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Prep Standard - Chemical Standard Summary

Order ID : P4495

Test : SVOCMS Group1

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,S 12110,S12111,S12113,S12117,S1212
6,S12127,S12128,S12129,S12130,S12131,S12132,S12133,S12134,S12187,S12188,S12189,S12207,S12236,S12237,
S12238,S12275,S12312,S12314,S12323,S12324,S12326,S12327,S12375,S12378,S12453,S12454,S12455,S12456,S
12457,S12458,S12459,S12460,S12461,S12509,S12510,S9068,S9934,

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Extractions STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3868	METHELENE CHLORIDE+ACETONE	EP2538	09/17/2024	03/11/2025	Rajesh Parikh	None	None	RUPESHKUMAR SHAH 09/17/2024

FROM 8000.00000ml of E3793 + 8000.00000ml of E3794 = Final Quantity: 1600.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3923	Baked Sodium Sulfate	EP2551	10/18/2024	01/03/2025	Rajesh Parikh	Extraction_SCALE_2 (EX-SC-2)	None	RUPESHKUMAR SHAH 10/18/2024

FROM 4000.00000gram of E3551 = Final Quantity: 4000.000 gram

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SVOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1366	LOQ & LOD 20 PPM	SP6506	05/16/2024	11/13/2024	Jagrut Upadhyay	None	None	mohammad ahmed 05/16/2024

FROM 0.20000ml of S11762 + 0.40000ml of S11557 + 0.40000ml of S11902 + 0.40000ml of S12089 + 18.60000ml of E3743 = Final Quantity: 20.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
2082	LOQ & LOD 4 PPM	SP6507	05/16/2024	11/13/2024	Jagrut Upadhyay	None	None	mohammad ahmed 05/16/2024

FROM 16.00000ml of E3743 + 4.00000ml of SP6506 = Final Quantity: 20.000 ml

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SVOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
18	Second Source Calibration Stock Standard, 100 PPM, (8270/625/CLP)	SP6558	07/09/2024	11/30/2024	Jagrut Upadhyay	None	None	mohammad ahmed 07/11/2024

FROM 0.04000ml of S10977 + 0.08000ml of S11003 + 0.10000ml of S11766 + 0.20000ml of S11566 + 0.20000ml of S12097 + 0.20000ml of S12117 + 1.18000ml of E3768 = Final Quantity: 2.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
416	40 ng BNA ICV, 40 PPM	SP6559	07/09/2024	11/30/2024	Jagrut Upadhyay	None	None	mohammad ahmed 07/11/2024

FROM 0.01000ml of S12033 + 0.60000ml of E3768 + 0.40000ml of SP6558 = Final Quantity: 1.010 ml

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SVOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3895	50 ug/ml DFTPP 8270E	SP6573	07/15/2024	01/08/2025	Rahul Chavli	None	None	Yogesh Patel 07/17/2024

FROM 1.00000ml of S10247 + 19.00000ml of E3768 = Final Quantity: 20.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3858	SFAM ICALSTOCK 200ppm : 5?.?0 ml	SP6576	08/01/2024	12/14/2024	Jagrut Upadhyay	None	None	Yogesh Patel 08/08/2024

FROM 0.05000ml of S12238 + 0.10000ml of S12073 + 0.10000ml of S12080 + 0.15000ml of S12237 + 0.20000ml of E3786 + 0.20000ml of S11533 + 0.20000ml of S11699 + 0.20000ml of S11767 + 0.30000ml of S11532 + 0.30000ml of S11671 + 0.50000ml of S11997 + 0.50000ml of S12236 + 0.50000ml of S12375 + 0.70000ml of S11670 + 1.00000ml of S11602 = Final Quantity: 5.000 ml

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SVOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3860	SFAM SSTD010	SP6580	08/01/2024	12/14/2024	Jagrut Upadhyay	None	None	Yogesh Patel 08/08/2024

FROM 0.01000ml of S12037 + 0.95000ml of E3786 + 0.05000ml of SP6576 = Final Quantity: 1.010 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3861	SFAM SSTD020	SP6581	08/01/2024	12/14/2024	Jagrut Upadhyay	None	None	Yogesh Patel 08/08/2024

FROM 0.01000ml of S12037 + 0.90000ml of E3786 + 0.10000ml of SP6576 = Final Quantity: 1.010 ml

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SVOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3862	SFAM SSTD040	SP6582	08/01/2024	12/14/2024	Jagrut Upadhyay	None	None	Yogesh Patel 08/08/2024

FROM 0.01000ml of S12037 + 0.80000ml of E3786 + 0.20000ml of SP6576 = Final Quantity: 1.010 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3863	SFAM SSTD080	SP6583	08/01/2024	12/14/2024	Jagrut Upadhyay	None	None	Yogesh Patel 08/08/2024

FROM 0.01000ml of S12037 + 0.60000ml of E3786 + 0.40000ml of SP6576 = Final Quantity: 1.010 ml

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SVOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3864	SFAM SSTD160	SP6584	08/01/2024	12/14/2024	Jagrut Upadhyay	None	None	Yogesh Patel 08/08/2024

FROM 0.01000ml of S12037 + 0.20000ml of E3786 + 0.80000ml of SP6576 = Final Quantity: 1.010 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3859	SFAM SSTD005	SP6585	08/01/2024	12/14/2024	Jagrut Upadhyay	None	None	Yogesh Patel 08/08/2024

FROM 0.01000ml of S12037 + 0.97500ml of E3786 + 0.02500ml of SP6576 = Final Quantity: 1.010 ml

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SVOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3865	SFAM ICV STOCK 200 PPM 2.0ml	SP6617	09/09/2024	01/05/2025	Jagrut Upadhyay	None	None	mohammad ahmed 09/11/2024

FROM 0.04000ml of E3791 + 0.04000ml of S10711 + 0.04000ml of S11700 + 0.04000ml of S9068 + 0.04000ml of S9934 + 0.10000ml of S12004 + 0.10000ml of S12378 + 0.20000ml of S12105 + 0.20000ml of S12126 + 0.20000ml of S12453 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3866	SFAM ICV 20 PPM	SP6618	09/09/2024	01/05/2025	Jagrut Upadhyay	None	None	mohammad ahmed 09/11/2024

FROM 0.01000ml of S12312 + 0.90000ml of E3791 + 0.10000ml of SP6617 = Final Quantity: 1.010 ml

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SVOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3764	8270/625 Stock solution 100 ng	SP6620	09/11/2024	02/08/2025	Jagrut Upadhyay	None	None	mohammad ahmed 09/11/2024

FROM 0.26700ml of S10103 + 0.40000ml of S11494 + 0.50000ml of S12113 + 1.00000ml of S11085 + 1.00000ml of S11098 + 1.00000ml of S11159 + 1.00000ml of S12078 + 1.00000ml of S12275 + 3.83300ml of E3791 = Final Quantity: 10.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
413	80 ng BNA ICC, 80 PPM	SP6621	09/11/2024	02/08/2025	Jagrut Upadhyay	None	None	mohammad ahmed 09/11/2024

FROM 0.01000ml of S12314 + 0.20000ml of E3791 + 0.80000ml of SP6620 = Final Quantity: 1.010 ml

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SVOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
412	60 ng BNA ICC, 60 PPM	SP6622	09/11/2024	02/08/2025	Jagrut Upadhyay	None	None	mohammad ahmed 09/11/2024

FROM 0.01000ml of S12314 + 0.40000ml of E3791 + 0.60000ml of SP6620 = Final Quantity: 1.010 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
411	50 ng BNA ICC, 50 PPM	SP6623	09/11/2024	02/08/2025	Jagrut Upadhyay	None	None	mohammad ahmed 09/11/2024

FROM 0.01000ml of S12314 + 0.50000ml of E3791 + 0.50000ml of SP6620 = Final Quantity: 1.010 ml

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SVOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
410	40 ng BNA ICC, 40 PPM	SP6624	09/11/2024	02/08/2025	Jagrut Upadhyay	None	None	mohammad ahmed 09/11/2024

FROM 0.01000ml of S12314 + 0.60000ml of E3791 + 0.40000ml of SP6620 = Final Quantity: 1.010 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3678	20 ng BNA ICC, 20 PPM	SP6625	09/11/2024	02/08/2025	Jagrut Upadhyay	None	None	mohammad ahmed 09/11/2024

FROM 0.01000ml of S12314 + 0.80000ml of E3791 + 0.20000ml of SP6620 = Final Quantity: 1.010 ml

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SVOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
408	10 ng BNA ICC, 10 PPM	SP6626	09/11/2024	02/08/2025	Jagrut Upadhyay	None	None	mohammad ahmed 09/11/2024

FROM 0.01000ml of S12314 + 0.90000ml of E3791 + 0.10000ml of SP6620 = Final Quantity: 1.010 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
407	5 ng BNA ICC, 5 PPM	SP6627	09/11/2024	02/08/2025	Jagrut Upadhyay	None	None	mohammad ahmed 09/11/2024

FROM 0.01000ml of S12314 + 0.95000ml of E3791 + 0.05000ml of SP6620 = Final Quantity: 1.010 ml

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SVOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
175	2.5 ng BNA ICC, 2.5 PPM	SP6628	09/11/2024	02/08/2025	Jagrut Upadhyay	None	None	mohammad ahmed 09/11/2024

FROM 0.01000ml of S12314 + 0.50000ml of E3791 + 0.50000ml of SP6627 = Final Quantity: 1.010 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
171	8270/625 Spike Solution, 50/100 PPM	SP6630	09/13/2024	02/12/2025	Rahul Chavli	None	None	Yogesh Patel 10/29/2024

FROM 0.10000ml of S12134 + 0.10000ml of S12461 + 0.20000ml of S12453 + 0.30000ml of S11775 + 0.30000ml of S12510 + 0.40000ml of S10393 + 0.40000ml of S10583 + 0.40000ml of S11138 + 0.40000ml of S11141 + 0.40000ml of S11649 + 0.70000ml of S11771 + 0.70000ml of S12105 + 0.80000ml of S12126 + 1.10000ml of S12110 + 1.10000ml of S12133 + 1.10000ml of S12460 + 1.20000ml of S12455 + 1.20000ml of S12456 + 1.20000ml of S12457 + 1.20000ml of S12458 + 1.20000ml of S12459 + 1.20000ml of S12509 + 1.30000ml of S11541 + 1.30000ml of S11772 + 1.30000ml of S11773 + 1.30000ml of S12106 + 1.30000ml of S12108 + 1.30000ml of S12111 + 1.30000ml of S12127 + 1.30000ml of S12129 + 1.30000ml of S12130 + 1.30000ml of S12131 + 1.30000ml of S12454 + 1.40000ml of S11774 + 1.40000ml of S12107 + 1.40000ml of S12109 + 1.40000ml of S12128 + 1.40000ml of S12132 + 163.00000ml of E3788 = Final Quantity: 200.000 ml

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SVOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
19	8270/CLP Surrogate Solution, 100 PPM BN/150 PPM ACID	SP6638	10/10/2024	04/04/2025	Jagrut Upadhyay	None	None	mohammad ahmed 10/18/2024

FROM 1930.00000ml of E3815 + 5.00000ml of S10978 + 5.00000ml of S10979 + 5.00000ml of S10980 + 5.00000ml of S11004 + 5.00000ml of S11005 + 5.00000ml of S11006 + 5.00000ml of S11007 + 5.00000ml of S11008 + 5.00000ml of S11009 + 5.00000ml of S11010 + 5.00000ml of S12187 + 5.00000ml of S12188 + 5.00000ml of S12189 + 5.00000ml of S12207 = Final Quantity: 2000.000 ml

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CHEMICAL RECEIPT LOG BOOK

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

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CHEMICAL RECEIPT LOG BOOK

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)	24I2662006	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

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

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CHEMICAL RECEIPT LOG BOOK

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

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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 days)	406703	03/11/2025	09/11/2024 / Rahul	02/07/2023 / Christian	S11085

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
CPI International	z-110381-01 / 8270 Calibration Solution, 76-1, 500 & 1,000 mg/L, 1ml	495831	03/11/2025	09/11/2024 / Rahul	02/07/2023 / Christian	S11098

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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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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]	A0201940	03/13/2025	09/13/2024 / yogesh	09/18/2023 / Kiran	S11541

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]	A0201940	11/16/2024	05/16/2024 / Jagrut	09/18/2023 / Kiran	S11557

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]	A0201940	12/05/2024	06/05/2024 / Rahul	09/18/2023 / Kiran	S11566

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31902 / CLP/SVOA Additions Mix (Atrazine, Benzaldehyde, Caprolactam) 1000ug/mL	A0200496	02/01/2025	08/01/2024 / anahy	09/25/2023 / Kiran	S11602

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555872 / Custom Standard, pentachlorophenol Std [CS 5328-5]	A0201728	03/13/2025	09/13/2024 / anahy	11/09/2023 / Yogesh	S11649

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	12/25/2024	06/25/2024 / Jagrut	11/13/2023 / Rahul	S11670

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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

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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

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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] [CS 4978-2]	A0207706	01/09/2025	07/09/2024 / Jagrut	02/05/2024 / Rahul	S12097

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	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

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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	S12108

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] [CS 4978-2]	A0207706	03/13/2025	09/13/2024 / anahy	02/05/2024 / Rahul	S12110

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	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

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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

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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 #
Restek	31087 / Acid Surrogate 10,000ug/ml,methanol,5ml/ ampul	A0206206	04/10/2025	10/10/2024 / anahy	03/15/2024 / Rahul	S12189

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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

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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 Monitoring Compounds, 1mL, 2000ug/mL, CH2Cl2	A0206801	01/25/2025	07/25/2024 / Jagrut	05/30/2024 / Rahul	S12375

284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

CHEMICAL RECEIPT LOG BOOK

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] [CS 4978-1]	A0214021	03/13/2025	09/13/2024 / anahy	07/23/2024 / RAHUL	S12455

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	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

284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

CHEMICAL RECEIPT LOG BOOK

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] [CS 4978-1]	A0214021	03/13/2025	09/13/2024 / anahy	07/23/2024 / RAHUL	S12460

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	S12461

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	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

284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

CHEMICAL RECEIPT LOG BOOK

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

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	072820	01/10/2025	07/10/2024 / Jagrut	10/18/2021 / Christian	S9934

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

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

CERTIFIED WEIGHT REPORT

Part Number: 98496
Lot Number: 042221
Description: 1,2,3,4-Tetrachlorobenzene

Solvent(s): Methylene chloride **Lot#** 105345

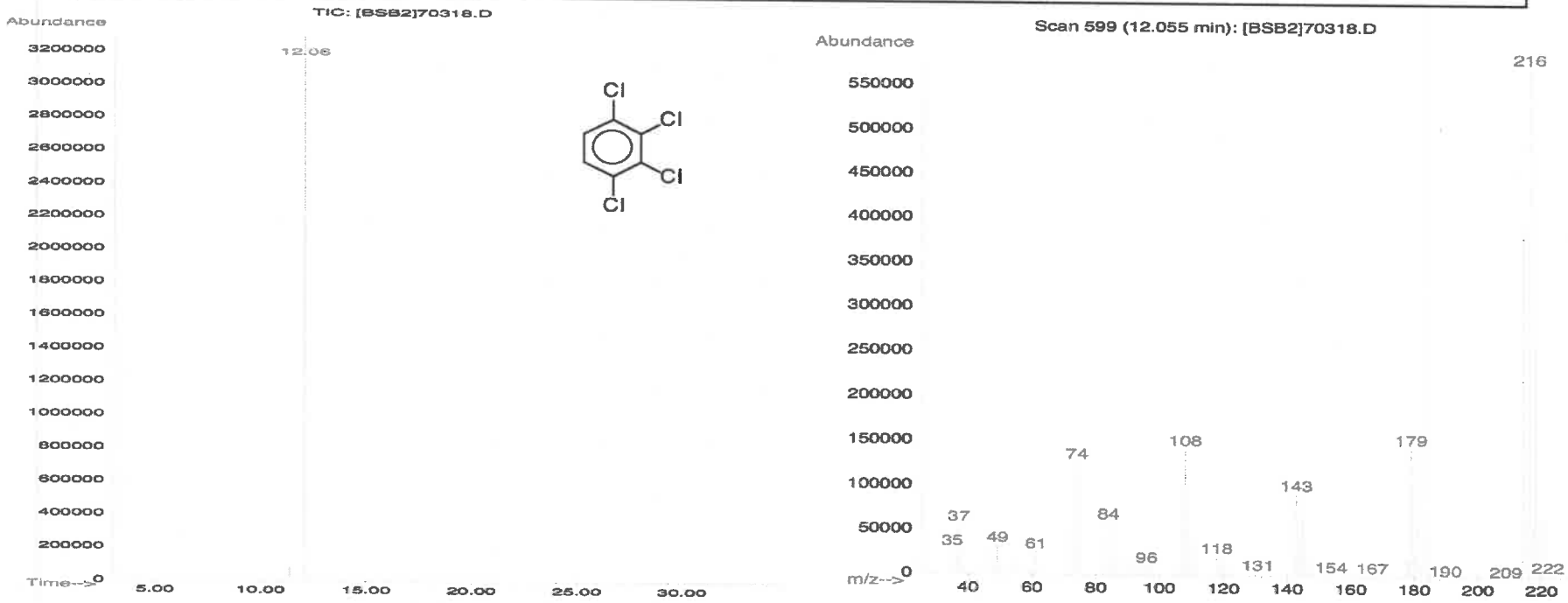
Expiration Date: 042226
Recommended Storage: Refrigerate (4 °C)
Nominal Concentration (µg/mL): 5000
NIST Test ID#: 6UTB

Weight(s) shown below were combined and diluted to (mL): 20.0 5E-05 Balance Uncertainty 0.058 Flask Uncertainty

Formulated By: Prashant Chauhan	042221 DATE
Reviewed By: Pedro L. Rentas	042221 DATE

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. 1,2,3,4-Tetrachlorobenzene	318	FBW01	5000	97.3	0.2	0.10292	0.10300	5003.7	36.0	634-66-2	N/A	orl-rat 1167mg/kg

Method GC8MSD-3.M: Column: (30m X 0.25mm ID X 0.25µm film thickness), Temp 1 = 50°C (1min.), Temp 2 = 300°C (4 min.), Rate = 10°C/min., Injector B= 200°C, Detector B = 300°C. Analysis performed by Nicole Poisson.



Received on 08/23/22 by CG S10708 to S10712

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

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

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

CERTIFIED WEIGHT REPORT

Part Number: 98495
Lot Number: 072820
Description: Pentachlorobenzene

Expiration Date: 072825
Recommended Storage: Refrigerate (4 °C)
Nominal Concentration (µg/mL): 5000
NIST Test ID#: 23060

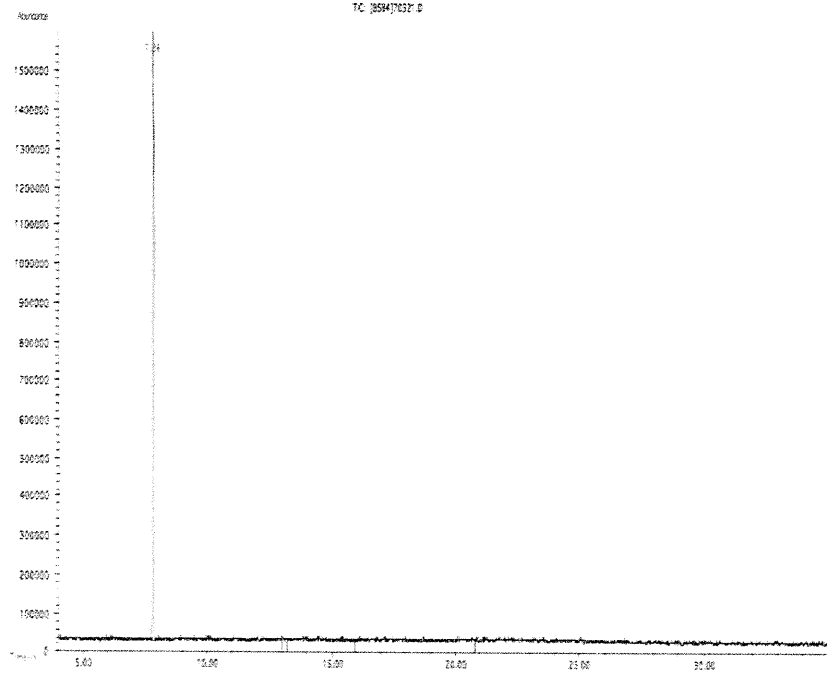
Solvent(s): **Lot#**
Methylene chloride 104929

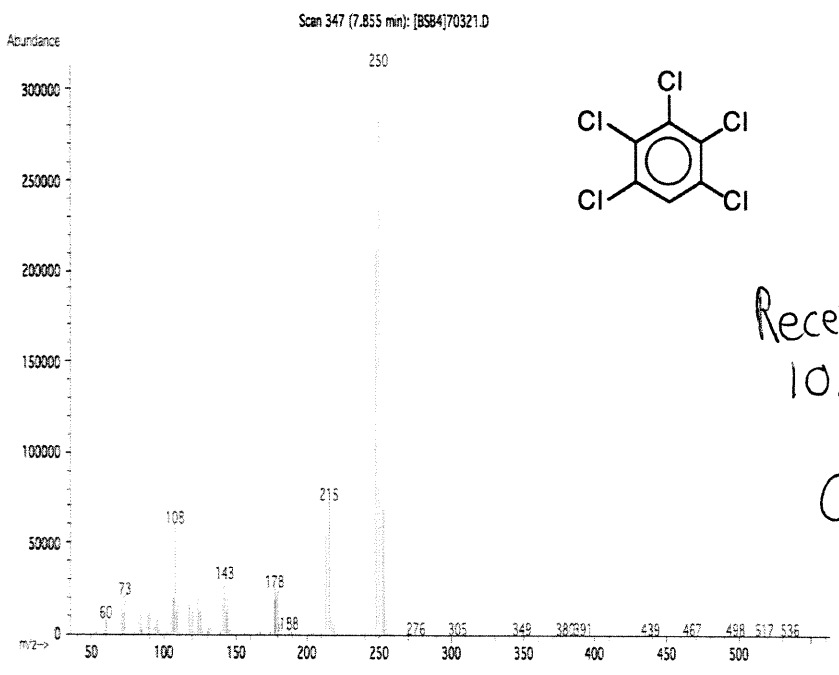
5E-05 Balance Uncertainty
Weight(s) shown below were combined and diluted to (mL): 25.0 0.001 Flask Uncertainty

	072820
Formulated By: Benson Chan	DATE
	072820
Reviewed By: Pedro L. Rentas	DATE

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. Pentachlorobenzene	321	2705100	5000	99.5	0.5	0.12561	0.12566	5001.9	50.4	608-93-5	N/A	orl-rat 1080mg/kg

Method GC7MSD-1.M: Column: SPB-608 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 150°C (4min.), Temp 2 = 290°C (13.5 min.), Rate = 8°C/min., Injector B= 200°C, Detector B = 290°C. Split Ratio = 100:1, Scan Rate = 2. Analysis performed by Candice Warren.





Received on
10/18/21
by
CG
S9931
to
S9935

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

RESTEK
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

ACCREDITED ISO 17034 Accredited Reference Material Producer Certificate #3222.01

ACCREDITED ISO/IEC 17025 Accredited 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. : 31902 **Lot No.:** A0200496

Description : Additions Standard

Additions Standard 1000 µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : August 31, 2025 **Storage:** 10°C or colder

Handling: This product is photosensitive. **Ship:** Ambient

K.S 09/25/23

S11599 1

S11603

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	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

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

Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

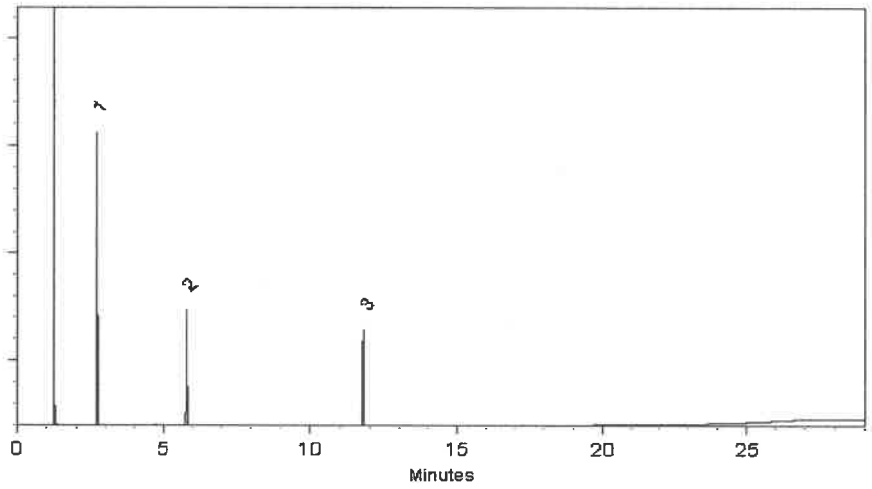
Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID

Split Vent:
100 ml/min.

Inj. Vol
1µl



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

Laith Clemente - Operations Technician I

Date Mixed: 01-Aug-2023 **Balance Serial #** B442140311

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 04-Aug-2023

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

CPI INTERNATIONAL

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

Catalog No.:	Lot No.:	Storage:	Solvent:	Exp. Date:	Description:
Z-010074-07	406703	≤ -10 °C	Methylene Chloride	3/30/2025	3,3'-Dichlorobenzidine Solution, 1,000 mg/L, 1 mL

Compound	CAS No.	Purity (%)	Compound Lot No.	Concentration, mg/L
3,3'-dichlorobenzidine	91-94-1	99.5	74.3.26P	989 ± 7.53

Received on
02/07/23
by
CG

S11084
to
S11088

*Not a certified value

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 gravimetricllly.

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Santa Rosa, CA 95403

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Manufacturer's Quality System
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Date Received:_____

Certificate of Analysis

Rev 0

Catalog No.:	Lot No.:	Storage:	Solvent:	Exp. Date:	Description:
Z-110817-01	414125	≤ -10 °C	Methylene Chloride	6/21/2025	Custom 8270 Mix, 4-55, 1000 mg/L, 1 mL

Compound	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 ± 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
by
CG
S11089
to
S11093

*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 gravimetricly.

CPI INTERNATIONAL

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Santa Rosa, CA 95403

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(707)545-7901 Fax

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by TUV USA to ISO 9001:2015

Date Received: _____

Certificate of Analysis

Rev 0

Catalog No.:	Lot No.:	Storage:	Solvent:	Exp. Date:	Description:
Z-112090-04	440246	≤ -10 °C	Methylene Chloride	2/16/2026	CLP Acid Surrogate Solution, 7,500 mg/L, 1 mL

Compound	CAS No.	Purity (%)	Compound Lot No.	Concentration, mg/L
2-chlorophenol-d_4	93951-73-6	99.3	248.12.7P	7487 ± 17.2
2-fluorophenol	367-12-4	99.8	10.7.3.3P	7513 ± 17.26
phenol-d6	13127-88-3	99.9	949.120.8P	7481 ± 17.19
2,4,6-tribromophenol	118-79-6	99.8	12.1.6P	7469 ± 17.17

Received on
02/25/21
by
CG

S9236
to
S9240

*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: Erica Castiglione

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 gravimetricly.

CPI INTERNATIONAL

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Santa Rosa, CA 95403

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Received on 02/07/23 by CG

~~S11088~~ S11096 to S11099

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

Date Received:_____

Certificate of Analysis

Rev 0

Catalog No.:	Lot No.:	Storage:	Solvent:	Exp. Date:	Description:
Z-110381-01	495831	≤ -10 °C	Methylene Chloride	10/30/2027	Method 8270 Calibration Solution, 76-1, 500 & 1,000 mg/L, 1 mL

Compound	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 ± 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 ± 17.24
benzo[b]fluoranthene	205-99-2	99.8	17.421.3P	1001 ± 19.91
benzo[k]fluoranthene	207-08-9	98.9	18.421.4P	1001 ± 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 ± 17.24
bis(2-chloroethoxy)methane	111-91-1	99.1	31.3.15P	999.7 ± 17.89
bis(2-chloroethyl)ether	111-44-4	99.8	32.7.1P	1001 ± 17.23
bis(2-chloro-1-methylethyl) ether	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 ± 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 ± 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

Certified By: Briana Smith

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 gravimetricly.

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 ± 17.22
2,4,5-trichlorophenol	95-95-4	96.5	121.7.1.1P	1000 ± 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

Certified By: Briana Smith

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 gravimetricly.

RESTEK®
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

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
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.

Received on 01/26/21 by CG S9064 to S9093

Catalog No. : 31853 **Lot No.:** A0158185

Description : 1,4-dioxane

1,4-Dioxane 2,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

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

CERTIFIED VALUES

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

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

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

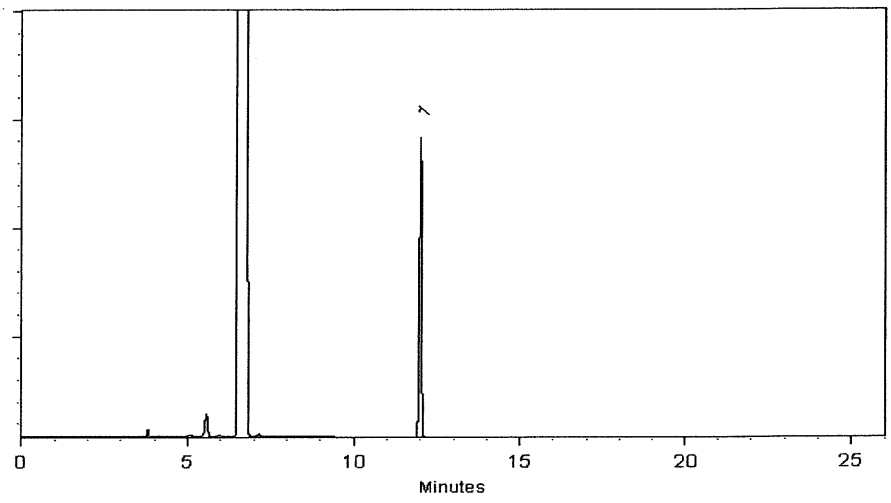
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

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.

Clara Windle - Operations Technician I

Date Mixed: 25-Feb-2020 **Balance:** B442140311

Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 27-Feb-2020

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

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Tel: (800)356-1688
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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 on 03/08/22 by CG S10242 to S10247

Catalog No. : 31615 **Lot No.:** A0182667

Description : GC/MS Tuning Mixture

GC/MS Tuning Mixture 1,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : March 31, 2025 **Storage:** 10°C or colder

Handling: Contains carcinogen/reproductive toxin. **Ship:** Ambient

CERTIFIED VALUES

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

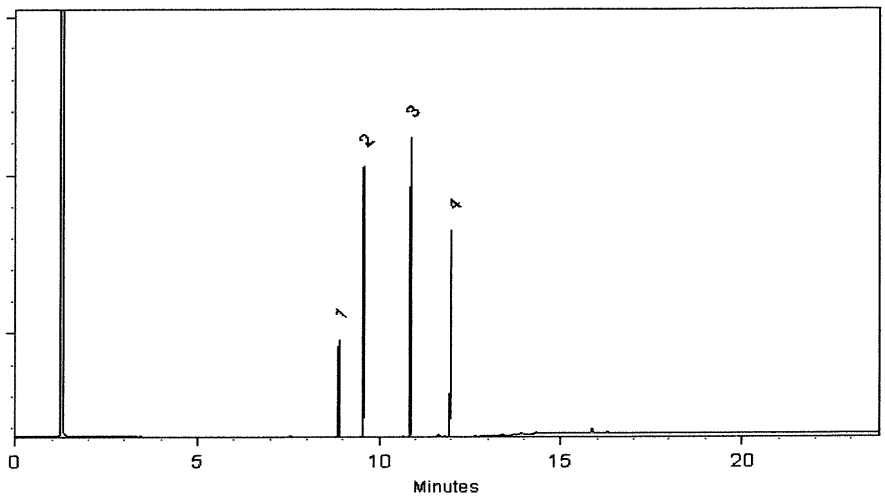
Carrier Gas:
hydrogen-constant pressure 10 psi.

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.

Morgan Craighead - Mix Technician

Date Mixed: 08-Mar-2022 **Balance:** B345965662

Merlina Cowan - Operations Tech I

Date Passed: 10-Mar-2022

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

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Certificate #3222.02

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Received by CG on 05/19/22

S10393 to S10402

Catalog No. : 555871 **Lot No.:** A0185300

Description : Custom 4-Nitrophenol Standard

Custom 4-Nitrophenol Standard 25,000µg/mL, Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : May 31, 2025 **Storage:** 10°C or colder

Ship: Ambient

CERTIFIED VALUES

Component #	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	4-Nitrophenol	25,060.0 µg/mL	+/- 231.9100 µg/mL	Gravimetric
	CAS # 100-02-7 (Lot MKCN1089)		+/- 753.2622 µg/mL	Unstressed
	Purity 99%		+/- 905.6020 µg/mL	Stressed

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

Katelyn McGinnis - Operations Tech I

Date Mixed: 16-May-2022 **Balance:** 1128342314

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

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

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

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

Manufacturing Notes:

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

Handling Notes:

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

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Received by
CG
on
07/05/22
S 10583
to
S 10592

Catalog No. : 555868 **Lot No.:** A0186373

Description : Custom Benzidine Standard

Custom Benzidine Standard 25,000µg/mL, Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : June 30, 2025 **Storage:** 10°C or colder

Handling: Contains carcinogen/reproductive toxin. **Ship:** Ambient

CERTIFIED VALUES

Component #	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	Benzidine	25,200.0 µg/mL	+/- 233.2055 µg/mL	Gravimetric
	CAS # 92-87-5 (Lot 220511RSR)		+/- 351.6606 µg/mL	Unstressed
	Purity 99%		+/- 512.6054 µg/mL	Stressed

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

Tom Suckar - Mix Technician **Date Mixed:** 16-Jun-2022 **Balance:** 1122030677

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

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

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

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

Manufacturing Notes:

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

Handling Notes:

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

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Received by CG on 12/28/22 S10951 to S10980

Catalog No. : 31087 **Lot No.:** A0188108

Description : Acid Surrogate Mix (4/89 SOW)

Acid Surrogate 10,000µg/mL, Methanol, 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : August 31, 2030 **Storage:** 10°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound		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 µg/mL +/- 294.4162 µg/mL +/- 357.2628 µg/mL		Gravimetric Unstressed Stressed
2	Phenol-d6 **CAS #** 13127-88-3 **Purity** 99%	(Lot PR-31262)	10,043.3 µg/mL	+/- 58.3923 µg/mL +/- 293.0957 µg/mL +/- 355.6603 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 µg/mL +/- 292.1253 µg/mL +/- 354.4829 µg/mL		Gravimetric Unstressed Stressed

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

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

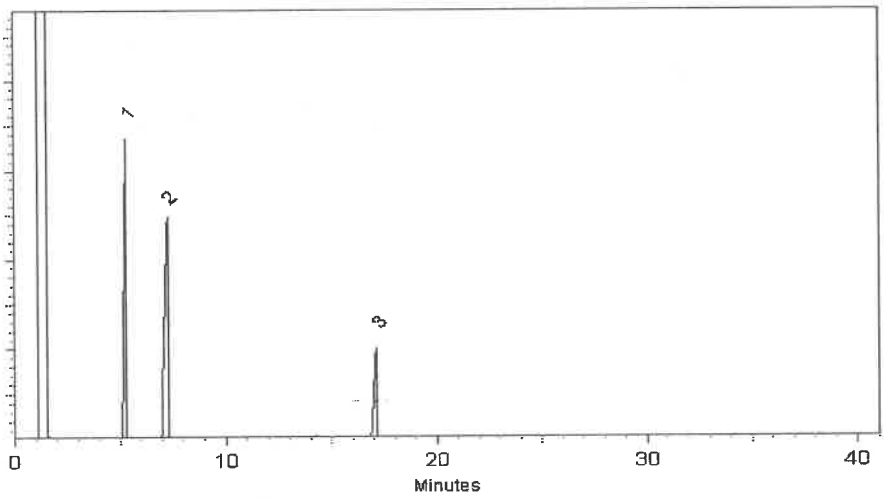
Carrier Gas:
hydrogen-constant pressure 10 psi.

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.

Morgan Craighead - Mix Technician

Date Mixed: 02-Aug-2022 **Balance:** 1127510105

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 05-Aug-2022

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

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Received by CG on 12/28/22 S10951 to S10980

Catalog No. : 31087 **Lot No.:** A0188108

Description : Acid Surrogate Mix (4/89 SOW)

Acid Surrogate 10,000µg/mL, Methanol, 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : August 31, 2030 **Storage:** 10°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound		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 µg/mL +/- 294.4162 µg/mL +/- 357.2628 µg/mL		Gravimetric Unstressed Stressed
2	Phenol-d6 **CAS #** 13127-88-3 **Purity** 99%	(Lot PR-31262)	10,043.3 µg/mL	+/- 58.3923 µg/mL +/- 293.0957 µg/mL +/- 355.6603 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 µg/mL +/- 292.1253 µg/mL +/- 354.4829 µg/mL		Gravimetric Unstressed Stressed

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

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

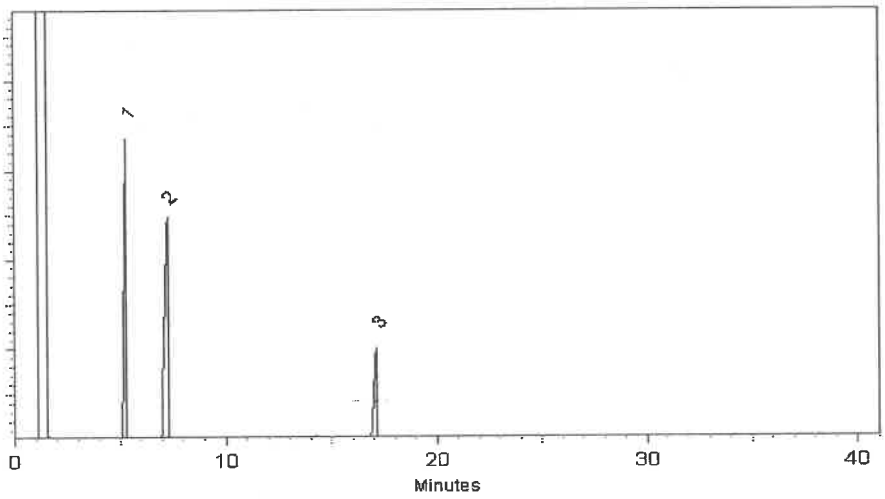
Carrier Gas:
hydrogen-constant pressure 10 psi.

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.

Morgan Craighead - Mix Technician

Date Mixed: 02-Aug-2022 **Balance:** 1127510105

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 05-Aug-2022

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

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Received by CG on 12/28/22 S10951 to S10980

Catalog No. : 31087 **Lot No.:** A0188108

Description : Acid Surrogate Mix (4/89 SOW)

Acid Surrogate 10,000µg/mL, Methanol, 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : August 31, 2030 **Storage:** 10°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound		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 µg/mL +/- 294.4162 µg/mL +/- 357.2628 µg/mL		Gravimetric Unstressed Stressed
2	Phenol-d6 **CAS #** 13127-88-3 **Purity** 99%	(Lot PR-31262)	10,043.3 µg/mL	+/- 58.3923 µg/mL +/- 293.0957 µg/mL +/- 355.6603 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 µg/mL +/- 292.1253 µg/mL +/- 354.4829 µg/mL		Gravimetric Unstressed Stressed

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

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

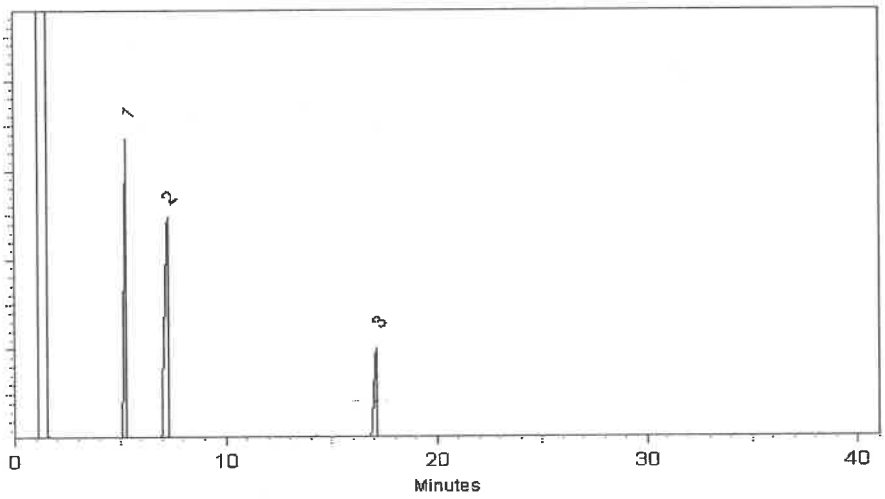
Carrier Gas:
hydrogen-constant pressure 10 psi.

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



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Morgan Craighead - Mix Technician

Date Mixed: 02-Aug-2022 **Balance:** 1127510105

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 05-Aug-2022

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

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Received by CG on 12/28/22 S10951 to S10980

Catalog No. : 31087 **Lot No.:** A0188108

Description : Acid Surrogate Mix (4/89 SOW)

Acid Surrogate 10,000µg/mL, Methanol, 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : August 31, 2030 **Storage:** 10°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound		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 µg/mL +/- 294.4162 µg/mL +/- 357.2628 µg/mL		Gravimetric Unstressed Stressed
2	Phenol-d6 **CAS #** 13127-88-3 **Purity** 99%	(Lot PR-31262)	10,043.3 µg/mL	+/- 58.3923 µg/mL +/- 293.0957 µg/mL +/- 355.6603 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 µg/mL +/- 292.1253 µg/mL +/- 354.4829 µg/mL		Gravimetric Unstressed Stressed

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

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

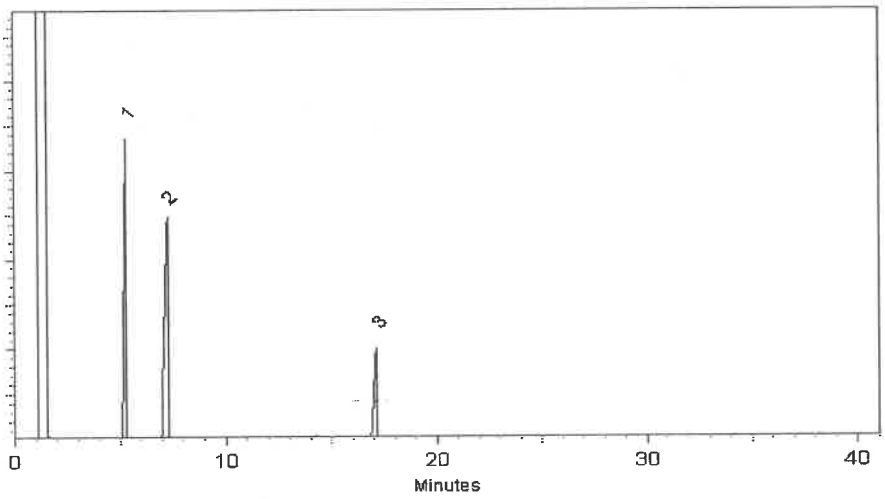
Carrier Gas:
hydrogen-constant pressure 10 psi.

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.

Morgan Craighead - Mix Technician

Date Mixed: 02-Aug-2022 **Balance:** 1127510105

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 05-Aug-2022

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

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Received by CG on 12/28/22 $10981 to $11010

Catalog No. : 31086 **Lot No.:** A0189418

Description : B/N Surrogate Mix (4/89 SOW)

Base Neutral Surrogate 5000µg/mL, Methylene Chloride, 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : August 31, 2028 **Storage:** 10°C or colder

Handling: Sonicate prior to use. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	Nitrobenzene-d5 **CAS #** 4165-60-0 (Lot PR-29940A) **Purity** 99%	5,009.8 µg/mL	+/- 29.1271 µg/mL +/- 225.6421 µg/mL +/- 250.3778 µg/mL	Gravimetric Unstressed Stressed
2	2-Fluorobiphenyl **CAS #** 321-60-8 (Lot 00021384) **Purity** 99%	5,026.6 µg/mL	+/- 29.2250 µg/mL +/- 226.4003 µg/mL +/- 251.2191 µg/mL	Gravimetric Unstressed Stressed
3	p-Terphenyl-d14 **CAS #** 1718-51-0 (Lot PR-30504) **Purity** 99%	5,027.3 µg/mL	+/- 29.2289 µg/mL +/- 226.4304 µg/mL +/- 251.2524 µg/mL	Gravimetric Unstressed Stressed

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.

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

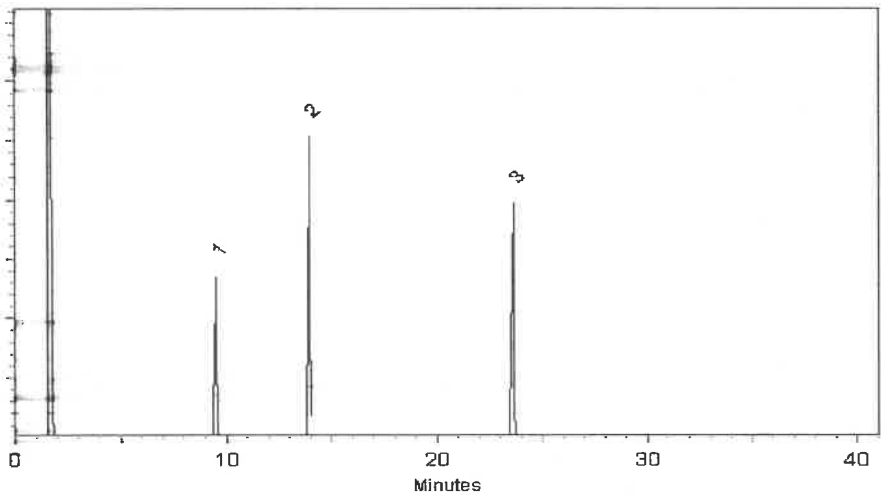
Carrier Gas:
hydrogen-constant pressure 10 psi.

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



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John Friedline - Operations Technician I

Date Mixed: 09-Sep-2022 **Balance:** 1128353505

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 13-Sep-2022

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

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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 12/28/22 $10981 to $11010

Catalog No. : 31086 **Lot No.:** A0189418

Description : B/N Surrogate Mix (4/89 SOW)

Base Neutral Surrogate 5000µg/mL, Methylene Chloride, 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : August 31, 2028 **Storage:** 10°C or colder

Handling: Sonicate prior to use. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	Nitrobenzene-d5 **CAS #** 4165-60-0 (Lot PR-29940A) **Purity** 99%	5,009.8 µg/mL	+/- 29.1271 µg/mL +/- 225.6421 µg/mL +/- 250.3778 µg/mL	Gravimetric Unstressed Stressed
2	2-Fluorobiphenyl **CAS #** 321-60-8 (Lot 00021384) **Purity** 99%	5,026.6 µg/mL	+/- 29.2250 µg/mL +/- 226.4003 µg/mL +/- 251.2191 µg/mL	Gravimetric Unstressed Stressed
3	p-Terphenyl-d14 **CAS #** 1718-51-0 (Lot PR-30504) **Purity** 99%	5,027.3 µg/mL	+/- 29.2289 µg/mL +/- 226.4304 µg/mL +/- 251.2524 µg/mL	Gravimetric Unstressed Stressed

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.

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

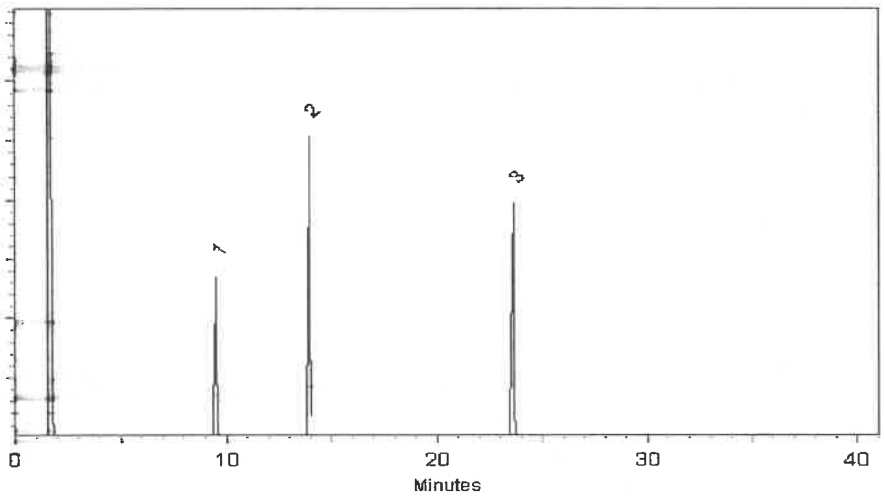
Carrier Gas:
hydrogen-constant pressure 10 psi.

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



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Catalog No. : 31086 **Lot No.:** A0189418

Description : B/N Surrogate Mix (4/89 SOW)

Base Neutral Surrogate 5000µg/mL, Methylene Chloride, 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : August 31, 2028 **Storage:** 10°C or colder

Handling: Sonicate prior to use. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
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2	2-Fluorobiphenyl **CAS #** 321-60-8 (Lot 00021384) **Purity** 99%	5,026.6 µg/mL	+/- 29.2250 µg/mL +/- 226.4003 µg/mL +/- 251.2191 µg/mL	Gravimetric Unstressed Stressed
3	p-Terphenyl-d14 **CAS #** 1718-51-0 (Lot PR-30504) **Purity** 99%	5,027.3 µg/mL	+/- 29.2289 µg/mL +/- 226.4304 µg/mL +/- 251.2524 µg/mL	Gravimetric Unstressed Stressed

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

Tech Tips:
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Column:
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Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
40°C (hold 2 min.) to 330°C
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Inj. Temp:
250°C

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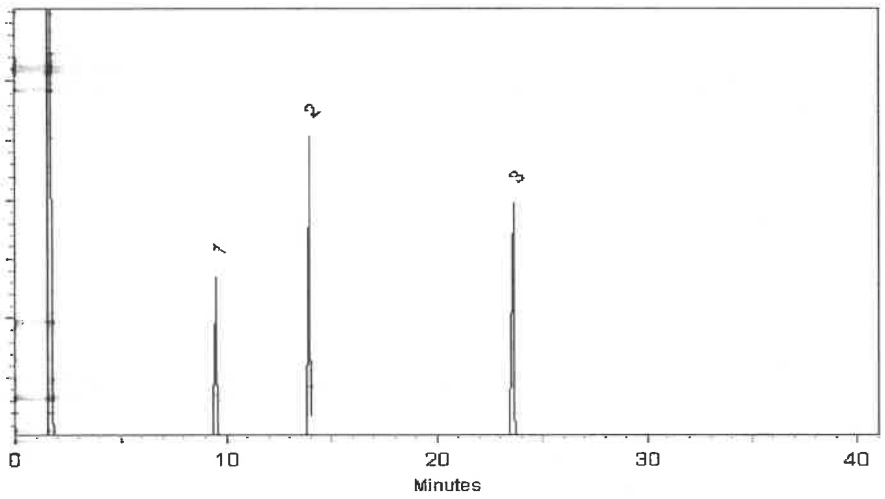

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John Friedline - Operations Technician I

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Catalog No. : 31086 **Lot No.:** A0189418

Description : B/N Surrogate Mix (4/89 SOW)

Base Neutral Surrogate 5000µg/mL, Methylene Chloride, 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : August 31, 2028 **Storage:** 10°C or colder

Handling: Sonicate prior to use. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
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2	2-Fluorobiphenyl **CAS #** 321-60-8 (Lot 00021384) **Purity** 99%	5,026.6 µg/mL	+/- 29.2250 µg/mL +/- 226.4003 µg/mL +/- 251.2191 µg/mL	Gravimetric Unstressed Stressed
3	p-Terphenyl-d14 **CAS #** 1718-51-0 (Lot PR-30504) **Purity** 99%	5,027.3 µg/mL	+/- 29.2289 µg/mL +/- 226.4304 µg/mL +/- 251.2524 µg/mL	Gravimetric Unstressed Stressed

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.

Column:
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Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
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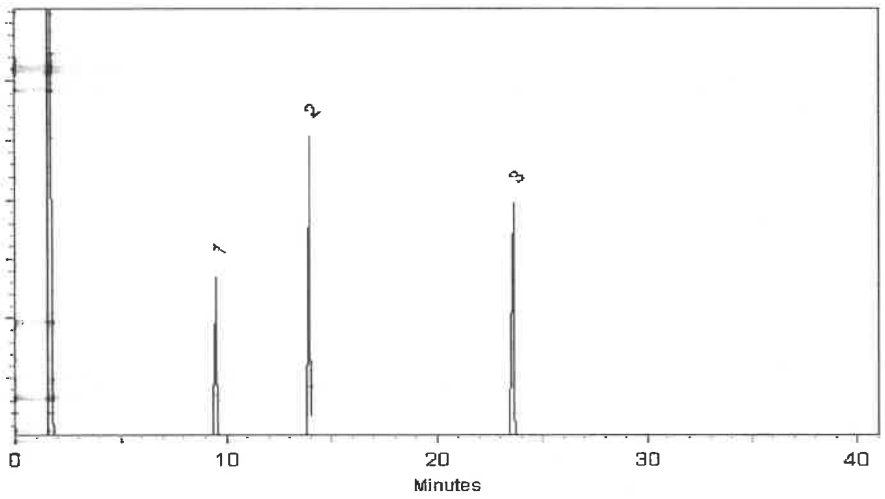

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Base Neutral Surrogate 5000µg/mL, Methylene Chloride, 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : August 31, 2028 **Storage:** 10°C or colder

Handling: Sonicate prior to use. **Ship:** Ambient

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3	p-Terphenyl-d14 **CAS #** 1718-51-0 (Lot PR-30504) **Purity** 99%	5,027.3 µg/mL	+/- 29.2289 µg/mL +/- 226.4304 µg/mL +/- 251.2524 µg/mL	Gravimetric Unstressed Stressed

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

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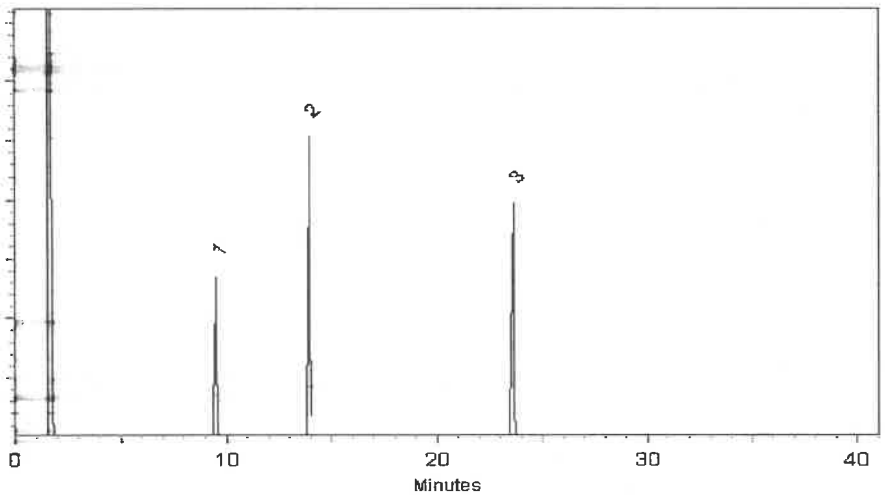

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Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : August 31, 2028 **Storage:** 10°C or colder

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3	p-Terphenyl-d14 **CAS #** 1718-51-0 (Lot PR-30504) **Purity** 99%	5,027.3 µg/mL	+/- 29.2289 µg/mL +/- 226.4304 µg/mL +/- 251.2524 µg/mL	Gravimetric Unstressed Stressed

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

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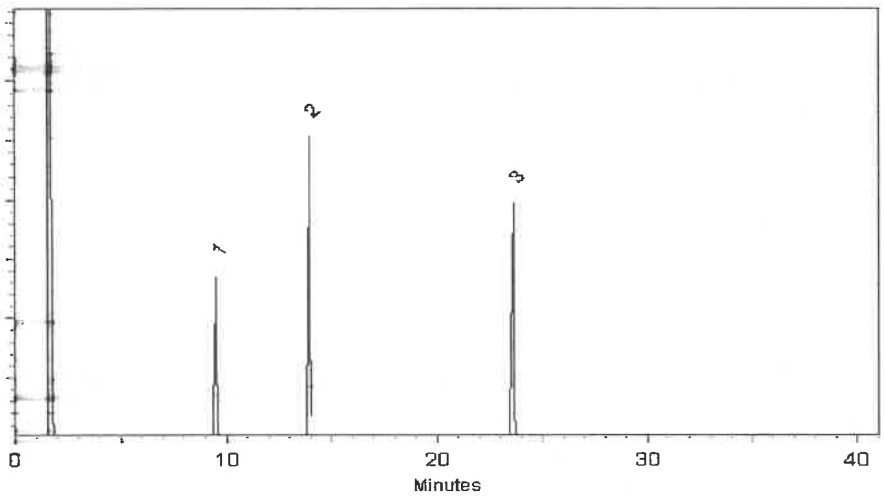

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Date Passed: 13-Sep-2022

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Description : B/N Surrogate Mix (4/89 SOW)

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Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : August 31, 2028 **Storage:** 10°C or colder

Handling: Sonicate prior to use. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
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3	p-Terphenyl-d14 **CAS #** 1718-51-0 (Lot PR-30504) **Purity** 99%	5,027.3 µg/mL	+/- 29.2289 µg/mL +/- 226.4304 µg/mL +/- 251.2524 µg/mL	Gravimetric Unstressed Stressed

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

Tech Tips:
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Rtx-5 (cat.#10223)

Carrier Gas:
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Temp. Program:
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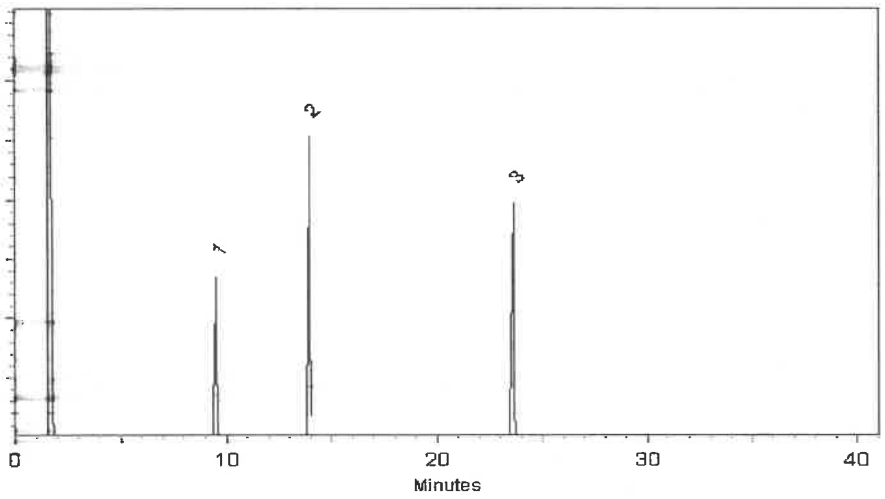

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Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : August 31, 2028 **Storage:** 10°C or colder

Handling: Sonicate prior to use. **Ship:** Ambient

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3	p-Terphenyl-d14 **CAS #** 1718-51-0 (Lot PR-30504) **Purity** 99%	5,027.3 µg/mL	+/- 29.2289 µg/mL +/- 226.4304 µg/mL +/- 251.2524 µg/mL	Gravimetric Unstressed Stressed

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

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

Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
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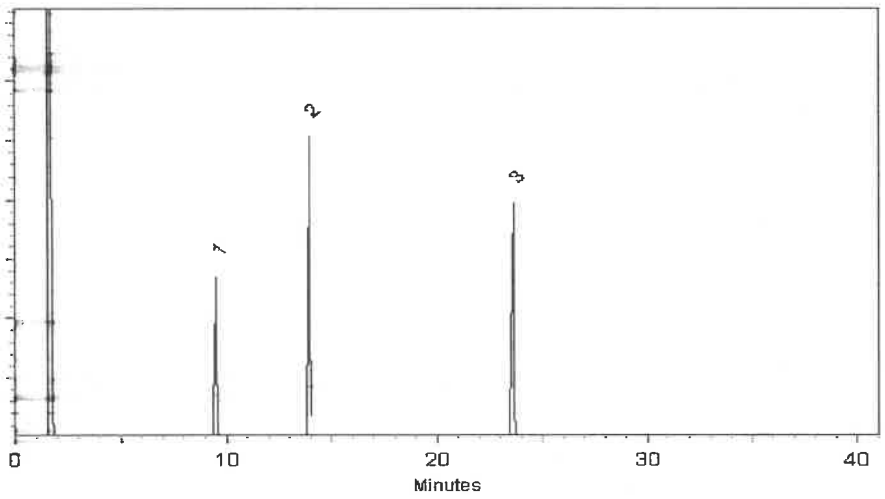

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John Friedline - Operations Technician I

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Catalog No. : 555870 **Lot No.:** A0194698

Description : Custom 2,4-Dinitrophenol Standard

Custom 2,4-Dinitrophenol Standard 25,000µg/mL, Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : February 28, 2026 **Storage:** 10°C or colder

Ship: Ambient

CERTIFIED

Component #	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%

Russ Bookhamer - Operations Technician I

Date Mixed: 15-Feb-2023 **Balance:** B442140311

Manufactured under Restek's Registered Quality Certificate #FM 8

tified Reference Material Notes

:es:

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

ıty, concentration, and expiration of the CRM are based on the unopened product being stored according to the ɜnded 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.

ıds 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 ɔmpound in solution.

isomeric compounds is reported as the sum of the isomers.

lues are rounded to the nearest whole number.

rtainty Value Notes:

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

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

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

ıged 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 ɳ, 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 ɟards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ɜm. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, ıdes complete instructions.

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

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Catalog No. : 555869 **Lot No.:** A0194702

Description : Custom Hexachlorocyclopentadiene Standard

Custom Hexachlorocyclopentadiene Standard 25,000µg/mL, Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : February 28, 2026 **Storage:** 10°C or colder

Ship: Ambient

CERTIFIED

Component #	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%

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.

nty, concentration, and expiration of the CRM are based on the unopened product being stored according to the ended 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 mpound 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 ty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability ty and shipping stability uncertainty and were combined using the following formula:

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

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

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

Notes:

tion is based upon gravimetric preparation using either a balance whose calibration has been verified daily 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 ı, 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 ards 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, des complete instructions.

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

Sand
Purified
Washed and Ignited

avantor™ | J.T.Baker®

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 HCl	<= 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

E 2865

James T Ethier

Jamie Ethier
Vice President Global Quality

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

PRODUCTOS QUIMICOS MONTERREY, S.A. DE C.V.

MIRADOR 201, COL. MIRADOR
MONTERREY, N.L. MEXICO
CP 64070
TEL +52 81 13 52 57 57
www.pqm.com.mx

CERTIFICATE OF ANALYSIS

PRODUCT :	SODIUM SULFATE CRYSTALS ANHYDROUS		
QUALITY :	ACS (CODE RMB3375)	FORMULA :	Na_2SO_4
SPECIFICATION NUMBER :	6399	RELEASE DATE:	ABR/21/2023
LOT NUMBER :	313201		

TEST	SPECIFICATIONS	LOT VALUES
Assay (Na_2SO_4)	Min. 99.0%	99.7 %
pH of a 5% solution at 25°C	5.2 - 9.2	6.1
Insoluble matter	Max. 0.01%	0.005 %
Loss on ignition	Max. 0.5%	0.1 %
Chloride (Cl)	Max. 0.001%	<0.001 %
Nitrogen compounds (as N)	Max. 5 ppm	<5 ppm
Phosphate (PO_4)	Max. 0.001%	<0.001 %
Heavy metals (as Pb)	Max. 5 ppm	<5 ppm
Iron (Fe)	Max. 0.001%	<0.001 %
Calcium (Ca)	Max. 0.01%	0.002 %
Magnesium (Mg)	Max. 0.005%	0.001 %
Potassium (K)	Max. 0.008%	0.003 %
Extraction-concentration suitability	Passes test	Passes test
Appearance	Passes test	Passes test
Identification	Passes test	Passes test
Solubility and foreing matter	Passes test	Passes test
Retained on US Standard No. 10 sieve	Max. 1%	0.1 %
Retained on US Standard No. 60 sieve	Min. 94%	97.3 %
Through US Standard No. 60 sieve	Max. 5%	2.5 %
Through US Standard No. 100 sieve	Max. 10%	0.1 %

COMMENTS

QC: PhC Irma Belmares

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

RG-02-01, Ed. 3

Recd. by RB on 7/24/23 E3551

ULTRA RESI-ANALYZED
For Organic Residue Analysis
(dichloromethane)

avantor™ | J.T.B

Material No.: 926
Batch No.: 24C01E
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 (CH_2Cl_2) (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 %

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

E 3743

Ken Koehnlein
Sr. Manager, Quality Assurance

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

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

avantor™ | J.T.Baker

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 (CH_2Cl_2) (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: MG24D10725

E 3768

JCroak
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

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

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

avantor™ | J.T.Baker®

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 (CH_2Cl_2) (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

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

Acetone
BAKER RESI-ANALYZED® Reagent
For Organic Residue Analysis

avantor™ | J.T.Baker®

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 ($(CH_3)_2CO$) (by GC, corrected for water)	≥ 99.4 %	99.7 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 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	< 0.1
Water (H_2O)	≤ 0.5 %	0.3 %
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	≤ 5	< 1
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	≤ 10	1

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

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

Recd. by RP on 8/13/24

E 3788

Ken Koehnlein
Sr. Manager, Quality Assurance

PO: PO2-76 PRODUCT CODE: SHIP DATE: 9/3/2024

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

avantor™ | J.T.Baker®

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	1
Assay (CH_2Cl_2) (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

E 3791

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

Acetone
CMOS

avantor™ | J.T.Baker®

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 ($(CH_3)_2CO$) (by GC, corrected for water)	≥ 99.5 %	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 (H_2O)	≤ 0.5 %	0.1 %
Solubility in H_2O	Passes Test	Passes Test
Chloride (Cl)	≤ 0.2 ppm	< 0.2 ppm
Phosphate (PO_4)	≤ 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 on 9/11/24

E3793

Acetone
CMOS

avantor™ | J.T.Baker®

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 (Tl)	≤ 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

>>> Continued on page 3 >>>

Acetone
CMOS

avantor™ | J.T.Baker®

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

Test	Specification	Result

For Microelectronic Use

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

Michelle Bales
Sr. Manager, Quality Assurance

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

Acetone
BAKER RESI-ANALYZED® Reagent
For Organic Residue Analysis

avantor | J.T.Baker

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 ($(CH_3)_2CO$) (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 (H_2O)	<= 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

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)

avantor™ | J.T.Baker

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_2Cl_2) (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

E 3822

JCroak
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

CPI INTERNATIONAL

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

Catalog No.:	Lot No.:	Storage:	Solvent:	Exp. Date:	Description:
Z-110094-02	506889	≤ -10 °C	Methylene Chloride	7/25/2028	CLP Base/Neutral Surrogate Solution, 5,000 mg/L, 1 ml

Compound	CAS No.	Purity (%)	Compound Lot No.	Concentration, mg/L
1,2-dichlorobenzene-d_4	2199-69-1	99.7	247.29.3P	5035 ± 28.02
2-fluorobiphenyl	321-60-8	99.69	8.286.1.1P	4999 ± 103.66
nitrobenzene-d5	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

511494 to 511498 } Y.P. 08/11/2023

*Not a certified value

Certified By: _____

Clint Tipton
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 gravimetricly.

RESTEK
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

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
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. : 30409 **Lot No.:** A0196693

Description : Pyridine Standard

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

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : January 31, 2027 **Storage:** 0°C or colder

Ship: Ambient

S11529
↓
S11538
Y.P. 08/3/23

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%	2,012.0 µg/mL	+/- 32.9613

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

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

Quality Confirmation Test

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

Carrier Gas:
hydrogen-constant pressure 11.0 psi.

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

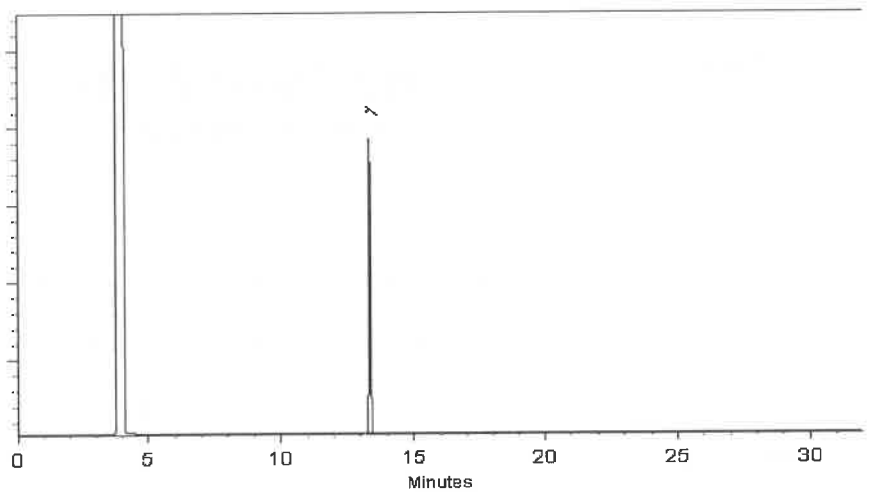
Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID

Split Vent:
40 ml/min

Inj. Vol
1µl



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

Daniel Wasson - Operations Tech I **Date Mixed:** 05-Apr-2023 **Balance Serial #** 1128342314

Marlina Cowan – Operations Tech II ARM QC **Date Passed:** 12-Apr-2023

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

  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.

RESTEK
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

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
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. : 30409 **Lot No.:** A0196693

Description : Pyridine Standard

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

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : January 31, 2027 **Storage:** 0°C or colder

Ship: Ambient

S11529
↓
S11538
Y.P. 08/3/23

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%	2,012.0 µg/mL	+/- 32.9613

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

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

Quality Confirmation Test

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

Carrier Gas:
hydrogen-constant pressure 11.0 psi.

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

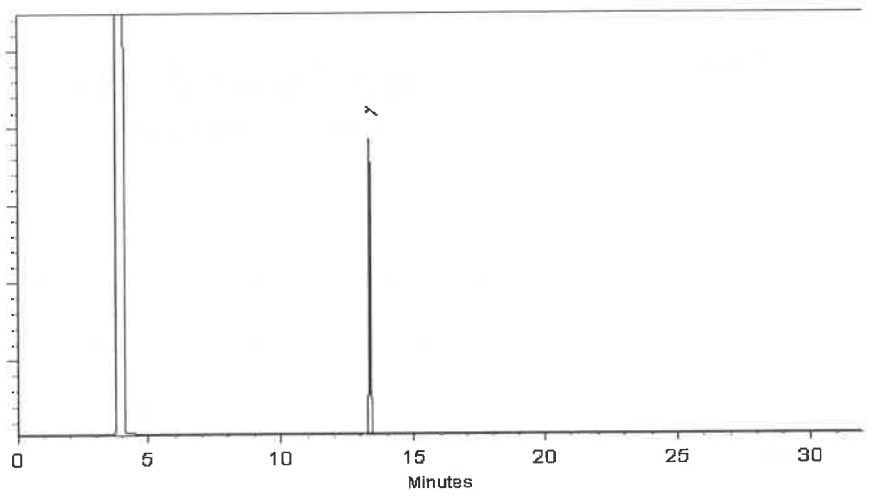
Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID

Split Vent:
40 ml/min

Inj. Vol
1µl



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

Daniel Wasson - Operations Tech I **Date Mixed:** 05-Apr-2023 **Balance Serial #** 1128342314

Marlina Cowan – Operations Tech II ARM QC **Date Passed:** 12-Apr-2023

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

  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.

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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.

Catalog No. : 555223 **Lot No.:** A0201940

Description : Custom 8270 Plus Standard #1

Custom 8270 Plus Standard #1 1,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : September 30, 2025 **Storage:** 10°C or colder

Handling: This product is photosensitive. **Ship:** Ambient

511539 ↓ 511568 Y.P. 091 191

CERTIFIED VALUES

Component #	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	3,3'-Dichlorobenzidine	91-94-1	S230321RSR	99%	1,001.0 µg/mL	+/- 22.9799
2	Atrazine	1912-24-9	5FYWL	99%	1,010.0 µg/mL	+/- 23.1865
3	Benzidine	92-87-5	S221205RSR	99%	1,008.0 µg/mL	+/- 23.1406
4	epsilon-Caprolactam	105-60-2	I16X016	99%	1,008.0 µg/mL	+/- 23.1406

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

Sam Moodler - Operations Tech I

REVIEWED
By Jennifer Pollino at 7:10 am, Sep 13, 2023

Date Mixed: 13-Sep-2023 **Balance:** B345965662

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

  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.
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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. : 555223 **Lot No.:** A0201940

Description : Custom 8270 Plus Standard #1

Custom 8270 Plus Standard #1 1,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : September 30, 2025 **Storage:** 10°C or colder

Handling: This product is photosensitive. **Ship:** Ambient

511539 ↓ 511568 Y.P. 091 191

CERTIFIED VALUES

Component #	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	3,3'-Dichlorobenzidine	91-94-1	S230321RSR	99%	1,001.0 µg/mL	+/- 22.9799
2	Atrazine	1912-24-9	5FYWL	99%	1,010.0 µg/mL	+/- 23.1865
3	Benzidine	92-87-5	S221205RSR	99%	1,008.0 µg/mL	+/- 23.1406
4	epsilon-Caprolactam	105-60-2	I16X016	99%	1,008.0 µg/mL	+/- 23.1406

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

Sam Moodler - Operations Tech I

REVIEWED
By Jennifer Pollino at 7:10 am, Sep 13, 2023

Date Mixed: 13-Sep-2023 **Balance:** B345965662

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

Manufacturing Notes:

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

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.
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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. : 555223 **Lot No.:** A0201940

Description : Custom 8270 Plus Standard #1

Custom 8270 Plus Standard #1 1,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : September 30, 2025 **Storage:** 10°C or colder

Handling: This product is photosensitive. **Ship:** Ambient

511539 ↓ 511568 Y.P. 091 191

CERTIFIED VALUES

Component #	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	3,3'-Dichlorobenzidine	91-94-1	S230321RSR	99%	1,001.0 µg/mL	+/- 22.9799
2	Atrazine	1912-24-9	5FYWL	99%	1,010.0 µg/mL	+/- 23.1865
3	Benzidine	92-87-5	S221205RSR	99%	1,008.0 µg/mL	+/- 23.1406
4	epsilon-Caprolactam	105-60-2	I16X016	99%	1,008.0 µg/mL	+/- 23.1406

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

Sam Moodler - Operations Tech I

REVIEWED
By Jennifer Pollino at 7:10 am, Sep 13, 2023

Date Mixed: 13-Sep-2023 **Balance:** B345965662

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

Manufacturing Notes:

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

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.
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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

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ACCREDITED ISO 17034 Accredited Reference Material Producer Certificate #3222.01

ACCREDITED ISO/IEC 17025 Accredited 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. : 555872 **Lot No.:** A0201728

Description : Custom Pentachlorophenol Standard

Custom Pentachlorophenol Standard 25,000µg/mL, Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : September 30, 2026 **Storage:** 10°C or colder

Ship: Ambient

511649 ↓ 511658 Y.P. 11/13/23

CERTIFIED VALUES

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

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

Josh McCloskey - Operations Technician I

Date Mixed: 05-Sep-2023 **Balance:** B251644995

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

  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.
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CERTIFIED REFERENCE MATERIAL

ilac-MRA ACCREDITED ISO 17034 Accredited Reference Material Producer Certificate #3222.01

ilac-MRA ACCREDITED ISO/IEC 17025 Accredited Testing Laboratory Certificate #3222.02

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. : 31900 **Lot No.:** A0204128

S11669 ↓ S11688 RC 11/15/23

Description : OLM 01.1 Revised SV MegaMix

OLM 01.1 Revised SV MegaMix 500-1000 µg/mL, Methylene chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : May 31, 2025 **Storage:** 0°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	108-95-2	MKCK1120	99%	1,005.8 µg/mL	+/- 18.8928
2	Bis(2-chloroethyl)ether	111-44-4	SHBL6942	99%	1,001.0 µg/mL	+/- 18.8034
3	2-Chlorophenol	95-57-8	STBJ3909	99%	1,002.8 µg/mL	+/- 18.8365
4	2,2'-oxybis(1-chloropropane)	108-60-1	230714JLM	99%	1,001.2 µg/mL	+/- 18.8064
5	2-Methylphenol (o-cresol)	95-48-7	SHBN7598	99%	1,007.3 µg/mL	+/- 18.9210
6	Acetophenone	98-86-2	STBH8205	99%	1,004.0 µg/mL	+/- 18.5897
7	Hexachloroethane	67-72-1	QTORH	99%	1,000.8 µg/mL	+/- 18.7991
8	N-Nitroso-di-n-propylamine	621-64-7	N63MG	99%	1,003.2 µg/mL	+/- 18.8449
9	4-Methylphenol (p-cresol)	106-44-5	SHBN1151	99%	503.6 µg/mL	+/- 9.4605
10	3-Methylphenol (m-cresol)	108-39-4	STBJ0710	99%	504.4 µg/mL	+/- 9.4746
11	Nitrobenzene	98-95-3	10224044	99%	1,001.1 µg/mL	+/- 18.8045
12	Isophorone	78-59-1	MKCC9506	99%	1,000.7 µg/mL	+/- 18.7982
13	2-Nitrophenol	88-75-5	RP230509C	99%	1,004.4 µg/mL	+/- 18.8670
14	2,4-Dimethylphenol	105-67-9	XW5GK	99%	1,005.0 µg/mL	+/- 18.8787
15	Bis(2-chloroethoxy)methane	111-91-1	13670200	99%	1,001.2 µg/mL	+/- 18.8071
16	2,4-Dichlorophenol	120-83-2	BCBZ6787	99%	1,007.0 µg/mL	+/- 18.9163

17	Naphthalene	91-20-3	STBL1057	99%	1,000.7	µg/mL	+/- 18.7975
18	4-Chloroaniline	106-47-8	BCCJ3217	99%	1,004.4	µg/mL	+/- 18.8675
19	Hexachlorobutadiene	87-68-3	RP230823RSR	98%	1,001.6	µg/mL	+/- 18.8143
20	2-Methylnaphthalene	91-57-6	STBK0259	96%	1,002.1	µg/mL	+/- 18.8242
21	4-Chloro-3-methylphenol	59-50-7	BCCD4461	99%	1,000.3	µg/mL	+/- 18.7895
22	1,2,4,5-Tetrachlorobenzene	95-94-3	MKCS1444	99%	1,003.7	µg/mL	+/- 18.8543
23	Hexachlorocyclopentadiene	77-47-4	099063P13G	99%	1,000.6	µg/mL	+/- 18.7965
24	2,4,6-Trichlorophenol	88-06-2	STBJ5914	99%	1,002.1	µg/mL	+/- 18.8247
25	2,4,5-Trichlorophenol	95-95-4	FHN01	98%	1,003.0	µg/mL	+/- 18.8417
26	2-Chloronaphthalene	91-58-7	RPN7O	99%	1,000.7	µg/mL	+/- 18.7975
27	Biphenyl	92-52-4	MKCL6515	99%	1,003.0	µg/mL	+/- 18.5712
28	2-Nitroaniline	88-74-4	RP230531	99%	1,003.4	µg/mL	+/- 18.8487
29	Acenaphthylene	208-96-8	p06V	98%	1,000.7	µg/mL	+/- 18.7980
30	Dimethylphthalate	131-11-3	10117699	99%	1,000.9	µg/mL	+/- 18.8010
31	2,6-Dinitrotoluene	606-20-2	BCCG1833	99%	1,000.6	µg/mL	+/- 18.7963
32	Acenaphthene	83-32-9	MKCR7169	99%	1,000.7	µg/mL	+/- 18.7975
33	3-Nitroaniline	99-09-2	RP230822RSR	99%	1,002.7	µg/mL	+/- 18.8355
34	2,4-Dinitrophenol	51-28-5	DR230417RSR	99%	1,002.4	µg/mL	+/- 18.8294
35	Dibenzofuran	132-64-9	MKCD9952	99%	1,003.0	µg/mL	+/- 18.5712
36	2,4-Dinitrotoluene	121-14-2	MKAA0690V	99%	1,000.8	µg/mL	+/- 18.7991
37	4-Nitrophenol	100-02-7	RP230511A	99%	1,007.3	µg/mL	+/- 18.9210
38	2,3,4,6-Tetrachlorophenol	58-90-2	PR-30126	99%	1,004.3	µg/mL	+/- 18.8646
39	Fluorene	86-73-7	10241100	99%	1,000.7	µg/mL	+/- 18.7987
40	4-Chlorophenyl phenyl ether	7005-72-3	MKCQ0984	99%	1,000.6	µg/mL	+/- 18.7961
41	Diethylphthalate	84-66-2	BCCD3396	99%	1,001.0	µg/mL	+/- 18.8034
42	4-Nitroaniline	100-01-6	RP230111	99%	1,002.5	µg/mL	+/- 18.8318
43	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol)	534-52-1	230505JLM	99%	1,000.8	µg/mL	+/- 18.7989
44	Diphenylamine	122-39-4	MKCT1512	99%	1,002.5	µg/mL	+/- 18.8308
45	4-Bromophenyl phenyl ether	101-55-3	STBH6361	99%	1,000.7	µg/mL	+/- 18.7970
46	Hexachlorobenzene	118-74-1	14652300	99%	1,000.5	µg/mL	+/- 18.7935
47	Pentachlorophenol	87-86-5	RP230530RSR	99%	1,002.8	µg/mL	+/- 18.8365
48	Phenanthrene	85-01-8	MKCQ8876	99%	1,000.6	µg/mL	+/- 18.7958
49	Anthracene	120-12-7	MKCR0570	99%	1,000.7	µg/mL	+/- 18.7987
50	Carbazole	86-74-8	14095100	99%	1,003.3	µg/mL	+/- 18.8468
51	Di-n-butylphthalate	84-74-2	MKCN4337	99%	1,000.8	µg/mL	+/- 18.7991
52	Fluoranthene	206-44-0	MKCQ4728	99%	1,000.4	µg/mL	+/- 18.7926

53	Pyrene	129-00-0	BCCG8479	98%	1,000.7 µg/mL	+/- 18.7987
54	Benzyl butyl phthalate	85-68-7	X121018	99%	1,000.6 µg/mL	+/- 18.7951
55	Benz(a)anthracene	56-55-3	I20012022BAA	99%	1,000.6 µg/mL	+/- 18.7961
56	Chrysene	218-01-9	RP230601	99%	1,000.6 µg/mL	+/- 18.7958
57	3,3'-Dichlorobenzidine	91-94-1	S231019RSR	99%	1,003.2 µg/mL	+/- 18.8440
58	Bis(2-ethylhexyl)phthalate	117-81-7	MKCQ3468	99%	1,000.5 µg/mL	+/- 18.7947
59	Di-n-octyl phthalate	117-84-0	14382700	99%	1,001.0 µg/mL	+/- 18.8036
60	Benzo(b)fluoranthene	205-99-2	022013B	99%	1,000.7 µg/mL	+/- 18.7975
61	Benzo(k)fluoranthene	207-08-9	012022K	99%	1,000.6 µg/mL	+/- 18.7958
62	Benzo(a)pyrene	50-32-8	P54915-0703	99%	1,000.6 µg/mL	+/- 18.7968
63	Indeno(1,2,3-cd)pyrene	193-39-5	12-JKL-118-9	97%	1,001.3 µg/mL	+/- 18.8089
64	Dibenz(a,h)anthracene	53-70-3	ER032211-01	99%	1,000.6 µg/mL	+/- 18.7963
65	Benzo(g,h,i)perylene	191-24-2	RP230511B	98%	1,000.5 µg/mL	+/- 18.7934

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

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

RESTEK

Quality Confirmation Test

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

Carrier Gas:
hydrogen-constant pressure 10 psi

Temp. Program:
35°C (hold 3 min.) to 330°C
@ 3°C/min. (hold 3 min.)

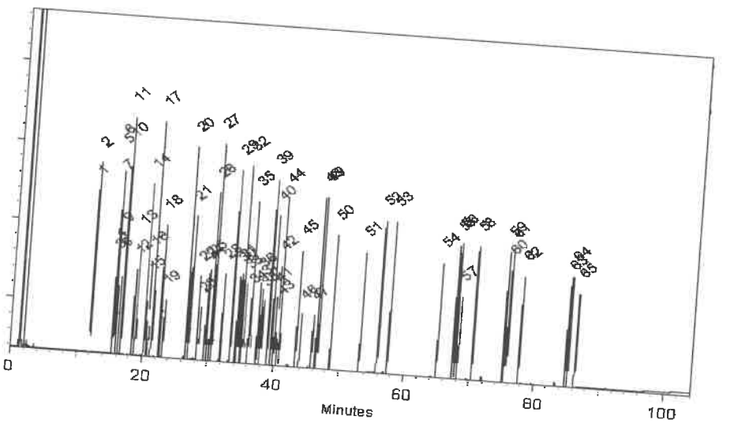
Inj. Temp:
250°C

Det. Temp:
300°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.

Penelope Riglin - Operations Tech I

Date Mixed: 06-Nov-2023 **Balance Serial #** 1128360905

Dillan Murphy - Operations Technician I

Date Passed: 08-Nov-2023

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

  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.

RESTEK

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

www.restek.com

CERTIFIED REFERENCE MATERIAL

ilac-MRA ACCREDITED ISO 17034 Accredited Reference Material Producer Certificate #3222.01

ilac-MRA ACCREDITED ISO/IEC 17025 Accredited Testing Laboratory Certificate #3222.02

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. : 31900 **Lot No.:** A0204128

S11669 ↓ S11688 RC 11/15/23

Description : OLM 01.1 Revised SV MegaMix

OLM 01.1 Revised SV MegaMix 500-1000 µg/mL, Methylene chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : May 31, 2025 **Storage:** 0°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	108-95-2	MKCK1120	99%	1,005.8 µg/mL	+/- 18.8928
2	Bis(2-chloroethyl)ether	111-44-4	SHBL6942	99%	1,001.0 µg/mL	+/- 18.8034
3	2-Chlorophenol	95-57-8	STBJ3909	99%	1,002.8 µg/mL	+/- 18.8365
4	2,2'-oxybis(1-chloropropane)	108-60-1	230714JLM	99%	1,001.2 µg/mL	+/- 18.8064
5	2-Methylphenol (o-cresol)	95-48-7	SHBN7598	99%	1,007.3 µg/mL	+/- 18.9210
6	Acetophenone	98-86-2	STBH8205	99%	1,004.0 µg/mL	+/- 18.5897
7	Hexachloroethane	67-72-1	QTORH	99%	1,000.8 µg/mL	+/- 18.7991
8	N-Nitroso-di-n-propylamine	621-64-7	N63MG	99%	1,003.2 µg/mL	+/- 18.8449
9	4-Methylphenol (p-cresol)	106-44-5	SHBN1151	99%	503.6 µg/mL	+/- 9.4605
10	3-Methylphenol (m-cresol)	108-39-4	STBJ0710	99%	504.4 µg/mL	+/- 9.4746
11	Nitrobenzene	98-95-3	10224044	99%	1,001.1 µg/mL	+/- 18.8045
12	Isophorone	78-59-1	MKCC9506	99%	1,000.7 µg/mL	+/- 18.7982
13	2-Nitrophenol	88-75-5	RP230509C	99%	1,004.4 µg/mL	+/- 18.8670
14	2,4-Dimethylphenol	105-67-9	XW5GK	99%	1,005.0 µg/mL	+/- 18.8787
15	Bis(2-chloroethoxy)methane	111-91-1	13670200	99%	1,001.2 µg/mL	+/- 18.8071
16	2,4-Dichlorophenol	120-83-2	BCBZ6787	99%	1,007.0 µg/mL	+/- 18.9163

17	Naphthalene	91-20-3	STBL1057	99%	1,000.7	µg/mL	+/- 18.7975
18	4-Chloroaniline	106-47-8	BCCJ3217	99%	1,004.4	µg/mL	+/- 18.8675
19	Hexachlorobutadiene	87-68-3	RP230823RSR	98%	1,001.6	µg/mL	+/- 18.8143
20	2-Methylnaphthalene	91-57-6	STBK0259	96%	1,002.1	µg/mL	+/- 18.8242
21	4-Chloro-3-methylphenol	59-50-7	BCCD4461	99%	1,000.3	µg/mL	+/- 18.7895
22	1,2,4,5-Tetrachlorobenzene	95-94-3	MKCS1444	99%	1,003.7	µg/mL	+/- 18.8543
23	Hexachlorocyclopentadiene	77-47-4	099063P13G	99%	1,000.6	µg/mL	+/- 18.7965
24	2,4,6-Trichlorophenol	88-06-2	STBJ5914	99%	1,002.1	µg/mL	+/- 18.8247
25	2,4,5-Trichlorophenol	95-95-4	FHN01	98%	1,003.0	µg/mL	+/- 18.8417
26	2-Chloronaphthalene	91-58-7	RPN7O	99%	1,000.7	µg/mL	+/- 18.7975
27	Biphenyl	92-52-4	MKCL6515	99%	1,003.0	µg/mL	+/- 18.5712
28	2-Nitroaniline	88-74-4	RP230531	99%	1,003.4	µg/mL	+/- 18.8487
29	Acenaphthylene	208-96-8	p06V	98%	1,000.7	µg/mL	+/- 18.7980
30	Dimethylphthalate	131-11-3	10117699	99%	1,000.9	µg/mL	+/- 18.8010
31	2,6-Dinitrotoluene	606-20-2	BCCG1833	99%	1,000.6	µg/mL	+/- 18.7963
32	Acenaphthene	83-32-9	MKCR7169	99%	1,000.7	µg/mL	+/- 18.7975
33	3-Nitroaniline	99-09-2	RP230822RSR	99%	1,002.7	µg/mL	+/- 18.8355
34	2,4-Dinitrophenol	51-28-5	DR230417RSR	99%	1,002.4	µg/mL	+/- 18.8294
35	Dibenzofuran	132-64-9	MKCD9952	99%	1,003.0	µg/mL	+/- 18.5712
36	2,4-Dinitrotoluene	121-14-2	MKAA0690V	99%	1,000.8	µg/mL	+/- 18.7991
37	4-Nitrophenol	100-02-7	RP230511A	99%	1,007.3	µg/mL	+/- 18.9210
38	2,3,4,6-Tetrachlorophenol	58-90-2	PR-30126	99%	1,004.3	µg/mL	+/- 18.8646
39	Fluorene	86-73-7	10241100	99%	1,000.7	µg/mL	+/- 18.7987
40	4-Chlorophenyl phenyl ether	7005-72-3	MKCQ0984	99%	1,000.6	µg/mL	+/- 18.7961
41	Diethylphthalate	84-66-2	BCCD3396	99%	1,001.0	µg/mL	+/- 18.8034
42	4-Nitroaniline	100-01-6	RP230111	99%	1,002.5	µg/mL	+/- 18.8318
43	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol)	534-52-1	230505JLM	99%	1,000.8	µg/mL	+/- 18.7989
44	Diphenylamine	122-39-4	MKCT1512	99%	1,002.5	µg/mL	+/- 18.8308
45	4-Bromophenyl phenyl ether	101-55-3	STBH6361	99%	1,000.7	µg/mL	+/- 18.7970
46	Hexachlorobenzene	118-74-1	14652300	99%	1,000.5	µg/mL	+/- 18.7935
47	Pentachlorophenol	87-86-5	RP230530RSR	99%	1,002.8	µg/mL	+/- 18.8365
48	Phenanthrene	85-01-8	MKCQ8876	99%	1,000.6	µg/mL	+/- 18.7958
49	Anthracene	120-12-7	MKCR0570	99%	1,000.7	µg/mL	+/- 18.7987
50	Carbazole	86-74-8	14095100	99%	1,003.3	µg/mL	+/- 18.8468
51	Di-n-butylphthalate	84-74-2	MKCN4337	99%	1,000.8	µg/mL	+/- 18.7991
52	Fluoranthene	206-44-0	MKCQ4728	99%	1,000.4	µg/mL	+/- 18.7926

53	Pyrene	129-00-0	BCCG8479	98%	1,000.7 µg/mL	+/- 18.7987
54	Benzyl butyl phthalate	85-68-7	X121018	99%	1,000.6 µg/mL	+/- 18.7951
55	Benz(a)anthracene	56-55-3	I20012022BAA	99%	1,000.6 µg/mL	+/- 18.7961
56	Chrysene	218-01-9	RP230601	99%	1,000.6 µg/mL	+/- 18.7958
57	3,3'-Dichlorobenzidine	91-94-1	S231019RSR	99%	1,003.2 µg/mL	+/- 18.8440
58	Bis(2-ethylhexyl)phthalate	117-81-7	MKCQ3468	99%	1,000.5 µg/mL	+/- 18.7947
59	Di-n-octyl phthalate	117-84-0	14382700	99%	1,001.0 µg/mL	+/- 18.8036
60	Benzo(b)fluoranthene	205-99-2	022013B	99%	1,000.7 µg/mL	+/- 18.7975
61	Benzo(k)fluoranthene	207-08-9	012022K	99%	1,000.6 µg/mL	+/- 18.7958
62	Benzo(a)pyrene	50-32-8	P54915-0703	99%	1,000.6 µg/mL	+/- 18.7968
63	Indeno(1,2,3-cd)pyrene	193-39-5	12-JKL-118-9	97%	1,001.3 µg/mL	+/- 18.8089
64	Dibenz(a,h)anthracene	53-70-3	ER032211-01	99%	1,000.6 µg/mL	+/- 18.7963
65	Benzo(g,h,i)perylene	191-24-2	RP230511B	98%	1,000.5 µg/mL	+/- 18.7934

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

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

RESTEK

Quality Confirmation Test

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

Carrier Gas:
hydrogen-constant pressure 10 psi

Temp. Program:
35°C (hold 3 min.) to 330°C
@ 3°C/min. (hold 3 min.)

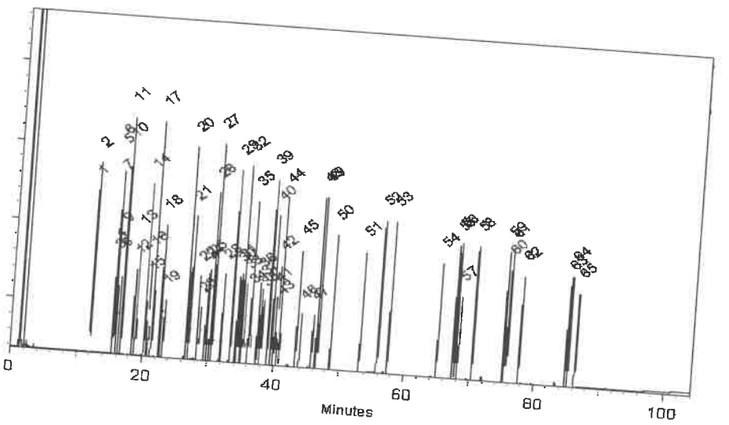
Inj. Temp:
250°C

Det. Temp:
300°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.

Penelope Riglin - Operations Tech I

Date Mixed: 06-Nov-2023 **Balance Serial #** 1128360905

Dillan Murphy - Operations Technician I

Date Passed: 08-Nov-2023

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

  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.

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

chromatographic plus

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
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. : 30614 **Lot No.:** A0203488

S11689 ↓ S11706 RC 11/21/23

Description : 1,4-dioxane-d8 Standard

1,4-dioxane-d8 Standard 2000 µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : October 31, 2026 **Storage:** 0°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,4-Dioxane-d8	17647-74-4	RP230605	99%	2,001.2 µg/mL	+/- 24.9053

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

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

Quality Confirmation Test

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

Carrier Gas:
hydrogen-constant pressure 11.0 psi.

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

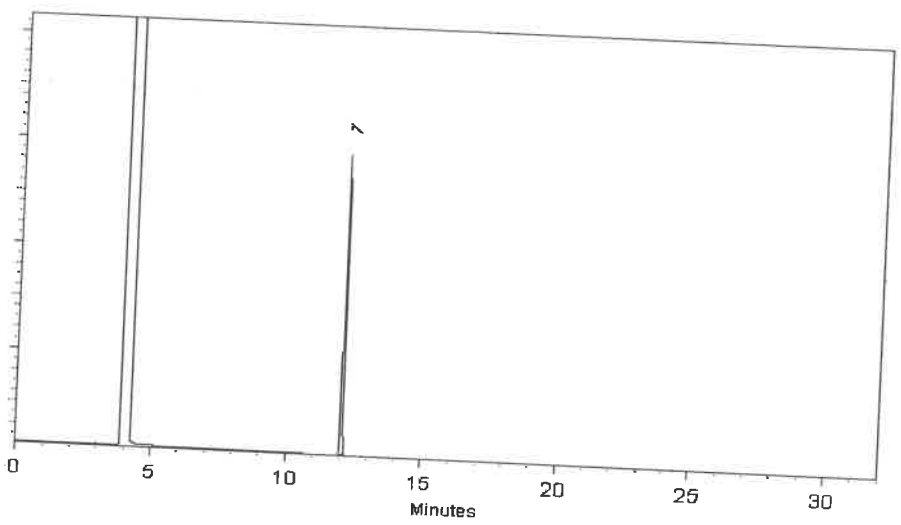
Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID

Split Vent:
40 ml/min

Inj. Vol
1µl



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

Michael Maye - Operations Tech I

Date Mixed: 23-Oct-2023 **Balance Serial #** B251644995

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 26-Oct-2023

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

  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.
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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

chromatographic plus

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
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. : 30614 **Lot No.:** A0203488

S11689 ↓ S11706 RC 11/21/23

Description : 1,4-dioxane-d8 Standard

1,4-dioxane-d8 Standard 2000 µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : October 31, 2026 **Storage:** 0°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,4-Dioxane-d8	17647-74-4	RP230605	99%	2,001.2 µg/mL	+/- 24.9053

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

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

Quality Confirmation Test

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

Carrier Gas:
hydrogen-constant pressure 11.0 psi.

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

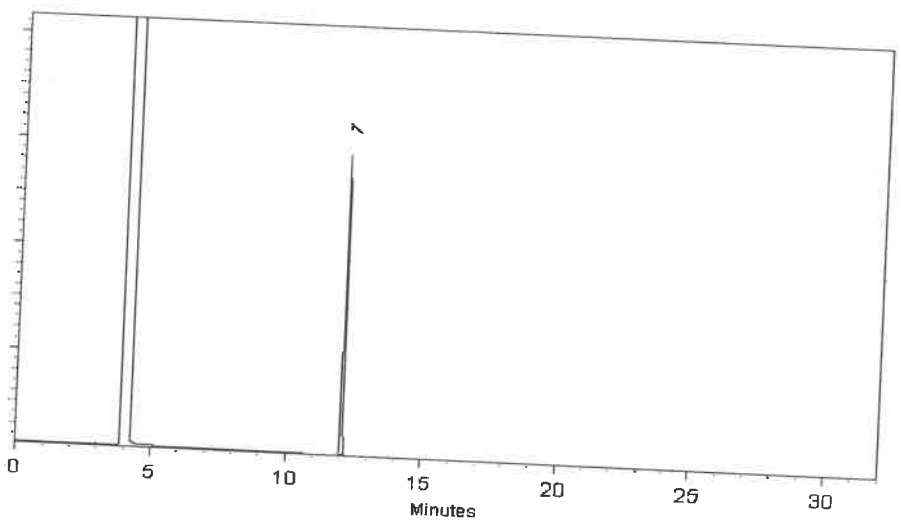
Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID

Split Vent:
40 ml/min

Inj. Vol
1µl



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

Michael Maye - Operations Tech I

Date Mixed: 23-Oct-2023 **Balance Serial #** B251644995

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 26-Oct-2023

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

  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.

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Fax: 1-814-353-1309

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

chromatographic plus

ACCREDITED ISO 17034 Accredited Reference Material Producer Certificate #3222.01

ACCREDITED ISO/IEC 17025 Accredited 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. : 31853 **Lot No.:** A0196453

Description : 1,4-dioxane

1,4-Dioxane 2,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : March 31, 2028 **Storage:** 0°C or colder

Ship: Ambient

S11749 ↓ S11794 RC 11/30/23

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

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

Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

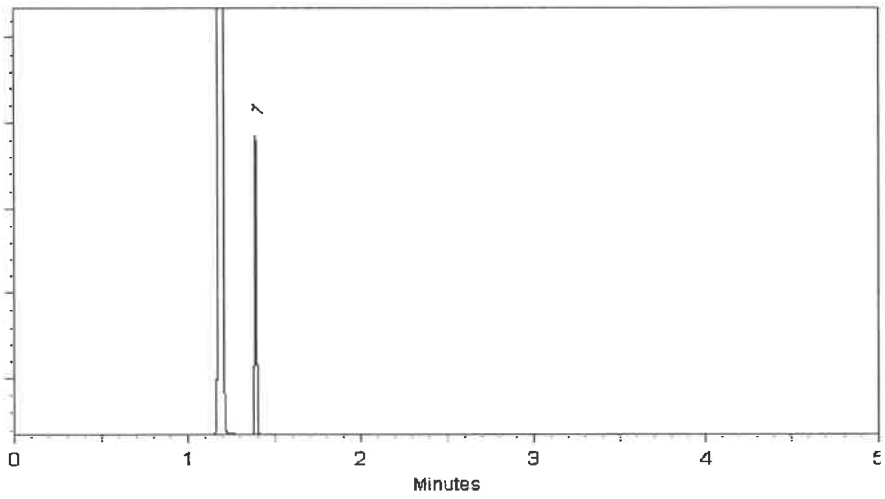
Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID

Split Vent:
100 ml/min.

Inj. Vol
1µl



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Sam Moodler - Operations Tech I

Date Mixed: 30-Mar-2023 **Balance Serial #** B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 31-Mar-2023

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

  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.
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Catalog No. : 31853 **Lot No.:** A0196453

Description : 1,4-dioxane

1,4-Dioxane 2,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : March 31, 2028 **Storage:** 0°C or colder

Ship: Ambient

S11749 ↓ S11794 RC 11/30/23

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

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

Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

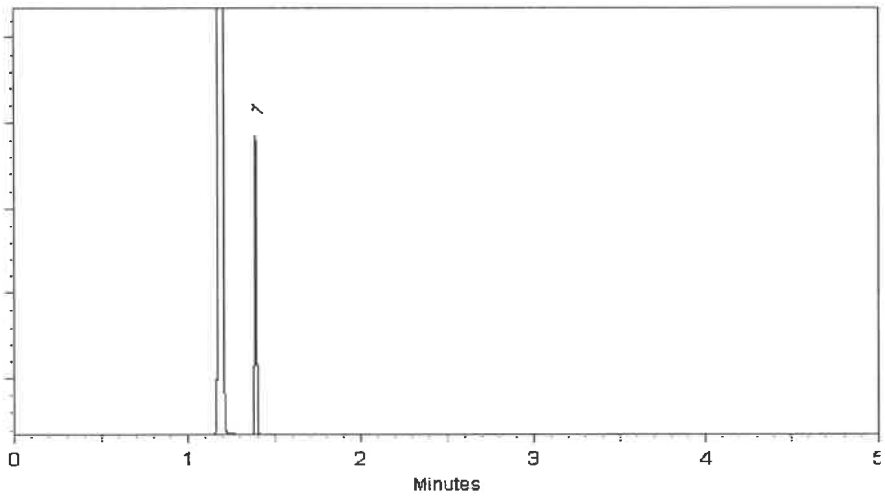
Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID

Split Vent:
100 ml/min.

Inj. Vol
1µl



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Sam Moodler - Operations Tech I

Date Mixed: 30-Mar-2023 **Balance Serial #** B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 31-Mar-2023

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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  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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Catalog No. : 31853 **Lot No.:** A0196453

Description : 1,4-dioxane

1,4-Dioxane 2,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : March 31, 2028 **Storage:** 0°C or colder

Ship: Ambient

S11749 ↓ S11794 RC 11/30/23

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

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

Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

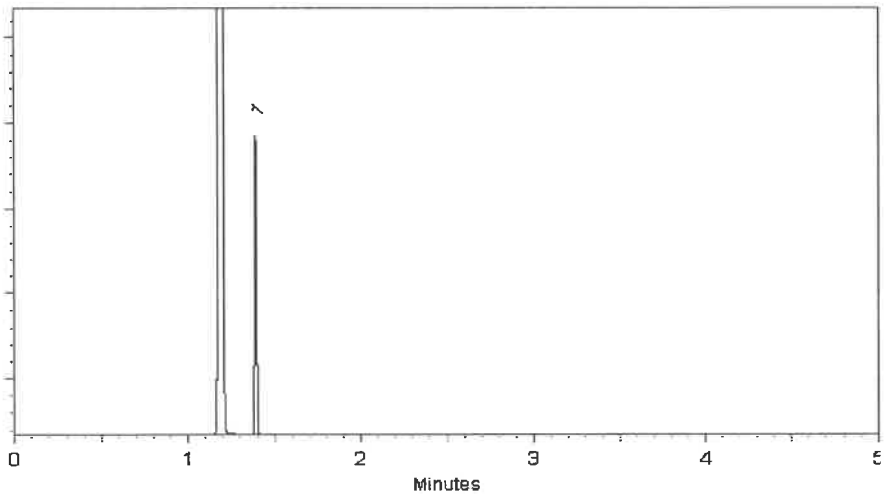
Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID

Split Vent:
100 ml/min.

Inj. Vol
1µl



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Sam Moodler - Operations Tech I

Date Mixed: 30-Mar-2023 **Balance Serial #** B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 31-Mar-2023

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

General Certified Reference Material Notes

Expiration Notes:

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

- 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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Certificate of Analysis

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Catalog No. : 31853 **Lot No.:** A0196453

Description : 1,4-dioxane

1,4-Dioxane 2,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : March 31, 2028 **Storage:** 0°C or colder

Ship: Ambient

S11749 ↓ S11794 RC 11/30/23

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

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

Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

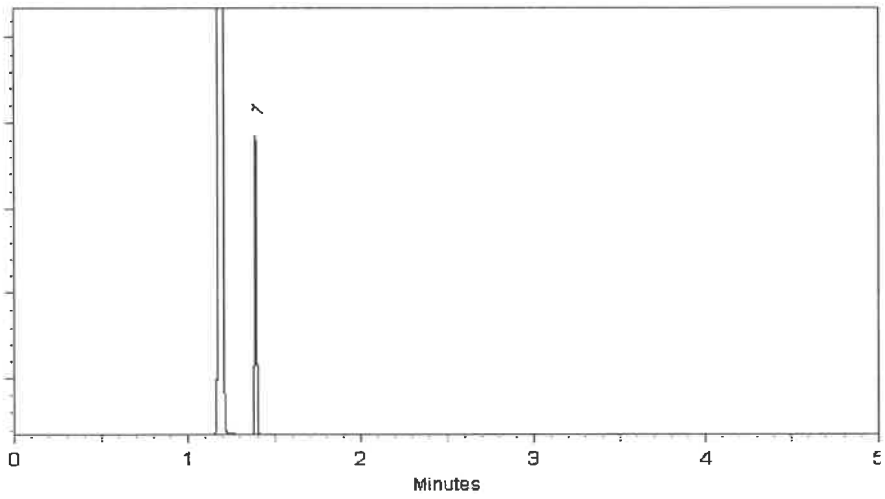
Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID

Split Vent:
100 ml/min.

Inj. Vol
1µl



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Sam Moodler - Operations Tech I

Date Mixed: 30-Mar-2023 **Balance Serial #** B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 31-Mar-2023

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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Certified Uncertainty Value Notes:

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Catalog No. : 31853 **Lot No.:** A0196453

Description : 1,4-dioxane

1,4-Dioxane 2,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : March 31, 2028 **Storage:** 0°C or colder

Ship: Ambient

S11749 ↓ S11794 RC 11/30/23

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

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

Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
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Inj. Temp:
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Det. Temp:
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Det. Type:
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Split Vent:
100 ml/min.

Inj. Vol
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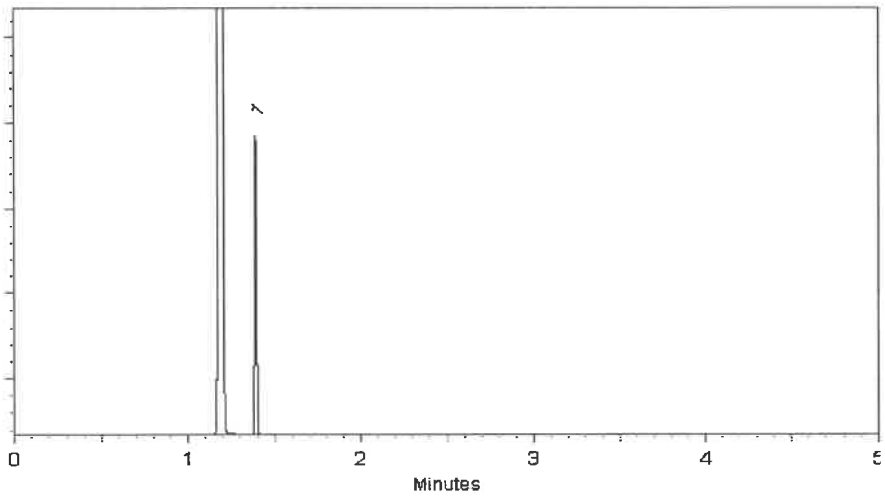

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Sam Moodler - Operations Tech I

Date Mixed: 30-Mar-2023 **Balance Serial #** B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 31-Mar-2023

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

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Catalog No. : 31853 **Lot No.:** A0196453

Description : 1,4-dioxane

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Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : March 31, 2028 **Storage:** 0°C or colder

Ship: Ambient

S11749 ↓ S11794 RC 11/30/23

CERTIFIED VALUES

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

Quality Confirmation Test

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

Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
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@ 9.6°C/min. (hold 2.86 min.)

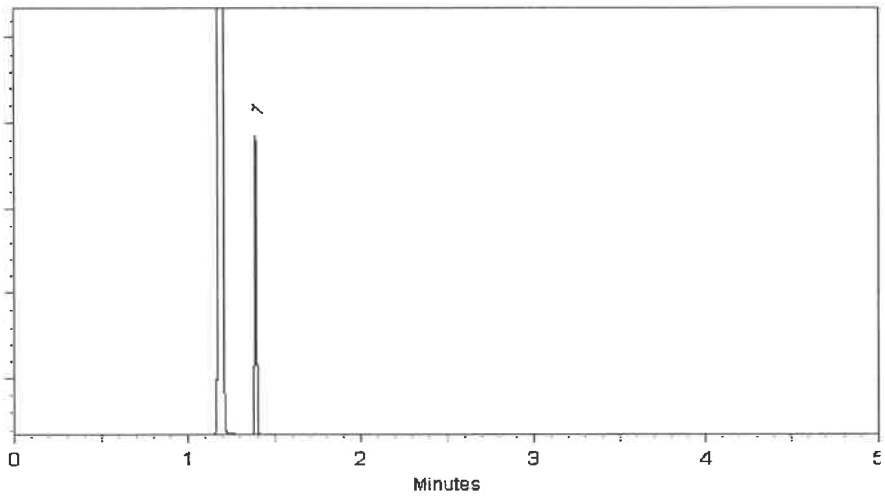
Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID

Split Vent:
100 ml/min.

Inj. Vol
1µl



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Sam Moodler - Operations Tech I

Date Mixed: 30-Mar-2023 **Balance Serial #** B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 31-Mar-2023

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Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

  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.

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ACCREDITED ISO/IEC 17025 Accredited 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. : 31853 **Lot No.:** A0196453

Description : 1,4-dioxane

1,4-Dioxane 2,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : March 31, 2028 **Storage:** 0°C or colder

Ship: Ambient

S11749 ↓ S11794 RC 11/30/23

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

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

Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

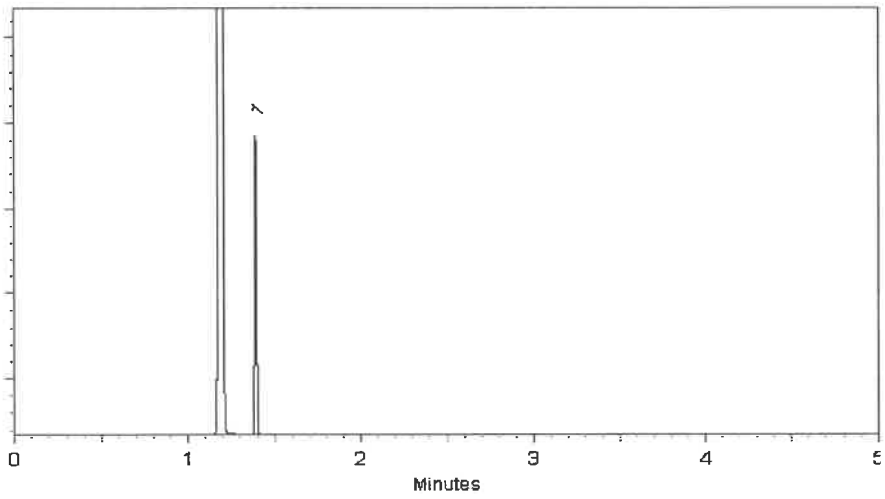
Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID

Split Vent:
100 ml/min.

Inj. Vol
1µl



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

Sam Moodler - Operations Tech I

Date Mixed: 30-Mar-2023 **Balance Serial #** B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 31-Mar-2023

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

  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.
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Catalog No. : 31853 **Lot No.:** A0196453

Description : 1,4-dioxane

1,4-Dioxane 2,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : March 31, 2028 **Storage:** 0°C or colder

Ship: Ambient

S11749 ↓ S11794 RC 11/30/23

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

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

Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

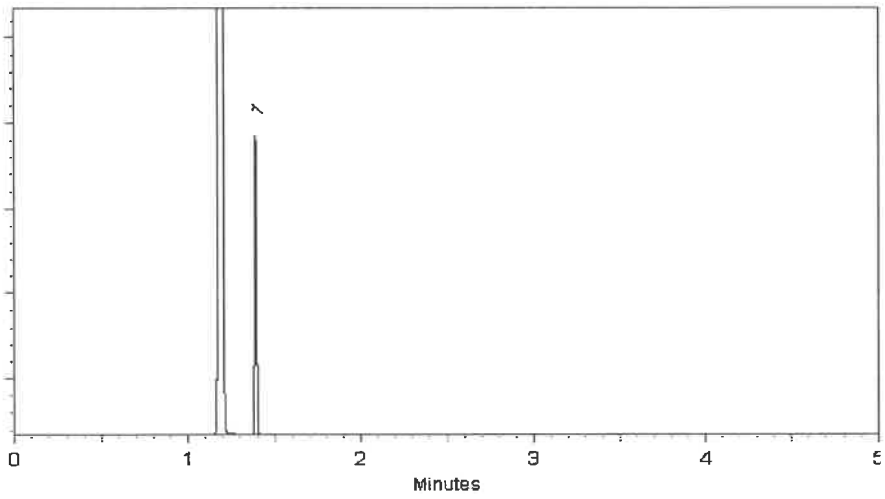
Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID

Split Vent:
100 ml/min.

Inj. Vol
1µl



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

Sam Moodler - Operations Tech I

Date Mixed: 30-Mar-2023 **Balance Serial #** B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 31-Mar-2023

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

  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:

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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.:** A0197982

Description : 8270 MegaMix®

8270 MegaMix® 500-1,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : November 30, 2024 **Storage:** 0°C or colder

Handling: Sonication required. Mix is photosensitive. **Ship:** Ambient

S11877 ↓ S11906 RC 11/30/23

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
76	Benzo(g,h,i)perylene	191-24-2	RP230511B	98%	1,006.8	µg/mL	+/- 36.6295

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

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

Quality Confirmation Test

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

Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

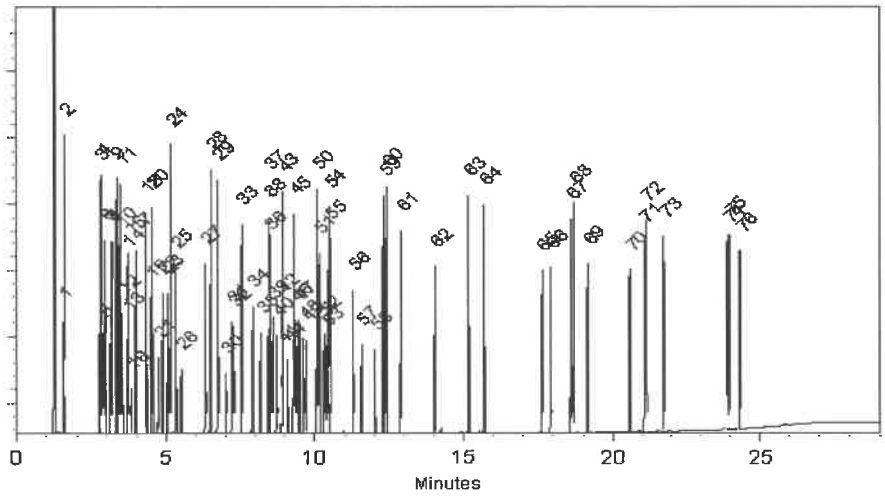
Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID

Split Vent:
100 ml/min.

Inj. Vol
1µl



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Tom Suckar - Mix Technician

Date Mixed: 11-May-2023 **Balance Serial #** 1128353505

Christie Mills - Operations Tech II - ARM QC

Date Passed: 18-May-2023

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

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Catalog No. : 31046 **Lot No.:** A0205496

Description : Pyridine-d5 Mix

Pyridine-d5 2000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : September 30, 2027 **Storage:** 10°C or colder

Ship: Ambient

S11929 ↓ S12012 RC 12/21/23

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.

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

Quality Confirmation Test

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.)

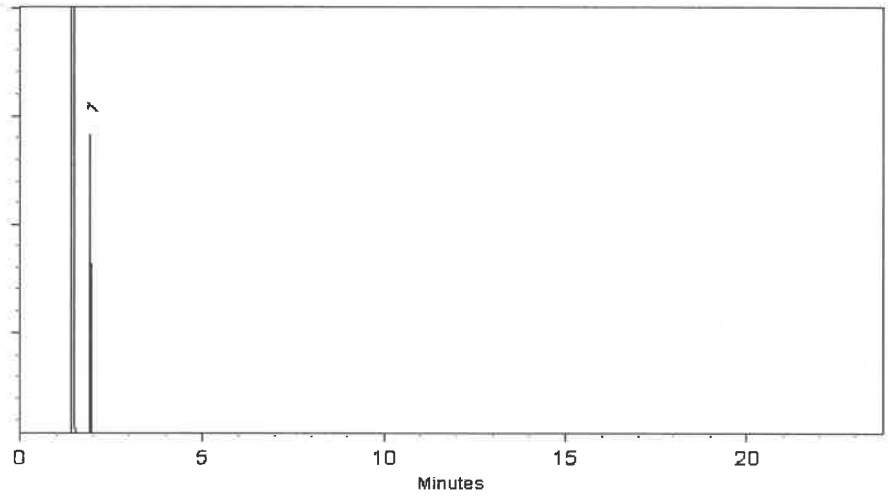
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
10 ml/min.

Inj. Vol
1µl



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

Dakota Parson - Operations Technician I **Date Mixed:** 14-Dec-2023 **Balance Serial #** B345965662

Jennifer Pollino - Operations Tech III - ARM QC **Date Passed:** 18-Dec-2023

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

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chromatographic plus

ACCREDITED ISO 17034 Accredited Reference Material Producer Certificate #3222.01

ACCREDITED ISO/IEC 17025 Accredited 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. : 31046 **Lot No.:** A0205496

Description : Pyridine-d5 Mix

Pyridine-d5 2000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : September 30, 2027 **Storage:** 10°C or colder

Ship: Ambient

S11929 ↓ S12012 RC 12/21/23

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.

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

Quality Confirmation Test

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.)

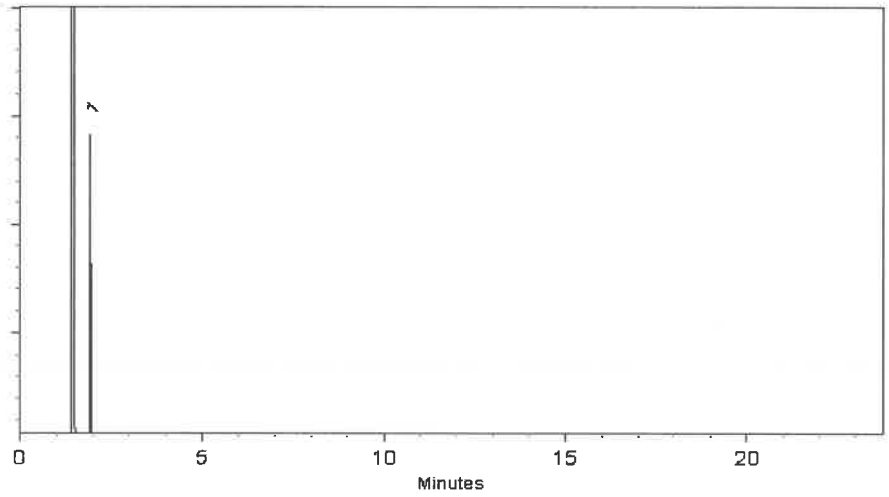
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
10 ml/min.

Inj. Vol
1µl



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

Dakota Parson - Operations Technician I **Date Mixed:** 14-Dec-2023 **Balance Serial #** B345965662

Jennifer Pollino - Operations Tech III - ARM QC **Date Passed:** 18-Dec-2023

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

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Fax: 1-814-353-1309

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Catalog No. : 31206 **Lot No.:** A0201320

S12013 ↓ S12042 RC 12/26/23

Description : SV Internal Standard Mix 2mg/ml

SV Internal Standard Mix 2mg/ml 2000 µg/ml, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

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

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

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

Quality Confirmation Test

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.)

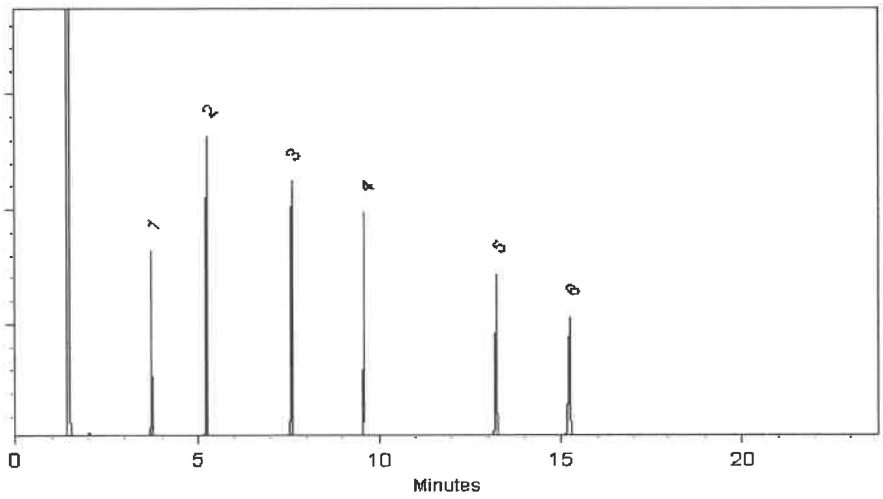
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
10 ml/min.

Inj. Vol
1µl



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

Peter Robbins - Operations Technician I

Date Mixed: 23-Aug-2023 **Balance Serial #** B345965662

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 25-Aug-2023

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

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Catalog No. : 31206 **Lot No.:** A0201320

S12013 ↓ S12042 RC 12/26/23

Description : SV Internal Standard Mix 2mg/ml

SV Internal Standard Mix 2mg/ml 2000 µg/ml, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

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

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

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

Quality Confirmation Test

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.)

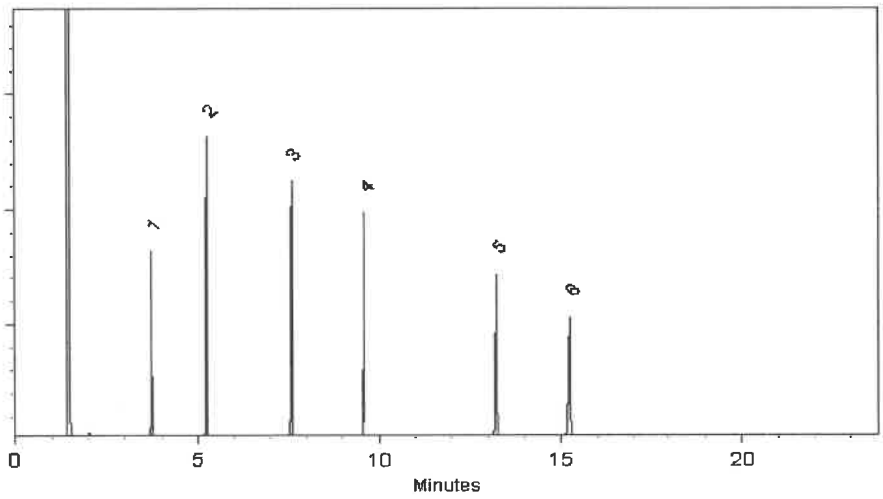
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
10 ml/min.

Inj. Vol
1µl



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

Peter Robbins - Operations Technician I

Date Mixed: 23-Aug-2023 **Balance Serial #** B345965662

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 25-Aug-2023

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

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

CERTIFIED WEIGHT REPORT

Part Number: 98495
Lot Number: 111722
Description: Pentachlorobenzene

Solvent(s): **Lot#**
Methylene chloride C21F09CAS0000DCM

Expiration Date: 111727
Recommended Storage: Refrigerate (4 °C)
Nominal Concentration (µg/mL): 5000
NIST Test ID#: 6UTB

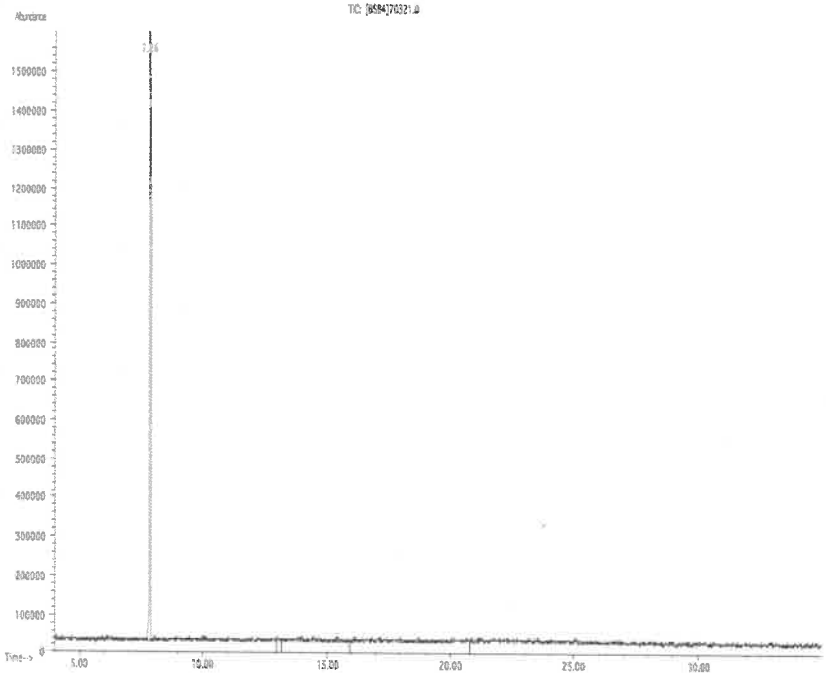
5E-05 Balance Uncertainty
0.0003 Flask Uncertainty

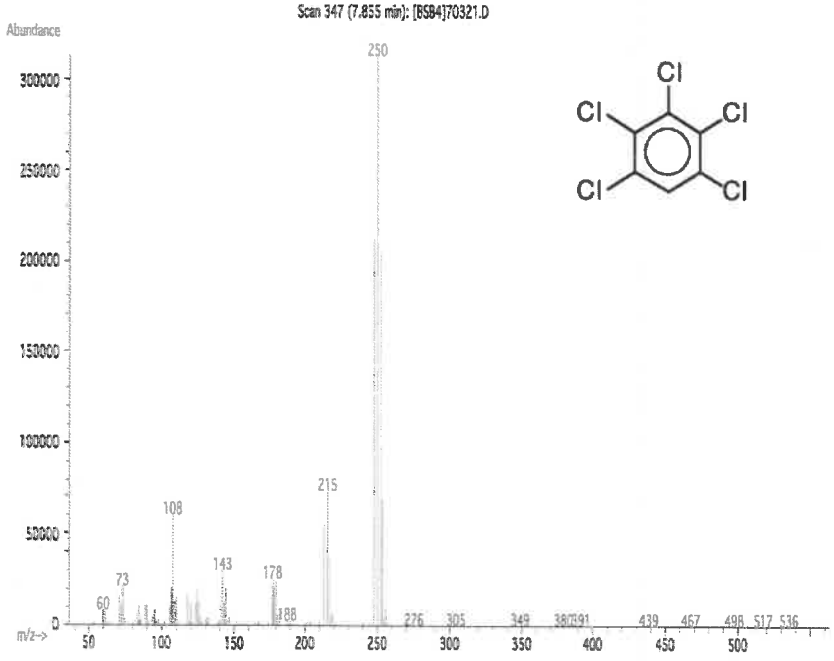
Weight(s) shown below were combined and diluted to (mL): 30.0

Prashant Chauhan	111722
Formulated By: Prashant Chauhan	DATE
Pedro L. Rentas	111722
Reviewed By: Pedro L. Rentas	DATE

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. Pentachlorobenzene	321	2705100	5000	99.5	0.5	0.15084	0.15092	5002.8	50.4	608-93-5	N/A	orl-rat 1080mg/kg

Method GC7MSD-1.M: Column: SPB-608 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 150°C (4min.), Temp 2 = 290°C (13.5 min.), Rate = 8°C/min., Injector B= 200°C, Detector B = 290°C. Split Ratio = 100:1, Scan Rate = 2. Analysis performed by Candice Warren.





S12073
RC/
01/03/24

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

CPI INTERNATIONAL

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

Catalog No.:	Lot No.:	Storage:	Solvent:	Exp. Date:	Description:
Z-110816-01	414127	≤ -10 °C	Methylene Chloride	6/21/2025	Custom 8270 Mix, 4-79, 1000 mg/L, 1 mL

Compound	CAS No.	Purity (%)	Compound Lot No.	Concentration, mg/L
atrazine	1912-24-9	99.5	337.7.3P	997 ± 5.81
benzidine	92-87-5	99.9	124.18.6.2P	991.8 ± 5.77
caprolactam	105-60-2	99.9	271.1.6P	999 ± 5.82

S12075
↓
S12079
RC
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 gravimetricly.

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CERTIFIED WEIGHT REPORT

Part Number: 98495
Lot Number: 111722
Description: Pentachlorobenzene

Solvent(s): **Lot#**
Methylene chloride C21F09CAS0000DCM

Expiration Date: 111727
Recommended Storage: Refrigerate (4 °C)
Nominal Concentration (µg/mL): 5000
NIST Test ID#: 6UTB

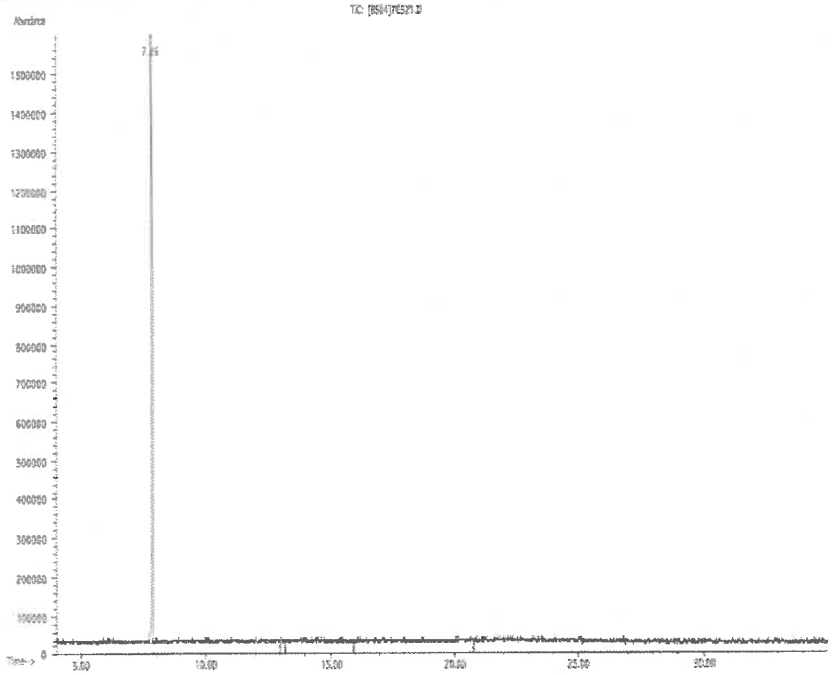
5E-05 Balance Uncertainty
0.0003 Flask Uncertainty

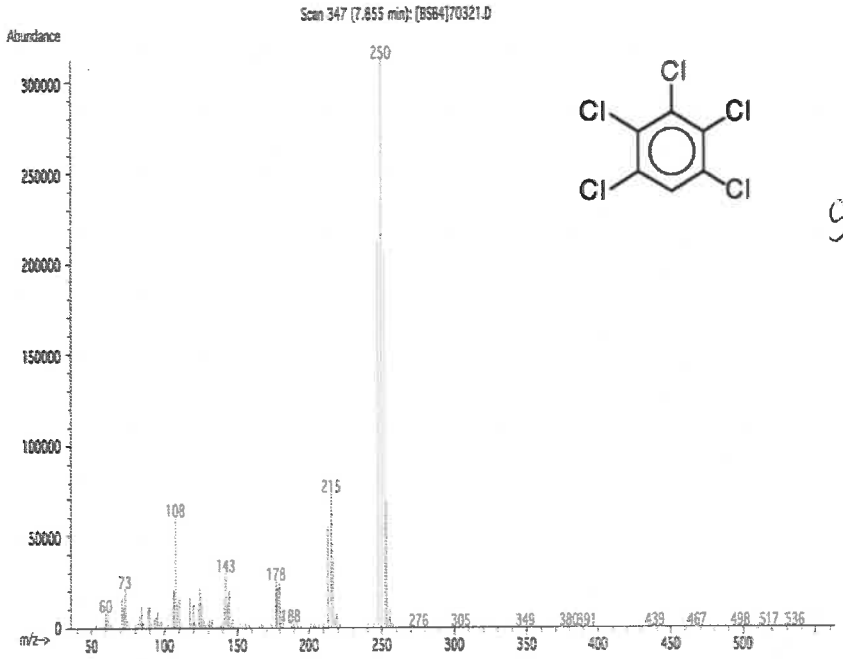
Weight(s) shown below were combined and diluted to (mL): 30.0

Prashant Chauhan	111722	
Formulated By:	Prashant Chauhan	DATE
Pedro L. Rentas	111722	
Reviewed By:	Pedro L. Rentas	DATE

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. Pentachlorobenzene	321	2705100	5000	99.5	0.5	0.15084	0.15092	5002.8	50.4	608-93-5	N/A	orl-rat 1080mg/kg

Method GC7MSD-1.M: Column: SPB-608 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 150°C (4min.), Temp 2 = 290°C (13.5 min.), Rate = 8°C/min., Injector B= 200°C, Detector B = 290°C. Split Ratio = 100:1, Scan Rate = 2. Analysis performed by Candice Warren.





S12080 } RC 02/09/24
S12081 }

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- Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

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Catalog No. : 555224 **Lot No.:** A0207706

Description : Custom 8270 Plus Standard #2

Custom 8270 Plus Standard #2 1,000µg/mL, Methylene Chloride, 1mL/ampul

S12082 ↓ S12111 RC/ 02/22/24

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : February 28, 2026 **Storage:** 10°C or colder

Ship: Ambient

CERTIFIED VALUES

Component #	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
CAS # 75-09-2
Purity 99%

John Friedline - Operations Technician I

Date Mixed: 12-Feb-2024 **Balance:** B345965662

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

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Catalog No. : 555224 **Lot No.:** A0207706

Description : Custom 8270 Plus Standard #2

Custom 8270 Plus Standard #2 1,000µg/mL, Methylene Chloride, 1mL/ampul

S12082 ↓ S12111 RC/ 02/22/24

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : February 28, 2026 **Storage:** 10°C or colder

Ship: Ambient

CERTIFIED VALUES

Component #	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
CAS # 75-09-2
Purity 99%

John Friedline - Operations Technician I

Date Mixed: 12-Feb-2024 **Balance:** B345965662

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Catalog No. : 555224 **Lot No.:** A0207706

Description : Custom 8270 Plus Standard #2

Custom 8270 Plus Standard #2 1,000µg/mL, Methylene Chloride, 1mL/ampul

S12082 ↓ S12111 RC/ 02/22/24

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : February 28, 2026 **Storage:** 10°C or colder

Ship: Ambient

CERTIFIED VALUES

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

John Friedline - Operations Technician I

Date Mixed: 12-Feb-2024 **Balance:** B345965662

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Catalog No. : 555224 **Lot No.:** A0207706

Description : Custom 8270 Plus Standard #2

Custom 8270 Plus Standard #2 1,000µg/mL, Methylene Chloride, 1mL/ampul

S12082 ↓ S12111 RC/ 02/22/24

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : February 28, 2026 **Storage:** 10°C or colder

Ship: Ambient

CERTIFIED VALUES

Component #	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
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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
CAS # 75-09-2
Purity 99%

John Friedline - Operations Technician I

Date Mixed: 12-Feb-2024 **Balance:** B345965662

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

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Catalog No. : 555224 **Lot No.:** A0207706

Description : Custom 8270 Plus Standard #2

Custom 8270 Plus Standard #2 1,000µg/mL, Methylene Chloride, 1mL/ampul

S12082 ↓ S12111 RC/ 02/22/24

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : February 28, 2026 **Storage:** 10°C or colder

Ship: Ambient

CERTIFIED VALUES

Component #	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
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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
CAS # 75-09-2
Purity 99%

John Friedline - Operations Technician I

Date Mixed: 12-Feb-2024 **Balance:** B345965662

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

RESTEK
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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

Description : Custom 8270 Plus Standard #2

Custom 8270 Plus Standard #2 1,000µg/mL, Methylene Chloride, 1mL/ampul

S12082 ↓ S12111 RC/ 02/22/24

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : February 28, 2026 **Storage:** 10°C or colder

Ship: Ambient

CERTIFIED VALUES

Component #	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
CAS # 75-09-2
Purity 99%

John Friedline - Operations Technician I

Date Mixed: 12-Feb-2024 **Balance:** B345965662

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Catalog No. : 555224 **Lot No.:** A0207706

Description : Custom 8270 Plus Standard #2

Custom 8270 Plus Standard #2 1,000µg/mL, Methylene Chloride, 1mL/ampul

S12082 ↓ S12111 RC/ 02/22/24

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : February 28, 2026 **Storage:** 10°C or colder

Ship: Ambient

CERTIFIED VALUES

Component #	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
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5	Biphenyl	92-52-4	MKCL6515	99%	1,006.0 µg/mL	+/- 29.571294

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

John Friedline - Operations Technician I

Date Mixed: 12-Feb-2024 **Balance:** B345965662

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Catalog No. : 555224 **Lot No.:** A0207706

Description : Custom 8270 Plus Standard #2

Custom 8270 Plus Standard #2 1,000µg/mL, Methylene Chloride, 1mL/ampul

S12082 ↓ S12111 RC/ 02/22/24

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : February 28, 2026 **Storage:** 10°C or colder

Ship: Ambient

CERTIFIED VALUES

Component #	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
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5	Biphenyl	92-52-4	MKCL6515	99%	1,006.0 µg/mL	+/- 29.571294

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

John Friedline - Operations Technician I

Date Mixed: 12-Feb-2024 **Balance:** B345965662

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

Catalog No. : 555224 **Lot No.:** A0207706

Description : Custom 8270 Plus Standard #2

Custom 8270 Plus Standard #2 1,000µg/mL, Methylene Chloride, 1mL/ampul

S12082 ↓ S12111 RC/ 02/22/24

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : February 28, 2026 **Storage:** 10°C or colder

Ship: Ambient

CERTIFIED VALUES

Component #	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
CAS # 75-09-2
Purity 99%

John Friedline - Operations Technician I

Date Mixed: 12-Feb-2024 **Balance:** B345965662

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

CPI INTERNATIONAL

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:_____

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Rev 0

Catalog No.:	Lot No.:	Storage:	Solvent:	Exp. Date:	Description:
Z-020223-01	454157	≤ -10 °C	P/T Methanol	6/10/2026	1,4-Dioxane Solution, 2000 mg/L, 1 mL

Compound	CAS No.	Purity (%)	Compound Lot No.	Concentration, mg/L
1,4-dioxane	123-91-1	100	223.1.3P	1997 ± 57.08

S12112 ↓ S12116 } RC/ 03/08/24

*Not a certified value

Certified By: Melissa Workoff

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 gravimetricly.

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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. : 31850 **Lot No.:** A0203726

Description : 8270 MegaMix®

8270 MegaMix® 500-1000 µg/mL, Methylene Chloride, 1mL/ampul

S12117 ↓ S12146 RC/ 03/18/24

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : April 30, 2025 **Storage:** 0°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	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	µg/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	Pyrene	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.

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

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Catalog No. : 31850 **Lot No.:** A0203726

Description : 8270 MegaMix®

8270 MegaMix® 500-1000 µg/mL, Methylene Chloride, 1mL/ampul

S12117 ↓ S12146 RC/ 03/18/24

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : April 30, 2025 **Storage:** 0°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	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	µg/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	Pyrene	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.

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

RESTEK
110 Benner Circle
Bellefonte, PA 16823-8812
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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

chromatographic plus

ACCREDITED ISO 17034 Accredited Reference Material Producer Certificate #3222.01

ACCREDITED ISO/IEC 17025 Accredited 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.:** A0203726

Description : 8270 MegaMix®

8270 MegaMix® 500-1000 µg/mL, Methylene Chloride, 1mL/ampul

S12117 ↓ S12146 RC/ 03/18/24

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : April 30, 2025 **Storage:** 0°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	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	µg/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	Pyrene	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.

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

RESTEK
110 Benner Circle
Bellefonte, PA 16823-8812
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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

chromatographic plus

ACCREDITED ISO 17034 Accredited Reference Material Producer Certificate #3222.01

ACCREDITED ISO/IEC 17025 Accredited 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.:** A0203726

Description : 8270 MegaMix®

8270 MegaMix® 500-1000 µg/mL, Methylene Chloride, 1mL/ampul

S12117 ↓ S12146 RC/ 03/18/24

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : April 30, 2025 **Storage:** 0°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	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	µg/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	Pyrene	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.

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

RESTEK
110 Benner Circle
Bellefonte, PA 16823-8812
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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

chromatographic plus

ACCREDITED ISO 17034 Accredited Reference Material Producer Certificate #3222.01

ACCREDITED ISO/IEC 17025 Accredited 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.:** A0203726

Description : 8270 MegaMix®

8270 MegaMix® 500-1000 µg/mL, Methylene Chloride, 1mL/ampul

S12117 ↓ S12146 RC/ 03/18/24

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : April 30, 2025 **Storage:** 0°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	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	µg/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	Pyrene	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.

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

RESTEK
110 Benner Circle
Bellefonte, PA 16823-8812
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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

chromatographic plus

ACCREDITED ISO 17034 Accredited Reference Material Producer Certificate #3222.01

ACCREDITED ISO/IEC 17025 Accredited 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.:** A0203726

Description : 8270 MegaMix®

8270 MegaMix® 500-1000 µg/mL, Methylene Chloride, 1mL/ampul

S12117 ↓ S12146 RC/ 03/18/24

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : April 30, 2025 **Storage:** 0°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	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	µg/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	Pyrene	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.

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

RESTEK
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

ACCREDITED ISO 17034 Accredited Reference Material Producer Certificate #3222.01

ACCREDITED ISO/IEC 17025 Accredited 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.:** A0203726

Description : 8270 MegaMix®

8270 MegaMix® 500-1000 µg/mL, Methylene Chloride, 1mL/ampul

S12117 ↓ S12146 RC/ 03/18/24

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : April 30, 2025 **Storage:** 0°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	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	µg/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	Pyrene	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.

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

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

Catalog No. : 31850 **Lot No.:** A0203726

Description : 8270 MegaMix®

8270 MegaMix® 500-1000 µg/mL, Methylene Chloride, 1mL/ampul

S12117 ↓ S12146 RC/ 03/18/24

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : April 30, 2025 **Storage:** 0°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	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	µg/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	Pyrene	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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CAS # 75-09-2
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Catalog No. : 31850 **Lot No.:** A0203726

Description : 8270 MegaMix®

8270 MegaMix® 500-1000 µg/mL, Methylene Chloride, 1mL/ampul

S12117 ↓ S12146 RC/ 03/18/24

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : April 30, 2025 **Storage:** 0°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	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	µg/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	Pyrene	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.

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

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

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Certificate of Analysis

chromatographic plus

ACCREDITED ISO 17034 Accredited Reference Material Producer Certificate #3222.01

ACCREDITED ISO/IEC 17025 Accredited 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.:** A0203726

Description : 8270 MegaMix®

8270 MegaMix® 500-1000 µg/mL, Methylene Chloride, 1mL/ampul

S12117 ↓ S12146 RC/ 03/18/24

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : April 30, 2025 **Storage:** 0°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	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	µg/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	Pyrene	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.

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

RESTEK
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: 1-814-353-1300
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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. : 31087 **Lot No.:** A0206206

Description : Acid Surrogate Mix (4/89 SOW)

Acid Surrogate 10, 000µg/mL, Methanol, 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : January 31, 2032 **Storage:** 10°C or colder

Ship: Ambient

S12187 ↓ S12206 } RC/ 03/18/24

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 # 67-56-1
Purity 99%

Quality Confirmation Test

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.)

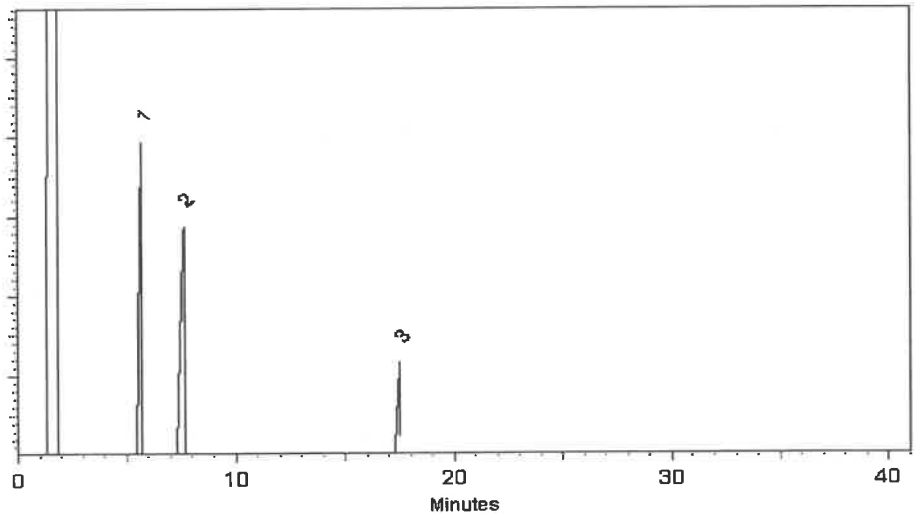
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
2 ml/min.

Inj. Vol
1µl



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

Penelope Riglin - Operations Tech I

Date Mixed: 04-Jan-2024 **Balance Serial #** 1128360905

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

RESTEK
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Bellefonte, PA 16823-8812
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ISO/IEC 17025 Accredited
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. : 31087 **Lot No.:** A0206206

Description : Acid Surrogate Mix (4/89 SOW)

Acid Surrogate 10, 000µg/mL, Methanol, 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : January 31, 2032 **Storage:** 10°C or colder

Ship: Ambient

S12187 ↓ S12206 } RC/ 03/18/24

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 # 67-56-1
Purity 99%

Quality Confirmation Test

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.)

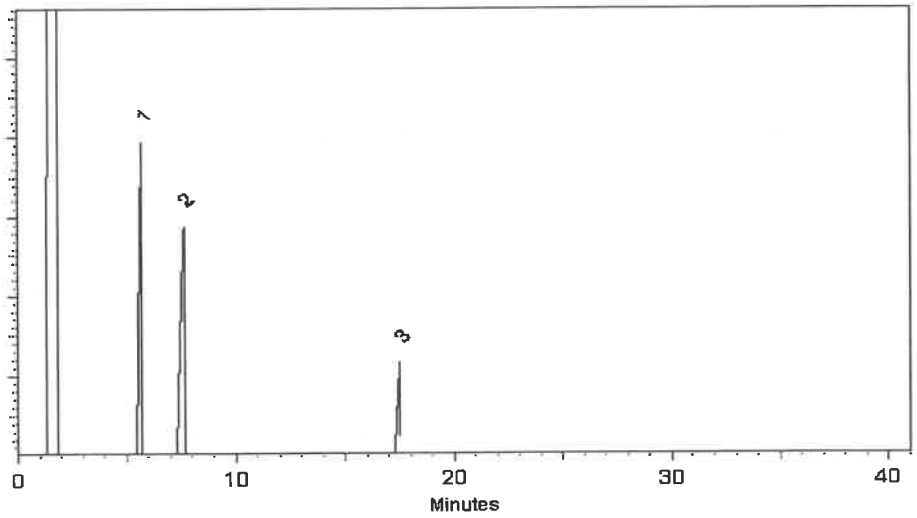
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
2 ml/min.

Inj. Vol
1µl



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

Penelope Riglin - Operations Tech I

Date Mixed: 04-Jan-2024 **Balance Serial #** 1128360905

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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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. : 31087 **Lot No.:** A0206206

Description : Acid Surrogate Mix (4/89 SOW)

Acid Surrogate 10, 000µg/mL, Methanol, 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : January 31, 2032 **Storage:** 10°C or colder

Ship: Ambient

S12187 ↓ S12206 } RC/ 03/18/24

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 # 67-56-1
Purity 99%

Quality Confirmation Test

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.)

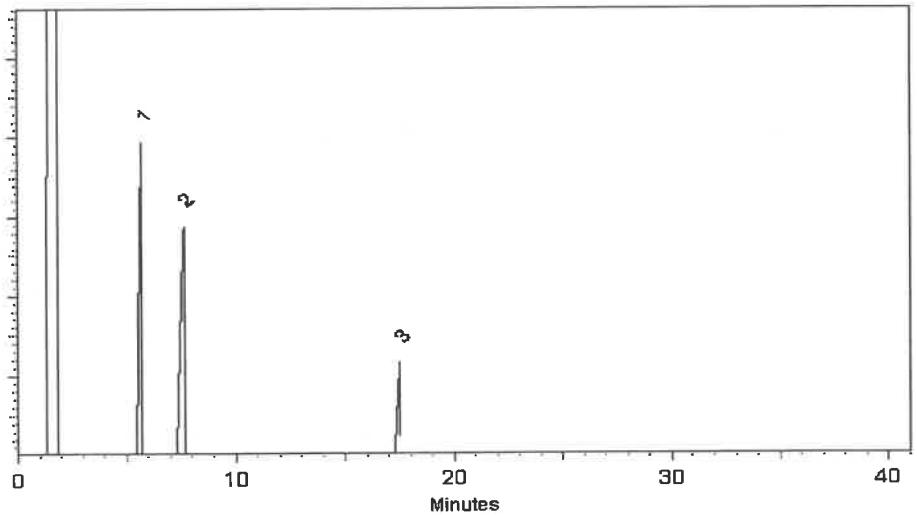
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
2 ml/min.

Inj. Vol
1µl



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

Penelope Riglin - Operations Tech I

Date Mixed: 04-Jan-2024 **Balance Serial #** 1128360905

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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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.:** A0206381

Description : B/N Surrogate Mix (4/89 SOW)

Base Neutral Surrogate 5000µg/mL, Methylene Chloride, 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : December 31, 2029 **Storage:** 10°C or colder

Handling: Sonicate prior to use. **Ship:** Ambient

S12207 ↓ S12221 RC/ 03/18/24

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.

Quality Confirmation Test

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.)

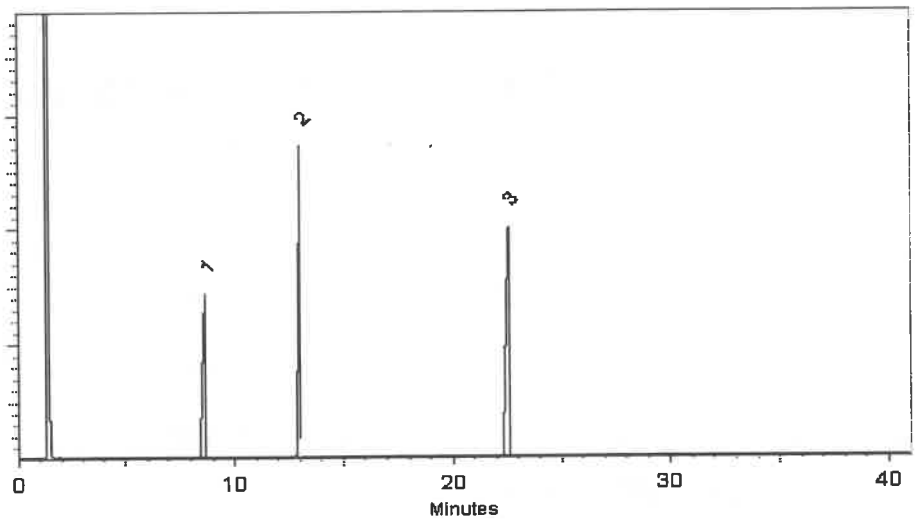
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
2 ml/min.

Inj. Vol
1µl



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

Jess Hoy - Operations Tech I

Date Mixed: 09-Jan-2024 **Balance Serial #** 1128360905

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

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CERTIFIED WEIGHT REPORT

Part Number: 90494
Lot Number: 060822
Description: 1-Methylnaphthalene

Expiration Date: 060827
Recommended Storage: Refrigerate (4 °C)
Nominal Concentration (µg/mL): 2000
NIST Test ID#: 6UTB

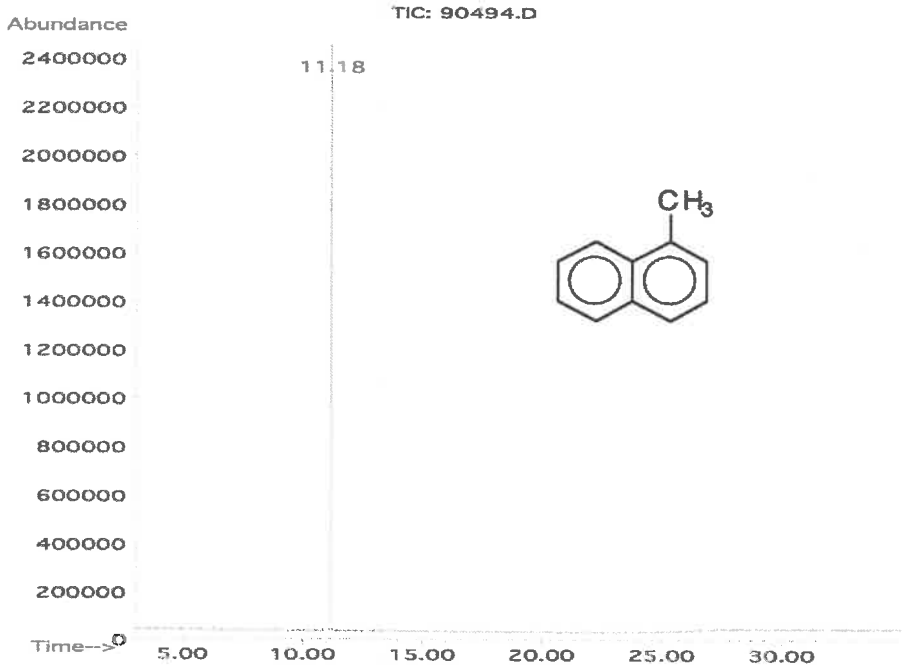
Solvent(s):	Lot#
Methylene chloride	105345

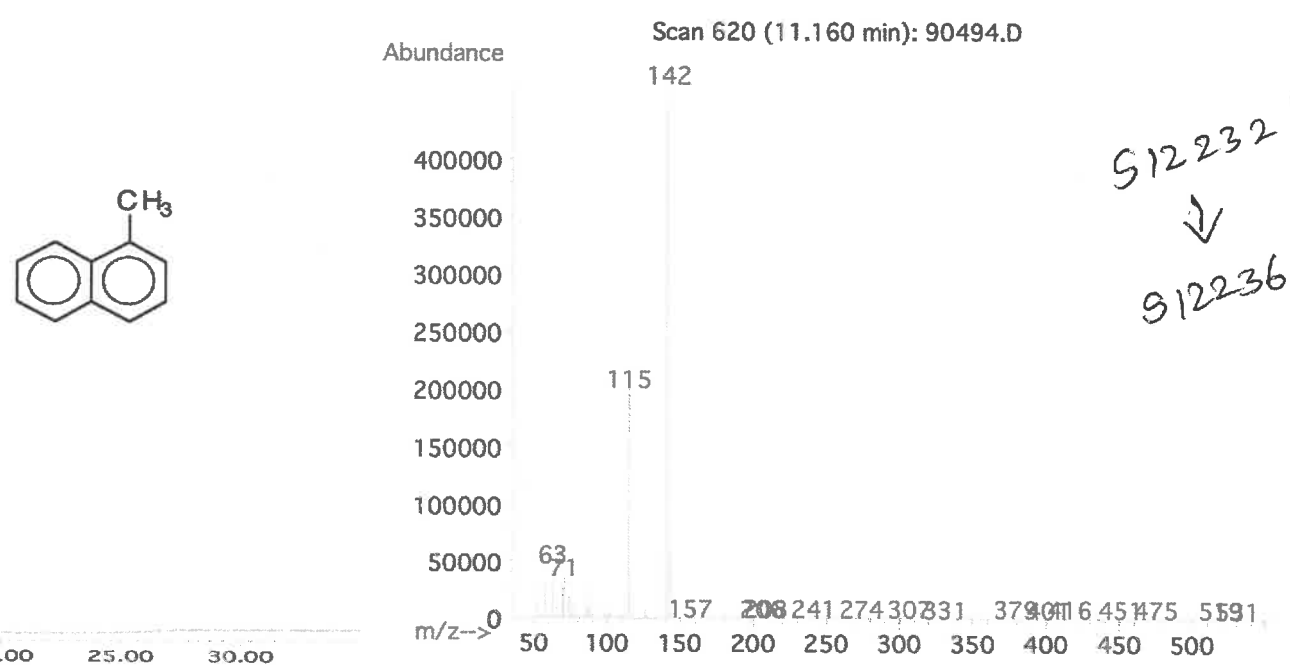
5E-05 Balance Uncertainty
Weight(s) shown below were combined and diluted to (mL): 100.0 0.003 Flask Uncertainty

Formulated By: Prashant Chauhan	060822 DATE
Reviewed By: Pedro L. Rentas	060822 DATE

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
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/kg

Method GC8MSD-3.M: Column:SPB-5 (30m X 0.25mm ID X 0.25µm 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.





S12232 ↓ S12236 RC 04/16/24

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

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CERTIFIED WEIGHT REPORT

Part Number: 98496
Lot Number: 040524
Description: 1,2,3,4-Tetrachlorobenzene

Solvent(s): Methylene chloride **Lot#** 23030243

Expiration Date: 040529
Recommended Storage: Refrigerate (4 °C)
Nominal Concentration (µg/mL): 5000
NIST Test ID#: 6UTB

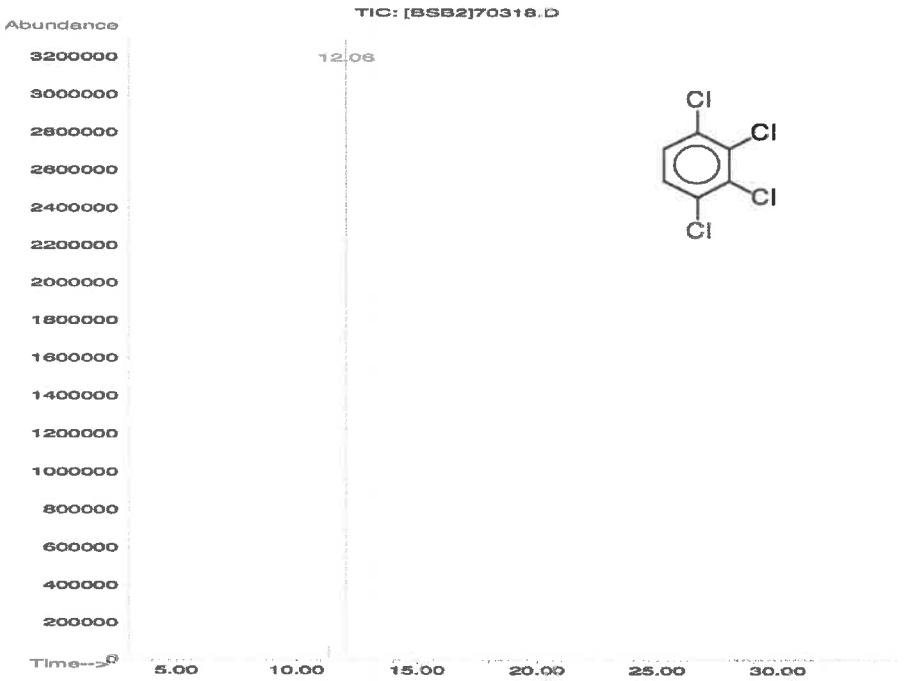
5E-05 Balance Uncertainty
0.001 Flask Uncertainty

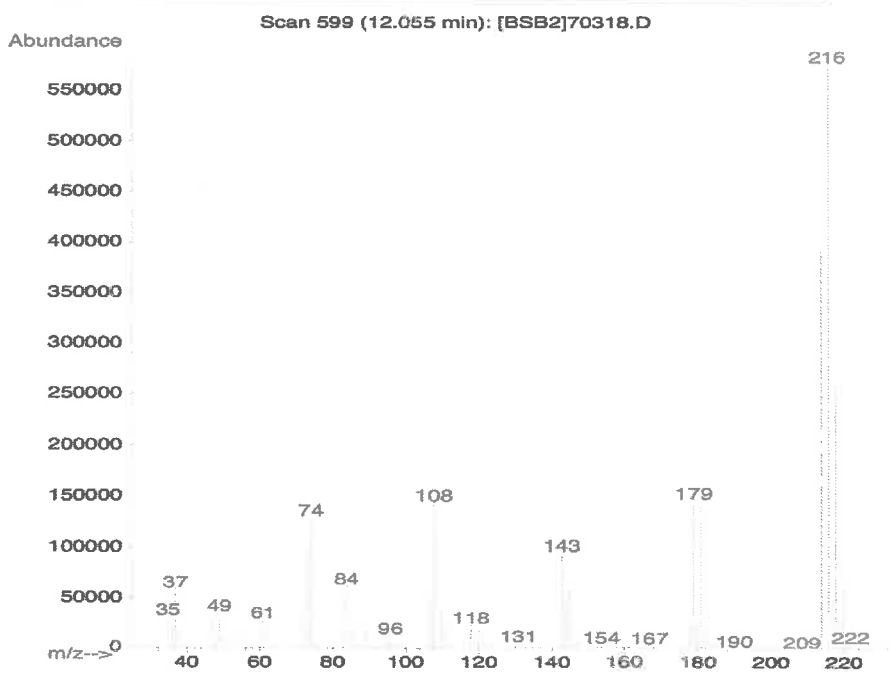
Weight(s) shown below were combined and diluted to (mL): 50.0

Formulated By:	Anthony Mahoney	040524 DATE
Reviewed By:	Pedro L. Rentas	040524 DATE

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. 1,2,3,4-Tetrachlorobenzene	318	FBW01	5000	97.3	0.2	0.25709	0.25742	5006.4	20.7	634-66-2	N/A	orl-rat 1167mg/kg

Method GC8MSD-3.M: Column: (30m X 0.25mm ID X 0.25µm film thickness), Temp 1 = 50°C (1min.), Temp 2 = 300°C (4 min.), Rate = 10°C/min., Injector B= 200°C, Detector B = 300°C. Analysis performed by Nicole Poisson.





S12237 RC 04/16/24
↓
S12241

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

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https://Absolutestandards.com

CERTIFIED WEIGHT REPORT

Part Number: 98496
Lot Number: 040524
Description: 1,2,3,4-Tetrachlorobenzene

Solvent(s): Methylene chloride **Lot#** 23030243

Expiration Date: 040529
Recommended Storage: Refrigerate (4 °C)
Nominal Concentration (µg/mL): 5000
NIST Test ID#: 6UTB

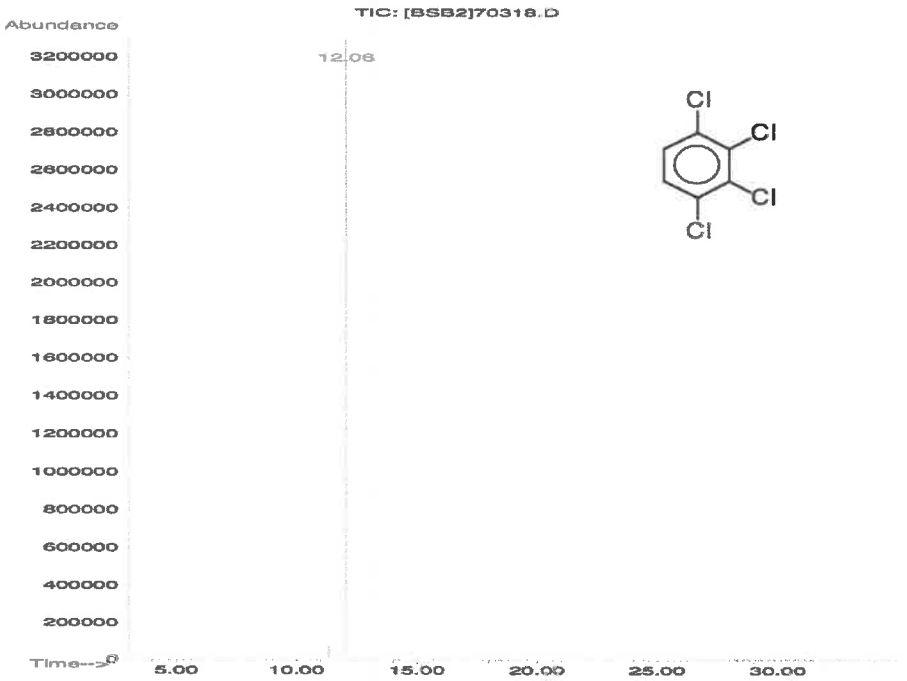
5E-05 Balance Uncertainty
0.001 Flask Uncertainty

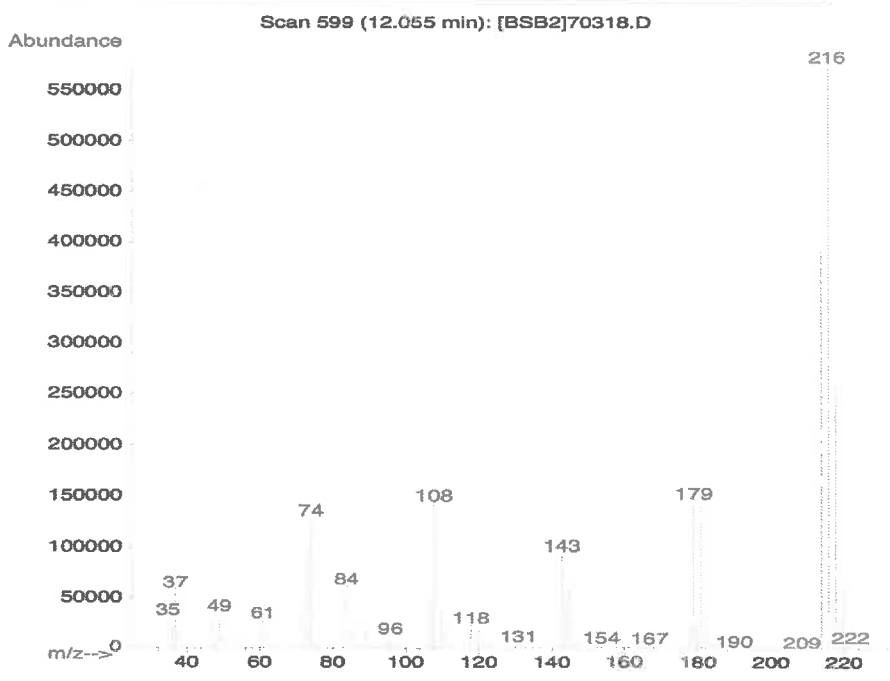
Weight(s) shown below were combined and diluted to (mL): 50.0

Formulated By:	Anthony Mahoney	040524 DATE
Reviewed By:	Pedro L. Rentas	040524 DATE

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. 1,2,3,4-Tetrachlorobenzene	318	FBW01	5000	97.3	0.2	0.25709	0.25742	5006.4	20.7	634-66-2	N/A	orl-rat 1167mg/kg

Method GC8MSD-3.M: Column: (30m X 0.25mm ID X 0.25µm film thickness), Temp 1 = 50°C (1min.), Temp 2 = 300°C (4 min.), Rate = 10°C/min., Injector B= 200°C, Detector B = 300°C. Analysis performed by Nicole Poisson.





S12237 RC 04/16/24
↓
S12241

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

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by TUV USA to ISO 9001:2015

Date Received: _____

Certificate of Analysis

Rev 0

Catalog No.:	Lot No.:	Storage:	Solvent:	Exp. Date:	Description:
Z-010442-07	495833	≤ -10 °C	Methylene Chloride	1/16/2028	Benzaldehyde Solution, 1000 mg/L, 1.3 mL

Compound	CAS No.	Purity (%)	Compound Lot No.	Concentration, mg/L
benzaldehyde	100-52-7	98.3	442.421.1P	996.8 ± 11.49

S12275 ↓ S12279 } RC/ 05/24/24

*Not a certified value

Certified By: S. Hunter

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 gravimetricly.

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S12312 ↓ S12331 } RC/ 05/30/24

Catalog No. : 31206 **Lot No.:** A0206540

Description : SV Internal Standard Mix 2mg/ml

SV Internal Standard Mix 2mg/ml 2000 µg/ml, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **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

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.)

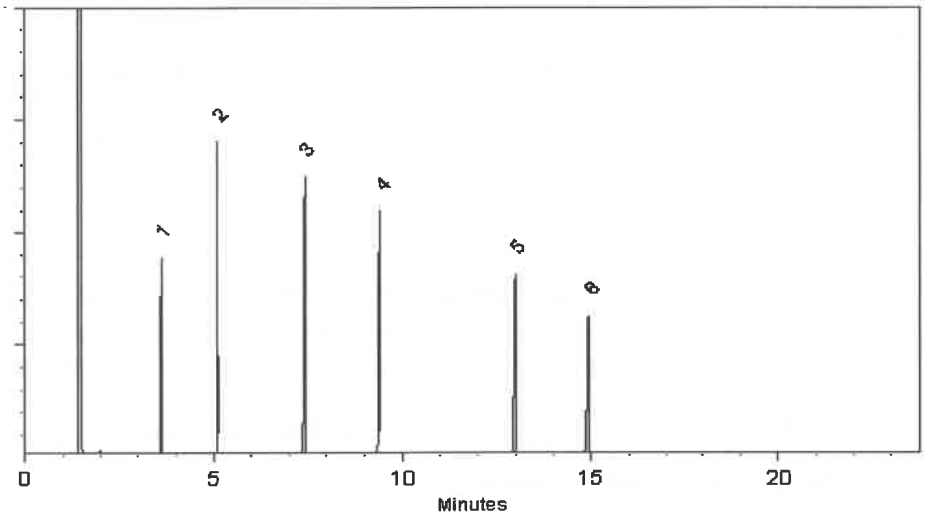
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
10 ml/min.

Inj. Vol
1µl



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

Malina Homan - Operations Technician I

Date Mixed: 12-Jan-2024 **Balance Serial #** 1128360905

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 16-Jan-2024

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

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Certificate #3222.02

Certificate of Analysis

chromatographic plus

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S12312 ↓ S12331 } RC/ 05/30/24

Catalog No. : 31206 **Lot No.:** A0206540

Description : SV Internal Standard Mix 2mg/ml

SV Internal Standard Mix 2mg/ml 2000 µg/ml, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **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

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.)

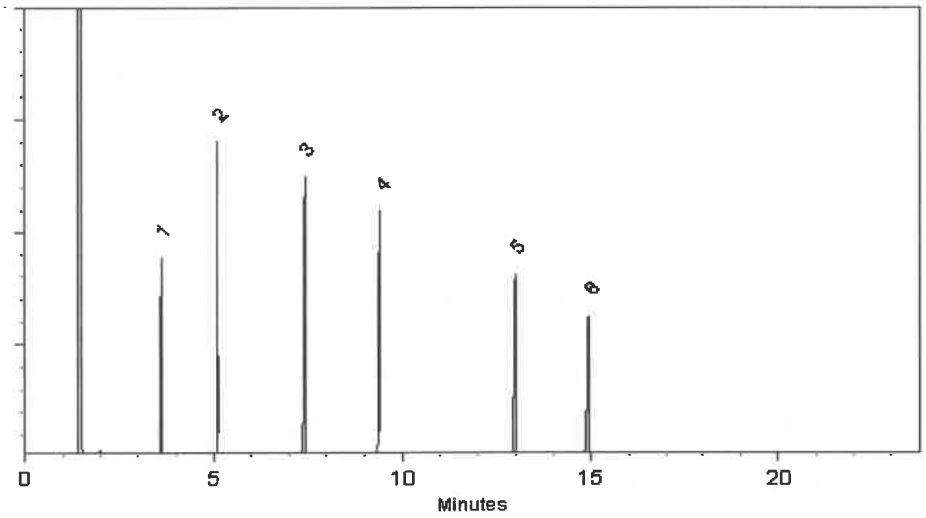
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
10 ml/min.

Inj. Vol
1µl



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

Malina Homan - Operations Technician I

Date Mixed: 12-Jan-2024 **Balance Serial #** 1128360905

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 16-Jan-2024

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

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S12312 ↓ S12331 } RC/ 05/30/24

Catalog No. : 31206 **Lot No.:** A0206540

Description : SV Internal Standard Mix 2mg/ml

SV Internal Standard Mix 2mg/ml 2000 µg/ml, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **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

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.)

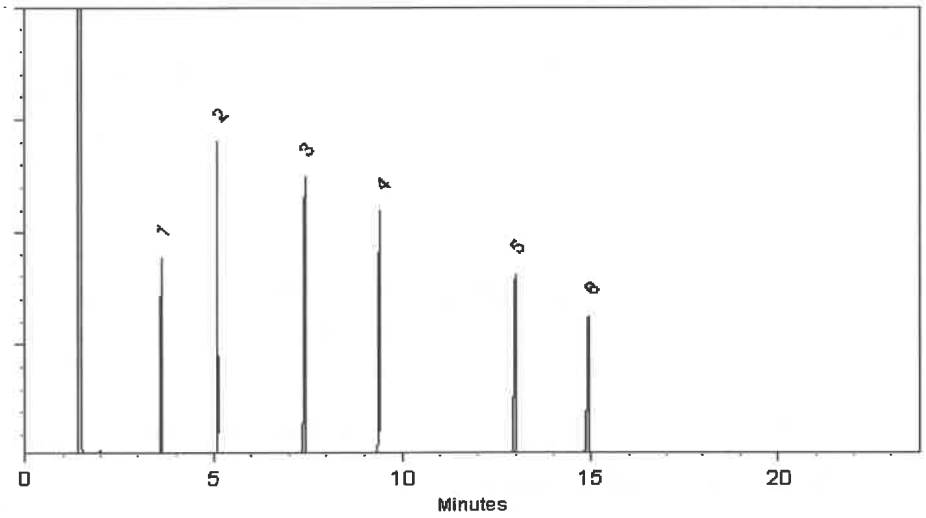
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
10 ml/min.

Inj. Vol
1µl



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

Malina Homan - Operations Technician I

Date Mixed: 12-Jan-2024 **Balance Serial #** 1128360905

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 16-Jan-2024

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

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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.

S12312 ↓ S12331 } RC/ 05/30/24

Catalog No. : 31206 **Lot No.:** A0206540

Description : SV Internal Standard Mix 2mg/ml

SV Internal Standard Mix 2mg/ml 2000 µg/ml, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **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

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.)

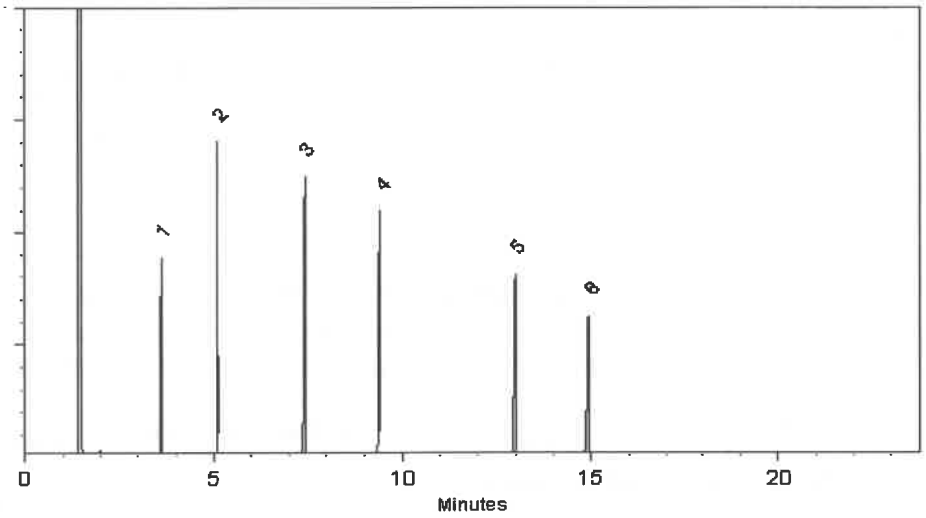
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
10 ml/min.

Inj. Vol
1µl



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

Malina Homan - Operations Technician I

Date Mixed: 12-Jan-2024 **Balance Serial #** 1128360905

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 16-Jan-2024

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

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S12312 ↓ S12331 } RC/ 05/30/24

Catalog No. : 31206 **Lot No.:** A0206540

Description : SV Internal Standard Mix 2mg/ml

SV Internal Standard Mix 2mg/ml 2000 µg/ml, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **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

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.)

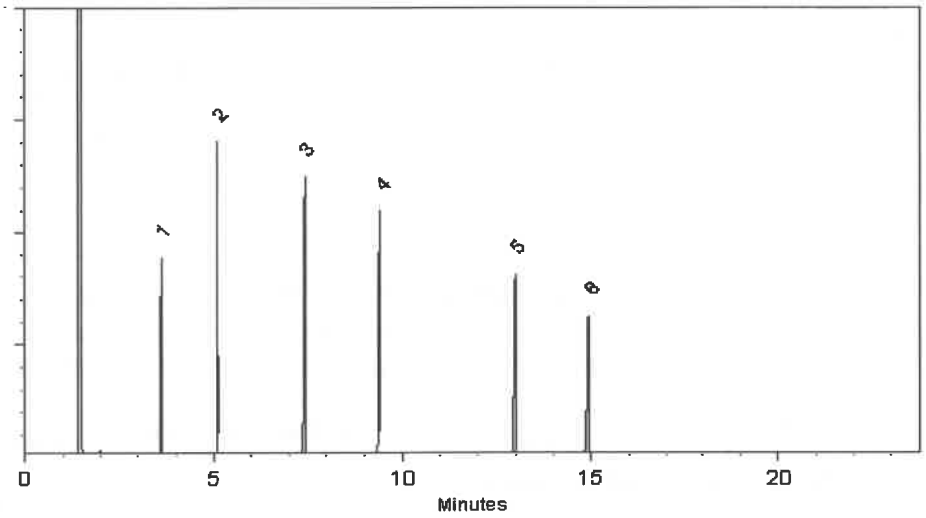
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
10 ml/min.

Inj. Vol
1µl



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

Malina Homan - Operations Technician I

Date Mixed: 12-Jan-2024 **Balance Serial #** 1128360905

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 16-Jan-2024

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

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S12312 ↓ S12331 } RC/ 05/30/24

Catalog No. : 31206 **Lot No.:** A0206540

Description : SV Internal Standard Mix 2mg/ml

SV Internal Standard Mix 2mg/ml 2000 µg/ml, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **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

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.)

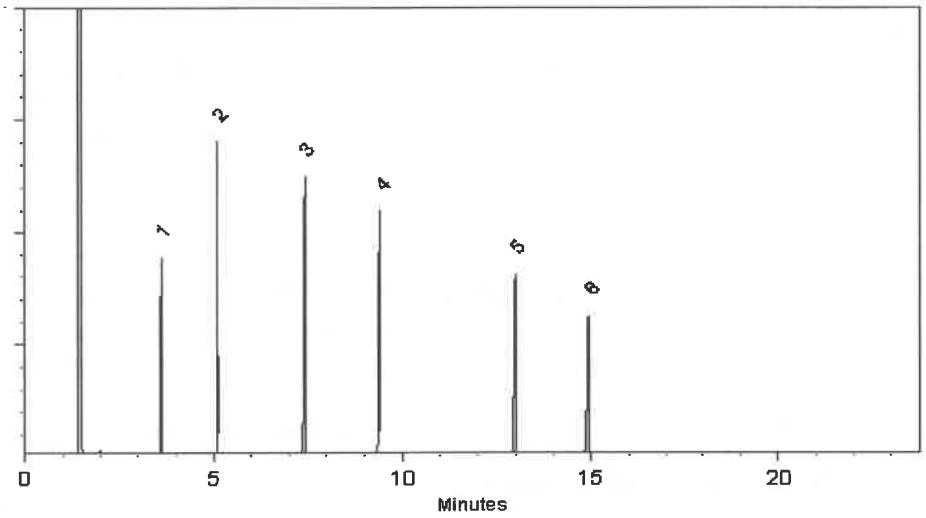
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
10 ml/min.

Inj. Vol
1µl



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

Malina Homan - Operations Technician I

Date Mixed: 12-Jan-2024 **Balance Serial #** 1128360905

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 16-Jan-2024

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

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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. : 31810 **Lot No.:** A0206801

Description : OLC03.2 SVOA Deuterated Monitoring Compounds Mix

OLC 03.2 SVOA Deuterated Monitoring Compounds, 1mL/ampul, Methylene Chloride, 2000µg/mL

S12362 ↓ S12388 } RC 05/31/24

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

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

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

Quality Confirmation Test

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.)

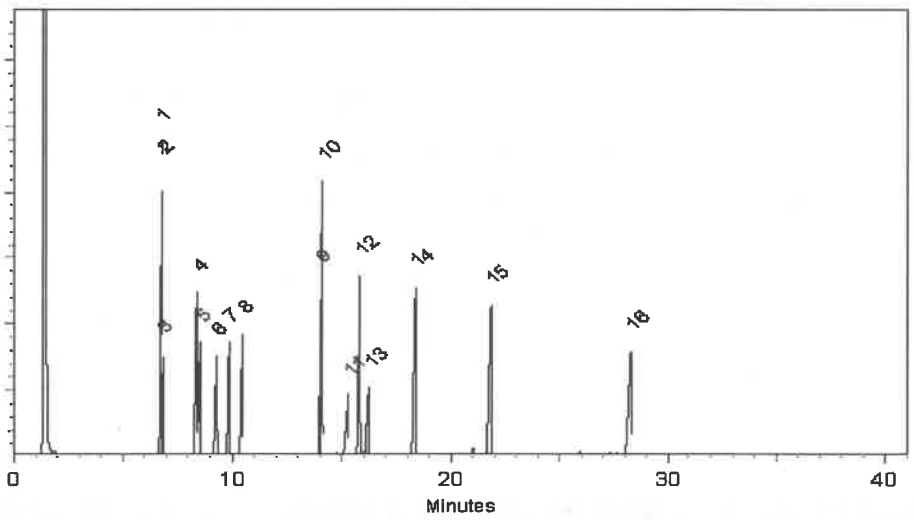
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
2 ml/min.

Inj. Vol
1µl



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Matt Fragassi - Mix Technician

Date Mixed: 20-Jan-2024 **Balance Serial #** B345965662

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 29-Jan-2024

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

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

Catalog No. : 31810 **Lot No.:** A0206801

Description : OLC03.2 SVOA Deuterated Monitoring Compounds Mix

OLC 03.2 SVOA Deuterated Monitoring Compounds, 1mL/ampul, Methylene Chloride, 2000µg/mL

S12362 ↓ S12388 } RC 05/31/24

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

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

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

Quality Confirmation Test

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.)

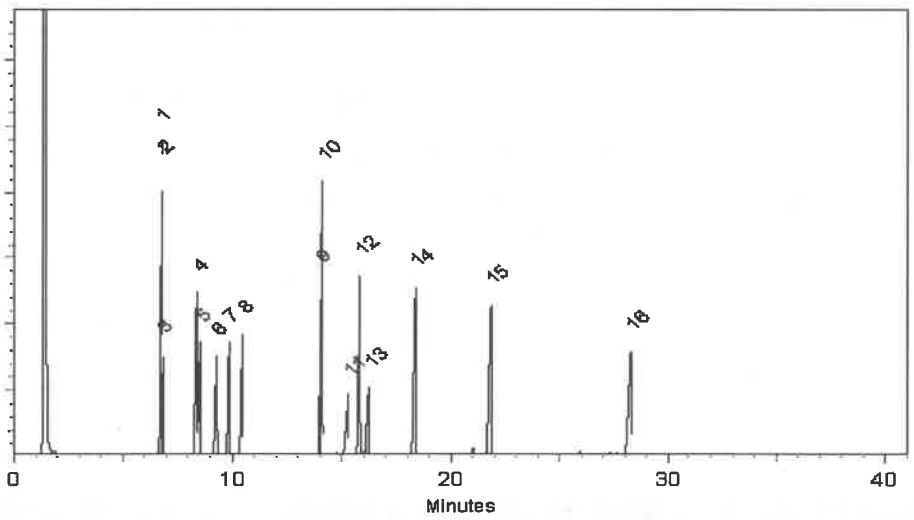
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
2 ml/min.

Inj. Vol
1µl



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

Matt Fragassi - Mix Technician

Date Mixed: 20-Jan-2024 **Balance Serial #** B345965662

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 29-Jan-2024

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

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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. : 555223 **Lot No.:** A0214021

Description : Custom 8270 Plus Standard #1

Custom 8270 Plus Standard #1 1,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2026 **Storage:** 10°C or colder

Handling: This product is photosensitive. **Ship:** Ambient

CERTIFIED VALUES

Component #	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	3,3'-Dichlorobenzidine	91-94-1	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

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

S12449 ↓ S12508 } RC 7/24/24

Rebecca Gingerich - Operations Tech II

Date Mixed: 18-Jul-2024 **Balance:** 1128353505

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

  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.

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

gravimetric

ACCREDITED ISO 17034 Accredited Reference Material Producer Certificate #3222.01

ACCREDITED ISO/IEC 17025 Accredited 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. : 555223 **Lot No.:** A0214021

Description : Custom 8270 Plus Standard #1

Custom 8270 Plus Standard #1 1,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2026 **Storage:** 10°C or colder

Handling: This product is photosensitive. **Ship:** Ambient

CERTIFIED VALUES

Component #	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	3,3'-Dichlorobenzidine	91-94-1	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

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

S12449 ↓ S12508 } RC 7/24/24

Rebecca Gingerich - Operations Tech II

Date Mixed: 18-Jul-2024 **Balance:** 1128353505

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

  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:

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110 Benner Circle
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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

gravimetric

ACCREDITED ISO 17034 Accredited Reference Material Producer Certificate #3222.01

ACCREDITED ISO/IEC 17025 Accredited 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. : 555223 **Lot No.:** A0214021

Description : Custom 8270 Plus Standard #1

Custom 8270 Plus Standard #1 1,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2026 **Storage:** 10°C or colder

Handling: This product is photosensitive. **Ship:** Ambient

CERTIFIED VALUES

Component #	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	3,3'-Dichlorobenzidine	91-94-1	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

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

S12449 ↓ S12508 } RC 7/24/24

Rebecca Gingerich - Operations Tech II

Date Mixed: 18-Jul-2024 **Balance:** 1128353505

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

General Certified Reference Material Notes

Expiration Notes:

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

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Catalog No. : 555223 **Lot No.:** A0214021

Description : Custom 8270 Plus Standard #1

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Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2026 **Storage:** 10°C or colder

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CAS # 75-09-2
Purity 99%

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Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2026 **Storage:** 10°C or colder

Handling: This product is photosensitive. **Ship:** Ambient

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

S12449 ↓ S12508 } RC 7/24/24

Rebecca Gingerich - Operations Tech II

Date Mixed: 18-Jul-2024 **Balance:** 1128353505

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Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2026 **Storage:** 10°C or colder

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

S12449 ↓ S12508 } RC 7/24/24

Rebecca Gingerich - Operations Tech II

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Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

  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.

RESTEK
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

gravimetric

ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ISO/IEC 17025 Accredited
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.:** A0214017

Description : Custom 8270 Plus Standard #2

Custom 8270 Plus Standard #2 1,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2026 **Storage:** 10°C or colder

Ship: Ambient

CERTIFIED VALUES

Component #	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%	1,005.0 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%

S12509 ↓ S12568 } RC/ 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

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

Manufacturing Notes:

- 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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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.:** A0214017

Description : Custom 8270 Plus Standard #2

Custom 8270 Plus Standard #2 1,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2026 **Storage:** 10°C or colder

Ship: Ambient

CERTIFIED VALUES

Component #	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%	1,005.0 µg/mL	+/- 29.541899
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Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

S12509 ↓ S12568 } RC/ 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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  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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