

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

Order ID : P4495

Test : SVOCMS Group4

Prepbatch ID : PB164401,

Sequence ID/Qc Batch ID: BE103024,BE103024,BF102624,BF102924,BF110424,BF110424,BF111324,BF111324,BG110124,BG1

#### Standard ID :

EP2538,EP2551,SP6506,SP6507,SP6558,SP6559,SP6573,SP6576,SP6580,SP6581,SP6582,SP6583,SP6584,SP658 5,SP6617,SP6618,SP6620,SP6621,SP6622,SP6623,SP6624,SP6625,SP6626,SP6627,SP6628,SP6630,SP6638,

#### Chemical ID :

10ul/1000ul

sample,E2865,E3551,E3743,E3768,E3786,E3788,E3791,E3793,E3794,E3815,E3822,S10103,S10247,S10393,S10583, S10711,S10977,S10978,S10979,S10980,S11003,S11004,S11005,S11006,S11007,S11008,S11009,S11010,S11085,S11 098,S11138,S11141,S11159,S11494,S11532,S11533,S11541,S11557,S11566,S11602,S11649,S11670,S11671,S11699, S11700,S11762,S11766,S11767,S11771,S11772,S11773,S11774,S11775,S11902,S11997,S12004,S12033,S12037,S12 073,S12078,S12080,S12089,S12097,S12105,S12106,S12107,S12108,S12109,S12110,S12111,S12113,S12117,S1212 6,S12127,S12128,S12129,S12130,S12131,S12132,S12133,S12134,S12187,S12188,S12189,S12207,S12236,S12237,S12238,S12275,S12312,S12314,S12323,S1234,S12327,S12375,S12378,S12453,S12454,S12455,S12456,S 12457,S12458,S12459,S12460,S12461,S12509,S12510,S9068,S9934,



# Extractions STANDARD PREPARATION LOG

Recipe ID 3868	NAME METHELENE CHLORIDE+ACETONE	<u>NO.</u> EP2538	<b>Prep Date</b> 09/17/2024		Prepared By Rajesh Parikh	<u>ScaleID</u> None	PipetteID None	Supervised By RUPESHKUMAR SHAH 09/17/2024
FROM	8000.00000ml of E3793 + 8000.0000	00ml of E37	94 = Final Qu	antity: 1600.00	10 ml			

<u>Recipe</u> <u>ID</u> 3923	NAME Baked Sodium Sulfate	<u>NO.</u> EP2551	Prep Date 10/18/2024	Expiration Date 01/03/2025	Prepared By Rajesh Parikh	ScaleID Extraction_SC ALE_2	<u>PipetteID</u> None	Supervised By RUPESHKUMAR SHAH 10/18/2024
FROM	4000.00000gram of E3551 = Final C	uantity: 400	0.000 gram			(EX-SC-2)		



<b>Recipe</b> <u>ID</u> 1366	NAME LOQ & LOD 20 PPM	<u>NO.</u> <u>SP6506</u>	Prep Date 05/16/2024	Expiration Date 11/13/2024	<u>Prepared</u> <u>By</u> Jagrut Upadhyay	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By mohammad ahmed 05/16/2024
FROM	0.20000ml of S11762 + 0.40000ml of Quantity: 20.000 ml	S11557 + (	).40000ml of \$	511902 + 0.400	00ml of \$12089	9 + 18.60000ml	of E3743 = Fi	inal

<u>Recipe</u> <u>ID</u> 2082	NAME LOQ & LOD 4 PPM	<u>NO.</u> <u>SP6507</u>	<u>Prep Date</u> 05/16/2024	Expiration Date 11/13/2024	Prepared By Jagrut Upadhyay	<u>ScaleID</u> None	PipetteID None	Supervised By mohammad ahmed 05/16/2024
<u>FROM</u>	16.00000ml of E3743 + 4.00000ml of	SP6506 =	Final Quantit	y: 20.000 ml				



Recipe ID 18	NAME Second Source Calibration Stock Standard, 100 PPM,	<u>NO.</u> <u>SP6558</u>	Prep Date 07/09/2024	Expiration Date 11/30/2024	Prepared By Jagrut Upadhyay	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By mohammad ahmed 07/11/2024
FROM	<sup>•</sup> (8270/625/CLP) 0.04000ml of S10977 + 0.08000ml of 0.20000ml of S12117 + 1.18000ml of				00ml of S11566	5 + 0.20000ml o	f S12097 +	

Recipe ID 416	NAME 40 ng BNA ICV, 40 PPM	<u>NO.</u> <u>SP6559</u>	Prep Date 07/09/2024	Expiration Date 11/30/2024	Prepared By Jagrut Upadhyay	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By mohammad ahmed 07/11/2024
FROM	0.01000ml of S12033 + 0.60000ml of	E3768 + 0	40000ml of S	P6558 = Final		ml	<u> </u>	



Recipe ID 3895 FROM	NAME 50 ug/ml DFTPP 8270E 1.00000ml of S10247 + 19.00000ml of	<u>NO.</u> SP6573	Prep Date 07/15/2024 Final Quantity	Expiration Date 01/08/2025 /: 20.000 ml	Prepared <u>By</u> Rahul Chavli	<u>ScaleID</u> None	PipettelD None	Supervised By Yogesh Patel 07/17/2024
Recipe ID 3858	NAME SFAM ICALSTOCK 200ppm : 5?.?0 ml	<u>NO.</u> SP6576	Prep Date 08/01/2024	Expiration Date 12/14/2024	Prepared By Jagrut Upadhyay	<u>ScaleID</u> None	PipettelD None	Supervised By Yogesh Patel 08/08/2024

 FROM
 0.05000ml of \$12238 + 0.10000ml of \$12073 + 0.10000ml of \$12080 + 0.15000ml of \$12237 + 0.20000ml of \$3786 + 0.20000ml of \$11533 + 0.20000ml of \$11699 + 0.20000ml of \$11767 + 0.30000ml of \$11532 + 0.30000ml of \$11671 + 0.50000ml of \$11997 + 0.50000ml of \$12236 + 0.50000ml of \$12375 + 0.70000ml of \$11670 + 1.00000ml of \$11602 = Final Quantity: 5.000 ml



	NAME SFAM SSTD010	<u>NO.</u> <u>SP6580</u>	<u>Prep Date</u> 08/01/2024	Expiration Date 12/14/2024	<u>Prepared</u> <u>By</u> Jagrut Upadhyay	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Yogesh Patel 08/08/2024
FROM	0.01000ml of S12037 + 0.95000ml of	E3786 + 0.	05000ml of S	P6576 = Final	Quantity: 1.010	ml		

<u>Recipe</u> <u>ID</u> 3861	NAME SFAM SSTD020	<u>NO.</u> <u>SP6581</u>	Prep Date 08/01/2024	Expiration Date 12/14/2024	Prepared By Jagrut Upadhyay	<u>ScaleID</u> None	PipettelD None	Supervised By Yogesh Patel 08/08/2024
FROM	0.01000ml of S12037 + 0.90000ml of	E3786 + 0.	10000ml of S	P6576 = Final	Quantity: 1.010	ml		



Recipe ID 3862	NAME SFAM SSTD040	<u>NO.</u> <u>SP6582</u>	Prep Date 08/01/2024	Expiration Date 12/14/2024	<u>Prepared</u> <u>By</u> Jagrut Upadhyay	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Yogesh Patel 08/08/2024
FROM	0.01000ml of S12037 + 0.80000ml of	FE3786 + 0.	20000ml of S	P6576 = Final	Quantity: 1.010	n ml		

<u>Recipe</u> <u>ID</u> 3863	NAME SFAM SSTD080	<u>NO.</u> <u>SP6583</u>	<b>Prep Date</b> 08/01/2024	Expiration Date 12/14/2024	Prepared By Jagrut Upadhyay	<u>ScaleID</u> None	PipettelD None	Supervised By Yogesh Patel 08/08/2024
FROM	0.01000ml of S12037 + 0.60000ml of	E3786 + 0	1.40000ml of S	P6576 = Final		ml		



<u>Recipe</u> <u>ID</u> 3864	NAME SFAM SSTD160	<u>NO.</u> <u>SP6584</u>	Prep Date 08/01/2024	Expiration Date 12/14/2024	Prepared By Jagrut Upadhyay	<u>ScaleID</u> None	PipetteID None	Supervised By Yogesh Patel 08/08/2024
FROM	0.01000ml of S12037 + 0.20000ml of	FE3786 + 0.	80000ml of S	P6576 = Final	Quantity: 1.010	ml		

<u>Recipe</u> <u>ID</u> 3859	NAME SFAM SSTD005	<u>NO.</u> <u>SP6585</u>	<u>Prep Date</u> 08/01/2024	Expiration Date 12/14/2024	Prepared By Jagrut Upadhyay	<u>ScaleID</u> None	PipettelD None	Supervised By Yogesh Patel 08/08/2024
FROM	0.01000ml of S12037 + 0.97500ml of	E3786 + 0.	02500ml of S	P6576 = Final		ml		00/00/2021



Recipe ID 3865	NAME SFAM ICV STOCK 200 PPM 2.0ml	<u>NO.</u> <u>SP6617</u>	<b>Prep Date</b> 09/09/2024	Expiration Date 01/05/2025	Prepared By Jagrut Upadhyay	<u>ScaleID</u> None	PipetteID None	Supervised By mohammad ahmed 09/11/2024
FROM	0.04000ml of E3791 + 0.04000ml of of S12004 + 0.10000ml of S12378 + 1.000 ml							

<u>Recipe</u> <u>ID</u> 3866	NAME SFAM ICV 20 PPM	<u>NO.</u> <u>SP6618</u>	<u>Prep Date</u> 09/09/2024	Expiration Date 01/05/2025	Prepared By Jagrut Upadhyay	<u>ScaleID</u> None	PipetteID None	Supervised By mohammad ahmed 09/11/2024
FROM	0.01000ml of S12312 + 0.90000ml of	E3791 + 0.	10000ml of S	P6617 = Final		ml		00,11/2021



Recipe ID 3764	NAME 8270/625 Stock solution 100 ng	<u>NO.</u> <u>SP6620</u>	<b>Prep Date</b> 09/11/2024	Expiration Date 02/08/2025	Prepared By Jagrut Upadhyay	<u>ScaleID</u> None	PipetteID None	Supervised By mohammad ahmed 09/11/2024
FROM	0.26700ml of S10103 + 0.40000ml of 1.00000ml of S11159 + 1.00000ml of							

<u>Recipe</u> <u>ID</u> 413	NAME 80 ng BNA ICC, 80 PPM	<u>NO.</u> <u>SP6621</u>	<u>Prep Date</u> 09/11/2024	Expiration Date 02/08/2025	Prepared By Jagrut Upadhyay	<u>ScaleID</u> None	PipetteID None	Supervised By mohammad ahmed 09/11/2024
FROM	0.01000ml of S12314 + 0.20000ml of	E3791 + 0.	80000ml of S	P6620 = Final	Quantity: 1.010	ml	I	I



Recipe ID 412	NAME 60 ng BNA ICC, 60 PPM	<u>NO.</u> <u>SP6622</u>	Prep Date 09/11/2024	Expiration Date 02/08/2025	Prepared By Jagrut Upadhyay	<u>ScaleID</u> None	PipetteID None	Supervised By mohammad ahmed 09/11/2024
FROM	0.01000ml of S12314 + 0.40000ml of	E3791 + 0.	60000ml of S	P6620 = Final	Quantity: 1.010	ml		

<u>Recipe</u> <u>ID</u> 411	NAME 50 ng BNA ICC, 50 PPM	<u>NO.</u> SP6623	<u>Prep Date</u> 09/11/2024	Expiration Date 02/08/2025	Prepared By Jagrut Upadhyay	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By mohammad ahmed 09/11/2024
FROM	0.01000ml of S12314 + 0.50000ml of	E3791 + 0.	50000ml of S	P6620 = Final		ml		09/11/2024



Recipe ID 410	NAME 40 ng BNA ICC, 40 PPM	<u>NO.</u> <u>SP6624</u>	Prep Date 09/11/2024	Expiration Date 02/08/2025	Prepared By Jagrut Upadhyay	<u>ScaleID</u> None	PipetteID None	Supervised By mohammad ahmed 09/11/2024
FROM	0.01000ml of S12314 + 0.60000ml of	E3791 + 0.	40000ml of S	P6620 = Final	Quantity: 1.010	ml		

<u>Recipe</u> <u>ID</u> 3678	NAME 20 ng BNA ICC, 20 PPM	<u>NO.</u> SP6625	<b>Prep Date</b> 09/11/2024	Expiration Date 02/08/2025	<u>Prepared</u> <u>By</u> Jagrut Upadhyay	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By mohammad ahmed 09/11/2024
FROM	0.01000ml of S12314 + 0.80000ml of	E3791 + 0.	20000ml of S	P6620 = Final		ml		03/11/2024



Recipe ID 408	NAME 10 ng BNA ICC, 10 PPM	<u>NO.</u> <u>SP6626</u>	Prep Date 09/11/2024	Expiration Date 02/08/2025	<u>Prepared</u> <u>By</u> Jagrut Upadhyay	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By mohammad ahmed 09/11/2024
FROM	0.01000ml of S12314 + 0.90000ml of	E3791 + 0.	10000ml of S	P6620 = Final	Quantity: 1.010	ml		

<u>Recipe</u> <u>ID</u> 407	NAME 5 ng BNA ICC, 5 PPM	<u>NO.</u> <u>SP6627</u>	<b>Prep Date</b> 09/11/2024	Expiration Date 02/08/2025	Prepared By Jagrut Upadhyay	<u>ScaleID</u> None	PipetteID None	Supervised By mohammad ahmed 09/11/2024
FROM	0.01000ml of S12314 + 0.95000ml of	E3791 + 0.	.05000ml of S	P6620 = Final		ml		



Recipe ID 175	<b>NAME</b> 2.5 ng BNA ICC, 2.5 PPM	<u>NO.</u> <u>SP6628</u>	<b>Prep Date</b> 09/11/2024	Expiration Date 02/08/2025	Prepared By Jagrut Upadhyay	<u>ScaleID</u> None	PipetteID None	Supervised By mohammad ahmed 09/11/2024
FROM	0.01000ml of S12314 + 0.50000ml of	FE3791 + 0.	.50000ml of S	P6627 = Final	Quantity: 1.010	ml		

<u>Recipe</u> <u>ID</u> 171	<b>NAME</b> 8270/625 Spike Solution, 50/100 PPM	<u>NO.</u> <u>SP6630</u>	<b>Prep Date</b> 09/13/2024	Expiration Date 02/12/2025	Prepared By Rahul Chavli	<u>ScaleID</u> None	PipetteID None	Supervised By Yogesh Patel 10/29/2024
FROM	0.10000ml of S12134 + 0.10000ml o 0.40000ml of S10393 + 0.40000ml o 0.70000ml of S11771 + 0.70000ml o 1.10000ml of S12460 + 1.20000ml o 1.20000ml of S12459 + 1.20000ml o 1.30000ml of S12106 + 1.30000ml o 1.30000ml of S12130 + 1.30000ml o 1.40000ml of S12109 + 1.40000ml o	f S10583 + S12105 + f S12455 + f S12509 + f S12108 + f S12131 +	0.40000ml of 0.80000ml of 1.20000ml of 1.30000ml of 1.30000ml of 1.30000ml of	S11138 + 0.400 S12126 + 1.100 S12456 + 1.200 S11541 + 1.300 S12111 + 1.300 S12454 + 1.400	000ml of S11141 000ml of S12110 000ml of S1245 000ml of S11772 000ml of S12122 000ml of S11774	+ 0.40000ml o 0 + 1.10000ml o 7 + 1.20000ml o 2 + 1.30000ml o 7 + 1.30000ml o 4 + 1.40000ml o	f S11649 + of S12133 + of S12458 + of S11773 + of S12129 + of S12107 +	ml



Recipe ID 19	NAME 8270/CLP Surrogate Solution, 100 PPM BN/150 PPM ACID	<u>NO.</u> <u>SP6638</u>	Prep Date 10/10/2024	Expiration Date 04/04/2025	Prepared By Jagrut Upadhyay	<u>ScaleID</u> None	PipetteID None	Supervised By mohammad ahmed 10/18/2024
FROM	1930.00000ml of E3815 + 5.00000m 5.00000ml of S11005 + 5.00000ml of 5.00000ml of S11010 + 5.00000ml of Quantity: 2000.000 ml	S11006 + 5	5.00000ml of \$	611007 + 5.000	00ml of S11008	8 + 5.00000ml o	f S11009 +	



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-3382-05 / Sand, Purified (cs/4x2.5kg)	0000243821	12/31/2024	04/30/2020 / RAJESH	04/28/2020 / RAJESH	E2865
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	PC19631-100 / SODIUM SULFATE, ANHYDROUS, PEST GRADE, 1	313201	01/03/2025	01/03/2024 / Rajesh	07/20/2023 / Rajesh	E3551
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9644-A4 / Methylene Chloride,U-Resi, Cycle-Tainer (215L)	24C0162011	11/16/2024	05/16/2024 / Rajesh	04/26/2024 / Rajesh	E3743
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9644-A4 / Methylene Chloride,U-Resi, Cycle-Tainer (215L)	24E2462004	01/08/2025	07/08/2024 / Rajesh	06/21/2024 / Rajesh	E3768
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9644-A4 / Methylene Chloride,U-Resi, Cycle-Tainer (215L)	24F1062004	02/01/2025	08/01/2024 / Rajesh	07/16/2024 / Rajesh	E3786
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9254-03 / Acetone, Ultra Resi (cs/4x4L)	23H1462005	04/23/2025	08/13/2024 / Rajesh	08/13/2024 / Rajesh	E3788



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9644-A4 / Methylene Chloride,U-Resi, Cycle-Tainer (215L)	24G2362009	03/09/2025	09/09/2024 / Rajesh	09/03/2024 / Rajesh	E3791
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	9005-05 / Acetone Ultra (cs/4x4L)	24E0761004	03/11/2025	09/12/2024 / Rajesh	09/11/2024 / Rajesh	E3793
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9644-A4 / Methylene Chloride,U-Resi, Cycle-Tainer (215L)	24G2362009	03/17/2025	09/17/2024 / Rajesh	09/03/2024 / Rajesh	E3794
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9254-03 / Acetone, Ultra Resi (cs/4x4L)	24H1462005	04/04/2025	10/04/2024 / Rajesh	10/04/2024 / Rajesh	E3815
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9644-A4 / Methylene Chloride,U-Resi, Cycle-Tainer (215L)	2412662006	04/23/2025	10/24/2024 / Rajesh	10/24/2024 / Rajesh	E3822
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
CPI International	Z-112090-04 / CLP Acid Surrogate Solution, 7500 mg/L, 1ml	440246	02/08/2025	08/08/2024 / Jagrut	12/09/2021 / Christian	S10103



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# CHEMICAL RECEIPT LOG BOOK

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Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31615 / SV Mixture, GC/MS Tuning Mixture, CH2Cl2, 1mL,	A0182667	01/15/2025	07/15/2024 / Rahul	03/18/2022 / Christian	S10247
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555871 / Custom Standard, 4-nitrophenol Std [CS 5238-4]	A0185300	03/13/2025	09/13/2024 / yogesh	05/18/2022 / Christian	S10393
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555868 / Custom Standard, Benzidine Std [CS 5328-1]	A0186373	02/12/2025	08/12/2024 / Rahul	07/05/2022 / Christian	S10583
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	98496 / 1,2,3,4-Tetrachlorobenzene, 5000 ug/mL, in MeCl2	042221	03/09/2025	09/09/2024 / Jagrut	08/23/2022 / Christian	S10711
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31087 / Acid Surrogate 10,000ug/ml,methanol,5ml/ ampul	A0188108	11/30/2024	05/31/2024 / Jagrut	12/28/2022 / Christian	S10977
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31087 / Acid Surrogate 10,000ug/ml,methanol,5ml/ ampul	A0188108	04/10/2025	10/10/2024 / anahy	12/28/2022 / Christian	S10978



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31087 / Acid Surrogate 10,000ug/ml,methanol,5ml/ ampul	A0188108	04/10/2025	10/10/2024 / anahy	12/28/2022 / Christian	S10979
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31087 / Acid Surrogate 10,000ug/ml,methanol,5ml/ ampul	A0188108	04/10/2025	10/10/2024 / anahy	12/28/2022 / Christian	S10980
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31086 / Base Neutral Surrogate 5000ug/ml,CH2Cl2,5ml	A0189418	11/30/2024	05/31/2024 / Jagrut	12/28/2022 / Christian	S11003
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31086 / Base Neutral Surrogate 5000ug/ml,CH2Cl2,5ml	A0189418	04/10/2025	10/10/2024 / anahy	12/28/2022 / Christian	S11004
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31086 / Base Neutral Surrogate 5000ug/ml,CH2Cl2,5ml	A0189418	04/10/2025	10/10/2024 / anahy	12/28/2022 / Christian	S11005
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31086 / Base Neutral Surrogate 5000ug/ml,CH2Cl2,5ml	A0189418	04/10/2025	10/10/2024 / anahy	12/28/2022 / Christian	S11006



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31086 / Base Neutral Surrogate 5000ug/ml,CH2Cl2,5ml	A0189418	04/10/2025	10/10/2024 / anahy	12/28/2022 / Christian	S11007
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31086 / Base Neutral Surrogate 5000ug/ml,CH2Cl2,5ml	A0189418	04/10/2025	10/10/2024 / anahy	12/28/2022 / Christian	S11008
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31086 / Base Neutral Surrogate 5000ug/ml,CH2Cl2,5ml	A0189418	04/10/2025	10/10/2024 / anahy	12/28/2022 / Christian	S11009
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31086 / Base Neutral Surrogate 5000ug/ml,CH2Cl2,5ml	A0189418	04/10/2025	10/10/2024 / anahy	12/28/2022 / Christian	S11010
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
CPI International	Z-010074-07 / 3,3'-Dichlorobenzidine Solution, 1,000 mg/L, 1 ml, (Maximum Expiration: 180	406703	03/11/2025	09/11/2024 / Rahul	02/07/2023 / Christian	S11085
	-					
Supplier	days) ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555870 / Custom Standard, 2,4-dinitrophenol Std [CS 5328-3]	A0194698	02/12/2025	08/12/2024 / Rahul	02/20/2023 / Christian	S11138
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555869 / Custom Standard, hexachlorocyclopentadiene Std [CS 5328-2]	A0194702	02/12/2025	08/12/2024 / Rahul	02/20/2023 / Christian	S11141
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
CPI International	Z-110817-01 / Custom 8270 Mix, 4-55, 1000 mg/L, 1 ml, (Maximum Expiration: 90 Days)	414125	03/11/2025	09/11/2024 / Rahul	03/06/2023 / Christian	S11159
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
CPI International	Z-110094-02 / CLP Base/Neutral Surrogate Solution, 5000 mg/L, 1ml	506889	02/08/2025	08/08/2024 / Jagrut	08/11/2023 / Yogesh	S11494
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30409 / Pyridine, 2000 PPM in P & T Methanol	A0196693	12/25/2024	06/25/2024 / Jagrut	08/31/2023 / Yogesh	S11532
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30409 / Pyridine, 2000 PPM in P & T Methanol	A0196693	02/01/2025	08/01/2024 / anahy	08/31/2023 / Yogesh	S11533



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ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
555223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request] [CS 4978-1]	A0201940	03/13/2025	09/13/2024 / yogesh	09/18/2023 / Kiran	S11541
ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
555223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request]	A0201940	11/16/2024	05/16/2024 / Jagrut	09/18/2023 / Kiran	S11557
ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
555223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request]	A0201940	12/05/2024	06/05/2024 / Rahul	09/18/2023 / Kiran	S11566
[CS 4978-1]			Г	Γ	
ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
31902 / CLP/SVOA Additions Mix (Atrazine, Benzaldehyde, Caprolactam) 1000ug/mL	A0200496	02/01/2025	08/01/2024 / anahy	09/25/2023 / Kiran	S11602
ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
555872 / Custom Standard, pentachlorophenol Std [CS 5328-5]	A0201728	03/13/2025	09/13/2024 / anahy	11/09/2023 / Yogesh	S11649
ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
31900 / SOM01.1 Mega Mix, 500-1000 ug/ml	A0204128	12/25/2024	06/25/2024 / Jagrut	11/13/2023 / Rahul	S11670
	555223 / Custom 8270         Plus Std #1 [2nd lot at \$100         per ampul if requested -         contact ARM with Request]         [CS 4978-1]         ItemCode / ItemName         555223 / Custom 8270         Plus Std #1 [2nd lot at \$100         per ampul if requested -         contact ARM with Request]         [CS 4978-1]         ItemCode / ItemName         555223 / Custom 8270         Plus Std #1 [2nd lot at \$100         per ampul if requested -         contact ARM with Request]         [CS 4978-1]         ItemCode / ItemName         555223 / Custom 8270         Plus Std #1 [2nd lot at \$100         per ampul if requested -         contact ARM with Request]         [CS 4978-1]         ItemCode / ItemName         31902 / CLP/SVOA         Additions Mix (Atrazine,         Benzaldehyde,         Caprolactam) 1000ug/mL         ItemCode / ItemName         555872 / Custom         Standard,         pentachlorophenol Std [CS         5328-5]         ItemCode / ItemName         31900 / SOM01.1 Mega	StatusA0201940S55223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request]A0201940ItemCode / ItemNameLot #S55223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request]A0201940[CS 4978-1]ItemCode / ItemNameLot #S55223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request]A0201940[CS 4978-1]ItemCode / ItemNameLot #S55223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request]A0201940[CS 4978-1]Lot #A0201940ItemCode / ItemNameLot #31902 / CLP/SVOA Additions Mix (Atrazine, Benzaldehyde, Caprolactam) 1000ug/mLA0200496ItemCode / ItemNameLot #S55872 / Custom Standard, pentachlorophenol Std [CS 5328-5]A0201728ItemCode / ItemNameLot #31900 / SOM01.1 MegaA0204128	ItemCode / ItemNameLot #Date555223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request]A020194003/13/2025[CS 4978-1]ItemCode / ItemNameLot #Expiration Date555223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request]A020194011/16/2024[CS 4978-1]A020194011/16/2024[CS 4978-1]Lot #Expiration Date[CS 4978-1]Lot #Expiration Date[CS 4978-1]A020194012/05/2024[CS 4978-1]A020194012/05/2024[CS 4978-1]A020194012/05/2024[CS 4978-1]Lot #Expiration Date[CS 4978-1]ItemCode / ItemNameLot #Expiration Date[S 55872 / Custom Standard, pentachlorophenol Std [CS S328-5]A020172803/13/2025[S 5328-5]ItemCode / ItemNameLot #Expiration Date[S 1900 / SOM01.1 MegaA020412812/25/2024	ItemCode / ItemNameLot #DateOpened By555223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request]A020194003/13/202509/13/2024 / yogeshItemCode / ItemNameLot #Expiration DateDate Opened / Opened By555223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request]A020194011/16/202405/16/2024 / JagrutItemCode / ItemNameLot #Expiration DateDate Opened / Opened By(CS 4978-1]A020194011/16/202405/16/2024 / JagrutItemCode / ItemNameLot #Expiration DateDate Opened / Opened By555223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request]A020194012/05/202406/05/2024 / Rahul[CS 4978-1]ItemCode / ItemNameLot #Expiration DateDate Opened / Opened By31902 / CLP/SVOA Additions Mix (Atrazine, Benzaldehyde, Caprolactam) 1000ug/mLA020049602/01/202508/01/2024 / anahyitemCode / ItemNameLot #Expiration DateDate Opened / Opened By555872 / Custom Standard, pentachlorophenol Std [CS S328-5]A020172803/13/202509/13/2024 / anahyitemCode / ItemNameLot #Expiration DateDate Opened / Opened By31900 / SOM01.1 MegaA020172812/25/202406/25/2024 /	ItemCode / ItemNameLot #DateOpened ByReceived By555223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request]A020194003/13/202509/13/2024 / yogesh09/18/2023 / Kiran[CS 4978-1]Lot #Expiration DateDate Opened / Opened ByReceived Date / Received Date / Opened By555223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request]A020194011/16/202405/16/2024 / Jagrut09/18/2023 / Kiran[CS 4978-1]Lot #Expiration DateDate Opened / Opened ByReceived Date / Received Date / Opened By[CS 4978-1]Lot #Expiration DateDate Opened / Opened ByReceived Date / Received Date / Opened By[CS 4978-1]Lot #Expiration DateDate Opened / Opened ByReceived Date / Received Date / Opened By[CS 4978-1]Lot #Expiration DateDate Opened / Opened By09/18/2023 / Kiran[CS 4978-1]A020194012/05/202406/05/2024 / Rahul09/18/2023 / Kiran[CS 4978-1]Lot #Expiration DateDate Opened / Opened ByReceived Date / Received Date / Received Date / Received Date / Received Date / Received Date / Opened By[CS 4978-1]Lot #Expiration DateDate Opened / Opened By09/25/2023 / Kiran[CS 4978-1]Lot #Expiration DateDate Opened / Opened By09/25/2023 / Received Date / Received Date / Opened



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31900 / SOM01.1 Mega Mix, 500-1000 ug/ml	A0204128	02/01/2025	08/01/2024 / anahy	11/13/2023 / Rahul	S11671
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30614 / 1,4-Dioxane-D8 Standard	A0203488	02/01/2025	08/01/2024 / anahy	11/20/2023 / Rahul	S11699
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30614 / 1,4-Dioxane-D8 Standard	A0203488	02/28/2025	08/29/2024 / Jagrut	11/20/2023 / Rahul	S11700
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31853 / 1,4-Dioxane, 2000 ug/ml , Solvent: Methylene Chloride	A0196453	11/13/2024	05/13/2024 / Jagrut	11/21/2023 / Rahul	S11762
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31853 / 1,4-Dioxane, 2000 ug/ml , Solvent: Methylene Chloride	A0196453	12/14/2024	06/14/2024 / Rahul	11/21/2023 / Rahul	S11766
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31853 / 1,4-Dioxane, 2000 ug/ml , Solvent: Methylene Chloride	A0196453	01/12/2025	07/12/2024 / Rahul	11/21/2023 / Rahul	S11767



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31853 / 1,4-Dioxane, 2000 ug/ml , Solvent: Methylene Chloride	A0196453	02/20/2025	08/20/2024 / Rahul	11/21/2023 / Rahul	S11771
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31853 / 1,4-Dioxane, 2000 ug/ml , Solvent: Methylene Chloride	A0196453	03/13/2025	09/13/2024 / anahy	11/21/2023 / Rahul	S11772
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31853 / 1,4-Dioxane, 2000 ug/ml , Solvent: Methylene Chloride	A0196453	03/13/2025	09/13/2024 / anahy	11/21/2023 / Rahul	S11773
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31853 / 1,4-Dioxane, 2000 ug/ml , Solvent: Methylene Chloride	A0196453	03/13/2025	09/13/2024 / anahy	11/21/2023 / Rahul	S11774
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31853 / 1,4-Dioxane, 2000 ug/ml , Solvent: Methylene Chloride	A0196453	03/13/2025	09/13/2024 / anahy	11/21/2023 / Rahul	S11775
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31850 / 8270 SV Mix, 8270 Mega Mix 1mL, 1000ug/mL, CH2Cl2 [New Solvent 100% CH2Cl2]	A0197982	11/16/2024	05/16/2024 / Jagrut	11/21/2023 / rahul	S11902



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Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31046 / Pyridine-d5, Solvent Methylene Chloride, 2000 ug/L	A0205496	01/25/2025	07/25/2024 / Jagrut	12/21/2023 / Rahul	S11997
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31046 / Pyridine-d5, Solvent Methylene Chloride, 2000 ug/L	A0205496	03/09/2025	09/09/2024 / Jagrut	12/21/2023 / Rahul	S12004
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31206 / SV Mix, CLP method, Internal Std, 2000ug/mL, CH2Cl2, 1mL	A0201320	01/01/2025	07/01/2024 / Rahul	12/21/2023 / Rahul	S12033
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31206 / SV Mix, CLP method, Internal Std, 2000ug/mL, CH2Cl2, 1mL	A0201320	02/01/2025	08/01/2024 / Rahul	12/21/2023 / Rahul	S12037
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	98495 / Pentachlorobenzene, 5000 ug/mL, in MeCl2	111722	12/14/2024	06/14/2024 / Rahul	01/03/2024 / Rahul	S12073
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
CPI International	Z-110816-01 / Custom 8270 Mix, 4-79, 1000 mg/L, 1 mL, (Maximum Expiration: 180 Days)	414127	03/11/2025	09/11/2024 / Rahul	01/31/2024 / Rahul	S12078



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	98495 / Pentachlorobenzene, 5000 ug/mL, in MeCl2	111722	02/01/2025	08/01/2024 / anahy	02/09/2024 / Rahul	S12080
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555224 / Custom 8270 Plus Std #2 [2nd lot at \$85 per ampul if requested - contact ARM with Request] [CS 4978-2]	A0207706	11/16/2024	05/16/2024 / Jagrut	02/05/2024 / Rahul	S12089
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555224 / Custom 8270 Plus Std #2 [2nd lot at \$85 per ampul if requested - contact ARM with Request]	A0207706	01/09/2025	07/09/2024 / Jagrut	02/05/2024 / Rahul	S12097
Supplier	[CS 4978-2] ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555224 / Custom 8270 Plus Std #2 [2nd lot at \$85 per ampul if requested - contact ARM with Request] [CS 4978-2]	A0207706	02/12/2025	08/12/2024 / Rahul	02/05/2024 / Rahul	S12105
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555224 / Custom 8270 Plus Std #2 [2nd lot at \$85 per ampul if requested - contact ARM with Request] [CS 4978-2]	A0207706	03/13/2025	09/13/2024 / anahy	02/05/2024 / Rahul	S12106
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555224 / Custom 8270 Plus Std #2 [2nd lot at \$85 per ampul if requested - contact ARM with Request] [CS 4978-2]	A0207706	03/13/2025	09/13/2024 / anahy	02/05/2024 / Rahul	S12107



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555224 / Custom 8270 Plus Std #2 [2nd lot at \$85 per ampul if requested - contact ARM with Request]	A0207706	03/13/2025	09/13/2024 / anahy	02/05/2024 / Rahul	S12108
	[CS 4978-2]			1	1	i
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555224 / Custom 8270 Plus Std #2 [2nd lot at \$85 per ampul if requested - contact ARM with Request] [CS 4978-2]	A0207706	03/13/2025	09/13/2024 / anahy	02/05/2024 / Rahul	S12109
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555224 / Custom 8270 Plus Std #2 [2nd lot at \$85 per ampul if requested - contact ARM with Request]	A0207706	03/13/2025	09/13/2024 / anahy	02/05/2024 / Rahul	S12110
Supplier	[CS 4978-2] ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555224 / Custom 8270 Plus Std #2 [2nd lot at \$85 per ampul if requested - contact ARM with Request] [CS 4978-2]	A0207706	03/13/2025	09/13/2024 / anahy	02/05/2024 / Rahul	S12111
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
CPI International	z-010223-01 / 1,4-Dioxane Solution, 2,000mg/L, 1ml	454157	02/09/2025	08/09/2024 / Jagrut	03/08/2024 / Rahul	S12113
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31850 / 8270 SV Mix, 8270 Mega Mix 1mL, 1000ug/mL, CH2Cl2 [New Solvent 100% CH2Cl2]	A0203726	12/05/2024	06/05/2024 / Rahul	03/15/2024 / Rahul	S12117



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31850 / 8270 SV Mix, 8270 Mega Mix 1mL, 1000ug/mL, CH2Cl2 [New Solvent 100% CH2Cl2]	A0203726	02/12/2025	08/12/2024 / Rahul	03/15/2024 / Rahul	S12126
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31850 / 8270 SV Mix, 8270 Mega Mix 1mL, 1000ug/mL, CH2Cl2 [New Solvent 100% CH2Cl2]	A0203726	03/13/2025	09/13/2024 / anahy	03/15/2024 / Rahul	S12127
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31850 / 8270 SV Mix, 8270 Mega Mix 1mL, 1000ug/mL, CH2Cl2 [New Solvent 100% CH2Cl2]	A0203726	03/13/2025	09/13/2024 / anahy	03/15/2024 / Rahul	S12128
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31850 / 8270 SV Mix, 8270 Mega Mix 1mL, 1000ug/mL, CH2Cl2 [New Solvent 100% CH2Cl2]	A0203726	03/13/2025	09/13/2024 / anahy	03/15/2024 / Rahul	S12129
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31850 / 8270 SV Mix, 8270 Mega Mix 1mL, 1000ug/mL, CH2Cl2 [New Solvent 100% CH2Cl2]	A0203726	03/13/2025	09/13/2024 / anahy	03/15/2024 / Rahul	S12130
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31850 / 8270 SV Mix, 8270 Mega Mix 1mL, 1000ug/mL, CH2Cl2 [New Solvent 100% CH2Cl2]	A0203726	03/13/2025	09/13/2024 / anahy	03/15/2024 / Rahul	S12131



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31850 / 8270 SV Mix, 8270 Mega Mix 1mL, 1000ug/mL, CH2Cl2 [New Solvent 100% CH2Cl2]	A0203726	03/13/2025	09/13/2024 / anahy	03/15/2024 / Rahul	S12132
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31850 / 8270 SV Mix, 8270 Mega Mix 1mL, 1000ug/mL, CH2Cl2 [New Solvent 100% CH2Cl2]	A0203726	03/13/2025	09/13/2024 / anahy	03/15/2024 / Rahul	S12133
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31850 / 8270 SV Mix, 8270 Mega Mix 1mL, 1000ug/mL, CH2Cl2 [New Solvent 100% CH2Cl2]	A0203726	03/13/2025	09/13/2024 / anahy	03/15/2024 / Rahul	S12134
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31087 / Acid Surrogate 10,000ug/ml,methanol,5ml/ ampul	A0206206	04/10/2025	10/10/2024 / anahy	03/15/2024 / Rahul	S12187
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31087 / Acid Surrogate 10,000ug/ml,methanol,5ml/ ampul	A0206206	04/10/2025	10/10/2024 / anahy	03/15/2024 / Rahul	S12188
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31086 / Base Neutral Surrogate 5000ug/ml,CH2Cl2,5ml	A0206381	04/10/2025	10/10/2024 / anahy	03/15/2024 / Rahul	S12207
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	90494 / 1-Methylnaphthalene, 2000 ug/mL, in methylene chloride	060822	02/01/2025	08/01/2024 / anahy	04/11/2024 / Rahul	S12236
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	98496 / 1,2,3,4-Tetrachlorobenzene, 5000 ug/mL, in MeCl2	040524	12/14/2024	06/14/2024 / Rahul	04/11/2024 / Rahul	S12237
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	98496 / 1,2,3,4-Tetrachlorobenzene, 5000 ug/mL, in MeCl2	040524	02/01/2025	08/01/2024 / anahy	04/11/2024 / Rahul	S12238
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
CPI International	Z-010442-07 / Benzaldehyde Solution, 1000 mg/L, 1.3 ml, (Maximum Expiration: 90 Days)	495833	03/11/2025	09/11/2024 / Rahul	05/24/2024 / Rahul	S12275
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31206 / SV Mix, CLP method, Internal Std, 2000ug/mL, CH2Cl2, 1mL	A0206540	02/26/2025	08/26/2024 / anahy	05/30/2024 / Rahul	S12312



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31206 / SV Mix, CLP method, Internal Std, 2000ug/mL, CH2Cl2, 1mL	A0206540	03/04/2025	09/04/2024 / anahy	05/30/2024 / Rahul	S12314
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31206 / SV Mix, CLP method, Internal Std, 2000ug/mL, CH2Cl2, 1mL	A0206540	04/23/2025	10/23/2024 / anahy	05/30/2024 / Rahul	S12323
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31206 / SV Mix, CLP method, Internal Std, 2000ug/mL, CH2Cl2, 1mL	A0206540	04/30/2025	10/30/2024 / anahy	05/30/2024 / Rahul	S12324
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31206 / SV Mix, CLP method, Internal Std, 2000ug/mL, CH2Cl2, 1mL	A0206540	05/06/2025	11/06/2024 / anahy	05/30/2024 / Rahul	S12326
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31206 / SV Mix, CLP method, Internal Std, 2000ug/mL, CH2Cl2, 1mL	A0206540	05/12/2025	11/12/2024 / anahy	05/30/2024 / Rahul	S12327
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31810 / SV Mix, OLC 03.2 SVOA Deuterated	A0206801	01/25/2025	07/25/2024 / Jagrut	05/30/2024 / Rahul	S12375



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31810 / SV Mix, OLC 03.2 SVOA Deuterated Monitoring Compounds, 1mL, 2000ug/mL, CH2Cl2	A0206801	02/21/2025	08/21/2024 / Jagrut	05/30/2024 / Rahul	S12378
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request] [CS 4978-1]	A0214021	02/12/2025	08/12/2024 / Rahul	07/23/2024 / RAHUL	S12453
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request] [CS 4978-1]	A0214021	03/13/2025	09/13/2024 / anahy	07/23/2024 / RAHUL	S12454
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request]	A0214021	03/13/2025	09/13/2024 / anahy	07/23/2024 / RAHUL	S12455
Supplier	[CS 4978-1] ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request] [CS 4978-1]	A0214021	03/13/2025	09/13/2024 / anahy	07/23/2024 / RAHUL	S12456
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request] [CS 4978-1]	A0214021	03/13/2025	09/13/2024 / anahy	07/23/2024 / RAHUL	S12457

[CS 4978-1]



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request] [CS 4978-1]	A0214021	03/13/2025	09/13/2024 / anahy	07/23/2024 / RAHUL	S12458
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request] [CS 4978-1]	A0214021	03/13/2025	09/13/2024 / anahy	07/23/2024 / RAHUL	S12459
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request]	A0214021	03/13/2025	09/13/2024 / anahy	07/23/2024 / RAHUL	S12460
Supplier	[CS 4978-1] ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request]	A0214021	03/13/2025	09/13/2024 / anahy	07/23/2024 / RAHUL	S12461
Supplier	[CS 4978-1] ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555224 / Custom 8270 Plus Std #2 [2nd lot at \$85 per ampul if requested - contact ARM with Request] [CS 4978-2]	A0214017	03/13/2025	09/13/2024 / anahy	07/23/2024 / RAHUL	S12509
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555224 / Custom 8270 Plus Std #2 [2nd lot at \$85 per ampul if requested - contact ARM with Request] [CS 4978-2]	A0214017	03/13/2025	09/13/2024 / anahy	07/23/2024 / RAHUL	S12510



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31853 / 1,4-Dioxane, 2000 ug/ml , Solvent: Methylene Chloride	A0158185	01/05/2025	07/05/2024 / Jagrut	01/26/2021 / Christian	S9068
		i	1	i		
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #

Absolute Standarde Inc				
800-368-1131 www.absolutestandards.com		Certified Reference Material CRM	ANAB IS AR-1539 https://Abs	ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com
<u>CERTIFIED WEIGHT REPORT</u> Part Number: Lot Number: Description:	98496 042221 Methyle 1,2,3,4-Tetrachlorobenzene	Lot#	La l	
Expiration Date: 042226 Recommended Storage: Refrigeration Nominal Concentration (µg/mL): 5000 NIST Test ID#: 6UTB Weight(s) shown below were combined and diluted to (mL):	Pate:     042226       age:     Refrigerate (4 °C)       mL):     5000       ID#:     6UTB       Fer of and diluted to (mL):     20.0       0.058     Flask Uncertainty	Revie	Formulated By: Prashant Chauhan DATE	DATE 12221 DATE
Compound	Nominal Purity Uncertainty Conc (ug/mL) (%) Purity	Target         Expanded           Veight(g)         Actual         Actual         Uncertainty           Weight(g)         Weight(g)         Conc (Jrg/mL) (+/-) (Jrg/mL)	nded SDS Information tainty (Solvent Safety Info. On Attached pg.) rg/mL) CAS# OSHA PEL (TWA) LD50	
1. 1;2;3;4-Tetrachlorobenzene	97.3 0.2	0.10292 0.10300 5003.7 36.0		Eyyt
300°C. Analysis performed by Nicole Poisson.	Nicole Poisson.	$(1,1,1,1)$ , $1,2,1,2,2$ = $300^{\circ} \subset (4,1,1,1)$ , $4$ and $=$	$J_{2} \sim C(1 \text{ mm})$ , $I_{2} = J_{2} \sim C(4 \text{ mm})$ , kate = $I_{1} \sim C(1 \text{ mm})$ , injector B = $200^{\circ}$ C, Detector B =	Received
3200000 12.06		Abundance Scan 599 (12.	Scan 599 (12.055 min): [BSB2]70318.D	u P
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2000000		350000		80701 S
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1200000		200000		
800000		150000	108 179	
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200000		00 10 10 10 10 10 10 10 10 10 10 10 10 1	118	
T'ime> <sup>0</sup> 5.00 10.00	15.00 20.00 25.00 30.00	m/z>0 40 60 80 1	100 120 140 160 180 200 220	
• TI • St • St • U	<ul> <li>The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.</li> <li>Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).</li> <li>Standards are certified (+t-) 9.5% of the stated value, unless otherwise stated.</li> <li>All Standards, after opening annule, should be stored with caps tight and under appropriate laboratory conditions.</li> <li>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).</li> </ul>	etric measurements unless otherwise stated. (weights traceable to NIST (see above). r appropriate laboratory conditions, ing and Expressing the Uncertainty of NIST Measurements (1994).	urement Result,"	
Part # 98496 Lot # 042221		1 of 1	Printed: 8/15/2022, 1:10:25 PM	22, 1:10:25 PM
				22, 1.10.23 FM

Absolute Standards, Inc. 800-368-1131 www.absolutestandards.com		<b>Certified Reference Material CRM</b>	aterial CRM	<b>\$</b>	ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com
Certified Weight Report					
Part Number: Lot Number: Description:	98495 072820 Pentachlorobenzene	Solvent(s): L Methylene chloride 10	Lot# 104929	Jones 4	072820
Expiration Date:	072825		Formulated By:	ted By: Benson Chân	DATE
Recommended Storage:	Refrigerate (4 °C)				i element
Nominal Concentration (µg/mL):	5000			and to	072820
Weinhtle) shown below were combined an		5E-05 Balance Uncertainty	Reviewed By:	d By: Pedro L. Rentas	DATE
	10 CIIVIED 10 (ML): 25.0	U.UU1 Flask Uncertainty	Fynanciar	SDS Information	5
		Purity Uncertainty Target A	Actual Actual Uncertainty	(Solvent S	ttached pg.)
Compound	RM# Number Conc (ug/mL)	(%) Purity Weight(g)	Weight(g) Conc (µg/mL) (+/-) (µg/mL)		LD50
1. Pentachlorobenzene	321 2705100 5000	99.5 0.5 0.12561 0.1	0.12566 5001.9 50.4	50.4 608-93-5 N/A	orl-rat 1080mg/kg
<b>1:</b> Column: SPB-609 )0:1, Scan Rate = 2.	3 (30m X 0.25mm ID X 0.25µm film thicl Analysis performed by Candice Warren.	1 = 150°C (4min.		1., Injector	, Detector B =
- Verranze	a 200(1985) 31		Scan 347 (7.9	Scan 347 (7.855 min): [BS84]70321.D	
		Activitation		250	
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1075) 073. C075 - 2 <sup>(-1/m</sup> -	M 22 56 72	20.00 mmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmm	100 150 200	350 400	450 500 Sqq12
• The cert • Standar	tified value is the concentration calculs rds are prepared gravimetrically using	<ul> <li>The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.</li> <li>Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).</li> </ul>	ents unless otherwise stated. ble to NIST (see above).		
• Standar • All Stan • Uncerta	rds are certifed (+/-) 0.5% of the stated	I value, unless otherwise stated.	DRE GU INIJ I (SEE AUUVE).		
NIST T	on science us, and opening anipute, should be stored with G Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guid NIST Technical Note 1297 17.S. Government Printing Office	Printing Office Washington DC (1994)	<ul> <li>All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.</li> <li>Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Cuidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1997 U.S. Government Printing Office Westington DC (1994)</li> </ul>	ement Result,"	

Printed: 10/12/2021, 4:48:22 PM

1 of 1



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

www.restek.com

### **CERTIFIED REFERENCE MATERIAL**

### **Certificate of Analysis**

chromatographic plus





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

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

Catalog No. :	31902	Lot No.:	A0200496		S11599
Description :	Additions Standard			K.S	1
	Additions Standard 1000 µg/mL, Me	thylene Chloride, 1	mL/ampul	09/25/23	
Container Size :	2 mL	Pkg Amt:	> 1 mL		
Expiration Date :	August 31, 2025	Storage:	10°C or colder	_	S11603
Handling:	This product is photosensitive.	Ship:	Ambient		

#### CERTIFIED VALUES

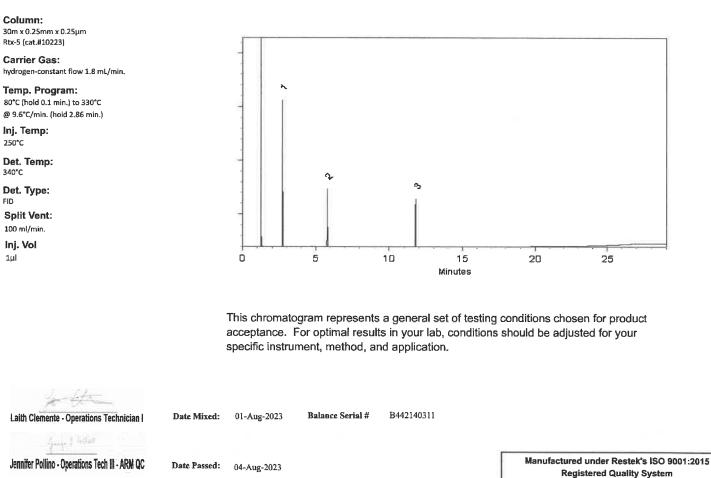
Elution Order	Compound	CAS #	Lot #	e Purity.	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Benzaldehyde	100-52-7	RD230209RSRA	99%	1,001.0 μg/mL	+/- 29.4243
2	epsilon-Caprolactam	105-60-2	I16X016	99%	1,001.0 µg/mL	+/- 29.4243
3	Atrazine	1912-24-9	5FYWL	99%	1,002.0 μg/mL	+/- 29.4537

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

Solvent: Methylene chloride CAS # 75-09-2 Purity 99%



### **Quality Confirmation Test**



Certificate #FM 80397





(707)525-5788 (800)878-7654 Toll Free (707)545-7901 Fax

Manufacturer's Quality System Audited & Registered by TUV USA to ISO 9001:2015

Date Received:

		Certific	cate of A	Analysis	Rev 0	Page 1 of 1
Catalog No.: Lot No.:	Storage:	Solvent:	Exp. Date:		Descri	ption:
Z-010074-07 406703	$\leq$ -10 °C	Methylene Chloride	3/30/2025	3,3'-Dichloroben:	zidine Solution,	1,000 mg/L, 1 mL
Сотрои	Ind	CAS No	. Purit	y (%) Compo	und Lot No.	Concentration, mg/L
3,3'-dichlorobenzidine		91-94-1	99	.5	74.3.26P	989 ± 7.53

Received on 02/07/23 Бү CG 511084 to

511098

\*Not a certified value

m

Certified By:

Jacob Mulloy Chemist

All weights are traceable through N. I. S. T. Test No. 822/264157-00. Concentration (correct for purity) and uncertainty (95% confidence) values listed are determined gravimetricIly.



(707)525-5788 (800)878-7654 Toll Free (707)545-7901 Fax Manufacturer's Quality System Audited & Registered by TUV USA to ISO 9001:2015

Date Received:\_\_\_\_

Certificate of Analysis Rev 0

Page 1 of 1

Catalog No.: Lot No.:	Storage:	Solvent:	Exp. Date:	Descri	ption:	
Z-110817-01 414125	0817-01 414125 $\leq -10 \text{ °C}$ Methylene Chloride 6/21/2025 Custom 8270 Mix, 4-55, 1000 mg/L, 1 mL					
Compos	ınd	CAS No.	Purity (%)	Compound Lot No.	Concentration, mg/L	
acetophenone		98-86-2	99.2	85.8.1P	998 ± 11.5	
benzoic acid		65-85-0	100	123.7.1P	$1010 \ \pm 5.88$	
biphenyl		92-52-4	99.9	366.29.1P	999 ± 5.82	
1,2,4,5-tetrachlorobenzene		95-94-3	99.7	53.7.2P	993 ± 5.79	

Received on 02/07/23 61 CG S11089 40 \$ 11093

\*Not a certified value

Manufactured by o2si smart solutions, Accredited to ISO 9001:2008 by NSF and ISO/IEC 17025:2005 (Certification No. 3031.01) and ISO Guide 34:2009 (Certification No. 3031.02) by A2LA

Shane Overcash

Chemist

All weights are traceable through N. I. S. T. Test No. 822/264157-00. Concentration (correct for purity) and uncertainty (95% confidence) values listed are determined gravimetriclly.

Certified By:



(707)525-5788 (800)878-7654 Toll Free (707)545-7901 Fax

Manufacturer's Quality System Audited & Registered by TUV USA to ISO 9001:2015

Date Received:\_

		Certific	ate of Ana	lysis Rev 0	Page 1 of 1
<b>Catalog No.: Lot No.:</b> Z-112090 440246	<b>Storage:</b> ≤ -10 °C	Solvent: Methylene Chloride	Exp. Date:	<b>Descri</b> P Acid Surrogate Solutio	-
-04 Compor	und	CAS No.	Purity (%)	Compound Lot No.	Concentration, mg/L
0. Hannahamal d		93951-73-6	99.3	248.12.7P	7487 ± 17.2
2-chlorophenol-d₄ 2-fluorophenol		367-12-4	99.8	10.7.3.3P	7513 ± 17.26
		13127-88-3	99.9	949.120.8P	7481 ± 17.19
phenol-d6 2,4,6-tribromophenol		118-79-6	99.8	12.1.6P	7469 ±17.17

Receivedon 02/25/21 64 C6 59236 +0 59240

\*Not a certified value

Manufactured by o2si smart solutions, Accredited to ISO 9001:2008 by NSF and ISO/IEC 17025:2005 (Certification No. 3031.01) and ISO Guide 34:2009 (Certification No. 3031.02) by A2LA

Erre Castre

Certified By:

Erica Castiglione Chemist

All weights are traceable through N. I. S. T. Test No. 822/264157-00. Concentration (correct for purity) and uncertainty (95% confidence) values listed are determined gravimetriclly.



(707)525-5788 (800)878-7654 Toll Free (707)545-7901 Fax Receivedon BYCG 02-107/23 by CG Manufacturer's Quality System

Audited & Registered by TUV USA to ISO 9001:2015

Page 1 of 4

Date Received:

Certificate of Analysis Rev 0

Catalog No.: Lot No.:	Storage:	Solvent:	Exp. Date:	Descri	<b>ption:</b> n, 76-1, 500 & 1,000 mg/L, 1 mL
Z-110381-01 495831	≤-10 °C	Methylene Chloride	10/30/2027 Method	1 8270 Calibration Solution	i, 76-1, 500 & 1,000 mg/L, 1 mL
Сотрои	Ind	CAS No.	Purity (%)	Compound Lot No.	Concentration, mg/L
acenaphthene		83-32-9	99.9	13.1.5P	1003 ± 17.27
acenaphthylene		208-96-8	97.6	14.290.1P	999.8 ± 17.22
aniline		62-53-3	99.9	64.7.1P	995 ± 17.13
anthracene		120-12-7	99.5	15.7.1P	$1001 \pm 17.24$
azobenzene		103-33-3	98.1	252.7.2P	999.1 ± 17.21
benzo[a]anthracene		56-55-3	100	16.7.3P	$1001 \pm 17.24$
benzo[b]fluoranthene		205-99-2	99.8	17.421.3P	$1001 \pm 19.91$
benzo[k]fluoranthene		207-08-9	98.9	18.421.4P	$1001 \pm 17.92$
benzo[ghi]perylene		191-24-2	93	19.286.4P	999.6 ± 19.88
benzo[a]pyrene		50-32-8	97	20.286.2P	999.1 ± 26.35
benzyl alcohol		100-51-6	99.9	65.18.1P	$1001 \pm 17.24$
bis(2-chloroethoxy)methane		111-91-1	99.1	31.3.15P	$999.7 \pm 17.89$
bis(2-chloroethyl)ether		111-44-4	99.8	32.7.1P	$1001 \hspace{0.1 in} \pm 17.23$
bis(2-chloro-1-methylethyl) eth	er	108-60-1	99.5	34.3.13P	999.5 ± 17.89
bis(2-ethylhexyl)adipate		103-23-1	99.5	874.7.1P	$999.5 \pm 17.21$
bis(2-ethylhexyl)phthalate		117-81-7	99.4	33.29.1P	998.8 ± 19.86
4-bromophenyl phenyl ether		101-55-3	99.4	35.7.1P	999.1 ± 17.2
butyl benzyl phthalate		85-68-7	98.4	36.1.6P	984.7 ± 19.58
carbazole		86-74-8	99.4	239.7.2P	$1000 \pm 17.22$

\*Not a certified value

Manufactured by o2si smart solutions, Accredited to ISO 9001:2008 by NSF and ISO/IEC 17025:2005 (Certification No. 3031.01) and ISO Guide 34:2009 (Certification No. 3031.02) by A2LA

Brann

Certified By:

Briana Smith Chemist

All weights are traceable through N. I. S. T. Test No. 822/264157-00. Concentration (correct for purity) and uncertainty (95% confidence) values listed are determined gravimetriclly.

### **Certificate of Analysis**

Catalog No.: Z-110381-01	Lot No.: 495831		Expiration Date: 10/30/2027			
Compound	CAS No.	Purity (%)	Compound Lot No.	Concentration, mg/L		
1,2,4-trichlorobenzene	120-82-1	99.6	54.29.1P	$1000 \pm 17.22$		
2,4,5-trichlorophenol	95-95-4	96.5	121.7.1.1P	$1000 \pm 17.22$		
2,4,6-trichlorophenol	88-06-2	99.6	113.7.1P	1002 ± 17.25		

\*Not a certified value

Manufactured by o2si smart solutions, Accredited to ISO 9001:2008 by NSF and ISO/IEC 17025:2005 (Certification No. 3031.01) and ISO Guide 34:2009 (Certification No. 3031.02) by A2LA

Brann' MM

Certified By:

6 120

Briana Smith Chemist All weights are traceable through N. I. S. T. Test No. 822/264157-00. Concentration (correct for purity) and uncertainty (95% confidence) values listed are determined gravimetriclly.



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

# CERTIFIED REFERENCE MATERIAL

## **Certificate of Analysis**



ACCREDITED ISONEC 17025 Accedited Testing Laboratory Certificate #3222.02

Fax: (814)353-1309

		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.	Received
Catalog No. :	31853	Lot No.: <u>A0158185</u>	01/26/21
Description :	1,4-dioxane		64
	1,4-Dioxane 2,000	μg/mL, Methylene Chloride, 1mL/ampul	CG
Container Size :	2 mL	Pkg Amt: _ > 1 mL	59064
Expiration Date :	February 28, 2025	Storage: 0°C or colder	to
	, <u>2010, 102 - 2000, 103 - 103</u>		59093

### CERTIFIED VALUES

Whilin

Elution Order		Compound	Grav. Conc. (weight/volume)		Expanded (95% C.L.;	Uncertainty K=2)	
1	1,4-Dioxane CAS # 123-91-1 Purity 99%	(Lot SHBL3022)	2,000.8 µg/mL	+/-	11.7418 42.8671 44.1116	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
Solvent:	Methylene chloride					<u> </u>	

CAS # 75-09-2

Purity 99%

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

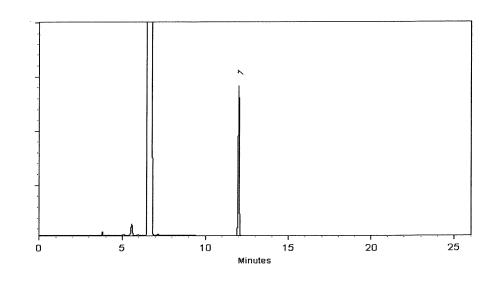
Carrier Gas: hydrogen-constant pressure 11.0 psi.

**Temp. Program:** 40°C (hold 2 min.) to 240°C @ 8°C/min. (hold 5 min.)

Inj. Temp: 200°C

Det. Temp: 250°C

Det. Type: FID



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

Cora Wide Clara Windle - Operations Technician I

Date Mixed: 25-Feb-2020

Balance: B442140311

Junifer 2 Pollino Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 27-Feb-2020



Bellefonte, PA 16823-8812

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

www.restek.com

### **CERTIFIED REFERENCE MATERIAL**

### **Certificate of Analysis**





FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE. Receivedon This Reference Material is intended for Laboratory Use Only as a standard for 03118122 the qualitative and/or quantitative determination of the analyte(s) listed. 67 31615 Lot No.: A0182667 Catalog No. : cĠ **Description :** GC/MS Tuning Mixture 510242 GC/MS Tuning Mixture 1,000µg/mL, Methylene Chloride, 1mL/ampul 40 Container Size : 2 mL Pkg Amt: > 1 mL 510247 **Expiration Date :** March 31, 2025 Storage: 10°C or colder Ship: Ambient Handling: Contains carcinogen/reproductive toxin.

#### CERTIFIED VALUES

4holans

Elution Order			Compound		Compound Grav. Conc. (weight/volume)		)	Expanded Uncertainty (95% C.L.; K=2)		
1 .	Pentachlo CAS # Purity	rophenol 87-86-5 99%	(Lot 211229RSR)	1,003.6 µg/m	L +/- +/- +/-	5.8897 45.7132 66.0037	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed		
2	DFTPP (I CAS # Purity	Decafluorotripher 5074-71-5 95%	ylphosphine) (Lot Q117-147)	1,006.6 µg/m	L +/- +/- +/-	5.9074 45.8508 66.2023	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed		
3	Benzidine CAS # Purity	92-87-5 99%	(Lot 211228JLM)	1,008.4 µg/m	L +/- +/- +/-	5.9179 45.9318 66.3193	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed		
4	4,4'-DDT CAS # Purity	50-29-3 99%	(Lot 210916JLM)	1,007.6 μg/m	L +/- +/- +/-	5.9132 45.8954 66.2667	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed		

Solvent: Methylene chloride CAS # 75-09-2

Purity 99%

**Column:** 30m x 0.25mm x 0.25µm Rtx-5 (cat.#10223)

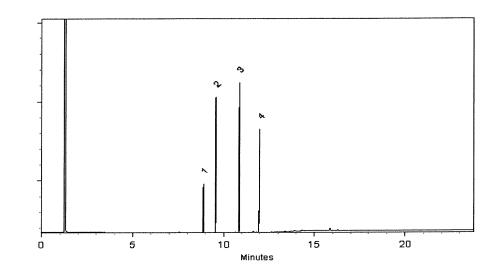
Carrier Gas: hydrogen-constant pressure 10 psi.

**Temp. Program:** 75°C (hold 1 min.) to 330°C @ 20°C/min. (hold 10 min.)

Inj. Temp: 250°C

**Det. Temp:** 330°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.



Date Mixed: 08-Mar-2022 Balance: B345965662



Date Passed: 10-Mar-2022



# **EK**<sup>®</sup> CERTIFIED REFERENCE MATERIAL

### **Gravimetric Certificate**





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Bellefonte, PA 16823-8812

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

#### 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.:       555871       Lot No.:       A0185300       CC         Description :       Custom 4-Nitrophenol Standard       Custom 4-Nitrophenol Standard 25,000µg/mL, Methanol, 1mL/ampul       CC	eived by
Description :       Custom 4-Nitrophenol Standard       (Custom 4-Nitrophenol Standard 25,000µg/mL, Methanol, 1mL/ampul         Container Size :       2 mL       Pkg Amt: _> 1 mL       S	on
Custom 4-Nitrophenol Standard 25,000µg/mL, Methanol, 1mL/ampul Container Size : 2 mL Pkg Amt: >1 mL S	5/18/27
Expiration Date : May 31, 2025 Storage: 10°C or colder	10793
	tu
Ship: Ambient	10402

### CERTIFIED VALUES

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Component #		Grav. Conc. (weight/volume)		Expanded (95% C.L.;			
1	4-Nitrophenol CAS # 100-02-7 Purity 99%	(Lot MKCN1089)	25,060.0 μg/mL	+/- +/-	231.9100 753.2622 905.6020	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
Solvent:	Methanol CAS # 67-56-1						

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Katelyn McGinni - Operations Tech I

Purity

99%

Date Mixed: 16-May-2022

Balance: 1128342314

#### **General Certified Reference Material Notes**

#### **Expiration Notes:**

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

#### **Purity Notes:**

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

#### Certified Uncertainty Value Notes:

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

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

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

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

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

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

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### **Gravimetric Certificate**



#### FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE. This Reference Material is intended for Laboratory Use Only as a standard for Received by the qualitative and/or quantitative determination of the analyte(s) listed. 555868 Lot No.: A0186373 CG Catalog No. : **Description : Custom Benzidine Standard** on Custom Benzidine Standard 25,000µg/mL, Methanol, 1mL/ampul 07/03/22 **Container Size :** 2 mL Pkg Amt: > 1 mL 5 10583 **Expiration Date :** June 30, 2025 Storage: 10°C or colder tυ Handling: Ship: Ambient Contains carcinogen/reproductive toxin. 510592

### CERTIFIED VALUES

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, 13	rimetric ressed	

Solvent: Methanol CAS # 67-56-1 Purity 99%

Tom Suckar-Mix Technician

Date Mixed: 16-Jun-2022

Balance: 1122030677

#### **General Certified Reference Material Notes**

#### **Expiration Notes:**

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

#### **Purity Notes:**

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

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

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

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

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

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

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

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

#### Manufacturing Notes:

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

#### Handling Notes:

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

## CERTIFIED REFERENCE MATERIAL

### **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 Received by the qualitative and/or quantitative determination of the analyte(s) listed. CG on 31087 Lot No.: A0188108 Acid Surrogate Mix (4/89 SOW) Acid Surrogate 10, 000µg/mL, Methanol, 5mL/ampul

Pkg Amt:

Storage:

Ship:

> 5 mL

Ambient

10°C or colder

### CERTIFIED VALUES

Elution Order		Grav. Conc. (weight/volume)		Expanded Uncertainty (95% C.L.; K=2)			
1	2-Fluorophenol CAS # 367-12-4 Purity 99%	(Lot STBF3761V)	10,088.5 µg/mL	+/- +/- +/-	58.6554 294.4162 357.2628	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
2	Phenol-d6 CAS # 13127-88-3 Purity 99%	(Lot PR-31262)	10,043.3 µg/mL	+/- +/- +/-	58.3923 293.0957 355.6603	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
3	2,4,6-Tribromophenol CAS # 118-79-6 Purity 99%	(Lot MKCJ7664)	10,010.0 μg/mL	+/- +/- +/-	58.1990 292.1253 354.4829	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
Solvent:	Methanol						

CAS# 67-56-1

> Purity 99%

Fax: (814)353-1309 www.restek.com

5 mL

August 31, 2030

Catalog No. :

Container Size :

**Expiration Date :** 

**Description :** 

**110 Benner Circle** 

Bellefonte, PA 16823-8812

Tel: (800)356-1688



Halah



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ISO/IEC 17025 Accredited Testing Laboratory Certrificate #3222.02



1 of 3

Column: 30m x 0.25mm x 0.25µm Rtx-5 (cat.#10223)

Carrier Gas: hydrogen-constant pressure 10 psi.

Temp. Program: 40°C (hold 2 min.) to 330°C @ 10°C/min. (hold 10 min.)

Inj. Temp: 250°C

Det. Temp: 330°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.



Date Mixed: 02-Aug-2022

Balance: 1127510105

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 05-Aug-2022

## CERTIFIED REFERENCE MATERIAL

### **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 Received by the qualitative and/or quantitative determination of the analyte(s) listed. CG on 31087 Lot No.: A0188108 Acid Surrogate Mix (4/89 SOW) Acid Surrogate 10, 000µg/mL, Methanol, 5mL/ampul

Pkg Amt:

Storage:

Ship:

> 5 mL

Ambient

10°C or colder

### CERTIFIED VALUES

Elution Order		Grav. Conc. (weight/volume)		Expanded Uncertainty (95% C.L.; K=2)			
1	2-Fluorophenol CAS # 367-12-4 Purity 99%	(Lot STBF3761V)	10,088.5 µg/mL	+/- +/- +/-	58.6554 294.4162 357.2628	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
2	Phenol-d6 CAS # 13127-88-3 Purity 99%	(Lot PR-31262)	10,043.3 µg/mL	+/- +/- +/-	58.3923 293.0957 355.6603	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
3	2,4,6-Tribromophenol CAS # 118-79-6 Purity 99%	(Lot MKCJ7664)	10,010.0 μg/mL	+/- +/- +/-	58.1990 292.1253 354.4829	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
Solvent:	Methanol						

CAS# 67-56-1

> Purity 99%

Fax: (814)353-1309 www.restek.com

5 mL

August 31, 2030

Catalog No. :

Container Size :

**Expiration Date :** 

**Description :** 

**110 Benner Circle** 

Bellefonte, PA 16823-8812

Tel: (800)356-1688



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ISO/IEC 17025 Accredited Testing Laboratory Certrificate #3222.02



1 of 3

Column: 30m x 0.25mm x 0.25µm Rtx-5 (cat.#10223)

Carrier Gas: hydrogen-constant pressure 10 psi.

Temp. Program: 40°C (hold 2 min.) to 330°C @ 10°C/min. (hold 10 min.)

Inj. Temp: 250°C

Det. Temp: 330°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.



Date Mixed: 02-Aug-2022

Balance: 1127510105

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 05-Aug-2022

## CERTIFIED REFERENCE MATERIAL

### **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 Received by the qualitative and/or quantitative determination of the analyte(s) listed. CG on 31087 Lot No.: A0188108 Acid Surrogate Mix (4/89 SOW) Acid Surrogate 10, 000µg/mL, Methanol, 5mL/ampul

Pkg Amt:

Storage:

Ship:

> 5 mL

Ambient

10°C or colder

### CERTIFIED VALUES

Elution Order		Grav. Conc. (weight/volume)		Expanded Uncertainty (95% C.L.; K=2)			
1	2-Fluorophenol CAS # 367-12-4 Purity 99%	(Lot STBF3761V)	10,088.5 µg/mL	+/- +/- +/-	58.6554 294.4162 357.2628	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
2	Phenol-d6 CAS # 13127-88-3 Purity 99%	(Lot PR-31262)	10,043.3 µg/mL	+/- +/- +/-	58.3923 293.0957 355.6603	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
3	2,4,6-Tribromophenol CAS # 118-79-6 Purity 99%	(Lot MKCJ7664)	10,010.0 μg/mL	+/- +/- +/-	58.1990 292.1253 354.4829	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
Solvent:	Methanol						

CAS# 67-56-1

> Purity 99%

Fax: (814)353-1309 www.restek.com

5 mL

August 31, 2030

Catalog No. :

Container Size :

**Expiration Date :** 

**Description :** 

**110 Benner Circle** 

Bellefonte, PA 16823-8812

Tel: (800)356-1688



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ISO/IEC 17025 Accredited Testing Laboratory Certrificate #3222.02



1 of 3

Column: 30m x 0.25mm x 0.25µm Rtx-5 (cat.#10223)

Carrier Gas: hydrogen-constant pressure 10 psi.

Temp. Program: 40°C (hold 2 min.) to 330°C @ 10°C/min. (hold 10 min.)

Inj. Temp: 250°C

Det. Temp: 330°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.



Date Mixed: 02-Aug-2022

Balance: 1127510105

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 05-Aug-2022

## CERTIFIED REFERENCE MATERIAL

### **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 Received by the qualitative and/or quantitative determination of the analyte(s) listed. CG on 31087 Lot No.: A0188108 Acid Surrogate Mix (4/89 SOW) Acid Surrogate 10, 000µg/mL, Methanol, 5mL/ampul

Pkg Amt:

Storage:

Ship:

> 5 mL

Ambient

10°C or colder

### CERTIFIED VALUES

Elution Order		Grav. Conc. (weight/volume)		Expanded Uncertainty (95% C.L.; K=2)			
1	2-Fluorophenol CAS # 367-12-4 Purity 99%	(Lot STBF3761V)	10,088.5 µg/mL	+/- +/- +/-	58.6554 294.4162 357.2628	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
2	Phenol-d6 CAS # 13127-88-3 Purity 99%	(Lot PR-31262)	10,043.3 µg/mL	+/- +/- +/-	58.3923 293.0957 355.6603	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
3	2,4,6-Tribromophenol CAS # 118-79-6 Purity 99%	(Lot MKCJ7664)	10,010.0 μg/mL	+/- +/- +/-	58.1990 292.1253 354.4829	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
Solvent:	Methanol						

CAS# 67-56-1

> Purity 99%

Fax: (814)353-1309 www.restek.com

5 mL

August 31, 2030

Catalog No. :

Container Size :

**Expiration Date :** 

**Description :** 

**110 Benner Circle** 

Bellefonte, PA 16823-8812

Tel: (800)356-1688



Halah



ACCREDITED

ISO/IEC 17025 Accredited Testing Laboratory Certrificate #3222.02



1 of 3

Column: 30m x 0.25mm x 0.25µm Rtx-5 (cat.#10223)

Carrier Gas: hydrogen-constant pressure 10 psi.

Temp. Program: 40°C (hold 2 min.) to 330°C @ 10°C/min. (hold 10 min.)

Inj. Temp: 250°C

Det. Temp: 330°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.



Date Mixed: 02-Aug-2022

Balance: 1127510105

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 05-Aug-2022



Bellefonte, PA 16823-8812

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

www.restek.com

### **CERTIFIED REFERENCE MATERIAL**

### **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. Received by CG on 31086 Lot No.: A0189418 Catalog No. : 12/28/22 **Description :** B/N Surrogate Mix (4/89 SOW) Base Neutral Surrogate 5000µg/mL, Methylene Chloride, 5mL/ampul \$10981 Container Size : 5 mL Pkg Amt: > 5 mL 40 **Expiration Date :** August 31, 2028 10°C or colder Storage: S11010 Handling: Sonicate prior to use. Ship: Ambient

#### CERTIFIED VALUES

Elution Order	Compound			Grav. ( (weight/v		Expanded Uncertainty (95% C.L.; K=2)			
1	Nitrober CAS # Purity	nzene-d5 4165-60-0 99%	(Lot PR-29940A)	5,009.8	μg/mL	+/- +/- +/-	29.1271 225.6421 250.3778	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
2	2-Fluoro CAS # Purity	biphenyl 321-60-8 99%	(Lot 00021384)	5,026.6	µg/mL	+/- +/- +/-	29.2250 226.4003 251.2191	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
3	p-Terpho CAS # Purity	enyl-d14 1718-51-0 99%	(Lot PR-30504)	5,027.3	µg/mL	+/- +/- +/-	29.2289 226.4304 251.2524	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
Solvent:	Methyle	ne chloride							

CAS # 75-09-2 Purity 99%

## Tech Tips:





Bellefonte, PA 16823-8812

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

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### **CERTIFIED REFERENCE MATERIAL**

### **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. Received by CG on 31086 Lot No.: A0189418 Catalog No. : 12/28/22 **Description :** B/N Surrogate Mix (4/89 SOW) Base Neutral Surrogate 5000µg/mL, Methylene Chloride, 5mL/ampul \$10981 Container Size : 5 mL Pkg Amt: > 5 mL 40 **Expiration Date :** August 31, 2028 10°C or colder Storage: S11010 Handling: Sonicate prior to use. Ship: Ambient

#### CERTIFIED VALUES

Elution Order	Compound			Grav. ( (weight/v		Expanded Uncertainty (95% C.L.; K=2)			
1	Nitrober CAS # Purity	nzene-d5 4165-60-0 99%	(Lot PR-29940A)	5,009.8	μg/mL	+/- +/- +/-	29.1271 225.6421 250.3778	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
2	2-Fluoro CAS # Purity	biphenyl 321-60-8 99%	(Lot 00021384)	5,026.6	µg/mL	+/- +/- +/-	29.2250 226.4003 251.2191	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
3	p-Terpho CAS # Purity	enyl-d14 1718-51-0 99%	(Lot PR-30504)	5,027.3	µg/mL	+/- +/- +/-	29.2289 226.4304 251.2524	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
Solvent:	Methyle	ne chloride							

CAS # 75-09-2 Purity 99%

## Tech Tips:





Bellefonte, PA 16823-8812

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

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### **CERTIFIED REFERENCE MATERIAL**

### **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. Received by CG on 31086 Lot No.: A0189418 Catalog No. : 12/28/22 **Description :** B/N Surrogate Mix (4/89 SOW) Base Neutral Surrogate 5000µg/mL, Methylene Chloride, 5mL/ampul \$10981 Container Size : 5 mL Pkg Amt: > 5 mL 40 **Expiration Date :** August 31, 2028 10°C or colder Storage: S11010 Handling: Sonicate prior to use. Ship: Ambient

#### CERTIFIED VALUES

Elution Order	Compound			Grav. ( (weight/v		Expanded Uncertainty (95% C.L.; K=2)			
1	Nitrober CAS # Purity	nzene-d5 4165-60-0 99%	(Lot PR-29940A)	5,009.8	μg/mL	+/- +/- +/-	29.1271 225.6421 250.3778	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
2	2-Fluoro CAS # Purity	biphenyl 321-60-8 99%	(Lot 00021384)	5,026.6	µg/mL	+/- +/- +/-	29.2250 226.4003 251.2191	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
3	p-Terpho CAS # Purity	enyl-d14 1718-51-0 99%	(Lot PR-30504)	5,027.3	µg/mL	+/- +/- +/-	29.2289 226.4304 251.2524	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
Solvent:	Methyle	ne chloride							

CAS # 75-09-2 Purity 99%

## Tech Tips:





Bellefonte, PA 16823-8812

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

www.restek.com

### **CERTIFIED REFERENCE MATERIAL**

### **Certificate of Analysis**





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## Tech Tips:





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

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Solvent:	Methyle	ne chloride							

CAS # 75-09-2 Purity 99%

## Tech Tips:





Bellefonte, PA 16823-8812

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

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### **CERTIFIED REFERENCE MATERIAL**

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Solvent:	Methyle	ne chloride							

CAS # 75-09-2 Purity 99%

## Tech Tips:





**110 Benner Circle** 

Bellefonte, PA 16823-8812

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

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## **CERTIFIED REFERENCE MATERIAL**

## **Certificate of Analysis**





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Solvent:	Methyle	ne chloride							

CAS # 75-09-2 Purity 99%

## Tech Tips:

Due to the limited solubility of p-terphenyl-d14 in methanol, we do not recommend that this mixture be diluted in methanol.





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

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## CERTIFIED REFERENCE MATERIAL

## 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. :	555870	Lot No.: A0194698	
Description :	Custom 2,4-Dinitrophenol Stan	dard	
	Custom 2,4-Dinitrophenol Stan	dard 25,000µg/mL, Methanol, 1mL/ampul	
Container Size :	2 mL	Pkg Amt: > 1 mL	Σ
Expiration Date :	February 28, 2026	Storage: 10°C or colder	
		Ship: Ambient	

## CERTIFIED

Componen t#		Compound	CAS #	- Lot #	Purity Grav. Conc. (weight/volume)
1	2,4-Dinitrophenol		51-28-5	DR221221RSR	99% 25,195.0 μg/mL
Solvent:	Methanol CAS # 67-56-1 Purity 99%				

Ann 7. B. Russ Bookhamer - Operations Technician I

Date Mixed:

15-Feb-2023 Balan

Balance: B442140311

Manufactured under Restek' Registered Quality Certificate #FM 8

## tified Reference Material Notes

## es:

n date valid for unopened ampul stored in compliance with the recommended conditions.

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

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

nds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A n factor is used to calculate the amount of compound necessary to achieve the desired concentration of the impound in solution.

isomeric compounds is reported as the sum of the isomers.

lues are rounded to the nearest whole number.

## rtainty Value Notes:

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

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

erage factor of 2, which gives a level of confidence of approximately 95%.

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

## Notes:

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

:

the unopened product, when stored in compliance with the recommended conditions, is guaranteed through ion displayed on the product label and certificate. Contact Restek for additional opened product stability n, with the knowledge/understanding that open product stability is subject to the specific handling and ntal conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with lards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom m. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, ides complete instructions.

ssolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely



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www.restek.com

## **CERTIFIED REFERENCE MATERIAL**

## **Certificate of Analysis**

gravimetric



	This Ref	erence Material is intended	LY-READ SDS PRIOR TO USE. for Laboratory Use Only as a standard for etermination of the analyte(s) listed.	r Rec
Catalog No. :	555869	Lot No.:	<u>A0194702</u>	Ũ
Description :	Custom Hexachlorocyclope	entadiene Standard		
	Custom Hexachlorocyclope 1mL/ampul	entadiene Standard 25,000	ug/mL, Methanol,	53
Container Size :	2 mL	Pkg Amt:	> 1 mL	
Expiration Date :	February 28, 2026	Storage:	10°C or colder	(
		Ship:	Ambient	

## CERTIFIEI

Componen t#	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)
1	Hexachlorocyclopentadiene	77-47-4	0012019	99%	25,008.0 μg/mL
Solvent:	Methanol CAS # 67-56-1 Purity 99%				

Para T. Bu

Russ Bookhamer - Operations Technician I

Date Mixed: 15-Feb-2023

Balance: B442140311

Manufactured under Restek Registered Quality Certificate #FM {

## tified Reference Material Notes

## es:

n date valid for unopened ampul stored in compliance with the recommended conditions.

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Sand Purified Washed and Ignited



Material No.: 3382-05 Batch No.: 0000243821 Manufactured Date: 2018/04/09 Retest Date: 2025/04/07

**Revision No: 1** 

**Certificate of Analysis** 

Test	Specification	Result
Substances Soluble in HCI	<= 0.16 %	0.01

For Laboratory, Research or Manufacturing Use Meets Reagent Specifications for testing USP/NF monographs

Country of Origin:	US
Packaging Site:	Paris Mfg Ctr & DC







PRODUCTOS QUIMICOS MONTERREY, S.A. DE CY. MIRADOR 201, COL. MIRADOR MONTERREY, N.L. MEXICO CP 64070 TEL +52 81 13 52 57 57 WWW.pqm.com.mx

## **CERTIFICATE OF ANALYSIS**

	SODIUM SULFATE CRYSTALS A ACS (CODE RMB3375)			NA.CO
SPECIFICATION NUMBER :	-		E DATE:	Na <sub>2</sub> SO <sub>4</sub> ABR/21/2023
	3201	N.a.L.a.M.O	E 1./A I E.	ADR/2 1/2023
TEST	SPECI	FICATIONS	LOT V	ALUES
Assay (Na <sub>2</sub> SO <sub>4</sub> )	Min. 99	1.0%	99.7 %	
pH of a 5% solution at 25°C	5.2 - 9.	2	6.1	
Insoluble matter	Max. 0.	01%	0.005	1
Loss on ignition	Max. 0.	5%	0.1 %	16
Chloride (Cl)	Max. 0.	001%	<0.001	0/
Nitrogen compounds (as N)	Max. 5	ppm	<0.001 <5 ppn	
Phosphate (PO <sub>4</sub> )	Max. 0.		<0.001	
Heavy metals (as Pb)	Max. S			
Iron (Fe)	Max, 0,	9 R ·	<5 ppn <0.001	
Calcium (Ca)	Max. 0.	01%	0.002 %	
Magnesium (Mg)	Max. 0.	005%	0.001 %	
Potassium (K)	Max. 0.		0.003 %	
Extraction-concentration suit	ability Passes	test	Passes	*
Appearance	Passes		Passes	
Identification	Passes	test	Passes	test
Solubility and foreing matter		test	Passes	: test
Retained on US Standard No.		h	0.1 %	
Retained on US Standard No.	60 sieve Min. 94	a/ <sub>0</sub>	97.3 %	
Through US Standard No. 60	sieve Max. 5%	46	2.5 %	
Through US Standard No. 100	) sieve Max. 10	1%	0.1 %	
an second a second s	CON	MENTS	ಕ್ಷಿತ್ರಾಳಿಸಿಕ ಕಾರ್ಯಕರ್ ಪ್ರದೇಶಕರ್	
91 <i>0</i> 91			n+	15 HANDOWNI
			- he "	
			1	
		QC: Ph	C Irma Belma	res

If you need further details, please call our factory or contact our local distributor.

Read. by R: 017/293 E3551

RE-02-01, Ed. 1

ULTRA RESI-ANALYZED For Organic Residue Analysis (dichloromethane)





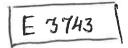
Material No.: 926 Batch No.: 24C016 Manufactured Date: 2024-C Expiration Date: 2025-C Revision I

## Certificate of Analysis

Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	≤ 5	< 1
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/ml.)	≤ 10	2
Assay (CH2Cl2) (by GC, exclusive of preservative, corrected for water)	≥ 99.8 %	100.0 %
Color (APHA)	≤ 10	10
Residue after Evaporation	≤ 1.0 ppm	0.2 ppm
Titrable Acid (µeq/g)	≤ 0.3	< 0.1
Chloride (Cl)	≤ 10 ppm	< 5 ppm
Water (by KF, coulometric)	≤ 0.02 %	< 0.01 %
		< 0.01 /0

For Laboratory,Research,or Manufacturing Use MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: USA Packaging Site: Phillipsburg Mfg Ctr & DC Manufacturer source batch: MG24A04224



tematileo. Sr. Manager, Quality Assurance

## PO: PO1-8886 PRODUCT CODE: SHIP DATE: 6/21/2024

Methylene Chloride ULTRA RESI-ANALYZED For Organic Residue Analysis (dichloromethane)





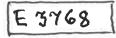
Material No.: 9266-A4 Batch No.: 24E2462004 Manufactured Date: 2024-04-10 Expiration Date: 2025-07-10 Revision No.: 0

## Certificate of Analysis

Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	≤ 5	3
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	≤ 10	3
Assay (CH2Cl2) (by GC, exclusive of preservative, corrected for water)	≥ 99.8 %	100.0 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	0.1 ppm
Titrable Acid (µeq/g)	≤ 0.3	< 0.1
Chloride (Cl)	≤ 10 ppm	5 ppm
Water (by KF, coulometric)	≤ 0 <b>.</b> 02 %	< 0.01 %

For Laboratory,Research,or Manufacturing Use MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: USA Packaging Site: Phillipsburg Mfg Ctr & DC Manufacturer source batch: MG24D10725



floak
Janue Croak Director Quality Operations, Bioscience Production

## PO: PO1-9448 PRODUCT CODE: SHIP DATE: 7/16/2024

Methylene Chloride ULTRA RESI-ANALYZED For Organic Residue Analysis (dichloromethane)



Material No.: 9266-A4 Batch No.: 24F1062004 Manufactured Date: 2024-04-15 Expiration Date: 2025-07-15 Revision No.: 0

## **Certificate of Analysis**

Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	≤ 5	< 1
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	≤ 10	7
Assay (CH2Cl2) (by GC, exclusive of preservative, corrected for water)	≥ 99.8 %	100.0 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	0.1 ppm
Titrable Acid (µeq/g)	≤ 0.3	< 0.1
Chloride (Cl)	≤ 10 ppm	< 5 ppm
Water (by KF, coulometric)	≤ 0.02 %	< 0.01 %

For Laboratory,Research,or Manufacturing Use MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: USA Packaging Site: Phillipsburg Mfg Ctr & DC Manufacturer source batch: MG24D15750

E 3786

Alioak Director Quality Operations, Bioscience Production

### Acetone

BAKER RESI-ANALYZED® Reagent For Organic Residue Analysis

## (Vavantor"



Material No.: 9254-03 Batch No.: 23H1462005 Manufactured Date: 2023-07-26 Expiration Date: 2026-07-25 Revision No.: 0

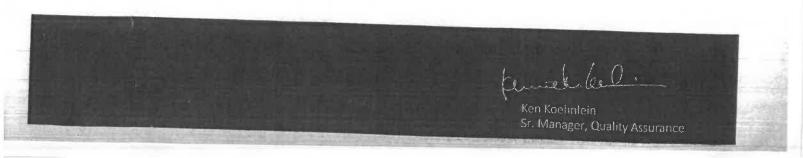
## **Certificate of Analysis**

Test	Specification	Result	
Assay ((CH3)2CO) (by GC, corrected for water)		Result	- 73
Color (APHA)	≥ 99.4 %	99.7 %	
Residue after Evaporation	≤ 10	5	
	≤ 1.0 ppm	0.3 ppm	
Substances Reducing Permanganate	Passes Test	Passes Test	
Titrable Acid (µeq/g)	≤ 0.3	0.1	
Titrable Base (µeq/g)	≤ 0.6		
Water (H2O)	≤ 0.5 %	< 0.1	
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)		0.3 %	
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	≤ 5	< 1	
(pg/mL)	≤ 10	1	

For Laboratory,Research,or Manufacturing Use MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: USA Packaging Site: Philipsburg Mfg Ctr & DC

Recd. by RP on 8/13/24 E 3788



Methylene Chloride ULTRA RESI-ANALYZED For Organic Residue Analysis (dichloromethane)



Material No.: 9266-A4 Batch No.: 24G2362009 Manufactured Date: 2024-06-10 Expiration Date: 2025-09-09 Revision No.: 0

## Certificate of Analysis

Test	Specification	Result		
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	≤ 5	2		
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	≤ 10	2		
Assay (CH2Cl2) (by GC, exclusive of preservative, corrected for water)	≥ 99.8 %	100.0 %		
Color (APHA)	≤ 10	5		
Residue after Evaporation	≤ 1.0 ppm	0.3 ppm		
Titrable Acid (µeq/g)	≤ 0.3	< 0.1		
Chloride (Cl)	≤ 10 ppm	< 5 ppm		
Water (by KF, coulometric)	≤ 0.02 %	< 0.01 %		

For Laboratory,Research,or Manufacturing Use MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: USA Packaging Site: Phillipsburg Mfg Ctr & DC Manufacturer source batch: MG24F10024



Acetone CMOS





Material No.: 9005-05 Batch No.: 24E0761004 Manufactured Date: 2024-05-02 Retest Date: 2029-05-01 Revision No.: 0

## Certificate of Analysis

Test	Specification	Result
Assay ((CH <sub>3</sub> ) <sub>2</sub> CO) (by GC, corrected for water)	≥ <b>99.5</b> %	99.8 %
Color (APHA)	≤ 10	< 5
Residue after Evaporation	≤ 5 ppm	< 1 ppm
Titrable Acid (µeq/g)	≤ 0.3	0.1
Titrable Base (µeq/g)	≤ 0.5	0.1
Water (H2O)	≤ 0.5 %	0.1 %
Solubility in H₂O	Passes Test	Passes Test
Chloride (Cl)	≤ 0.2 ppm	< 0.2 ppm
Phosphate (PO4)	≤ 0.05 ppm	< 0.05 ppm
Trace Impurities – Aluminum (Al)	≤ 50.0 ppb	< 5.0 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 5.0 ppb
Trace Impurities – Barium (Ba)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Beryllium (Be)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Bismuth (Bi)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities – Boron (B)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Cadmium (Cd)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Calcium (Ca)	≤ 25.0 ppb	3.6 ppb
Trace Impurities – Chromium (Cr)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Cobalt (Co)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Copper (Cu)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Gallium (Ga)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Germanium (Ge)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities – Gold (Au)	≤ 20 ppb	< 5 ppb
Trace Impurities - Iron (Fe)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Lead (Pb)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities – Lithium (Li)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Magnesium (Mg)	≤ 20 ppb	< 1 ppb
Trace Impurities – Manganese (Mn)	≤ 10.0 ppb	< 1.0 ppb

>>> Continued on page 2 >>>

Recd. by RP cm 9/11/24 E 3793

Acetone CMOS





## Material No.: 9005-05 Batch No.: 24E0761004

Test	Specification	Result
Trace Impurities – Molybdenum (Mo)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Nickel (Ni)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Niobium (Nb)	≤ 50.0 ppb	< 1.0 ppb
Trace Impurities – Potassium (K)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities – Silicon (Si)	≤ 50 ppb	< 10 ppb
Trace Impurities – Silver (Ag)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Sodium (Na)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Strontium (Sr)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Tantalum (Ta)	≤ 50.0 ppb	< 5.0 ppb
Trace Impurities – Thallium (TI)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Tin (Sn)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities – Titanium (Ti)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Vanadium (V)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Zinc (Zn)	≤ 20.0 ppb	7.9 ppb
Trace Impurities – Zirconium (Zr)	≤ 10.0 ppb	< 1.0 ppb
Particle Count – 0.5 µm and greater (Rion KS42AF)	≤ 100 par/ml	8 par/ml
Particle Count – 1.0 µm and greater (Rion KS42AF)	≤ 8 par/ml	2 par/ml

Acetone CMOS





Material No.: 9005-05 Batch No.: 24E0761004

Test	Specification	Result	
1050	Specification	Result	

For Microelectronic Use

Country of Origin: USA Packaging Site: Paris Mfg Ctr & DC

Muhelle Bales

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Michelle Bales Sr. Manager, Quality Assurance

1 610 306 1 300

## PO: PO2-329 PRODUCT CODE: SHIP DATE: 9/30/2024

Acetone

BAKER RESI-ANALYZED® Reagent For Organic Residue Analysis

Avantor



Material No.: 9254-03 Batch No.: 24H1462005 Manufactured Date: 2024-05-24 Expiration Date:2027-05-24 Revision No.: 0

## Certificate of Analysis

Test	Specification	Result
Assay ((CH3)2CO) (by GC, corrected forwater)	>= 99.4 %	99.8 %
Color (APHA)	<= 10	5
Residue after Evaporation	<= 1.0 ppm	0.2 ppm
Substances Reducing Permanganate	Passes Test	Passes Test
Titrable Acid (µeq/g)	<= 0.3	0,2
Titrable Base (µeq/g)	<= 0,6	<0.1
Water (H2O)	<= 0.5 %	0.2 %
FID-Sensitive Impurities (as 2-Octanol)Single Impurity Peak (ng/mL)	<= 5	<1
ECD Sensitive Impurities (as HeptachlorEpoxide) Single Peak (pg/mL)	<= 10	1

For Laboratory,Research,or Manufacturing Use MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: United States Packaging Site: Phillipsburg Mfg Ctr & DC

E3815

Alioak Jamie Croak Director Quality Operations, Bioscience Production

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700 Avantor Performance Materials,LLC

100 Matsonford Rd, Suite 200, Radnor, PA, 19087. U.S.A. Phone 610.386. 1700

Methylene Chloride ULTRA RESI-ANALYZED For Organic Residue Analysis (dichloromethane)





Material No.: 9266-A4 Batch No.: 2412662006 Manufactured Date: 2024-08-29 Expiration Date:2025-11-28 Revision No.: 0

## Certificate of Analysis

Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol)Single Impurity Peak (ng/mL)	<= 5	2
ECD Sensitive Impurities (as HeptachlorEpoxide) Single Peak (pg/mL)	<= 10	3
Assay (CH <sub>2</sub> Cl <sub>2</sub> ) (by GC, exclusive of preservative, corrected for water)	>= 99.8 %	99.9 %
Color (APHA)	<= 10	5
Residue after Evaporation	<= 1.0 ppm	0.2 ppm
Titrable Acid (µeq/g)	<= 0.3	<0.1
Chloride (Cl)	<= 10 ppm	<5 ppm
Water (by KF, coulometric)	<= 0.02 %	<0.01 %

For Laboratory,Research,or Manufacturing Use MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: United States Packaging Site: Phillipsburg Mfg Ctr & DC



For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700

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5580 Skylane Blvd Santa Rosa, CA 95403

Manufacturer's Quality System Audited & Registered by TUV USA to ISO 9001:2015

> (800)878-7654 Toll Free (707)545-7901 Fax

(707)525-5788

Date Received:

Certificate of Analysis Rev 0 Page 1 of 1	Description:	CLP Base/Neutral Surrogate Solution, 5,000 mg/L, 1 ml
cate of ,	Exp. Date:	7/25/2028
Certifi	Solvent:	Methylene Chloride

Storage: ≤-10 °C

Catalog No.: Lot No.:

506889

Z-110094-02

Compound	CAS No.	Purity (%)	Compound Lot No.	Concentration, mg/L
1,2-dichlorobenzene-d"	2199-69-1	66.7	247.29.3P	5035 ± 28.02
2-fluorobiphenył	321-60-8	69.66	8.286.1.1P	4999 ± 103.66
nitrobenzene-dS	4165-60-0	99.67	7.9.3P	4988 ±27.32
p-terphenyl-d14	1718-51-0	99.3	9.120.8P	5005 ±27.85

51494 7.P. 211130 L

\*Not a certified value

Anoneociation Clint Tipton Chemist

Certified By:

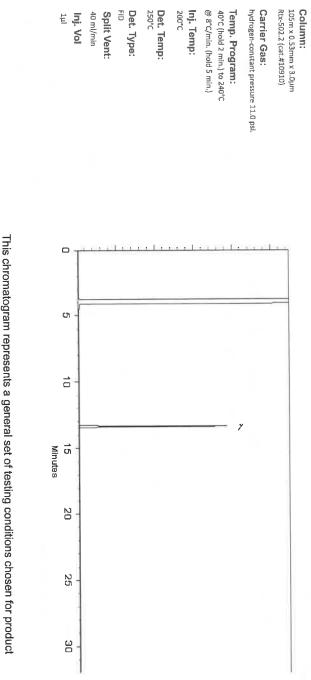
All weights are traceable through N. I. S. T. Test No. 822/264157-00. Concentration (correct for purity) and uncertainty (95% confidence) values listed are determined gravimetriclly.

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Solvent: P&T Methanol CAS # 67-56-1 Purity 99%	1 Pyridine	Elution Order Com	Expiration Date : January 31, 2027		Pyridine 2000µg/m	Description : Pyridine Standard	Catalog No.: 30409		www.restek.com	Beilefonte, PA 16823-8812 Tel: 1-814-353-1300 Fax: 1-814-353-1309	110 Benner Circle
* Expanded Uncertainty displayed in same units as Grav. Conc.	110-86-1 SHBN7324 99% 2,012.0 μ	C E R T Compound CAS # Lot # Purity Grav. Co	older	Pkg Amt: >1 mL S     <- 2 &	Pyridine 2000µg/mL, P&T Methanol, 1mL/ampul		Lot No.: A0196693	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.		Certificate of Analysis	CERTIFIED REFERENCE MATERIAL
in same units as Grav. Conc.	μg/mL +/- 32.9613	Conc. (volume) (95% C.L.; K=2)	( (	52/5/20 3 2	,	/ /· /·	v v ( 62-		ACCREDITED ISONEC 17025 Accredited Noting Laboratory Certificate #222.02		Acce EDITED So 17034 Acreating Getting Bandward

RESTEK

**Quality Confirmation Test** 



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.

Marlina Cowan Operations Tech II ARM QC	Daniel Wasson - Operations Tech I
Date Passed: 12-Apr-2023	Date Mixed: 05-Apr-2023
12-Apr-2023	05-Apr-2023
	Balance Serial #
	1128342314
Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397	

RESTEK

# **General Certified Reference Material Notes**

## Expiration Notes:

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

## Purity Notes

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

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

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

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

- k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- . that the minimum packaged amount can be sufficiently transferred. The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure

# 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.

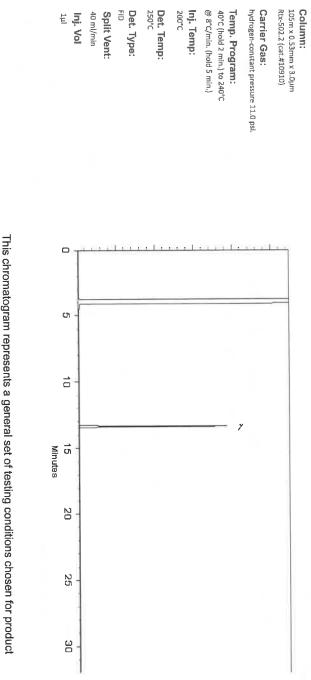
## Handling Notes:

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

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## CERTIFIED REFERENCE MATERIAL

## 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. :	555223	Lot No.: A0201940	511539	2
Description :	Custom 8270 Plus Standard #1	Lot No <u>A0201940</u>	311331	Y.P.
	Custom 8270 Plus Standard #1 1,000 1mL/ampul	µg/mL, Methylene Chloride,	J	09119
Container Size :	2 mL	Pka Amtro Starl		0310
Expiration Date :	September 30, 2025	Pkg Amt: > 1 mL Storage: 10°C or colder	51568	··· )
Handling:	This product is photosensitive.	Storage: 10°C or colder Ship: Ambient		J

## CERTIFIED VALUES

Componen t #		CAS #	Lot #	Positi	Grav. Conc.	
1	3,3'-Dichlorobenzidine		Lot #	Purity	(weight/volume)	Uncertainty * (95% C.L.; K=2)
2	Atrazine	91-94-1	S230321RSR	99%	1,001.0 µg/mL	+/- 22.9799
3	Benzidine	1912-24-9	5FYWL	99%	1,010.0 μg/mL	+/- 23.1865
4		92-87-5	S221205RSR		1,008.0 μg/mL	+/- 23.1406
	epsilon-Caprolactam	105-60-2	I16X016		1,008.0 μg/mL	
Solvent:	Methylene chloride CAS # 75-09-2 Purity 99%					+/- 23.1406

Lowmie Moodler				REVIEWED By Jennifer Pollino at 7-10 am, Sup 13, 2023	
Sam Moodler - Operations Tech I	Date Mixed:	13-Sep-2023	Balance:	B345965662	Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397



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Expiration Date :	September 30, 2025	Pkg Amt: > 1 mL Storage: 10°C or colder	51568	··· )
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	epsilon-Caprolactam	105-60-2	I16X016		1,008.0 μg/mL	
Solvent:	Methylene chloride CAS # 75-09-2 Purity 99%					+/- 23.1406

Lowmie Moodler				REVIEWED By Jennifer Pollino at 7-10 am, Sup 13, 2023	
Sam Moodler - Operations Tech I	Date Mixed:	13-Sep-2023	Balance:	B345965662	Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397



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	epsilon-Caprolactam	105-60-2	I16X016		1,008.0 μg/mL	
Solvent:	Methylene chloride CAS # 75-09-2 Purity 99%					+/- 23.1406

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- that the minimum packaged amount can be sufficiently transferred.

## Manufacturing Notes:

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

## Handling Notes:

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





Bellefonte, PA 16823-8812

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

www.restek.com

**CERTIFIED REFERENCE MATERIAL** 



# **Certificate of Analysis** gravimetric

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

- Slicke ?	J.L.	V (1118123	SILER			
Lot No.: <u>A0201728</u>	q	d 25,000µg/mL, Methanol,	Pkg Amt: > 1 mL	Storage: 10°C or colder	Ship: Ambient	
555872	Custom Pentachlorophenol Standard	Custom Pentachlorophenol Standard 25,000µg/mL, Methanol, 1mL/ampul	2 mL	September 30, 2026		
Catalog No. :	Description :		Container Size :	Expiration Date :		

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onen   #	Compound	CAS #	Lot #	Purity Grav. Conc. (weight/volume)	Uncertainty (95% C.L.; K=2)
Pentachlorophenol		87-86-5	RP230530RSR	99% 25,000.0 μg/mL +/- 777.0837	+/- 777.0837

67-56-1 %66 Methanol CAS# Purity Solvent:

Josh McCloskey - Operations Technician I provide 1

05-Sep-2023 Date Mixed:

Balance: B251644995

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397 1 of 2

01-Nov-2022 rev.

RESTEK

## 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.

### Notes: Purity

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

## **Certified Uncertainty Value Notes**

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

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

P.

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

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

## Manufacturing Notes:

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

### Handling Notes:

- environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, 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 most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom which includes complete instructions. .
  - any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved. -٠

### RESTEK

Ship: Ambient

Handling:

Sonication required. Mix is photosensitive.

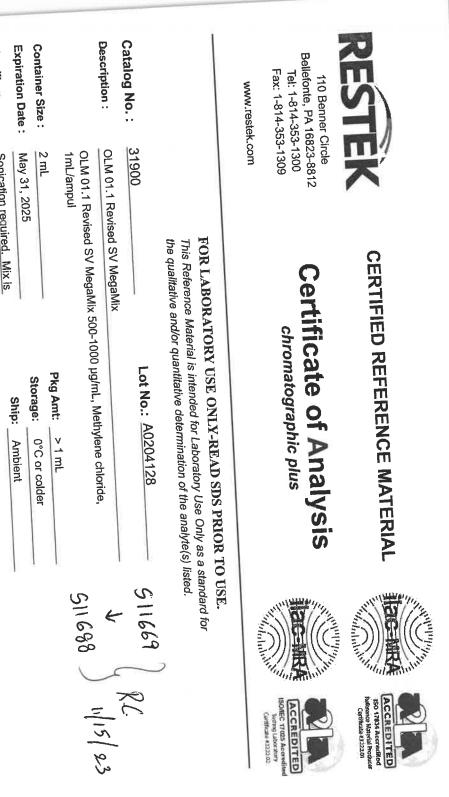
CERTIFIED VALUES

CompoundCAS #Phenol108-95-2Phenol111-44-4Bis(2-chloroethyl)ether95-57-82-Chlorophenol111-44-42,2'-oxybis(1-chlorophenol)95-57-82,2'-oxybis(1-chlorophenol)95-60-12,2'-oxybis(1-chlorophenol)95-48-72-Methylphenol (o-cresol)98-86-2Acetophenone67-72-1Hexachloroethane621-64-7N-Nitroso-di-n-propylamine106-44-54-Methylphenol (p-cresol)108-39-43-Methylphenol (m-crcsol)98-95-3Nitrobenzene78-59-1Isophorone88-75-52-Nitrophenol105-67-92,4-Dimethylphenol105-67-9111-91-1111-91-1	120-83-2 BCBZ6787
Compound     108       start     108       rophenol     108       rybis(1-chloropropane)     111       sybis(1-chloropropane)     95       hylphenol (o-cresol)     10       phenone     10       chloroethane     10       chloroethane     6       troso-di-n-propylamine     6       troso-di-n-propylamine     1       ethylphenol (m-cresol)     1       obenzene     1       obenzene     1       obenzene     1       phrone     1	
Phenol     108       Phenol     108       Phenol     108       Bis(2-chloroethyl)ether     101       2.2-Chlorophenol     111       2.2-Chlorophenol     111       2.2-Chlorophenol     111       2.2-Chlorophenol     111       2.2-Chlorophenol     111       2.2-Chlorophenol     10       2.2-Chlorophenol     95       2-Methylphenol (o-cresol)     95       Acetophenone     10       Acetophenone     60       Hexachloroethane     60       N-Nitroso-di-n-propylamine     60       A-Methylphenol (p-cresol)     11       3-Methylphenol (p-cresol)     110       3-Methylphenol (m-cresol)     110       3-Methylphenol (m-cresol)     110       1     110       3-Methylphenol (m-cresol)     110       2-Nitrobenzene     110       1     110       1     110       1     110       1     110       1     100       1     100       1     100       1     100       1     100       1     100       1     100       1     100       1     100	1
Compound       Phenol     10       Phenol     10       Bis(2-chloropethyl)ether     10       2-Chlorophenol     1       2,2'-oxybis(1-chloropropane)     1       2,2'-oxybis(1-chloropropane)     9       2-Methylphenol (o-cresol)     1       Acetophenone     1       Hexachloroethane     1       N-Nitroso-di-n-propylamine     9       3-Methylphenol (p-cresol)     9       Nitrobenzene     1       Isophorone     1	
Compound       Phenol     10       Bis(2-chloroethyl)ether     10       2-Chlorophenol     1       2,2'-oxybis(1-chloropropane)     1       2,2'-oxybis(1-chloropropane)     1       2-Methylphenol (o-cresol)     1       Acetophenone     1       Hexachloroethane     1       N-Nitroso-di-n-propylamine     1       3-Methylphenol (p-cresol)     1       Nitrobenzene     1	
Compound     10       shloroethyl)ether     10       rophenol     1       sybis(1-chloropropane)     1       hylphenol (o-cresol)     1       phenone     1       phenone     1       ethylphenol (p-cresol)     9       ethylphenol (p-cresol)     9	
Compound       10         Phenol       10         Bis(2-chloroethyl)ether       10         2-Chlorophenol       1         2,2-oxybis(1-chloropropane)       1         2,2-Methylphenol (o-cresol)       1         Acetophenone       1         Hexachloroethane       9         N-Nitroso-di-n-propylamine       9         4-Methylphenol (p-cresol)       9	10224044
Compound     10       Phenol     10       Bis(2-chloroethyl)ether     10       2Chlorophenol     1       2.2.2-oxybis(1-chloropropane)     1       2Methylphenol (o-cresol)     1       Acetophenone     1       Hexachloroethane     9       N-Nitroso-di-n-propylamine     9	19-4 STBJ0710
Compound       Phenol     1       Bis(2-chloroethyl)ether     1       2-Chlorophenol     1       2,2'-oxybis(1-chloropropane)     1       2-Methylphenol (o-cresol)     2       Acetophenone     4       Hexachloroethane     4	4-5 SHBN1151
Compound       Phenol       Bis(2-chloroethyl)ether       2-Chlorophenol       2,2'-oxybis(1-chloropropane)       2,Methylphenol (o-cresol)       Acetophenone	4-7 N63MG
Compound       Phenol       Bis(2-chloroethyl)ether       2-Chlorophenol       2,2'-oxybis(1-chloropropane)       2-Methylphenol (o-cresol)	-1 QTORH
Compound       Phenol       Bis(2-chloroethyl)ether       2-Chlorophenol       2,2'-oxybis(1-chloropropane)	-2 STBH8205
Compound Phenol Bis(2-chloroethyl)ether 2-Chlorophenol	-7 SHBN7598
Compound Phenol Bis(2-chloroethyl)ether	0-1 230714JLM
Compound Phenol Bis(2-chloroethyl)ether	8 STB13909
Compound Phenol	
Compound	-4 SHBL6942
Compound	2 MKCK1120
	Lot #

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1 of 5



aeahonoutadane         87.68.3         R22.302.32R.R         99.7         1,004.7           ledivjnaphlanane         91.57.6         STBK/0.29         99.7         1,004.7           lobor-3-madbyphenol         59.90.7         BCCDL461         99.7         1,002.7           lobor-3-madbyphenol         59.90.7         BCCDL461         99.7         1,002.7           lobor-3-madbyphenol         59.54.7         REN01         99.7         1,002.7           lobor-3-madbyphenol         95.95.4         FEM01         99.7         1,002.7           lobor-3-madbyphenol         95.95.4         FEM01         99.7         1,002.7           lobor-3-madbyphenol         95.95.4         REN23031         99.7         1,003.7           lobor-3-madbyphenol         95.95.4         REN23031         99.7         1,003.7           normaphthalace         91.58.7         REN700         99.7         1,003.7           normaphthalace         131.1.3         1017.69         99.7         1,003.7           normaphthalace         132.64.9         MKCR7169         99.7         1,003.7           normaphthalace         132.64.9         MKCR20982         99.7         1,003.7           normaphthalace         122.49.9	arabionobination $87.6-3$ $872.002.38.R$ $997.6$ $107.6$ $872.6$ $872.6$ $872.6$ $872.6$ $872.6$ $872.6$ $872.6$ $872.6$ $872.6$ $897.6$ $107.699.6$ $997.6$ $10.66.29.6$ $872.63.1$ $997.6$ $101.699.6$ $109.66.29.2$ $872.003.1$ $997.6$ $100.66.29.2$ $872.002.17.6$ $997.6$ $100.66.29.2$ $872.306.11.8$ $997.6$ $100.66.29.2$ $872.306.11.8$ $997.6$ $100.66.29.2$ $100.227.8 R$ $997.6$ $100.66.29.2$ $872.306.11.8$ $997.6$ $100.66.29.2$ $872.306.11.8$ $997.6$ $100.66.29.2$ $1002.304.17.8 R$ $997.6$ $100.69.7$ $100.69.7$ $100.69.7$ $100.69.7$ $100.69.7$ $100.69.7$ $100.69.7$	Fluoranthene	Di-n-buty	Carbazole	Anthracene	Fuenanthrene	DL	Pentach	Hexach	45 4-Brom						39 Fluorenc										30	29 . Ac	28 2-1	27 Bi	26 2-	25 2,	24 2.	23 H				
BCCJ3217         99%         1,001,6           87-68-3         RP230823RSR         98%         1,001,6           91-57-6         STBK0259         96%         1,001,6           91-57-6         STBK0259         99%         1,002,1           99-50-7         BCCD4461         99%         1,003,7           95-94-3         MKCS1444         99%         1,003,7           7-47-4         099063P13G         99%         1,003,0           -59-4         FHN01         98%         1,000,7           -59-4         FHN01         99%         1,000,7           -59-4         RPN7O         99%         1,000,7           -1002117         RP230822RSR         99%         1,000,7           -11-3         DRCG1833         99%         1,000,7           -11-3         DR230417RSR         99%         1,000,7	BCC13217         SPC, 1,001, $\mu$ $\mu$ 87-68-3         RP230823RSR         98%         1,001, $\mu$ $\mu$ 99-50-7         BCCD4461         99%         1,000, $\mu$ $\mu$ 1017         99%         1,000, $\mu$ $\mu$ $\mu$ 1017         99%         1,000, $\mu$ $\mu$ $\mu$ -8-6-2         STBJS914         99%         1,000, $\mu$ $\mu$ 8-60-2         STBJS914         99%         1,000, $\mu$ $\mu$ -8-6-2         STBJS914         99%         1,000, $\mu$ $\mu$ -8-6-2         STBJS914         99%         1,000, $\mu$ $\mu$ -1-3         10117699         99%         1,000, $\mu$ $\mu$ -1-1-3         BCCD30822RSR         99%         1,000, $\mu$ $\mu$ -1-1-3         I017699         99%         1,000, $\mu$ $\mu$	ene	Di-n-butylphthalate	œ	me	Drene		loronhenal	lorobenzene	ophenyl phenyl ether	Diphenylamine	nitro-2-methylphenol (Dinitro-o-cresol)	oaniline	<sup>1</sup> phthalate	4-Chlorophenyl phenyl ether	enc	6-Tetrachlorophenol	rophenol	Jinitrotoluene	nzofuran	Dinitrophenol	Itroamline	naphthene	-Junitrotoluene	neuyiphthalate	nothelp 1.1	cnanhthylene	Nitroaniline	phenyl	Chloronaphthalene	.4,5-Trichlorophenol	,4,6-Trichlorophenol	lexachlorocyclopentadiene	1,2,4,5-Tetrachlorobenzene	4-Chloro-3-methylphenol	2-Methylnaphthalene	Hexachlorobutadiene
reo         BCCJ3217         99%         1,001,6           6         STBK023RSR         98%         1,002,1           7         BCCD4461         99%         1,002,1           7         BCCD4461         99%         1,000,3           3         MKCS1444         99%         1,000,1           6         STBJ5914         99%         1,000,7           1         099063P13G         99%         1,003,0           FHN01         98%         1,000,7         1           FHN01         98%         1,000,7         1           MKCL6515         99%         1,000,7         1           P06V         98%         1,000,7         14           P06V         99%         1,000,7         14           P06V         99%         1,000,7         14           MKCL6515         99%         1,000,7         14           P06V         99%         1,000,7         14           P06V         99%         1,000,7         14           MKCR7169         99%         1,000,7         142           MKCQ99V         99%         1,000,7         142/m           MKCQ0984         99%         1,00	rooddel del del del del del del del del del	84-74-2	00-/+0	1-21 0-1	120-12-7	85-01-8	87-86-5	118-74-1	101-55-3	101	120 100	534-52-1	100.01 4	84-66-2	7005-77-3	86-73-7	58-90-2	100-02-7	121-14-2	132-64-9	51-28-5	99-09-2	83-32-9	606-20-2	131-11-2	208-96-	88-74-4	92-52-4	91-58-2	95-95	-90-22	-11-4	יע-ער אני-ער	05.04	20-20	01.57	87-68
99%         1,004.4           98%         1,001.6           96%         1,002.1           99%         1,002.3           99%         1,003.7           99%         1,003.7           99%         1,003.7           99%         1,003.7           99%         1,003.7           99%         1,003.7           99%         1,003.7           99%         1,003.7           99%         1,003.7           99%         1,003.7           99%         1,000.7 $\mu$	$99\%$ I,004.4 $\mug/mL$ $98\%$ 1,001.6 $\mug/mL$ $99\%$ 1,000.3 $\mug/mL$ $99\%$ 1,000.3 $\mug/mL$ $99\%$ 1,000.7 $\mug/mL$ $99\%$ 1,000.7 $\mug/mL$ $99\%$ 1,003.0 $\mug/mL$ $99\%$ 1,000.7 $\mug/mL$ <t< td=""><td></td><td></td><td>70</td><td></td><td></td><td></td><td></td><td></td><td>2</td><td></td><td></td><td></td><td></td><td></td><td></td><td>VIICACTN</td><td>MINAA0690V</td><td>MT 1 00000</td><td>MCCDOCC</td><td>DD00022RSK</td><td>R PJ2000000</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>			70						2							VIICACTN	MINAA0690V	MT 1 00000	MCCDOCC	DD00022RSK	R PJ2000000															
1,004.4       1,001.6       1,002.1       1,002.1       1,002.1       1,003.7       1,003.7       1,000.6       1,002.1       1,000.7       1,001.7       1,002.7       1,002.7       1,001.7       1,002.7       1,002.7       1,002.7	I,004.4 $\mu g/mL$ 1,001.6 $\mu g/mL$ 1,002.1 $\mu g/mL$ 1,000.3 $\mu g/mL$ 1,000.4 $\mu g/mL$ 1,000.7 $\mu g/mL$ ,003.0 $\mu g/mL$ ,003.1 $\mu g/mL$ ,003.1 $\mu g/mL$ ,000.7 $\mu g/mL$ ,000.8 $\mu g/mL$ ,02 $\mu g/mL$				1			- 1						1	1	1	1		1	1	1			1	1		%66	%66	%666	%86	%66	%66	%66	%66	%96	%86	%66
	$\begin{array}{c c} \mu g/mL \\ \mu g$				1	1	1								1		1	1	10							- 1 h h h h								1,000.3			

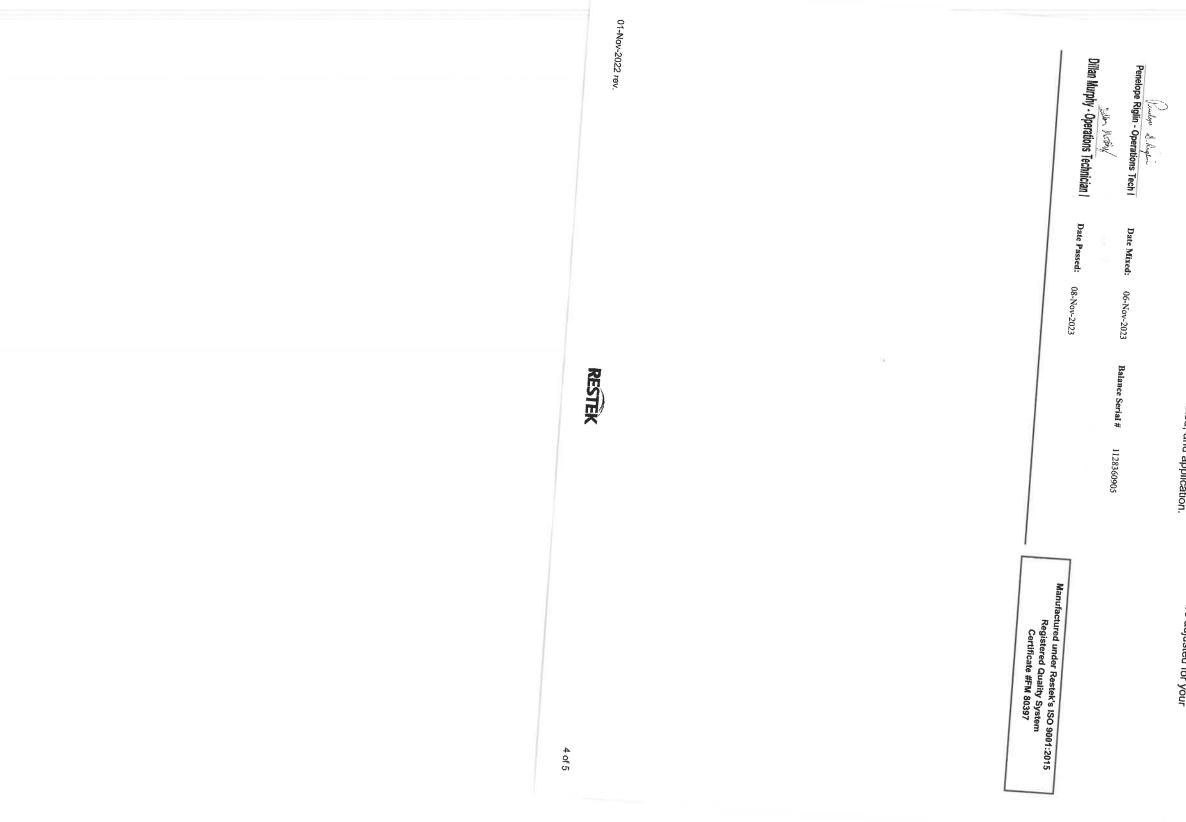
01-Nov-2022 rev.

RESTEK

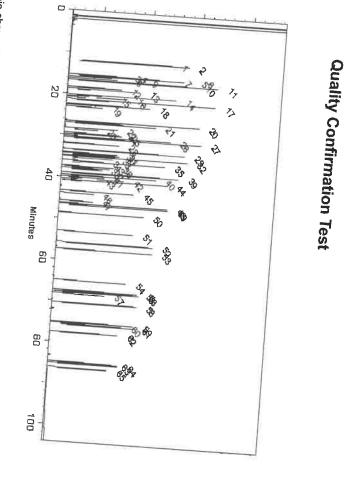
2 of 5

01-Nov-2022 rev. CAS # Purity %66 RESTEK 3 of 5

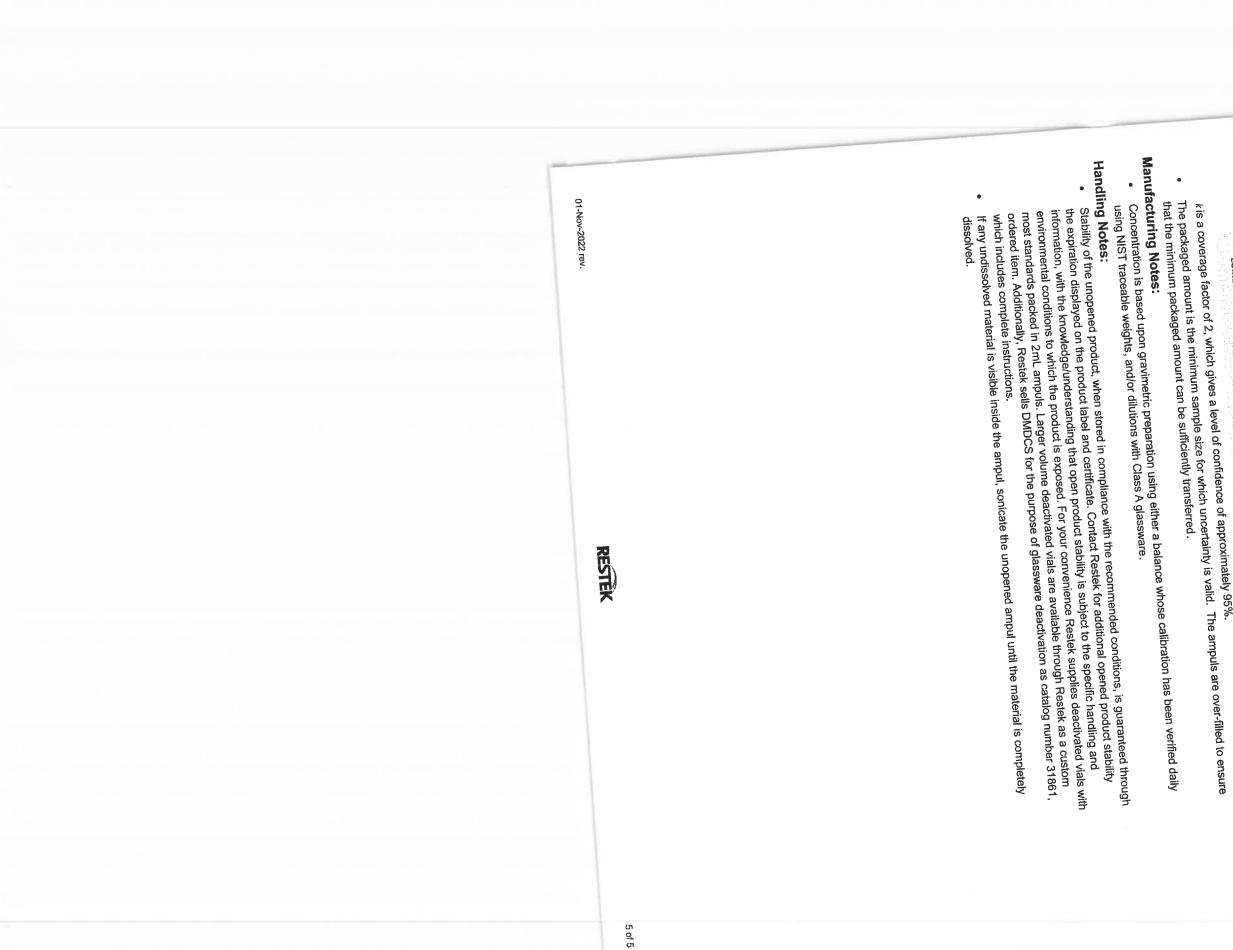
65	64	63	62	61	60	59	58	57	8		\$	54	53	
Benzo(g,h,i)perylene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Benzo(a)pyrene	Benzo(k)fluoranthene	Benzo(b)fluoranthene	Di-n-octyl phthalate	Bis(2-ethylhexyl)phthalaire	3,3'-Dichlorobelizium	Ch Jones I and Amp	Chrysene	Benz(a)anthracene	Benzyl butyl phthalate	Pyrene	
	191-24-2	53-70-3	193-39-5	50-32-8	207-08-9	205-99-2	117-84-0	117-81-7	91-94-1	2-10-012	010 01 0	\$6-55-3	85-68-7	129-00-0
* Expand	RP23	ER032211-01	12-JKL-118-9	P54915-0703	012022K	022013B	14382700	MKCQ3468	S231010101	cra1010RSR	RP230601	120012022BAA	X12I018	BCCG8479
led Uncert	%86	%66	97%	%66	%66	%66	%66	0/26	2000/	%666	%66	%666	1	
ainty displa	6 1,000.:		1	1,000.6	1	1,000.7	1,001.0	1 001 0	1 000.5	1,003.2	1,000.6	1,000.6 μ	1,000.0 P	1,000.1 MB/mm
ayed in sa	1,000.5 µg/шь	1,000.6 µg/m	Jun/Bri	1,000.6 µg/шь	hg/mL	- Harring		uø/mL	ug/mL	µg/mL	µg/mL	mu/8th	I min	na/mT
* Expanded Uncertainty displayed in same uncorrection	mo units as Grav. Conc.				+/- 18.7968	+/- 18.7958	+/- 18.7975	+/- 18.8036	+/- 18.7947	+/- 18.8440	+/- 10.1200	10 7058	+/- 18.7961	+/- 18.7951



Column: 30m x0.25µm x0.25µm Rtx-5 (act.#10223) Carrier Gas: hydrogen-constant pressure 10 psi Temp. Program: 35°C (hold 3 min.] to 330°C @ 3°C/min. (hold 3 min.] 1nj. Temp: 250°C Det. Temp: 250°C Det. Type: FID Split Vent: Ratio 50:1 Inj. Vol 1µl



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



**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. 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. correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution. ≻

Purity of isomeric compounds is reported as the sum of the isomers.
Purity values are rounded to the nearest whole number.
Certified Uncertainty Value Notes:

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

 $\sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage stability}^2 + u_{shipping stability}^2}$ 

 $_{k}$  is a coverage factor of 2, which gives a level of confidence of approximately 95%.  $U_{combined\ uncertainty} = k$ 



Ship: Ambient

Handling:

Sonication required. Mix is photosensitive.

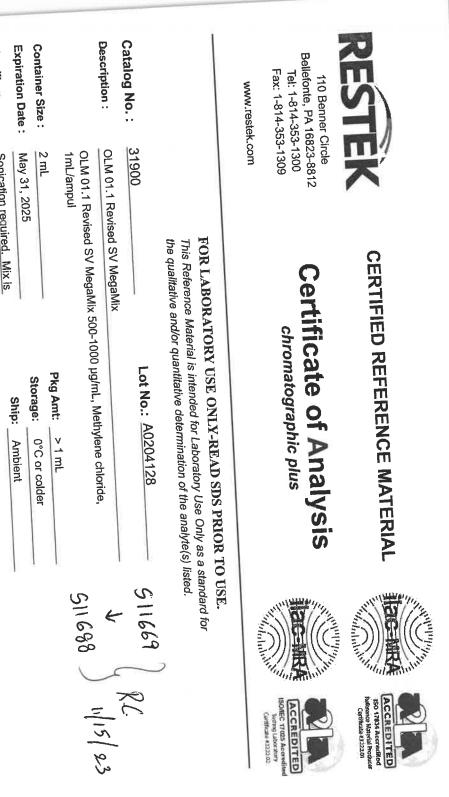
CERTIFIED VALUES

CompoundCAS #Phenol108-95-2Phenol111-44-4Bis(2-chloroethyl)ether95-57-82-Chlorophenol111-44-42,2'-oxybis(1-chlorophenol)95-57-82,2'-oxybis(1-chlorophenol)95-60-12,2'-oxybis(1-chlorophenol)95-48-72-Methylphenol (o-cresol)98-86-2Acetophenone67-72-1Hexachloroethane621-64-7N-Nitroso-di-n-propylamine106-44-54-Methylphenol (p-cresol)108-39-43-Methylphenol (m-crcsol)98-95-3Nitrobenzene78-59-1Isophorone88-75-52-Nitrophenol105-67-92,4-Dimethylphenol105-67-9111-91-1111-91-1	120-83-2 BCBZ6787
Compound     108       start     108       rophenol     108       rybis(1-chloropropane)     111       sybis(1-chloropropane)     95       hylphenol (o-cresol)     10       phenone     10       chloroethane     10       chloroethane     6       troso-di-n-propylamine     6       troso-di-n-propylamine     1       ethylphenol (m-cresol)     1       obenzene     1       obenzene     1       obenzene     1       phrone     1	
Phenol     108       Phenol     108       Phenol     108       Bis(2-chloroethyl)ether     101       2.2-Chlorophenol     111       2.2-Chlorophenol     111       2.2-Chlorophenol     111       2.2-Chlorophenol     111       2.2-Chlorophenol     111       2.2-Chlorophenol     10       2.2-Chlorophenol     95       2-Methylphenol (o-cresol)     95       Acetophenone     10       Acetophenone     60       Hexachloroethane     60       N-Nitroso-di-n-propylamine     60       A-Methylphenol (p-cresol)     11       3-Methylphenol (p-cresol)     110       3-Methylphenol (m-cresol)     110       3-Methylphenol (m-cresol)     110       1     110       3-Methylphenol (m-cresol)     110       2-Nitrobenzene     110       1     110       1     110       1     110       1     110       1     100       1     100       1     100       1     100       1     100       1     100       1     100       1     100       1     100	1
Compound       Phenol     10       Phenol     10       Bis(2-chloropethyl)ether     10       2-Chlorophenol     1       2,2'-oxybis(1-chloropropane)     1       2,2'-oxybis(1-chloropropane)     9       2-Methylphenol (o-cresol)     1       Acetophenone     1       Hexachloroethane     1       N-Nitroso-di-n-propylamine     9       3-Methylphenol (p-cresol)     9       Nitrobenzene     1       Isophorone     1	
Compound       Phenol     10       Bis(2-chloroethyl)ether     10       2-Chlorophenol     1       2,2'-oxybis(1-chloropropane)     1       2,2'-oxybis(1-chloropropane)     1       2-Methylphenol (o-cresol)     1       Acetophenone     1       Hexachloroethane     1       N-Nitroso-di-n-propylamine     1       3-Methylphenol (p-cresol)     1       Nitrobenzene     1	
Compound     10       shloroethyl)ether     10       rophenol     1       sybis(1-chloropropane)     1       hylphenol (o-cresol)     1       phenone     1       phenone     1       ethylphenol (p-cresol)     9       ethylphenol (p-cresol)     9	
Compound       Phenol     10       Phenol     10       Bis(2-chloroethyl)ether     10       2-Chlorophenol     1       2,2-oxybis(1-chloropropane)     1       2,2-Methylphenol (o-cresol)     1       Acetophenone     1       Hexachloroethane     9       N-Nitroso-di-n-propylamine     9       4-Methylphenol (p-cresol)     9	10224044
Compound     10       Phenol     10       Bis(2-chloroethyl)ether     10       2Chlorophenol     1       2.2.2-oxybis(1-chloropropane)     1       2Methylphenol (o-cresol)     1       Acetophenone     1       Hexachloroethane     9       N-Nitroso-di-n-propylamine     9	19-4 STBJ0710
Compound       Phenol     1       Bis(2-chloroethyl)ether     1       2-Chlorophenol     1       2,2'-oxybis(1-chloropropane)     1       2-Methylphenol (o-cresol)     2       Acetophenone     4       Hexachloroethane     4	4-5 SHBN1151
Compound       Phenol       Bis(2-chloroethyl)ether       2-Chlorophenol       2,2'-oxybis(1-chloropropane)       2,Methylphenol (o-cresol)       Acetophenone	4-7 N63MG
Compound       Phenol       Bis(2-chloroethyl)ether       2-Chlorophenol       2,2'-oxybis(1-chloropropane)       2-Methylphenol (o-cresol)	-1 QTORH
Compound       Phenol       Bis(2-chloroethyl)ether       2-Chlorophenol       2,2'-oxybis(1-chloropropane)	-2 STBH8205
Compound Phenol Bis(2-chloroethyl)ether 2-Chlorophenol	-7 SHBN7598
Compound Phenol Bis(2-chloroethyl)ether	0-1 230714JLM
Compound Phenol Bis(2-chloroethyl)ether	8 STB13909
Compound Phenol	
Compound	-4 SHBL6942
Compound	2 MKCK1120
	Lot #

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1 of 5



	52	51		5	49	48	47	46	45	4	43	42	4	40	39	38	37	36	35	34	2.	20	22	00		20	00	2 2	2	26	24	23	22	21	20	19	
	Fluoranthene	Di-n-butylphthalate	Carbazole	Auturacene		Phenonthese	Pentachlorophenol	Hexachlorobenzene	4-Bromophenyl phenyl ether	Diphenylamine	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol)	4-Nitroaniline	Diethylphthalate	4-Chlorophenyl phenyl ether	Fluorene	2,3,4,6-Tetrachlorophenol	4-Nitrophenol	2,4-Dinitrotoluene	Dibenzofuran	2,4-Dinitrophenol	3-Nitroaniline	Acenaphthene	2,6-Dinitrotoluene	Dimethylphthalate	Acenaphthylenc	2-Nıtroaniline	Biphenyl	2-Chloronaphthalene	2,4,5-Trichlorophenol	2,4,0-1richlorophenol	7 4 C m · · · ·	Hevachland A	1.2.4.5-Tetrachlorob	4-Chloro-3-methylnhenol	2-Methylnaphthalene	Hexachlorobutadiene	+
206-44-0	84-74-2		86-74 0	120-12-7	85-01-8	87-86-5	118-74-1	101-00-3	101 65 2	100 00 1	534-52-1	100 01 2	84-66-2	7005-72-2	86-72-7	58-00-2	100-02 -2-41-12-1	101 14 5	0 197621	2 00 15	0-00-09	83-32-9	606-20-2	131-11-3	208-96-8	88-74-4	92-52-4	91-58-7	95-95-4	88-06-2	77-47-4	95-94-3	59-50-7	91-57-6	87-68-3	100-47-8	106
MKC04798	MKCN4337 99%		Ìà			RP230530RSR 9	14652300 9	STBH6361 9	2			всслузую	DCrimina	10241100	rk-30126	KP230511A	MKAA0690V	MKCD9952	UR230417RSR	KF230822RSR	MINUK/109												)-7 BCCD4461	7-6 STBK0259	8-3 RP230823RSR		
	% 1,000.8	99% 1,003.3	99% 1,000.7			00% 1 M	99% 1,000.5	99% 1,000.7				99% 1,0	1	1	99% 1,	1		1	%66	%66	1	%66	%66	%86	%66	%666	%66	0%.96	%666	0/66	000/	000	%66	%96	%86	%66	0/00
	.8 ш <u>я</u> /тГ.	3.3 µg/mL	0.7 µg/mL	0.6 µg/mL	2.0 µg/mL	- 1		00.7 μg/mL	l,002.5 μg/mL	l,000.8 μg/mL	1,002.5 μg/mL	1,001.0 µg/mL	1,000.6 μg/mL	1,000.7 µg/mL	1,004.3 µg/mL	1,007.3 µg/mL	1,000.8 µg/mL	1,003.0 µg/	1,002.4 μg	1,002.7 μg	1,000.7 με	1,000.6 µş	1,000.9 µ						1,002.1	1,000.6	1,003./	1,000.0	1		6 1,001.6		1
		+/-	+	+-	+/-			+/-	L +-	L +/-	ч. +-	ηΓ +/-	nL +/-					µg/mL	µg/mL	µg/mL	µg/mL	µg/mL	μg/mL,	µg/mL	µg/mL	µg/mL	µg/mL	µg/mL	µg/mL	μg/mL,	µg/mL	la/Bri	In Start			µg/mL	1,000./ µg/mL
18./99I	10 700-	18.8468	18.7987	18.7958	18.8365					- 18.7989	- 18.8318	/- 18.8034	/- 18.7961	+/- 18.7987	+/- 18.8646	+/- 18.9210	+/- 18.7991	+/- 18.5712	+/- 18.8294	+/- 18.8355	+/- 18.7975	+/- 18.7963	+/- 18.8010	+/- 18.7980	+/- 18.8487	+/- 18.5712	+/- 18.7975	+/- 18.8417	+/- 18.8247	+/- 18.7965	+/- 18.8543	+/- 18.7895				+/- 18.8675	+/- 18.7975

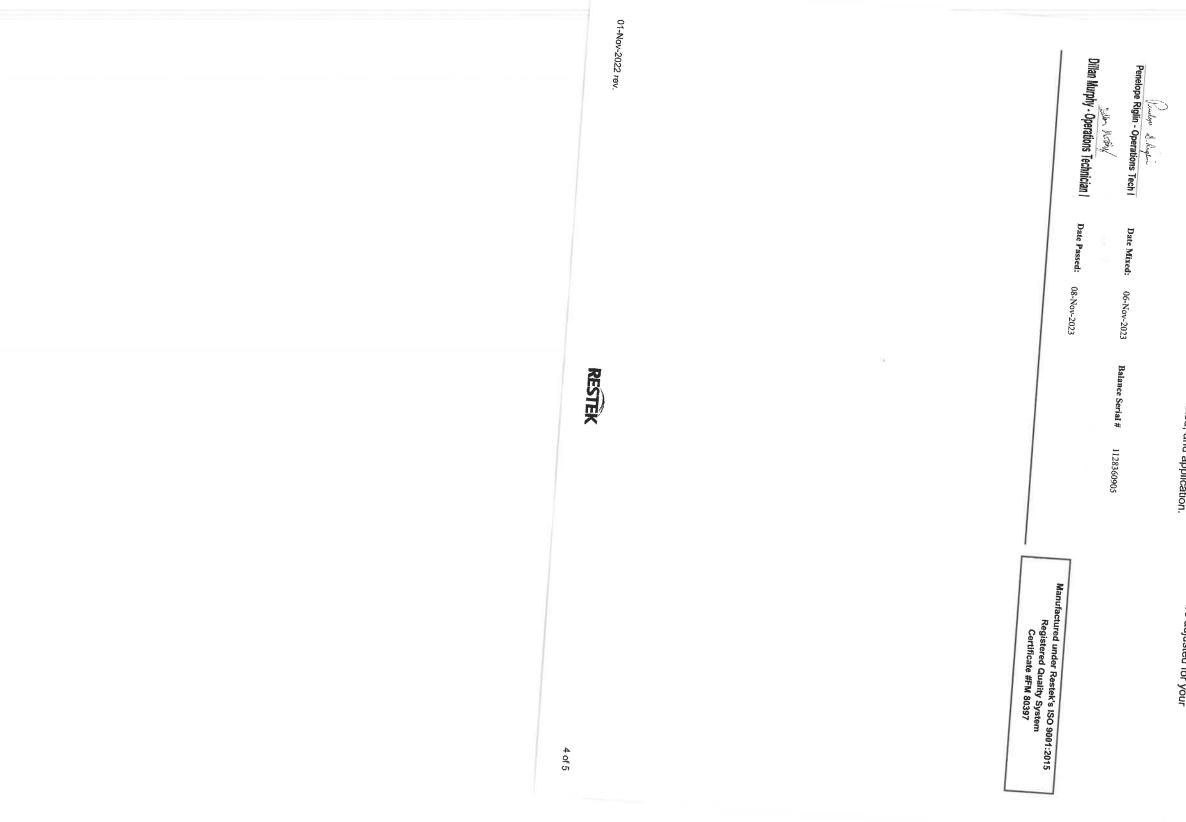
01-Nov-2022 rev.

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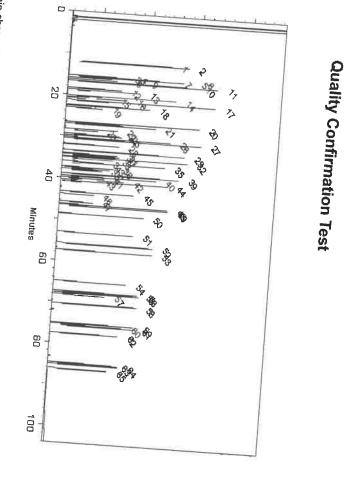
2 of 5

01-Nov-2022 rev. CAS # Purity %66 RESTEK 3 of 5

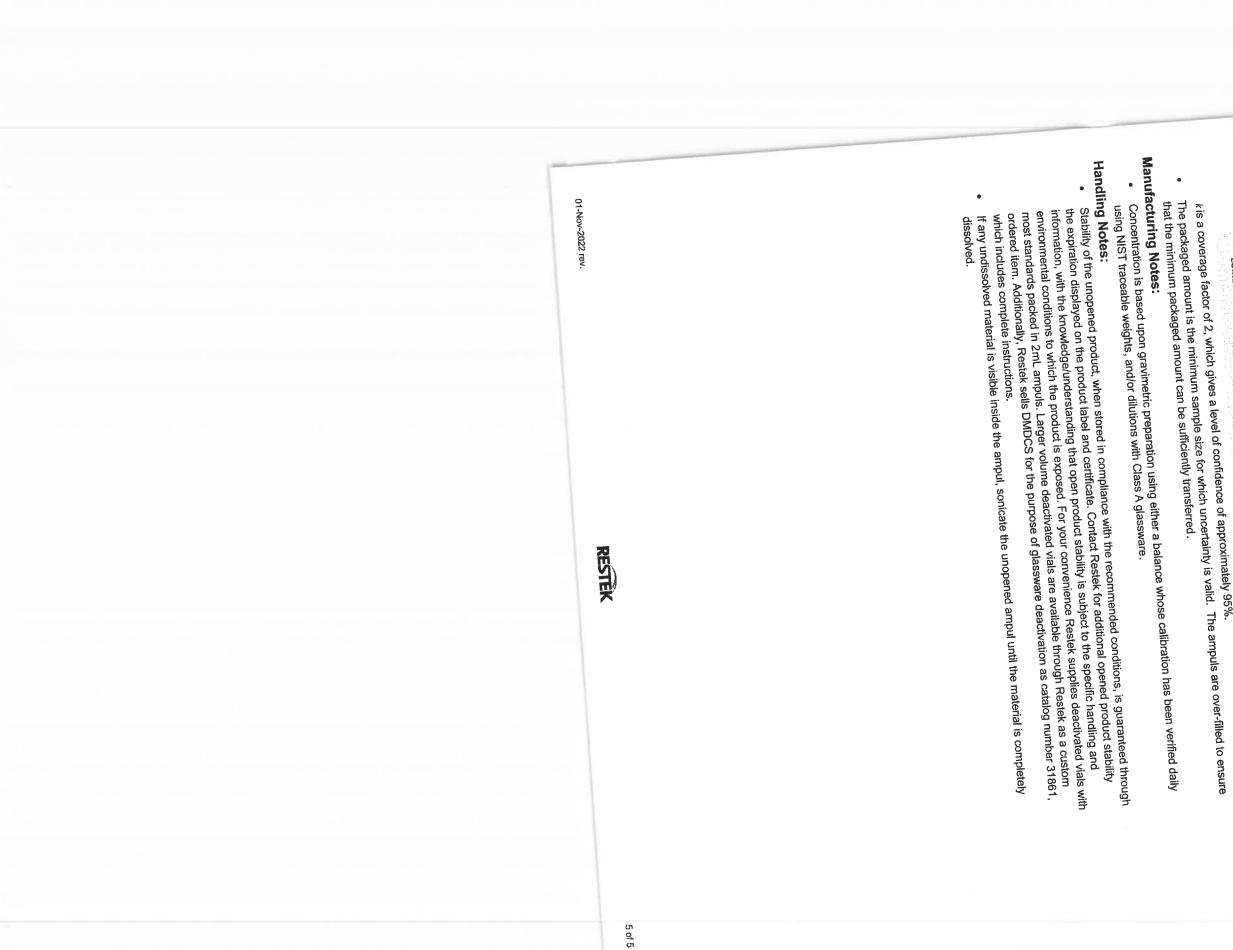
65	64	63	62	61	60	59	58	57	8		\$	54	53	
Benzo(g,h,i)perylene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Benzo(a)pyrene	Benzo(k)fluoranthene	Benzo(b)fluoranthene	Di-n-octyl phthalate	Bis(2-ethylhexyl)phthalaire	3,3'-Dichlorobelizium	Ch Jones I and Amp	Chrysene	Benz(a)anthracene	Benzyl butyl phthalate	Pyrene	
	191-24-2	53-70-3	193-39-5	50-32-8	207-08-9	205-99-2	117-84-0	117-81-7	91-94-1	2-10-012	010 01 0	\$6-55-3	85-68-7	129-00-0
* Expand	RP23	ER032211-01	12-JKL-118-9	P54915-0703	012022K	022013B	14382700	MKCQ3468	S231010101	cra1010RSR	RP230601	120012022BAA	X12I018	BCCG8479
led Uncert	%86	%66	97%	%66	%66	%66	%66	0/26	2000/	%666	%66	%666	1	
ainty displa	6 1,000.:		1	1,000.6	1	1,000.7	1,001.0	1 001 0	1 000.5	1,003.2	1,000.6	1,000.6 μ	1,000.0 P	1,000.1 MB/mm
ayed in sa	1,000.5 µg/шь	1,000.6 µg/m	Jun/Bri	1,000.6 µg/шь	hg/mL	- Harring		uø/mL	ug/mL	µg/mL	µg/mL	mu/8th	I min	na/mT
* Expanded Uncertainty displayed in same uncorrection	mo units as Grav. Conc.				+/- 18.7968	+/- 18.7958	+/- 18.7975	+/- 18.8036	+/- 18.7947	+/- 18.8440	+/- 10.1200	10 7058	+/- 18.7961	+/- 18.7951



Column: 30m x0.25µm x0.25µm Rtx-5 (act.#10223) Carrier Gas: hydrogen-constant pressure 10 psi Temp. Program: 35°C (hold 3 min.] to 330°C @ 3°C/min. (hold 3 min.] 1nj. Temp: 250°C Det. Temp: 250°C Det. Type: FID Split Vent: Ratio 50:1 Inj. Vol 1µl



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



**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. 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. correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution. ≻

Purity of isomeric compounds is reported as the sum of the isomers.
Purity values are rounded to the nearest whole number.
Certified Uncertainty Value Notes:

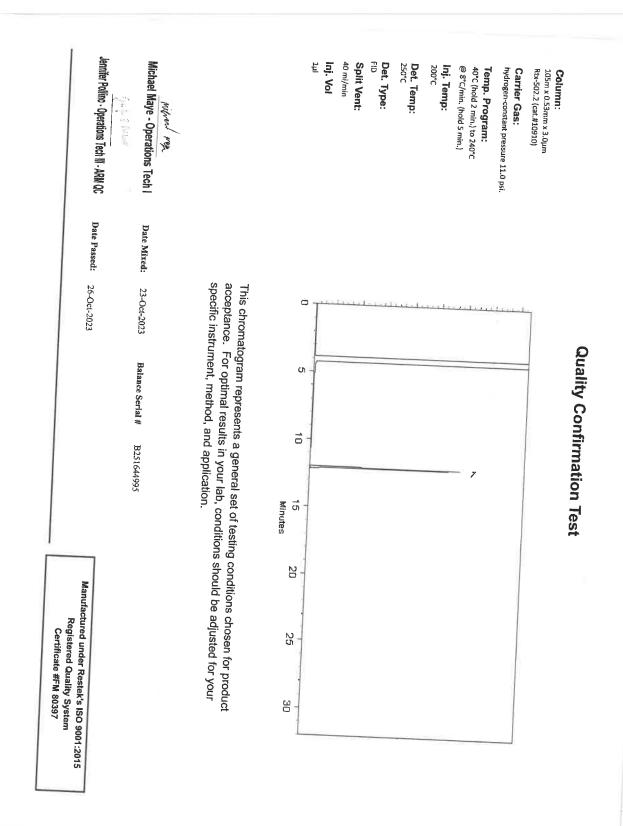
The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability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

 $\sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage stability}^2 + u_{shipping stability}^2}$ 

 $_{k}$  is a coverage factor of 2, which gives a level of confidence of approximately 95%.  $U_{combined\ uncertainty} = k$ 



A Contraction of the second participant of the second participant of the second participant of the second participant produce configure second		1 tor 1689	SITTO6 11/21/23	CERTIFIED     VALUES       certifie     VALUES       ot #     Purity     Expanded       ot #     Uncertainty *     (95% C.L.; K=2)       0605     99%     2,001.2 µg/mL     +/- 24.9053       * Expanded Uncertainty displayed in same units as Grav. Conc.	
CERTIFIED REFERENCE MATERIAL	Certificate of Analysis chromatographic plus	FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE. This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed. Lot No.: <u>A0203488</u> 5116	J8 Standard d8 Standard 2000 μg/mL, P&T Methanol, 1mL/ampul <b>Pkg Amt:</b> >1 mL 2026 Storage: 0°C or colder Ship: Ambient	Compound Compound 17647-74-4 RP230605 9	
RESTEK	110 Benner Circle Bellefonte, PA 16823-8812 Tel: 1-814-353-1300 Fax: 1-814-353-1309 www.restek.com	Catalog No. : <u>30614</u>	Description :       1,4-dioxane-d8 Standard         1,4-dioxane-d8 Standard       1,4-dioxane-d8 Standard         Container Size :       2 mL         Expiration Date :       October 31, 2026	Elution Order 1 1,4-Dioxane-d8	Solvent: P&T Methanol CAS # 67-56-1 Purity 99%



## Expiration Notes:

- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
  - 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,
  - Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the

Purity of isomeric compounds is reported as the sum of the isomers. parent compound in solution.

- Purity values are rounded to the nearest whole number. •
- uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded Certified Uncertainty Value Notes:
  - uncertainty and shipping stability uncertainty and were combined using the following formula:

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

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

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

that the minimum packaged amount can be sufficiently transferred.

## Manufacturing Notes:

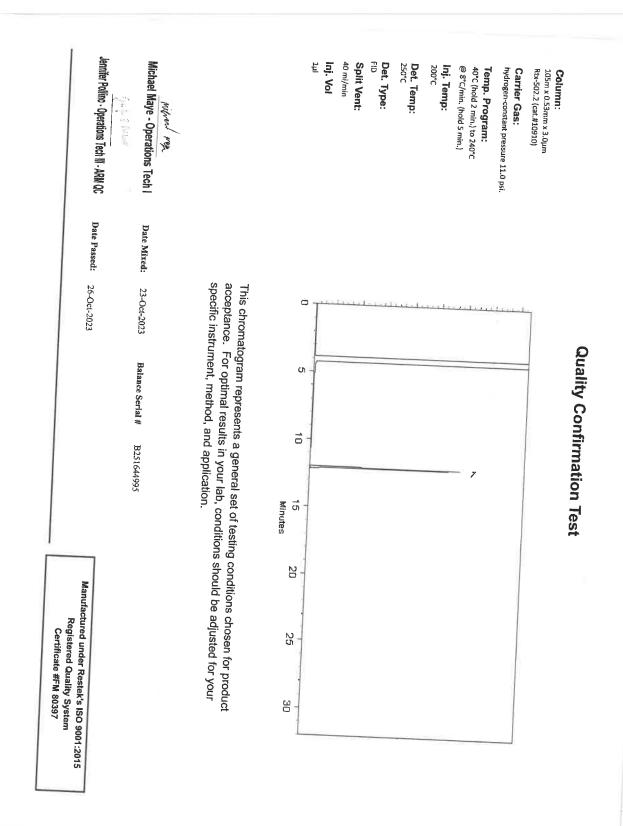
- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily
  - using NtST traceable weights, and/or dilutions with Class A glassware.

## Handling Notes:

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

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A Contraction of the second participant of the second participant of the second participant of the second participant produce configure second		1 tor 1689	SITTO6 11/21/23	CERTIFIED     VALUES       certifie     VALUES       ot #     Purity     Expanded       ot #     Uncertainty *     (95% C.L.; K=2)       0605     99%     2,001.2 µg/mL     +/- 24.9053       * Expanded Uncertainty displayed in same units as Grav. Conc.	
CERTIFIED REFERENCE MATERIAL	Certificate of Analysis chromatographic plus	FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE. This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed. Lot No.: <u>A0203488</u> 5116	J8 Standard d8 Standard 2000 μg/mL, P&T Methanol, 1mL/ampul <b>Pkg Amt:</b> >1 mL 2026 Storage: 0°C or colder Ship: Ambient	Compound Compound 17647-74-4 RP230605 9	
RESTEK	110 Benner Circle Bellefonte, PA 16823-8812 Tel: 1-814-353-1300 Fax: 1-814-353-1309 www.restek.com	Catalog No. : <u>30614</u>	Description :       1,4-dioxane-d8 Standard         1,4-dioxane-d8 Standard       1,4-dioxane-d8 Standard         Container Size :       2 mL         Expiration Date :       October 31, 2026	Elution Order 1 1,4-Dioxane-d8	Solvent: P&T Methanol CAS # 67-56-1 Purity 99%



## Expiration Notes:

- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
  - 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,
  - Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the

Purity of isomeric compounds is reported as the sum of the isomers. parent compound in solution.

- Purity values are rounded to the nearest whole number. •
- uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded Certified Uncertainty Value Notes:
  - uncertainty and shipping stability uncertainty and were combined using the following formula:

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

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

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

that the minimum packaged amount can be sufficiently transferred.

## Manufacturing Notes:

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

## Handling Notes:

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

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### **CERTIFIED REFERENCE MATERIAL**

### **Certificate of Analysis**

chromatographic plus



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

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

Catalog No. :	31853	Lot No.:	A0196453	_ SII749) , 1
Description :	1,4-dioxane			_ (KC)
	1,4-Dioxane 2,000µg/mL, Me	sthylene Chloride, 1mL/arr	ipul	
Container Size :	2 mL	Pkg Amt:	> 1 mL	_ SII794 / 11/30/23
Expiration Date :	March 31, 2028	Storage:	0°C or colder	5//
		Ship:	Ambient	

### CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,4-Dioxane	123-91-1	SHBN3770	99%	2,013.0 µg/mL	+/- 25.0521

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

Solvent: Methylene chloride CAS # 75-09-2 Purity 99%



### **Quality Confirmation Test**





### **Expiration Notes:**

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

### **Purity Notes:**

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

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

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

그는 방법에 있는 것 같아요. 이 것 같은 것 같은 것이 있다.	
	$u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage stability}^2 + u_{shipping stability}^2$
$U_{combined\ uncertainty} = k$	$11^{4}$ $\pm 11^{2}$
- compinea uncertainty	"gravimetric ' "homogeneity ' "storage stability ' "shipping stability
an a	a stability stability

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

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

### Manufacturing Notes:

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

### Handling Notes:

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





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

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### **CERTIFIED REFERENCE MATERIAL**

### **Certificate of Analysis**

chromatographic plus



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

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

Catalog No. :	31853	Lot No.:	A0196453	_ SII749) , 1
Description :	1,4-dioxane			_ (KC)
	1,4-Dioxane 2,000µg/mL, Me	sthylene Chloride, 1mL/arr	ipul	
Container Size :	2 mL	Pkg Amt:	> 1 mL	_ SII794 / 11/30/23
Expiration Date :	March 31, 2028	Storage:	0°C or colder	5//
		Ship:	Ambient	

### CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,4-Dioxane	123-91-1	SHBN3770	99%	2,013.0 µg/mL	+/- 25.0521

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

Solvent: Methylene chloride CAS # 75-09-2 Purity 99%



### **Quality Confirmation Test**





### **Expiration Notes:**

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

### **Purity Notes:**

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

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

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

그는 방법에 있는 것 같아요. 이 것 같은 것 같은 것이 있다.	
	$u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage stability}^2 + u_{shipping stability}^2$
$U_{combined  uncertainty} = k$	$11^{4}$ $\pm 11^{2}$
- compinea uncertainty	"gravimetric ' "homogeneity ' "storage stability ' "shipping stability
an a	a stability stability

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

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

### Manufacturing Notes:

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

### Handling Notes:

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





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

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### **CERTIFIED REFERENCE MATERIAL**

### **Certificate of Analysis**

chromatographic plus



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

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

Catalog No. :	31853	Lot No.:	A0196453	_ 911749) <sub>0</sub> 1
Description :	1,4-dioxane			_ L (KC/
	1,4-Dioxane 2,000µg/mL, Me	ethylene Chloride, 1mL/arr	ipul	
Container Size :	2 mL	Pkg Amt:	> 1 mL	_ SII794 / 11/30/23
Expiration Date :	March 31, 2028	Storage:	0°C or colder	3/11/11/
		Ship:	Ambient	

### CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,4-Dioxane	123-91-1	SHBN3770	99%	2,013.0 µg/mL	+/- 25.0521

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

Solvent: Methylene chloride CAS # 75-09-2 Purity 99%



### **Quality Confirmation Test**





### **Expiration Notes:**

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

### **Purity Notes:**

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/µECD, GC/MS, LC/MS, RI, and/or melting point.
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  parent compound in solution.
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	$u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage stability}^2 + u_{shipping stability}^2$
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- compinea uncertainty	"gravimetric ' "homogeneity ' "storage stability ' "shipping stability
an a	a stability stability

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

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### Manufacturing Notes:

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Catalog No. :	31853	Lot No.:	A0196453	_ 911749) <sub>0</sub> 1
Description :	1,4-dioxane			_ L (KC/
	1,4-Dioxane 2,000µg/mL, Me	ethylene Chloride, 1mL/arr	ipul	
Container Size :	2 mL	Pkg Amt:	> 1 mL	_ SII794 / 11/30/23
Expiration Date :	March 31, 2028	Storage:	0°C or colder	3/11/11/
		Ship:	Ambient	

### CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,4-Dioxane	123-91-1	SHBN3770	99%	2,013.0 µg/mL	+/- 25.0521

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

Solvent: Methylene chloride CAS # 75-09-2 Purity 99%



### **Quality Confirmation Test**





### **Expiration Notes:**

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

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Catalog No. :	31853	Lot No.:	A0196453	_ SII749) , 1
Description :	1,4-dioxane			_ (KC)
	1,4-Dioxane 2,000µg/mL, Me	sthylene Chloride, 1mL/arr	ipul	
Container Size :	2 mL	Pkg Amt:	> 1 mL	_ SII794 / 11/30/23
Expiration Date :	March 31, 2028	Storage:	0°C or colder	5//
		Ship:	Ambient	

#### CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,4-Dioxane	123-91-1	SHBN3770	99%	2,013.0 µg/mL	+/- 25.0521

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







## **General Certified Reference Material Notes**

#### **Expiration Notes:**

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Catalog No. :	31853	Lot No.:	A0196453	_ SII749) , 1
Description :	1,4-dioxane			_ (KC)
	1,4-Dioxane 2,000µg/mL, Me	sthylene Chloride, 1mL/arr	ipul	
Container Size :	2 mL	Pkg Amt:	> 1 mL	_ SII794 / 11/30/23
Expiration Date :	March 31, 2028	Storage:	0°C or colder	5//
		Ship:	Ambient	

#### CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,4-Dioxane	123-91-1	SHBN3770	99%	2,013.0 µg/mL	+/- 25.0521

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







## **General Certified Reference Material Notes**

#### **Expiration Notes:**

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## **CERTIFIED REFERENCE MATERIAL**

## **Certificate of Analysis**

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Catalog No. :	31853	Lot No.:	A0196453	_ SII749) , 1
Description :	1,4-dioxane			_ (KC)
	1,4-Dioxane 2,000µg/mL, Me	sthylene Chloride, 1mL/arr	ipul	
Container Size :	2 mL	Pkg Amt:	> 1 mL	_ SII794 / 11/30/23
Expiration Date :	March 31, 2028	Storage:	0°C or colder	5//
		Ship:	Ambient	

#### CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,4-Dioxane	123-91-1	SHBN3770	99%	2,013.0 µg/mL	+/- 25.0521

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







## **General Certified Reference Material Notes**

#### **Expiration Notes:**

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  correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the
  parent compound in solution.
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#### **Certified Uncertainty Value Notes:**

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	$u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage stability}^2 + u_{shipping stability}^2$
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## **CERTIFIED REFERENCE MATERIAL**

## **Certificate of Analysis**

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Catalog No. :	31853	Lot No.:	A0196453	_ SII749) , 1
Description :	1,4-dioxane			_ (KC)
	1,4-Dioxane 2,000µg/mL, Me	sthylene Chloride, 1mL/arr	ipul	
Container Size :	2 mL	Pkg Amt:	> 1 mL	_ SII794 / 11/30/23
Expiration Date :	March 31, 2028	Storage:	0°C or colder	5//
		Ship:	Ambient	

#### CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,4-Dioxane	123-91-1	SHBN3770	99%	2,013.0 µg/mL	+/- 25.0521

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







## **General Certified Reference Material Notes**

#### **Expiration Notes:**

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

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

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

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$U_{combined  uncertainty} = k$	$11^{4}$ $\pm 11^{2}$
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k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

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#### Manufacturing Notes:

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## **CERTIFIED REFERENCE MATERIAL**

# **Certificate of Analysis**

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Achel



### 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. :	31850	Lot No.: A	- 511877	.) /	
<b>Description</b> :	8270 MegaMix®			- 1	1 RC/
	8270 MegaMix® 500-1,000µg	$\checkmark$	La T		
Container Size :	2 mL	Pkg Amt:	> 1 mL	\$11906	11/30/23
Expiration Date :	November 30, 2024	Storage:	0°C or colder		J .
Handling:	Sonication required. Mix is photosensitive.	Ship: _	Ambient		

#### CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Pyridine	110-86-1	SHBN7324	99%	1,006.9 µg/mL	+/- 36.6352
2	N-Nitrosodimethylamine	62-75-9	230209JLM	99%	1,007.4 µg/mL	+/- 36.6514
3	Phenol	108-95-2	MKCK1120	99%	1,005.3 µg/mL	+/- 36.5746
4	Aniline	62-53-3	X22F726	99%	1,004.6 µg/mL	+/- 36.5503
5	Bis(2-chloroethyl)ether	111-44-4	SHBL6942	99%	1,005.1 µg/mL	+/- 36.5665
6	2-Chlorophenol	95-57-8	STBJ3909	99%	1,007.1 µg/mL	+/- 36.6392
7	1,3-Dichlorobenzene	541-73-1	BCBZ7498	99%	1,006.7 µg/mL	+/- 36.6251
8	1,4-Dichlorobenzene	106-46-7	MKBS7929V	99%	1,005.6 µg/mL	+/- 36.5867
9	Benzyl alcohol	100-51-6	SHBK5943	99%	1,005.4 µg/mL	+/- 36.5786
10	1,2-Dichlorobenzene	95-50-1	SHBN3835	99%	1,003.9 µg/mL	+/- 36.5240
11	2-Methylphenol (o-cresol)	95-48-7	SHBN7598	99%	1,002.3 µg/mL	+/- 36.4654
12	2,2'-oxybis(1-chloropropane)	108-60-1	230329JLM	99%	1,004.3 µg/mL	+/- 36.5402
13	3-Methylphenol (m-cresol)	108-39-4	STBJ0710	99%	502.1 μg/mL	+/- 18.2671
14	4-Methylphenol (p-cresol)	106-44-5	SHBN3411	99%	501.9 μg/mL	+/- 18.2631
15	N-Nitroso-di-n-propylamine	621-64-7	N63MG	99%	1,004.0 µg/mL	+/- 36.5281
16	Hexachloroethane	67-72-1	QTORH	99%	1,006.1 µg/mL	+/- 36.6029
17	Nitrobenzene	98-95-3	10224044	99%	1,003.1 µg/mL	+/- 36.4957



18	Isophorone	78-59-1	MKCC9506	99%	1,003.8	μg/mL	+/- 36.5220
19	2-Nitrophenol	88-75-5	RP230509C	99%	1,005.8	μg/mL	+/- 36.5948
20	2,4-Dimethylphenol	105-67-9	XW5GK	99%	1,004.2	μg/mL	+/- 36.5341
21	Bis(2-chloroethoxy)methane	111-91-1	13670200	99%	1,006.3	µg/mL	+/- 36.6130
22	2,4-Dichlorophenol	120-83-2	BCBZ6787	99%	1,004.0	µg/mL	+/- 36.5281
23	1,2,4-Trichlorobenzene	120-82-1	SHBM0526	99%	1,007.1	µg/mL	+/- 36.6413
24	Naphthalene	91-20-3	MKCH0219	99%	1,006.7	μg/mL	+/- 36.6271
25	4-Chloroaniline	106-47-8	WXBC4601V	99%	1,005.4	μg/mL	+/- 36.5806
26	Hexachlorobutadiene	87-68-3	X05J	99%	1,006.4	µg/mL	+/- 36.6170
27	4-Chloro-3-methylphenol	59-50-7	BCCD4461	99%	1,004.7	μg/mL	+/- 36.5543
28	2-Methylnaphthalene	91-57-6	STBK0259	96%	1,002.3	μg/mL	+/- 36.4679
29	1-Methylnaphthalene	90-12-0	5234.00-3	99%	1,000.0	μg/mL	+/- 36.3825
30	Hexachlorocyclopentadiene	77-47-4	0012019	99%	1,006.1	µg/mL	+/- 36.6049
31	2,4,6-Trichlorophenol	88-06-2	STBJ5914	99%	1,004.9	μg/mL	+/- 36.5604
32	2,4,5-Trichlorophenol	95-95-4	FHN01	98%	1,006.5	μg/mL	+/- 36.6176
33	2-Chloronaphthalene	91-58-7	RPN7O	99%	1,004.4	μg/mL	+/- 36.5422
34	2-Nitroaniline	88-74-4	RP230509A	99%	1,002.3	µg/mL	+/- 36.4654
35	1,4-Dinitrobenzene	100-25-4	RP230512A	99%	1,001.5	μg/mL	+/- 36.4371
36	Acenaphthylene	208-96-8	L10L	95%	1,003.4	µg/mL	+/- 36.5066
37	1,3-Dinitrobenzene	99-65-0	1-DXX-24-1	99%	1,004.8	µg/mL	+/- 36.5564
38	Dimethylphthalate	131-11-3	10117699	99%	1,004.7	µg/mL	+/- 36.5543
39	2,6-Dinitrotoluene	606-20-2	BCCG1833	99%	1,006.8	μg/mL	+/- 36.6312
40	1,2-Dinitrobenzene	528-29-0	RP230428	99%	1,006.4	µg/mL	+/- 36.6170
41	Acenaphthene	83-32-9	MKCR7169	99%	1,000.0	µg/mL	+/- 36.3825
42	3-Nitroaniline	99-09-2	MKCH5457	99%	1,004.8	μg/mL	+/- 36.5584
43	2,4-Dinitrophenol	51-28-5	DR230417RSR	99%	1,005.8	µg/mL	+/- 36.5948
44	Dibenzofuran	132-64-9	MKCN1772	99%	1,004.3	μg/mL	+/- 36.5402
45	2,4-Dinitrotoluene	121-14-2	MKAA0690V	99%	1,005.8	µg/mL	+/- 36.5928
46	4-Nitrophenol	100-02-7	RP230511A	99%	1,005.8	µg/mL	+/- 36.5948
47	2,3,4,6-Tetrachlorophenol	58-90-2	PR-30126	99%	1,005.9	µg/mL	+/- 36.5988
48	2,3,5,6-Tetrachlorophenol	935-95-5	RP230513	99%	1,004.9	µg/mL	+/- 36.5624
49	Fluorene	86-73-7	10236068	99%	1,005.4	µg/mL	+/- 36.5806
50	4-Chlorophenyl phenyl ether	7005-72-3	MKCQ0984	99%	1,004.3	µg/mL	+/- 36.5382
51	Diethylphthalate	84-66-2	BCCD3396	99%	1,007.1	μg/mL	+/- 36.6392
52	4-Nitroaniline	100-01-6	RP220906	99%	1,005.3	μg/mL	+/- 36.5766
53	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol)	534-52-1	230505JLM	99%	1,003.8	μg/mL	+/- 36.5200



54	Diphenylamine	122-39-4	MKCH1042	99%	1,002.5	µg/mL	+/-	36.4735
55	Azobenzene	103-33-3	BCCG7339	98%	1,003.5	µg/mL	+/-	36.5106
56	4-Bromophenyl phenyl ether	101-55-3	STBH6361	99%	1,005.6	µg/mL	+/-	36.5847
57	Hexachlorobenzene	118-74-1	14257500	99%	1,005.9	μg/mL	+/-	36.5988
58	Pentachlorophenol	87-86-5	RP230504	99%	1,004.2	µg/mL	+/-	36.5362
59	Phenanthrene	85-01-8	MKCQ8876	99%	1,004.1	µg/mL	+/-	36.5321
60	Anthracene	120-12-7	MKCR0570	99%	1,008.3	µg/mL	+/-	36.6857
61	Carbazole	86-74-8	14351100	99%	1,005.1	µg/mL	+/-	36.5665
62	Di-n-butylphthalate	84-74-2	MKCN4337	99%	1,006.4	µg/mL	+/-	36.6170
63	Fluoranthene	206-44-0	MKCQ4728	99%	1,003.7	µg/mL	+/-	36.5159
64	Pyrene	129-00-0	BCCG7845	99%	1,004.3	µg/mL	+/-	36.5382
65	Benzyl butyl phthalate	85-68-7	X12I018	99%	1,003.4	µg/mL	+/-	36.5058
66	Bis(2-ethylhexyl)adipate	103-23-1	MKCM1988	99%	1,003.4	µg/mL	+/-	36.5079
67	Benz(a)anthracene	56-55-3	0012022BAA	97%	1,004.9	µg/mL	+/-	36.5624
68	Chrysene	218-01-9	RP230512B	99%	1,006.2	µg/mL	+/-	36.6089
69	Bis(2-ethylhexyl)phthalate	117-81-7	MKCQ3468	99%	1,003.8	µg/mL	+/-	36.5220
70	Di-n-octyl phthalate	117-84-0	13994100	99%	1,004.2	µg/mL	+/-	36.5341
71	Benzo(b)fluoranthene	205-99-2	012013B	99%	1,008.4	µg/mL	+/-	36.6877
72	Benzo(k)fluoranthene	207-08-9	012022K	99%	1,004.1	µg/mL	+/-	36.5301
73	Benzo(a)pyrene	50-32-8	J6IUE	99%	1,006.4	µg/mL	+/-	36.6170
74	Indeno(1,2,3-cd)pyrene	193-39-5	12-JKL-118-9	97%	1,002.0	µg/mL	+/-	36.4557
75	Dibenz(a,h)anthracene	53-70-3	ER032211-01	99%	1,006.1	µg/mL	+/-	36.6029
75	())							

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

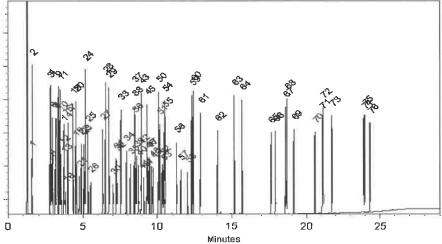
 Solvent:
 Methylene chloride

 CAS #
 75-09-2

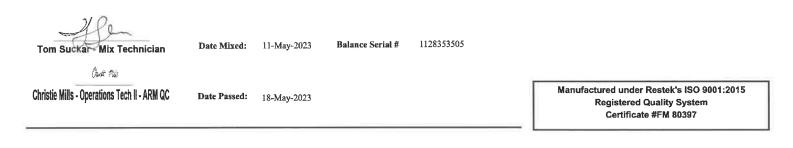
 Purity
 99%



Column: 30m x 0.25mm x 0.25µm Rtx-5 (cat.#10223) Carrier Gas: hydrogen-constant flow 1.8 mL/min. Temp. Program: P 80°C (hold 0.1 min.) to 330°C @ 9.6°C/min. (hold 2.86 min.) Inj. Temp: 250°C Det. Temp: 340°C Det. Type: FID Split Vent: 100 ml/min. Inj. Vol 1µl D 5



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







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## **CERTIFIED REFERENCE MATERIAL**

## **Certificate of Analysis**

chromatographic plus



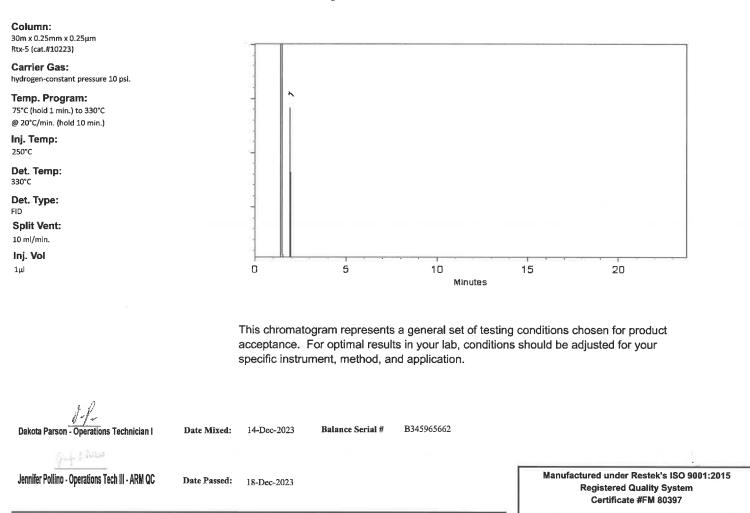
#### FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE. This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed. 511929 RC V 12/21/23 512012 12/21/23 Lot No.: A0205496 31046 Catalog No. : Pyridine-d5 Mix **Description :** Pyridine-d5 2000µg/mL, Methylene Chloride, 1mL/ampul Container Size : > 1 mL 2 mL Pkg Amt: **Expiration Date :** September 30, 2027 10°C or colder Storage: Ship: Ambient

#### CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Pyridine-d5	7291-22-7	M-317	99%	2,008.4 µg/mL	+/- 32.8508

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









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## **CERTIFIED REFERENCE MATERIAL**

## **Certificate of Analysis**

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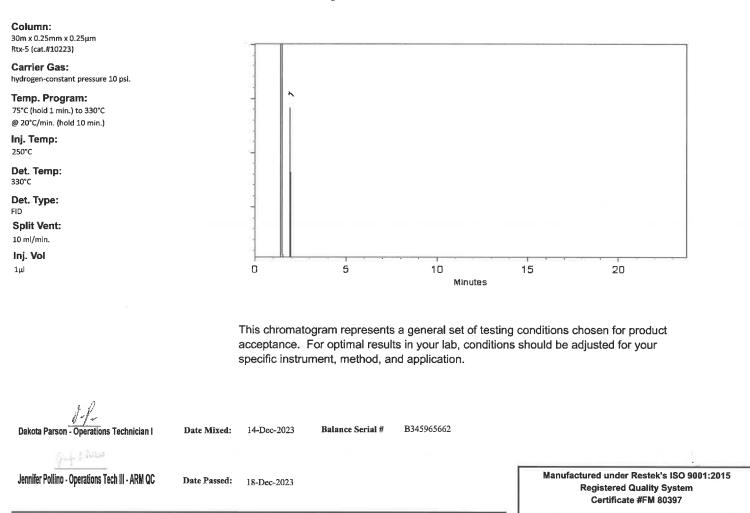
#### FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE. This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed. 511929 RC V 12/21/23 512012 12/21/23 Lot No.: A0205496 31046 Catalog No. : Pyridine-d5 Mix **Description :** Pyridine-d5 2000µg/mL, Methylene Chloride, 1mL/ampul Container Size : > 1 mL 2 mL Pkg Amt: **Expiration Date :** September 30, 2027 10°C or colder Storage: Ship: Ambient

#### CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Pyridine-d5	7291-22-7	M-317	99%	2,008.4 µg/mL	+/- 32.8508

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









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

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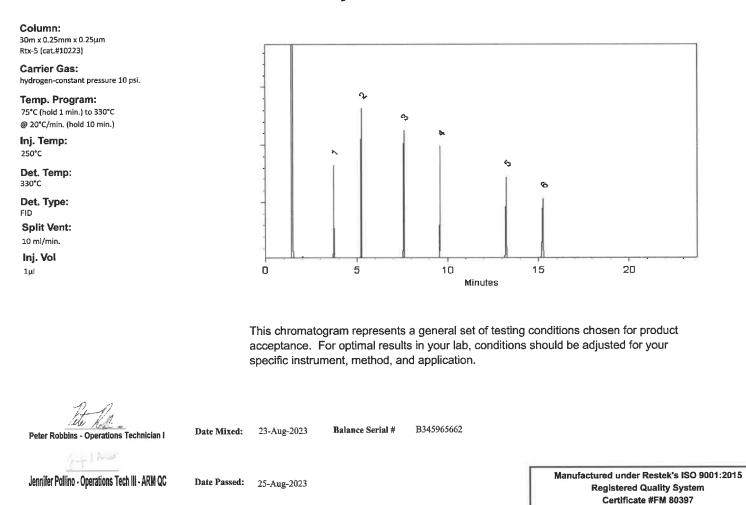
Catalog No. :	31206	Lot No.:	A0201320	
<b>Description</b> :	SV Internal Standard Mix 2mg/ml	512013 pr		
	SV Internal Standard Mix 2mg/ml 2 1mL/ampul	V ( XC 12/26/23		
Container Size :	2 mL	Pkg Amt:	> 1 mL	512042 12/26/23
Expiration Date :	July 31, 2029	Storage:	10°C or colder	
Handling:	Sonication required. Mix is photosensitive.	Ship:	Ambient	

#### CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,4-Dichlorobenzene-d4	3855-82-1	PR-30447	99%	2,017.0 μg/mL	+/- 90.8469
2	Naphthalene-d8	1146-65-2	M-2180	99%	2,011.3 µg/mL	+/- 90.5917
3	Acenaphthene-d10	15067-26-2	PR-33507	99%	2,008.6 µg/mL	+/- 90.4685
4	Phenanthrene-d10	1517-22-2	PR-32303	99%	2,019.4 µg/mL	+/- 90.9550
5	Chrysene-d12	1719-03-5	PR-32210	99%	2,013.7 µg/mL	+/- 90.6968
6	Perylene-d12	1520-96-3	PR-33205	99%	2,012.7 μg/mL	+/- 90.6517

Solvent: Methylene chloride CAS # 75-09-2 Purity 99% \* Expanded Uncertainty displayed in same units as Grav. Conc.









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## **CERTIFIED REFERENCE MATERIAL**

## **Certificate of Analysis**

chromatographic plus



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

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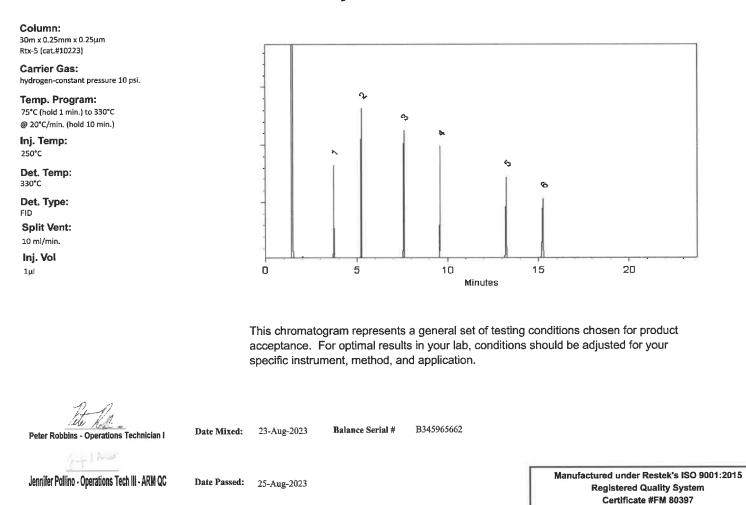
Catalog No. :	31206	Lot No.:	A0201320	
<b>Description</b> :	SV Internal Standard Mix 2mg/ml	512013 pr		
	SV Internal Standard Mix 2mg/ml 2 1mL/ampul	V ( XC 12/26/23		
Container Size :	2 mL	Pkg Amt:	> 1 mL	512042 12/26/23
Expiration Date :	July 31, 2029	Storage:	10°C or colder	
Handling:	Sonication required. Mix is photosensitive.	Ship:	Ambient	

#### CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,4-Dichlorobenzene-d4	3855-82-1	PR-30447	99%	2,017.0 μg/mL	+/- 90.8469
2	Naphthalene-d8	1146-65-2	M-2180	99%	2,011.3 µg/mL	+/- 90.5917
3	Acenaphthene-d10	15067-26-2	PR-33507	99%	2,008.6 µg/mL	+/- 90.4685
4	Phenanthrene-d10	1517-22-2	PR-32303	99%	2,019.4 µg/mL	+/- 90.9550
5	Chrysene-d12	1719-03-5	PR-32210	99%	2,013.7 µg/mL	+/- 90.6968
6	Perylene-d12	1520-96-3	PR-33205	99%	2,012.7 μg/mL	+/- 90.6517

Solvent: Methylene chloride CAS # 75-09-2 Purity 99% \* Expanded Uncertainty displayed in same units as Grav. Conc.







Part # 98495 800-368-1131 CERTIFIED WEIGHT REPORT www.absolutestandards.com Absolute Standards, Inc. 290°C. Split Ratio = 100:1, Scan Rate = 2. Analysis performed by Candice Warren. Method GC7MSD-1.M: Column: SPB-608 (30m X 0.25mm ID X 0.25mm film thickness) Temp 1 = 150°C (4min.), Temp 2 = 290°C (13.5 min.), Rate = 8°C/min., Injector B= 200°C, Detector B = Pentachlorobenzene Compound Weight(s) shown below were combined and diluted to (mL): Time-> P 696969 1000001 100000 1200000 1308080 106000 200000 300000 400000 000008 900000 3400000 550000 100000 500000 700000 Nominal Concentration (µg/mL): 5.00 Recommended Storage: Lot # 111722 10.00 Expiration Date NIST Test ID#: Part Number: Lot Number: Description: All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.
 Uncertainty Reference: Taylor, B.N. and Kuyal, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," 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 (+t/-) 0.5% of the stated value, unless otherwise stated. NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994). 15,00 TIC: [8594]70321.0 321 RM# **6UTB** 5000 98495 Pentachlorobenzene 111722 Refrigerate (4 °C) 111727 2705100 28.03 Number 5 Conc (µg/mL) 25.05 5000 Nominal 30.0 0.0003 Flask Uncertainty 99.5 Purity 5E-05 Balance Uncertainty 8 30.80 **Certified Reference Material CRM** Uncertainty Purity 0.5 Methylene chloride C21F09CAS0000DCM Solvent(s): 0.15084 Weight(g) Target 1 of 1 m/2-> 0 -Abundance 300000 200000 133000 100000 150000 20005 0.15092 Weight(g) 8 Actual Lot# -6 Ä 10 Conc (µg/mL) (+/-) (µg/mL) 5002.8 Actual 5 Uncertainty 200 Expanded Reviewed By: ormulated By: Scan 347 (7.855 min): [8584]70321.D 50.4 10 250 608-93-5 276 SDS Information (Solvent Safety Info. On Attached pg.) CAS# techo 30 305 Pedro L. Rentas Prashant Chauhan 202 350 摇 **OSHA PEL (TWA)** le va NIA 0 here 48 Printed: 12/29/2023, 2:56:17 PM 1or 8 467 https://Absolutestandards.com orl-rat 1080mg/kg ANAB ISO 17034 Accredited AR-1539 Certificate Number 50 498 517 536 LD50 111722 DATE 111722 DATE 512073 01/23/24



5580 Skylane Blvd Santa Rosa, CA 95403

(707)525-5788 (800)878-7654 Toll Free (707)545-7901 Fax Manufacturer's Quality System Audited & Registered by TUV USA to ISO 9001:2015

Date Received:

Certificate of Analysis Rev 0 Page 1 of 1

Catalog No.: Lot No.:	Storage:	Solvent:	Exp. Date:	e: Description:		ption:
Z-110816-01 414127	≤-10 °C	Methylene Chloride	6/21/2025	Custom 8270 Mix, 4-79, 1000 mg/L, 1 mL		
Compo	und	CAS No.	. Purit	y (%)	Compound Lot No.	Concentration, mg/L
atrazine		1912-24-9	99	0.5	337.7.3P	997 ± 5.81
benzidine		92-87-5	99	9.9	124.18.6.2P	$991.8 \pm 5.77$
caprolactam		105-60-2	99	9.9	271.1.6P	999 ± 5.82

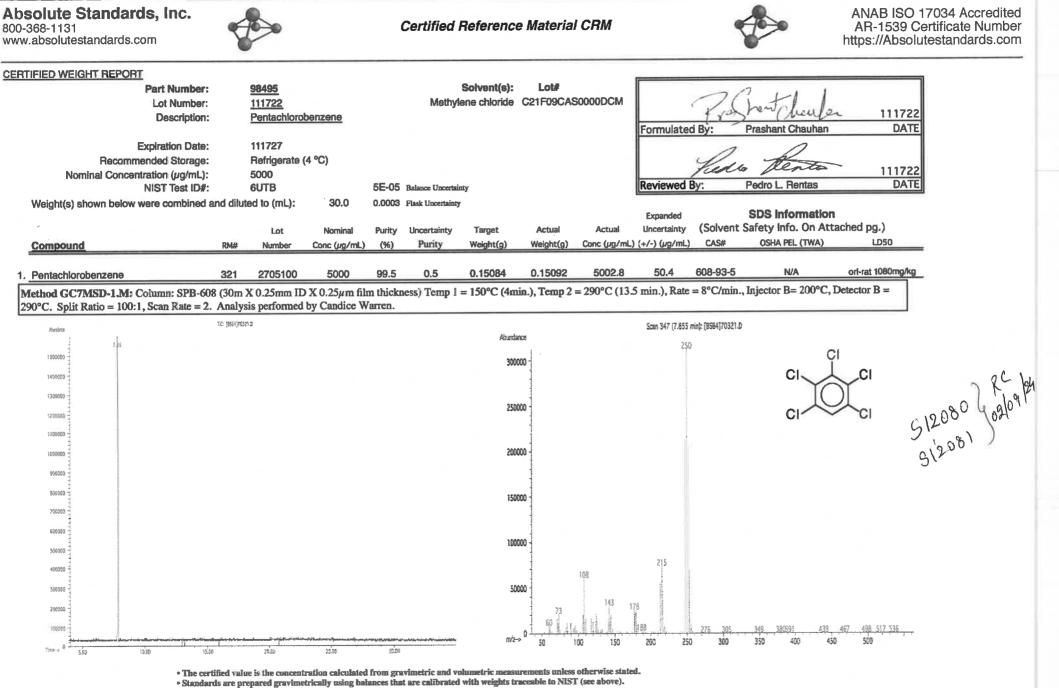
S12075 ) RC J J J 02/01/24

\*Not a certified value

Manufactured by o2si smart solutions, Accredited to ISO 9001:2008 by NSF and ISO/IEC 17025:2005 (Certification No. 3031.01) and ISO Guide 34:2009 (Certification No. 3031.02) by A2LA

Certified By:

Shane Overcash Chemist All weights are traceable through N. I. S. T. Test No. 822/264157-00. Concentration (correct for purity) and uncertainty (95% confidence) values listed are determined gravimetriclly.



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).



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## **CERTIFIED REFERENCE MATERIAL**



gravimetric



Testing Laboratory Certificate #3222.02

## 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. :	555224	Lot No.:	A0207706	
<b>Description</b> :	Custom 8270 Plus Standard #	512082 7 RC/		
	Custom 8270 Plus Standard # 1mL/ampul	512111 ) 02/22/24		
Container Size :	2 mL	Pkg Amt:	> 1 mL	512111 ) 00100101
Expiration Date :	February 28, 2026	Storage:	10°C or colder	
		Ship:	Ambient	

#### CERTIFIED VALUES

Componen t#	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	1,2,4,5-Tetrachlorobenzene	95-94-3	MKCT9480	99%	1,001.0 µg/mL	+/- 29.424320
2	Acetophenone	98-86-2	STBH8205	99%	1,004.0 µg/mL	+/- 29.512504
3	Benzaldehyde	100-52-7	RD231129RSRA	99%	1,005.0 μg/mL	+/- 29.541899
4	Benzoic acid	65-85-0	MKCR2694	99%	1,003.0 µg/mL	+/- 29.483110
5	Biphenyl	92-52-4	MKCL6515	99%	1,006.0 µg/mL	+/- 29.571294

Solvent: Methylene chloride 75-09-2 CAS# Purity 99%

Ma Futti

12-Feb-2024

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

John Friedline - Operations Technician I

Date Mixed:

Balance: B345965662

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## **CERTIFIED REFERENCE MATERIAL**



gravimetric



Testing Laboratory Certificate #3222.02

## 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. :	555224	Lot No.:	A0207706	
<b>Description</b> :	Custom 8270 Plus Standard #	2		512082 7 RC/
	Custom 8270 Plus Standard # 1mL/ampul	512111 ) 02/22/24		
Container Size :	2 mL	Pkg Amt:	> 1 mL	512111 ) 00100101
Expiration Date :	February 28, 2026	Storage:	10°C or colder	
		Ship:	Ambient	

#### CERTIFIED VALUES

Componen t#	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	1,2,4,5-Tetrachlorobenzene	95-94-3	MKCT9480	99%	1,001.0 µg/mL	+/- 29.424320
2	Acetophenone	98-86-2	STBH8205	99%	1,004.0 µg/mL	+/- 29.512504
3	Benzaldehyde	100-52-7	RD231129RSRA	99%	1,005.0 μg/mL	+/- 29.541899
4	Benzoic acid	65-85-0	MKCR2694	99%	1,003.0 µg/mL	+/- 29.483110
5	Biphenyl	92-52-4	MKCL6515	99%	1,006.0 µg/mL	+/- 29.571294

Solvent: Methylene chloride 75-09-2 CAS# Purity 99%

Ma Futti

12-Feb-2024

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

John Friedline - Operations Technician I

Date Mixed:

Balance: B345965662

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## **CERTIFIED REFERENCE MATERIAL**



gravimetric



Testing Laboratory Certificate #3222.02

## 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. :	555224	Lot No.:	A0207706	
<b>Description</b> :	Custom 8270 Plus Standard #	2		512082 7 RC/
	Custom 8270 Plus Standard # 1mL/ampul	512111 ) 02/22/24		
Container Size :	2 mL	Pkg Amt:	> 1 mL	512111 ) 00100101
Expiration Date :	February 28, 2026	Storage:	10°C or colder	
		Ship:	Ambient	

#### CERTIFIED VALUES

Componen t#	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	1,2,4,5-Tetrachlorobenzene	95-94-3	MKCT9480	99%	1,001.0 µg/mL	+/- 29.424320
2	Acetophenone	98-86-2	STBH8205	99%	1,004.0 µg/mL	+/- 29.512504
3	Benzaldehyde	100-52-7	RD231129RSRA	99%	1,005.0 μg/mL	+/- 29.541899
4	Benzoic acid	65-85-0	MKCR2694	99%	1,003.0 µg/mL	+/- 29.483110
5	Biphenyl	92-52-4	MKCL6515	99%	1,006.0 µg/mL	+/- 29.571294

Solvent: Methylene chloride 75-09-2 CAS# Purity 99%

Ma Futti

12-Feb-2024

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

John Friedline - Operations Technician I

Date Mixed:

Balance: B345965662

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## **CERTIFIED REFERENCE MATERIAL**



gravimetric



Testing Laboratory Certificate #3222.02

## 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. :	555224	Lot No.:	A0207706	
<b>Description</b> :	Custom 8270 Plus Standard #	512082 7 RC/		
	Custom 8270 Plus Standard # 1mL/ampul	512111 ) 02/22/24		
Container Size :	2 mL	Pkg Amt:	> 1 mL	512111 ) 00100101
Expiration Date :	February 28, 2026	Storage:	10°C or colder	
		Ship:	Ambient	

### CERTIFIED VALUES

Componen t#	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	1,2,4,5-Tetrachlorobenzene	95-94-3	MKCT9480	99%	1,001.0 µg/mL	+/- 29.424320
2	Acetophenone	98-86-2	STBH8205	99%	1,004.0 µg/mL	+/- 29.512504
3	Benzaldehyde	100-52-7	RD231129RSRA	99%	1,005.0 μg/mL	+/- 29.541899
4	Benzoic acid	65-85-0	MKCR2694	99%	1,003.0 µg/mL	+/- 29.483110
5	Biphenyl	92-52-4	MKCL6515	99%	1,006.0 µg/mL	+/- 29.571294

Solvent: Methylene chloride 75-09-2 CAS# Purity 99%

Ma Futti

12-Feb-2024

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

John Friedline - Operations Technician I

Date Mixed:

Balance: B345965662

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## **CERTIFIED REFERENCE MATERIAL**



gravimetric



Testing Laboratory Certificate #3222.02

## 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. :	555224	Lot No.:	A0207706	
<b>Description</b> :	Custom 8270 Plus Standard #	512082 7 RC/		
	Custom 8270 Plus Standard # 1mL/ampul	512111 ) 02/22/24		
Container Size :	2 mL	Pkg Amt:	> 1 mL	512111 ) 00100101
Expiration Date :	February 28, 2026	Storage:	10°C or colder	
		Ship:	Ambient	

### CERTIFIED VALUES

Componen t#	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	1,2,4,5-Tetrachlorobenzene	95-94-3	MKCT9480	99%	1,001.0 µg/mL	+/- 29.424320
2	Acetophenone	98-86-2	STBH8205	99%	1,004.0 µg/mL	+/- 29.512504
3	Benzaldehyde	100-52-7	RD231129RSRA	99%	1,005.0 μg/mL	+/- 29.541899
4	Benzoic acid	65-85-0	MKCR2694	99%	1,003.0 µg/mL	+/- 29.483110
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Solvent: Methylene chloride 75-09-2 CAS# Purity 99%

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Expiration Date :	February 28, 2026	Storage:	10°C or colder	
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### CERTIFIED VALUES

Componen t#	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
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Solvent: Methylene chloride 75-09-2 CAS# Purity 99%

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Solvent: Methylene chloride 75-09-2 CAS# Purity 99%

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12-Feb-2024

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

John Friedline - Operations Technician I

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Solvent: Methylene chloride 75-09-2 CAS# Purity 99%

Ma Futti

12-Feb-2024

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

John Friedline - Operations Technician I

Date Mixed:

Balance: B345965662

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gravimetric



Testing Laboratory Certificate #3222.02

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3	Benzaldehyde	100-52-7	RD231129RSRA	99%	1,005.0 μg/mL	+/- 29.541899
4	Benzoic acid	65-85-0	MKCR2694	99%	1,003.0 µg/mL	+/- 29.483110
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Solvent: Methylene chloride 75-09-2 CAS# Purity 99%

Ma Futti

12-Feb-2024

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

John Friedline - Operations Technician I

Date Mixed:

Balance: B345965662

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5580 Skylane Blvd Santa Rosa, CA 95403

(707)525-5788 (800)878-7654 Toll Free (707)545-7901 Fax Manufacturer's Quality System Audited & Registered by TUV USA to ISO 9001:2015

Date Received:\_

**Certificate of Analysis** Rev 0 Page 1 of 1 Solvent: Exp. Date: Catalog No.: Lot No.: **Storage: Description:** 1,4-Dioxane Solution, 2000 mg/L, 6/10/2026 Z-020223-01 454157 ≤-10 °C P/T Methanol 1 mL Compound CAS No. Purity (%) **Compound Lot No.** Concentration, mg/L 123-91-1 100 1,4-dioxane 223.1.3P 1997 ± 57.08

512112 ] RC/ V ] 03/08/24

\*Not a certified value

Melson Ubr

Certified By:

Melissa Workoff Chemist All weights are traceable through N. I. S. T. Test No. 822/264157-00. Concentration (correct for purity) and uncertainty (95% confidence) values listed are determined gravimetriclly.



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# **CERTIFIED REFERENCE MATERIAL**

# **Certificate of Analysis**

chromatographic plus



hand

ISO/IEC 17025 Accred Testing Laboratory Certificate #3222.02

## 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. :	31850	Lot No.: <u>A020372</u>	6	6121177 Rc/
Description :	8270 MegaMix®			Juit
	8270 MegaMix® 500-1000 μg/mL, I	اد	1 03/18/24	
Container Size :	2 mL	Pkg Amt: > 1 mL		512146
Expiration Date :	April 30, 2025	Storage: 0°C or co	lder	5/2/40
Handling:	Sonication required. Mix is photosensitive.	Ship: Ambient		

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Pyridine	110-86-1	SHBP6240	99%	1,001.6 µg/mL	+/- 36.4412
2	N-Nitrosodimethylamine	62-75-9	230209JLM	99%	1,005.9 µg/mL	+/- 36.5968
3	Phenol	108-95-2	MKCK1120	99%	1,003.3 µg/mL	+/- 36.5038
4	Aniline	62-53-3	X22F726	99%	1,005.8 μg/mL	+/- 36.5928
5	Bis(2-chloroethyl)ether	111-44-4	SHBL6942	99%	1,008.1 μg/mL	+/- 36.6776
6	2-Chlorophenol	95-57-8	STBJ3909	99%	1,001.8 µg/mL	+/- 36.4492
7	1,3-Dichlorobenzene	541-73-1	BCCD5315	99%	1,002.3 µg/mL	+/- 36.4654
8	1,4-Dichlorobenzene	106-46-7	MKBS7929V	99%	1,003.7 µg/mL	+/- 36.5159
9	Benzyl alcohol	100-51-6	SHBK5469	99%	1,008.7 µg/mL	+/- 36.6979
10	1,2-Dichlorobenzene	95-50-1	SHBN3835	99%	1,000.3 µg/mL	+/- 36.3926
11	2-Methylphenol (o-cresol)	95-48-7	SHBN7598	99%	1,003.5 µg/mL	+/- 36.5099
12	2,2'-oxybis(1-chloropropane)	108-60-1	29-MAR-45-5	99%	1,007.3 µg/mL	+/- 36.6493
13	3-Methylphenol (m-cresol)	108-39-4	STBJ0710	99%	504.3 µg/mL	+/- 18.3500
14	4-Methylphenol (p-cresol)	106-44-5	SHBN3411	99%	503.6 µg/mL	+/- 18.3237
15	N-Nitroso-di-n-propylamine	621-64-7	N63MG	99%	1,008.3 µg/mL	+/- 36.6857
16	Hexachloroethane	67-72-1	QTORH	99%	1,007.5 µg/mL	+/- 36.6554
17	Nitrobenzene	98-95-3	10224044	99%	1,008.6 µg/mL	+/- 36.6938

18	Isophorone	78-59-1	MKCC9506	99%	1,005.9	µg/mL	+/- 36.5988
19	2-Nitrophenol	88-75-5	RP230710	99%	1,003.2	μg/mL	+/- 36.4998
20	2,4-Dimethylphenol	105-67-9	XW5GK	99%	1,003.8	µg/mL	+/- 36.5200
21	Bis(2-chloroethoxy)methane	111-91-1	13670200	99%	1,002.1	µg/mL	+/- 36.4573
22	2,4-Dichlorophenol	120-83-2	BCBZ6787	99%	1,003.7	µg/mL	+/- 36.5180
23	1,2,4-Trichlorobenzene	120-82-1	SHBP5900	99%	1,007.6	μg/mL	+/- 36.6574
24	Naphthalene	91-20-3	STBL1057	99%	1,008.3	µg/mL	+/- 36.6837
25	4-Chloroaniline	106-47-8	BCCJ3217	99%	1,001.3	µg/mL	+/- 36.4290
26	Hexachlorobutadiene	87-68-3	RP230823RSR	98%	1,008.3	µg/mL	+/- 36.6829
27	4-Chloro-3-methylphenol	59-50-7	BCCD4461	99%	1,003.1	µg/mL	+/- 36.4937
28	2-Methylnaphthalene	91-57-6	STBK0259	96%	1,001.9	µg/mL	+/- 36.4505
29	1-Methylnaphthalene	90-12-0	5234.00-8	98%	1,000.0	µg/mL	+/- 36.3838
30	Hexachlorocyclopentadiene	77-47-4	099063I14L	98%	1,008.5	µg/mL	+/- 36.6909
31	2,4,6-Trichlorophenol	88-06-2	STBJ5914	99%	1,004.4	µg/mL	+/- 36.5442
32	2,4,5-Trichlorophenol	95-95-4	FHN01	98%	1,001.9	µg/mL	+/- 36.4512
33	2-Chloronaphthalene	91-58-7	RPN7O	99%	1,001.1	µg/mL	+/- 36.4230
34	2-Nitroaniline	88-74-4	RP230531	99%	1,002.9	µg/mL	+/- 36.4876
35	1,4-Dinitrobenzene	100-25-4	RP230816	99%	1,005.7	µg/mL	+/- 36.5887
36	Acenaphthylene	208-96-8	p06V	98%	1,009.5	µg/mL	+/- 36.7265
37	1,3-Dinitrobenzene	99-65-0	1-DXX-24-1	99%	1,004.4	µg/mL	+/- 36.5422
38	Dimethylphthalate	131-11-3	358221L17K	99%	1,005.9	µg/mL	+/- 36.5968
39	2,6-Dinitrotoluene	606-20-2	BCCG1833	99%	1,003.2	µg/mL	+/- 36.4998
40	1,2-Dinitrobenzene	528-29-0	RP230428	99%	1,002.2	µg/mL	+/- 36.4634
41	Acenaphthene	83-32-9	MKCR7169	99%	1,009.3	µg/mL	+/- 36.7221
42	3-Nitroaniline	99-09-2	RP230822RSR	99%	1,003.9	µg/mL	+/- 36.5240
43	2,4-Dinitrophenol	51-28-5	DR230417RSR	99%	1,002.0	µg/mL	+/- 36.4553
44	Dibenzofuran	132-64-9	MKCD9952	99%	1,006.7	µg/mL	+/- 36.6251
45	2,4-Dinitrotoluene	121-14-2	MKAA0690V	99%	1,003.8	µg/mL	+/- 36.5220
46	4-Nitrophenol	100-02-7	RP230627	99%	1,002.3	μg/mL	+/- 36.4674
47	2,3,4,6-Tetrachlorophenol	58-90-2	PR-30126	99%	1,008.7	µg/mL	+/- 36.6979
48	2,3,5,6-Tetrachlorophenol	935-95-5	RP230919	99%	1,006.3	μg/mL	+/- 36.6130
49	Fluorene	86-73-7	10241100	99%	1,008.3	µg/mL	+/- 36.6857
50	4-Chlorophenyl phenyl ether	7005-72-3	MKCT7248	99%	1,003.8	µg/mL	+/- 36.5220
51	Diethylphthalate	84-66-2	MKCD2547	99%	1,008.6	µg/mL	+/- 36.6958
52	4-Nitroaniline	100-01-6	RP230111	99%	1,001.1	µg/mL	+/- 36.4230
53	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol)	534-52-1	230718JLM	99%	1,002.0	ug/mL	+/- 36.4553

54	Diphenylamine	122-39-4	MKCH1042	99%	1,002.3	µg/mL	+/- 36.4674
55	Azobenzene	103-33-3	BCCK0887	99%	1,005.8	µg/mL	+/- 36.5928
56	4-Bromophenyl phenyl ether	101-55-3	STBH6361	99%	1,003.0	µg/mL	+/- 36.4917
57	Hexachlorobenzene	118-74-1	14821700	99%	1,007.5	µg/mL	+/- 36.6554
58	Pentachlorophenol	87-86-5	RP230530RSR	99%	1,008.8	μg/mL	+/- 36.7019
59	Phenanthrene	85-01-8	MKCQ8876	99%	1,008.4	µg/mL	+/- 36.6877
60	Anthracene	120-12-7	MKCR0570	99%	1,009.0	µg/mL	+/- 36.7100
61	Carbazole	86-74-8	14351100	99%	1,000.9	µg/mL	+/- 36.4149
62	Di-n-butylphthalate	84-74-2	MKCN4337	99%	1,007.6	µg/mL	+/- 36.6595
63	Fluoranthene	206-44-0	MKCQ4728	99%	1,009.6	μg/mL	+/- 36.7302
64	Рутепе	129-00-0	BCCG8479	98%	1,007.2	µg/mL	+/- 36.6453
65	Benzyl butyl phthalate	85-68-7	X12I018	99%	1,002.1	μg/mL	+/- 36.4573
66	Bis(2-ethylhexyl)adipate	103-23-1	MKCM1988	99%	1,005.2	µg/mL	+/- 36.5705
67	Benz(a)anthracene	56-55-3	I220012022BAA	99%	1,002.2	µg/mL	+/- 36.4614
68	Chrysene	218-01-9	RP230601	99%	1,008.3	μg/mL	+/- 36.6837
69	Bis(2-ethylhexyl)phthalate	117-81-7	MKCQ3468	99%	1,001.8	µg/mL	+/- 36.4472
70	Di-n-octyl phthalate	117-84-0	14382700	99%	1,006.0	µg/mL	+/- 36.6008
71	Benzo(b)fluoranthene	205-99-2	012013B	99%	1,002.8	µg/mL	+/- 36.4836
72	Benzo(k)fluoranthene	207-08-9	012022K	99%	1,003.0	µg/mL	+/- 36.4917
73	Benzo(a)pyrene	50-32-8	P54915-0703	99%	1,002.3	µg/mL	+/- 36.4674
74	Indeno(1,2,3-cd)pyrene	193-39-5	12-JKL-118-9	97%	1,009.4	µg/mL	+/- 36.7243
75	Dibenz(a,h)anthracene	53-70-3	2-ASA-59-1	99%	1,007.6	µg/mL	+/- 36.6595
76	Benzo(g,h,i)perylene	191-24-2	RP231003RSR	99%	1,002.9	µg/mL	+/- 36.4876



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# **CERTIFIED REFERENCE MATERIAL**

# **Certificate of Analysis**

chromatographic plus



hand

ISO/IEC 17025 Accred Testing Laboratory Certificate #3222.02

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Catalog No. :	31850	Lot No.: <u>A020372</u>	6	6121177 Rc/
Description :	8270 MegaMix®			Juit
	8270 MegaMix® 500-1000 μg/mL, I	اد	1 03/18/24	
Container Size :	2 mL	Pkg Amt: > 1 mL		512146
Expiration Date :	April 30, 2025	Storage: 0°C or co	lder	5/2/40
Handling:	Sonication required. Mix is photosensitive.	Ship: Ambient		

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Pyridine	110-86-1	SHBP6240	99%	1,001.6 µg/mL	+/- 36.4412
2	N-Nitrosodimethylamine	62-75-9	230209JLM	99%	1,005.9 µg/mL	+/- 36.5968
3	Phenol	108-95-2	MKCK1120	99%	1,003.3 µg/mL	+/- 36.5038
4	Aniline	62-53-3	X22F726	99%	1,005.8 μg/mL	+/- 36.5928
5	Bis(2-chloroethyl)ether	111-44-4	SHBL6942	99%	1,008.1 μg/mL	+/- 36.6776
6	2-Chlorophenol	95-57-8	STBJ3909	99%	1,001.8 µg/mL	+/- 36.4492
7	1,3-Dichlorobenzene	541-73-1	BCCD5315	99%	1,002.3 µg/mL	+/- 36.4654
8	1,4-Dichlorobenzene	106-46-7	MKBS7929V	99%	1,003.7 µg/mL	+/- 36.5159
9	Benzyl alcohol	100-51-6	SHBK5469	99%	1,008.7 µg/mL	+/- 36.6979
10	1,2-Dichlorobenzene	95-50-1	SHBN3835	99%	1,000.3 µg/mL	+/- 36.3926
11	2-Methylphenol (o-cresol)	95-48-7	SHBN7598	99%	1,003.5 µg/mL	+/- 36.5099
12	2,2'-oxybis(1-chloropropane)	108-60-1	29-MAR-45-5	99%	1,007.3 µg/mL	+/- 36.6493
13	3-Methylphenol (m-cresol)	108-39-4	STBJ0710	99%	504.3 µg/mL	+/- 18.3500
14	4-Methylphenol (p-cresol)	106-44-5	SHBN3411	99%	503.6 µg/mL	+/- 18.3237
15	N-Nitroso-di-n-propylamine	621-64-7	N63MG	99%	1,008.3 µg/mL	+/- 36.6857
16	Hexachloroethane	67-72-1	QTORH	99%	1,007.5 µg/mL	+/- 36.6554
17	Nitrobenzene	98-95-3	10224044	99%	1,008.6 µg/mL	+/- 36.6938

18	Isophorone	78-59-1	MKCC9506	99%	1,005.9	µg/mL	+/- 36.5988
19	2-Nitrophenol	88-75-5	RP230710	99%	1,003.2	μg/mL	+/- 36.4998
20	2,4-Dimethylphenol	105-67-9	XW5GK	99%	1,003.8	µg/mL	+/- 36.5200
21	Bis(2-chloroethoxy)methane	111-91-1	13670200	99%	1,002.1	µg/mL	+/- 36.4573
22	2,4-Dichlorophenol	120-83-2	BCBZ6787	99%	1,003.7	µg/mL	+/- 36.5180
23	1,2,4-Trichlorobenzene	120-82-1	SHBP5900	99%	1,007.6	μg/mL	+/- 36.6574
24	Naphthalene	91-20-3	STBL1057	99%	1,008.3	µg/mL	+/- 36.6837
25	4-Chloroaniline	106-47-8	BCCJ3217	99%	1,001.3	µg/mL	+/- 36.4290
26	Hexachlorobutadiene	87-68-3	RP230823RSR	98%	1,008.3	µg/mL	+/- 36.6829
27	4-Chloro-3-methylphenol	59-50-7	BCCD4461	99%	1,003.1	µg/mL	+/- 36.4937
28	2-Methylnaphthalene	91-57-6	STBK0259	96%	1,001.9	µg/mL	+/- 36.4505
29	1-Methylnaphthalene	90-12-0	5234.00-8	98%	1,000.0	µg/mL	+/- 36.3838
30	Hexachlorocyclopentadiene	77-47-4	099063I14L	98%	1,008.5	µg/mL	+/- 36.6909
31	2,4,6-Trichlorophenol	88-06-2	STBJ5914	99%	1,004.4	µg/mL	+/- 36.5442
32	2,4,5-Trichlorophenol	95-95-4	FHN01	98%	1,001.9	µg/mL	+/- 36.4512
33	2-Chloronaphthalene	91-58-7	RPN7O	99%	1,001.1	µg/mL	+/- 36.4230
34	2-Nitroaniline	88-74-4	RP230531	99%	1,002.9	µg/mL	+/- 36.4876
35	1,4-Dinitrobenzene	100-25-4	RP230816	99%	1,005.7	µg/mL	+/- 36.5887
36	Acenaphthylene	208-96-8	p06V	98%	1,009.5	µg/mL	+/- 36.7265
37	1,3-Dinitrobenzene	99-65-0	1-DXX-24-1	99%	1,004.4	µg/mL	+/- 36.5422
38	Dimethylphthalate	131-11-3	358221L17K	99%	1,005.9	µg/mL	+/- 36.5968
39	2,6-Dinitrotoluene	606-20-2	BCCG1833	99%	1,003.2	µg/mL	+/- 36.4998
40	1,2-Dinitrobenzene	528-29-0	RP230428	99%	1,002.2	µg/mL	+/- 36.4634
41	Acenaphthene	83-32-9	MKCR7169	99%	1,009.3	µg/mL	+/- 36.7221
42	3-Nitroaniline	99-09-2	RP230822RSR	99%	1,003.9	µg/mL	+/- 36.5240
43	2,4-Dinitrophenol	51-28-5	DR230417RSR	99%	1,002.0	µg/mL	+/- 36.4553
44	Dibenzofuran	132-64-9	MKCD9952	99%	1,006.7	µg/mL	+/- 36.6251
45	2,4-Dinitrotoluene	121-14-2	MKAA0690V	99%	1,003.8	µg/mL	+/- 36.5220
46	4-Nitrophenol	100-02-7	RP230627	99%	1,002.3	μg/mL	+/- 36.4674
47	2,3,4,6-Tetrachlorophenol	58-90-2	PR-30126	99%	1,008.7	µg/mL	+/- 36.6979
48	2,3,5,6-Tetrachlorophenol	935-95-5	RP230919	99%	1,006.3	μg/mL	+/- 36.6130
49	Fluorene	86-73-7	10241100	99%	1,008.3	µg/mL	+/- 36.6857
50	4-Chlorophenyl phenyl ether	7005-72-3	MKCT7248	99%	1,003.8	µg/mL	+/- 36.5220
51	Diethylphthalate	84-66-2	MKCD2547	99%	1,008.6	µg/mL	+/- 36.6958
52	4-Nitroaniline	100-01-6	RP230111	99%	1,001.1	µg/mL	+/- 36.4230
53	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol)	534-52-1	230718JLM	99%	1,002.0	ug/mL	+/- 36.4553

54	Diphenylamine	122-39-4	MKCH1042	99%	1,002.3	µg/mL	+/- 36.4674
55	Azobenzene	103-33-3	BCCK0887	99%	1,005.8	µg/mL	+/- 36.5928
56	4-Bromophenyl phenyl ether	101-55-3	STBH6361	99%	1,003.0	µg/mL	+/- 36.4917
57	Hexachlorobenzene	118-74-1	14821700	99%	1,007.5	µg/mL	+/- 36.6554
58	Pentachlorophenol	87-86-5	RP230530RSR	99%	1,008.8	μg/mL	+/- 36.7019
59	Phenanthrene	85-01-8	MKCQ8876	99%	1,008.4	µg/mL	+/- 36.6877
60	Anthracene	120-12-7	MKCR0570	99%	1,009.0	µg/mL	+/- 36.7100
61	Carbazole	86-74-8	14351100	99%	1,000.9	µg/mL	+/- 36.4149
62	Di-n-butylphthalate	84-74-2	MKCN4337	99%	1,007.6	µg/mL	+/- 36.6595
63	Fluoranthene	206-44-0	MKCQ4728	99%	1,009.6	μg/mL	+/- 36.7302
64	Рутепе	129-00-0	BCCG8479	98%	1,007.2	µg/mL	+/- 36.6453
65	Benzyl butyl phthalate	85-68-7	X12I018	99%	1,002.1	μg/mL	+/- 36.4573
66	Bis(2-ethylhexyl)adipate	103-23-1	MKCM1988	99%	1,005.2	µg/mL	+/- 36.5705
67	Benz(a)anthracene	56-55-3	I220012022BAA	99%	1,002.2	µg/mL	+/- 36.4614
68	Chrysene	218-01-9	RP230601	99%	1,008.3	µg/mL	+/- 36.6837
69	Bis(2-ethylhexyl)phthalate	117-81-7	MKCQ3468	99%	1,001.8	µg/mL	+/- 36.4472
70	Di-n-octyl phthalate	117-84-0	14382700	99%	1,006.0	µg/mL	+/- 36.6008
71	Benzo(b)fluoranthene	205-99-2	012013B	99%	1,002.8	µg/mL	+/- 36.4836
72	Benzo(k)fluoranthene	207-08-9	012022K	99%	1,003.0	µg/mL	+/- 36.4917
73	Benzo(a)pyrene	50-32-8	P54915-0703	99%	1,002.3	µg/mL	+/- 36.4674
74	Indeno(1,2,3-cd)pyrene	193-39-5	12-JKL-118-9	97%	1,009.4	µg/mL	+/- 36.7243
75	Dibenz(a,h)anthracene	53-70-3	2-ASA-59-1	99%	1,007.6	µg/mL	+/- 36.6595
76	Benzo(g,h,i)perylene	191-24-2	RP231003RSR	99%	1,002.9	µg/mL	+/- 36.4876



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# **CERTIFIED REFERENCE MATERIAL**

# **Certificate of Analysis**

chromatographic plus



hand

ISO/IEC 17025 Accred Testing Laboratory Certificate #3222.02

## 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. :	31850	Lot No.: <u>A020372</u>	6	6121177 Rc/
Description :	8270 MegaMix®			Juit
	8270 MegaMix® 500-1000 μg/mL, I	اد	1 03/18/24	
Container Size :	2 mL	Pkg Amt: > 1 mL		512146
Expiration Date :	April 30, 2025	Storage: 0°C or co	lder	5/2/40
Handling:	Sonication required. Mix is photosensitive.	Ship: Ambient		

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Pyridine	110-86-1	SHBP6240	99%	1,001.6 µg/mL	+/- 36.4412
2	N-Nitrosodimethylamine	62-75-9	230209JLM	99%	1,005.9 µg/mL	+/- 36.5968
3	Phenol	108-95-2	MKCK1120	99%	1,003.3 µg/mL	+/- 36.5038
4	Aniline	62-53-3	X22F726	99%	1,005.8 μg/mL	+/- 36.5928
5	Bis(2-chloroethyl)ether	111-44-4	SHBL6942	99%	1,008.1 μg/mL	+/- 36.6776
6	2-Chlorophenol	95-57-8	STBJ3909	99%	1,001.8 µg/mL	+/- 36.4492
7	1,3-Dichlorobenzene	541-73-1	BCCD5315	99%	1,002.3 µg/mL	+/- 36.4654
8	1,4-Dichlorobenzene	106-46-7	MKBS7929V	99%	1,003.7 µg/mL	+/- 36.5159
9	Benzyl alcohol	100-51-6	SHBK5469	99%	1,008.7 µg/mL	+/- 36.6979
10	1,2-Dichlorobenzene	95-50-1	SHBN3835	99%	1,000.3 µg/mL	+/- 36.3926
11	2-Methylphenol (o-cresol)	95-48-7	SHBN7598	99%	1,003.5 µg/mL	+/- 36.5099
12	2,2'-oxybis(1-chloropropane)	108-60-1	29-MAR-45-5	99%	1,007.3 µg/mL	+/- 36.6493
13	3-Methylphenol (m-cresol)	108-39-4	STBJ0710	99%	504.3 µg/mL	+/- 18.3500
14	4-Methylphenol (p-cresol)	106-44-5	SHBN3411	99%	503.6 µg/mL	+/- 18.3237
15	N-Nitroso-di-n-propylamine	621-64-7	N63MG	99%	1,008.3 µg/mL	+/- 36.6857
16	Hexachloroethane	67-72-1	QTORH	99%	1,007.5 µg/mL	+/- 36.6554
17	Nitrobenzene	98-95-3	10224044	99%	1,008.6 µg/mL	+/- 36.6938

18	Isophorone	78-59-1	MKCC9506	99%	1,005.9	µg/mL	+/- 36.5988
19	2-Nitrophenol	88-75-5	RP230710	99%	1,003.2	μg/mL	+/- 36.4998
20	2,4-Dimethylphenol	105-67-9	XW5GK	99%	1,003.8	µg/mL	+/- 36.5200
21	Bis(2-chloroethoxy)methane	111-91-1	13670200	99%	1,002.1	µg/mL	+/- 36.4573
22	2,4-Dichlorophenol	120-83-2	BCBZ6787	99%	1,003.7	µg/mL	+/- 36.5180
23	1,2,4-Trichlorobenzene	120-82-1	SHBP5900	99%	1,007.6	μg/mL	+/- 36.6574
24	Naphthalene	91-20-3	STBL1057	99%	1,008.3	µg/mL	+/- 36.6837
25	4-Chloroaniline	106-47-8	BCCJ3217	99%	1,001.3	µg/mL	+/- 36.4290
26	Hexachlorobutadiene	87-68-3	RP230823RSR	98%	1,008.3	µg/mL	+/- 36.6829
27	4-Chloro-3-methylphenol	59-50-7	BCCD4461	99%	1,003.1	µg/mL	+/- 36.4937
28	2-Methylnaphthalene	91-57-6	STBK0259	96%	1,001.9	µg/mL	+/- 36.4505
29	1-Methylnaphthalene	90-12-0	5234.00-8	98%	1,000.0	µg/mL	+/- 36.3838
30	Hexachlorocyclopentadiene	77-47-4	099063I14L	98%	1,008.5	µg/mL	+/- 36.6909
31	2,4,6-Trichlorophenol	88-06-2	STBJ5914	99%	1,004.4	µg/mL	+/- 36.5442
32	2,4,5-Trichlorophenol	95-95-4	FHN01	98%	1,001.9	µg/mL	+/- 36.4512
33	2-Chloronaphthalene	91-58-7	RPN7O	99%	1,001.1	µg/mL	+/- 36.4230
34	2-Nitroaniline	88-74-4	RP230531	99%	1,002.9	µg/mL	+/- 36.4876
35	1,4-Dinitrobenzene	100-25-4	RP230816	99%	1,005.7	µg/mL	+/- 36.5887
36	Acenaphthylene	208-96-8	p06V	98%	1,009.5	µg/mL	+/- 36.7265
37	1,3-Dinitrobenzene	99-65-0	1-DXX-24-1	99%	1,004.4	µg/mL	+/- 36.5422
38	Dimethylphthalate	131-11-3	358221L17K	99%	1,005.9	µg/mL	+/- 36.5968
39	2,6-Dinitrotoluene	606-20-2	BCCG1833	99%	1,003.2	µg/mL	+/- 36.4998
40	1,2-Dinitrobenzene	528-29-0	RP230428	99%	1,002.2	µg/mL	+/- 36.4634
41	Acenaphthene	83-32-9	MKCR7169	99%	1,009.3	µg/mL	+/- 36.7221
42	3-Nitroaniline	99-09-2	RP230822RSR	99%	1,003.9	µg/mL	+/- 36.5240
43	2,4-Dinitrophenol	51-28-5	DR230417RSR	99%	1,002.0	µg/mL	+/- 36.4553
44	Dibenzofuran	132-64-9	MKCD9952	99%	1,006.7	µg/mL	+/- 36.6251
45	2,4-Dinitrotoluene	121-14-2	MKAA0690V	99%	1,003.8	µg/mL	+/- 36.5220
46	4-Nitrophenol	100-02-7	RP230627	99%	1,002.3	μg/mL	+/- 36.4674
47	2,3,4,6-Tetrachlorophenol	58-90-2	PR-30126	99%	1,008.7	µg/mL	+/- 36.6979
48	2,3,5,6-Tetrachlorophenol	935-95-5	RP230919	99%	1,006.3	μg/mL	+/- 36.6130
49	Fluorene	86-73-7	10241100	99%	1,008.3	µg/mL	+/- 36.6857
50	4-Chlorophenyl phenyl ether	7005-72-3	MKCT7248	99%	1,003.8	µg/mL	+/- 36.5220
51	Diethylphthalate	84-66-2	MKCD2547	99%	1,008.6	µg/mL	+/- 36.6958
52	4-Nitroaniline	100-01-6	RP230111	99%	1,001.1	µg/mL	+/- 36.4230
53	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol)	534-52-1	230718JLM	99%	1,002.0	ug/mL	+/- 36.4553

54	Diphenylamine	122-39-4	MKCH1042	99%	1,002.3	µg/mL	+/- 36.4674
55	Azobenzene	103-33-3	BCCK0887	99%	1,005.8	µg/mL	+/- 36.5928
56	4-Bromophenyl phenyl ether	101-55-3	STBH6361	99%	1,003.0	µg/mL	+/- 36.4917
57	Hexachlorobenzene	118-74-1	14821700	99%	1,007.5	µg/mL	+/- 36.6554
58	Pentachlorophenol	87-86-5	RP230530RSR	99%	1,008.8	μg/mL	+/- 36.7019
59	Phenanthrene	85-01-8	MKCQ8876	99%	1,008.4	µg/mL	+/- 36.6877
60	Anthracene	120-12-7	MKCR0570	99%	1,009.0	µg/mL	+/- 36.7100
61	Carbazole	86-74-8	14351100	99%	1,000.9	µg/mL	+/- 36.4149
62	Di-n-butylphthalate	84-74-2	MKCN4337	99%	1,007.6	µg/mL	+/- 36.6595
63	Fluoranthene	206-44-0	MKCQ4728	99%	1,009.6	μg/mL	+/- 36.7302
64	Рутепе	129-00-0	BCCG8479	98%	1,007.2	µg/mL	+/- 36.6453
65	Benzyl butyl phthalate	85-68-7	X12I018	99%	1,002.1	μg/mL	+/- 36.4573
66	Bis(2-ethylhexyl)adipate	103-23-1	MKCM1988	99%	1,005.2	µg/mL	+/- 36.5705
67	Benz(a)anthracene	56-55-3	I220012022BAA	99%	1,002.2	µg/mL	+/- 36.4614
68	Chrysene	218-01-9	RP230601	99%	1,008.3	µg/mL	+/- 36.6837
69	Bis(2-ethylhexyl)phthalate	117-81-7	MKCQ3468	99%	1,001.8	µg/mL	+/- 36.4472
70	Di-n-octyl phthalate	117-84-0	14382700	99%	1,006.0	µg/mL	+/- 36.6008
71	Benzo(b)fluoranthene	205-99-2	012013B	99%	1,002.8	µg/mL	+/- 36.4836
72	Benzo(k)fluoranthene	207-08-9	012022K	99%	1,003.0	µg/mL	+/- 36.4917
73	Benzo(a)pyrene	50-32-8	P54915-0703	99%	1,002.3	µg/mL	+/- 36.4674
74	Indeno(1,2,3-cd)pyrene	193-39-5	12-JKL-118-9	97%	1,009.4	µg/mL	+/- 36.7243
75	Dibenz(a,h)anthracene	53-70-3	2-ASA-59-1	99%	1,007.6	µg/mL	+/- 36.6595
76	Benzo(g,h,i)perylene	191-24-2	RP231003RSR	99%	1,002.9	µg/mL	+/- 36.4876



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# **CERTIFIED REFERENCE MATERIAL**

# **Certificate of Analysis**

chromatographic plus



hand

ISO/IEC 17025 Accred Testing Laboratory Certificate #3222.02

## 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. :	31850	Lot No.: <u>A020372</u>	6	6121177 Rc/
Description :	8270 MegaMix®			Juit
	8270 MegaMix® 500-1000 μg/mL, I	اد	1 03/18/24	
Container Size :	2 mL	Pkg Amt: > 1 mL		512146
Expiration Date :	April 30, 2025	Storage: 0°C or co	lder	5/2/40
Handling:	Sonication required. Mix is photosensitive.	Ship: Ambient		

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Pyridine	110-86-1	SHBP6240	99%	1,001.6 µg/mL	+/- 36.4412
2	N-Nitrosodimethylamine	62-75-9	230209JLM	99%	1,005.9 µg/mL	+/- 36.5968
3	Phenol	108-95-2	MKCK1120	99%	1,003.3 µg/mL	+/- 36.5038
4	Aniline	62-53-3	X22F726	99%	1,005.8 μg/mL	+/- 36.5928
5	Bis(2-chloroethyl)ether	111-44-4	SHBL6942	99%	1,008.1 μg/mL	+/- 36.6776
6	2-Chlorophenol	95-57-8	STBJ3909	99%	1,001.8 µg/mL	+/- 36.4492
7	1,3-Dichlorobenzene	541-73-1	BCCD5315	99%	1,002.3 µg/mL	+/- 36.4654
8	1,4-Dichlorobenzene	106-46-7	MKBS7929V	99%	1,003.7 µg/mL	+/- 36.5159
9	Benzyl alcohol	100-51-6	SHBK5469	99%	1,008.7 µg/mL	+/- 36.6979
10	1,2-Dichlorobenzene	95-50-1	SHBN3835	99%	1,000.3 µg/mL	+/- 36.3926
11	2-Methylphenol (o-cresol)	95-48-7	SHBN7598	99%	1,003.5 µg/mL	+/- 36.5099
12	2,2'-oxybis(1-chloropropane)	108-60-1	29-MAR-45-5	99%	1,007.3 µg/mL	+/- 36.6493
13	3-Methylphenol (m-cresol)	108-39-4	STBJ0710	99%	504.3 µg/mL	+/- 18.3500
14	4-Methylphenol (p-cresol)	106-44-5	SHBN3411	99%	503.6 µg/mL	+/- 18.3237
15	N-Nitroso-di-n-propylamine	621-64-7	N63MG	99%	1,008.3 µg/mL	+/- 36.6857
16	Hexachloroethane	67-72-1	QTORH	99%	1,007.5 µg/mL	+/- 36.6554
17	Nitrobenzene	98-95-3	10224044	99%	1,008.6 µg/mL	+/- 36.6938

18	Isophorone	78-59-1	MKCC9506	99%	1,005.9	µg/mL	+/- 36.5988
19	2-Nitrophenol	88-75-5	RP230710	99%	1,003.2	μg/mL	+/- 36.4998
20	2,4-Dimethylphenol	105-67-9	XW5GK	99%	1,003.8	µg/mL	+/- 36.5200
21	Bis(2-chloroethoxy)methane	111-91-1	13670200	99%	1,002.1	µg/mL	+/- 36.4573
22	2,4-Dichlorophenol	120-83-2	BCBZ6787	99%	1,003.7	µg/mL	+/- 36.5180
23	1,2,4-Trichlorobenzene	120-82-1	SHBP5900	99%	1,007.6	μg/mL	+/- 36.6574
24	Naphthalene	91-20-3	STBL1057	99%	1,008.3	µg/mL	+/- 36.6837
25	4-Chloroaniline	106-47-8	BCCJ3217	99%	1,001.3	µg/mL	+/- 36.4290
26	Hexachlorobutadiene	87-68-3	RP230823RSR	98%	1,008.3	µg/mL	+/- 36.6829
27	4-Chloro-3-methylphenol	59-50-7	BCCD4461	99%	1,003.1	µg/mL	+/- 36.4937
28	2-Methylnaphthalene	91-57-6	STBK0259	96%	1,001.9	µg/mL	+/- 36.4505
29	1-Methylnaphthalene	90-12-0	5234.00-8	98%	1,000.0	µg/mL	+/- 36.3838
30	Hexachlorocyclopentadiene	77-47-4	099063I14L	98%	1,008.5	µg/mL	+/- 36.6909
31	2,4,6-Trichlorophenol	88-06-2	STBJ5914	99%	1,004.4	µg/mL	+/- 36.5442
32	2,4,5-Trichlorophenol	95-95-4	FHN01	98%	1,001.9	µg/mL	+/- 36.4512
33	2-Chloronaphthalene	91-58-7	RPN7O	99%	1,001.1	µg/mL	+/- 36.4230
34	2-Nitroaniline	88-74-4	RP230531	99%	1,002.9	µg/mL	+/- 36.4876
35	1,4-Dinitrobenzene	100-25-4	RP230816	99%	1,005.7	µg/mL	+/- 36.5887
36	Acenaphthylene	208-96-8	p06V	98%	1,009.5	µg/mL	+/- 36.7265
37	1,3-Dinitrobenzene	99-65-0	1-DXX-24-1	99%	1,004.4	µg/mL	+/- 36.5422
38	Dimethylphthalate	131-11-3	358221L17K	99%	1,005.9	µg/mL	+/- 36.5968
39	2,6-Dinitrotoluene	606-20-2	BCCG1833	99%	1,003.2	µg/mL	+/- 36.4998
40	1,2-Dinitrobenzene	528-29-0	RP230428	99%	1,002.2	µg/mL	+/- 36.4634
41	Acenaphthene	83-32-9	MKCR7169	99%	1,009.3	µg/mL	+/- 36.7221
42	3-Nitroaniline	99-09-2	RP230822RSR	99%	1,003.9	µg/mL	+/- 36.5240
43	2,4-Dinitrophenol	51-28-5	DR230417RSR	99%	1,002.0	µg/mL	+/- 36.4553
44	Dibenzofuran	132-64-9	MKCD9952	99%	1,006.7	µg/mL	+/- 36.6251
45	2,4-Dinitrotoluene	121-14-2	MKAA0690V	99%	1,003.8	µg/mL	+/- 36.5220
46	4-Nitrophenol	100-02-7	RP230627	99%	1,002.3	μg/mL	+/- 36.4674
47	2,3,4,6-Tetrachlorophenol	58-90-2	PR-30126	99%	1,008.7	µg/mL	+/- 36.6979
48	2,3,5,6-Tetrachlorophenol	935-95-5	RP230919	99%	1,006.3	μg/mL	+/- 36.6130
49	Fluorene	86-73-7	10241100	99%	1,008.3	µg/mL	+/- 36.6857
50	4-Chlorophenyl phenyl ether	7005-72-3	MKCT7248	99%	1,003.8	µg/mL	+/- 36.5220
51	Diethylphthalate	84-66-2	MKCD2547	99%	1,008.6	µg/mL	+/- 36.6958
52	4-Nitroaniline	100-01-6	RP230111	99%	1,001.1	µg/mL	+/- 36.4230
53	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol)	534-52-1	230718JLM	99%	1,002.0	ug/mL	+/- 36.4553

54	Diphenylamine	122-39-4	MKCH1042	99%	1,002.3	µg/mL	+/- 36.4674
55	Azobenzene	103-33-3	BCCK0887	99%	1,005.8	µg/mL	+/- 36.5928
56	4-Bromophenyl phenyl ether	101-55-3	STBH6361	99%	1,003.0	µg/mL	+/- 36.4917
57	Hexachlorobenzene	118-74-1	14821700	99%	1,007.5	µg/mL	+/- 36.6554
58	Pentachlorophenol	87-86-5	RP230530RSR	99%	1,008.8	μg/mL	+/- 36.7019
59	Phenanthrene	85-01-8	MKCQ8876	99%	1,008.4	µg/mL	+/- 36.6877
60	Anthracene	120-12-7	MKCR0570	99%	1,009.0	µg/mL	+/- 36.7100
61	Carbazole	86-74-8	14351100	99%	1,000.9	µg/mL	+/- 36.4149
62	Di-n-butylphthalate	84-74-2	MKCN4337	99%	1,007.6	µg/mL	+/- 36.6595
63	Fluoranthene	206-44-0	MKCQ4728	99%	1,009.6	μg/mL	+/- 36.7302
64	Рутепе	129-00-0	BCCG8479	98%	1,007.2	µg/mL	+/- 36.6453
65	Benzyl butyl phthalate	85-68-7	X12I018	99%	1,002.1	μg/mL	+/- 36.4573
66	Bis(2-ethylhexyl)adipate	103-23-1	MKCM1988	99%	1,005.2	µg/mL	+/- 36.5705
67	Benz(a)anthracene	56-55-3	I220012022BAA	99%	1,002.2	µg/mL	+/- 36.4614
68	Chrysene	218-01-9	RP230601	99%	1,008.3	µg/mL	+/- 36.6837
69	Bis(2-ethylhexyl)phthalate	117-81-7	MKCQ3468	99%	1,001.8	µg/mL	+/- 36.4472
70	Di-n-octyl phthalate	117-84-0	14382700	99%	1,006.0	µg/mL	+/- 36.6008
71	Benzo(b)fluoranthene	205-99-2	012013B	99%	1,002.8	µg/mL	+/- 36.4836
72	Benzo(k)fluoranthene	207-08-9	012022K	99%	1,003.0	µg/mL	+/- 36.4917
73	Benzo(a)pyrene	50-32-8	P54915-0703	99%	1,002.3	µg/mL	+/- 36.4674
74	Indeno(1,2,3-cd)pyrene	193-39-5	12-JKL-118-9	97%	1,009.4	µg/mL	+/- 36.7243
75	Dibenz(a,h)anthracene	53-70-3	2-ASA-59-1	99%	1,007.6	µg/mL	+/- 36.6595
76	Benzo(g,h,i)perylene	191-24-2	RP231003RSR	99%	1,002.9	µg/mL	+/- 36.4876



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# **CERTIFIED REFERENCE MATERIAL**

# **Certificate of Analysis**

chromatographic plus



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ISO/IEC 17025 Accred Testing Laboratory Certificate #3222.02

## 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. :	31850	Lot No.: <u>A020372</u>	6	6121177 Rc/
Description :	8270 MegaMix®			Juit
	8270 MegaMix® 500-1000 μg/mL, I	اد	1 03/18/24	
Container Size :	2 mL	Pkg Amt: > 1 mL		512146
Expiration Date :	April 30, 2025	Storage: 0°C or co	lder	5/2/40
Handling:	Sonication required. Mix is photosensitive.	Ship: Ambient		

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Pyridine	110-86-1	SHBP6240	99%	1,001.6 µg/mL	+/- 36.4412
2	N-Nitrosodimethylamine	62-75-9	230209JLM	99%	1,005.9 µg/mL	+/- 36.5968
3	Phenol	108-95-2	MKCK1120	99%	1,003.3 µg/mL	+/- 36.5038
4	Aniline	62-53-3	X22F726	99%	1,005.8 μg/mL	+/- 36.5928
5	Bis(2-chloroethyl)ether	111-44-4	SHBL6942	99%	1,008.1 μg/mL	+/- 36.6776
6	2-Chlorophenol	95-57-8	STBJ3909	99%	1,001.8 µg/mL	+/- 36.4492
7	1,3-Dichlorobenzene	541-73-1	BCCD5315	99%	1,002.3 µg/mL	+/- 36.4654
8	1,4-Dichlorobenzene	106-46-7	MKBS7929V	99%	1,003.7 µg/mL	+/- 36.5159
9	Benzyl alcohol	100-51-6	SHBK5469	99%	1,008.7 µg/mL	+/- 36.6979
10	1,2-Dichlorobenzene	95-50-1	SHBN3835	99%	1,000.3 µg/mL	+/- 36.3926
11	2-Methylphenol (o-cresol)	95-48-7	SHBN7598	99%	1,003.5 µg/mL	+/- 36.5099
12	2,2'-oxybis(1-chloropropane)	108-60-1	29-MAR-45-5	99%	1,007.3 µg/mL	+/- 36.6493
13	3-Methylphenol (m-cresol)	108-39-4	STBJ0710	99%	504.3 µg/mL	+/- 18.3500
14	4-Methylphenol (p-cresol)	106-44-5	SHBN3411	99%	503.6 µg/mL	+/- 18.3237
15	N-Nitroso-di-n-propylamine	621-64-7	N63MG	99%	1,008.3 µg/mL	+/- 36.6857
16	Hexachloroethane	67-72-1	QTORH	99%	1,007.5 µg/mL	+/- 36.6554
17	Nitrobenzene	98-95-3	10224044	99%	1,008.6 µg/mL	+/- 36.6938

18	Isophorone	78-59-1	MKCC9506	99%	1,005.9	µg/mL	+/- 36.5988
19	2-Nitrophenol	88-75-5	RP230710	99%	1,003.2	μg/mL	+/- 36.4998
20	2,4-Dimethylphenol	105-67-9	XW5GK	99%	1,003.8	µg/mL	+/- 36.5200
21	Bis(2-chloroethoxy)methane	111-91-1	13670200	99%	1,002.1	µg/mL	+/- 36.4573
22	2,4-Dichlorophenol	120-83-2	BCBZ6787	99%	1,003.7	µg/mL	+/- 36.5180
23	1,2,4-Trichlorobenzene	120-82-1	SHBP5900	99%	1,007.6	μg/mL	+/- 36.6574
24	Naphthalene	91-20-3	STBL1057	99%	1,008.3	µg/mL	+/- 36.6837
25	4-Chloroaniline	106-47-8	BCCJ3217	99%	1,001.3	µg/mL	+/- 36.4290
26	Hexachlorobutadiene	87-68-3	RP230823RSR	98%	1,008.3	µg/mL	+/- 36.6829
27	4-Chloro-3-methylphenol	59-50-7	BCCD4461	99%	1,003.1	µg/mL	+/- 36.4937
28	2-Methylnaphthalene	91-57-6	STBK0259	96%	1,001.9	µg/mL	+/- 36.4505
29	1-Methylnaphthalene	90-12-0	5234.00-8	98%	1,000.0	µg/mL	+/- 36.3838
30	Hexachlorocyclopentadiene	77-47-4	099063I14L	98%	1,008.5	µg/mL	+/- 36.6909
31	2,4,6-Trichlorophenol	88-06-2	STBJ5914	99%	1,004.4	µg/mL	+/- 36.5442
32	2,4,5-Trichlorophenol	95-95-4	FHN01	98%	1,001.9	µg/mL	+/- 36.4512
33	2-Chloronaphthalene	91-58-7	RPN7O	99%	1,001.1	µg/mL	+/- 36.4230
34	2-Nitroaniline	88-74-4	RP230531	99%	1,002.9	µg/mL	+/- 36.4876
35	1,4-Dinitrobenzene	100-25-4	RP230816	99%	1,005.7	µg/mL	+/- 36.5887
36	Acenaphthylene	208-96-8	p06V	98%	1,009.5	µg/mL	+/- 36.7265
37	1,3-Dinitrobenzene	99-65-0	1-DXX-24-1	99%	1,004.4	µg/mL	+/- 36.5422
38	Dimethylphthalate	131-11-3	358221L17K	99%	1,005.9	µg/mL	+/- 36.5968
39	2,6-Dinitrotoluene	606-20-2	BCCG1833	99%	1,003.2	µg/mL	+/- 36.4998
40	1,2-Dinitrobenzene	528-29-0	RP230428	99%	1,002.2	µg/mL	+/- 36.4634
41	Acenaphthene	83-32-9	MKCR7169	99%	1,009.3	µg/mL	+/- 36.7221
42	3-Nitroaniline	99-09-2	RP230822RSR	99%	1,003.9	µg/mL	+/- 36.5240
43	2,4-Dinitrophenol	51-28-5	DR230417RSR	99%	1,002.0	µg/mL	+/- 36.4553
44	Dibenzofuran	132-64-9	MKCD9952	99%	1,006.7	µg/mL	+/- 36.6251
45	2,4-Dinitrotoluene	121-14-2	MKAA0690V	99%	1,003.8	µg/mL	+/- 36.5220
46	4-Nitrophenol	100-02-7	RP230627	99%	1,002.3	μg/mL	+/- 36.4674
47	2,3,4,6-Tetrachlorophenol	58-90-2	PR-30126	99%	1,008.7	µg/mL	+/- 36.6979
48	2,3,5,6-Tetrachlorophenol	935-95-5	RP230919	99%	1,006.3	μg/mL	+/- 36.6130
49	Fluorene	86-73-7	10241100	99%	1,008.3	µg/mL	+/- 36.6857
50	4-Chlorophenyl phenyl ether	7005-72-3	MKCT7248	99%	1,003.8	µg/mL	+/- 36.5220
51	Diethylphthalate	84-66-2	MKCD2547	99%	1,008.6	µg/mL	+/- 36.6958
52	4-Nitroaniline	100-01-6	RP230111	99%	1,001.1	µg/mL	+/- 36.4230
53	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol)	534-52-1	230718JLM	99%	1,002.0	ug/mL	+/- 36.4553

54	Diphenylamine	122-39-4	MKCH1042	99%	1,002.3	µg/mL	+/- 36.4674
55	Azobenzene	103-33-3	BCCK0887	99%	1,005.8	µg/mL	+/- 36.5928
56	4-Bromophenyl phenyl ether	101-55-3	STBH6361	99%	1,003.0	µg/mL	+/- 36.4917
57	Hexachlorobenzene	118-74-1	14821700	99%	1,007.5	µg/mL	+/- 36.6554
58	Pentachlorophenol	87-86-5	RP230530RSR	99%	1,008.8	μg/mL	+/- 36.7019
59	Phenanthrene	85-01-8	MKCQ8876	99%	1,008.4	µg/mL	+/- 36.6877
60	Anthracene	120-12-7	MKCR0570	99%	1,009.0	µg/mL	+/- 36.7100
61	Carbazole	86-74-8	14351100	99%	1,000.9	µg/mL	+/- 36.4149
62	Di-n-butylphthalate	84-74-2	MKCN4337	99%	1,007.6	µg/mL	+/- 36.6595
63	Fluoranthene	206-44-0	MKCQ4728	99%	1,009.6	μg/mL	+/- 36.7302
64	Рутепе	129-00-0	BCCG8479	98%	1,007.2	µg/mL	+/- 36.6453
65	Benzyl butyl phthalate	85-68-7	X12I018	99%	1,002.1	μg/mL	+/- 36.4573
66	Bis(2-ethylhexyl)adipate	103-23-1	MKCM1988	99%	1,005.2	µg/mL	+/- 36.5705
67	Benz(a)anthracene	56-55-3	I220012022BAA	99%	1,002.2	µg/mL	+/- 36.4614
68	Chrysene	218-01-9	RP230601	99%	1,008.3	μg/mL	+/- 36.6837
69	Bis(2-ethylhexyl)phthalate	117-81-7	MKCQ3468	99%	1,001.8	µg/mL	+/- 36.4472
70	Di-n-octyl phthalate	117-84-0	14382700	99%	1,006.0	µg/mL	+/- 36.6008
71	Benzo(b)fluoranthene	205-99-2	012013B	99%	1,002.8	µg/mL	+/- 36.4836
72	Benzo(k)fluoranthene	207-08-9	012022K	99%	1,003.0	µg/mL	+/- 36.4917
73	Benzo(a)pyrene	50-32-8	P54915-0703	99%	1,002.3	µg/mL	+/- 36.4674
74	Indeno(1,2,3-cd)pyrene	193-39-5	12-JKL-118-9	97%	1,009.4	µg/mL	+/- 36.7243
75	Dibenz(a,h)anthracene	53-70-3	2-ASA-59-1	99%	1,007.6	µg/mL	+/- 36.6595
76	Benzo(g,h,i)perylene	191-24-2	RP231003RSR	99%	1,002.9	µg/mL	+/- 36.4876



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# **CERTIFIED REFERENCE MATERIAL**

# **Certificate of Analysis**

chromatographic plus



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ISO/IEC 17025 Accred Testing Laboratory Certificate #3222.02

## 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. :	31850	Lot No.: <u>A020372</u>	6	6121177 Rc/
Description :	8270 MegaMix®			Juit
	8270 MegaMix® 500-1000 μg/mL, I	اد	1 03/18/24	
Container Size :	2 mL	Pkg Amt: > 1 mL		512146
Expiration Date :	April 30, 2025	Storage: 0°C or co	lder	5/2/40
Handling:	Sonication required. Mix is photosensitive.	Ship: Ambient		

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Pyridine	110-86-1	SHBP6240	99%	1,001.6 µg/mL	+/- 36.4412
2	N-Nitrosodimethylamine	62-75-9	230209JLM	99%	1,005.9 µg/mL	+/- 36.5968
3	Phenol	108-95-2	MKCK1120	99%	1,003.3 µg/mL	+/- 36.5038
4	Aniline	62-53-3	X22F726	99%	1,005.8 μg/mL	+/- 36.5928
5	Bis(2-chloroethyl)ether	111-44-4	SHBL6942	99%	1,008.1 μg/mL	+/- 36.6776
6	2-Chlorophenol	95-57-8	STBJ3909	99%	1,001.8 µg/mL	+/- 36.4492
7	1,3-Dichlorobenzene	541-73-1	BCCD5315	99%	1,002.3 µg/mL	+/- 36.4654
8	1,4-Dichlorobenzene	106-46-7	MKBS7929V	99%	1,003.7 µg/mL	+/- 36.5159
9	Benzyl alcohol	100-51-6	SHBK5469	99%	1,008.7 µg/mL	+/- 36.6979
10	1,2-Dichlorobenzene	95-50-1	SHBN3835	99%	1,000.3 µg/mL	+/- 36.3926
11	2-Methylphenol (o-cresol)	95-48-7	SHBN7598	99%	1,003.5 µg/mL	+/- 36.5099
12	2,2'-oxybis(1-chloropropane)	108-60-1	29-MAR-45-5	99%	1,007.3 µg/mL	+/- 36.6493
13	3-Methylphenol (m-cresol)	108-39-4	STBJ0710	99%	504.3 µg/mL	+/- 18.3500
14	4-Methylphenol (p-cresol)	106-44-5	SHBN3411	99%	503.6 µg/mL	+/- 18.3237
15	N-Nitroso-di-n-propylamine	621-64-7	N63MG	99%	1,008.3 µg/mL	+/- 36.6857
16	Hexachloroethane	67-72-1	QTORH	99%	1,007.5 µg/mL	+/- 36.6554
17	Nitrobenzene	98-95-3	10224044	99%	1,008.6 µg/mL	+/- 36.6938

18	Isophorone	78-59-1	MKCC9506	99%	1,005.9	µg/mL	+/- 36.5988
19	2-Nitrophenol	88-75-5	RP230710	99%	1,003.2	μg/mL	+/- 36.4998
20	2,4-Dimethylphenol	105-67-9	XW5GK	99%	1,003.8	µg/mL	+/- 36.5200
21	Bis(2-chloroethoxy)methane	111-91-1	13670200	99%	1,002.1	µg/mL	+/- 36.4573
22	2,4-Dichlorophenol	120-83-2	BCBZ6787	99%	1,003.7	µg/mL	+/- 36.5180
23	1,2,4-Trichlorobenzene	120-82-1	SHBP5900	99%	1,007.6	μg/mL	+/- 36.6574
24	Naphthalene	91-20-3	STBL1057	99%	1,008.3	µg/mL	+/- 36.6837
25	4-Chloroaniline	106-47-8	BCCJ3217	99%	1,001.3	µg/mL	+/- 36.4290
26	Hexachlorobutadiene	87-68-3	RP230823RSR	98%	1,008.3	µg/mL	+/- 36.6829
27	4-Chloro-3-methylphenol	59-50-7	BCCD4461	99%	1,003.1	µg/mL	+/- 36.4937
28	2-Methylnaphthalene	91-57-6	STBK0259	96%	1,001.9	µg/mL	+/- 36.4505
29	1-Methylnaphthalene	90-12-0	5234.00-8	98%	1,000.0	µg/mL	+/- 36.3838
30	Hexachlorocyclopentadiene	77-47-4	099063I14L	98%	1,008.5	µg/mL	+/- 36.6909
31	2,4,6-Trichlorophenol	88-06-2	STBJ5914	99%	1,004.4	µg/mL	+/- 36.5442
32	2,4,5-Trichlorophenol	95-95-4	FHN01	98%	1,001.9	µg/mL	+/- 36.4512
33	2-Chloronaphthalene	91-58-7	RPN7O	99%	1,001.1	µg/mL	+/- 36.4230
34	2-Nitroaniline	88-74-4	RP230531	99%	1,002.9	µg/mL	+/- 36.4876
35	1,4-Dinitrobenzene	100-25-4	RP230816	99%	1,005.7	µg/mL	+/- 36.5887
36	Acenaphthylene	208-96-8	p06V	98%	1,009.5	µg/mL	+/- 36.7265
37	1,3-Dinitrobenzene	99-65-0	1-DXX-24-1	99%	1,004.4	µg/mL	+/- 36.5422
38	Dimethylphthalate	131-11-3	358221L17K	99%	1,005.9	µg/mL	+/- 36.5968
39	2,6-Dinitrotoluene	606-20-2	BCCG1833	99%	1,003.2	µg/mL	+/- 36.4998
40	1,2-Dinitrobenzene	528-29-0	RP230428	99%	1,002.2	µg/mL	+/- 36.4634
41	Acenaphthene	83-32-9	MKCR7169	99%	1,009.3	µg/mL	+/- 36.7221
42	3-Nitroaniline	99-09-2	RP230822RSR	99%	1,003.9	µg/mL	+/- 36.5240
43	2,4-Dinitrophenol	51-28-5	DR230417RSR	99%	1,002.0	µg/mL	+/- 36.4553
44	Dibenzofuran	132-64-9	MKCD9952	99%	1,006.7	µg/mL	+/- 36.6251
45	2,4-Dinitrotoluene	121-14-2	MKAA0690V	99%	1,003.8	µg/mL	+/- 36.5220
46	4-Nitrophenol	100-02-7	RP230627	99%	1,002.3	μg/mL	+/- 36.4674
47	2,3,4,6-Tetrachlorophenol	58-90-2	PR-30126	99%	1,008.7	µg/mL	+/- 36.6979
48	2,3,5,6-Tetrachlorophenol	935-95-5	RP230919	99%	1,006.3	μg/mL	+/- 36.6130
49	Fluorene	86-73-7	10241100	99%	1,008.3	µg/mL	+/- 36.6857
50	4-Chlorophenyl phenyl ether	7005-72-3	MKCT7248	99%	1,003.8	µg/mL	+/- 36.5220
51	Diethylphthalate	84-66-2	MKCD2547	99%	1,008.6	µg/mL	+/- 36.6958
52	4-Nitroaniline	100-01-6	RP230111	99%	1,001.1	µg/mL	+/- 36.4230
53	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol)	534-52-1	230718JLM	99%	1,002.0	ug/mL	+/- 36.4553

54	Diphenylamine	122-39-4	MKCH1042	99%	1,002.3	µg/mL	+/- 36.4674
55	Azobenzene	103-33-3	BCCK0887	99%	1,005.8	µg/mL	+/- 36.5928
56	4-Bromophenyl phenyl ether	101-55-3	STBH6361	99%	1,003.0	µg/mL	+/- 36.4917
57	Hexachlorobenzene	118-74-1	14821700	99%	1,007.5	µg/mL	+/- 36.6554
58	Pentachlorophenol	87-86-5	RP230530RSR	99%	1,008.8	μg/mL	+/- 36.7019
59	Phenanthrene	85-01-8	MKCQ8876	99%	1,008.4	µg/mL	+/- 36.6877
60	Anthracene	120-12-7	MKCR0570	99%	1,009.0	µg/mL	+/- 36.7100
61	Carbazole	86-74-8	14351100	99%	1,000.9	µg/mL	+/- 36.4149
62	Di-n-butylphthalate	84-74-2	MKCN4337	99%	1,007.6	µg/mL	+/- 36.6595
63	Fluoranthene	206-44-0	MKCQ4728	99%	1,009.6	μg/mL	+/- 36.7302
64	Рутепе	129-00-0	BCCG8479	98%	1,007.2	µg/mL	+/- 36.6453
65	Benzyl butyl phthalate	85-68-7	X12I018	99%	1,002.1	μg/mL	+/- 36.4573
66	Bis(2-ethylhexyl)adipate	103-23-1	MKCM1988	99%	1,005.2	µg/mL	+/- 36.5705
67	Benz(a)anthracene	56-55-3	I220012022BAA	99%	1,002.2	µg/mL	+/- 36.4614
68	Chrysene	218-01-9	RP230601	99%	1,008.3	µg/mL	+/- 36.6837
69	Bis(2-ethylhexyl)phthalate	117-81-7	MKCQ3468	99%	1,001.8	µg/mL	+/- 36.4472
70	Di-n-octyl phthalate	117-84-0	14382700	99%	1,006.0	µg/mL	+/- 36.6008
71	Benzo(b)fluoranthene	205-99-2	012013B	99%	1,002.8	µg/mL	+/- 36.4836
72	Benzo(k)fluoranthene	207-08-9	012022K	99%	1,003.0	µg/mL	+/- 36.4917
73	Benzo(a)pyrene	50-32-8	P54915-0703	99%	1,002.3	µg/mL	+/- 36.4674
74	Indeno(1,2,3-cd)pyrene	193-39-5	12-JKL-118-9	97%	1,009.4	µg/mL	+/- 36.7243
75	Dibenz(a,h)anthracene	53-70-3	2-ASA-59-1	99%	1,007.6	µg/mL	+/- 36.6595
76	Benzo(g,h,i)perylene	191-24-2	RP231003RSR	99%	1,002.9	µg/mL	+/- 36.4876



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# **Certificate of Analysis**

chromatographic plus



hand

ISO/IEC 17025 Accred Testing Laboratory Certificate #3222.02

## 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. :	31850	Lot No.: A020372	6	6121177 Rc/
Description :	8270 MegaMix®			Juit
	8270 MegaMix® 500-1000 μg/mL, I	Methylene Chloride, 1mL/ampu	اد	1 03/18/24
Container Size :	2 mL	Pkg Amt: > 1 mL		512146
Expiration Date :	April 30, 2025	Storage: 0°C or co	lder	5/2/40
Handling:	Sonication required. Mix is photosensitive.	Ship: Ambient		

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Pyridine	110-86-1	SHBP6240	99%	1,001.6 µg/mL	+/- 36.4412
2	N-Nitrosodimethylamine	62-75-9	230209JLM	99%	1,005.9 µg/mL	+/- 36.5968
3	Phenol	108-95-2	MKCK1120	99%	1,003.3 µg/mL	+/- 36.5038
4	Aniline	62-53-3	X22F726	99%	1,005.8 μg/mL	+/- 36.5928
5	Bis(2-chloroethyl)ether	111-44-4	SHBL6942	99%	1,008.1 μg/mL	+/- 36.6776
6	2-Chlorophenol	95-57-8	STBJ3909	99%	1,001.8 µg/mL	+/- 36.4492
7	1,3-Dichlorobenzene	541-73-1	BCCD5315	99%	1,002.3 µg/mL	+/- 36.4654
8	1,4-Dichlorobenzene	106-46-7	MKBS7929V	99%	1,003.7 µg/mL	+/- 36.5159
9	Benzyl alcohol	100-51-6	SHBK5469	99%	1,008.7 µg/mL	+/- 36.6979
10	1,2-Dichlorobenzene	95-50-1	SHBN3835	99%	1,000.3 µg/mL	+/- 36.3926
11	2-Methylphenol (o-cresol)	95-48-7	SHBN7598	99%	1,003.5 µg/mL	+/- 36.5099
12	2,2'-oxybis(1-chloropropane)	108-60-1	29-MAR-45-5	99%	1,007.3 µg/mL	+/- 36.6493
13	3-Methylphenol (m-cresol)	108-39-4	STBJ0710	99%	504.3 µg/mL	+/- 18.3500
14	4-Methylphenol (p-cresol)	106-44-5	SHBN3411	99%	503.6 µg/mL	+/- 18.3237
15	N-Nitroso-di-n-propylamine	621-64-7	N63MG	99%	1,008.3 µg/mL	+/- 36.6857
16	Hexachloroethane	67-72-1	QTORH	99%	1,007.5 µg/mL	+/- 36.6554
17	Nitrobenzene	98-95-3	10224044	99%	1,008.6 µg/mL	+/- 36.6938

18	Isophorone	78-59-1	MKCC9506	99%	1,005.9	µg/mL	+/- 36.5988
19	2-Nitrophenol	88-75-5	RP230710	99%	1,003.2	μg/mL	+/- 36.4998
20	2,4-Dimethylphenol	105-67-9	XW5GK	99%	1,003.8	µg/mL	+/- 36.5200
21	Bis(2-chloroethoxy)methane	111-91-1	13670200	99%	1,002.1	µg/mL	+/- 36.4573
22	2,4-Dichlorophenol	120-83-2	BCBZ6787	99%	1,003.7	µg/mL	+/- 36.5180
23	1,2,4-Trichlorobenzene	120-82-1	SHBP5900	99%	1,007.6	μg/mL	+/- 36.6574
24	Naphthalene	91-20-3	STBL1057	99%	1,008.3	μg/mL	+/- 36.6837
25	4-Chloroaniline	106-47-8	BCCJ3217	99%	1,001.3	μg/mL	+/- 36.4290
26	Hexachlorobutadiene	87-68-3	RP230823RSR	98%	1,008.3	µg/mL	+/- 36.6829
27	4-Chloro-3-methylphenol	59-50-7	BCCD4461	99%	1,003.1	µg/mL	+/- 36.4937
28	2-Methylnaphthalene	91-57-6	STBK0259	96%	1,001.9	µg/mL	+/- 36.4505
29	1-Methylnaphthalene	90-12-0	5234.00-8	98%	1,000.0	µg/mL	+/- 36.3838
30	Hexachlorocyclopentadiene	77-47-4	099063I14L	98%	1,008.5	µg/mL	+/- 36.6909
31	2,4,6-Trichlorophenol	88-06-2	STBJ5914	99%	1,004.4	μg/mL	+/- 36.5442
32	2,4,5-Trichlorophenol	95-95-4	FHN01	98%	1,001.9	µg/mL	+/- 36.4512
33	2-Chloronaphthalene	91-58-7	RPN7O	99%	1,001.1	µg/mL	+/- 36.4230
34	2-Nitroaniline	88-74-4	RP230531	99%	1,002.9	µg/mL	+/- 36.4876
35	1,4-Dinitrobenzene	100-25-4	RP230816	99%	1,005.7	µg/mL	+/- 36.5887
36	Acenaphthylene	208-96-8	p06V	98%	1,009.5	µg/mL	+/- 36.7265
37	1,3-Dinitrobenzene	99-65-0	1-DXX-24-1	99%	1,004.4	µg/mL	+/- 36.5422
38	Dimethylphthalate	131-11-3	358221L17K	99%	1,005.9	µg/mL	+/- 36.5968
39	2,6-Dinitrotoluene	606-20-2	BCCG1833	99%	1,003.2	µg/mL	+/- 36.4998
40	1,2-Dinitrobenzene	528-29-0	RP230428	99%	1,002.2	µg/mL	+/- 36.4634
41	Acenaphthene	83-32-9	MKCR7169	99%	1,009.3	µg/mL	+/- 36.7221
42	3-Nitroaniline	99-09-2	RP230822RSR	99%	1,003.9	µg/mL	+/- 36.5240
43	2,4-Dinitrophenol	51-28-5	DR230417RSR	99%	1,002.0	µg/mL	+/- 36.4553
44	Dibenzofuran	132-64-9	MKCD9952	99%	1,006.7	µg/mL	+/- 36.6251
45	2,4-Dinitrotoluene	121-14-2	MKAA0690V	99%	1,003.8	µg/mL	+/- 36.5220
46	4-Nitrophenol	100-02-7	RP230627	99%	1,002.3	μg/mL	+/- 36.4674
47	2,3,4,6-Tetrachlorophenol	58-90-2	PR-30126	99%	1,008.7	µg/mL	+/- 36.6979
48	2,3,5,6-Tetrachlorophenol	935-95-5	RP230919	99%	1,006.3	µg/mL	+/- 36.6130
49	Fluorene	86-73-7	10241100	99%	1,008.3	µg/mL	+/- 36.6857
50	4-Chlorophenyl phenyl ether	7005-72-3	MKCT7248	99%	1,003.8	µg/mL	+/- 36.5220
51	Diethylphthalate	84-66-2	MKCD2547	99%	1,008.6	µg/mL	+/- 36.6958
52	4-Nitroaniline	100-01-6	RP230111	99%	1,001.1	µg/mL	+/- 36.4230
53	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol)	534-52-1	230718JLM	99%	1,002.0		+/- 36.4553

54	Diphenylamine	122-39-4	MKCH1042	99%	1,002.3	µg/mL	+/- 36.4674
55	Azobenzene	103-33-3	BCCK0887	99%	1,005.8	µg/mL	+/- 36.5928
56	4-Bromophenyl phenyl ether	101-55-3	STBH6361	99%	1,003.0	µg/mL	+/- 36.4917
57	Hexachlorobenzene	118-74-1	14821700	99%	1,007.5	µg/mL	+/- 36.6554
58	Pentachlorophenol	87-86-5	RP230530RSR	99%	1,008.8	µg/mL	+/- 36.7019
59	Phenanthrene	85-01-8	MKCQ8876	99%	1,008.4	µg/mL	+/- 36.6877
60	Anthracene	120-12-7	MKCR0570	99%	1,009.0	µg/mL	+/- 36.7100
61	Carbazole	86-74-8	14351100	99%	1,000.9	µg/mL	+/- 36.4149
62	Di-n-butylphthalate	84-74-2	MKCN4337	99%	1,007.6	µg/mL	+/- 36.6595
63	Fluoranthene	206-44-0	MKCQ4728	99%	1,009.6	μg/mL	+/- 36.7302
64	Рутепе	129-00-0	BCCG8479	98%	1,007.2	µg/mL	+/- 36.6453
65	Benzyl butyl phthalate	85-68-7	X12I018	99%	1,002.1	μg/mL	+/- 36.4573
66	Bis(2-ethylhexyl)adipate	103-23-1	MKCM1988	99%	1,005.2	µg/mL	+/- 36.5705
67	Benz(a)anthracene	56-55-3	I220012022BAA	99%	1,002.2	µg/mL	+/- 36.4614
68	Chrysene	218-01-9	RP230601	99%	1,008.3	µg/mL	+/- 36.6837
69	Bis(2-ethylhexyl)phthalate	117-81-7	MKCQ3468	99%	1,001.8	µg/mL	+/- 36.4472
70	Di-n-octyl phthalate	117-84-0	14382700	99%	1,006.0	µg/mL	+/- 36.6008
71	Benzo(b)fluoranthene	205-99-2	012013B	99%	1,002.8	µg/mL	+/- 36.4836
72	Benzo(k)fluoranthene	207-08-9	012022K	99%	1,003.0	µg/mL	+/- 36.4917
73	Benzo(a)pyrene	50-32-8	P54915-0703	99%	1,002.3	µg/mL	+/- 36.4674
74	Indeno(1,2,3-cd)pyrene	193-39-5	12-JKL-118-9	97%	1,009.4	µg/mL	+/- 36.7243
75	Dibenz(a,h)anthracene	53-70-3	2-ASA-59-1	99%	1,007.6	µg/mL	+/- 36.6595
76	Benzo(g,h,i)perylene	191-24-2	RP231003RSR	99%	1 000 0	μg/mL	+/- 36.4876



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# **CERTIFIED REFERENCE MATERIAL**

# **Certificate of Analysis**

chromatographic plus



hand

ISO/IEC 17025 Accred Testing Laboratory Certificate #3222.02

## 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. :	31850	Lot No.: A020372	6	6121177 Rc/
Description :	8270 MegaMix®			Juit
	8270 MegaMix® 500-1000 μg/mL, I	Methylene Chloride, 1mL/ampu	اد	1 03/18/24
Container Size :	2 mL	Pkg Amt: > 1 mL		512146
Expiration Date :	April 30, 2025	Storage: 0°C or co	lder	5/2/40
Handling:	Sonication required. Mix is photosensitive.	Ship: Ambient		

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Pyridine	110-86-1	SHBP6240	99%	1,001.6 µg/mL	+/- 36.4412
2	N-Nitrosodimethylamine	62-75-9	230209JLM	99%	1,005.9 µg/mL	+/- 36.5968
3	Phenol	108-95-2	MKCK1120	99%	1,003.3 µg/mL	+/- 36.5038
4	Aniline	62-53-3	X22F726	99%	1,005.8 μg/mL	+/- 36.5928
5	Bis(2-chloroethyl)ether	111-44-4	SHBL6942	99%	1,008.1 μg/mL	+/- 36.6776
6	2-Chlorophenol	95-57-8	STBJ3909	99%	1,001.8 µg/mL	+/- 36.4492
7	1,3-Dichlorobenzene	541-73-1	BCCD5315	99%	1,002.3 µg/mL	+/- 36.4654
8	1,4-Dichlorobenzene	106-46-7	MKBS7929V	99%	1,003.7 µg/mL	+/- 36.5159
9	Benzyl alcohol	100-51-6	SHBK5469	99%	1,008.7 µg/mL	+/- 36.6979
10	1,2-Dichlorobenzene	95-50-1	SHBN3835	99%	1,000.3 µg/mL	+/- 36.3926
11	2-Methylphenol (o-cresol)	95-48-7	SHBN7598	99%	1,003.5 µg/mL	+/- 36.5099
12	2,2'-oxybis(1-chloropropane)	108-60-1	29-MAR-45-5	99%	1,007.3 µg/mL	+/- 36.6493
13	3-Methylphenol (m-cresol)	108-39-4	STBJ0710	99%	504.3 µg/mL	+/- 18.3500
14	4-Methylphenol (p-cresol)	106-44-5	SHBN3411	99%	503.6 µg/mL	+/- 18.3237
15	N-Nitroso-di-n-propylamine	621-64-7	N63MG	99%	1,008.3 µg/mL	+/- 36.6857
16	Hexachloroethane	67-72-1	QTORH	99%	1,007.5 µg/mL	+/- 36.6554
17	Nitrobenzene	98-95-3	10224044	99%	1,008.6 µg/mL	+/- 36.6938

18	Isophorone	78-59-1	MKCC9506	99%	1,005.9	µg/mL	+/- 36.5988
19	2-Nitrophenol	88-75-5	RP230710	99%	1,003.2	μg/mL	+/- 36.4998
20	2,4-Dimethylphenol	105-67-9	XW5GK	99%	1,003.8	µg/mL	+/- 36.5200
21	Bis(2-chloroethoxy)methane	111-91-1	13670200	99%	1,002.1	µg/mL	+/- 36.4573
22	2,4-Dichlorophenol	120-83-2	BCBZ6787	99%	1,003.7	µg/mL	+/- 36.5180
23	1,2,4-Trichlorobenzene	120-82-1	SHBP5900	99%	1,007.6	μg/mL	+/- 36.6574
24	Naphthalene	91-20-3	STBL1057	99%	1,008.3	µg/mL	+/- 36.6837
25	4-Chloroaniline	106-47-8	BCCJ3217	99%	1,001.3	µg/mL	+/- 36.4290
26	Hexachlorobutadiene	87-68-3	RP230823RSR	98%	1,008.3	µg/mL	+/- 36.6829
27	4-Chloro-3-methylphenol	59-50-7	BCCD4461	99%	1,003.1	µg/mL	+/- 36.4937
28	2-Methylnaphthalene	91-57-6	STBK0259	96%	1,001.9	µg/mL	+/- 36.4505
29	1-Methylnaphthalene	90-12-0	5234.00-8	98%	1,000.0	µg/mL	+/- 36.3838
30	Hexachlorocyclopentadiene	77-47-4	099063I14L	98%	1,008.5	µg/mL	+/- 36.6909
31	2,4,6-Trichlorophenol	88-06-2	STBJ5914	99%	1,004.4	µg/mL	+/- 36.5442
32	2,4,5-Trichlorophenol	95-95-4	FHN01	98%	1,001.9	µg/mL	+/- 36.4512
33	2-Chloronaphthalene	91-58-7	RPN7O	99%	1,001.1	µg/mL	+/- 36.4230
34	2-Nitroaniline	88-74-4	RP230531	99%	1,002.9	µg/mL	+/- 36.4876
35	1,4-Dinitrobenzene	100-25-4	RP230816	99%	1,005.7	µg/mL	+/- 36.5887
36	Acenaphthylene	208-96-8	p06V	98%	1,009.5	µg/mL	+/- 36.7265
37	1,3-Dinitrobenzene	99-65-0	1-DXX-24-1	99%	1,004.4	µg/mL	+/- 36.5422
38	Dimethylphthalate	131-11-3	358221L17K	99%	1,005.9	µg/mL	+/- 36.5968
39	2,6-Dinitrotoluene	606-20-2	BCCG1833	99%	1,003.2	µg/mL	+/- 36.4998
40	1,2-Dinitrobenzene	528-29-0	RP230428	99%	1,002.2	µg/mL	+/- 36.4634
41	Acenaphthene	83-32-9	MKCR7169	99%	1,009.3	µg/mL	+/- 36.7221
42	3-Nitroaniline	99-09-2	RP230822RSR	99%	1,003.9	µg/mL	+/- 36.5240
43	2,4-Dinitrophenol	51-28-5	DR230417RSR	99%	1,002.0	µg/mL	+/- 36.4553
44	Dibenzofuran	132-64-9	MKCD9952	99%	1,006.7	µg/mL	+/- 36.6251
45	2,4-Dinitrotoluene	121-14-2	MKAA0690V	99%	1,003.8	µg/mL	+/- 36.5220
46	4-Nitrophenol	100-02-7	RP230627	99%	1,002.3	μg/mL	+/- 36.4674
47	2,3,4,6-Tetrachlorophenol	58-90-2	PR-30126	99%	1,008.7	µg/mL	+/- 36.6979
48	2,3,5,6-Tetrachlorophenol	935-95-5	RP230919	99%	1,006.3	μg/mL	+/- 36.6130
49	Fluorene	86-73-7	10241100	99%	1,008.3	µg/mL	+/- 36.6857
50	4-Chlorophenyl phenyl ether	7005-72-3	MKCT7248	99%	1,003.8	µg/mL	+/- 36.5220
51	Diethylphthalate	84-66-2	MKCD2547	99%	1,008.6	µg/mL	+/- 36.6958
52	4-Nitroaniline	100-01-6	RP230111	99%	1,001.1	µg/mL	+/- 36.4230
53	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol)	534-52-1	230718JLM	99%	1,002.0	ug/mL	+/- 36.4553

54	Diphenylamine	122-39-4	MKCH1042	99%	1,002.3	µg/mL	+/- 36.4674
55	Azobenzene	103-33-3	BCCK0887	99%	1,005.8	µg/mL	+/- 36.5928
56	4-Bromophenyl phenyl ether	101-55-3	STBH6361	99%	1,003.0	µg/mL	+/- 36.4917
57	Hexachlorobenzene	118-74-1	14821700	99%	1,007.5	µg/mL	+/- 36.6554
58	Pentachlorophenol	87-86-5	RP230530RSR	99%	1,008.8	μg/mL	+/- 36.7019
59	Phenanthrene	85-01-8	MKCQ8876	99%	1,008.4	µg/mL	+/- 36.6877
60	Anthracene	120-12-7	MKCR0570	99%	1,009.0	µg/mL	+/- 36.7100
61	Carbazole	86-74-8	14351100	99%	1,000.9	µg/mL	+/- 36.4149
62	Di-n-butylphthalate	84-74-2	MKCN4337	99%	1,007.6	µg/mL	+/- 36.6595
63	Fluoranthene	206-44-0	MKCQ4728	99%	1,009.6	μg/mL	+/- 36.7302
64	Рутепе	129-00-0	BCCG8479	98%	1,007.2	µg/mL	+/- 36.6453
65	Benzyl butyl phthalate	85-68-7	X12I018	99%	1,002.1	μg/mL	+/- 36.4573
66	Bis(2-ethylhexyl)adipate	103-23-1	MKCM1988	99%	1,005.2	µg/mL	+/- 36.5705
67	Benz(a)anthracene	56-55-3	I220012022BAA	99%	1,002.2	µg/mL	+/- 36.4614
68	Chrysene	218-01-9	RP230601	99%	1,008.3	μg/mL	+/- 36.6837
69	Bis(2-ethylhexyl)phthalate	117-81-7	MKCQ3468	99%	1,001.8	µg/mL	+/- 36.4472
70	Di-n-octyl phthalate	117-84-0	14382700	99%	1,006.0	µg/mL	+/- 36.6008
71	Benzo(b)fluoranthene	205-99-2	012013B	99%	1,002.8	µg/mL	+/- 36.4836
72	Benzo(k)fluoranthene	207-08-9	012022K	99%	1,003.0	µg/mL	+/- 36.4917
73	Benzo(a)pyrene	50-32-8	P54915-0703	99%	1,002.3	µg/mL	+/- 36.4674
74	Indeno(1,2,3-cd)pyrene	193-39-5	12-JKL-118-9	97%	1,009.4	µg/mL	+/- 36.7243
75	Dibenz(a,h)anthracene	53-70-3	2-ASA-59-1	99%	1,007.6	µg/mL	+/- 36.6595
76	Benzo(g,h,i)perylene	191-24-2	RP231003RSR	99%	1,002.9	µg/mL	+/- 36.4876

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

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## **CERTIFIED REFERENCE MATERIAL**

# **Certificate of Analysis**

chromatographic plus



hand

ISO/IEC 17025 Accred Testing Laboratory Certificate #3222.02

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	8270 MegaMix® 500-1000 μg/mL, I	اد	1 03/18/24	
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Expiration Date :	April 30, 2025	Storage: 0°C or co	lder	5/2/40
Handling:	Sonication required. Mix is photosensitive.	Ship: Ambient		

#### CERTIFIED VALUES

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10	1,2-Dichlorobenzene	95-50-1	SHBN3835	99%	1,000.3 µg/mL	+/- 36.3926
11	2-Methylphenol (o-cresol)	95-48-7	SHBN7598	99%	1,003.5 µg/mL	+/- 36.5099
12	2,2'-oxybis(1-chloropropane)	108-60-1	29-MAR-45-5	99%	1,007.3 µg/mL	+/- 36.6493
13	3-Methylphenol (m-cresol)	108-39-4	STBJ0710	99%	504.3 µg/mL	+/- 18.3500
14	4-Methylphenol (p-cresol)	106-44-5	SHBN3411	99%	503.6 µg/mL	+/- 18.3237
15	N-Nitroso-di-n-propylamine	621-64-7	N63MG	99%	1,008.3 µg/mL	+/- 36.6857
16	Hexachloroethane	67-72-1	QTORH	99%	1,007.5 µg/mL	+/- 36.6554
17	Nitrobenzene	98-95-3	10224044	99%	1,008.6 µg/mL	+/- 36.6938

18	Isophorone	78-59-1	MKCC9506	99%	1,005.9	µg/mL	+/- 36.5988
19	2-Nitrophenol	88-75-5	RP230710	99%	1,003.2	μg/mL	+/- 36.4998
20	2,4-Dimethylphenol	105-67-9	XW5GK	99%	1,003.8	µg/mL	+/- 36.5200
21	Bis(2-chloroethoxy)methane	111-91-1	13670200	99%	1,002.1	µg/mL	+/- 36.4573
22	2,4-Dichlorophenol	120-83-2	BCBZ6787	99%	1,003.7	µg/mL	+/- 36.5180
23	1,2,4-Trichlorobenzene	120-82-1	SHBP5900	99%	1,007.6	μg/mL	+/- 36.6574
24	Naphthalene	91-20-3	STBL1057	99%	1,008.3	µg/mL	+/- 36.6837
25	4-Chloroaniline	106-47-8	BCCJ3217	99%	1,001.3	µg/mL	+/- 36.4290
26	Hexachlorobutadiene	87-68-3	RP230823RSR	98%	1,008.3	µg/mL	+/- 36.6829
27	4-Chloro-3-methylphenol	59-50-7	BCCD4461	99%	1,003.1	µg/mL	+/- 36.4937
28	2-Methylnaphthalene	91-57-6	STBK0259	96%	1,001.9	µg/mL	+/- 36.4505
29	1-Methylnaphthalene	90-12-0	5234.00-8	98%	1,000.0	µg/mL	+/- 36.3838
30	Hexachlorocyclopentadiene	77-47-4	099063I14L	98%	1,008.5	µg/mL	+/- 36.6909
31	2,4,6-Trichlorophenol	88-06-2	STBJ5914	99%	1,004.4	µg/mL	+/- 36.5442
32	2,4,5-Trichlorophenol	95-95-4	FHN01	98%	1,001.9	µg/mL	+/- 36.4512
33	2-Chloronaphthalene	91-58-7	RPN7O	99%	1,001.1	µg/mL	+/- 36.4230
34	2-Nitroaniline	88-74-4	RP230531	99%	1,002.9	µg/mL	+/- 36.4876
35	1,4-Dinitrobenzene	100-25-4	RP230816	99%	1,005.7	µg/mL	+/- 36.5887
36	Acenaphthylene	208-96-8	p06V	98%	1,009.5	µg/mL	+/- 36.7265
37	1,3-Dinitrobenzene	99-65-0	1-DXX-24-1	99%	1,004.4	µg/mL	+/- 36.5422
38	Dimethylphthalate	131-11-3	358221L17K	99%	1,005.9	µg/mL	+/- 36.5968
39	2,6-Dinitrotoluene	606-20-2	BCCG1833	99%	1,003.2	µg/mL	+/- 36.4998
40	1,2-Dinitrobenzene	528-29-0	RP230428	99%	1,002.2	µg/mL	+/- 36.4634
41	Acenaphthene	83-32-9	MKCR7169	99%	1,009.3	µg/mL	+/- 36.7221
42	3-Nitroaniline	99-09-2	RP230822RSR	99%	1,003.9	µg/mL	+/- 36.5240
43	2,4-Dinitrophenol	51-28-5	DR230417RSR	99%	1,002.0	µg/mL	+/- 36.4553
44	Dibenzofuran	132-64-9	MKCD9952	99%	1,006.7	µg/mL	+/- 36.6251
45	2,4-Dinitrotoluene	121-14-2	MKAA0690V	99%	1,003.8	µg/mL	+/- 36.5220
46	4-Nitrophenol	100-02-7	RP230627	99%	1,002.3	μg/mL	+/- 36.4674
47	2,3,4,6-Tetrachlorophenol	58-90-2	PR-30126	99%	1,008.7	µg/mL	+/- 36.6979
48	2,3,5,6-Tetrachlorophenol	935-95-5	RP230919	99%	1,006.3	μg/mL	+/- 36.6130
49	Fluorene	86-73-7	10241100	99%	1,008.3	μg/mL	+/- 36.6857
50	4-Chlorophenyl phenyl ether	7005-72-3	MKCT7248	99%	1,003.8	µg/mL	+/- 36.5220
51	Diethylphthalate	84-66-2	MKCD2547	99%	1,008.6	µg/mL	+/- 36.6958
52	4-Nitroaniline	100-01-6	RP230111	99%	1,001.1	µg/mL	+/- 36.4230
53	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol)	534-52-1	230718JLM	99%	1,002.0	ug/mL	+/- 36.4553

54	Diphenylamine	122-39-4	MKCH1042	99%	1,002.3	µg/mL	+/- 36.4674
55	Azobenzene	103-33-3	BCCK0887	99%	1,005.8	µg/mL	+/- 36.5928
56	4-Bromophenyl phenyl ether	101-55-3	STBH6361	99%	1,003.0	µg/mL	+/- 36.4917
57	Hexachlorobenzene	118-74-1	14821700	99%	1,007.5	µg/mL	+/- 36.6554
58	Pentachlorophenol	87-86-5	RP230530RSR	99%	1,008.8	μg/mL	+/- 36.7019
59	Phenanthrene	85-01-8	MKCQ8876	99%	1,008.4	µg/mL	+/- 36.6877
60	Anthracene	120-12-7	MKCR0570	99%	1,009.0	µg/mL	+/- 36.7100
61	Carbazole	86-74-8	14351100	99%	1,000.9	µg/mL	+/- 36.4149
62	Di-n-butylphthalate	84-74-2	MKCN4337	99%	1,007.6	µg/mL	+/- 36.6595
63	Fluoranthene	206-44-0	MKCQ4728	99%	1,009.6	μg/mL	+/- 36.7302
64	Рутепе	129-00-0	BCCG8479	98%	1,007.2	µg/mL	+/- 36.6453
65	Benzyl butyl phthalate	85-68-7	X12I018	99%	1,002.1	μg/mL	+/- 36.4573
66	Bis(2-ethylhexyl)adipate	103-23-1	MKCM1988	99%	1,005.2	µg/mL	+/- 36.5705
67	Benz(a)anthracene	56-55-3	I220012022BAA	99%	1,002.2	µg/mL	+/- 36.4614
68	Chrysene	218-01-9	RP230601	99%	1,008.3	µg/mL	+/- 36.6837
69	Bis(2-ethylhexyl)phthalate	117-81-7	MKCQ3468	99%	1,001.8	µg/mL	+/- 36.4472
70	Di-n-octyl phthalate	117-84-0	14382700	99%	1,006.0	µg/mL	+/- 36.6008
71	Benzo(b)fluoranthene	205-99-2	012013B	99%	1,002.8	µg/mL	+/- 36.4836
72	Benzo(k)fluoranthene	207-08-9	012022K	99%	1,003.0	µg/mL	+/- 36.4917
73	Benzo(a)pyrene	50-32-8	P54915-0703	99%	1,002.3	µg/mL	+/- 36.4674
74	Indeno(1,2,3-cd)pyrene	193-39-5	12-JKL-118-9	97%	1,009.4	µg/mL	+/- 36.7243
75	Dibenz(a,h)anthracene	53-70-3	2-ASA-59-1	99%	1,007.6	µg/mL	+/- 36.6595
76	Benzo(g,h,i)perylene	191-24-2	RP231003RSR	99%	1,002.9	µg/mL	+/- 36.4876

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

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## **CERTIFIED REFERENCE MATERIAL**

# **Certificate of Analysis**

chromatographic plus



hand

ISO/IEC 17025 Accred Testing Laboratory Certificate #3222.02

#### 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. :	31850	Lot No.: <u>A020372</u>	6	6121177 Rc/
Description :	8270 MegaMix®			Juit
	8270 MegaMix® 500-1000 μg/mL, I	اد	1 03/18/24	
Container Size :	2 mL	Pkg Amt: > 1 mL		512146
Expiration Date :	April 30, 2025	Storage: 0°C or co	lder	5/2/40
Handling:	Sonication required. Mix is photosensitive.	Ship: Ambient		

#### CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Pyridine	110-86-1	SHBP6240	99%	1,001.6 µg/mL	+/- 36.4412
2	N-Nitrosodimethylamine	62-75-9	230209JLM	99%	1,005.9 µg/mL	+/- 36.5968
3	Phenol	108-95-2	MKCK1120	99%	1,003.3 µg/mL	+/- 36.5038
4	Aniline	62-53-3	X22F726	99%	1,005.8 μg/mL	+/- 36.5928
5	Bis(2-chloroethyl)ether	111-44-4	SHBL6942	99%	1,008.1 μg/mL	+/- 36.6776
6	2-Chlorophenol	95-57-8	STBJ3909	99%	1,001.8 µg/mL	+/- 36.4492
7	1,3-Dichlorobenzene	541-73-1	BCCD5315	99%	1,002.3 µg/mL	+/- 36.4654
8	1,4-Dichlorobenzene	106-46-7	MKBS7929V	99%	1,003.7 µg/mL	+/- 36.5159
9	Benzyl alcohol	100-51-6	SHBK5469	99%	1,008.7 µg/mL	+/- 36.6979
10	1,2-Dichlorobenzene	95-50-1	SHBN3835	99%	1,000.3 µg/mL	+/- 36.3926
11	2-Methylphenol (o-cresol)	95-48-7	SHBN7598	99%	1,003.5 µg/mL	+/- 36.5099
12	2,2'-oxybis(1-chloropropane)	108-60-1	29-MAR-45-5	99%	1,007.3 µg/mL	+/- 36.6493
13	3-Methylphenol (m-cresol)	108-39-4	STBJ0710	99%	504.3 µg/mL	+/- 18.3500
14	4-Methylphenol (p-cresol)	106-44-5	SHBN3411	99%	503.6 µg/mL	+/- 18.3237
15	N-Nitroso-di-n-propylamine	621-64-7	N63MG	99%	1,008.3 µg/mL	+/- 36.6857
16	Hexachloroethane	67-72-1	QTORH	99%	1,007.5 µg/mL	+/- 36.6554
17	Nitrobenzene	98-95-3	10224044	99%	1,008.6 µg/mL	+/- 36.6938

18	Isophorone	78-59-1	MKCC9506	99%	1,005.9	µg/mL	+/- 36.5988
19	2-Nitrophenol	88-75-5	RP230710	99%	1,003.2	μg/mL	+/- 36.4998
20	2,4-Dimethylphenol	105-67-9	XW5GK	99%	1,003.8	µg/mL	+/- 36.5200
21	Bis(2-chloroethoxy)methane	111-91-1	13670200	99%	1,002.1	µg/mL	+/- 36.4573
22	2,4-Dichlorophenol	120-83-2	BCBZ6787	99%	1,003.7	µg/mL	+/- 36.5180
23	1,2,4-Trichlorobenzene	120-82-1	SHBP5900	99%	1,007.6	μg/mL	+/- 36.6574
24	Naphthalene	91-20-3	STBL1057	99%	1,008.3	µg/mL	+/- 36.6837
25	4-Chloroaniline	106-47-8	BCCJ3217	99%	1,001.3	µg/mL	+/- 36.4290
26	Hexachlorobutadiene	87-68-3	RP230823RSR	98%	1,008.3	µg/mL	+/- 36.6829
27	4-Chloro-3-methylphenol	59-50-7	BCCD4461	99%	1,003.1	µg/mL	+/- 36.4937
28	2-Methylnaphthalene	91-57-6	STBK0259	96%	1,001.9	µg/mL	+/- 36.4505
29	1-Methylnaphthalene	90-12-0	5234.00-8	98%	1,000.0	µg/mL	+/- 36.3838
30	Hexachlorocyclopentadiene	77-47-4	099063I14L	98%	1,008.5	µg/mL	+/- 36.6909
31	2,4,6-Trichlorophenol	88-06-2	STBJ5914	99%	1,004.4	µg/mL	+/- 36.5442
32	2,4,5-Trichlorophenol	95-95-4	FHN01	98%	1,001.9	µg/mL	+/- 36.4512
33	2-Chloronaphthalene	91-58-7	RPN7O	99%	1,001.1	µg/mL	+/- 36.4230
34	2-Nitroaniline	88-74-4	RP230531	99%	1,002.9	µg/mL	+/- 36.4876
35	1,4-Dinitrobenzene	100-25-4	RP230816	99%	1,005.7	µg/mL	+/- 36.5887
36	Acenaphthylene	208-96-8	p06V	98%	1,009.5	µg/mL	+/- 36.7265
37	1,3-Dinitrobenzene	99-65-0	1-DXX-24-1	99%	1,004.4	µg/mL	+/- 36.5422
38	Dimethylphthalate	131-11-3	358221L17K	99%	1,005.9	µg/mL	+/- 36.5968
39	2,6-Dinitrotoluene	606-20-2	BCCG1833	99%	1,003.2	µg/mL	+/- 36.4998
40	1,2-Dinitrobenzene	528-29-0	RP230428	99%	1,002.2	µg/mL	+/- 36.4634
41	Acenaphthene	83-32-9	MKCR7169	99%	1,009.3	µg/mL	+/- 36.7221
42	3-Nitroaniline	99-09-2	RP230822RSR	99%	1,003.9	µg/mL	+/- 36.5240
43	2,4-Dinitrophenol	51-28-5	DR230417RSR	99%	1,002.0	µg/mL	+/- 36.4553
44	Dibenzofuran	132-64-9	MKCD9952	99%	1,006.7	µg/mL	+/- 36.6251
45	2,4-Dinitrotoluene	121-14-2	MKAA0690V	99%	1,003.8	µg/mL	+/- 36.5220
46	4-Nitrophenol	100-02-7	RP230627	99%	1,002.3	μg/mL	+/- 36.4674
47	2,3,4,6-Tetrachlorophenol	58-90-2	PR-30126	99%	1,008.7	µg/mL	+/- 36.6979
48	2,3,5,6-Tetrachlorophenol	935-95-5	RP230919	99%	1,006.3	μg/mL	+/- 36.6130
49	Fluorene	86-73-7	10241100	99%	1,008.3	μg/mL	+/- 36.6857
50	4-Chlorophenyl phenyl ether	7005-72-3	MKCT7248	99%	1,003.8	µg/mL	+/- 36.5220
51	Diethylphthalate	84-66-2	MKCD2547	99%	1,008.6	µg/mL	+/- 36.6958
52	4-Nitroaniline	100-01-6	RP230111	99%	1,001.1	µg/mL	+/- 36.4230
53	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol)	534-52-1	230718JLM	99%	1,002.0	ug/mL	+/- 36.4553

54	Diphenylamine	122-39-4	MKCH1042	99%	1,002.3	µg/mL	+/- 36.4674
55	Azobenzene	103-33-3	BCCK0887	99%	1,005.8	µg/mL	+/- 36.5928
56	4-Bromophenyl phenyl ether	101-55-3	STBH6361	99%	1,003.0	µg/mL	+/- 36.4917
57	Hexachlorobenzene	118-74-1	14821700	99%	1,007.5	µg/mL	+/- 36.6554
58	Pentachlorophenol	87-86-5	RP230530RSR	99%	1,008.8	μg/mL	+/- 36.7019
59	Phenanthrene	85-01-8	MKCQ8876	99%	1,008.4	µg/mL	+/- 36.6877
60	Anthracene	120-12-7	MKCR0570	99%	1,009.0	µg/mL	+/- 36.7100
61	Carbazole	86-74-8	14351100	99%	1,000.9	µg/mL	+/- 36.4149
62	Di-n-butylphthalate	84-74-2	MKCN4337	99%	1,007.6	µg/mL	+/- 36.6595
63	Fluoranthene	206-44-0	MKCQ4728	99%	1,009.6	μg/mL	+/- 36.7302
64	Рутепе	129-00-0	BCCG8479	98%	1,007.2	µg/mL	+/- 36.6453
65	Benzyl butyl phthalate	85-68-7	X12I018	99%	1,002.1	μg/mL	+/- 36.4573
66	Bis(2-ethylhexyl)adipate	103-23-1	MKCM1988	99%	1,005.2	µg/mL	+/- 36.5705
67	Benz(a)anthracene	56-55-3	I220012022BAA	99%	1,002.2	µg/mL	+/- 36.4614
68	Chrysene	218-01-9	RP230601	99%	1,008.3	μg/mL	+/- 36.6837
69	Bis(2-ethylhexyl)phthalate	117-81-7	MKCQ3468	99%	1,001.8	µg/mL	+/- 36.4472
70	Di-n-octyl phthalate	117-84-0	14382700	99%	1,006.0	µg/mL	+/- 36.6008
71	Benzo(b)fluoranthene	205-99-2	012013B	99%	1,002.8	µg/mL	+/- 36.4836
72	Benzo(k)fluoranthene	207-08-9	012022K	99%	1,003.0	µg/mL	+/- 36.4917
73	Benzo(a)pyrene	50-32-8	P54915-0703	99%	1,002.3	µg/mL	+/- 36.4674
74	Indeno(1,2,3-cd)pyrene	193-39-5	12-JKL-118-9	97%	1,009.4	µg/mL	+/- 36.7243
75	Dibenz(a,h)anthracene	53-70-3	2-ASA-59-1	99%	1,007.6	µg/mL	+/- 36.6595
76	Benzo(g,h,i)perylene	191-24-2	RP231003RSR	99%	1,002.9	µg/mL	+/- 36.4876

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

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## **CERTIFIED REFERENCE MATERIAL**



chromatographic plus



ACCREDITED ISO 17034 Accredited

#### 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. :	31087	Lot No.:	A0206206	- 512187 7 RC/
Description :	Acid Surrogate Mix (4/89 SO	W)		512101 KC
	Acid Surrogate 10, 000µg/mL	., Methanol, 5mL/ampul		V (03/18/24
Container Size :	5 mL	Pkg Amt:	> 5 mL	912206
Expiration Date :	January 31, 2032	Storage:	10°C or colder	
		Ship:	Ambient	

#### CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	2-Fluorophenol	367-12-4	STBK1705	99%	10,005.3 µg/mL	+/- 302.5390
2	Phenol-d6	13127-88-3	PR-33287A	99%	10,005.5 μg/mL	+/- 302.5475
3	2,4,6-Tribromophenol	118-79-6	RP230831RSR	99%	10,006.6 µg/mL	+/- 302.5783

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

Solvent: Methanol CAS # 6'

CAS # 67-56-1 Purity 99%



Chuide Milb

Christie Mills - Operations Lead Tech - ARM QC

Date Passed: 08-Jan-2024

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



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## **CERTIFIED REFERENCE MATERIAL**



chromatographic plus



ACCREDITED ISO 17034 Accredited

#### 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. :	31087	Lot No.:	A0206206	- 512187 7 RC/
Description :	Acid Surrogate Mix (4/89 SO	W)		512101 KC
	Acid Surrogate 10, 000µg/mL	., Methanol, 5mL/ampul		V (03/18/24
Container Size :	5 mL	Pkg Amt:	> 5 mL	912206
Expiration Date :	January 31, 2032	Storage:	10°C or colder	
		Ship:	Ambient	

#### CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	2-Fluorophenol	367-12-4	STBK1705	99%	10,005.3 µg/mL	+/- 302.5390
2	Phenol-d6	13127-88-3	PR-33287A	99%	10,005.5 μg/mL	+/- 302.5475
3	2,4,6-Tribromophenol	118-79-6	RP230831RSR	99%	10,006.6 µg/mL	+/- 302.5783

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

Solvent: Methanol CAS # 6'

CAS # 67-56-1 Purity 99%



Chuide Milb

Christie Mills - Operations Lead Tech - ARM QC

Date Passed: 08-Jan-2024

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



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## **CERTIFIED REFERENCE MATERIAL**



chromatographic plus



ACCREDITED ISO 17034 Accredited

#### 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. :	31087	Lot No.:	A0206206	- 512187 7 RC/
Description :	Acid Surrogate Mix (4/89 SO	W)		512101 KC
	Acid Surrogate 10, 000µg/mL	., Methanol, 5mL/ampul		V (03/18/24
Container Size :	5 mL	Pkg Amt:	> 5 mL	912206
Expiration Date :	January 31, 2032	Storage:	10°C or colder	
		Ship:	Ambient	

#### CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	2-Fluorophenol	367-12-4	STBK1705	99%	10,005.3 µg/mL	+/- 302.5390
2	Phenol-d6	13127-88-3	PR-33287A	99%	10,005.5 μg/mL	+/- 302.5475
3	2,4,6-Tribromophenol	118-79-6	RP230831RSR	99%	10,006.6 µg/mL	+/- 302.5783

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

Solvent: Methanol CAS # 6'

CAS # 67-56-1 Purity 99%



Chuide Milb

Christie Mills - Operations Lead Tech - ARM QC

Date Passed: 08-Jan-2024

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



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# **CERTIFIED REFERENCE MATERIAL**

# **Certificate of Analysis**

chromatographic plus



VIEC 17025 Accredite Testing Laboratory Certificate #3222.02

### 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. :	31086	Lot No.: 4	A0206381	- 512207 7 Rc/
Description :	B/N Surrogate Mix (4/89 SOW)	Sidou ( KC/		
	Base Neutral Surrogate 5000µg	/mL, Methylene Chlorid	e, 5mL/ampul	V ) 03/18/24
Container Size :	5 mL	Pkg Amt:	> 5 mL	512221
Expiration Date :	December 31, 2029	Storage:	10°C or colder	
Handling:	Sonicate prior to use.	Ship:	Ambient	=:

#### CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Nitrobenzene-d5	4165-60-0	I-25158	99%	5,029.3 μg/mL	+/- 226.5204
2	2-Fluorobiphenyl	321-60-8	00021384	99%	5,030.9 µg/mL	+/- 226.5936
3	p-Terphenyl-d14	1718-51-0	PR-32599	99%	5,026.4 µg/mL	+/- 226.3909

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

Solvent: Methylene chloride CAS # 75-09-2 Purity 99%

Tech Tips:

Due to the limited solubility of p-terphenyl-d14 in methanol, we do not recommend that this mixture be diluted in methanol.





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.



Jess Hoy - Operations Tech I

Date Mixed: 09-Jan-2024

Jan-2024 Balance Serial #

ial # 1128360905

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Gungo & Pullins Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 11-Jan-2024

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

Absolute Standards, Inc. 800-368-1131 www.absolutestandards.com		Certified Reference Material CRM	CRM ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com
CERTIFIED WEIGHT REPORT Part Number: Lot Number: Description:	<u>90494</u> 060822 1-Methylnaphthalene	<b>Solvent(s): Lot#</b> Methylene chloride 105345	Jestentler 00
Expiration Date: 060827 Recommended Storage: Refrigerate Nominal Concentration (µg/mL): 2000 NIST Test ID#: 6UTB Weight(s) shown below were combined and diluted to (mL):	: 060827 Refrigerate (4 °C) 2000 6UTB and diluted to (mL): 100.0	5E-05 Balance Uncertainty 0.003 Flaak Uncertainty	Pormulated By: Prashant Chauhan DATE
Compound	Lot Nominal RM# Number Conc (µg/mL)	Purity Uncertainty Target Actual (%) Purity Weight(g) Weight(g)	Expanded SDS Information Actual Uncertainty (Solvent Safety Info. On Attached pg.) Conc (ug/mL) (++/) (ug/mL) CAS# 0SHA PEL (TWA) LD50
<ol> <li><u>1. 1-Methylnaphthalene</u></li> <li>Method GC8MSD-3.M: Column:SPB-5 (3 Split Ratio = 100:1, Scan Rate = 2. Analysi</li> </ol>	313         04413BX         2000           PB-5 (30m X 0.25mm ID X 0.25mm film ti Analysis performed by: Gina McLane.	98         0.2         0.20410         0.20423           hickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C	1.         1-Methylnaphthalene         313         04413BX         2000         98         0.2         0.20410         0.20423         2001.3         8.2         90-12-0         N/A         orl-rat 1840mg/rg           Method GC8MSD-3.M:         Column:SPB-5 (30m X 0.25mm ID X 0.25mm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9min.), Rate = 10°C/min., Injector B= 200°C, Detector B = 275°C, Split Ratio = 100:1, Scan Rate = 2.         Analysis performed by: Gina McLane.
	TIC: 90494.D		Scan 620 (11.160 min): 90494.D
2400000 1118		Abundance	C
2000000		400000	G12237 / KC/
1800000	CH3	350000	11 4 /ou 16/24
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400000		50000 <sup>63</sup> 1	
200000			157 2008 241 274 30 23 31 37 9 0 m 6 45 H 7
Time>0 5.00 10.00 15	15.00 20.00 25.00	30.00	0 150 200 250 300 350 400 450 500
<ul> <li>The cert</li> <li>Standar</li> <li>Standar</li> <li>All Standar</li> <li>All Standar</li> <li>Uncertai</li> <li>NISST T</li> </ul>	<ul> <li>The certified value is the concentration calculated from gravimetric and volu Shandar ds are prepared gravimetrically using balances that are calibrated w Standar ds are cretified (+A) 0.5% of the stated value, unless of the wise stated, All Shandards, after opening ampule, should be stored with caps tight and un Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evalua NIST Technical Note 1297, U.S. Government Printing Office, Washington, I     </li> </ul>	<ul> <li>The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.</li> <li>Standards are prepared gravinetrically using balances that are calibrated with weights traceable to NIST (see above).</li> <li>Standards are critical (+/) 0.5% of the stated value, unless otherwise stated.</li> <li>All Shandards, after opening ampule, should be stored with case tight and under appropriate laboratory conditions.</li> <li>Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Washington, DC, (1994).</li> <li>NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).</li> </ul>	herwise stated. see above). diftons. rtainty of NIST Measurement Result,"
Part # 90494 Lot # 060822		1 of 1	Printed: 4/9/2024, 3:59:04 PM

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And the formation         V Target       And the formation         V Target       And the formation         V Target       School A tarbed By.         V Target       And target       Solution (Solvent Safety Info. On Attached pg.)         V Target       Association         O.25742       5006.4       20.7       634.66.2       NM       on-nation         Abundance         Scen 590 (12.055 min): [ESB2]70318.D         Abundance         Scen 500 (12.055 min): [ESB2]70318.D         Abundance         Scen 500 (12.055 min): [ESB2]70318.D         Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2"         Abundance         Scen 500 (12.055 min): [ESB2]70318.D         Colspan="2"         Colspan="2"         Scen 500 (12.055 min): [ESB2]70318.D         Colspan="2"         Scen 500 (2.000 (2.000 (2.000 (2.000)
y         Target         Actual         Expanded         SDS Information           Weight(g)         Weight(g)         Conc. (up/mL)         CAS#         OSNA FEL (TWA)         UDSO           -         Weight(g)         Conc. (up/mL)         CAS#         OSNA FEL (TWA)         UDSO           -         0.25709         0.25742         5006.4         20.7         E34-66.2         WA         ort-rat 1167mg/k           =         50°C (1min.), Temp 2 = 300°C (4 min.), Rate = 10°C/min., Injector B= 200°C, Detector B =         216         250000         250000         26000         200°C, Detector B =         216           Abundance         Sconoco         300000         12.00°C (4 min.), Rate = 10°C/min., Injector B= 200°C, Detector B =         216         216           Abundance         Sconoco         300000         1400000         1400000         116         1179           4500000         350000         350000         1000         1179         1179         1179           1000000         357         49         64         118         1179         179           1000000         357         49         61         160         179         179         179           1000000         357         49         61 </td
0.25709         0.25742         5006.4         20.7         834-66.2         NA         ortiat 1167mg/k           = 50°C (1min.), Temp 2 = 300°C (4 min.), Rate = 10°C/min., Injector B= 200°C, Detector B =
Abundance         Scan 559 (12.055 min); [BSB2]70318.D           550000         550000           5000000         450000           500000         300000           300000         300000           300000         179           150000         143           160000         143           160000         143           179         143           100000         37           300000         37           40         108           1100         143           100         118           1100         118           110         143           110         143           110         143           110         154,167           100         100           118         161           118         161           118         161           118         154,167           100         100         100           100         100         100           100         100         100           118         174           108         118           108         118
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<sup>35</sup> <sup>49</sup> 61 <sup>96</sup> <sup>118</sup> <sup>131</sup> 154 167 <sup>190</sup> 209 m/z> <sup>0</sup> 40 60 80 100 120 140 160 180 200

Part # 98496 Lot # 040524

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And the formation         V Target       And the formation         V Target       And the formation         V Target       School A tarbed By.         V Target       And target       Solution (Solvent Safety Info. On Attached pg.)         V Target       Association         O.25742       5006.4       20.7       634.66.2       NM       on-nation         Abundance         Scen 590 (12.055 min): [ESB2]70318.D         Abundance         Scen 500 (12.055 min): [ESB2]70318.D         Abundance         Scen 500 (12.055 min): [ESB2]70318.D         Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2"         Abundance         Scen 500 (12.055 min): [ESB2]70318.D         Colspan="2"         Colspan="2"         Scen 500 (12.055 min): [ESB2]70318.D         Colspan="2"         Scen 500 (2.000 (2.000 (2.000 (2.000)
y         Target         Actual         Expanded         SDS Information           Weight(g)         Weight(g)         Conc. (up/mL)         CAS#         OSNA FEL (TWA)         UDSO           -         Weight(g)         Conc. (up/mL)         CAS#         OSNA FEL (TWA)         UDSO           -         0.25709         0.25742         5006.4         20.7         E34-66.2         WA         ort-rat 1167mg/k           =         50°C (1min.), Temp 2 = 300°C (4 min.), Rate = 10°C/min., Injector B= 200°C, Detector B =         216         250000         250000         26000         200°C, Detector B =         216           Abundance         Sconoco         300000         12.00°C (4 min.), Rate = 10°C/min., Injector B= 200°C, Detector B =         216         216           Abundance         Sconoco         300000         1400000         1400000         116         1179           4500000         350000         350000         1000         1179         1179         1179           1000000         357         49         64         118         1179         179           1000000         357         49         61         160         179         179         179           1000000         357         49         61 </td
0.25709         0.25742         5006.4         20.7         834-66.2         NA         ortiat 1167mg/k           = 50°C (1min.), Temp 2 = 300°C (4 min.), Rate = 10°C/min., Injector B= 200°C, Detector B =
Abundance         Scan 559 (12.055 min); [BSB2]70318.D           550000         550000           5000000         450000           500000         300000           300000         300000           300000         179           150000         143           160000         143           160000         143           179         143           100000         37           300000         37           40         108           1100         143           100         118           1100         118           110         143           110         143           110         143           110         154,167           100         100           118         161           118         161           118         161           118         154,167           100         100         100           100         100         100           100         100         100           118         174           108         118           108         118
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<sup>35</sup> <sup>49</sup> 61 <sup>96</sup> <sup>118</sup> <sup>131</sup> 154 167 <sup>190</sup> 209 m/z> <sup>0</sup> 40 60 80 100 120 140 160 180 200

Part # 98496 Lot # 040524

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1 of 1



5580 Skylane Blvd Santa Rosa, CA 95403

(707)525-5788 (800)878-7654 Toll Free (707)545-7901 Fax Manufacturer's Quality System Audited & Registered by TUV USA to ISO 9001:2015

Date Received:

			Certific	Certificate of Analysis			Page 1 of 1
Catalog No.: I	Lot No.:	Storage:	Solvent:	Exp. Date:		Descri	ption:
Z-010442-07	495833	≤ -10 °C	Methylene Chloride	1/16/2028	Benzalde	hyde Solution, 1000 mg	/L, 1.3 mL
	Compou	nd	CAS No	. Purit	ty (%)	Compound Lot No.	Concentration, mg/L
benzaldehyde			100-52-7	98	8.3	442.421.1P	996.8 ±11.49

512275 ) RC/ V ) 05/24/24 512279 ) 05/24/24

\*Not a certified value

5.

Scott Hunter Chemist All weights are traceable through N. I. S. T. Test No. 822/264157-00. Concentration (correct for purity) and uncertainty (95% confidence) values listed are determined gravimetriclly.

Certified By:



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O/IEC 17025 Accredite Testing Laboratory Certificate #3222.02

1

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

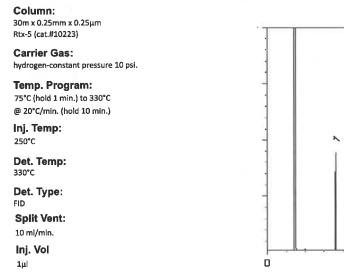
This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

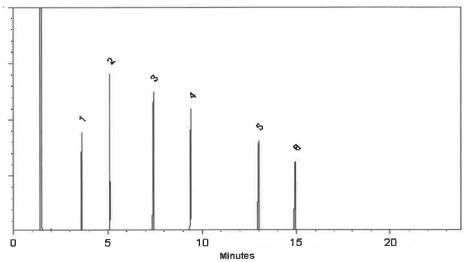
Catalog No. :	31206	Lot No.:	<u>A0206540</u>	G12312 RC/
<b>Description</b> :	SV Internal Standard Mix 2mg/ml	05/30/24		
	SV Internal Standard Mix 2mg/ml 2 1mL/ampul	000 µg/ml, Methyle	ne Chloride,	G12331
Container Size :	<u>2 mL</u>	Pkg Amt:	> 1 mL	
Expiration Date :	December 31, 2029	Storage:	10°C or colder	
Handling:	Sonication required. Mix is photosensitive.	Ship:	Ambient	

#### CERTIFIED VALUES

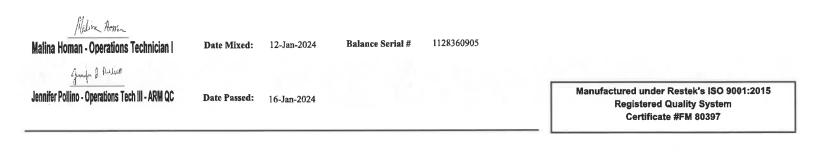
Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,4-Dichlorobenzene-d4	3855-82-1	PR-30447	99%	2,007.1 μg/mL	+/- 90.4025
2	Naphthalene-d8	1146-65-2	M-2180	99%	2,005.9 μg/mL	+/- 90.3454
3	Acenaphthene-d10	15067-26-2	PR-33507	99%	2,007.9 μg/mL	+/- 90.4385
4	Phenanthrene-d10	1517-22-2	PR-32303	99%	2,006.7 μg/mL	+/- 90.3845
5	Chrysene-d12	1719-03-5	PR-32210	99%	2,015.5 µg/mL	+/- 90.7778
6	Perylene-d12	1520-96-3	PR-33205	99%	2,014.7 μg/mL	+/- 90.7448

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





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





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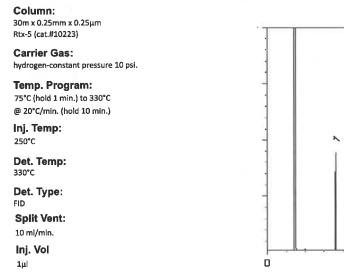
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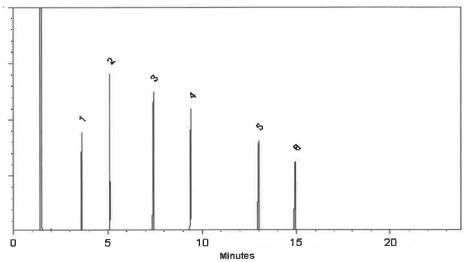
Catalog No. :	31206	Lot No.:	<u>A0206540</u>	G12312 RC/
<b>Description</b> :	SV Internal Standard Mix 2mg/ml			05/30/24
	SV Internal Standard Mix 2mg/ml 2000 μg/ml, Methylene Chloride, 1mL/ampul			G12331
Container Size :	2 mL	Pkg Amt:	> 1 mL	.91= 2
Expiration Date :	December 31, 2029	Storage:	10°C or colder	
Handling:	Sonication required. Mix is photosensitive.	Ship:	Ambient	

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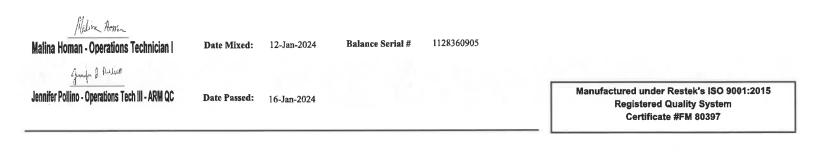
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4	Phenanthrene-d10	1517-22-2	PR-32303	99%	2,006.7 μg/mL	+/- 90.3845
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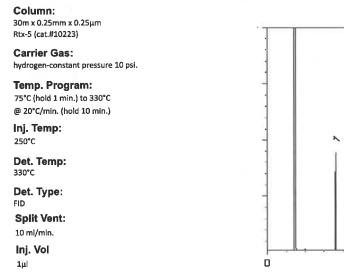
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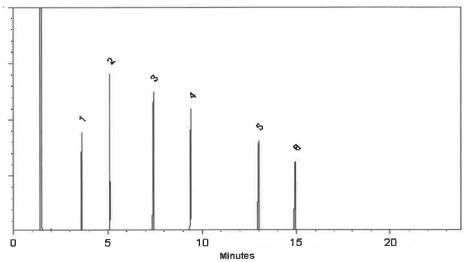
Catalog No. :	31206	Lot No.:	<u>A0206540</u>	G12312 RC/
<b>Description</b> :	SV Internal Standard Mix 2mg/ml			05/30/24
	SV Internal Standard Mix 2mg/ml 2000 μg/ml, Methylene Chloride, 1mL/ampul			G12331
Container Size :	2 mL	Pkg Amt:	> 1 mL	.91= 2
Expiration Date :	December 31, 2029	Storage:	10°C or colder	
Handling:	Sonication required. Mix is photosensitive.	Ship:	Ambient	

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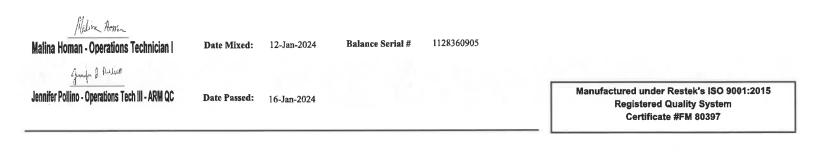
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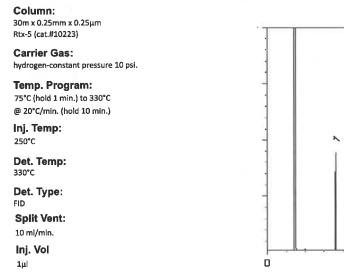
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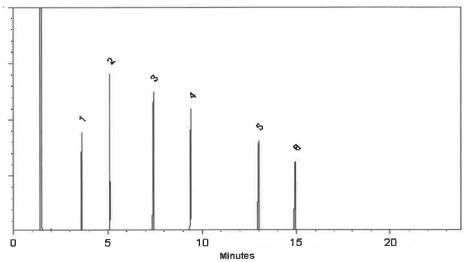
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<b>Description</b> :	SV Internal Standard Mix 2mg/ml			05/30/24
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Container Size :	2 mL	Pkg Amt:	> 1 mL	.91= 2
Expiration Date :	December 31, 2029	Storage:	10°C or colder	
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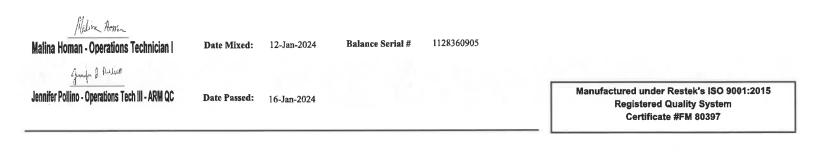
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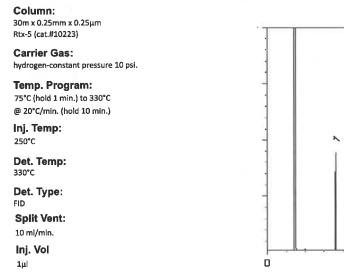
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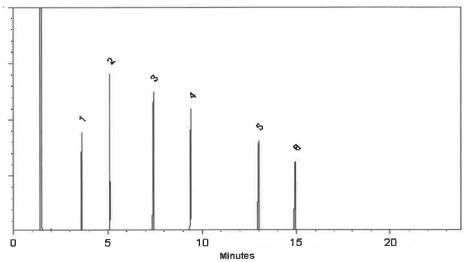
Catalog No. :	31206	Lot No.:	<u>A0206540</u>	G12312 RC/
<b>Description</b> :	SV Internal Standard Mix 2mg/ml			05/30/24
	SV Internal Standard Mix 2mg/ml 2000 μg/ml, Methylene Chloride, 1mL/ampul			G12331
Container Size :	2 mL	Pkg Amt:	> 1 mL	.91= 2
Expiration Date :	December 31, 2029	Storage:	10°C or colder	
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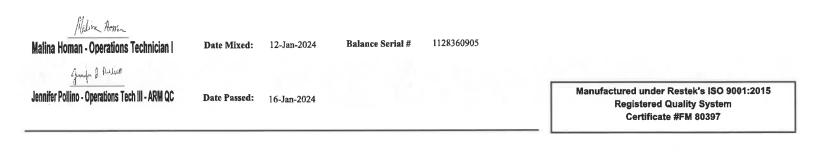
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3	Acenaphthene-d10	15067-26-2	PR-33507	99%	2,007.9 μg/mL	+/- 90.4385
4	Phenanthrene-d10	1517-22-2	PR-32303	99%	2,006.7 μg/mL	+/- 90.3845
5	Chrysene-d12	1719-03-5	PR-32210	99%	2,015.5 μg/mL	+/- 90.7778
6	Perylene-d12	1520-96-3	PR-33205	99%	2,014.7 μg/mL	+/- 90.7448

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





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.





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

www.restek.com

# **CERTIFIED REFERENCE MATERIAL**

# **Certificate of Analysis**

chromatographic plus



hduð

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O/IEC 17025 Accredite Testing Laboratory Certificate #3222.02

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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. :	31206	Lot No.:	<u>A0206540</u>	G12312 RC/
<b>Description</b> :	SV Internal Standard Mix 2mg/ml			05/30/24
	SV Internal Standard Mix 2mg/ml 2 1mL/ampul	000 µg/ml, Methyle	ne Chloride,	G12331
Container Size :	<u>2 mL</u>	Pkg Amt:	> 1 mL	
Expiration Date :	December 31, 2029	Storage:	10°C or colder	
Handling:	Sonication required. Mix is photosensitive.	Ship:	Ambient	

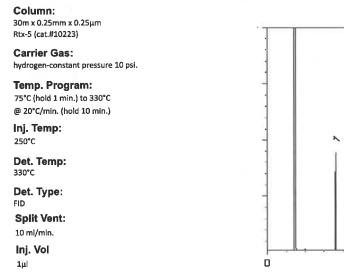
#### CERTIFIED VALUES

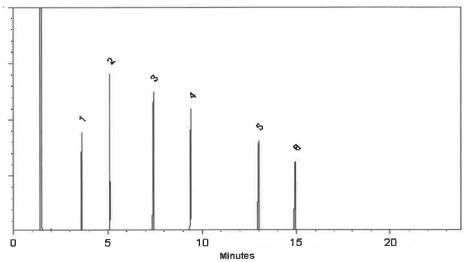
Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,4-Dichlorobenzene-d4	3855-82-1	PR-30447	99%	2,007.1 μg/mL	+/- 90.4025
2	Naphthalene-d8	1146-65-2	M-2180	99%	2,005.9 μg/mL	+/- 90.3454
3	Acenaphthene-d10	15067-26-2	PR-33507	99%	2,007.9 μg/mL	+/- 90.4385
4	Phenanthrene-d10	1517-22-2	PR-32303	99%	2,006.7 μg/mL	+/- 90.3845
5	Chrysene-d12	1719-03-5	PR-32210	99%	2,015.5 µg/mL	+/- 90.7778
6	Perylene-d12	1520-96-3	PR-33205	99%	2,014.7 μg/mL	+/- 90.7448

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

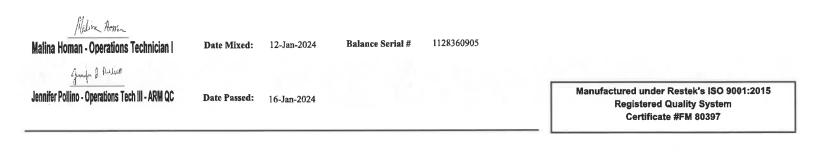
Solvent: Methylene chloride CAS # 75-09-2 Purity 99%

## **Quality Confirmation Test**





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.





110 Benner Circle Bellefonte, PA 16823-8812

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

www.restek.com

**CERTIFIED REFERENCE MATERIAL** 

# **Certificate of Analysis**

chromatographic plus



hdað



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. :	31810	Lot No.: <u>A0206801</u>	- S12362
Description :	OLC03.2 SVOA Deuterated Monitor	ing Compounds Mix	RC/
	OLC 03.2 SVOA Deuterated Monito Methylene Chloride, 2000µg/mL	ring Compounds, 1mL/ampul,	512388 25/31/24
Container Size :	2 mL	Pkg Amt: _ > 1 mL	
Expiration Date :	October 31, 2027	Storage: 10°C or colder	
Handling:	Sonication required. Mix is photosensitive.	Ship: Ambient	

#### CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Phenol-d5	4165-62-2	HJ-481	99%	2,010.0 µg/mL	+/- 60.7996
2	bis(2-Chloroethyl) ether-d8	93952-02-4	PR-31659	99%	2,005.0 μg/mL	+/- 60.6483
3	2-Chlorophenol-d4	93951-73-6	PR-30568	98%	2,010.0 µg/mL	+/- 60.7990
4	4-Methylphenol-d8	190780-66-6	PR-25303	99%	2,009.0 µg/mL	+/- 60.7693
5	Nitrobenzene-d5	4165-60-0	I-25158	99%	2,002.0 µg/mL	+/- 60.5576
6	2-Nitrophenol-d4	93951-78-1	H-151	99%	2,000.0 µg/mL	+/- 60.4971
7	2,4-Dichlorophenol-d3	93951-74-7	AB-210	99%	2,003.0 µg/mL	+/- 60.5878
8	4-Chloroaniline-d4	191656-33-4	FG-142	99%	2,005.0 µg/mL	+/- 60.6483
9	Dimethylphthalate-d6	85448-30-2	X-477	99%	2,001.0 µg/mL	+/- 60.5273
10	Acenaphthylene-d8	93951-97-4	FG-239	99%	2,009.0 μg/mL	+/- 60.7693
11	4-Nitrophenol-d4	93951-79-2	FG-377	99%	2,006.0 μg/mL	+/- 60.6786
12	Fluorene-d10	81103-79-9	FG-335	99%	2,006.0 μg/mL	+/- 60.6786
13	4,6-Dinitro-2-methylphenol-d2	93951-76-9	FG-143	99%	2,006.0 μg/mL	+/- 60.6786
14	Anthracene-d10	1719-06-8	PR-31411	99%	2,000.0 μg/mL	+/- 60.4971
15	Pyrene-d10	1718-52-1	PR-30304	99%	2,007.0 μg/mL	+/- 60.7088
16	Benzo(a)pyrene-d12	63466-71-7	PR-34192A	99%	2,006.0 µg/mL	+/- 60.6786

#### Solvent: Methylene chloride 75-09-2 CAS# 99% Purity

Column: 30m x 0.25mm x 0.25µm Rtx-5 (cat.#10223) **Carrier Gas:** 

hydrogen-constant pressure 10 psi.

Temp. Program: 40°C (hold 2 min.) to 330°C

Inj. Temp: 250°C

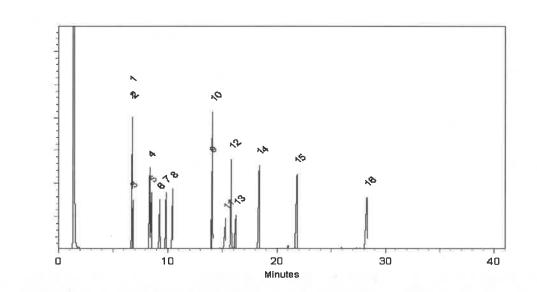
Det. Temp: 330°C

Det. Type:

FID Split Vent: 2 ml/min. Inj. Vol

1µl

@ 10°C/min. (hold 10 min.)



**Quality Confirmation Test** 

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.

Mur Matt Fragassi - Mix Technician

20-Jan-2024 Date Mixed:

B345965662

Jennifer Pollino - Operations Tech III - ARM QC

**Date Passed:** 

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

Grand & Aviliant

29-Jan-2024

**Balance Serial #** 

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110 Benner Circle Bellefonte, PA 16823-8812

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

www.restek.com

**CERTIFIED REFERENCE MATERIAL** 

# **Certificate of Analysis**

chromatographic plus



hdað



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. :	31810	Lot No.: <u>A0206801</u>	- S12362
Description :	OLC03.2 SVOA Deuterated Monitor	ing Compounds Mix	RC/
	OLC 03.2 SVOA Deuterated Monito Methylene Chloride, 2000µg/mL	ring Compounds, 1mL/ampul,	512388 25/31/24
Container Size :	2 mL	Pkg Amt: _ > 1 mL	
Expiration Date :	October 31, 2027	Storage: 10°C or colder	
Handling:	Sonication required. Mix is photosensitive.	Ship: Ambient	

#### CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Phenol-d5	4165-62-2	HJ-481	99%	2,010.0 µg/mL	+/- 60.7996
2	bis(2-Chloroethyl) ether-d8	93952-02-4	PR-31659	99%	2,005.0 μg/mL	+/- 60.6483
3	2-Chlorophenol-d4	93951-73-6	PR-30568	98%	2,010.0 µg/mL	+/- 60.7990
4	4-Methylphenol-d8	190780-66-6	PR-25303	99%	2,009.0 µg/mL	+/- 60.7693
5	Nitrobenzene-d5	4165-60-0	I-25158	99%	2,002.0 µg/mL	+/- 60.5576
6	2-Nitrophenol-d4	93951-78-1	H-151	99%	2,000.0 µg/mL	+/- 60.4971
7	2,4-Dichlorophenol-d3	93951-74-7	AB-210	99%	2,003.0 µg/mL	+/- 60.5878
8	4-Chloroaniline-d4	191656-33-4	FG-142	99%	2,005.0 µg/mL	+/- 60.6483
9	Dimethylphthalate-d6	85448-30-2	X-477	99%	2,001.0 µg/mL	+/- 60.5273
10	Acenaphthylene-d8	93951-97-4	FG-239	99%	2,009.0 μg/mL	+/- 60.7693
11	4-Nitrophenol-d4	93951-79-2	FG-377	99%	2,006.0 μg/mL	+/- 60.6786
12	Fluorene-d10	81103-79-9	FG-335	99%	2,006.0 μg/mL	+/- 60.6786
13	4,6-Dinitro-2-methylphenol-d2	93951-76-9	FG-143	99%	2,006.0 μg/mL	+/- 60.6786
14	Anthracene-d10	1719-06-8	PR-31411	99%	2,000.0 µg/mL	+/- 60.4971
15	Pyrene-d10	1718-52-1	PR-30304	99%	2,007.0 μg/mL	+/- 60.7088
16	Benzo(a)pyrene-d12	63466-71-7	PR-34192A	99%	2,006.0 µg/mL	+/- 60.6786

#### Solvent: Methylene chloride 75-09-2 CAS# 99% Purity

Column: 30m x 0.25mm x 0.25µm Rtx-5 (cat.#10223) **Carrier Gas:** 

hydrogen-constant pressure 10 psi.

Temp. Program: 40°C (hold 2 min.) to 330°C

Inj. Temp: 250°C

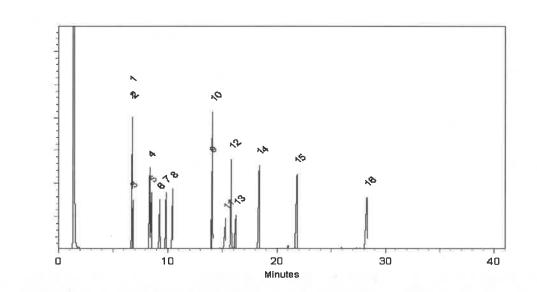
Det. Temp: 330°C

Det. Type:

FID Split Vent: 2 ml/min. Inj. Vol

1µl

@ 10°C/min. (hold 10 min.)



**Quality Confirmation Test** 

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.

Mur Matt Fragassi - Mix Technician

20-Jan-2024 Date Mixed:

B345965662

Jennifer Pollino - Operations Tech III - ARM QC

**Date Passed:** 

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

Grand & Aviliant

29-Jan-2024

**Balance Serial #** 

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CERTIFIED VALUES

Componen t #	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	3,3'-Dichlorobenzidine	<b>91-94-</b> 1	S240326RSR	99%	1,004.0 µg/mL	+/- 23.0487
2	Atrazine	1912-24-9	5FYWL	99%	1,005.0 μg/mL	+/- 23.0717
3	Benzidine	92-87-5	S240430RSR	99%	1,006.0 μg/mL	+/- 23.0947
4	epsilon-Caprolactam	105-60-2	Y16H012	99%	1,000.0 µg/mL	+/- 22.9569

Storage:

Ship:

10°C or colder

Ambient

Solvent: Methylene chloride CAS # 75-09-2 Purity 99%

**Expiration Date :** 

Handling:

July 31, 2026

This product is photosensitive.

512449 RC/ 12508 7/24/24

Repuse Annal Rebecca Gingerich - Operations Tech II

Date Mixed: 18-Jul-2024

Balance: 1128353505

1128353505

#### **Expiration Notes:**

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

## **Purity Notes:**

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

## Certified Uncertainty Value Notes:

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

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

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

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

## **Manufacturing Notes:**

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

## Handling Notes:

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



CERTIFIED VALUES

Componen t #	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	3,3'-Dichlorobenzidine	<b>91-94-</b> 1	S240326RSR	99%	1,004.0 µg/mL	+/- 23.0487
2	Atrazine	1912-24-9	5FYWL	99%	1,005.0 μg/mL	+/- 23.0717
3	Benzidine	92-87-5	S240430RSR	99%	1,006.0 μg/mL	+/- 23.0947
4	epsilon-Caprolactam	105-60-2	Y16H012	99%	1,000.0 µg/mL	+/- 22.9569

Storage:

Ship:

10°C or colder

Ambient

Solvent: Methylene chloride CAS # 75-09-2 Purity 99%

**Expiration Date :** 

Handling:

July 31, 2026

This product is photosensitive.

512449 RC/ 12508 7/24/24

Repuse Annal Rebecca Gingerich - Operations Tech II

Date Mixed: 18-Jul-2024

Balance: 1128353505

1128353505

#### **Expiration Notes:**

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

## **Purity Notes:**

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

## Certified Uncertainty Value Notes:

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

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

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

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

## **Manufacturing Notes:**

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

## Handling Notes:

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



CERTIFIED VALUES

Componen t #	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	3,3'-Dichlorobenzidine	<b>91-94-</b> 1	S240326RSR	99%	1,004.0 µg/mL	+/- 23.0487
2	Atrazine	1912-24-9	5FYWL	99%	1,005.0 μg/mL	+/- 23.0717
3	Benzidine	92-87-5	S240430RSR	99%	1,006.0 μg/mL	+/- 23.0947
4	epsilon-Caprolactam	105-60-2	Y16H012	99%	1,000.0 µg/mL	+/- 22.9569

Storage:

Ship:

10°C or colder

Ambient

Solvent: Methylene chloride CAS # 75-09-2 Purity 99%

**Expiration Date :** 

Handling:

July 31, 2026

This product is photosensitive.

512449 RC/ 12508 7/24/24

Repuse Annal Rebecca Gingerich - Operations Tech II

Date Mixed: 18-Jul-2024

Balance: 1128353505

1128353505

#### **Expiration Notes:**

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

## **Purity Notes:**

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

## Certified Uncertainty Value Notes:

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

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

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

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

## **Manufacturing Notes:**

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

## Handling Notes:

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



CERTIFIED VALUES

Componen t #	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	3,3'-Dichlorobenzidine	<b>91-94-</b> 1	S240326RSR	99%	1,004.0 µg/mL	+/- 23.0487
2	Atrazine	1912-24-9	5FYWL	99%	1,005.0 μg/mL	+/- 23.0717
3	Benzidine	92-87-5	S240430RSR	99%	1,006.0 μg/mL	+/- 23.0947
4	epsilon-Caprolactam	105-60-2	Y16H012	99%	1,000.0 µg/mL	+/- 22.9569

Storage:

Ship:

10°C or colder

Ambient

Solvent: Methylene chloride CAS # 75-09-2 Purity 99%

**Expiration Date :** 

Handling:

July 31, 2026

This product is photosensitive.

512449 RC/ 12508 7/24/24

Repuse Annal Rebecca Gingerich - Operations Tech II

Date Mixed: 18-Jul-2024

Balance: 1128353505

1128353505

#### **Expiration Notes:**

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

## **Purity Notes:**

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

## Certified Uncertainty Value Notes:

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

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

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

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

## **Manufacturing Notes:**

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

## Handling Notes:

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



CERTIFIED VALUES

Componen t #	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	3,3'-Dichlorobenzidine	<b>91-94-</b> 1	S240326RSR	99%	1,004.0 µg/mL	+/- 23.0487
2	Atrazine	1912-24-9	5FYWL	99%	1,005.0 μg/mL	+/- 23.0717
3	Benzidine	92-87-5	S240430RSR	99%	1,006.0 μg/mL	+/- 23.0947
4	epsilon-Caprolactam	105-60-2	Y16H012	99%	1,000.0 µg/mL	+/- 22.9569

Storage:

Ship:

10°C or colder

Ambient

Solvent: Methylene chloride CAS # 75-09-2 Purity 99%

**Expiration Date :** 

Handling:

July 31, 2026

This product is photosensitive.

512449 RC/ 12508 7/24/24

Repuse Annal Rebecca Gingerich - Operations Tech II

Date Mixed: 18-Jul-2024

Balance: 1128353505

1128353505

#### **Expiration Notes:**

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

## **Purity Notes:**

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

## Certified Uncertainty Value Notes:

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

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

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

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

## **Manufacturing Notes:**

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

## Handling Notes:

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CERTIFIED VALUES

Componen t #	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	3,3'-Dichlorobenzidine	<b>91-94-</b> 1	S240326RSR	99%	1,004.0 µg/mL	+/- 23.0487
2	Atrazine	1912-24-9	5FYWL	99%	1,005.0 μg/mL	+/- 23.0717
3	Benzidine	92-87-5	S240430RSR	99%	1,006.0 μg/mL	+/- 23.0947
4	epsilon-Caprolactam	105-60-2	Y16H012	99%	1,000.0 µg/mL	+/- 22.9569

Storage:

Ship:

10°C or colder

Ambient

Solvent: Methylene chloride CAS # 75-09-2 Purity 99%

**Expiration Date :** 

Handling:

July 31, 2026

This product is photosensitive.

512449 RC/ 12508 7/24/24

Repuse Annal Rebecca Gingerich - Operations Tech II

Date Mixed: 18-Jul-2024

Balance: 1128353505

1128353505

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

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CERTIFIED VALUES

Componen t #	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
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3	Benzidine	92-87-5	S240430RSR	99%	1,006.0 μg/mL	+/- 23.0947
4	epsilon-Caprolactam	105-60-2	Y16H012	99%	1,000.0 µg/mL	+/- 22.9569

Storage:

Ship:

10°C or colder

Ambient

Solvent: Methylene chloride CAS # 75-09-2 Purity 99%

**Expiration Date :** 

Handling:

July 31, 2026

This product is photosensitive.

512449 RC/ 12508 7/24/24

Repuse Annal Rebecca Gingerich - Operations Tech II

Date Mixed: 18-Jul-2024

Balance: 1128353505

1128353505

#### **Expiration Notes:**

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4	epsilon-Caprolactam	105-60-2	Y16H012	99%	1,000.0 µg/mL	+/- 22.9569

Storage:

Ship:

10°C or colder

Ambient

Solvent: Methylene chloride CAS # 75-09-2 Purity 99%

**Expiration Date :** 

Handling:

July 31, 2026

This product is photosensitive.

512449 RC/ 12508 7/24/24

Repuse Annal Rebecca Gingerich - Operations Tech II

Date Mixed: 18-Jul-2024

Balance: 1128353505

1128353505

#### **Expiration Notes:**

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CERTIFIED VALUES

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4	epsilon-Caprolactam	105-60-2	Y16H012	99%	1,000.0 µg/mL	+/- 22.9569

Storage:

Ship:

10°C or colder

Ambient

Solvent: Methylene chloride CAS # 75-09-2 Purity 99%

**Expiration Date :** 

Handling:

July 31, 2026

This product is photosensitive.

512449 RC/ 12508 7/24/24

Repuse Annal Rebecca Gingerich - Operations Tech II

Date Mixed: 18-Jul-2024

Balance: 1128353505

1128353505

#### **Expiration Notes:**

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#### CERTIFIED VALUES

Componen t#	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,2,4,5-Tetrachlorobenzene	95-94-3	МКСТ9480	99%	1,005.0 µg/mL	+/- 29.541899
2	Acetophenone	98-86-2	STBH8205	99%	1,005.0 μg/mL	+/- 29.541899
3	Benzaldehyde	100-52-7	RD231129RSRA	99%	1,008.0 µg/mL	+/- 29.630084
4	Benzoic acid	65-85-0	MKCR2694	99%	1,010.0 μg/mL	+/- 29.688874
5	Biphenyl	92-52-4	MKCS5928	99%	1,008.0 µg/mL	+/- 29.630084

Solvent: Methylene chloride CAS # 75-09-2 Purity 99%

512568 Rc/ V 7/24/24

Jess Hoy - Operations Tech I

Date Mixed: 18-Jul-2024

Balance: 1128360905

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

 $\square$ 

## **Expiration Notes:**

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#### CERTIFIED VALUES

Componen t#	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
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5	Biphenyl	92-52-4	MKCS5928	99%	1,008.0 µg/mL	+/- 29.630084

Solvent: Methylene chloride CAS # 75-09-2 Purity 99%

512568 Rc/ V 7/24/24

Jess Hoy - Operations Tech I

Date Mixed: 18-Jul-2024

Balance: 1128360905

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

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