

## Prep Standard - Chemical Standard Summary

**Order ID :** P3475

**Test :** SVOCMS Group2

**Prepbatch ID :** PB162520,

**Sequence ID/Qc Batch ID:** Bf081324,BF081424,BF081524,BF081624,

**Standard ID :**

EP2511,EP2519,SP6506,SP6507/6508,SP6509,SP6510,SP6524,SP6525,SP6549,SP6550,SP6551,SP6552,SP6553,S  
P6554,SP6555,SP6556,SP6557,SP6558,SP6559,SP6573,

**Chemical ID :**

10ul/1000ul

sample,E2865,E3551,E3743,E3744,E3746,E3753,E3768,E3769,E3786,S10102,S10247,S10398,S10591,S10972,S109  
73,S10974,S10975,S10976,S10977,S10996,S10997,S10998,S10999,S11000,S11001,S11002,S11003,S11012,S11092,  
S11096,S11102,S11136,S11148,S11434,S11546,S11548,S11554,S11557,S11560,S11563,S11564,S11565,S11566,S117  
62,S11763,S11764,S11765,S11766,S11898,S11899,S11900,S11901,S11902,S11903,S11904,S11905,S11906,S12033,S  
12041,S12076,S12088,S12089,S12090,S12091,S12092,S12093,S12094,S12095,S12096,S12097,S12112,S12117,S96  
75,

## Extractions STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
2017	1:1 ACETONE/METHYLENE CHLORIDE	<a href="#">EP2511</a>	07/12/2024	01/08/2025	Rajesh Parikh	None	None	RUPESHKUMAR SHAH 07/12/2024

**FROM** 8000.00000ml of E3768 + 8000.00000ml of E3769 = Final Quantity: 16000.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3923	Baked Sodium Sulfate	<a href="#">EP2519</a>	08/02/2024	01/03/2025	Rajesh Parikh	Extraction_SC ALE_2 (EX-SC-2)	None	RUPESHKUMAR SHAH 08/02/2024

**FROM** 4000.00000gram of E3551 = Final Quantity: 4000.000 gram



<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1366	LOQ & LOD 20 PPM	<a href="#">SP6506</a>	05/16/2024	11/13/2024	Jagrut Upadhyay	None	None	mohammad ahmed 05/16/2024
<b><u>FROM</u></b> 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								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
2081	LOQ & LOD 8 PPM	<a href="#">SP6509</a>	05/16/2024	11/13/2024	Jagrut Upadhyay	None	None	mohammad ahmed 05/16/2024
<b><u>FROM</u></b> 4.80000ml of E3743 + 3.20000ml of SP6506 = Final Quantity: 8.000 ml								

## SVOC STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3749	LOQ & LOD 10PPM	<a href="#">SP6510</a>	05/16/2024	11/13/2024	Jagrut Upadhyay	None	None	mohammad ahmed
								05/16/2024

**FROM** 5.00000ml of E3743 + 5.00000ml of SP6506 = Final Quantity: 10.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
19	8270/CLP Surrogate Solution, 100 PPM BN/150 PPM ACID	<a href="#">SP6524</a>	05/31/2024	11/29/2024	Jagrut Upadhyay	None	None	Yogesh Patel
								06/13/2024

**FROM** 1930.00000ml of E3744 + 2.90000ml of S11003 + 3.00000ml of S10977 + 5.30000ml of S10996 + 5.30000ml of S10997 + 5.30000ml of S10998 + 5.30000ml of S10999 + 5.30000ml of S11000 + 5.30000ml of S11001 + 5.30000ml of S11002 + 5.40000ml of S10972 + 5.40000ml of S10973 + 5.40000ml of S10974 + 5.40000ml of S10975 + 5.40000ml of S10976 = Final Quantity: 2000.000 ml



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<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3764	8270/625 Stock solution 100 ng	<a href="#">SP6549</a>	07/09/2024	08/26/2024	Jagrut Upadhyay	None	None	mohammad ahmed 07/09/2024
<u>FROM</u>	0.26700ml of S10102 + 0.40000ml of S11434 + 0.50000ml of S12112 + 1.00000ml of S11092 + 1.00000ml of S11096 + 1.00000ml of S11102 + 1.00000ml of S11148 + 1.00000ml of S12076 + 3.83300ml of E3746 = Final Quantity: 10.000 ml							

## SVOC STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
413	80 ng BNA ICC, 80 PPM	<a href="#">SP6550</a>	07/09/2024	08/26/2024	Jagrut Upadhyay	None	None	mohammad ahmed
								07/09/2024

**FROM** 0.01000ml of S12033 + 0.20000ml of E3746 + 0.80000ml of SP6549 = Final Quantity: 1.010 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
412	60 ng BNA ICC, 60 PPM	<a href="#">SP6551</a>	07/09/2024	08/26/2024	Jagrut Upadhyay	None	None	mohammad ahmed
								07/09/2024

**FROM** 0.01000ml of S12033 + 0.40000ml of E3746 + 0.60000ml of SP6549 = Final Quantity: 1.010 ml

## SVOC STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
411	50 ng BNA ICC, 50 PPM	<a href="#">SP6552</a>	07/09/2024	08/26/2024	Jagrut Upadhyay	None	None	mohammad ahmed
								07/09/2024

**FROM** 0.01000ml of S12033 + 0.50000ml of E3746 + 0.50000ml of SP6549 = Final Quantity: 1.010 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
410	40 ng BNA ICC, 40 PPM	<a href="#">SP6553</a>	07/09/2024	08/26/2024	Jagrut Upadhyay	None	None	mohammad ahmed
								07/09/2024

**FROM** 0.01000ml of S12033 + 0.60000ml of E3746 + 0.40000ml of SP6549 = Final Quantity: 1.010 ml

## SVOC STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3678	20 ng BNA ICC, 20 PPM	<a href="#">SP6554</a>	07/09/2024	08/26/2024	Jagrut Upadhyay	None	None	mohammad ahmed
								07/09/2024

**FROM** 0.01000ml of S12033 + 0.80000ml of E3746 + 0.20000ml of SP6549 = Final Quantity: 1.010 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
408	10 ng BNA ICC, 10 PPM	<a href="#">SP6555</a>	07/09/2024	08/26/2024	Jagrut Upadhyay	None	None	mohammad ahmed
								07/09/2024

**FROM** 0.01000ml of S12033 + 0.90000ml of E3746 + 0.10000ml of SP6549 = Final Quantity: 1.010 ml

## SVOC STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
407	5 ng BNA ICC, 5 PPM	<a href="#">SP6556</a>	07/09/2024	08/26/2024	Jagrut Upadhyay	None	None	mohammad ahmed
								07/09/2024

**FROM** 0.01000ml of S12033 + 0.95000ml of E3746 + 0.05000ml of SP6549 = Final Quantity: 1.010 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
175	2.5 ng BNA ICC, 2.5 PPM	<a href="#">SP6557</a>	07/09/2024	08/26/2024	Jagrut Upadhyay	None	None	mohammad ahmed
								07/09/2024

**FROM** 0.01000ml of S12033 + 0.50000ml of E3746 + 0.50000ml of SP6556 = Final Quantity: 1.010 ml

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<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
416	40 ng BNA ICV, 40 PPM	<a href="#">SP6559</a>	07/09/2024	11/30/2024	Jagrut Upadhyay	None	None	mohammad ahmed 07/11/2024
<u>FROM</u>	0.01000ml of S12033 + 0.60000ml of E3768 + 0.40000ml of SP6558 = Final Quantity: 1.010 ml							

## SVOC STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3895	50 ug/ml DFTPP 8270E	<a href="#">SP6573</a>	07/15/2024	01/08/2025	Rahul Chavli	None	None	Yogesh Patel
07/17/2024								
<u>FROM</u>	1.00000ml of S10247 + 19.00000ml of E3768 = Final Quantity: 20.000 ml							

## 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	06/30/2025	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	07/01/2025	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-9254-03 / Acetone, Ultra Resi (cs/4x4L)	23H14626005	11/29/2024	05/29/2024 / Rajesh	05/23/2024 / Rajesh	E3744

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	11/25/2024	05/25/2024 / Rajesh	05/08/2024 / Rajesh	E3746

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	12/01/2024	06/01/2024 / Rajesh	05/31/2024 / Rajesh	E3753



### 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)	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-9254-03 / Acetone, Ultra Resi (cs/4x4L)	23H1462005	01/12/2025	07/12/2024 /	07/02/2024 / Rajesh	E3769

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 #
CPI International	Z-112090-04 / CLP Acid Surrogate Solution, 7500 mg/L, 1ml	440246	09/29/2024	03/29/2024 / Jagrut	12/09/2021 / Christian	S10102

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	10/26/2024	04/26/2024 / Rahul	05/18/2022 / Christian	S10398

## CHEMICAL RECEIPT LOG BOOK

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	08/29/2024	02/29/2024 / Jagrut	07/05/2022 / Christian	S10591

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	08/31/2030	05/31/2024 / Jagrut	12/28/2022 / Christian	S10972

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	S10973

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	S10974

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	S10975

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	S10976

## 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	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	31086 / Base Neutral Surrogate 5000ug/ml, CH <sub>2</sub> Cl <sub>2</sub> , 5ml	A0189418	08/31/2028	05/31/2024 / Jagrut	12/28/2022 / Christian	S10996

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31086 / Base Neutral Surrogate 5000ug/ml, CH <sub>2</sub> Cl <sub>2</sub> , 5ml	A0189418	11/30/2024	05/31/2024 / Jagrut	12/28/2022 / Christian	S10997

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31086 / Base Neutral Surrogate 5000ug/ml, CH <sub>2</sub> Cl <sub>2</sub> , 5ml	A0189418	11/30/2024	05/31/2024 / Jagrut	12/28/2022 / Christian	S10998

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31086 / Base Neutral Surrogate 5000ug/ml, CH <sub>2</sub> Cl <sub>2</sub> , 5ml	A0189418	11/30/2024	05/31/2024 / Jagrut	12/28/2022 / Christian	S10999

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31086 / Base Neutral Surrogate 5000ug/ml, CH <sub>2</sub> Cl <sub>2</sub> , 5ml	A0189418	11/30/2024	05/31/2024 / Jagrut	12/28/2022 / Christian	S11000

## CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31086 / Base Neutral Surrogate 5000ug/ml,CH <sub>2</sub> Cl <sub>2</sub> ,5ml	A0189418	11/30/2024	05/31/2024 / Jagrut	12/28/2022 / Christian	S11001

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31086 / Base Neutral Surrogate 5000ug/ml,CH <sub>2</sub> Cl <sub>2</sub> ,5ml	A0189418	11/30/2024	05/31/2024 / Jagrut	12/28/2022 / Christian	S11002

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31086 / Base Neutral Surrogate 5000ug/ml,CH <sub>2</sub> Cl <sub>2</sub> ,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	555872 / Custom Standard, pentachlorophenol Std [CS 5328-5]	A0193449	10/26/2024	04/26/2024 / Rahul	01/13/2023 / Christian	S11012

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	01/09/2025	07/09/2024 / Jagrut	02/07/2023 / Christian	S11092

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	01/09/2025	07/09/2024 / Jagrut	02/07/2023 / Christian	S11096

## CHEMICAL RECEIPT LOG BOOK

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	01/09/2025	07/09/2024 / Jagrut	02/07/2023 / Christian	S11102

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	08/29/2024	02/29/2024 / Jagrut	02/20/2023 / Christian	S11136

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	01/09/2025	07/09/2024 / Jagrut	03/06/2023 / Christian	S11148

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	503442	08/26/2024	07/09/2024 / Jagrut	07/26/2023 / yogesh	S11434

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]	A0201940	10/26/2024	04/26/2024 / Rahul	09/18/2023 / Kiran	S11546

[CS 4978-1]

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request]	A0201940	12/05/2024	06/05/2024 / Rahul	09/18/2023 / Kiran	S11548

[CS 4978-1]

## 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]	A0201940	12/05/2024	06/05/2024 / Rahul	09/18/2023 / Kiran	S11554

[CS 4978-1]

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request]	A0201940	11/16/2024	05/16/2024 / Jagrut	09/18/2023 / Kiran	S11557

[CS 4978-1]

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request]	A0201940	12/05/2024	06/05/2024 / Rahul	09/18/2023 / Kiran	S11560

[CS 4978-1]

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request]	A0201940	12/05/2024	06/05/2024 / Rahul	09/18/2023 / Kiran	S11563

[CS 4978-1]

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request]	A0201940	12/05/2024	06/05/2024 / Rahul	09/18/2023 / Kiran	S11564

[CS 4978-1]

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request]	A0201940	12/05/2024	06/05/2024 / Rahul	09/18/2023 / Kiran	S11565

[CS 4978-1]

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

[CS 4978-1]

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	12/05/2024	06/05/2024 / Rahul	11/21/2023 / Rahul	S11763

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	12/05/2024	06/05/2024 / Rahul	11/21/2023 / Rahul	S11764

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	12/05/2024	06/05/2024 / Rahul	11/21/2023 / Rahul	S11765

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

## CHEMICAL RECEIPT LOG BOOK

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, CH <sub>2</sub> Cl <sub>2</sub> [New Solvent 100% CH <sub>2</sub> Cl <sub>2</sub> ]	A0197982	11/30/2024	06/05/2024 / Rahul	11/21/2023 / rahul	S11898

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, CH <sub>2</sub> Cl <sub>2</sub> [New Solvent 100% CH <sub>2</sub> Cl <sub>2</sub> ]	A0197982	11/30/2024	06/05/2024 / Rahul	11/21/2023 / rahul	S11899

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, CH <sub>2</sub> Cl <sub>2</sub> [New Solvent 100% CH <sub>2</sub> Cl <sub>2</sub> ]	A0197982	11/30/2024	06/05/2024 / Rahul	11/21/2023 / rahul	S11900

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, CH <sub>2</sub> Cl <sub>2</sub> [New Solvent 100% CH <sub>2</sub> Cl <sub>2</sub> ]	A0197982	10/26/2024	04/26/2024 / Rahul	11/21/2023 / rahul	S11901

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, CH <sub>2</sub> Cl <sub>2</sub> [New Solvent 100% CH <sub>2</sub> Cl <sub>2</sub> ]	A0197982	11/16/2024	05/16/2024 / Jagrut	11/21/2023 / rahul	S11902

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, CH <sub>2</sub> Cl <sub>2</sub> [New Solvent 100% CH <sub>2</sub> Cl <sub>2</sub> ]	A0197982	11/30/2024	06/05/2024 / Rahul	11/21/2023 / rahul	S11903



## CHEMICAL RECEIPT LOG BOOK

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, CH <sub>2</sub> Cl <sub>2</sub> [New Solvent 100% CH <sub>2</sub> Cl <sub>2</sub> ]	A0197982	11/30/2024	06/05/2024 / Rahul	11/21/2023 / rahul	S11904

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, CH <sub>2</sub> Cl <sub>2</sub> [New Solvent 100% CH <sub>2</sub> Cl <sub>2</sub> ]	A0197982	11/30/2024	06/05/2024 / Rahul	11/21/2023 / rahul	S11905

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, CH <sub>2</sub> Cl <sub>2</sub> [New Solvent 100% CH <sub>2</sub> Cl <sub>2</sub> ]	A0197982	11/30/2024	06/05/2024 / Rahul	11/21/2023 / rahul	S11906

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, CH <sub>2</sub> Cl <sub>2</sub> , 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, CH <sub>2</sub> Cl <sub>2</sub> , 1mL	A0201320	02/13/2025	08/13/2024 / anahy	12/21/2023 / Rahul	S12041

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	01/09/2025	07/09/2024 / Jagrut	01/31/2024 / Rahul	S12076

## CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555224 / Custom 8270 Plus Std #2 [2nd lot at \$85 per ampul if requested - contact ARM with Request]	A0207706	10/26/2024	04/26/2024 / Rahul	02/05/2024 / Rahul	S12088

[CS 4978-2]

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555224 / Custom 8270 Plus Std #2 [2nd lot at \$85 per ampul if requested - contact ARM with Request]	A0207706	11/16/2024	05/16/2024 / Jagrut	02/05/2024 / Rahul	S12089

[CS 4978-2]

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555224 / Custom 8270 Plus Std #2 [2nd lot at \$85 per ampul if requested - contact ARM with Request]	A0207706	12/05/2024	06/05/2024 / Rahul	02/05/2024 / Rahul	S12090

[CS 4978-2]

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555224 / Custom 8270 Plus Std #2 [2nd lot at \$85 per ampul if requested - contact ARM with Request]	A0207706	12/05/2024	06/05/2024 / Rahul	02/05/2024 / Rahul	S12091

[CS 4978-2]

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555224 / Custom 8270 Plus Std #2 [2nd lot at \$85 per ampul if requested - contact ARM with Request]	A0207706	12/05/2024	06/05/2024 / Rahul	02/05/2024 / Rahul	S12092

[CS 4978-2]

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555224 / Custom 8270 Plus Std #2 [2nd lot at \$85 per ampul if requested - contact ARM with Request]	A0207706	12/05/2024	06/05/2024 / Rahul	02/05/2024 / Rahul	S12093

[CS 4978-2]

## CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555224 / Custom 8270 Plus Std #2 [2nd lot at \$85 per ampul if requested - contact ARM with Request]	A0207706	12/05/2024	06/05/2024 / Rahul	02/05/2024 / Rahul	S12094

[CS 4978-2]

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555224 / Custom 8270 Plus Std #2 [2nd lot at \$85 per ampul if requested - contact ARM with Request]	A0207706	12/05/2024	06/05/2024 / Rahul	02/05/2024 / Rahul	S12095

[CS 4978-2]

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555224 / Custom 8270 Plus Std #2 [2nd lot at \$85 per ampul if requested - contact ARM with Request]	A0207706	12/05/2024	06/05/2024 / Rahul	02/05/2024 / Rahul	S12096

[CS 4978-2]

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555224 / Custom 8270 Plus Std #2 [2nd lot at \$85 per ampul if requested - contact ARM with Request]	A0207706	01/09/2025	07/09/2024 / Jagrut	02/05/2024 / Rahul	S12097

[CS 4978-2]

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	01/09/2025	07/09/2024 / Jagrut	03/08/2024 / Rahul	S12112

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, CH <sub>2</sub> Cl <sub>2</sub> [New Solvent 100% CH <sub>2</sub> Cl <sub>2</sub> ]	A0203726	12/05/2024	06/05/2024 / Rahul	03/15/2024 / Rahul	S12117

**CHEMICAL RECEIPT LOG BOOK**

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]	A0175226	08/31/2024	06/05/2024 / Rahul	08/12/2021 / Christian	S9675



5580 Skylane Blvd  
Santa Rosa, CA 95403

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(800)878-7654 Toll Free  
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Manufacturer's Quality System  
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by TUV USA to ISO 9001:2015

Date Received: \_\_\_\_\_

## Certificate of Analysis

Rev 0

Page 1 of 1

Catalog No.:	Lot No.:	Storage:	Solvent:	Exp. Date:	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 gravimetrically.



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Date Received: \_\_\_\_\_

## Certificate of Analysis

Rev 0

Page 1 of 1

<b>Catalog No.:</b>	<b>Lot No.:</b>	<b>Storage:</b>	<b>Solvent:</b>	<b>Exp. Date:</b>	<b>Description:</b>
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

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## Certificate of Analysis

Rev 0

Page 1 of 1

**Catalog No.:** Lot No.: **Storage:** **Solvent:** **Exp. Date:** **Description:**  
Z-112090 440246  $\leq -10^{\circ}\text{C}$  Methylene Chloride 2/16/2026 CLP Acid Surrogate Solution, 7,500 mg/L, 1 mL  
-04

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

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 gravimetrically.

Certified By: \_\_\_\_\_

Erica Castiglione  
Chemist



5580 Skylane Blvd  
Santa Rosa, CA 95403

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(707)545-7901 Fax

Receivalon  
02/07/23 by CG  
51096  
to  
51099  
Manufacturer's Quality System  
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by TUV USA to ISO 9001:2015

Date Received: \_\_\_\_\_

## Certificate of Analysis

Rev 0

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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

*Brianna Smith*

Certified By: \_\_\_\_\_

Brianna Smith  
Chemist

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Concentration (correct for purity) and uncertainty (95% confidence) values listed are determined gravimetrically.



# Certificate of Analysis

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Catalog No.: Z-110381-01

Lot No.: 495831

Expiration Date: 10/30/2027

<u>Compound</u>	<u>CAS No.</u>	<u>Purity (%)</u>	<u>Compound Lot No.</u>	<u>Concentration, mg/L</u>
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  
Chemist

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Concentration (correct for purity) and uncertainty (95% confidence) values listed are determined gravimetrically.



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## Certificate of Analysis

Rev 0

Page 1 of 1

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

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

Received on  
02/07/23  
by CG

S11101  
to  
S11103

\*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 gravimetrically.



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

www.restek.com

# CERTIFIED REFERENCE MATERIAL

## Gravimetric Certificate



### 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  
08/12/21  
by  
CG  
S 9671  
to  
S 9675

**Catalog No. :** 555869 **Lot No.:** A0175226

**Description :** Custom Hexachlorocyclopentadiene Standard

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

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

**Expiration Date :** August 31, 2024 **Storage:** 10°C or colder

**Ship:** Ambient

### CERTIFIED VALUES

Component #	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Hexachlorocyclopentadiene CAS # 77-47-4 (Lot 0012019) Purity 99%	25,032.0 µg/mL	+/- 231.6508 µg/mL Gravimetric +/- 1,251.3257 µg/mL Unstressed +/- 1,281.8032 µg/mL Stressed

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

*Lane Kibe*  
Lane Kibe - Mix Technician

Date Mixed: 09-Aug-2021

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

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

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

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at [www.restek.com/Contact-Us](http://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](http://www.restek.com/Contact-Us).
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

### Manufacturing Notes:

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

### Handling Notes:

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



# CERTIFIED REFERENCE MATERIAL

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

www.restek.com

## Certificate of Analysis



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

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

Received on  
03/10/22  
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

Marlene 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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Fax: (814)353-1309

www.restek.com

## Gravimetric Certificate



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

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

Catalog No. : 555871 Lot No.: A0185300  
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

Received by  
CG ON  
05/18/22  
S10393  
+U  
S10402

### 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		+/- 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:

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

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

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at [www.restek.com/Contact-Us](http://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](http://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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Fax: (814)353-1309

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# CERTIFIED REFERENCE MATERIAL

## Gravimetric Certificate



### 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  
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 Suckal - 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:

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

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

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at [www.restek.com/Contact-Us](http://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](http://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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# CERTIFIED REFERENCE MATERIAL

## Certificate of Analysis



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. :** 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

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

### 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 Gravimetric +/- 294.4162 µg/mL Unstressed +/- 357.2628 µg/mL Stressed
2	Phenol-d6 CAS # 13127-88-3 Purity 99% (Lot PR-31262)	10,043.3 µg/mL	+/- 58.3923 µg/mL Gravimetric +/- 293.0957 µg/mL Unstressed +/- 355.6603 µg/mL Stressed
3	2,4,6-Tribromophenol CAS # 118-79-6 Purity 99% (Lot MKCJ7664)	10,010.0 µg/mL	+/- 58.1990 µg/mL Gravimetric +/- 292.1253 µg/mL Unstressed +/- 354.4829 µg/mL 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



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



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. :** 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

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

### 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 Gravimetric +/- 294.4162 µg/mL Unstressed +/- 357.2628 µg/mL Stressed
2	Phenol-d6 CAS # 13127-88-3 Purity 99% (Lot PR-31262)	10,043.3 µg/mL	+/- 58.3923 µg/mL Gravimetric +/- 293.0957 µg/mL Unstressed +/- 355.6603 µg/mL Stressed
3	2,4,6-Tribromophenol CAS # 118-79-6 Purity 99% (Lot MKCJ7664)	10,010.0 µg/mL	+/- 58.1990 µg/mL Gravimetric +/- 292.1253 µg/mL Unstressed +/- 354.4829 µg/mL 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  
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# CERTIFIED REFERENCE MATERIAL

## Certificate of Analysis



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

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

**Catalog No. :** 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

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

### 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 Gravimetric +/- 294.4162 µg/mL Unstressed +/- 357.2628 µg/mL Stressed
2	Phenol-d6 CAS # 13127-88-3 Purity 99% (Lot PR-31262)	10,043.3 µg/mL	+/- 58.3923 µg/mL Gravimetric +/- 293.0957 µg/mL Unstressed +/- 355.6603 µg/mL Stressed
3	2,4,6-Tribromophenol CAS # 118-79-6 Purity 99% (Lot MKCJ7664)	10,010.0 µg/mL	+/- 58.1990 µg/mL Gravimetric +/- 292.1253 µg/mL Unstressed +/- 354.4829 µg/mL 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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# CERTIFIED REFERENCE MATERIAL

## Certificate of Analysis



ISO 17034 Accredited  
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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. :** 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

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

### 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 Gravimetric +/- 294.4162 µg/mL Unstressed +/- 357.2628 µg/mL Stressed
2	Phenol-d6 CAS # 13127-88-3 Purity 99% (Lot PR-31262)	10,043.3 µg/mL	+/- 58.3923 µg/mL Gravimetric +/- 293.0957 µg/mL Unstressed +/- 355.6603 µg/mL Stressed
3	2,4,6-Tribromophenol CAS # 118-79-6 Purity 99% (Lot MKCJ7664)	10,010.0 µg/mL	+/- 58.1990 µg/mL Gravimetric +/- 292.1253 µg/mL Unstressed +/- 354.4829 µg/mL 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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## Certificate of Analysis



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. :** 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

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

### 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 Gravimetric +/- 294.4162 µg/mL Unstressed +/- 357.2628 µg/mL Stressed
2	Phenol-d6 CAS # 13127-88-3 Purity 99% (Lot PR-31262)	10,043.3 µg/mL	+/- 58.3923 µg/mL Gravimetric +/- 293.0957 µg/mL Unstressed +/- 355.6603 µg/mL Stressed
3	2,4,6-Tribromophenol CAS # 118-79-6 Purity 99% (Lot MKCJ7664)	10,010.0 µg/mL	+/- 58.1990 µg/mL Gravimetric +/- 292.1253 µg/mL Unstressed +/- 354.4829 µg/mL 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



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

www.restek.com

# CERTIFIED REFERENCE MATERIAL

## Certificate of Analysis



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

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

**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

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

### 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 Gravimetric +/- 294.4162 µg/mL Unstressed +/- 357.2628 µg/mL Stressed
2	Phenol-d6 CAS # 13127-88-3 Purity 99% (Lot PR-31262)	10,043.3 µg/mL	+/- 58.3923 µg/mL Gravimetric +/- 293.0957 µg/mL Unstressed +/- 355.6603 µg/mL Stressed
3	2,4,6-Tribromophenol CAS # 118-79-6 Purity 99% (Lot MKCJ7664)	10,010.0 µg/mL	+/- 58.1990 µg/mL Gravimetric +/- 292.1253 µg/mL Unstressed +/- 354.4829 µg/mL Stressed

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

**Column:**

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Rtx-5 (cat.#10223)

**Carrier Gas:**

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Received by  
CG on  
12/28/22  
\$10981  
to  
S11010

**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 Gravimetric +/- 225.6421 µg/mL Unstressed +/- 250.3778 µg/mL Stressed
2	2-Fluorobiphenyl CAS # 321-60-8 (Lot 00021384) Purity 99%	5,026.6 µg/mL	+/- 29.2250 µg/mL Gravimetric +/- 226.4003 µg/mL Unstressed +/- 251.2191 µg/mL Stressed
3	p-Terphenyl-d14 CAS # 1718-51-0 (Lot PR-30504) Purity 99%	5,027.3 µg/mL	+/- 29.2289 µg/mL Gravimetric +/- 226.4304 µg/mL Unstressed +/- 251.2524 µg/mL 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  
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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

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Received by  
CG on  
12/28/22  
\$10981  
to  
S11010

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

www.restek.com

CERTIFIED REFERENCE MATERIAL

# Certificate of Analysis

gravimetric



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

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

**Catalog No. :** 555872 **Lot No.:** A0193449

**Description :** Custom Pentachlorophenol Standard

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

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

**Expiration Date :** January 31, 2026 **Storage:** 10°C or colder

**Ship:** Ambient

Received on  
01/13/23  
by  
CG  
S11011  
+0  
S11015

## CERTIFIED VALUES

Component #	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Pentachlorophenol	87-86-5	RP221012	99%	25,050.0 µg/mL	+/- 778.6378

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

*Russ Bookhamer*

Russ Bookhamer - Operations Technician I

**Date Mixed:** 11-Jan-2023

**Balance:** B442140311

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

### Certified Uncertainty Value Notes:

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

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

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

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

### Manufacturing Notes:

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

### Handling Notes:

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





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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. : 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®  
Registered Quality  
Certificate #FM 8

**tified Reference Material Notes**

**es:**

n date valid for unopened ampul stored in compliance with the recommended conditions.  
nty, concentration, and expiration of the CRM are based on the unopened product being stored according to the  
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:

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

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

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

**Notes:**

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

:

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

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

Sand  
Purified  
Washed and Ignited



Material No.: 3382-05  
Batch No.: 0000243821  
Manufactured Date: 2018/04/09  
Retest Date: 2025/04/07  
Revision No: 1

## Certificate of Analysis

Test	Specification	Result
Substances Soluble in HCl	$\leq 0.16\%$	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

  
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  
QUÍMICOS  
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 <sub>2</sub> SO <sub>4</sub>
SPECIFICATION NUMBER :	6399	RELEASE DATE:	ABR/21/2023
LOT NUMBER :	313201		

TEST	SPECIFICATIONS	LOT VALUES
Assay (Na <sub>2</sub> SO <sub>4</sub> )	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 <sub>4</sub> )	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 foreign 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.

Recd. by R3 on 7/24/23 **E 3551**

RC-02-01, Ed. 3

Material No.: 92E  
Batch No.: 24C016  
Manufactured Date: 2024-C  
Expiration Date: 2025-C  
Revision I

## Certificate of Analysis

Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	$\leq 5$	< 1
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	$\leq 10$	2
Assay (CH <sub>2</sub> Cl <sub>2</sub> ) (by GC, exclusive of preservative, corrected for water)	$\geq 99.8 \%$	100.0 %
Color (APHA)	$\leq 10$	10
Residue after Evaporation	$\leq 1.0$ ppm	0.2 ppm
Titration Acid ( $\mu$ eq/g)	$\leq 0.3$	< 0.1
Chloride (Cl)	$\leq 10$ ppm	< 5 ppm
Water (by KF, coulometric)	$\leq 0.02 \%$	< 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

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  
Page 1 of 1

Acetone  
BAKER RESI-ANALYZED® Reagent  
For Organic Residue Analysis



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 <sub>3</sub> ) <sub>2</sub> CO) (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
Titration Acid (μeq/g)	≤ 0.3	0.1
Titration Base (μeq/g)	≤ 0.6	< 0.1
Water (H <sub>2</sub> O)	≤ 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

Rec'd by RP on 5/23/24

E 3744

Ken Koehnlein  
Sr. Manager, Quality Assurance

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



Material No.: 9266-A4  
Batch No.: 24C0162011  
Manufactured Date: 2024-01-04  
Expiration Date: 2025-04-04  
Revision No.: 0

## Certificate of Analysis

Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	$\leq 5$	< 1
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	$\leq 10$	2
Assay (CH <sub>2</sub> Cl <sub>2</sub> ) (by GC, exclusive of preservative, corrected for water)	$\geq 99.8 \%$	100.0 %
Color (APHA)	$\leq 10$	10
Residue after Evaporation	$\leq 1.0 \text{ ppm}$	0.2 ppm
Titration Acid ( $\mu\text{eq/g}$ )	$\leq 0.3$	< 0.1
Chloride (Cl)	$\leq 10 \text{ ppm}$	< 5 ppm
Water (by KF, coulometric)	$\leq 0.02 \%$	< 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 3746

Ken Koehnlein  
Sr. Manager, Quality Assurance

Acetone  
BAKER RESI-ANALYZED® Reagent  
For Organic Residue Analysis



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 <sub>3</sub> ) <sub>2</sub> CO) (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
Titration Acid (μeq/g)	≤ 0.3	0.1
Titration Base (μeq/g)	≤ 0.6	< 0.1
Water (H <sub>2</sub> O)	≤ 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 5/31/24

E3753

Ken Koehnlein  
Sr. Manager, Quality Assurance



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



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

## Certificate of Analysis

Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	$\leq 5$	3
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	$\leq 10$	3
Assay ( $\text{CH}_2\text{Cl}_2$ ) (by GC, exclusive of preservative, corrected for water)	$\geq 99.8 \%$	100.0 %
Color (APHA)	$\leq 10$	5
Residue after Evaporation	$\leq 1.0 \text{ ppm}$	0.1 ppm
Titration Acid ( $\mu\text{eq/g}$ )	$\leq 0.3$	< 0.1
Chloride (Cl)	$\leq 10 \text{ ppm}$	5 ppm
Water (by KF, coulometric)	$\leq 0.02 \%$	< 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

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

Page 1 of 1

Acetone

BAKER RESI-ANALYZED® Reagent

For Organic Residue Analysis

avantor™



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 <sub>3</sub> ) <sub>2</sub> CO) (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
Titration Acid (μeq/g)	≤ 0.3	0.1
Titration Base (μeq/g)	≤ 0.6	< 0.1
Water (H <sub>2</sub> O)	≤ 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 7/21/24

E 3769

Ken Koehnlein  
Sr. Manager, Quality Assurance

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



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

## Certificate of Analysis

Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	$\leq 5$	< 1
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	$\leq 10$	7
Assay (CH <sub>2</sub> Cl <sub>2</sub> ) (by GC, exclusive of preservative, corrected for water)	$\geq 99.8\%$	100.0 %
Color (APHA)	$\leq 10$	5
Residue after Evaporation	$\leq 1.0$ ppm	0.1 ppm
Titration Acid ( $\mu$ eq/g)	$\leq 0.3$	< 0.1
Chloride (Cl)	$\leq 10$ ppm	< 5 ppm
Water (by KF, coulometric)	$\leq 0.02\%$	< 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



5580 Skyline 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

Page 1 of 1

Catalog No.: Lot No.:  
Z-110094-02 503442

Solvent: Storage:  
Methylene Chloride  $\leq -10^{\circ}\text{C}$

Exp. Date: Description:  
8/26/2024 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	5052 $\pm$ 122.61
2-fluorobiphenyl	321-60-8	99.7	8.7.1.1P	5005 $\pm$ 121.47
nitrobenzene- $d_4$	4165-60-0	100	7.9.2P	5040 $\pm$ 122.21
p-terphenyl- $d_{14}$	1718-51-0	99.6	9.12.9P	5027 $\pm$ 122

\*Not a certified value

Certified By: \_\_\_\_\_

*Joanna Radu*

Joanna Radu  
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 gravimetrically.





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

www.restek.com

CERTIFIED REFERENCE MATERIAL

# Certificate of Analysis

gravimetric



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

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**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  
↓  
51568  
} 7.P.  
09/19/

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%

REVIEWED

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

Sam Moodler - Operations Tech I

Date Mixed: 13-Sep-2023

Balance: B345965662

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

## 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:

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

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

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

### Manufacturing Notes:

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

### Handling Notes:

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



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



**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  
↓  
51568  
} 7.P.  
09/19/

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%

REVIEWED

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

Sam Moodler - Operations Tech I

Date Mixed: 13-Sep-2023

Balance: B345965662

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



## 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:

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

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

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

### Manufacturing Notes:

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

### Handling Notes:

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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



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

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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%						

REVIEWED

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

Sam Moodler - Operations Tech I

Date Mixed: 13-Sep-2023

Balance: B345965662

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

## General Certified Reference Material Notes

### Expiration Notes:

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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

Expiration Date: September 30, 2025

Handling: This product is photosensitive.

Pkg Amt: > 1 mL

Storage: 10°C or colder

Ship: Ambient

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Pkg Amt: > 1 mL  
Storage: 10°C or colder  
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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/ $\mu$ ECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

### Certified Uncertainty Value Notes:

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

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

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

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

### Manufacturing Notes:

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

### Handling Notes:

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



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

www.restek.com

## CERTIFIED REFERENCE MATERIAL

# Certificate of Analysis

*chromatographic plus*



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

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

**Catalog No. :** 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*  
Sam Moodler - Operations Tech I

Date Mixed: 30-Mar-2023

Balance Serial # B707717271

*Jennifer Pollino*  
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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- Purity values are rounded to the nearest whole number.

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

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

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

### Manufacturing Notes:

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

### Handling Notes:

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## CERTIFIED REFERENCE MATERIAL

# Certificate of Analysis

chromatographic plus



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

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

**Catalog No. :** 31853 **Lot No.:** A0196453  
**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*  
Sam Moodler - Operations Tech I

Date Mixed: 30-Mar-2023

Balance Serial # B707717271

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

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### Manufacturing Notes:

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

### Handling Notes:

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## CERTIFIED REFERENCE MATERIAL

# Certificate of Analysis

*chromatographic plus*



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

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

**Catalog No. :** 31853 **Lot No.:** A0196453  
**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*  
Sam Moodler - Operations Tech I

Date Mixed: 30-Mar-2023

Balance Serial # B707717271

*Jennifer Pollino*  
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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## CERTIFIED REFERENCE MATERIAL

# Certificate of Analysis

*chromatographic plus*



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

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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*  
Sam Moodler - Operations Tech I

Date Mixed: 30-Mar-2023

Balance Serial # B707717271

*Jennifer Pollino*  
Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 31-Mar-2023

Manufactured under Restek's ISO 9001:2015  
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## General Certified Reference Material Notes

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## CERTIFIED REFERENCE MATERIAL

# Certificate of Analysis

*chromatographic plus*



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**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

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80°C (hold 0.1 min.) to 330°C  
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340°C

**Det. Type:**

FID

**Split Vent:**

100 ml/min.

**Inj. Vol**

1µl



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*Sam Moodler*  
Sam Moodler - Operations Tech I

Date Mixed: 30-Mar-2023

Balance Serial # B707717271

*Jennifer Pollino*  
Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 31-Mar-2023

Manufactured under Restek's ISO 9001:2015  
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## General Certified Reference Material Notes

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CERTIFIED REFERENCE MATERIAL

## Certificate of Analysis

*chromatographic plus*



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

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

**Catalog No. :** 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

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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	RPN70	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:**

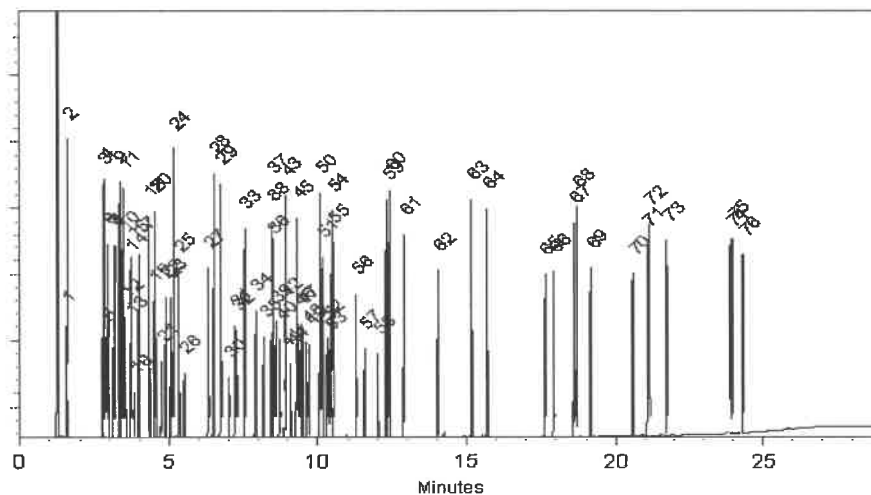
FID

**Split Vent:**

100 ml/min.

**Inj. Vol**

1µl



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

  
Tom Suckar - Mix Technician

Date Mixed: 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



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

www.restek.com

CERTIFIED REFERENCE MATERIAL

## Certificate of Analysis

chromatographic plus



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

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

Catalog No.: 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

511877  
↓  
511906  
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	RPN70	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:**

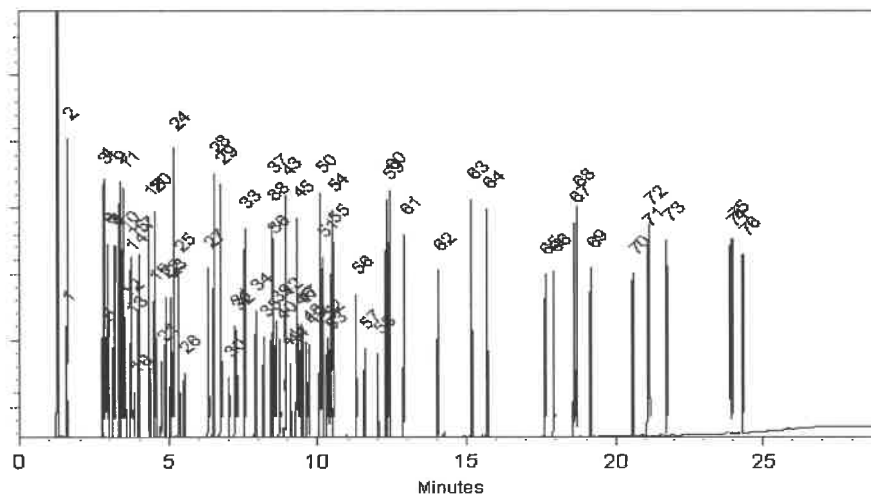
FID

**Split Vent:**

100 ml/min.

**Inj. Vol**

1µl



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

  
Tom Suckar - Mix Technician

Date Mixed: 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



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

www.restek.com

CERTIFIED REFERENCE MATERIAL

# Certificate of Analysis

chromatographic plus



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

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

**Catalog No. :** 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

511877  
↓  
511906

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	RPN70	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:**

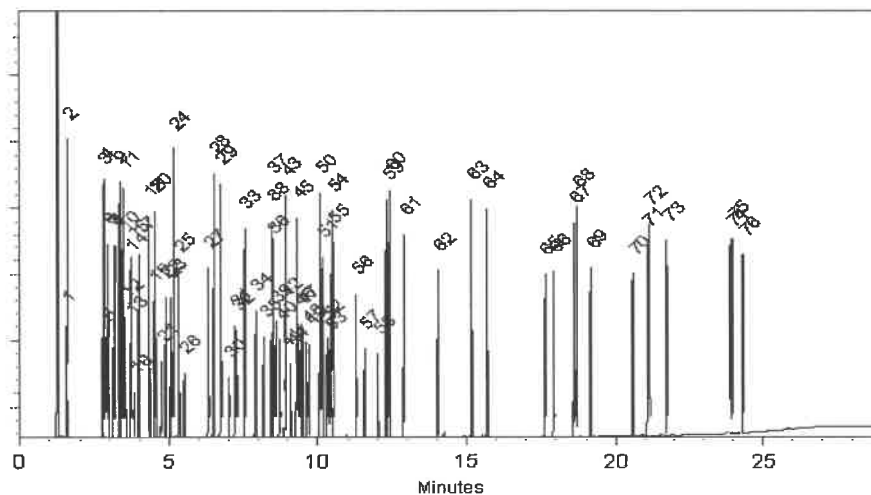
FID

**Split Vent:**

100 ml/min.

**Inj. Vol**

1µl



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

  
Tom Suckar - Mix Technician

Date Mixed: 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



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

www.restek.com

CERTIFIED REFERENCE MATERIAL

# Certificate of Analysis

*chromatographic plus*



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

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

**Catalog No. :** 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

511877  
↓  
511906

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	RPN70	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:**

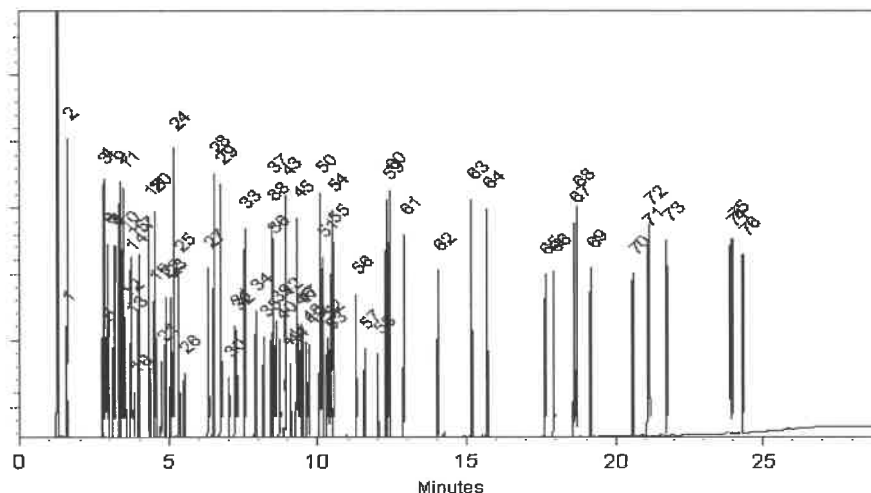
FID

**Split Vent:**

100 ml/min.

**Inj. Vol**

1µl



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

  
Tom Suckar - Mix Technician

Date Mixed: 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



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

www.restek.com

CERTIFIED REFERENCE MATERIAL

# Certificate of Analysis

chromatographic plus



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

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

Catalog No. : 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

511877  
↓  
511906  
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	RPN70	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:**

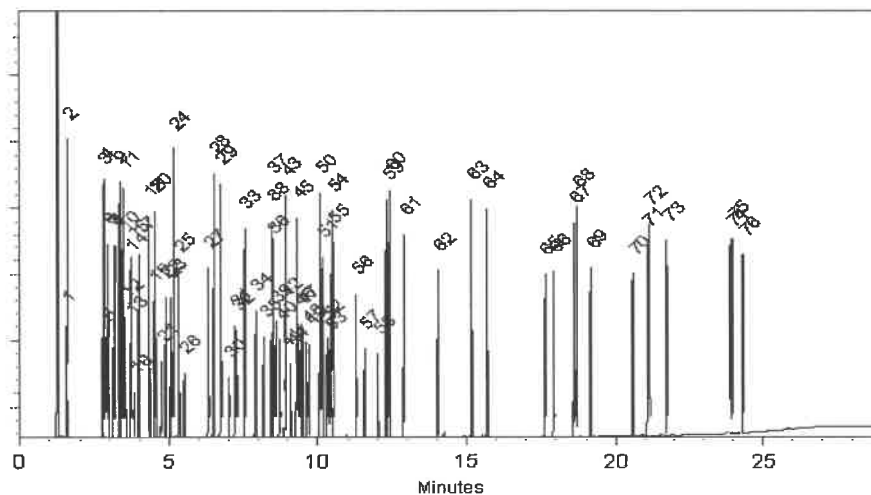
FID

**Split Vent:**

100 ml/min.

**Inj. Vol**

1µl



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

  
Tom Suckar - Mix Technician

Date Mixed: 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



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

www.restek.com

CERTIFIED REFERENCE MATERIAL

# Certificate of Analysis

*chromatographic plus*



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

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

**Catalog No. :** 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

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511906

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	RPN70	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:**

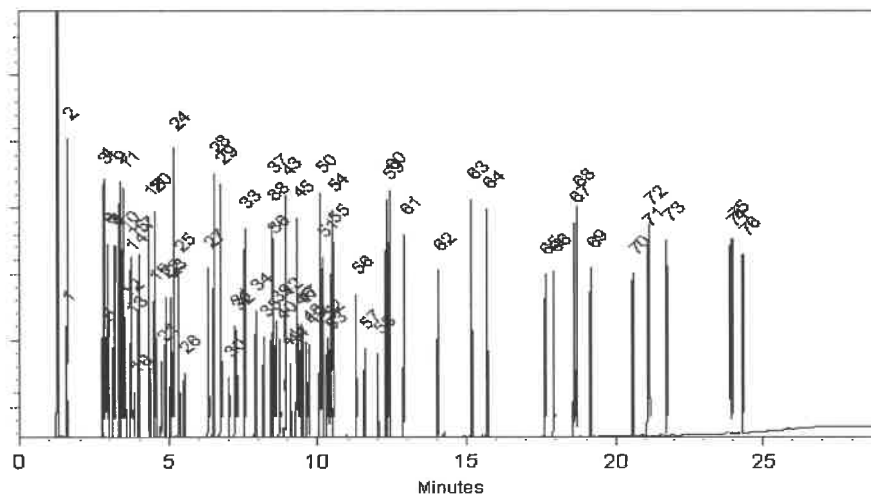
FID

**Split Vent:**

100 ml/min.

**Inj. Vol**

1µl



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

  
Tom Suckar - Mix Technician

Date Mixed: 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



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

www.restek.com

CERTIFIED REFERENCE MATERIAL

## Certificate of Analysis

chromatographic plus



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

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

Catalog No.: 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

511877  
↓  
511906  
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	RPN70	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:**

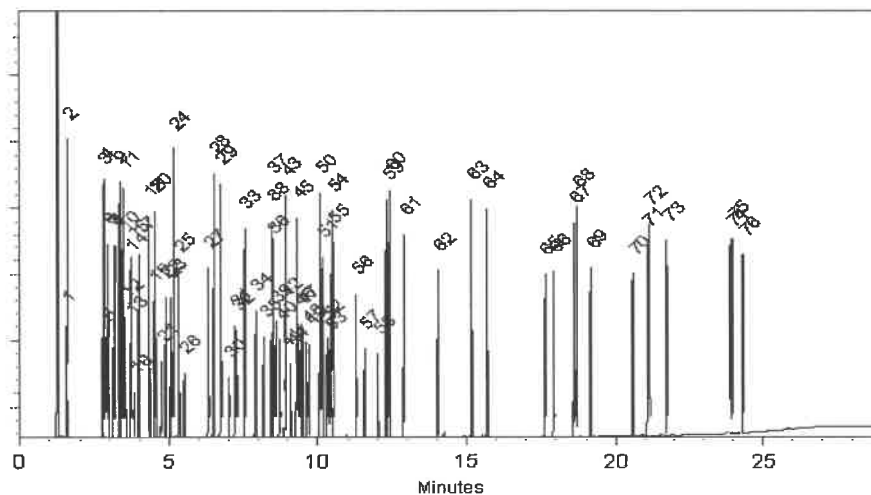
FID

**Split Vent:**

100 ml/min.

**Inj. Vol**

1µl



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

  
Tom Suckar - Mix Technician

Date Mixed: 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



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

www.restek.com

CERTIFIED REFERENCE MATERIAL

# Certificate of Analysis

chromatographic plus



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

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

**Catalog No. :** 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

511877  
↓  
511906

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	RPN70	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:**

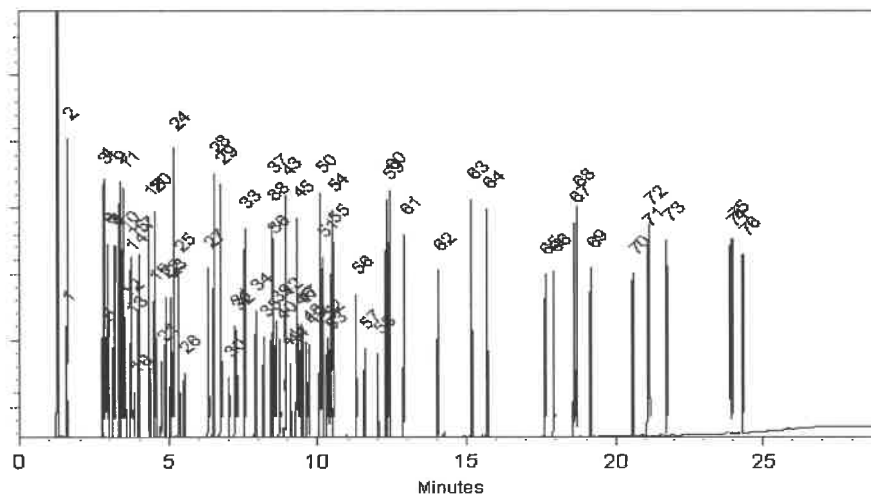
FID

**Split Vent:**

100 ml/min.

**Inj. Vol**

1µl



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

  
Tom Suckar - Mix Technician

Date Mixed: 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



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

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CERTIFIED REFERENCE MATERIAL

# Certificate of Analysis

chromatographic plus



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

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

**Catalog No. :** 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

511877  
↓  
511906

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	RPN70	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:**

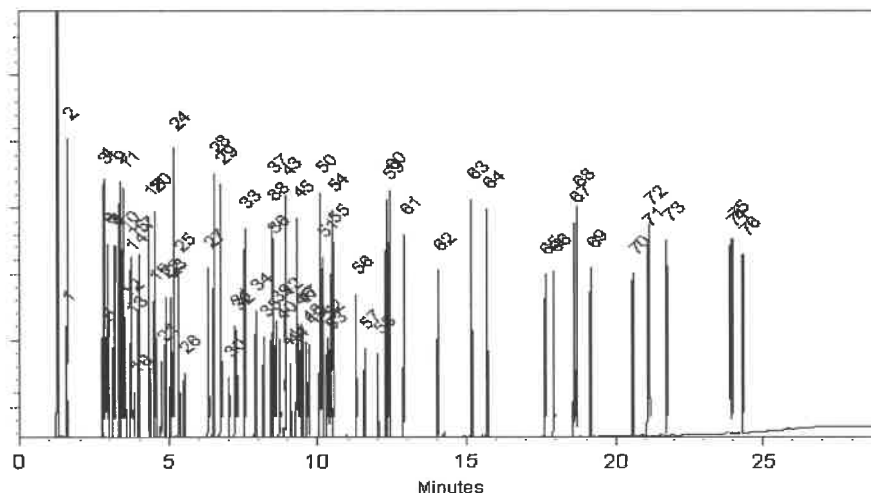
FID

**Split Vent:**

100 ml/min.

**Inj. Vol**

1µl



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

  
Tom Suckar - Mix Technician

Date Mixed: 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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Fax: 1-814-353-1309

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## CERTIFIED REFERENCE MATERIAL

# Certificate of Analysis

chromatographic plus



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

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

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

**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

S12013  
↓  
S12042 } RC  
12/26/23

### 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:**

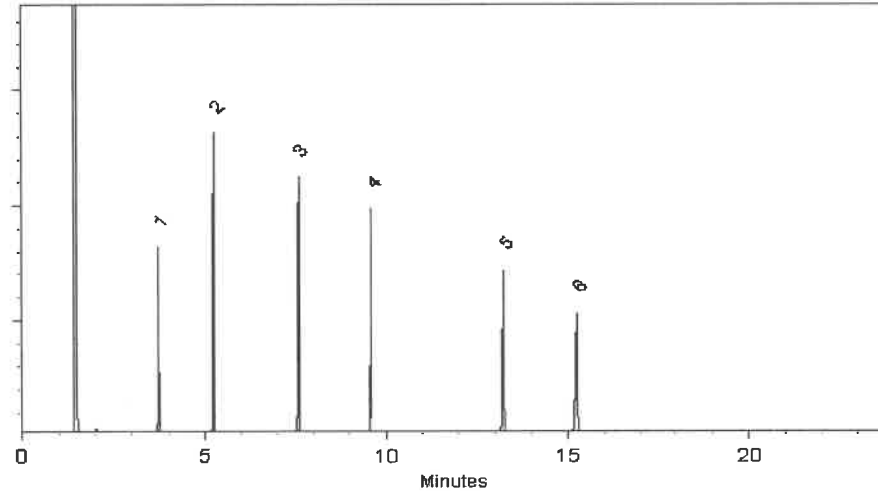
FID

**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



110 Benner Circle  
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## CERTIFIED REFERENCE MATERIAL

# Certificate of Analysis

chromatographic plus



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

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

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

**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

S12013  
↓  
S12042 } RC  
12/26/23

### 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:**

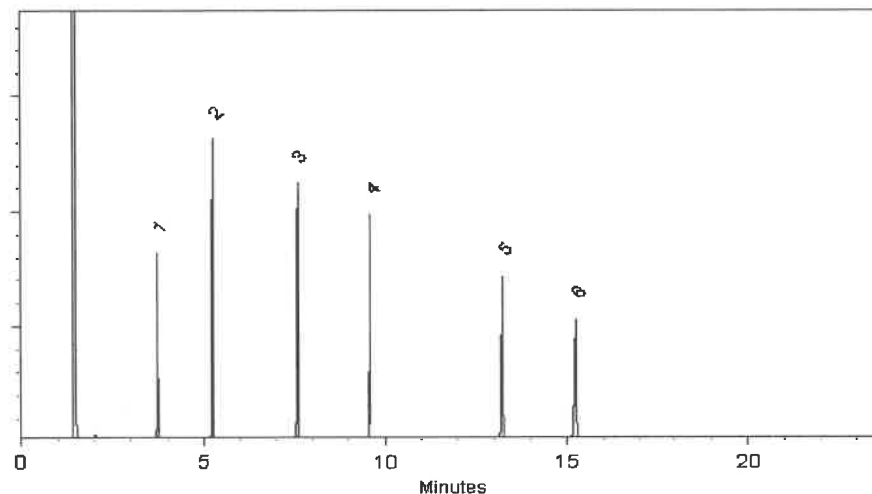
FID

**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



5580 Skylane Blvd  
Santa Rosa, CA 95403

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

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

Date Received: \_\_\_\_\_

## Certificate of Analysis

Rev 0

Page 1 of 1

<b>Catalog No.:</b>	<b>Lot No.:</b>	<b>Storage:</b>	<b>Solvent:</b>	<b>Exp. Date:</b>	<b>Description:</b>
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

912075 } RC  
↓  
912079 } 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 gravimetrically.



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Fax: 1-814-353-1309

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

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

**Ship:** Ambient

512082 } RC/  
↓  
512111 } 02/22/24

## 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%

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

John Friedline - Operations Technician I

Date Mixed: 12-Feb-2024

Balance: B345965662



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**Description :** Custom 8270 Plus Standard #2

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

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512082 } RC/  
↓  
512111 } 02/22/24

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512082 } RC/  
↓  
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**Expiration Date :** February 28, 2026 **Storage:** 10°C or colder

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512082 } RC/  
↓  
512111 } 02/22/24

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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%

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John Friedline - Operations Technician I

Date Mixed: 12-Feb-2024

Balance: B345965662



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

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

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

**Ship:** Ambient

512082 } RC/  
↓  
512111 } 02/22/24

## 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%

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

John Friedline - Operations Technician I

Date Mixed: 12-Feb-2024

Balance: B345965662



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



### 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

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

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

**Ship:** Ambient

512082 } RC/  
↓  
512111 } 02/22/24

### CERTIFIED VALUES

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

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

**Ship:** Ambient

512082 } RC/  
↓  
512111 } 02/22/24

## CERTIFIED VALUES

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

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

John Friedline - Operations Technician I

Date Mixed: 12-Feb-2024

Balance: B345965662



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CERTIFIED REFERENCE MATERIAL

# Certificate of Analysis

gravimetric



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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

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

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

**Ship:** Ambient

512082 } RC/  
↓  
512111 } 02/22/24

## CERTIFIED VALUES

Component #	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
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3	Benzaldehyde	100-52-7	RD231129RSRA	99%	1,005.0 µg/mL	+/- 29.541899
4	Benzoic acid	65-85-0	MKCR2694	99%	1,003.0 µg/mL	+/- 29.483110
5	Biphenyl	92-52-4	MKCL6515	99%	1,006.0 µg/mL	+/- 29.571294

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

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

John Friedline - Operations Technician I

Date Mixed: 12-Feb-2024

Balance: B345965662



5580 Skylane Blvd  
Santa Rosa, CA 95403

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

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

Date Received: \_\_\_\_\_

## Certificate of Analysis

Rev 0

Page 1 of 1

Catalog No.:	Lot No.:	Storage:	Solvent:	Exp. Date:	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

512112 } RC/  
↓  
912116 } 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 gravimetrically.



110 Benner Circle  
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Tel: 1-814-353-1300  
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## CERTIFIED REFERENCE MATERIAL

# Certificate of Analysis

chromatographic plus



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

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

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

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

**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

512117 } RC/  
↓ 03/18/24  
512146 }

### 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	BCKK0887	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%

