

Prep Standard - Chemical Standard Summary

Order ID : Q2150

Test : SVOC-TCL BNA -20

Prepbatch ID : PB168211,

Sequence ID/Qc Batch ID: BF053025,BF060225,

Standard ID :

EP2612,EP2614,EP2865,SP6754,SP6757,SP6769,SP6770,SP6782,SP6783,SP6784,SP6785,SP6786,SP6787,SP6788,SP6789,SP6790,SP6791,

Chemical ID :

10ul/1000ul

sample,E3551,E3902,E3904,E3921,E3926,E3930,E3932,E3939,S10104,S10399,S10584,S11143,S11162,S11484,S11496,S11650,S11788,S11789,S11790,S11798,S11799,S12115,S12190,S12191,S12192,S12193,S12194,S12195,S12209,S12210,S12211,S12212,S12213,S12214,S12215,S12216,S12271,S12277,S12486,S12488,S12489,S12490,S12491,S12492,S12493,S12494,S12495,S12496,S12534,S12535,S12536,S12537,S12538,S12539,S12540,S12541,S12542,S12577,S12658,S12662,S12667,S12793,S12974,S12976,S12977,S12978,S12979,S12980,S12981,S12982,S12983,S13078

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 | EP2612 | 05/09/2025 | 11/05/2025 | RUPESHKUMAR SHAH | None | None | Riteshkumar Patel |
| | | | | | | | | 05/09/2025 |

FROM 8000.00000ml of E3930 + 8000.00000ml of E3932 = 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 | EP2614 | 05/19/2025 | 07/01/2025 | RUPESHKUMAR SHAH | Extraction_SC ALE_2 | None | Riteshkumar Patel |
| | | | | | | (EX-SC-2) | | 05/19/2025 |

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> |
|------------------|--|------------------------|------------------|------------------------|--------------------|----------------|------------------|-------------------------------|
| 19 | 8270/CLP Surrogate Solution, 100 PPM BN/150 PPM ACID | SP6754 | 03/18/2025 | 09/18/2025 | Rahul Chavli | None | None | Jagrut Upadhyay 04/03/2025 |

| | |
|-------------|---|
| FROM | 1930.00000ml of E3902 + 2.60000ml of S12216 + 2.70000ml of S12195 + 5.20000ml of S12210 + 5.30000ml of S12192 + 5.30000ml of S12194 + 5.30000ml of S12209 + 5.30000ml of S12211 + 5.30000ml of S12212 + 5.30000ml of S12213 + 5.40000ml of S12190 + 5.40000ml of S12214 + 5.60000ml of S12191 + 5.60000ml of S12215 + 5.70000ml of S12193 = Final Quantity: 2000.000 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> |
|------------------|----------------------|------------------------|------------------|------------------------|--------------------|----------------|------------------|-------------------------------|
| 3895 | 50 ug/ml DFTPP 8270E | SP6757 | 03/31/2025 | 09/30/2025 | Rahul Chavli | None | None | Jagrut Upadhyay 04/01/2025 |

| FROM | |
|---|-----------------------------|
| 1.00000ml of S12577 + 19.00000ml of E3904 | = Final Quantity: 20.000 ml |

[illegible]

| <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 | SP6770 | 04/10/2025 | 09/10/2025 | Jagrut Upadhyay | None | None | Sohil Jodhani 04/16/2025 |
| <u>FROM</u> 0.01000ml of S12658 + 0.60000ml of E3926 + 0.40000ml of SP6769 = 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> |
|------------------|-------------------------------------|------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 171 | 8270/625 Spike Solution, 50/100 PPM | SP6782 | 04/30/2025 | 05/31/2025 | Rahul Chavli | None | None | Jagrut Upadhyay |
| | | | | | | | | 05/15/2025 |

FROM 0.10000ml of S12488 + 0.20000ml of S12534 + 0.20000ml of S12983 + 0.40000ml of S10399 + 0.40000ml of S10584 + 0.40000ml of S11143 + 0.40000ml of S11484 + 0.40000ml of S11650 + 0.50000ml of S12542 + 0.80000ml of S12974 + 1.00000ml of S12496 + 1.10000ml of S11789 + 1.10000ml of S12492 + 1.20000ml of S11799 + 1.20000ml of S12491 + 1.20000ml of S12493 + 1.20000ml of S12976 + 1.20000ml of S12980 + 1.20000ml of S12982 + 1.30000ml of S11798 + 1.30000ml of S12490 + 1.30000ml of S12495 + 1.30000ml of S12535 + 1.30000ml of S12537 + 1.30000ml of S12538 + 1.30000ml of S12540 + 1.30000ml of S12541 + 1.30000ml of S12979 + 1.30000ml of S12981 + 1.40000ml of S11790 + 1.40000ml of S12489 + 1.40000ml of S12494 + 1.40000ml of S12536 + 1.40000ml of S12539 + 1.40000ml of S12977 + 1.40000ml of S12978 + 163.00000ml of E3921 = Final Quantity: 200.000 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> |
|------------------|--------------------------------|------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 3764 | 8270/625 Stock solution 100 ng | SP6783 | 05/05/2025 | 06/21/2025 | Jagrut Upadhyay | None | None | Rahul Chavli |
| | | | | | | | | 05/16/2025 |

FROM 0.26700ml of S10104 + 0.40000ml of S11496 + 0.50000ml of S12115 + 1.00000ml of S11162 + 1.00000ml of S12271 + 1.00000ml of S12277 + 1.00000ml of S12793 + 1.00000ml of S13078 + 3.83300ml of E3930 = 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 | SP6784 | 05/05/2025 | 06/21/2025 | Jagrut Upadhyay | None | None | Rahul Chavli |
| | | | | | | | | 05/16/2025 |

FROM 0.01000ml of S12662 + 0.20000ml of E3930 + 0.80000ml of SP6783 = 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 | SP6785 | 05/05/2025 | 06/21/2025 | Jagrut Upadhyay | None | None | Rahul Chavli |
| | | | | | | | | 05/16/2025 |

FROM 0.01000ml of S12662 + 0.40000ml of E3930 + 0.60000ml of SP6783 = 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 | SP6786 | 05/05/2025 | 06/21/2025 | Jagrut Upadhyay | None | None | Rahul Chavli |
| | | | | | | | | 05/16/2025 |

FROM 0.01000ml of S12662 + 0.50000ml of E3930 + 0.50000ml of SP6783 = 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 | SP6787 | 05/05/2025 | 06/21/2025 | Jagrut Upadhyay | None | None | Rahul Chavli |
| | | | | | | | | 05/16/2025 |

FROM 0.01000ml of S12662 + 0.60000ml of E3930 + 0.40000ml of SP6783 = 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 | SP6788 | 05/05/2025 | 06/21/2025 | Jagrut Upadhyay | None | None | Rahul Chavli |
| | | | | | | | | 05/16/2025 |

FROM 0.01000ml of S12662 + 0.80000ml of E3930 + 0.20000ml of SP6783 = 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> |
|------------------|---------------------|------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 407 | 5 ng BNA ICC, 5 PPM | SP6789 | 05/05/2025 | 06/21/2025 | Jagrut Upadhyay | None | None | Rahul Chavli |
| | | | | | | | | 05/16/2025 |

FROM 0.01000ml of S12662 + 0.95000ml of E3930 + 0.05000ml of SP6783 = 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> |
|------------------|-----------------------|------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 408 | 10 ng BNA ICC, 10 PPM | SP6790 | 05/05/2025 | 06/21/2025 | Jagrut Upadhyay | None | None | Rahul Chavli |
| | | | | | | | | 05/16/2025 |

FROM 0.01000ml of S12662 + 0.90000ml of E3930 + 0.10000ml of SP6783 = 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 | SP6791 | 05/05/2025 | 06/21/2025 | Jagrut Upadhyay | None | None | Rahul Chavli |
| | | | | | | | | 05/16/2025 |

FROM 0.01000ml of S12662 + 0.50000ml of E3930 + 0.50000ml of SP6789 = Final Quantity: 1.010 ml

CHEMICAL RECEIPT LOG BOOK

| 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 | 12/04/2025 | 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-9254-03 / Acetone, Ultra Resi (cs/4x4L) | 24H2762008 | 09/18/2025 | 03/18/2025 / RUPESH | 02/12/2025 / RUPESH | E3902 |

| 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) | 24K1762005 | 01/07/2026 | 03/13/2025 / | 12/27/2024 / RUPESH | E3904 |

| 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) | 6789 | 09/24/2025 | 03/14/2025 / Rajesh | 03/13/2025 / Rajesh | E3921 |

| 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) | 25A0262002 | 10/08/2025 | 04/08/2025 / Rajesh | 02/07/2025 / Rajesh | E3926 |

| 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) | 25A0262002 | 02/20/2026 | 05/02/2025 / RUPESH | 03/09/2025 / RUPESH | E3930 |

CHEMICAL RECEIPT LOG BOOK

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|------------------|--|------------|-----------------|-------------------------|-----------------------------|----------------|
| Seidler Chemical | BA-9254-03 / Acetone, Ultra Resi (cs/4x4L) | 24H1462005 | 11/05/2025 | 05/05/2025 / RUPESH | 04/23/2025 / RUPESH | E3932 |

| 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) | 25A2862010 | 11/22/2025 | 05/22/2025 / RUPESH | 02/28/2025 / RUPESH | E3939 |

| 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 | 07/30/2025 | 01/30/2025 / anahy | 12/09/2021 / Christian | S10104 |

| 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 | 05/31/2025 | 04/30/2025 / Rahul | 05/18/2022 / Christian | S10399 |

| 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 | 06/30/2025 | 01/29/2025 / anahy | 07/05/2022 / Christian | S10584 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|----------|---|----------|-----------------|-------------------------|-----------------------------|----------------|
| Restek | 555869 / Custom Standard, hexachlorocyclopentadiene Std [CS 5328-2] | A0194702 | 07/29/2025 | 01/29/2025 / anahy | 02/20/2023 / Christian | S11143 |

CHEMICAL RECEIPT LOG BOOK

| 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 | 06/21/2025 | 05/05/2025 / Jagrut | 03/06/2023 / Christian | S11162 |

| 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] | A0200549 | 10/30/2025 | 04/30/2025 / Rahul | 08/10/2023 / yogesh | S11484 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-------------------|---|--------|-----------------|-------------------------|-----------------------------|----------------|
| CPI International | Z-110094-02 / CLP Base/Neutral Surrogate Solution, 5000 mg/L, 1ml | 506889 | 10/28/2025 | 04/28/2025 / Jagrut | 08/11/2023 / Yogesh | S11496 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|----------|---|----------|-----------------|-------------------------|-----------------------------|----------------|
| Restek | 555872 / Custom Standard, pentachlorophenol Std [CS 5328-5] | A0201728 | 07/29/2025 | 01/29/2025 / anahy | 11/09/2023 / Yogesh | S11650 |

| 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 | 09/10/2025 | 03/10/2025 / anahy | 11/21/2023 / Rahul | S11788 |

| 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 | 10/25/2025 | 04/25/2025 / Jagrut | 11/21/2023 / Rahul | S11789 |

CHEMICAL RECEIPT LOG BOOK

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|----------|---|----------|-----------------|-------------------------|-----------------------------|----------------|
| Restek | 31853 / 1,4-Dioxane, 2000 ug/ml , Solvent: Methylene Chloride | A0196453 | 10/30/2025 | 04/30/2025 / Rahul | 11/21/2023 / Rahul | S11790 |

| 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 | A0200655 | 10/30/2025 | 04/30/2025 / Rahul | 11/21/2023 / rahul | S11798 |

| 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 | A0200655 | 10/30/2025 | 04/30/2025 / Rahul | 11/21/2023 / rahul | S11799 |

| 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 | 10/28/2025 | 04/28/2025 / Jagrut | 03/08/2024 / Rahul | S12115 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|----------|--|----------|-----------------|-------------------------|-----------------------------|----------------|
| Restek | 31087 / Acid Surrogate 10,000ug/ml,methanol,5ml/ ampul | A0206206 | 09/18/2025 | 03/18/2025 / anahy | 03/15/2024 / Rahul | S12190 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|----------|--|----------|-----------------|-------------------------|-----------------------------|----------------|
| Restek | 31087 / Acid Surrogate 10,000ug/ml,methanol,5ml/ ampul | A0206206 | 09/18/2025 | 03/18/2025 / anahy | 03/15/2024 / Rahul | S12191 |

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 | A0206206 | 09/18/2025 | 03/18/2025 / anahy | 03/15/2024 / Rahul | S12192 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|----------|--|----------|-----------------|-------------------------|-----------------------------|----------------|
| Restek | 31087 / Acid Surrogate 10,000ug/ml,methanol,5ml/ ampul | A0206206 | 09/18/2025 | 03/18/2025 / anahy | 03/15/2024 / Rahul | S12193 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|----------|--|----------|-----------------|-------------------------|-----------------------------|----------------|
| Restek | 31087 / Acid Surrogate 10,000ug/ml,methanol,5ml/ ampul | A0206206 | 09/18/2025 | 03/18/2025 / anahy | 03/15/2024 / Rahul | S12194 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|----------|--|----------|-----------------|-------------------------|-----------------------------|----------------|
| Restek | 31087 / Acid Surrogate 10,000ug/ml,methanol,5ml/ ampul | A0206206 | 09/18/2025 | 03/18/2025 / anahy | 03/15/2024 / Rahul | S12195 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|----------|---|----------|-----------------|-------------------------|-----------------------------|----------------|
| Restek | 31086 / Base Neutral Surrogate 5000ug/ml,CH ₂ Cl ₂ ,5ml | A0206381 | 09/18/2025 | 03/18/2025 / anahy | 03/15/2024 / Rahul | S12209 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|----------|---|----------|-----------------|-------------------------|-----------------------------|----------------|
| Restek | 31086 / Base Neutral Surrogate 5000ug/ml,CH ₂ Cl ₂ ,5ml | A0206381 | 09/18/2025 | 03/18/2025 / anahy | 03/15/2024 / Rahul | S12210 |

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 ₂ Cl ₂ ,5ml | A0206381 | 09/18/2025 | 03/18/2025 / anahy | 03/15/2024 / Rahul | S12211 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|----------|--|----------|-----------------|-------------------------|-----------------------------|----------------|
| Restek | 31086 / Base Neutral Surrogate 5000ug/ml,CH ₂ Cl ₂ ,5ml | A0206381 | 09/18/2025 | 03/18/2025 / anahy | 03/15/2024 / Rahul | S12212 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|----------|--|----------|-----------------|-------------------------|-----------------------------|----------------|
| Restek | 31086 / Base Neutral Surrogate 5000ug/ml,CH ₂ Cl ₂ ,5ml | A0206381 | 09/18/2025 | 03/18/2025 / anahy | 03/15/2024 / Rahul | S12213 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|----------|--|----------|-----------------|-------------------------|-----------------------------|----------------|
| Restek | 31086 / Base Neutral Surrogate 5000ug/ml,CH ₂ Cl ₂ ,5ml | A0206381 | 09/18/2025 | 03/18/2025 / anahy | 03/15/2024 / Rahul | S12214 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|----------|--|----------|-----------------|-------------------------|-----------------------------|----------------|
| Restek | 31086 / Base Neutral Surrogate 5000ug/ml,CH ₂ Cl ₂ ,5ml | A0206381 | 09/18/2025 | 03/18/2025 / anahy | 03/15/2024 / Rahul | S12215 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|----------|--|----------|-----------------|-------------------------|-----------------------------|----------------|
| Restek | 31086 / Base Neutral Surrogate 5000ug/ml,CH ₂ Cl ₂ ,5ml | A0206381 | 09/18/2025 | 03/18/2025 / anahy | 03/15/2024 / Rahul | S12216 |

CHEMICAL RECEIPT LOG BOOK

| 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 | 520963 | 10/28/2025 | 04/28/2025 / Jagrut | 05/24/2024 / Rahul | S12271 |

| 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 | 11/05/2025 | 05/05/2025 / Jagrut | 05/24/2024 / Rahul | S12277 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|----------|---|----------|-----------------|-------------------------|-----------------------------|----------------|
| Restek | 555223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request] [CS 4978-1] | A0214021 | 09/10/2025 | 03/10/2025 / anahy | 07/23/2024 / RAHUL | S12486 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|----------|---|----------|-----------------|-------------------------|-----------------------------|----------------|
| Restek | 555223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request] [CS 4978-1] | A0214021 | 10/25/2025 | 04/25/2025 / Jagrut | 07/23/2024 / RAHUL | S12488 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|----------|---|----------|-----------------|-------------------------|-----------------------------|----------------|
| Restek | 555223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request] [CS 4978-1] | A0214021 | 10/30/2025 | 04/30/2025 / Rahul | 07/23/2024 / RAHUL | S12489 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|----------|---|----------|-----------------|-------------------------|-----------------------------|----------------|
| Restek | 555223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request] [CS 4978-1] | A0214021 | 10/30/2025 | 04/30/2025 / Rahul | 07/23/2024 / RAHUL | S12490 |

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] | A0214021 | 10/30/2025 | 04/30/2025 / Rahul | 07/23/2024 / RAHUL | S12491 |

[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] | A0214021 | 10/30/2025 | 04/30/2025 / Rahul | 07/23/2024 / RAHUL | S12492 |

[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] | A0214021 | 10/30/2025 | 04/30/2025 / Rahul | 07/23/2024 / RAHUL | S12493 |

[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] | A0214021 | 10/30/2025 | 04/30/2025 / Rahul | 07/23/2024 / RAHUL | S12494 |

[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] | A0214021 | 10/30/2025 | 04/30/2025 / Rahul | 07/23/2024 / RAHUL | S12495 |

[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] | A0214021 | 10/30/2025 | 04/30/2025 / Rahul | 07/23/2024 / RAHUL | S12496 |

[CS 4978-1]

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] | A0214017 | 10/10/2025 | 04/10/2025 / Jagrut | 07/23/2024 / RAHUL | S12534 |

[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] | A0214017 | 11/01/2025 | 04/30/2025 / Rahul | 07/23/2024 / RAHUL | S12535 |

[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] | A0214017 | 11/01/2025 | 04/30/2025 / Rahul | 07/23/2024 / RAHUL | S12536 |

[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] | A0214017 | 11/01/2025 | 04/30/2025 / Rahul | 07/23/2024 / RAHUL | S12537 |

[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] | A0214017 | 11/01/2025 | 04/30/2025 / Rahul | 07/23/2024 / RAHUL | S12538 |

[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] | A0214017 | 11/01/2025 | 04/30/2025 / Rahul | 07/23/2024 / RAHUL | S12539 |

[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] | A0214017 | 11/01/2025 | 04/30/2025 / Rahul | 07/23/2024 / RAHUL | S12540 |

[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] | A0214017 | 11/01/2025 | 04/30/2025 / Rahul | 07/23/2024 / RAHUL | S12541 |

[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] | A0214017 | 10/30/2025 | 04/30/2025 / Rahul | 07/23/2024 / RAHUL | S12542 |

[CS 4978-2]

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|----------|--|----------|-----------------|-------------------------|-----------------------------|----------------|
| Restek | 31615 / SV Mixture, GC/MS Tuning Mixture, CH ₂ Cl ₂ , 1mL, | A0212955 | 06/30/2027 | 03/31/2025 / Rahul | 08/01/2024 / Rahul | S12577 |

| 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 ₂ Cl ₂ , 1mL | A0212266 | 04/30/2030 | 04/07/2025 / anahy | 09/20/2024 / anahy | S12658 |

| 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 ₂ Cl ₂ , 1mL | A0212266 | 11/01/2025 | 05/01/2025 / Rahul | 09/20/2024 / anahy | S12662 |

CHEMICAL RECEIPT LOG BOOK

| 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 ₂ Cl ₂ , 1mL | A0212266 | 11/28/2025 | 05/28/2025 / Rahul | 09/20/2024 / anahy | S12667 |

| 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 | 06/21/2025 | 05/05/2025 / Jagrut | 05/24/2024 / Rahul | S12793 |

| 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 ₂ Cl ₂ [New Solvent 100% CH ₂ Cl ₂] | A0219438 | 09/10/2025 | 03/10/2025 / anahy | 12/11/2024 / anahy | S12974 |

| 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 ₂ Cl ₂ [New Solvent 100% CH ₂ Cl ₂] | A0219438 | 09/30/2025 | 04/30/2025 / Rahul | 12/11/2024 / anahy | S12976 |

| 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 ₂ Cl ₂ [New Solvent 100% CH ₂ Cl ₂] | A0219438 | 09/30/2025 | 04/30/2025 / Rahul | 12/11/2024 / anahy | S12977 |

| 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 ₂ Cl ₂ [New Solvent 100% CH ₂ Cl ₂] | A0219438 | 09/30/2025 | 04/30/2025 / Rahul | 12/11/2024 / anahy | S12978 |

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 ₂ Cl ₂ [New Solvent 100% CH ₂ Cl ₂] | A0219438 | 09/30/2025 | 04/30/2025 / Rahul | 12/11/2024 / anahy | S12979 |

| 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 ₂ Cl ₂ [New Solvent 100% CH ₂ Cl ₂] | A0219438 | 09/30/2025 | 04/30/2025 / Rahul | 12/11/2024 / anahy | S12980 |

| 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 ₂ Cl ₂ [New Solvent 100% CH ₂ Cl ₂] | A0219438 | 09/30/2025 | 04/30/2025 / Rahul | 12/11/2024 / anahy | S12981 |

| 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 ₂ Cl ₂ [New Solvent 100% CH ₂ Cl ₂] | A0219438 | 09/30/2025 | 04/30/2025 / Rahul | 12/11/2024 / anahy | S12982 |

| 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 ₂ Cl ₂ [New Solvent 100% CH ₂ Cl ₂] | A0219438 | 09/30/2025 | 04/30/2025 / Rahul | 12/11/2024 / anahy | S12983 |

| 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) | 525551 | 11/05/2025 | 05/05/2025 / Jagrut | 03/10/2025 / anahy | S13078 |



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-110817-01 | 414125 | ≤ -10 °C | Methylene Chloride | 6/21/2025 | Custom 8270 Mix, 4-55, 1000 mg/L, 1 mL |

| Compound | CAS No. | Purity (%) | Compound Lot No. | Concentration, mg/L |
|----------------------------|---------|------------|------------------|---------------------|
| acetophenone | 98-86-2 | 99.2 | 85.8.1P | 998 ± 11.5 |
| benzoic acid | 65-85-0 | 100 | 123.7.1P | 1010 ± 5.88 |
| biphenyl | 92-52-4 | 99.9 | 366.29.1P | 999 ± 5.82 |
| 1,2,4,5-tetrachlorobenzene | 95-94-3 | 99.7 | 53.7.2P | 993 ± 5.79 |

Received on
02/07/23
by
CG
S11089
to
S11093

*Not a certified value

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

Certified By: _____

Shane Overcash
Chemist

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



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-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 ₄ | 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 ₆ | 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



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.

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
+0
S10402

CERTIFIED VALUES

| Component # | Compound | Grav. Conc. (weight/volume) | Expanded Uncertainty (95% C.L.; K=2) |
|-------------|---|-----------------------------|--|
| 1 | 4-Nitrophenol CAS # 100-02-7 Purity 99% (Lot MKCN1089) | 25,060.0 µg/mL | +/- 231.9100 µg/mL Gravimetric +/- 753.2622 µg/mL Unstressed +/- 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 for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

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

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

Manufacturing Notes:

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

Handling Notes:

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



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

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

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

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

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

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

Manufacturing Notes:

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

Handling Notes:

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



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

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

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

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

Ship: Ambient

CERTIFIED

| Component # | Compound | CAS # | Lot # | Purity | Grav. Conc. (weight/volume) |
|-------------|---------------------------|---------|---------|--------|-----------------------------|
| 1 | Hexachlorocyclopentadiene | 77-47-4 | 0012019 | 99% | 25,008.0 µg/mL |

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

Russ Bookhamer - Operations Technician I

Date Mixed: 15-Feb-2023

Balance: B442140311

Manufactured under Restek
Registered Quality
Certificate #FM1

ified Reference Material Notes

es:

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

ues 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:

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

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

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

Notes:

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

:

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

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



**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 ₂ SO ₄ |
| SPECIFICATION NUMBER : | 6399 | RELEASE DATE: | ABR/21/2023 |
| LOT NUMBER : | 313201 | | |

| TEST | SPECIFICATIONS | LOT VALUES |
|--|----------------|-------------|
| Assay (Na ₂ SO ₄) | Min. 99.0% | 99.7 % |
| pH of a 5% solution at 25°C | 5.2 - 9.2 | 6.1 |
| Insoluble matter | Max. 0.01% | 0.005 % |
| Loss on ignition | Max. 0.5% | 0.1 % |
| Chloride (Cl) | Max. 0.001% | <0.001 % |
| Nitrogen compounds (as N) | Max. 5 ppm | <5 ppm |
| Phosphate (PO ₄) | Max. 0.001% | <0.001 % |
| Heavy metals (as Pb) | Max. 5 ppm | <5 ppm |
| Iron (Fe) | Max. 0.001% | <0.001 % |
| Calcium (Ca) | Max. 0.01% | 0.002 % |
| Magnesium (Mg) | Max. 0.005% | 0.001 % |
| Potassium (K) | Max. 0.008% | 0.003 % |
| Extraction-concentration suitability | Passes test | Passes test |
| Appearance | Passes test | Passes test |
| Identification | Passes test | Passes test |
| Solubility and 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

Acetone

BAKER RESI-ANALYZED® Reagent

For Organic Residue Analysis



Material No.: 9254-03

Batch No.: 24H2762008

Manufactured Date: 2024-04-18

Expiration Date: 2027-04-18

Revision No.: 0

Certificate of Analysis

| Test | Specification | Result |
|---|---------------|-------------|
| Assay ((CH ₃) ₂ CO) (by GC, corrected for water) | >= 99.4 % | 100.0 % |
| Color (APHA) | <= 10 | 5 |
| Residue after Evaporation | <= 1.0 ppm | 0.0 ppm |
| Substances Reducing Permanganate | Passes Test | Passes Test |
| Titration Acid (µeq/g) | <= 0.3 | 0.2 |
| Titration Base (µeq/g) | <= 0.6 | <0.1 |
| Water (H ₂ O) | <= 0.5 % | <0.1 % |
| 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: United States

Packaging Site: Phillipsburg Mfg Ctr & DC

E3902

Jamie Croak
Director Quality Operations, Bioscience Production

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

Avantor Performance Materials, LLC

100 Matsonford Rd, Suite 200, Radnor, PA, 19087 U.S.A. Phone 610.386.1700

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

avantor



Material No.: 9266-A4
Batch No.: 25A0262002
Manufactured Date: 2024-11-21
Expiration Date: 2026-02-20
Revision No.: 0

Certificate of Analysis

| Test | Specification | Result |
|--|----------------|------------|
| FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL) | ≤ 5 | 1 |
| ECD Sensitive Impurities (as HeptachlorEpoxide) Single Peak (pg/mL) | ≤ 10 | 4 |
| Assay (CH_2Cl_2) (by GC, exclusive of preservative, corrected for water) | $\geq 99.8\%$ | 99.9% |
| Color (APHA) | ≤ 10 | 10 |
| Residue after Evaporation | ≤ 1.0 ppm | 0.8 ppm |
| Titration Acid ($\mu\text{eq/g}$) | ≤ 0.3 | < 0.1 |
| Chloride (Cl) | ≤ 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: United States
Packaging Site: Phillipsburg Mfg Ctr & DC

E 3926

J. Croak

Jamie Croak
Director Quality Operations, Bioscience Production

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

Avantor Performance Materials, LLC

100 Matsonford Rd, Suite 200, Radnor, PA, 19087, U.S.A. Phone 610.386.1700

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

avantor



Material No.: 9266-A4
Batch No.: 25A0262002
Manufactured Date: 2024-11-21
Expiration Date: 2026-02-20
Revision No.: 0

Certificate of Analysis

| Test | Specification | Result |
|--|----------------|---------|
| FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL) | ≤ 5 | 1 |
| ECD Sensitive Impurities (as HeptachlorEpoxide) Single Peak (pg/mL) | ≤ 10 | 4 |
| Assay (CH ₂ Cl ₂) (by GC, exclusive of preservative, corrected for water) | $\geq 99.8 \%$ | 99.9 % |
| Color (APHA) | ≤ 10 | 10 |
| Residue after Evaporation | ≤ 1.0 ppm | 0.8 ppm |
| Titration Acid (μ eq/g) | ≤ 0.3 | <0.1 |
| Chloride (Cl) | ≤ 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: United States
Packaging Site: Phillipsburg Mfg Ctr & DC

E3930

J. Croak

Jamie Croak
Director Quality Operations, Bioscience Production

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

Avantor Performance Materials, LLC

100 Matsonford Rd, Suite 200, Radnor, PA, 19087, U.S.A. Phone 610.386.1700

Acetone
BAKER RESI-ANALYZED® Reagent
For Organic Residue Analysis

 **avantor™**



Material No.: 9254-03

Batch No.: 24H1462005

Manufactured Date: 2024-05-24

Expiration Date: 2027-05-24

Revision No.: 0

Certificate of Analysis

| Test | Specification | Result |
|---|---------------|-------------|
| Assay ((CH ₃) ₂ CO) (by GC, corrected for water) | >= 99.4 % | 99.8 % |
| Color (APHA) | <= 10 | 5 |
| Residue after Evaporation | <= 1.0 ppm | 0.2 ppm |
| Substances Reducing Permanganate | Passes Test | Passes Test |
| Titration Acid (µeq/g) | <= 0.3 | 0.2 |
| Titration Base (µeq/g) | <= 0.6 | <0.1 |
| Water (H ₂ O) | <= 0.5 % | 0.2 % |
| 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

RS

Country of Origin: United States

Packaging Site: Phillipsburg Mfg Ctr & DC

E 3932



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

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



Material No.: 9266-A4
Batch No.: 25A2862010
Manufactured Date: 2024-12-18
Expiration Date: 2026-03-19
Revision No.: 0

Certificate of Analysis

| Test | Specification | Result |
|--|----------------|---------|
| FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL) | ≤ 5 | <1 |
| ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL) | ≤ 10 | 2 |
| Assay (CH ₂ Cl ₂) (by GC, exclusive of preservative, corrected for water) | $\geq 99.8 \%$ | 99.9 % |
| Color (APHA) | ≤ 10 | 5 |
| Residue after Evaporation | ≤ 1.0 ppm | 0.3 ppm |
| Titration Acid (μ eq/g) | ≤ 0.3 | <0.1 |
| Chloride (Cl) | ≤ 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: United States
Packaging Site: Phillipsburg Mfg Ctr & DC

E3939

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

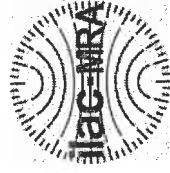
100 Matsonford Rd, Suite 200, Radnor, PA, 19087, U.S.A. Phone 610.386.1700



CERTIFIED REFERENCE MATERIAL

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

www.restek.com



Certificate of Analysis

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.: A0200549

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: August 31, 2026 Storage: 10°C or colder

Ship: Ambient

5116gh } Y.P.
↓
511693 } 08/10/28

CERTIFIED VALUES

| Component # | Compound | CAS # | Lot # | Purity | Grav. Conc. (weight/volume) | Expanded Uncertainty * (95% C.L.; K=2) |
|-------------|-------------------|---------|-------------|--------|-----------------------------|--|
| 1 | 2,4-Dinitrophenol | 51-28-5 | DR230417RSR | 99% | 25,008.0 µg/mL | +/- 777.3323 |

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


Tom Suckar, Mix Technician

Date Mixed: 02-Aug-2023 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 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.



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

Page 1 of 1

| Catalog No.: Lot No.: | Storage: | Solvent: | Exp. Date: | Rev | Description: |
|------------------------------------|----------|--------------------|------------|------------------|---|
| Z-110094-02 506889 | ≤ -10 °C | Methylene Chloride | 7/25/2028 | 0 | CLP Base/Neutral Surrogate Solution, 5,000 mg/L, 1 ml |
| Compound | | CAS No. | Purity (%) | Compound Lot No. | Concentration, mg/L |
| 1,2-dichlorobenzene-d ₄ | | 2199-69-1 | 99.7 | 247.29.3P | 5035 ± 28.02 |
| 2-fluorobiphenyl | | 321-60-8 | 99.69 | 8.286.1.1P | 4999 ± 103.66 |
| nitrobenzene-d5 | | 4165-60-0 | 99.67 | 7.9.3P | 4988 ± 27.32 |
| p-terphenyl-d14 | | 1718-51-0 | 99.3 | 9.120.8P | 5005 ± 27.85 |

511494 } Y.P.
↓ 08/11/2023
511498

*Not a certified value

Certified By: _____
Clint Tipton
Chemist

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



CERTIFIED REFERENCE MATERIAL

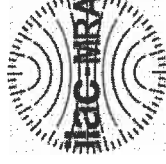
110 Benner Circle
Bellefonte, PA 16823-8812
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Fax: 1-814-353-1309

www.restek.com



Certificate of Analysis

gravimetric



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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Catalog No.: 555872 Lot No.: A0201728

Description: Custom Pentachlorophenol Standard

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

Container Size: 2 mL Pkg Amt: > 1 mL

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

Ship: Ambient

511649 Y.P.
↓ 11/13/23
511658

CERTIFIED VALUES

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

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

Josh McCloskey - Operations Technician I

Date Mixed: 05-Sep-2023 Balance: B251644995

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

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:

- 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

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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:

- 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.



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

Catalog No. : 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:

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

Purity Notes:

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- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

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

- 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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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.:** A0200655
Description : 1,4-dioxane
1,4-Dioxane 2,000µg/mL, Methylene Chloride, 1mL/ampul
Container Size : 2 mL **Pkg Amt:** > 1 mL
Expiration Date : August 31, 2028 **Storage:** 0°C or colder
Ship: Ambient

S11795
↓
S11808 } 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 | SHBQ1693 | 99% | 2,007.0 µg/mL | +/- 24.9775 |

* 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:

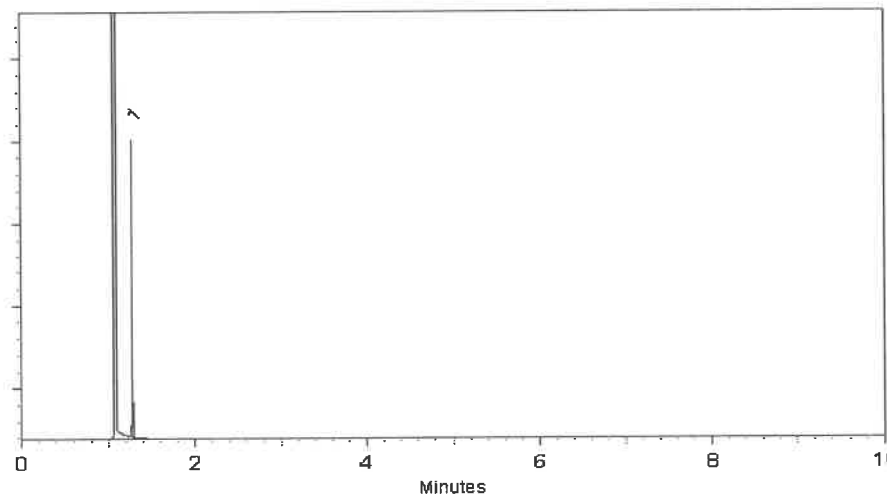
FID

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.

Penelope Riglin - Operations Tech I

Date Mixed: 06-Aug-2023

Balance Serial # 1128360905

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 08-Aug-2023

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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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:

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

Certificate of Analysis

chromatographic plus



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.:** A0200655
Description : 1,4-dioxane
1,4-Dioxane 2,000µg/mL, Methylene Chloride, 1mL/ampul
Container Size : 2 mL **Pkg Amt:** > 1 mL
Expiration Date : August 31, 2028 **Storage:** 0°C or colder
Ship: Ambient

S11795
↓
S11808 } 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 | SHBQ1693 | 99% | 2,007.0 µg/mL | +/- 24.9775 |

* 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:

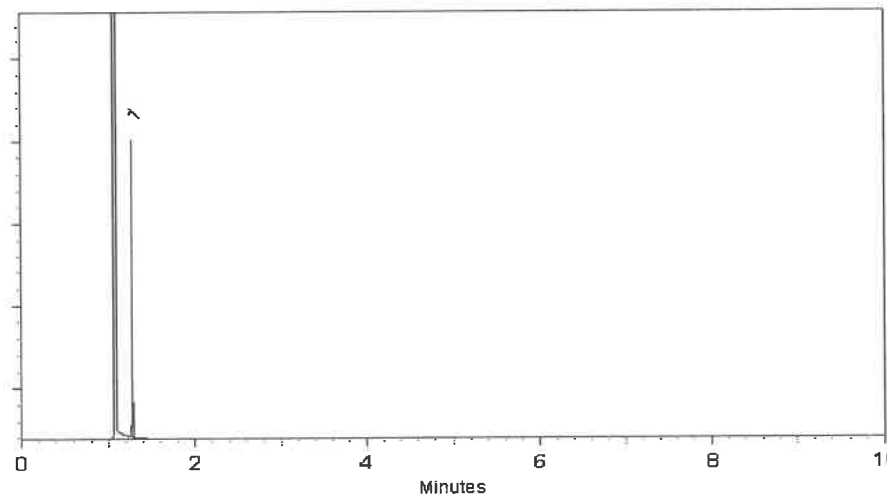
FID

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.

Penelope Riglin - Operations Tech I

Date Mixed: 06-Aug-2023

Balance Serial # 1128360905

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 08-Aug-2023

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

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.
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5580 Skylane Blvd
Santa Rosa, CA 95403

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

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

Date Received: _____

Certificate of Analysis

Rev 0

Page 1 of 1

| 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.



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Certificate of Analysis

chromatographic plus



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No. : 31087 **Lot No.:** A0206206
Description : Acid Surrogate Mix (4/89 SOW)
Acid Surrogate 10, 000µg/mL, Methanol, 5mL/ampul
Container Size : 5 mL **Pkg Amt:** > 5 mL
Expiration Date : January 31, 2032 **Storage:** 10°C or colder
Ship: Ambient

512187 } RC/
↓ } 03/18/24
512206 }

CERTIFIED VALUES

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

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

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

Quality Confirmation Test

Column:

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

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

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

Inj. Temp:

250°C

Det. Temp:

330°C

Det. Type:

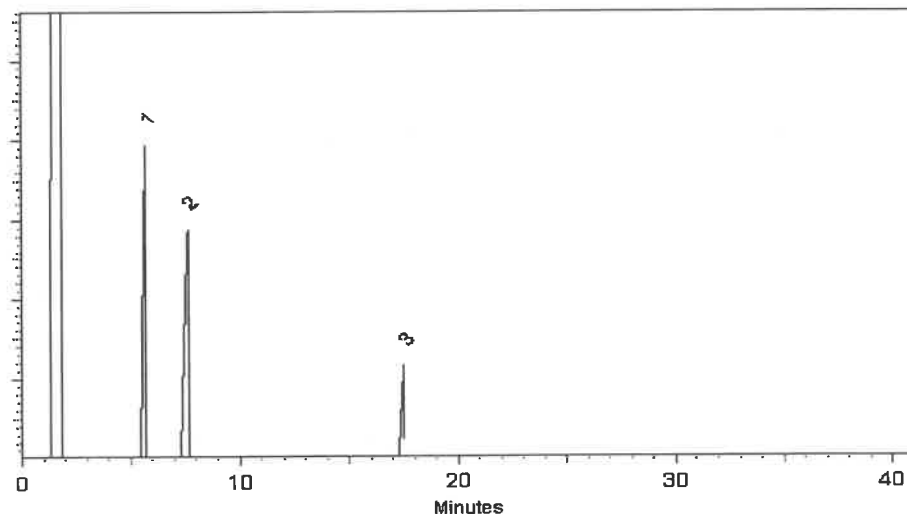
FID

Split Vent:

2 ml/min.

Inj. Vol

1µl



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

Penelope S. Riglin

Penelope Riglin - Operations Tech I

Date Mixed: 04-Jan-2024

Balance Serial # 1128360905

Christie Mills

Christie Mills - Operations Lead Tech - ARM QC

Date Passed: 08-Jan-2024

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



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: 1-814-353-1300
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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

chromatographic plus



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

Catalog No. : 31087 **Lot No.:** A0206206
Description : Acid Surrogate Mix (4/89 SOW)
Acid Surrogate 10, 000µg/mL, Methanol, 5mL/ampul
Container Size : 5 mL **Pkg Amt:** > 5 mL
Expiration Date : January 31, 2032 **Storage:** 10°C or colder
Ship: Ambient

512187 } RC/
↓ } 03/18/24
512206 }

CERTIFIED VALUES

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

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

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

Quality Confirmation Test

Column:

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

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

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

Inj. Temp:

250°C

Det. Temp:

330°C

Det. Type:

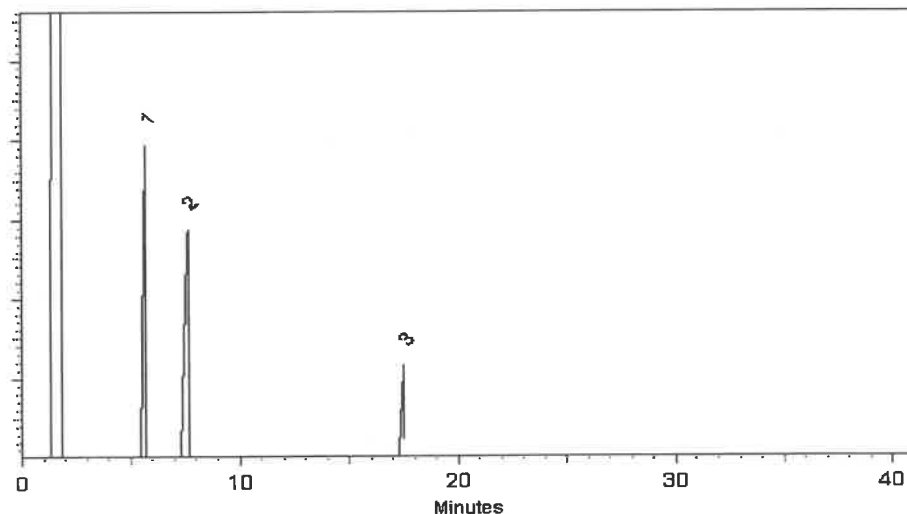
FID

Split Vent:

2 ml/min.

Inj. Vol

1µl



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Penelope S. Riglin

Penelope Riglin - Operations Tech I

Date Mixed: 04-Jan-2024

Balance Serial # 1128360905

Christie Mills

Christie Mills - Operations Lead Tech - ARM QC

Date Passed: 08-Jan-2024

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



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

Description : Acid Surrogate Mix (4/89 SOW)
Acid Surrogate 10, 000µg/mL, Methanol, 5mL/ampul

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

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

Ship: Ambient

512187 } RC/
↓ } 03/18/24
512206 }

CERTIFIED VALUES

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

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

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

Quality Confirmation Test

Column:

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

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

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

Inj. Temp:

250°C

Det. Temp:

330°C

Det. Type:

FID

Split Vent:

2 ml/min.

Inj. Vol

1µl



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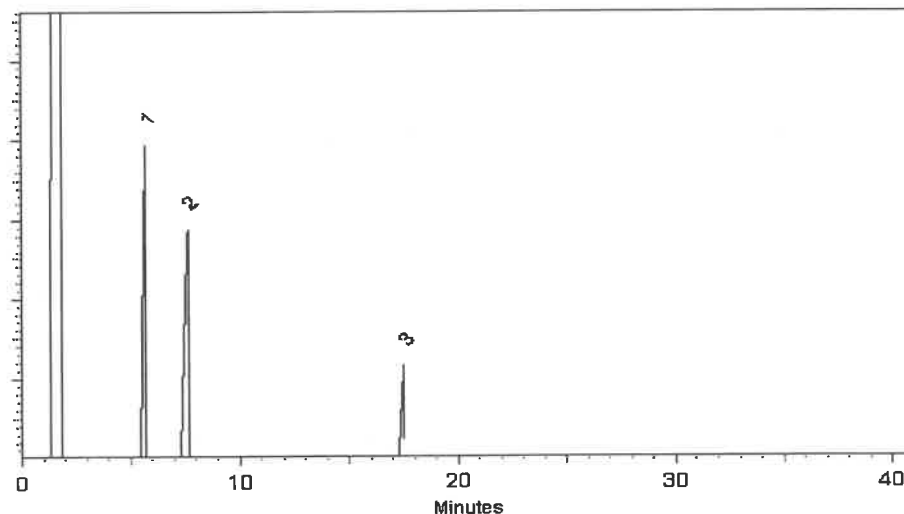
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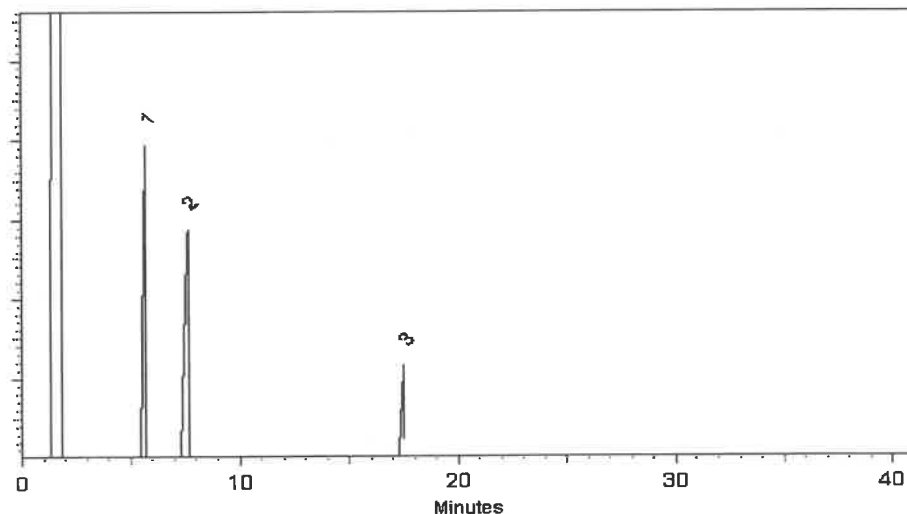
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Catalog No. : 31086 **Lot No.:** A0206381
Description : B/N Surrogate Mix (4/89 SOW)
Base Neutral Surrogate 5000µg/mL, Methylene Chloride, 5mL/ampul
Container Size : 5 mL **Pkg Amt:** > 5 mL
Expiration Date : December 31, 2029 **Storage:** 10°C or colder
Handling: Sonicate prior to use. **Ship:** Ambient

S12207 } RC/
↓
S12221 } 03/18/24

CERTIFIED VALUES

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

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

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

Tech Tips:

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

Quality Confirmation Test

Column:

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

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

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

250°C

Det. Temp:

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Det. Type:

FID

Split Vent:

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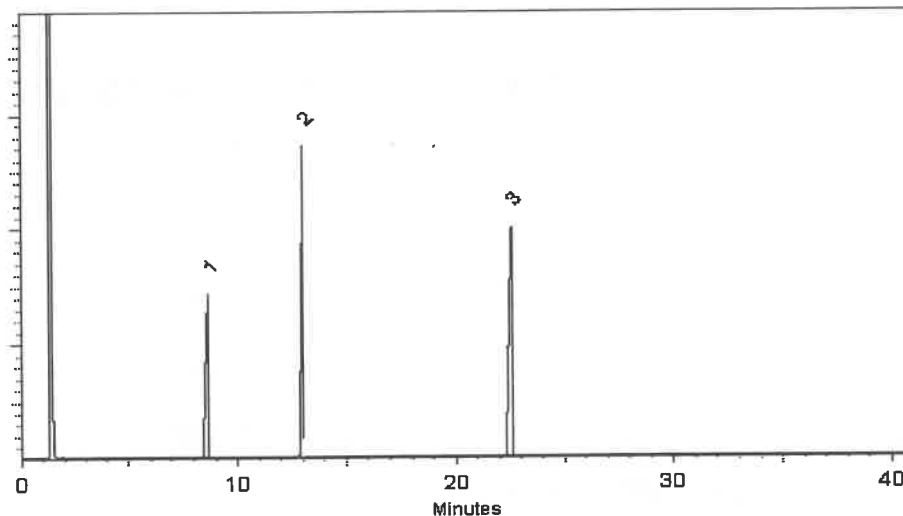
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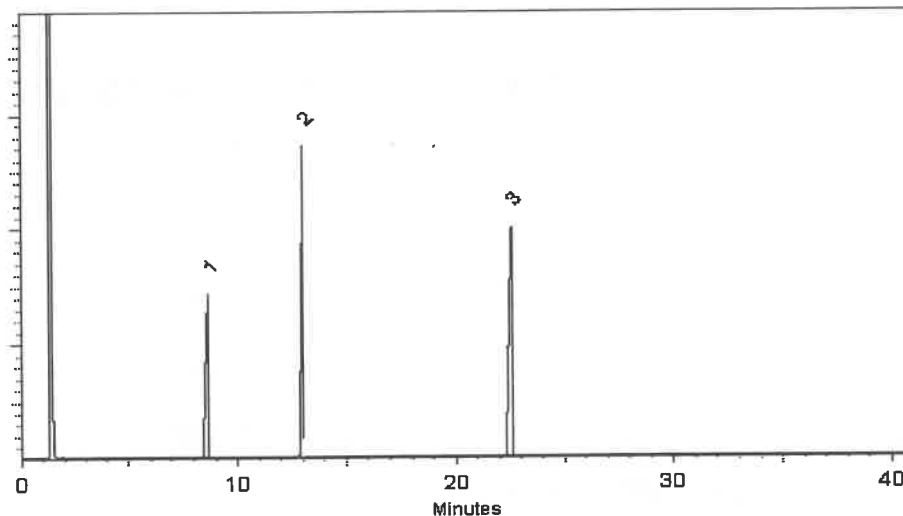
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Inj. Vol

1µl



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

Jess Hoy - Operations Tech I

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

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 11-Jan-2024

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



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. : 31086 **Lot No.:** A0206381
Description : B/N Surrogate Mix (4/89 SOW)
Base Neutral Surrogate 5000µg/mL, Methylene Chloride, 5mL/ampul
Container Size : 5 mL **Pkg Amt:** > 5 mL
Expiration Date : December 31, 2029 **Storage:** 10°C or colder
Handling: Sonicate prior to use. **Ship:** Ambient

S12207 } RC/
↓
S12221 } 03/18/24

CERTIFIED VALUES

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

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

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

Tech Tips:

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

Quality Confirmation Test

Column:

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

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

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

Inj. Temp:

250°C

Det. Temp:

330°C

Det. Type:

FID

Split Vent:

2 ml/min.

Inj. Vol

1µl



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

Jess Hoy - Operations Tech I

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

Jennifer Pollino - Operations Tech III - ARM QC

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chromatographic plus



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Catalog No. : 31086 **Lot No.:** A0206381
Description : B/N Surrogate Mix (4/89 SOW)
Base Neutral Surrogate 5000µg/mL, Methylene Chloride, 5mL/ampul
Container Size : 5 mL **Pkg Amt:** > 5 mL
Expiration Date : December 31, 2029 **Storage:** 10°C or colder
Handling: Sonicate prior to use. **Ship:** Ambient

S12207 } RC/
↓
S12221 } 03/18/24

CERTIFIED VALUES

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

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

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

Tech Tips:

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

Quality Confirmation Test

Column:

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

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

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

Inj. Temp:

250°C

Det. Temp:

330°C

Det. Type:

FID

Split Vent:

2 ml/min.

Inj. Vol

1µl



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

Jess Hoy - Operations Tech I

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

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 11-Jan-2024

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



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 4

| | | | | | |
|---------------------|-----------------|-----------------|--------------------|-------------------|--|
| Catalog No.: | Lot No.: | Storage: | Solvent: | Exp. Date: | Description: |
| Z-110381-01 | 520963 | ≤ -10 °C | Methylene Chloride | 10/10/2028 | 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 | 1010 ± 9.89 |
| acenaphthylene | 208-96-8 | 97.6 | 14.290.1P | 1014 ± 9.93 |
| aniline | 62-53-3 | 99.97 | 64.1.4P | 1001 ± 9.8 |
| anthracene | 120-12-7 | 99.5 | 15.7.1P | 999.6 ± 9.79 |
| azobenzene | 103-33-3 | 98.1 | 252.7.2P | 999.1 ± 9.8 |
| benzo[a]anthracene | 56-55-3 | 100 | 16.7.3P | 1007 ± 9.86 |
| benzo[b]fluoranthene | 205-99-2 | 99.8 | 17.421.3P | 1011 ± 14.11 |
| benzo[k]fluoranthene | 207-08-9 | 98.9 | 18.421.4P | 1001 ± 10.96 |
| benzo[ghi]perylene | 191-24-2 | 93 | 19.286.4P | 999.6 ± 13.95 |
| benzo[a]pyrene | 50-32-8 | 97 | 20.286.2P | 999.9 ± 22.24 |
| benzyl alcohol | 100-51-6 | 99.9 | 65.18.1P | 1001 ± 9.82 |
| bis(2-chloroethoxy)methane | 111-91-1 | 99.1 | 31.3.15P | 1000 ± 14.69 |
| bis(2-chloroethyl)ether | 111-44-4 | 99.8 | 32.7.1P | 1003 ± 13.89 |
| bis(2-chloro-1-methylethyl) ether | 108-60-1 | 99.5 | 34.3.15P | 999.4 ± 14.68 |
| bis(2-ethylhexyl)adipate | 103-23-1 | 99.5 | 874.7.1P | 999.5 ± 9.8 |
| bis(2-ethylhexyl)phthalate | 117-81-7 | 99.4 | 33.29.1P | 998.8 ± 17.03 |
| 4-bromophenyl phenyl ether | 101-55-3 | 99.4 | 35.7.1.1P | 1000 ± 13.85 |
| butyl benzyl phthalate | 85-68-7 | 98.4 | 36.1.6P | 984.7 ± 16.79 |
| carbazole | 86-74-8 | 99.4 | 239.7.2P | 1000 ± 9.8 |

*Not a certified value

512270 } RC/
↓
512274 } 05/24/24

Kerry Kane

Certified By: _____

Kerry Kane
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.

Certificate of Analysis

Page 2 of 4

Catalog No.: Z-110381-01

Lot No.: 520963

Expiration Date: 10/10/2028

| Compound | CAS No. | Purity (%) | Compound Lot No. | Concentration, mg/L |
|----------------------------|-----------|------------|------------------|---------------------|
| 4-chloroaniline | 106-47-8 | 100 | 66.7.1P | 1000 ± 9.79 |
| 4-chlorophenylphenyl ether | 7005-72-3 | 98 | 37.158.2P | 1001 ± 17.07 |
| 4-chloro-3-methylphenol | 59-50-7 | 99 | 102.1.2P | 1006 ± 17.16 |
| 2-chloronaphthalene | 91-58-7 | 99.9 | 42.7.6P | 1000 ± 9.79 |
| 2-chlorophenol | 95-57-8 | 99.8 | 103.7.1P | 1007 ± 13.96 |
| chrysene | 218-01-9 | 96 | 21.286.2P | 998.4 ± 12.85 |
| dibenz[a,h]anthracene | 53-70-3 | 99.44 | 22.286.3P | 1000 ± 9.74 |
| dibenzofuran | 132-64-9 | 100 | 67.7.2.1P | 1002 ± 9.77 |
| di-n-butyl phthalate | 84-74-2 | 99.84 | 40.286.1P | 1007 ± 24.48 |
| 1,2-dichlorobenzene | 95-50-1 | 99.8 | 43.7.1P | 1000 ± 9.79 |
| 1,3-dichlorobenzene | 541-73-1 | 99.5 | 44.1.3P | 999.4 ± 9.79 |
| 1,4-dichlorobenzene | 106-46-7 | 99.9 | 45.29.2P | 1000 ± 9.79 |
| 2,4-dichlorophenol | 120-83-2 | 99.6 | 104.7.1.1P | 1005 ± 13.93 |
| diethyl phthalate | 84-66-2 | 99.8 | 38.7.1P | 1011 ± 14 |
| 2,4-dimethylphenol | 105-67-9 | 99.6 | 105.7.1.1P | 1009 ± 13.98 |
| dimethyl phthalate | 131-11-3 | 99.9 | 39.9.2P | 996.5 ± 13.8 |
| 1,2-dinitrobenzene | 528-29-0 | 99.86 | 86.7.3.1P | 999.5 ± 9.75 |
| 1,3-dinitrobenzene | 99-65-0 | 100 | 313.7.2P | 998 ± 9.79 |
| 1,4-dinitrobenzene | 100-25-4 | 100 | 907.7.1P | 999.5 ± 9.8 |
| 2,4-dinitrophenol | 51-28-5 | 99.9 | 106.1.6DP | 1002 ± 13.89 |
| 2,4-dinitrotoluene | 121-14-2 | 100 | 87.7.3P | 999.8 ± 13.85 |
| 2,6-dinitrotoluene | 606-20-2 | 99.4 | 88.7.2.1P | 999.6 ± 13.85 |
| di-n-octyl phthalate | 117-84-0 | 99.1 | 41.7.5P | 991.6 ± 13.74 |
| diphenylamine | 122-39-4 | 100 | 78.1.6P | 998 ± 13.79 |
| 2,3,5,6-tetrachlorophenol | 935-95-5 | 97 | 1112.286.1P | 1004 ± 14.02 |
| fluoranthene | 206-44-0 | 98.6 | 23.7.4P | 999.6 ± 9.79 |
| fluorene | 86-73-7 | 98.4 | 24.7.1P | 999.7 ± 9.79 |

*Not a certified value

Kerry Kane

Certified By:

Kerry Kane
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.

Certificate of Analysis

Page 3 of 4

Catalog No.: Z-110381-01

Lot No.: 520963

Expiration Date: 10/10/2028

| Compound | CAS No. | Purity (%) | Compound Lot No. | Concentration, mg/L |
|----------------------------|----------|------------|------------------|---------------------|
| hexachlorobenzene | 118-74-1 | 99 | 46.158.4P | 999.9 ± 13.96 |
| hexachlorobutadiene | 87-68-3 | 97.4 | 47.1.4P | 1000 ± 9.79 |
| hexachlorocyclopentadiene | 77-47-4 | 99.2 | 48.2.2P | 1001 ± 9.8 |
| hexachloroethane | 67-72-1 | 99.9 | 49.1.4P | 1003 ± 9.82 |
| indeno[1,2,3-cd]pyrene | 193-39-5 | 98 | 25.286.4P | 999.4 ± 22.23 |
| isophorone | 78-59-1 | 98.9 | 90.1.4P | 999.9 ± 13.85 |
| 2-methyl-4,6-dinitrophenol | 534-52-1 | 99.6 | 107.421.2DP | 991 ± 24.09 |
| 1-methylnaphthalene | 90-12-0 | 97.1 | 249.7.5P | 999.2 ± 13.95 |
| 2-methylnaphthalene | 91-57-6 | 97.4 | 68.7.2P | 1006 ± 22.38 |
| 2-methylphenol | 95-48-7 | 99.6 | 114.7.3P | 1001 ± 13.87 |
| 3-methylphenol | 108-39-4 | 99.1 | 115.7.4P | 499.7 ± 6.92 |
| 4-methylphenol | 106-44-5 | 99.5 | 116.7.1P | 501.2 ± 6.94 |
| naphthalene | 91-20-3 | 99.8 | 26.9.1P | 1018 ± 9.97 |
| 2-nitroaniline | 88-74-4 | 99.7 | 69.29.1P | 999.6 ± 9.79 |
| 3-nitroaniline | 99-09-2 | 100 | 70.7.3P | 1000 ± 9.74 |
| 4-nitroaniline | 100-01-6 | 99.7 | 71.29.1P | 1001 ± 9.8 |
| nitrobenzene | 98-95-3 | 100 | 94.7.1P | 1000 ± 13.85 |
| 2-nitrophenol | 88-75-5 | 99.1 | 108.29.1P | 996.5 ± 13.81 |
| 4-nitrophenol | 100-02-7 | 100 | 109.7.1P | 1000 ± 13.82 |
| N-nitrosodimethylamine | 62-75-9 | 99.5 | 57.3.19P | 998.5 ± 14.67 |
| N-nitrosodi-n-propylamine | 621-64-7 | 99.8 | 59.286.1P | 996.8 ± 17 |
| pentachlorophenol | 87-86-5 | 99 | 110.1.7P | 1004 ± 13.92 |
| phenanthrene | 85-01-8 | 99.7 | 27.1.5P | 999 ± 12.87 |
| phenol | 108-95-2 | 100 | 112.7.1P | 998.5 ± 13.8 |
| pyrene | 129-00-0 | 99.2 | 28.9.2P | 998.9 ± 9.78 |
| pyridine | 110-86-1 | 100 | 101.24.1P | 999 ± 9.73 |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | 91.8 | 120.421.1P | 996.5 ± 13.92 |

*Not a certified value

Kerry Kane

Certified By:

Kerry Kane
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.

Certificate of Analysis

Page 4 of 4

Catalog No.: Z-110381-01

Lot No.: 520963

Expiration Date: 10/10/2028

| <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 | 999.6 ± 9.79 |
| 2,4,5-trichlorophenol | 95-95-4 | 96.5 | 121.7.1.1P | 999.5 ± 13.85 |
| 2,4,6-trichlorophenol | 88-06-2 | 99.6 | 113.7.1P | 996 ± 13.8 |

*Not a certified value



Certified By: _____

Kerry Kane
Chemist

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5580 Skylane Blvd
Santa Rosa, CA 95403

(707)525-5788
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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-010442-07 | 495833 | $\leq -10^{\circ}\text{C}$ | Methylene Chloride | 1/16/2028 | Benzaldehyde Solution, 1000 mg/L, 1.3 mL |

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

512275 } RC/
↓
512279 } 05/24/24

*Not a certified value

Certified By: _____

S. Hunter

Scott Hunter
Chemist

All weights are traceable through N. I. S. T. Test No. 822/264157-00.
Concentration (correct for purity) and uncertainty (95% confidence) values
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110 Benner Circle
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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

gravimetric



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No. : 555223 **Lot No.:** A0214021

Description : Custom 8270 Plus Standard #1

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

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

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

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

CERTIFIED VALUES

| Component # | Compound | CAS # | Lot # | Purity | Grav. Conc. (weight/volume) | Expanded Uncertainty * (95% C.L.; K=2) |
|-------------|------------------------|-----------|------------|--------|-----------------------------|--|
| 1 | 3,3'-Dichlorobenzidine | 91-94-1 | S240326RSR | 99% | 1,004.0 µg/mL | +/- 23.0487 |
| 2 | Atrazine | 1912-24-9 | 5FYWL | 99% | 1,005.0 µg/mL | +/- 23.0717 |
| 3 | Benzidine | 92-87-5 | S240430RSR | 99% | 1,006.0 µg/mL | +/- 23.0947 |
| 4 | epsilon-Caprolactam | 105-60-2 | Y16H012 | 99% | 1,000.0 µg/mL | +/- 22.9569 |

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

S12449 } RC/
↓ 7/24/24
S12508 }

Rebecca Gingerich - Operations Tech II

Date Mixed: 18-Jul-2024

Balance: 1128353505

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

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. : 555223 **Lot No.:** A0214021

Description : Custom 8270 Plus Standard #1

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

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

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

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

CERTIFIED VALUES

| Component # | Compound | CAS # | Lot # | Purity | Grav. Conc. (weight/volume) | Expanded Uncertainty * (95% C.L.; K=2) |
|-------------|------------------------|-----------|------------|--------|-----------------------------|--|
| 1 | 3,3'-Dichlorobenzidine | 91-94-1 | S240326RSR | 99% | 1,004.0 µg/mL | +/- 23.0487 |
| 2 | Atrazine | 1912-24-9 | 5FYWL | 99% | 1,005.0 µg/mL | +/- 23.0717 |
| 3 | Benzidine | 92-87-5 | S240430RSR | 99% | 1,006.0 µg/mL | +/- 23.0947 |
| 4 | epsilon-Caprolactam | 105-60-2 | Y16H012 | 99% | 1,000.0 µg/mL | +/- 22.9569 |

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

S12449 } RC/
↓
S12508 } 7/24/24

Rebecca Gingerich - Operations Tech II

Date Mixed: 18-Jul-2024

Balance: 1128353505

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

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. : 555223 **Lot No.:** A0214021

Description : Custom 8270 Plus Standard #1

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

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

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

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

CERTIFIED VALUES

| Component # | Compound | CAS # | Lot # | Purity | Grav. Conc. (weight/volume) | Expanded Uncertainty * (95% C.L.; K=2) |
|-------------|------------------------|-----------|------------|--------|-----------------------------|--|
| 1 | 3,3'-Dichlorobenzidine | 91-94-1 | S240326RSR | 99% | 1,004.0 µg/mL | +/- 23.0487 |
| 2 | Atrazine | 1912-24-9 | 5FYWL | 99% | 1,005.0 µg/mL | +/- 23.0717 |
| 3 | Benzidine | 92-87-5 | S240430RSR | 99% | 1,006.0 µg/mL | +/- 23.0947 |
| 4 | epsilon-Caprolactam | 105-60-2 | Y16H012 | 99% | 1,000.0 µg/mL | +/- 22.9569 |

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

S12449 } RC/
↓
S12508 } 7/24/24

Rebecca Gingerich - Operations Tech II

Date Mixed: 18-Jul-2024

Balance: 1128353505

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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

Certified Uncertainty Value Notes:

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

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

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



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

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

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.:** A0214021

Description : Custom 8270 Plus Standard #1

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

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

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

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

CERTIFIED VALUES

| Component # | Compound | CAS # | Lot # | Purity | Grav. Conc. (weight/volume) | Expanded Uncertainty * (95% C.L.; K=2) |
|-------------|------------------------|-----------|------------|--------|-----------------------------|--|
| 1 | 3,3'-Dichlorobenzidine | 91-94-1 | S240326RSR | 99% | 1,004.0 µg/mL | +/- 23.0487 |
| 2 | Atrazine | 1912-24-9 | 5FYWL | 99% | 1,005.0 µg/mL | +/- 23.0717 |
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Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

S12449 } RC/
↓
S12508 } 7/24/24

Rebecca Gingerich - Operations Tech II

Date Mixed: 18-Jul-2024

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Catalog No. : 555223 **Lot No.:** A0214021

Description : Custom 8270 Plus Standard #1

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

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

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

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

CERTIFIED VALUES

| Component # | Compound | CAS # | Lot # | Purity | Grav. Conc. (weight/volume) | Expanded Uncertainty * (95% C.L.; K=2) |
|-------------|------------------------|-----------|------------|--------|-----------------------------|--|
| 1 | 3,3'-Dichlorobenzidine | 91-94-1 | S240326RSR | 99% | 1,004.0 µg/mL | +/- 23.0487 |
| 2 | Atrazine | 1912-24-9 | 5FYWL | 99% | 1,005.0 µg/mL | +/- 23.0717 |
| 3 | Benzidine | 92-87-5 | S240430RSR | 99% | 1,006.0 µg/mL | +/- 23.0947 |
| 4 | epsilon-Caprolactam | 105-60-2 | Y16H012 | 99% | 1,000.0 µg/mL | +/- 22.9569 |

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

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Rebecca Gingerich - Operations Tech II

Date Mixed: 18-Jul-2024

Balance: 1128353505

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Catalog No. : 555223 **Lot No.:** A0214021

Description : Custom 8270 Plus Standard #1

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

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

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

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

CERTIFIED VALUES

| Component # | Compound | CAS # | Lot # | Purity | Grav. Conc. (weight/volume) | Expanded Uncertainty * (95% C.L.; K=2) |
|-------------|------------------------|-----------|------------|--------|-----------------------------|--|
| 1 | 3,3'-Dichlorobenzidine | 91-94-1 | S240326RSR | 99% | 1,004.0 µg/mL | +/- 23.0487 |
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| 3 | Benzidine | 92-87-5 | S240430RSR | 99% | 1,006.0 µg/mL | +/- 23.0947 |
| 4 | epsilon-Caprolactam | 105-60-2 | Y16H012 | 99% | 1,000.0 µg/mL | +/- 22.9569 |

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

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General Certified Reference Material Notes

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Catalog No. : 555223 **Lot No.:** A0214021

Description : Custom 8270 Plus Standard #1

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

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

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

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

CERTIFIED VALUES

| Component # | Compound | CAS # | Lot # | Purity | Grav. Conc. (weight/volume) | Expanded Uncertainty * (95% C.L.; K=2) |
|-------------|------------------------|-----------|------------|--------|-----------------------------|--|
| 1 | 3,3'-Dichlorobenzidine | 91-94-1 | S240326RSR | 99% | 1,004.0 µg/mL | +/- 23.0487 |
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Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

S12449 } RC/
↓
S12508 } 7/24/24

Rebecca Gingerich - Operations Tech II

Date Mixed: 18-Jul-2024

Balance: 1128353505

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Catalog No. : 555223 **Lot No.:** A0214021

Description : Custom 8270 Plus Standard #1

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

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

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

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

CERTIFIED VALUES

| Component # | Compound | CAS # | Lot # | Purity | Grav. Conc. (weight/volume) | Expanded Uncertainty * (95% C.L.; K=2) |
|-------------|------------------------|-----------|------------|--------|-----------------------------|--|
| 1 | 3,3'-Dichlorobenzidine | 91-94-1 | S240326RSR | 99% | 1,004.0 µg/mL | +/- 23.0487 |
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Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

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Rebecca Gingerich - Operations Tech II

Date Mixed: 18-Jul-2024

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Catalog No. : 555223 **Lot No.:** A0214021

Description : Custom 8270 Plus Standard #1

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

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

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

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

CERTIFIED VALUES

| Component # | Compound | CAS # | Lot # | Purity | Grav. Conc. (weight/volume) | Expanded Uncertainty * (95% C.L.; K=2) |
|-------------|------------------------|-----------|------------|--------|-----------------------------|--|
| 1 | 3,3'-Dichlorobenzidine | 91-94-1 | S240326RSR | 99% | 1,004.0 µg/mL | +/- 23.0487 |
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Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

S12449 } RC/
↓
S12508 } 7/24/24

Rebecca Gingerich - Operations Tech II

Date Mixed: 18-Jul-2024

Balance: 1128353505

Manufactured under Restek's ISO 9001:2015
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Catalog No. : 555223 **Lot No.:** A0214021

Description : Custom 8270 Plus Standard #1

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

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

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

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

CERTIFIED VALUES

| Component # | Compound | CAS # | Lot # | Purity | Grav. Conc. (weight/volume) | Expanded Uncertainty * (95% C.L.; K=2) |
|-------------|------------------------|-----------|------------|--------|-----------------------------|--|
| 1 | 3,3'-Dichlorobenzidine | 91-94-1 | S240326RSR | 99% | 1,004.0 µg/mL | +/- 23.0487 |
| 2 | Atrazine | 1912-24-9 | 5FYWL | 99% | 1,005.0 µg/mL | +/- 23.0717 |
| 3 | Benzidine | 92-87-5 | S240430RSR | 99% | 1,006.0 µg/mL | +/- 23.0947 |
| 4 | epsilon-Caprolactam | 105-60-2 | Y16H012 | 99% | 1,000.0 µg/mL | +/- 22.9569 |

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

S12449 } RC/
↓ 7/24/24
S12508 }

Rebecca Gingerich - Operations Tech II

Date Mixed: 18-Jul-2024

Balance: 1128353505

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

General Certified Reference Material Notes

Expiration Notes:

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

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/ μ ECD, GC/MS, LC/MS, RI, and/or melting point.
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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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- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.



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Fax: 1-814-353-1309

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.:** A0214017

Description : Custom 8270 Plus Standard #2

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

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

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

Ship: Ambient

CERTIFIED VALUES

| Component # | Compound | CAS # | Lot # | Purity | Grav. Conc. (weight/volume) | Expanded Uncertainty * (95% C.L.; K=2) |
|-------------|----------------------------|----------|--------------|--------|-----------------------------|--|
| 1 | 1,2,4,5-Tetrachlorobenzene | 95-94-3 | MKCT9480 | 99% | 1,005.0 µg/mL | +/- 29.541899 |
| 2 | Acetophenone | 98-86-2 | STBH8205 | 99% | 1,005.0 µg/mL | +/- 29.541899 |
| 3 | Benzaldehyde | 100-52-7 | RD231129RSRA | 99% | 1,008.0 µg/mL | +/- 29.630084 |
| 4 | Benzoic acid | 65-85-0 | MKCR2694 | 99% | 1,010.0 µg/mL | +/- 29.688874 |
| 5 | Biphenyl | 92-52-4 | MKCS5928 | 99% | 1,008.0 µg/mL | +/- 29.630084 |

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

S12509 } RC/
↓
S12568 } 7/24/24


Jess Hoy - Operations Tech I

Date Mixed: 18-Jul-2024

Balance: 1128360905

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

General Certified Reference Material Notes

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Catalog No. : 555224 **Lot No.:** A0214017

Description : Custom 8270 Plus Standard #2

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

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

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

Ship: Ambient

CERTIFIED VALUES

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

S12509 } RC/
↓
S12568 } 7/24/24


Jess Hoy - Operations Tech I

Date Mixed: 18-Jul-2024

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Catalog No. : 555224 **Lot No.:** A0214017

Description : Custom 8270 Plus Standard #2

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

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

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

Ship: Ambient

CERTIFIED VALUES

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

S12509 } RC/
↓
S12568 } 7/24/24


Jess Hoy - Operations Tech I

Date Mixed: 18-Jul-2024

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Catalog No. : 555224 **Lot No.:** A0214017

Description : Custom 8270 Plus Standard #2

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

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

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

Ship: Ambient

CERTIFIED VALUES

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

S12509 } RC/
↓
S12568 } 7/24/24


Jess Hoy - Operations Tech I

Date Mixed: 18-Jul-2024

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Catalog No. : 555224 **Lot No.:** A0214017

Description : Custom 8270 Plus Standard #2

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

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

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

Ship: Ambient

CERTIFIED VALUES

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

S12509 } RC/
↓
S12568 } 7/24/24


Jess Hoy - Operations Tech I

Date Mixed: 18-Jul-2024

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

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CERTIFIED VALUES

| Component # | Compound | CAS # | Lot # | Purity | Grav. Conc. (weight/volume) | Expanded Uncertainty * (95% C.L.; K=2) |
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S12509 } RC/
↓
S12568 } 7/24/24


Jess Hoy - Operations Tech I

Date Mixed: 18-Jul-2024

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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 : July 31, 2026 **Storage:** 10°C or colder

Ship: Ambient

CERTIFIED VALUES

| Component # | Compound | CAS # | Lot # | Purity | Grav. Conc. (weight/volume) | Expanded Uncertainty * (95% C.L.; K=2) |
|-------------|----------------------------|----------|--------------|--------|-----------------------------|--|
| 1 | 1,2,4,5-Tetrachlorobenzene | 95-94-3 | MKCT9480 | 99% | 1,005.0 µg/mL | +/- 29.541899 |
| 2 | Acetophenone | 98-86-2 | STBH8205 | 99% | 1,005.0 µg/mL | +/- 29.541899 |
| 3 | Benzaldehyde | 100-52-7 | RD231129RSRA | 99% | 1,008.0 µg/mL | +/- 29.630084 |
| 4 | Benzoic acid | 65-85-0 | MKCR2694 | 99% | 1,010.0 µg/mL | +/- 29.688874 |
| 5 | Biphenyl | 92-52-4 | MKCS5928 | 99% | 1,008.0 µg/mL | +/- 29.630084 |

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

S12509 } RC/
↓
S12568 } 7/24/24


Jess Hoy - Operations Tech I

Date Mixed: 18-Jul-2024

Balance: 1128360905

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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

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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.:** A0214017

Description : Custom 8270 Plus Standard #2

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

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

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

Ship: Ambient

CERTIFIED VALUES

| Component # | Compound | CAS # | Lot # | Purity | Grav. Conc. (weight/volume) | Expanded Uncertainty * (95% C.L.; K=2) |
|-------------|----------------------------|----------|--------------|--------|-----------------------------|--|
| 1 | 1,2,4,5-Tetrachlorobenzene | 95-94-3 | MKCT9480 | 99% | 1,005.0 µg/mL | +/- 29.541899 |
| 2 | Acetophenone | 98-86-2 | STBH8205 | 99% | 1,005.0 µg/mL | +/- 29.541899 |
| 3 | Benzaldehyde | 100-52-7 | RD231129RSRA | 99% | 1,008.0 µg/mL | +/- 29.630084 |
| 4 | Benzoic acid | 65-85-0 | MKCR2694 | 99% | 1,010.0 µg/mL | +/- 29.688874 |
| 5 | Biphenyl | 92-52-4 | MKCS5928 | 99% | 1,008.0 µg/mL | +/- 29.630084 |

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

S12509 } RC/
↓
S12568 } 7/24/24

Jess Hoy - Operations Tech I

Date Mixed: 18-Jul-2024

Balance: 1128360905

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

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



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

Catalog No. : 555224 **Lot No.:** A0214017

Description : Custom 8270 Plus Standard #2

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

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

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

Ship: Ambient

CERTIFIED VALUES

| Component # | Compound | CAS # | Lot # | Purity | Grav. Conc. (weight/volume) | Expanded Uncertainty * (95% C.L.; K=2) |
|-------------|----------------------------|----------|--------------|--------|-----------------------------|--|
| 1 | 1,2,4,5-Tetrachlorobenzene | 95-94-3 | MKCT9480 | 99% | 1,005.0 µg/mL | +/- 29.541899 |
| 2 | Acetophenone | 98-86-2 | STBH8205 | 99% | 1,005.0 µg/mL | +/- 29.541899 |
| 3 | Benzaldehyde | 100-52-7 | RD231129RSRA | 99% | 1,008.0 µg/mL | +/- 29.630084 |
| 4 | Benzoic acid | 65-85-0 | MKCR2694 | 99% | 1,010.0 µg/mL | +/- 29.688874 |
| 5 | Biphenyl | 92-52-4 | MKCS5928 | 99% | 1,008.0 µg/mL | +/- 29.630084 |

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

S12509 } RC/
↓
S12568 } 7/24/24


Jess Hoy - Operations Tech I

Date Mixed: 18-Jul-2024

Balance: 1128360905

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

General Certified Reference Material Notes

Expiration Notes:

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

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- 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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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. : 31615 **Lot No.:** A0212955

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 : June 30, 2027 **Storage:** 10°C or colder

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

CERTIFIED VALUES

| Elution Order | Compound | CAS # | Lot # | Purity | Grav. Conc. (weight/volume) | Expanded Uncertainty * (95% C.L.; K=2) |
|---------------|--------------------------------------|-----------|-------------|--------|-----------------------------|--|
| 1 | Pentachlorophenol | 87-86-5 | RP240517RSR | 99% | 1,004.5 µg/mL | +/- 44.8902 |
| 2 | DFTPP (Decafluorotriphenylphosphine) | 5074-71-5 | Q117-147 | 99% | 1,004.5 µg/mL | +/- 44.8902 |
| 3 | Benzidine | 92-87-5 | S240430RSR | 99% | 1,006.0 µg/mL | +/- 44.9572 |
| 4 | 4,4'-DDT | 50-29-3 | S240530RSR | 97% | 1,000.1 µg/mL | +/- 44.6922 |

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

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

S12577
↓
S12579 } RC
8/2/24

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:

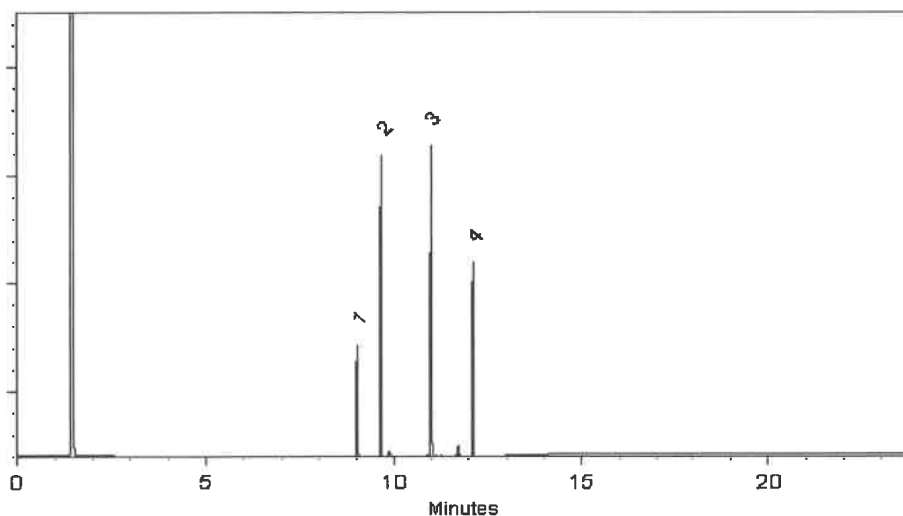
FID

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.


Ethan Winiarski - Operations Tech I

Date Mixed: 19-Jun-2024

Balance Serial # 1128353505


Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 26-Jun-2024

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



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

Catalog No. : 31206 **Lot No.:** A0212266

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 : April 30, 2030 **Storage:** 10°C or colder

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

CERTIFIED VALUES

| Elution Order | Compound | CAS # | Lot # | Purity | Grav. Conc. (weight/volume) | Expanded Uncertainty * (95% C.L.; K=2) |
|---------------|------------------------|------------|----------|--------|-----------------------------|--|
| 1 | 1,4-Dichlorobenzene-d4 | 3855-82-1 | PR-30447 | 99% | 2,000.6 µg/mL | +/- 90.1075 |
| 2 | Naphthalene-d8 | 1146-65-2 | M-2180 | 99% | 2,000.3 µg/mL | +/- 90.0925 |
| 3 | Acenaphthene-d10 | 15067-26-2 | PR-33507 | 99% | 2,000.4 µg/mL | +/- 90.1000 |
| 4 | Phenanthrene-d10 | 1517-22-2 | PR-34099 | 99% | 2,000.5 µg/mL | +/- 90.1037 |
| 5 | Chrysene-d12 | 1719-03-5 | PR-33506 | 99% | 2,000.7 µg/mL | +/- 90.1112 |
| 6 | Perylene-d12 | 1520-96-3 | PR-33205 | 99% | 2,000.6 µg/mL | +/- 90.1075 |

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

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

S12645
↓
S12674 } AC
10/1/24



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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No. : 31206 **Lot No.:** A0212266

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 : April 30, 2030 **Storage:** 10°C or colder

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

CERTIFIED VALUES

| Elution Order | Compound | CAS # | Lot # | Purity | Grav. Conc. (weight/volume) | Expanded Uncertainty * (95% C.L.; K=2) |
|---------------|------------------------|------------|----------|--------|-----------------------------|--|
| 1 | 1,4-Dichlorobenzene-d4 | 3855-82-1 | PR-30447 | 99% | 2,000.6 µg/mL | +/- 90.1075 |
| 2 | Naphthalene-d8 | 1146-65-2 | M-2180 | 99% | 2,000.3 µg/mL | +/- 90.0925 |
| 3 | Acenaphthene-d10 | 15067-26-2 | PR-33507 | 99% | 2,000.4 µg/mL | +/- 90.1000 |
| 4 | Phenanthrene-d10 | 1517-22-2 | PR-34099 | 99% | 2,000.5 µg/mL | +/- 90.1037 |
| 5 | Chrysene-d12 | 1719-03-5 | PR-33506 | 99% | 2,000.7 µg/mL | +/- 90.1112 |
| 6 | Perylene-d12 | 1520-96-3 | PR-33205 | 99% | 2,000.6 µg/mL | +/- 90.1075 |

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

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

S12645
↓
S12674 } AC
10/1/24



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

Catalog No. : 31206 **Lot No.:** A0212266

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 : April 30, 2030 **Storage:** 10°C or colder

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

CERTIFIED VALUES

| Elution Order | Compound | CAS # | Lot # | Purity | Grav. Conc. (weight/volume) | Expanded Uncertainty * (95% C.L.; K=2) |
|---------------|------------------------|------------|----------|--------|-----------------------------|--|
| 1 | 1,4-Dichlorobenzene-d4 | 3855-82-1 | PR-30447 | 99% | 2,000.6 µg/mL | +/- 90.1075 |
| 2 | Naphthalene-d8 | 1146-65-2 | M-2180 | 99% | 2,000.3 µg/mL | +/- 90.0925 |
| 3 | Acenaphthene-d10 | 15067-26-2 | PR-33507 | 99% | 2,000.4 µg/mL | +/- 90.1000 |
| 4 | Phenanthrene-d10 | 1517-22-2 | PR-34099 | 99% | 2,000.5 µg/mL | +/- 90.1037 |
| 5 | Chrysene-d12 | 1719-03-5 | PR-33506 | 99% | 2,000.7 µg/mL | +/- 90.1112 |
| 6 | Perylene-d12 | 1520-96-3 | PR-33205 | 99% | 2,000.6 µg/mL | +/- 90.1075 |

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

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

S12645
↓
S12674 } AC
10/1/24



5580 Skylane Blvd
Santa Rosa, CA 95403

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

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

Date Received: _____

Certificate of Analysis

Rev 0

Page 1 of 1

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

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

~~512280~~ } RCL
↓
~~512284~~ } 05/24/24

New Numbers Generated.

512790 } RCL
↓
512794 } 11/12/24

*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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chromatographic plus



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

Catalog No. : 31850 **Lot No.:** A0219438

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

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

Expiration Date : September 30, 2025 **Storage:** 0°C or colder

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

S12963
↓
S12992 } AC
12/17/24

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% | 1,008.3 µg/mL | +/- 36.6849 |
| 2 | N-Nitrosodimethylamine | 62-75-9 | S240313RSR | 99% | 1,008.6 µg/mL | +/- 36.6985 |
| 3 | Phenol | 108-95-2 | MKCK1120 | 99% | 1,003.5 µg/mL | +/- 36.5120 |
| 4 | Aniline | 62-53-3 | X22F726 | 99% | 1,002.9 µg/mL | +/- 36.4893 |
| 5 | Bis(2-chloroethyl)ether | 111-44-4 | 002891T24M | 99% | 1,003.0 µg/mL | +/- 36.4938 |
| 6 | 2-Chlorophenol | 95-57-8 | STBJ3909 | 99% | 1,005.6 µg/mL | +/- 36.5894 |
| 7 | 1,3-Dichlorobenzene | 541-73-1 | BCCD5315 | 99% | 1,004.1 µg/mL | +/- 36.5348 |
| 8 | 1,4-Dichlorobenzene | 106-46-7 | MKBS7929V | 99% | 1,002.1 µg/mL | +/- 36.4620 |
| 9 | Benzyl alcohol | 100-51-6 | SHBK5469 | 99% | 1,003.5 µg/mL | +/- 36.5120 |
| 10 | 1,2-Dichlorobenzene | 95-50-1 | SHBL6287 | 99% | 1,005.3 µg/mL | +/- 36.5757 |
| 11 | 2-Methylphenol (o-cresol) | 95-48-7 | SHBN7598 | 99% | 1,008.4 µg/mL | +/- 36.6894 |
| 12 | 2,2'-oxybis(1-chloropropane) | 108-60-1 | 29-MAR-45-5 | 99% | 1,004.6 µg/mL | +/- 36.5530 |
| 13 | 3-Methylphenol (m-cresol) | 108-39-4 | STBJ0710 | 99% | 502.1 µg/mL | +/- 18.2697 |
| 14 | 4-Methylphenol (p-cresol) | 106-44-5 | SHBN3411 | 99% | 503.8 µg/mL | +/- 18.3288 |
| 15 | N-Nitroso-di-n-propylamine | 621-64-7 | N63MG | 99% | 1,006.5 µg/mL | +/- 36.6212 |
| 16 | Hexachloroethane | 67-72-1 | DAXRI | 99% | 1,004.5 µg/mL | +/- 36.5484 |
| 17 | Nitrobenzene | 98-95-3 | 10224044 | 99% | 1,002.5 µg/mL | +/- 36.4757 |

| | | | | | | | |
|----|---|-----------|------------------|-------|---------|-------|-------------|
| 18 | Isophorone | 78-59-1 | MKCR3249 | 99% | 1,003.4 | µg/mL | +/- 36.5075 |
| 19 | 2-Nitrophenol | 88-75-5 | RP230710 | 99% | 1,002.5 | µg/mL | +/- 36.4757 |
| 20 | 2,4-Dimethylphenol | 105-67-9 | XW5GK | 99% | 1,006.5 | µg/mL | +/- 36.6212 |
| 21 | Bis(2-chloroethoxy)methane | 111-91-1 | 15705100 | 99% | 1,006.6 | µg/mL | +/- 36.6257 |
| 22 | 2,4-Dichlorophenol | 120-83-2 | BCKK6969 | 99% | 1,001.5 | µg/mL | +/- 36.4393 |
| 23 | 1,2,4-Trichlorobenzene | 120-82-1 | SHBP5900 | 99% | 1,006.4 | µg/mL | +/- 36.6166 |
| 24 | Naphthalene | 91-20-3 | STBL1057 | 99% | 1,002.1 | µg/mL | +/- 36.4620 |
| 25 | 4-Chloroaniline | 106-47-8 | BCCJ3217 | 99% | 1,004.4 | µg/mL | +/- 36.5439 |
| 26 | Hexachlorobutadiene | 87-68-3 | X05J | 98% | 1,002.5 | µg/mL | +/- 36.4771 |
| 27 | 4-Chloro-3-methylphenol | 59-50-7 | BCCD4461 | 99% | 1,004.5 | µg/mL | +/- 36.5484 |
| 28 | 2-Methylnaphthalene | 91-57-6 | STBL3028 | 99% | 1,000.0 | µg/mL | +/- 36.3847 |
| 29 | 1-Methylnaphthalene | 90-12-0 | 5234.00-8 | 98% | 990.2 | µg/mL | +/- 36.0269 |
| 30 | Hexachlorocyclopentadiene | 77-47-4 | 099063I14L | 98% | 1,001.3 | µg/mL | +/- 36.4325 |
| 31 | 2,4,6-Trichlorophenol | 88-06-2 | STBK8870 | 99% | 1,006.4 | µg/mL | +/- 36.6166 |
| 32 | 2,4,5-Trichlorophenol | 95-95-4 | 3YFRE | 97% | 1,004.6 | µg/mL | +/- 36.5505 |
| 33 | 2-Chloronaphthalene | 91-58-7 | RPN7O | 99% | 1,004.3 | µg/mL | +/- 36.5393 |
| 34 | 2-Nitroaniline | 88-74-4 | RP240715RSR | 99% | 1,004.4 | µg/mL | +/- 36.5439 |
| 35 | 1,4-Dinitrobenzene | 100-25-4 | RP240703RSR | 99% | 1,002.8 | µg/mL | +/- 36.4847 |
| 36 | Acenaphthylene | 208-96-8 | RP241029RSR | 98% | 1,000.0 | µg/mL | +/- 36.3835 |
| 37 | 1,3-Dinitrobenzene | 99-65-0 | TRC3-1075941-2-1 | 99% | 1,006.3 | µg/mL | +/- 36.6121 |
| 38 | Dimethylphthalate | 131-11-3 | 358221L17K | 99% | 1,008.9 | µg/mL | +/- 36.7076 |
| 39 | 2,6-Dinitrotoluene | 606-20-2 | BCCG1833 | 99% | 1,006.6 | µg/mL | +/- 36.6257 |
| 40 | 1,2-Dinitrobenzene | 528-29-0 | RP240701RSR | 99% | 1,002.5 | µg/mL | +/- 36.4757 |
| 41 | Acenaphthene | 83-32-9 | MKCR7169 | 99% | 1,000.0 | µg/mL | +/- 36.3847 |
| 42 | 3-Nitroaniline | 99-09-2 | RP240708RSR | 99% | 1,004.6 | µg/mL | +/- 36.5530 |
| 43 | 2,4-Dinitrophenol | 51-28-5 | D240927RSR | ----% | 1,005.6 | µg/mL | +/- 36.5894 |
| 44 | Dibenzofuran | 132-64-9 | MKCN1772 | 99% | 1,003.5 | µg/mL | +/- 36.5120 |
| 45 | 2,4-Dinitrotoluene | 121-14-2 | 102869V26E | 99% | 1,008.3 | µg/mL | +/- 36.6849 |
| 46 | 4-Nitrophenol | 100-02-7 | 20241029-2-AN | 99% | 1,004.8 | µg/mL | +/- 36.5575 |
| 47 | 2,3,4,6-Tetrachlorophenol | 58-90-2 | PR-34476 | 99% | 1,005.8 | µg/mL | +/- 36.5939 |
| 48 | 2,3,5,6-Tetrachlorophenol | 935-95-5 | RP231219RSR | 99% | 1,006.4 | µg/mL | +/- 36.6166 |
| 49 | Fluorene | 86-73-7 | 10246250 | 98% | 1,000.7 | µg/mL | +/- 36.4102 |
| 50 | 4-Chlorophenyl phenyl ether | 7005-72-3 | MKCT7248 | 99% | 1,004.9 | µg/mL | +/- 36.5621 |
| 51 | Diethylphthalate | 84-66-2 | BCCJ6241 | 99% | 1,003.9 | µg/mL | +/- 36.5257 |
| 52 | 4-Nitroaniline | 100-01-6 | RP230111 | 99% | 1,006.6 | µg/mL | +/- 36.6257 |
| 53 | 4,6-Dinitro-2-methylphenol (Dinitro-o-cresol) | 534-52-1 | S241008RSR | 99% | 1,001.3 | µg/mL | +/- 36.4302 |

| | | | | | | | |
|----|----------------------------|----------|--------------|-----|---------|-------|-------------|
| 54 | Diphenylamine | 122-39-4 | MKCT1512 | 99% | 1,003.0 | µg/mL | +/- 36.4938 |
| 55 | Azobenzene | 103-33-3 | BCKK0887 | 99% | 1,002.4 | µg/mL | +/- 36.4711 |
| 56 | 4-Bromophenyl phenyl ether | 101-55-3 | STBH6361 | 99% | 1,008.8 | µg/mL | +/- 36.7031 |
| 57 | Hexachlorobenzene | 118-74-1 | 15458400 | 99% | 1,005.1 | µg/mL | +/- 36.5712 |
| 58 | Pentachlorophenol | 87-86-5 | RP240517RSR | 99% | 1,005.9 | µg/mL | +/- 36.5984 |
| 59 | Phenanthrene | 85-01-8 | MKCT3391 | 99% | 1,004.9 | µg/mL | +/- 36.5621 |
| 60 | Anthracene | 120-12-7 | 101492T18R | 99% | 1,005.1 | µg/mL | +/- 36.5712 |
| 61 | Carbazole | 86-74-8 | 15276700 | 99% | 1,005.4 | µg/mL | +/- 36.5803 |
| 62 | Di-n-butylphthalate | 84-74-2 | MKCN4337 | 99% | 1,006.3 | µg/mL | +/- 36.6121 |
| 63 | Fluoranthene | 206-44-0 | MKCQ4728 | 99% | 1,003.5 | µg/mL | +/- 36.5120 |
| 64 | Pyrene | 129-00-0 | BCKK2592 | 99% | 1,002.0 | µg/mL | +/- 36.4575 |
| 65 | Benzyl butyl phthalate | 85-68-7 | X12I018 | 99% | 1,007.5 | µg/mL | +/- 36.6576 |
| 66 | Bis(2-ethylhexyl)adipate | 103-23-1 | MKCM1988 | 99% | 1,005.9 | µg/mL | +/- 36.5984 |
| 67 | Benz(a)anthracene | 56-55-3 | I70012022BAA | 99% | 1,005.5 | µg/mL | +/- 36.5848 |
| 68 | Chrysene | 218-01-9 | RP241007RSR | 99% | 1,005.3 | µg/mL | +/- 36.5757 |
| 69 | Bis(2-ethylhexyl)phthalate | 117-81-7 | MKCS8065 | 99% | 1,007.5 | µg/mL | +/- 36.6576 |
| 70 | Di-n-octyl phthalate | 117-84-0 | 15566400 | 99% | 1,002.3 | µg/mL | +/- 36.4666 |
| 71 | Benzo(b)fluoranthene | 205-99-2 | 052013B | 99% | 1,004.1 | µg/mL | +/- 36.5348 |
| 72 | Benzo(k)fluoranthene | 207-08-9 | 012022K | 99% | 1,002.8 | µg/mL | +/- 36.4847 |
| 73 | Benzo(a)pyrene | 50-32-8 | NQLXA | 98% | 1,006.2 | µg/mL | +/- 36.6108 |
| 74 | Indeno(1,2,3-cd)pyrene | 193-39-5 | 12-JKL-118-9 | 97% | 1,001.8 | µg/mL | +/- 36.4490 |
| 75 | Dibenz(a,h)anthracene | 53-70-3 | 2-ASA-59-1 | 99% | 1,003.3 | µg/mL | +/- 36.5029 |
| 76 | Benzo(g,h,i)perylene | 191-24-2 | RP241014RSR | 98% | 1,003.8 | µg/mL | +/- 36.5217 |

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

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

Tech Tips:

N-Nitrosodiphenylamine (86-30-6) is prone to breakdown in the injection port and will be converted to Diphenylamine (122-39-4). When comparing the response of Diphenylamine to mixtures manufactured using N-Nitrosodiphenylamine, a difference in response will be observed. The ratio of the MW can be used to calculate the theoretical concentration of the N-Nitrosodiphenylamine.



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.:** A0219438

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

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

Expiration Date : September 30, 2025 **Storage:** 0°C or colder

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

S12963
↓
S12992 } AC
12/17/24

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% | 1,008.3 µg/mL | +/- 36.6849 |
| 2 | N-Nitrosodimethylamine | 62-75-9 | S240313RSR | 99% | 1,008.6 µg/mL | +/- 36.6985 |
| 3 | Phenol | 108-95-2 | MKCK1120 | 99% | 1,003.5 µg/mL | +/- 36.5120 |
| 4 | Aniline | 62-53-3 | X22F726 | 99% | 1,002.9 µg/mL | +/- 36.4893 |
| 5 | Bis(2-chloroethyl)ether | 111-44-4 | 002891T24M | 99% | 1,003.0 µg/mL | +/- 36.4938 |
| 6 | 2-Chlorophenol | 95-57-8 | STBJ3909 | 99% | 1,005.6 µg/mL | +/- 36.5894 |
| 7 | 1,3-Dichlorobenzene | 541-73-1 | BCCD5315 | 99% | 1,004.1 µg/mL | +/- 36.5348 |
| 8 | 1,4-Dichlorobenzene | 106-46-7 | MKBS7929V | 99% | 1,002.1 µg/mL | +/- 36.4620 |
| 9 | Benzyl alcohol | 100-51-6 | SHBK5469 | 99% | 1,003.5 µg/mL | +/- 36.5120 |
| 10 | 1,2-Dichlorobenzene | 95-50-1 | SHBL6287 | 99% | 1,005.3 µg/mL | +/- 36.5757 |
| 11 | 2-Methylphenol (o-cresol) | 95-48-7 | SHBN7598 | 99% | 1,008.4 µg/mL | +/- 36.6894 |
| 12 | 2,2'-oxybis(1-chloropropane) | 108-60-1 | 29-MAR-45-5 | 99% | 1,004.6 µg/mL | +/- 36.5530 |
| 13 | 3-Methylphenol (m-cresol) | 108-39-4 | STBJ0710 | 99% | 502.1 µg/mL | +/- 18.2697 |
| 14 | 4-Methylphenol (p-cresol) | 106-44-5 | SHBN3411 | 99% | 503.8 µg/mL | +/- 18.3288 |
| 15 | N-Nitroso-di-n-propylamine | 621-64-7 | N63MG | 99% | 1,006.5 µg/mL | +/- 36.6212 |
| 16 | Hexachloroethane | 67-72-1 | DAXRI | 99% | 1,004.5 µg/mL | +/- 36.5484 |
| 17 | Nitrobenzene | 98-95-3 | 10224044 | 99% | 1,002.5 µg/mL | +/- 36.4757 |

| | | | | | | | |
|----|---|-----------|------------------|-------|---------|-------|-------------|
| 18 | Isophorone | 78-59-1 | MKCR3249 | 99% | 1,003.4 | µg/mL | +/- 36.5075 |
| 19 | 2-Nitrophenol | 88-75-5 | RP230710 | 99% | 1,002.5 | µg/mL | +/- 36.4757 |
| 20 | 2,4-Dimethylphenol | 105-67-9 | XW5GK | 99% | 1,006.5 | µg/mL | +/- 36.6212 |
| 21 | Bis(2-chloroethoxy)methane | 111-91-1 | 15705100 | 99% | 1,006.6 | µg/mL | +/- 36.6257 |
| 22 | 2,4-Dichlorophenol | 120-83-2 | BCKK6969 | 99% | 1,001.5 | µg/mL | +/- 36.4393 |
| 23 | 1,2,4-Trichlorobenzene | 120-82-1 | SHBP5900 | 99% | 1,006.4 | µg/mL | +/- 36.6166 |
| 24 | Naphthalene | 91-20-3 | STBL1057 | 99% | 1,002.1 | µg/mL | +/- 36.4620 |
| 25 | 4-Chloroaniline | 106-47-8 | BCCJ3217 | 99% | 1,004.4 | µg/mL | +/- 36.5439 |
| 26 | Hexachlorobutadiene | 87-68-3 | X05J | 98% | 1,002.5 | µg/mL | +/- 36.4771 |
| 27 | 4-Chloro-3-methylphenol | 59-50-7 | BCCD4461 | 99% | 1,004.5 | µg/mL | +/- 36.5484 |
| 28 | 2-Methylnaphthalene | 91-57-6 | STBL3028 | 99% | 1,000.0 | µg/mL | +/- 36.3847 |
| 29 | 1-Methylnaphthalene | 90-12-0 | 5234.00-8 | 98% | 990.2 | µg/mL | +/- 36.0269 |
| 30 | Hexachlorocyclopentadiene | 77-47-4 | 099063I14L | 98% | 1,001.3 | µg/mL | +/- 36.4325 |
| 31 | 2,4,6-Trichlorophenol | 88-06-2 | STBK8870 | 99% | 1,006.4 | µg/mL | +/- 36.6166 |
| 32 | 2,4,5-Trichlorophenol | 95-95-4 | 3YFRE | 97% | 1,004.6 | µg/mL | +/- 36.5505 |
| 33 | 2-Chloronaphthalene | 91-58-7 | RPN7O | 99% | 1,004.3 | µg/mL | +/- 36.5393 |
| 34 | 2-Nitroaniline | 88-74-4 | RP240715RSR | 99% | 1,004.4 | µg/mL | +/- 36.5439 |
| 35 | 1,4-Dinitrobenzene | 100-25-4 | RP240703RSR | 99% | 1,002.8 | µg/mL | +/- 36.4847 |
| 36 | Acenaphthylene | 208-96-8 | RP241029RSR | 98% | 1,000.0 | µg/mL | +/- 36.3835 |
| 37 | 1,3-Dinitrobenzene | 99-65-0 | TRC3-1075941-2-1 | 99% | 1,006.3 | µg/mL | +/- 36.6121 |
| 38 | Dimethylphthalate | 131-11-3 | 358221L17K | 99% | 1,008.9 | µg/mL | +/- 36.7076 |
| 39 | 2,6-Dinitrotoluene | 606-20-2 | BCCG1833 | 99% | 1,006.6 | µg/mL | +/- 36.6257 |
| 40 | 1,2-Dinitrobenzene | 528-29-0 | RP240701RSR | 99% | 1,002.5 | µg/mL | +/- 36.4757 |
| 41 | Acenaphthene | 83-32-9 | MKCR7169 | 99% | 1,000.0 | µg/mL | +/- 36.3847 |
| 42 | 3-Nitroaniline | 99-09-2 | RP240708RSR | 99% | 1,004.6 | µg/mL | +/- 36.5530 |
| 43 | 2,4-Dinitrophenol | 51-28-5 | D240927RSR | ----% | 1,005.6 | µg/mL | +/- 36.5894 |
| 44 | Dibenzofuran | 132-64-9 | MKCN1772 | 99% | 1,003.5 | µg/mL | +/- 36.5120 |
| 45 | 2,4-Dinitrotoluene | 121-14-2 | 102869V26E | 99% | 1,008.3 | µg/mL | +/- 36.6849 |
| 46 | 4-Nitrophenol | 100-02-7 | 20241029-2-AN | 99% | 1,004.8 | µg/mL | +/- 36.5575 |
| 47 | 2,3,4,6-Tetrachlorophenol | 58-90-2 | PR-34476 | 99% | 1,005.8 | µg/mL | +/- 36.5939 |
| 48 | 2,3,5,6-Tetrachlorophenol | 935-95-5 | RP231219RSR | 99% | 1,006.4 | µg/mL | +/- 36.6166 |
| 49 | Fluorene | 86-73-7 | 10246250 | 98% | 1,000.7 | µg/mL | +/- 36.4102 |
| 50 | 4-Chlorophenyl phenyl ether | 7005-72-3 | MKCT7248 | 99% | 1,004.9 | µg/mL | +/- 36.5621 |
| 51 | Diethylphthalate | 84-66-2 | BCCJ6241 | 99% | 1,003.9 | µg/mL | +/- 36.5257 |
| 52 | 4-Nitroaniline | 100-01-6 | RP230111 | 99% | 1,006.6 | µg/mL | +/- 36.6257 |
| 53 | 4,6-Dinitro-2-methylphenol (Dinitro-o-cresol) | 534-52-1 | S241008RSR | 99% | 1,001.3 | µg/mL | +/- 36.4302 |

| | | | | | | | |
|----|----------------------------|----------|--------------|-----|---------|-------|-------------|
| 54 | Diphenylamine | 122-39-4 | MKCT1512 | 99% | 1,003.0 | µg/mL | +/- 36.4938 |
| 55 | Azobenzene | 103-33-3 | BCKK0887 | 99% | 1,002.4 | µg/mL | +/- 36.4711 |
| 56 | 4-Bromophenyl phenyl ether | 101-55-3 | STBH6361 | 99% | 1,008.8 | µg/mL | +/- 36.7031 |
| 57 | Hexachlorobenzene | 118-74-1 | 15458400 | 99% | 1,005.1 | µg/mL | +/- 36.5712 |
| 58 | Pentachlorophenol | 87-86-5 | RP240517RSR | 99% | 1,005.9 | µg/mL | +/- 36.5984 |
| 59 | Phenanthrene | 85-01-8 | MKCT3391 | 99% | 1,004.9 | µg/mL | +/- 36.5621 |
| 60 | Anthracene | 120-12-7 | 101492T18R | 99% | 1,005.1 | µg/mL | +/- 36.5712 |
| 61 | Carbazole | 86-74-8 | 15276700 | 99% | 1,005.4 | µg/mL | +/- 36.5803 |
| 62 | Di-n-butylphthalate | 84-74-2 | MKCN4337 | 99% | 1,006.3 | µg/mL | +/- 36.6121 |
| 63 | Fluoranthene | 206-44-0 | MKCQ4728 | 99% | 1,003.5 | µg/mL | +/- 36.5120 |
| 64 | Pyrene | 129-00-0 | BCKK2592 | 99% | 1,002.0 | µg/mL | +/- 36.4575 |
| 65 | Benzyl butyl phthalate | 85-68-7 | X12I018 | 99% | 1,007.5 | µg/mL | +/- 36.6576 |
| 66 | Bis(2-ethylhexyl)adipate | 103-23-1 | MKCM1988 | 99% | 1,005.9 | µg/mL | +/- 36.5984 |
| 67 | Benz(a)anthracene | 56-55-3 | I70012022BAA | 99% | 1,005.5 | µg/mL | +/- 36.5848 |
| 68 | Chrysene | 218-01-9 | RP241007RSR | 99% | 1,005.3 | µg/mL | +/- 36.5757 |
| 69 | Bis(2-ethylhexyl)phthalate | 117-81-7 | MKCS8065 | 99% | 1,007.5 | µg/mL | +/- 36.6576 |
| 70 | Di-n-octyl phthalate | 117-84-0 | 15566400 | 99% | 1,002.3 | µg/mL | +/- 36.4666 |
| 71 | Benzo(b)fluoranthene | 205-99-2 | 052013B | 99% | 1,004.1 | µg/mL | +/- 36.5348 |
| 72 | Benzo(k)fluoranthene | 207-08-9 | 012022K | 99% | 1,002.8 | µg/mL | +/- 36.4847 |
| 73 | Benzo(a)pyrene | 50-32-8 | NQLXA | 98% | 1,006.2 | µg/mL | +/- 36.6108 |
| 74 | Indeno(1,2,3-cd)pyrene | 193-39-5 | 12-JKL-118-9 | 97% | 1,001.8 | µg/mL | +/- 36.4490 |
| 75 | Dibenz(a,h)anthracene | 53-70-3 | 2-ASA-59-1 | 99% | 1,003.3 | µg/mL | +/- 36.5029 |
| 76 | Benzo(g,h,i)perylene | 191-24-2 | RP241014RSR | 98% | 1,003.8 | µg/mL | +/- 36.5217 |

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

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

Tech Tips:

N-Nitrosodiphenylamine (86-30-6) is prone to breakdown in the injection port and will be converted to Diphenylamine (122-39-4). When comparing the response of Diphenylamine to mixtures manufactured using N-Nitrosodiphenylamine, a difference in response will be observed. The ratio of the MW can be used to calculate the theoretical concentration of the N-Nitrosodiphenylamine.



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.:** A0219438

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

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

Expiration Date : September 30, 2025 **Storage:** 0°C or colder

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

S12963
↓
S12992 } AC
12/17/24

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% | 1,008.3 µg/mL | +/- 36.6849 |
| 2 | N-Nitrosodimethylamine | 62-75-9 | S240313RSR | 99% | 1,008.6 µg/mL | +/- 36.6985 |
| 3 | Phenol | 108-95-2 | MKCK1120 | 99% | 1,003.5 µg/mL | +/- 36.5120 |
| 4 | Aniline | 62-53-3 | X22F726 | 99% | 1,002.9 µg/mL | +/- 36.4893 |
| 5 | Bis(2-chloroethyl)ether | 111-44-4 | 002891T24M | 99% | 1,003.0 µg/mL | +/- 36.4938 |
| 6 | 2-Chlorophenol | 95-57-8 | STBJ3909 | 99% | 1,005.6 µg/mL | +/- 36.5894 |
| 7 | 1,3-Dichlorobenzene | 541-73-1 | BCCD5315 | 99% | 1,004.1 µg/mL | +/- 36.5348 |
| 8 | 1,4-Dichlorobenzene | 106-46-7 | MKBS7929V | 99% | 1,002.1 µg/mL | +/- 36.4620 |
| 9 | Benzyl alcohol | 100-51-6 | SHBK5469 | 99% | 1,003.5 µg/mL | +/- 36.5120 |
| 10 | 1,2-Dichlorobenzene | 95-50-1 | SHBL6287 | 99% | 1,005.3 µg/mL | +/- 36.5757 |
| 11 | 2-Methylphenol (o-cresol) | 95-48-7 | SHBN7598 | 99% | 1,008.4 µg/mL | +/- 36.6894 |
| 12 | 2,2'-oxybis(1-chloropropane) | 108-60-1 | 29-MAR-45-5 | 99% | 1,004.6 µg/mL | +/- 36.5530 |
| 13 | 3-Methylphenol (m-cresol) | 108-39-4 | STBJ0710 | 99% | 502.1 µg/mL | +/- 18.2697 |
| 14 | 4-Methylphenol (p-cresol) | 106-44-5 | SHBN3411 | 99% | 503.8 µg/mL | +/- 18.3288 |
| 15 | N-Nitroso-di-n-propylamine | 621-64-7 | N63MG | 99% | 1,006.5 µg/mL | +/- 36.6212 |
| 16 | Hexachloroethane | 67-72-1 | DAXRI | 99% | 1,004.5 µg/mL | +/- 36.5484 |
| 17 | Nitrobenzene | 98-95-3 | 10224044 | 99% | 1,002.5 µg/mL | +/- 36.4757 |

| | | | | | | | |
|----|---|-----------|------------------|-------|---------|-------|-------------|
| 18 | Isophorone | 78-59-1 | MKCR3249 | 99% | 1,003.4 | µg/mL | +/- 36.5075 |
| 19 | 2-Nitrophenol | 88-75-5 | RP230710 | 99% | 1,002.5 | µg/mL | +/- 36.4757 |
| 20 | 2,4-Dimethylphenol | 105-67-9 | XW5GK | 99% | 1,006.5 | µg/mL | +/- 36.6212 |
| 21 | Bis(2-chloroethoxy)methane | 111-91-1 | 15705100 | 99% | 1,006.6 | µg/mL | +/- 36.6257 |
| 22 | 2,4-Dichlorophenol | 120-83-2 | BCKK6969 | 99% | 1,001.5 | µg/mL | +/- 36.4393 |
| 23 | 1,2,4-Trichlorobenzene | 120-82-1 | SHBP5900 | 99% | 1,006.4 | µg/mL | +/- 36.6166 |
| 24 | Naphthalene | 91-20-3 | STBL1057 | 99% | 1,002.1 | µg/mL | +/- 36.4620 |
| 25 | 4-Chloroaniline | 106-47-8 | BCCJ3217 | 99% | 1,004.4 | µg/mL | +/- 36.5439 |
| 26 | Hexachlorobutadiene | 87-68-3 | X05J | 98% | 1,002.5 | µg/mL | +/- 36.4771 |
| 27 | 4-Chloro-3-methylphenol | 59-50-7 | BCCD4461 | 99% | 1,004.5 | µg/mL | +/- 36.5484 |
| 28 | 2-Methylnaphthalene | 91-57-6 | STBL3028 | 99% | 1,000.0 | µg/mL | +/- 36.3847 |
| 29 | 1-Methylnaphthalene | 90-12-0 | 5234.00-8 | 98% | 990.2 | µg/mL | +/- 36.0269 |
| 30 | Hexachlorocyclopentadiene | 77-47-4 | 099063I14L | 98% | 1,001.3 | µg/mL | +/- 36.4325 |
| 31 | 2,4,6-Trichlorophenol | 88-06-2 | STBK8870 | 99% | 1,006.4 | µg/mL | +/- 36.6166 |
| 32 | 2,4,5-Trichlorophenol | 95-95-4 | 3YFRE | 97% | 1,004.6 | µg/mL | +/- 36.5505 |
| 33 | 2-Chloronaphthalene | 91-58-7 | RPN7O | 99% | 1,004.3 | µg/mL | +/- 36.5393 |
| 34 | 2-Nitroaniline | 88-74-4 | RP240715RSR | 99% | 1,004.4 | µg/mL | +/- 36.5439 |
| 35 | 1,4-Dinitrobenzene | 100-25-4 | RP240703RSR | 99% | 1,002.8 | µg/mL | +/- 36.4847 |
| 36 | Accenaphthylene | 208-96-8 | RP241029RSR | 98% | 1,000.0 | µg/mL | +/- 36.3835 |
| 37 | 1,3-Dinitrobenzene | 99-65-0 | TRC3-1075941-2-1 | 99% | 1,006.3 | µg/mL | +/- 36.6121 |
| 38 | Dimethylphthalate | 131-11-3 | 358221L17K | 99% | 1,008.9 | µg/mL | +/- 36.7076 |
| 39 | 2,6-Dinitrotoluene | 606-20-2 | BCCG1833 | 99% | 1,006.6 | µg/mL | +/- 36.6257 |
| 40 | 1,2-Dinitrobenzene | 528-29-0 | RP240701RSR | 99% | 1,002.5 | µg/mL | +/- 36.4757 |
| 41 | Acenaphthene | 83-32-9 | MKCR7169 | 99% | 1,000.0 | µg/mL | +/- 36.3847 |
| 42 | 3-Nitroaniline | 99-09-2 | RP240708RSR | 99% | 1,004.6 | µg/mL | +/- 36.5530 |
| 43 | 2,4-Dinitrophenol | 51-28-5 | D240927RSR | ----% | 1,005.6 | µg/mL | +/- 36.5894 |
| 44 | Dibenzofuran | 132-64-9 | MKCN1772 | 99% | 1,003.5 | µg/mL | +/- 36.5120 |
| 45 | 2,4-Dinitrotoluene | 121-14-2 | 102869V26E | 99% | 1,008.3 | µg/mL | +/- 36.6849 |
| 46 | 4-Nitrophenol | 100-02-7 | 20241029-2-AN | 99% | 1,004.8 | µg/mL | +/- 36.5575 |
| 47 | 2,3,4,6-Tetrachlorophenol | 58-90-2 | PR-34476 | 99% | 1,005.8 | µg/mL | +/- 36.5939 |
| 48 | 2,3,5,6-Tetrachlorophenol | 935-95-5 | RP231219RSR | 99% | 1,006.4 | µg/mL | +/- 36.6166 |
| 49 | Fluorene | 86-73-7 | 10246250 | 98% | 1,000.7 | µg/mL | +/- 36.4102 |
| 50 | 4-Chlorophenyl phenyl ether | 7005-72-3 | MKCT7248 | 99% | 1,004.9 | µg/mL | +/- 36.5621 |
| 51 | Diethylphthalate | 84-66-2 | BCCJ6241 | 99% | 1,003.9 | µg/mL | +/- 36.5257 |
| 52 | 4-Nitroaniline | 100-01-6 | RP230111 | 99% | 1,006.6 | µg/mL | +/- 36.6257 |
| 53 | 4,6-Dinitro-2-methylphenol (Dinitro-o-cresol) | 534-52-1 | S241008RSR | 99% | 1,001.3 | µg/mL | +/- 36.4302 |

| | | | | | | | |
|----|----------------------------|----------|--------------|-----|---------|-------|-------------|
| 54 | Diphenylamine | 122-39-4 | MKCT1512 | 99% | 1,003.0 | µg/mL | +/- 36.4938 |
| 55 | Azobenzene | 103-33-3 | BCKK0887 | 99% | 1,002.4 | µg/mL | +/- 36.4711 |
| 56 | 4-Bromophenyl phenyl ether | 101-55-3 | STBH6361 | 99% | 1,008.8 | µg/mL | +/- 36.7031 |
| 57 | Hexachlorobenzene | 118-74-1 | 15458400 | 99% | 1,005.1 | µg/mL | +/- 36.5712 |
| 58 | Pentachlorophenol | 87-86-5 | RP240517RSR | 99% | 1,005.9 | µg/mL | +/- 36.5984 |
| 59 | Phenanthrene | 85-01-8 | MKCT3391 | 99% | 1,004.9 | µg/mL | +/- 36.5621 |
| 60 | Anthracene | 120-12-7 | 101492T18R | 99% | 1,005.1 | µg/mL | +/- 36.5712 |
| 61 | Carbazole | 86-74-8 | 15276700 | 99% | 1,005.4 | µg/mL | +/- 36.5803 |
| 62 | Di-n-butylphthalate | 84-74-2 | MKCN4337 | 99% | 1,006.3 | µg/mL | +/- 36.6121 |
| 63 | Fluoranthene | 206-44-0 | MKCQ4728 | 99% | 1,003.5 | µg/mL | +/- 36.5120 |
| 64 | Pyrene | 129-00-0 | BCKK2592 | 99% | 1,002.0 | µg/mL | +/- 36.4575 |
| 65 | Benzyl butyl phthalate | 85-68-7 | X12I018 | 99% | 1,007.5 | µg/mL | +/- 36.6576 |
| 66 | Bis(2-ethylhexyl)adipate | 103-23-1 | MKCM1988 | 99% | 1,005.9 | µg/mL | +/- 36.5984 |
| 67 | Benz(a)anthracene | 56-55-3 | I70012022BAA | 99% | 1,005.5 | µg/mL | +/- 36.5848 |
| 68 | Chrysene | 218-01-9 | RP241007RSR | 99% | 1,005.3 | µg/mL | +/- 36.5757 |
| 69 | Bis(2-ethylhexyl)phthalate | 117-81-7 | MKCS8065 | 99% | 1,007.5 | µg/mL | +/- 36.6576 |
| 70 | Di-n-octyl phthalate | 117-84-0 | 15566400 | 99% | 1,002.3 | µg/mL | +/- 36.4666 |
| 71 | Benzo(b)fluoranthene | 205-99-2 | 052013B | 99% | 1,004.1 | µg/mL | +/- 36.5348 |
| 72 | Benzo(k)fluoranthene | 207-08-9 | 012022K | 99% | 1,002.8 | µg/mL | +/- 36.4847 |
| 73 | Benzo(a)pyrene | 50-32-8 | NQLXA | 98% | 1,006.2 | µg/mL | +/- 36.6108 |
| 74 | Indeno(1,2,3-cd)pyrene | 193-39-5 | 12-JKL-118-9 | 97% | 1,001.8 | µg/mL | +/- 36.4490 |
| 75 | Dibenz(a,h)anthracene | 53-70-3 | 2-ASA-59-1 | 99% | 1,003.3 | µg/mL | +/- 36.5029 |
| 76 | Benzo(g,h,i)perylene | 191-24-2 | RP241014RSR | 98% | 1,003.8 | µg/mL | +/- 36.5217 |

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

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

Tech Tips:

N-Nitrosodiphenylamine (86-30-6) is prone to breakdown in the injection port and will be converted to Diphenylamine (122-39-4). When comparing the response of Diphenylamine to mixtures manufactured using N-Nitrosodiphenylamine, a difference in response will be observed. The ratio of the MW can be used to calculate the theoretical concentration of the N-Nitrosodiphenylamine.



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.:** A0219438

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

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

Expiration Date : September 30, 2025 **Storage:** 0°C or colder

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

S12963
↓
S12992 } AC
12/17/24

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% | 1,008.3 µg/mL | +/- 36.6849 |
| 2 | N-Nitrosodimethylamine | 62-75-9 | S240313RSR | 99% | 1,008.6 µg/mL | +/- 36.6985 |
| 3 | Phenol | 108-95-2 | MKCK1120 | 99% | 1,003.5 µg/mL | +/- 36.5120 |
| 4 | Aniline | 62-53-3 | X22F726 | 99% | 1,002.9 µg/mL | +/- 36.4893 |
| 5 | Bis(2-chloroethyl)ether | 111-44-4 | 002891T24M | 99% | 1,003.0 µg/mL | +/- 36.4938 |
| 6 | 2-Chlorophenol | 95-57-8 | STBJ3909 | 99% | 1,005.6 µg/mL | +/- 36.5894 |
| 7 | 1,3-Dichlorobenzene | 541-73-1 | BCCD5315 | 99% | 1,004.1 µg/mL | +/- 36.5348 |
| 8 | 1,4-Dichlorobenzene | 106-46-7 | MKBS7929V | 99% | 1,002.1 µg/mL | +/- 36.4620 |
| 9 | Benzyl alcohol | 100-51-6 | SHBK5469 | 99% | 1,003.5 µg/mL | +/- 36.5120 |
| 10 | 1,2-Dichlorobenzene | 95-50-1 | SHBL6287 | 99% | 1,005.3 µg/mL | +/- 36.5757 |
| 11 | 2-Methylphenol (o-cresol) | 95-48-7 | SHBN7598 | 99% | 1,008.4 µg/mL | +/- 36.6894 |
| 12 | 2,2'-oxybis(1-chloropropane) | 108-60-1 | 29-MAR-45-5 | 99% | 1,004.6 µg/mL | +/- 36.5530 |
| 13 | 3-Methylphenol (m-cresol) | 108-39-4 | STBJ0710 | 99% | 502.1 µg/mL | +/- 18.2697 |
| 14 | 4-Methylphenol (p-cresol) | 106-44-5 | SHBN3411 | 99% | 503.8 µg/mL | +/- 18.3288 |
| 15 | N-Nitroso-di-n-propylamine | 621-64-7 | N63MG | 99% | 1,006.5 µg/mL | +/- 36.6212 |
| 16 | Hexachloroethane | 67-72-1 | DAXRI | 99% | 1,004.5 µg/mL | +/- 36.5484 |
| 17 | Nitrobenzene | 98-95-3 | 10224044 | 99% | 1,002.5 µg/mL | +/- 36.4757 |

| | | | | | | | |
|----|---|-----------|------------------|-------|---------|-------|-------------|
| 18 | Isophorone | 78-59-1 | MKCR3249 | 99% | 1,003.4 | µg/mL | +/- 36.5075 |
| 19 | 2-Nitrophenol | 88-75-5 | RP230710 | 99% | 1,002.5 | µg/mL | +/- 36.4757 |
| 20 | 2,4-Dimethylphenol | 105-67-9 | XW5GK | 99% | 1,006.5 | µg/mL | +/- 36.6212 |
| 21 | Bis(2-chloroethoxy)methane | 111-91-1 | 15705100 | 99% | 1,006.6 | µg/mL | +/- 36.6257 |
| 22 | 2,4-Dichlorophenol | 120-83-2 | BCKK6969 | 99% | 1,001.5 | µg/mL | +/- 36.4393 |
| 23 | 1,2,4-Trichlorobenzene | 120-82-1 | SHBP5900 | 99% | 1,006.4 | µg/mL | +/- 36.6166 |
| 24 | Naphthalene | 91-20-3 | STBL1057 | 99% | 1,002.1 | µg/mL | +/- 36.4620 |
| 25 | 4-Chloroaniline | 106-47-8 | BCCJ3217 | 99% | 1,004.4 | µg/mL | +/- 36.5439 |
| 26 | Hexachlorobutadiene | 87-68-3 | X05J | 98% | 1,002.5 | µg/mL | +/- 36.4771 |
| 27 | 4-Chloro-3-methylphenol | 59-50-7 | BCCD4461 | 99% | 1,004.5 | µg/mL | +/- 36.5484 |
| 28 | 2-Methylnaphthalene | 91-57-6 | STBL3028 | 99% | 1,000.0 | µg/mL | +/- 36.3847 |
| 29 | 1-Methylnaphthalene | 90-12-0 | 5234.00-8 | 98% | 990.2 | µg/mL | +/- 36.0269 |
| 30 | Hexachlorocyclopentadiene | 77-47-4 | 099063I14L | 98% | 1,001.3 | µg/mL | +/- 36.4325 |
| 31 | 2,4,6-Trichlorophenol | 88-06-2 | STBK8870 | 99% | 1,006.4 | µg/mL | +/- 36.6166 |
| 32 | 2,4,5-Trichlorophenol | 95-95-4 | 3YFRE | 97% | 1,004.6 | µg/mL | +/- 36.5505 |
| 33 | 2-Chloronaphthalene | 91-58-7 | RPN7O | 99% | 1,004.3 | µg/mL | +/- 36.5393 |
| 34 | 2-Nitroaniline | 88-74-4 | RP240715RSR | 99% | 1,004.4 | µg/mL | +/- 36.5439 |
| 35 | 1,4-Dinitrobenzene | 100-25-4 | RP240703RSR | 99% | 1,002.8 | µg/mL | +/- 36.4847 |
| 36 | Acenaphthylene | 208-96-8 | RP241029RSR | 98% | 1,000.0 | µg/mL | +/- 36.3835 |
| 37 | 1,3-Dinitrobenzene | 99-65-0 | TRC3-1075941-2-1 | 99% | 1,006.3 | µg/mL | +/- 36.6121 |
| 38 | Dimethylphthalate | 131-11-3 | 358221L17K | 99% | 1,008.9 | µg/mL | +/- 36.7076 |
| 39 | 2,6-Dinitrotoluene | 606-20-2 | BCCG1833 | 99% | 1,006.6 | µg/mL | +/- 36.6257 |
| 40 | 1,2-Dinitrobenzene | 528-29-0 | RP240701RSR | 99% | 1,002.5 | µg/mL | +/- 36.4757 |
| 41 | Acenaphthene | 83-32-9 | MKCR7169 | 99% | 1,000.0 | µg/mL | +/- 36.3847 |
| 42 | 3-Nitroaniline | 99-09-2 | RP240708RSR | 99% | 1,004.6 | µg/mL | +/- 36.5530 |
| 43 | 2,4-Dinitrophenol | 51-28-5 | D240927RSR | ----% | 1,005.6 | µg/mL | +/- 36.5894 |
| 44 | Dibenzofuran | 132-64-9 | MKCN1772 | 99% | 1,003.5 | µg/mL | +/- 36.5120 |
| 45 | 2,4-Dinitrotoluene | 121-14-2 | 102869V26E | 99% | 1,008.3 | µg/mL | +/- 36.6849 |
| 46 | 4-Nitrophenol | 100-02-7 | 20241029-2-AN | 99% | 1,004.8 | µg/mL | +/- 36.5575 |
| 47 | 2,3,4,6-Tetrachlorophenol | 58-90-2 | PR-34476 | 99% | 1,005.8 | µg/mL | +/- 36.5939 |
| 48 | 2,3,5,6-Tetrachlorophenol | 935-95-5 | RP231219RSR | 99% | 1,006.4 | µg/mL | +/- 36.6166 |
| 49 | Fluorene | 86-73-7 | 10246250 | 98% | 1,000.7 | µg/mL | +/- 36.4102 |
| 50 | 4-Chlorophenyl phenyl ether | 7005-72-3 | MKCT7248 | 99% | 1,004.9 | µg/mL | +/- 36.5621 |
| 51 | Diethylphthalate | 84-66-2 | BCCJ6241 | 99% | 1,003.9 | µg/mL | +/- 36.5257 |
| 52 | 4-Nitroaniline | 100-01-6 | RP230111 | 99% | 1,006.6 | µg/mL | +/- 36.6257 |
| 53 | 4,6-Dinitro-2-methylphenol (Dinitro-o-cresol) | 534-52-1 | S241008RSR | 99% | 1,001.3 | µg/mL | +/- 36.4302 |

| | | | | | | | |
|----|----------------------------|----------|--------------|-----|---------|-------|-------------|
| 54 | Diphenylamine | 122-39-4 | MKCT1512 | 99% | 1,003.0 | µg/mL | +/- 36.4938 |
| 55 | Azobenzene | 103-33-3 | BCKK0887 | 99% | 1,002.4 | µg/mL | +/- 36.4711 |
| 56 | 4-Bromophenyl phenyl ether | 101-55-3 | STBH6361 | 99% | 1,008.8 | µg/mL | +/- 36.7031 |
| 57 | Hexachlorobenzene | 118-74-1 | 15458400 | 99% | 1,005.1 | µg/mL | +/- 36.5712 |
| 58 | Pentachlorophenol | 87-86-5 | RP240517RSR | 99% | 1,005.9 | µg/mL | +/- 36.5984 |
| 59 | Phenanthrene | 85-01-8 | MKCT3391 | 99% | 1,004.9 | µg/mL | +/- 36.5621 |
| 60 | Anthracene | 120-12-7 | 101492T18R | 99% | 1,005.1 | µg/mL | +/- 36.5712 |
| 61 | Carbazole | 86-74-8 | 15276700 | 99% | 1,005.4 | µg/mL | +/- 36.5803 |
| 62 | Di-n-butylphthalate | 84-74-2 | MKCN4337 | 99% | 1,006.3 | µg/mL | +/- 36.6121 |
| 63 | Fluoranthene | 206-44-0 | MKCQ4728 | 99% | 1,003.5 | µg/mL | +/- 36.5120 |
| 64 | Pyrene | 129-00-0 | BCKK2592 | 99% | 1,002.0 | µg/mL | +/- 36.4575 |
| 65 | Benzyl butyl phthalate | 85-68-7 | X12I018 | 99% | 1,007.5 | µg/mL | +/- 36.6576 |
| 66 | Bis(2-ethylhexyl)adipate | 103-23-1 | MKCM1988 | 99% | 1,005.9 | µg/mL | +/- 36.5984 |
| 67 | Benz(a)anthracene | 56-55-3 | I70012022BAA | 99% | 1,005.5 | µg/mL | +/- 36.5848 |
| 68 | Chrysene | 218-01-9 | RP241007RSR | 99% | 1,005.3 | µg/mL | +/- 36.5757 |
| 69 | Bis(2-ethylhexyl)phthalate | 117-81-7 | MKCS8065 | 99% | 1,007.5 | µg/mL | +/- 36.6576 |
| 70 | Di-n-octyl phthalate | 117-84-0 | 15566400 | 99% | 1,002.3 | µg/mL | +/- 36.4666 |
| 71 | Benzo(b)fluoranthene | 205-99-2 | 052013B | 99% | 1,004.1 | µg/mL | +/- 36.5348 |
| 72 | Benzo(k)fluoranthene | 207-08-9 | 012022K | 99% | 1,002.8 | µg/mL | +/- 36.4847 |
| 73 | Benzo(a)pyrene | 50-32-8 | NQLXA | 98% | 1,006.2 | µg/mL | +/- 36.6108 |
| 74 | Indeno(1,2,3-cd)pyrene | 193-39-5 | 12-JKL-118-9 | 97% | 1,001.8 | µg/mL | +/- 36.4490 |
| 75 | Dibenz(a,h)anthracene | 53-70-3 | 2-ASA-59-1 | 99% | 1,003.3 | µg/mL | +/- 36.5029 |
| 76 | Benzo(g,h,i)perylene | 191-24-2 | RP241014RSR | 98% | 1,003.8 | µg/mL | +/- 36.5217 |

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

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

Tech Tips:

N-Nitrosodiphenylamine (86-30-6) is prone to breakdown in the injection port and will be converted to Diphenylamine (122-39-4). When comparing the response of Diphenylamine to mixtures manufactured using N-Nitrosodiphenylamine, a difference in response will be observed. The ratio of the MW can be used to calculate the theoretical concentration of the N-Nitrosodiphenylamine.



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.:** A0219438

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

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

Expiration Date : September 30, 2025 **Storage:** 0°C or colder

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

S12963
↓
S12992 } AC
12/17/24

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% | 1,008.3 µg/mL | +/- 36.6849 |
| 2 | N-Nitrosodimethylamine | 62-75-9 | S240313RSR | 99% | 1,008.6 µg/mL | +/- 36.6985 |
| 3 | Phenol | 108-95-2 | MKCK1120 | 99% | 1,003.5 µg/mL | +/- 36.5120 |
| 4 | Aniline | 62-53-3 | X22F726 | 99% | 1,002.9 µg/mL | +/- 36.4893 |
| 5 | Bis(2-chloroethyl)ether | 111-44-4 | 002891T24M | 99% | 1,003.0 µg/mL | +/- 36.4938 |
| 6 | 2-Chlorophenol | 95-57-8 | STBJ3909 | 99% | 1,005.6 µg/mL | +/- 36.5894 |
| 7 | 1,3-Dichlorobenzene | 541-73-1 | BCCD5315 | 99% | 1,004.1 µg/mL | +/- 36.5348 |
| 8 | 1,4-Dichlorobenzene | 106-46-7 | MKBS7929V | 99% | 1,002.1 µg/mL | +/- 36.4620 |
| 9 | Benzyl alcohol | 100-51-6 | SHBK5469 | 99% | 1,003.5 µg/mL | +/- 36.5120 |
| 10 | 1,2-Dichlorobenzene | 95-50-1 | SHBL6287 | 99% | 1,005.3 µg/mL | +/- 36.5757 |
| 11 | 2-Methylphenol (o-cresol) | 95-48-7 | SHBN7598 | 99% | 1,008.4 µg/mL | +/- 36.6894 |
| 12 | 2,2'-oxybis(1-chloropropane) | 108-60-1 | 29-MAR-45-5 | 99% | 1,004.6 µg/mL | +/- 36.5530 |
| 13 | 3-Methylphenol (m-cresol) | 108-39-4 | STBJ0710 | 99% | 502.1 µg/mL | +/- 18.2697 |
| 14 | 4-Methylphenol (p-cresol) | 106-44-5 | SHBN3411 | 99% | 503.8 µg/mL | +/- 18.3288 |
| 15 | N-Nitroso-di-n-propylamine | 621-64-7 | N63MG | 99% | 1,006.5 µg/mL | +/- 36.6212 |
| 16 | Hexachloroethane | 67-72-1 | DAXRI | 99% | 1,004.5 µg/mL | +/- 36.5484 |
| 17 | Nitrobenzene | 98-95-3 | 10224044 | 99% | 1,002.5 µg/mL | +/- 36.4757 |

| | | | | | | | |
|----|---|-----------|------------------|-------|---------|-------|-------------|
| 18 | Isophorone | 78-59-1 | MKCR3249 | 99% | 1,003.4 | µg/mL | +/- 36.5075 |
| 19 | 2-Nitrophenol | 88-75-5 | RP230710 | 99% | 1,002.5 | µg/mL | +/- 36.4757 |
| 20 | 2,4-Dimethylphenol | 105-67-9 | XW5GK | 99% | 1,006.5 | µg/mL | +/- 36.6212 |
| 21 | Bis(2-chloroethoxy)methane | 111-91-1 | 15705100 | 99% | 1,006.6 | µg/mL | +/- 36.6257 |
| 22 | 2,4-Dichlorophenol | 120-83-2 | BCKK6969 | 99% | 1,001.5 | µg/mL | +/- 36.4393 |
| 23 | 1,2,4-Trichlorobenzene | 120-82-1 | SHBP5900 | 99% | 1,006.4 | µg/mL | +/- 36.6166 |
| 24 | Naphthalene | 91-20-3 | STBL1057 | 99% | 1,002.1 | µg/mL | +/- 36.4620 |
| 25 | 4-Chloroaniline | 106-47-8 | BCCJ3217 | 99% | 1,004.4 | µg/mL | +/- 36.5439 |
| 26 | Hexachlorobutadiene | 87-68-3 | X05J | 98% | 1,002.5 | µg/mL | +/- 36.4771 |
| 27 | 4-Chloro-3-methylphenol | 59-50-7 | BCCD4461 | 99% | 1,004.5 | µg/mL | +/- 36.5484 |
| 28 | 2-Methylnaphthalene | 91-57-6 | STBL3028 | 99% | 1,000.0 | µg/mL | +/- 36.3847 |
| 29 | 1-Methylnaphthalene | 90-12-0 | 5234.00-8 | 98% | 990.2 | µg/mL | +/- 36.0269 |
| 30 | Hexachlorocyclopentadiene | 77-47-4 | 099063I14L | 98% | 1,001.3 | µg/mL | +/- 36.4325 |
| 31 | 2,4,6-Trichlorophenol | 88-06-2 | STBK8870 | 99% | 1,006.4 | µg/mL | +/- 36.6166 |
| 32 | 2,4,5-Trichlorophenol | 95-95-4 | 3YFRE | 97% | 1,004.6 | µg/mL | +/- 36.5505 |
| 33 | 2-Chloronaphthalene | 91-58-7 | RPN7O | 99% | 1,004.3 | µg/mL | +/- 36.5393 |
| 34 | 2-Nitroaniline | 88-74-4 | RP240715RSR | 99% | 1,004.4 | µg/mL | +/- 36.5439 |
| 35 | 1,4-Dinitrobenzene | 100-25-4 | RP240703RSR | 99% | 1,002.8 | µg/mL | +/- 36.4847 |
| 36 | Acenaphthylene | 208-96-8 | RP241029RSR | 98% | 1,000.0 | µg/mL | +/- 36.3835 |
| 37 | 1,3-Dinitrobenzene | 99-65-0 | TRC3-1075941-2-1 | 99% | 1,006.3 | µg/mL | +/- 36.6121 |
| 38 | Dimethylphthalate | 131-11-3 | 358221L17K | 99% | 1,008.9 | µg/mL | +/- 36.7076 |
| 39 | 2,6-Dinitrotoluene | 606-20-2 | BCCG1833 | 99% | 1,006.6 | µg/mL | +/- 36.6257 |
| 40 | 1,2-Dinitrobenzene | 528-29-0 | RP240701RSR | 99% | 1,002.5 | µg/mL | +/- 36.4757 |
| 41 | Acenaphthene | 83-32-9 | MKCR7169 | 99% | 1,000.0 | µg/mL | +/- 36.3847 |
| 42 | 3-Nitroaniline | 99-09-2 | RP240708RSR | 99% | 1,004.6 | µg/mL | +/- 36.5530 |
| 43 | 2,4-Dinitrophenol | 51-28-5 | D240927RSR | ----% | 1,005.6 | µg/mL | +/- 36.5894 |
| 44 | Dibenzofuran | 132-64-9 | MKCN1772 | 99% | 1,003.5 | µg/mL | +/- 36.5120 |
| 45 | 2,4-Dinitrotoluene | 121-14-2 | 102869V26E | 99% | 1,008.3 | µg/mL | +/- 36.6849 |
| 46 | 4-Nitrophenol | 100-02-7 | 20241029-2-AN | 99% | 1,004.8 | µg/mL | +/- 36.5575 |
| 47 | 2,3,4,6-Tetrachlorophenol | 58-90-2 | PR-34476 | 99% | 1,005.8 | µg/mL | +/- 36.5939 |
| 48 | 2,3,5,6-Tetrachlorophenol | 935-95-5 | RP231219RSR | 99% | 1,006.4 | µg/mL | +/- 36.6166 |
| 49 | Fluorene | 86-73-7 | 10246250 | 98% | 1,000.7 | µg/mL | +/- 36.4102 |
| 50 | 4-Chlorophenyl phenyl ether | 7005-72-3 | MKCT7248 | 99% | 1,004.9 | µg/mL | +/- 36.5621 |
| 51 | Diethylphthalate | 84-66-2 | BCCJ6241 | 99% | 1,003.9 | µg/mL | +/- 36.5257 |
| 52 | 4-Nitroaniline | 100-01-6 | RP230111 | 99% | 1,006.6 | µg/mL | +/- 36.6257 |
| 53 | 4,6-Dinitro-2-methylphenol (Dinitro-o-cresol) | 534-52-1 | S241008RSR | 99% | 1,001.3 | µg/mL | +/- 36.4302 |

| | | | | | | | |
|----|----------------------------|----------|--------------|-----|---------|-------|-------------|
| 54 | Diphenylamine | 122-39-4 | MKCT1512 | 99% | 1,003.0 | µg/mL | +/- 36.4938 |
| 55 | Azobenzene | 103-33-3 | BCKK0887 | 99% | 1,002.4 | µg/mL | +/- 36.4711 |
| 56 | 4-Bromophenyl phenyl ether | 101-55-3 | STBH6361 | 99% | 1,008.8 | µg/mL | +/- 36.7031 |
| 57 | Hexachlorobenzene | 118-74-1 | 15458400 | 99% | 1,005.1 | µg/mL | +/- 36.5712 |
| 58 | Pentachlorophenol | 87-86-5 | RP240517RSR | 99% | 1,005.9 | µg/mL | +/- 36.5984 |
| 59 | Phenanthrene | 85-01-8 | MKCT3391 | 99% | 1,004.9 | µg/mL | +/- 36.5621 |
| 60 | Anthracene | 120-12-7 | 101492T18R | 99% | 1,005.1 | µg/mL | +/- 36.5712 |
| 61 | Carbazole | 86-74-8 | 15276700 | 99% | 1,005.4 | µg/mL | +/- 36.5803 |
| 62 | Di-n-butylphthalate | 84-74-2 | MKCN4337 | 99% | 1,006.3 | µg/mL | +/- 36.6121 |
| 63 | Fluoranthene | 206-44-0 | MKCQ4728 | 99% | 1,003.5 | µg/mL | +/- 36.5120 |
| 64 | Pyrene | 129-00-0 | BCKK2592 | 99% | 1,002.0 | µg/mL | +/- 36.4575 |
| 65 | Benzyl butyl phthalate | 85-68-7 | X12I018 | 99% | 1,007.5 | µg/mL | +/- 36.6576 |
| 66 | Bis(2-ethylhexyl)adipate | 103-23-1 | MKCM1988 | 99% | 1,005.9 | µg/mL | +/- 36.5984 |
| 67 | Benz(a)anthracene | 56-55-3 | I70012022BAA | 99% | 1,005.5 | µg/mL | +/- 36.5848 |
| 68 | Chrysene | 218-01-9 | RP241007RSR | 99% | 1,005.3 | µg/mL | +/- 36.5757 |
| 69 | Bis(2-ethylhexyl)phthalate | 117-81-7 | MKCS8065 | 99% | 1,007.5 | µg/mL | +/- 36.6576 |
| 70 | Di-n-octyl phthalate | 117-84-0 | 15566400 | 99% | 1,002.3 | µg/mL | +/- 36.4666 |
| 71 | Benzo(b)fluoranthene | 205-99-2 | 052013B | 99% | 1,004.1 | µg/mL | +/- 36.5348 |
| 72 | Benzo(k)fluoranthene | 207-08-9 | 012022K | 99% | 1,002.8 | µg/mL | +/- 36.4847 |
| 73 | Benzo(a)pyrene | 50-32-8 | NQLXA | 98% | 1,006.2 | µg/mL | +/- 36.6108 |
| 74 | Indeno(1,2,3-cd)pyrene | 193-39-5 | 12-JKL-118-9 | 97% | 1,001.8 | µg/mL | +/- 36.4490 |
| 75 | Dibenz(a,h)anthracene | 53-70-3 | 2-ASA-59-1 | 99% | 1,003.3 | µg/mL | +/- 36.5029 |
| 76 | Benzo(g,h,i)perylene | 191-24-2 | RP241014RSR | 98% | 1,003.8 | µg/mL | +/- 36.5217 |

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

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

Tech Tips:

N-Nitrosodiphenylamine (86-30-6) is prone to breakdown in the injection port and will be converted to Diphenylamine (122-39-4). When comparing the response of Diphenylamine to mixtures manufactured using N-Nitrosodiphenylamine, a difference in response will be observed. The ratio of the MW can be used to calculate the theoretical concentration of the N-Nitrosodiphenylamine.



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.:** A0219438

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

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

Expiration Date : September 30, 2025 **Storage:** 0°C or colder

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

S12963
↓
S12992 } AC
12/17/24

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% | 1,008.3 µg/mL | +/- 36.6849 |
| 2 | N-Nitrosodimethylamine | 62-75-9 | S240313RSR | 99% | 1,008.6 µg/mL | +/- 36.6985 |
| 3 | Phenol | 108-95-2 | MKCK1120 | 99% | 1,003.5 µg/mL | +/- 36.5120 |
| 4 | Aniline | 62-53-3 | X22F726 | 99% | 1,002.9 µg/mL | +/- 36.4893 |
| 5 | Bis(2-chloroethyl)ether | 111-44-4 | 002891T24M | 99% | 1,003.0 µg/mL | +/- 36.4938 |
| 6 | 2-Chlorophenol | 95-57-8 | STBJ3909 | 99% | 1,005.6 µg/mL | +/- 36.5894 |
| 7 | 1,3-Dichlorobenzene | 541-73-1 | BCCD5315 | 99% | 1,004.1 µg/mL | +/- 36.5348 |
| 8 | 1,4-Dichlorobenzene | 106-46-7 | MKBS7929V | 99% | 1,002.1 µg/mL | +/- 36.4620 |
| 9 | Benzyl alcohol | 100-51-6 | SHBK5469 | 99% | 1,003.5 µg/mL | +/- 36.5120 |
| 10 | 1,2-Dichlorobenzene | 95-50-1 | SHBL6287 | 99% | 1,005.3 µg/mL | +/- 36.5757 |
| 11 | 2-Methylphenol (o-cresol) | 95-48-7 | SHBN7598 | 99% | 1,008.4 µg/mL | +/- 36.6894 |
| 12 | 2,2'-oxybis(1-chloropropane) | 108-60-1 | 29-MAR-45-5 | 99% | 1,004.6 µg/mL | +/- 36.5530 |
| 13 | 3-Methylphenol (m-cresol) | 108-39-4 | STBJ0710 | 99% | 502.1 µg/mL | +/- 18.2697 |
| 14 | 4-Methylphenol (p-cresol) | 106-44-5 | SHBN3411 | 99% | 503.8 µg/mL | +/- 18.3288 |
| 15 | N-Nitroso-di-n-propylamine | 621-64-7 | N63MG | 99% | 1,006.5 µg/mL | +/- 36.6212 |
| 16 | Hexachloroethane | 67-72-1 | DAXRI | 99% | 1,004.5 µg/mL | +/- 36.5484 |
| 17 | Nitrobenzene | 98-95-3 | 10224044 | 99% | 1,002.5 µg/mL | +/- 36.4757 |

| | | | | | | | |
|----|---|-----------|------------------|-------|---------|-------|-------------|
| 18 | Isophorone | 78-59-1 | MKCR3249 | 99% | 1,003.4 | µg/mL | +/- 36.5075 |
| 19 | 2-Nitrophenol | 88-75-5 | RP230710 | 99% | 1,002.5 | µg/mL | +/- 36.4757 |
| 20 | 2,4-Dimethylphenol | 105-67-9 | XW5GK | 99% | 1,006.5 | µg/mL | +/- 36.6212 |
| 21 | Bis(2-chloroethoxy)methane | 111-91-1 | 15705100 | 99% | 1,006.6 | µg/mL | +/- 36.6257 |
| 22 | 2,4-Dichlorophenol | 120-83-2 | BCKK6969 | 99% | 1,001.5 | µg/mL | +/- 36.4393 |
| 23 | 1,2,4-Trichlorobenzene | 120-82-1 | SHBP5900 | 99% | 1,006.4 | µg/mL | +/- 36.6166 |
| 24 | Naphthalene | 91-20-3 | STBL1057 | 99% | 1,002.1 | µg/mL | +/- 36.4620 |
| 25 | 4-Chloroaniline | 106-47-8 | BCCJ3217 | 99% | 1,004.4 | µg/mL | +/- 36.5439 |
| 26 | Hexachlorobutadiene | 87-68-3 | X05J | 98% | 1,002.5 | µg/mL | +/- 36.4771 |
| 27 | 4-Chloro-3-methylphenol | 59-50-7 | BCCD4461 | 99% | 1,004.5 | µg/mL | +/- 36.5484 |
| 28 | 2-Methylnaphthalene | 91-57-6 | STBL3028 | 99% | 1,000.0 | µg/mL | +/- 36.3847 |
| 29 | 1-Methylnaphthalene | 90-12-0 | 5234.00-8 | 98% | 990.2 | µg/mL | +/- 36.0269 |
| 30 | Hexachlorocyclopentadiene | 77-47-4 | 099063I14L | 98% | 1,001.3 | µg/mL | +/- 36.4325 |
| 31 | 2,4,6-Trichlorophenol | 88-06-2 | STBK8870 | 99% | 1,006.4 | µg/mL | +/- 36.6166 |
| 32 | 2,4,5-Trichlorophenol | 95-95-4 | 3YFRE | 97% | 1,004.6 | µg/mL | +/- 36.5505 |
| 33 | 2-Chloronaphthalene | 91-58-7 | RPN7O | 99% | 1,004.3 | µg/mL | +/- 36.5393 |
| 34 | 2-Nitroaniline | 88-74-4 | RP240715RSR | 99% | 1,004.4 | µg/mL | +/- 36.5439 |
| 35 | 1,4-Dinitrobenzene | 100-25-4 | RP240703RSR | 99% | 1,002.8 | µg/mL | +/- 36.4847 |
| 36 | Accenaphthylene | 208-96-8 | RP241029RSR | 98% | 1,000.0 | µg/mL | +/- 36.3835 |
| 37 | 1,3-Dinitrobenzene | 99-65-0 | TRC3-1075941-2-1 | 99% | 1,006.3 | µg/mL | +/- 36.6121 |
| 38 | Dimethylphthalate | 131-11-3 | 358221L17K | 99% | 1,008.9 | µg/mL | +/- 36.7076 |
| 39 | 2,6-Dinitrotoluene | 606-20-2 | BCCG1833 | 99% | 1,006.6 | µg/mL | +/- 36.6257 |
| 40 | 1,2-Dinitrobenzene | 528-29-0 | RP240701RSR | 99% | 1,002.5 | µg/mL | +/- 36.4757 |
| 41 | Acenaphthene | 83-32-9 | MKCR7169 | 99% | 1,000.0 | µg/mL | +/- 36.3847 |
| 42 | 3-Nitroaniline | 99-09-2 | RP240708RSR | 99% | 1,004.6 | µg/mL | +/- 36.5530 |
| 43 | 2,4-Dinitrophenol | 51-28-5 | D240927RSR | ----% | 1,005.6 | µg/mL | +/- 36.5894 |
| 44 | Dibenzofuran | 132-64-9 | MKCN1772 | 99% | 1,003.5 | µg/mL | +/- 36.5120 |
| 45 | 2,4-Dinitrotoluene | 121-14-2 | 102869V26E | 99% | 1,008.3 | µg/mL | +/- 36.6849 |
| 46 | 4-Nitrophenol | 100-02-7 | 20241029-2-AN | 99% | 1,004.8 | µg/mL | +/- 36.5575 |
| 47 | 2,3,4,6-Tetrachlorophenol | 58-90-2 | PR-34476 | 99% | 1,005.8 | µg/mL | +/- 36.5939 |
| 48 | 2,3,5,6-Tetrachlorophenol | 935-95-5 | RP231219RSR | 99% | 1,006.4 | µg/mL | +/- 36.6166 |
| 49 | Fluorene | 86-73-7 | 10246250 | 98% | 1,000.7 | µg/mL | +/- 36.4102 |
| 50 | 4-Chlorophenyl phenyl ether | 7005-72-3 | MKCT7248 | 99% | 1,004.9 | µg/mL | +/- 36.5621 |
| 51 | Diethylphthalate | 84-66-2 | BCCJ6241 | 99% | 1,003.9 | µg/mL | +/- 36.5257 |
| 52 | 4-Nitroaniline | 100-01-6 | RP230111 | 99% | 1,006.6 | µg/mL | +/- 36.6257 |
| 53 | 4,6-Dinitro-2-methylphenol (Dinitro-o-cresol) | 534-52-1 | S241008RSR | 99% | 1,001.3 | µg/mL | +/- 36.4302 |

| | | | | | | | |
|----|----------------------------|----------|--------------|-----|---------|-------|-------------|
| 54 | Diphenylamine | 122-39-4 | MKCT1512 | 99% | 1,003.0 | µg/mL | +/- 36.4938 |
| 55 | Azobenzene | 103-33-3 | BCKK0887 | 99% | 1,002.4 | µg/mL | +/- 36.4711 |
| 56 | 4-Bromophenyl phenyl ether | 101-55-3 | STBH6361 | 99% | 1,008.8 | µg/mL | +/- 36.7031 |
| 57 | Hexachlorobenzene | 118-74-1 | 15458400 | 99% | 1,005.1 | µg/mL | +/- 36.5712 |
| 58 | Pentachlorophenol | 87-86-5 | RP240517RSR | 99% | 1,005.9 | µg/mL | +/- 36.5984 |
| 59 | Phenanthrene | 85-01-8 | MKCT3391 | 99% | 1,004.9 | µg/mL | +/- 36.5621 |
| 60 | Anthracene | 120-12-7 | 101492T18R | 99% | 1,005.1 | µg/mL | +/- 36.5712 |
| 61 | Carbazole | 86-74-8 | 15276700 | 99% | 1,005.4 | µg/mL | +/- 36.5803 |
| 62 | Di-n-butylphthalate | 84-74-2 | MKCN4337 | 99% | 1,006.3 | µg/mL | +/- 36.6121 |
| 63 | Fluoranthene | 206-44-0 | MKCQ4728 | 99% | 1,003.5 | µg/mL | +/- 36.5120 |
| 64 | Pyrene | 129-00-0 | BCKK2592 | 99% | 1,002.0 | µg/mL | +/- 36.4575 |
| 65 | Benzyl butyl phthalate | 85-68-7 | X12I018 | 99% | 1,007.5 | µg/mL | +/- 36.6576 |
| 66 | Bis(2-ethylhexyl)adipate | 103-23-1 | MKCM1988 | 99% | 1,005.9 | µg/mL | +/- 36.5984 |
| 67 | Benz(a)anthracene | 56-55-3 | I70012022BAA | 99% | 1,005.5 | µg/mL | +/- 36.5848 |
| 68 | Chrysene | 218-01-9 | RP241007RSR | 99% | 1,005.3 | µg/mL | +/- 36.5757 |
| 69 | Bis(2-ethylhexyl)phthalate | 117-81-7 | MKCS8065 | 99% | 1,007.5 | µg/mL | +/- 36.6576 |
| 70 | Di-n-octyl phthalate | 117-84-0 | 15566400 | 99% | 1,002.3 | µg/mL | +/- 36.4666 |
| 71 | Benzo(b)fluoranthene | 205-99-2 | 052013B | 99% | 1,004.1 | µg/mL | +/- 36.5348 |
| 72 | Benzo(k)fluoranthene | 207-08-9 | 012022K | 99% | 1,002.8 | µg/mL | +/- 36.4847 |
| 73 | Benzo(a)pyrene | 50-32-8 | NQLXA | 98% | 1,006.2 | µg/mL | +/- 36.6108 |
| 74 | Indeno(1,2,3-cd)pyrene | 193-39-5 | 12-JKL-118-9 | 97% | 1,001.8 | µg/mL | +/- 36.4490 |
| 75 | Dibenz(a,h)anthracene | 53-70-3 | 2-ASA-59-1 | 99% | 1,003.3 | µg/mL | +/- 36.5029 |
| 76 | Benzo(g,h,i)perylene | 191-24-2 | RP241014RSR | 98% | 1,003.8 | µg/mL | +/- 36.5217 |

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

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

Tech Tips:

N-Nitrosodiphenylamine (86-30-6) is prone to breakdown in the injection port and will be converted to Diphenylamine (122-39-4). When comparing the response of Diphenylamine to mixtures manufactured using N-Nitrosodiphenylamine, a difference in response will be observed. The ratio of the MW can be used to calculate the theoretical concentration of the N-Nitrosodiphenylamine.



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.:** A0219438

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

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

Expiration Date : September 30, 2025 **Storage:** 0°C or colder

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

S12963
↓
S12992 } AC
12/17/24

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% | 1,008.3 µg/mL | +/- 36.6849 |
| 2 | N-Nitrosodimethylamine | 62-75-9 | S240313RSR | 99% | 1,008.6 µg/mL | +/- 36.6985 |
| 3 | Phenol | 108-95-2 | MKCK1120 | 99% | 1,003.5 µg/mL | +/- 36.5120 |
| 4 | Aniline | 62-53-3 | X22F726 | 99% | 1,002.9 µg/mL | +/- 36.4893 |
| 5 | Bis(2-chloroethyl)ether | 111-44-4 | 002891T24M | 99% | 1,003.0 µg/mL | +/- 36.4938 |
| 6 | 2-Chlorophenol | 95-57-8 | STBJ3909 | 99% | 1,005.6 µg/mL | +/- 36.5894 |
| 7 | 1,3-Dichlorobenzene | 541-73-1 | BCCD5315 | 99% | 1,004.1 µg/mL | +/- 36.5348 |
| 8 | 1,4-Dichlorobenzene | 106-46-7 | MKBS7929V | 99% | 1,002.1 µg/mL | +/- 36.4620 |
| 9 | Benzyl alcohol | 100-51-6 | SHBK5469 | 99% | 1,003.5 µg/mL | +/- 36.5120 |
| 10 | 1,2-Dichlorobenzene | 95-50-1 | SHBL6287 | 99% | 1,005.3 µg/mL | +/- 36.5757 |
| 11 | 2-Methylphenol (o-cresol) | 95-48-7 | SHBN7598 | 99% | 1,008.4 µg/mL | +/- 36.6894 |
| 12 | 2,2'-oxybis(1-chloropropane) | 108-60-1 | 29-MAR-45-5 | 99% | 1,004.6 µg/mL | +/- 36.5530 |
| 13 | 3-Methylphenol (m-cresol) | 108-39-4 | STBJ0710 | 99% | 502.1 µg/mL | +/- 18.2697 |
| 14 | 4-Methylphenol (p-cresol) | 106-44-5 | SHBN3411 | 99% | 503.8 µg/mL | +/- 18.3288 |
| 15 | N-Nitroso-di-n-propylamine | 621-64-7 | N63MG | 99% | 1,006.5 µg/mL | +/- 36.6212 |
| 16 | Hexachloroethane | 67-72-1 | DAXRI | 99% | 1,004.5 µg/mL | +/- 36.5484 |
| 17 | Nitrobenzene | 98-95-3 | 10224044 | 99% | 1,002.5 µg/mL | +/- 36.4757 |

| | | | | | | | |
|----|---|-----------|------------------|-------|---------|-------|-------------|
| 18 | Isophorone | 78-59-1 | MKCR3249 | 99% | 1,003.4 | µg/mL | +/- 36.5075 |
| 19 | 2-Nitrophenol | 88-75-5 | RP230710 | 99% | 1,002.5 | µg/mL | +/- 36.4757 |
| 20 | 2,4-Dimethylphenol | 105-67-9 | XW5GK | 99% | 1,006.5 | µg/mL | +/- 36.6212 |
| 21 | Bis(2-chloroethoxy)methane | 111-91-1 | 15705100 | 99% | 1,006.6 | µg/mL | +/- 36.6257 |
| 22 | 2,4-Dichlorophenol | 120-83-2 | BCKK6969 | 99% | 1,001.5 | µg/mL | +/- 36.4393 |
| 23 | 1,2,4-Trichlorobenzene | 120-82-1 | SHBP5900 | 99% | 1,006.4 | µg/mL | +/- 36.6166 |
| 24 | Naphthalene | 91-20-3 | STBL1057 | 99% | 1,002.1 | µg/mL | +/- 36.4620 |
| 25 | 4-Chloroaniline | 106-47-8 | BCCJ3217 | 99% | 1,004.4 | µg/mL | +/- 36.5439 |
| 26 | Hexachlorobutadiene | 87-68-3 | X05J | 98% | 1,002.5 | µg/mL | +/- 36.4771 |
| 27 | 4-Chloro-3-methylphenol | 59-50-7 | BCCD4461 | 99% | 1,004.5 | µg/mL | +/- 36.5484 |
| 28 | 2-Methylnaphthalene | 91-57-6 | STBL3028 | 99% | 1,000.0 | µg/mL | +/- 36.3847 |
| 29 | 1-Methylnaphthalene | 90-12-0 | 5234.00-8 | 98% | 990.2 | µg/mL | +/- 36.0269 |
| 30 | Hexachlorocyclopentadiene | 77-47-4 | 099063I14L | 98% | 1,001.3 | µg/mL | +/- 36.4325 |
| 31 | 2,4,6-Trichlorophenol | 88-06-2 | STBK8870 | 99% | 1,006.4 | µg/mL | +/- 36.6166 |
| 32 | 2,4,5-Trichlorophenol | 95-95-4 | 3YFRE | 97% | 1,004.6 | µg/mL | +/- 36.5505 |
| 33 | 2-Chloronaphthalene | 91-58-7 | RPN7O | 99% | 1,004.3 | µg/mL | +/- 36.5393 |
| 34 | 2-Nitroaniline | 88-74-4 | RP240715RSR | 99% | 1,004.4 | µg/mL | +/- 36.5439 |
| 35 | 1,4-Dinitrobenzene | 100-25-4 | RP240703RSR | 99% | 1,002.8 | µg/mL | +/- 36.4847 |
| 36 | Acenaphthylene | 208-96-8 | RP241029RSR | 98% | 1,000.0 | µg/mL | +/- 36.3835 |
| 37 | 1,3-Dinitrobenzene | 99-65-0 | TRC3-1075941-2-1 | 99% | 1,006.3 | µg/mL | +/- 36.6121 |
| 38 | Dimethylphthalate | 131-11-3 | 358221L17K | 99% | 1,008.9 | µg/mL | +/- 36.7076 |
| 39 | 2,6-Dinitrotoluene | 606-20-2 | BCCG1833 | 99% | 1,006.6 | µg/mL | +/- 36.6257 |
| 40 | 1,2-Dinitrobenzene | 528-29-0 | RP240701RSR | 99% | 1,002.5 | µg/mL | +/- 36.4757 |
| 41 | Acenaphthene | 83-32-9 | MKCR7169 | 99% | 1,000.0 | µg/mL | +/- 36.3847 |
| 42 | 3-Nitroaniline | 99-09-2 | RP240708RSR | 99% | 1,004.6 | µg/mL | +/- 36.5530 |
| 43 | 2,4-Dinitrophenol | 51-28-5 | D240927RSR | ----% | 1,005.6 | µg/mL | +/- 36.5894 |
| 44 | Dibenzofuran | 132-64-9 | MKCN1772 | 99% | 1,003.5 | µg/mL | +/- 36.5120 |
| 45 | 2,4-Dinitrotoluene | 121-14-2 | 102869V26E | 99% | 1,008.3 | µg/mL | +/- 36.6849 |
| 46 | 4-Nitrophenol | 100-02-7 | 20241029-2-AN | 99% | 1,004.8 | µg/mL | +/- 36.5575 |
| 47 | 2,3,4,6-Tetrachlorophenol | 58-90-2 | PR-34476 | 99% | 1,005.8 | µg/mL | +/- 36.5939 |
| 48 | 2,3,5,6-Tetrachlorophenol | 935-95-5 | RP231219RSR | 99% | 1,006.4 | µg/mL | +/- 36.6166 |
| 49 | Fluorene | 86-73-7 | 10246250 | 98% | 1,000.7 | µg/mL | +/- 36.4102 |
| 50 | 4-Chlorophenyl phenyl ether | 7005-72-3 | MKCT7248 | 99% | 1,004.9 | µg/mL | +/- 36.5621 |
| 51 | Diethylphthalate | 84-66-2 | BCCJ6241 | 99% | 1,003.9 | µg/mL | +/- 36.5257 |
| 52 | 4-Nitroaniline | 100-01-6 | RP230111 | 99% | 1,006.6 | µg/mL | +/- 36.6257 |
| 53 | 4,6-Dinitro-2-methylphenol (Dinitro-o-cresol) | 534-52-1 | S241008RSR | 99% | 1,001.3 | µg/mL | +/- 36.4302 |

| | | | | | | | |
|----|----------------------------|----------|--------------|-----|---------|-------|-------------|
| 54 | Diphenylamine | 122-39-4 | MKCT1512 | 99% | 1,003.0 | µg/mL | +/- 36.4938 |
| 55 | Azobenzene | 103-33-3 | BCKK0887 | 99% | 1,002.4 | µg/mL | +/- 36.4711 |
| 56 | 4-Bromophenyl phenyl ether | 101-55-3 | STBH6361 | 99% | 1,008.8 | µg/mL | +/- 36.7031 |
| 57 | Hexachlorobenzene | 118-74-1 | 15458400 | 99% | 1,005.1 | µg/mL | +/- 36.5712 |
| 58 | Pentachlorophenol | 87-86-5 | RP240517RSR | 99% | 1,005.9 | µg/mL | +/- 36.5984 |
| 59 | Phenanthrene | 85-01-8 | MKCT3391 | 99% | 1,004.9 | µg/mL | +/- 36.5621 |
| 60 | Anthracene | 120-12-7 | 101492T18R | 99% | 1,005.1 | µg/mL | +/- 36.5712 |
| 61 | Carbazole | 86-74-8 | 15276700 | 99% | 1,005.4 | µg/mL | +/- 36.5803 |
| 62 | Di-n-butylphthalate | 84-74-2 | MKCN4337 | 99% | 1,006.3 | µg/mL | +/- 36.6121 |
| 63 | Fluoranthene | 206-44-0 | MKCQ4728 | 99% | 1,003.5 | µg/mL | +/- 36.5120 |
| 64 | Pyrene | 129-00-0 | BCKK2592 | 99% | 1,002.0 | µg/mL | +/- 36.4575 |
| 65 | Benzyl butyl phthalate | 85-68-7 | X12I018 | 99% | 1,007.5 | µg/mL | +/- 36.6576 |
| 66 | Bis(2-ethylhexyl)adipate | 103-23-1 | MKCM1988 | 99% | 1,005.9 | µg/mL | +/- 36.5984 |
| 67 | Benz(a)anthracene | 56-55-3 | I70012022BAA | 99% | 1,005.5 | µg/mL | +/- 36.5848 |
| 68 | Chrysene | 218-01-9 | RP241007RSR | 99% | 1,005.3 | µg/mL | +/- 36.5757 |
| 69 | Bis(2-ethylhexyl)phthalate | 117-81-7 | MKCS8065 | 99% | 1,007.5 | µg/mL | +/- 36.6576 |
| 70 | Di-n-octyl phthalate | 117-84-0 | 15566400 | 99% | 1,002.3 | µg/mL | +/- 36.4666 |
| 71 | Benzo(b)fluoranthene | 205-99-2 | 052013B | 99% | 1,004.1 | µg/mL | +/- 36.5348 |
| 72 | Benzo(k)fluoranthene | 207-08-9 | 012022K | 99% | 1,002.8 | µg/mL | +/- 36.4847 |
| 73 | Benzo(a)pyrene | 50-32-8 | NQLXA | 98% | 1,006.2 | µg/mL | +/- 36.6108 |
| 74 | Indeno(1,2,3-cd)pyrene | 193-39-5 | 12-JKL-118-9 | 97% | 1,001.8 | µg/mL | +/- 36.4490 |
| 75 | Dibenz(a,h)anthracene | 53-70-3 | 2-ASA-59-1 | 99% | 1,003.3 | µg/mL | +/- 36.5029 |
| 76 | Benzo(g,h,i)perylene | 191-24-2 | RP241014RSR | 98% | 1,003.8 | µg/mL | +/- 36.5217 |

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

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

Tech Tips:

N-Nitrosodiphenylamine (86-30-6) is prone to breakdown in the injection port and will be converted to Diphenylamine (122-39-4). When comparing the response of Diphenylamine to mixtures manufactured using N-Nitrosodiphenylamine, a difference in response will be observed. The ratio of the MW can be used to calculate the theoretical concentration of the N-Nitrosodiphenylamine.



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.:** A0219438

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

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

Expiration Date : September 30, 2025 **Storage:** 0°C or colder

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

S12963
↓
S12992 } AC
12/17/24

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% | 1,008.3 µg/mL | +/- 36.6849 |
| 2 | N-Nitrosodimethylamine | 62-75-9 | S240313RSR | 99% | 1,008.6 µg/mL | +/- 36.6985 |
| 3 | Phenol | 108-95-2 | MKCK1120 | 99% | 1,003.5 µg/mL | +/- 36.5120 |
| 4 | Aniline | 62-53-3 | X22F726 | 99% | 1,002.9 µg/mL | +/- 36.4893 |
| 5 | Bis(2-chloroethyl)ether | 111-44-4 | 002891T24M | 99% | 1,003.0 µg/mL | +/- 36.4938 |
| 6 | 2-Chlorophenol | 95-57-8 | STBJ3909 | 99% | 1,005.6 µg/mL | +/- 36.5894 |
| 7 | 1,3-Dichlorobenzene | 541-73-1 | BCCD5315 | 99% | 1,004.1 µg/mL | +/- 36.5348 |
| 8 | 1,4-Dichlorobenzene | 106-46-7 | MKBS7929V | 99% | 1,002.1 µg/mL | +/- 36.4620 |
| 9 | Benzyl alcohol | 100-51-6 | SHBK5469 | 99% | 1,003.5 µg/mL | +/- 36.5120 |
| 10 | 1,2-Dichlorobenzene | 95-50-1 | SHBL6287 | 99% | 1,005.3 µg/mL | +/- 36.5757 |
| 11 | 2-Methylphenol (o-cresol) | 95-48-7 | SHBN7598 | 99% | 1,008.4 µg/mL | +/- 36.6894 |
| 12 | 2,2'-oxybis(1-chloropropane) | 108-60-1 | 29-MAR-45-5 | 99% | 1,004.6 µg/mL | +/- 36.5530 |
| 13 | 3-Methylphenol (m-cresol) | 108-39-4 | STBJ0710 | 99% | 502.1 µg/mL | +/- 18.2697 |
| 14 | 4-Methylphenol (p-cresol) | 106-44-5 | SHBN3411 | 99% | 503.8 µg/mL | +/- 18.3288 |
| 15 | N-Nitroso-di-n-propylamine | 621-64-7 | N63MG | 99% | 1,006.5 µg/mL | +/- 36.6212 |
| 16 | Hexachloroethane | 67-72-1 | DAXRI | 99% | 1,004.5 µg/mL | +/- 36.5484 |
| 17 | Nitrobenzene | 98-95-3 | 10224044 | 99% | 1,002.5 µg/mL | +/- 36.4757 |

| | | | | | | | |
|----|---|-----------|------------------|-------|---------|-------|-------------|
| 18 | Isophorone | 78-59-1 | MKCR3249 | 99% | 1,003.4 | µg/mL | +/- 36.5075 |
| 19 | 2-Nitrophenol | 88-75-5 | RP230710 | 99% | 1,002.5 | µg/mL | +/- 36.4757 |
| 20 | 2,4-Dimethylphenol | 105-67-9 | XW5GK | 99% | 1,006.5 | µg/mL | +/- 36.6212 |
| 21 | Bis(2-chloroethoxy)methane | 111-91-1 | 15705100 | 99% | 1,006.6 | µg/mL | +/- 36.6257 |
| 22 | 2,4-Dichlorophenol | 120-83-2 | BCKK6969 | 99% | 1,001.5 | µg/mL | +/- 36.4393 |
| 23 | 1,2,4-Trichlorobenzene | 120-82-1 | SHBP5900 | 99% | 1,006.4 | µg/mL | +/- 36.6166 |
| 24 | Naphthalene | 91-20-3 | STBL1057 | 99% | 1,002.1 | µg/mL | +/- 36.4620 |
| 25 | 4-Chloroaniline | 106-47-8 | BCCJ3217 | 99% | 1,004.4 | µg/mL | +/- 36.5439 |
| 26 | Hexachlorobutadiene | 87-68-3 | X05J | 98% | 1,002.5 | µg/mL | +/- 36.4771 |
| 27 | 4-Chloro-3-methylphenol | 59-50-7 | BCCD4461 | 99% | 1,004.5 | µg/mL | +/- 36.5484 |
| 28 | 2-Methylnaphthalene | 91-57-6 | STBL3028 | 99% | 1,000.0 | µg/mL | +/- 36.3847 |
| 29 | 1-Methylnaphthalene | 90-12-0 | 5234.00-8 | 98% | 990.2 | µg/mL | +/- 36.0269 |
| 30 | Hexachlorocyclopentadiene | 77-47-4 | 099063I14L | 98% | 1,001.3 | µg/mL | +/- 36.4325 |
| 31 | 2,4,6-Trichlorophenol | 88-06-2 | STBK8870 | 99% | 1,006.4 | µg/mL | +/- 36.6166 |
| 32 | 2,4,5-Trichlorophenol | 95-95-4 | 3YFRE | 97% | 1,004.6 | µg/mL | +/- 36.5505 |
| 33 | 2-Chloronaphthalene | 91-58-7 | RPN7O | 99% | 1,004.3 | µg/mL | +/- 36.5393 |
| 34 | 2-Nitroaniline | 88-74-4 | RP240715RSR | 99% | 1,004.4 | µg/mL | +/- 36.5439 |
| 35 | 1,4-Dinitrobenzene | 100-25-4 | RP240703RSR | 99% | 1,002.8 | µg/mL | +/- 36.4847 |
| 36 | Acenaphthylene | 208-96-8 | RP241029RSR | 98% | 1,000.0 | µg/mL | +/- 36.3835 |
| 37 | 1,3-Dinitrobenzene | 99-65-0 | TRC3-1075941-2-1 | 99% | 1,006.3 | µg/mL | +/- 36.6121 |
| 38 | Dimethylphthalate | 131-11-3 | 358221L17K | 99% | 1,008.9 | µg/mL | +/- 36.7076 |
| 39 | 2,6-Dinitrotoluene | 606-20-2 | BCCG1833 | 99% | 1,006.6 | µg/mL | +/- 36.6257 |
| 40 | 1,2-Dinitrobenzene | 528-29-0 | RP240701RSR | 99% | 1,002.5 | µg/mL | +/- 36.4757 |
| 41 | Acenaphthene | 83-32-9 | MKCR7169 | 99% | 1,000.0 | µg/mL | +/- 36.3847 |
| 42 | 3-Nitroaniline | 99-09-2 | RP240708RSR | 99% | 1,004.6 | µg/mL | +/- 36.5530 |
| 43 | 2,4-Dinitrophenol | 51-28-5 | D240927RSR | ----% | 1,005.6 | µg/mL | +/- 36.5894 |
| 44 | Dibenzofuran | 132-64-9 | MKCN1772 | 99% | 1,003.5 | µg/mL | +/- 36.5120 |
| 45 | 2,4-Dinitrotoluene | 121-14-2 | 102869V26E | 99% | 1,008.3 | µg/mL | +/- 36.6849 |
| 46 | 4-Nitrophenol | 100-02-7 | 20241029-2-AN | 99% | 1,004.8 | µg/mL | +/- 36.5575 |
| 47 | 2,3,4,6-Tetrachlorophenol | 58-90-2 | PR-34476 | 99% | 1,005.8 | µg/mL | +/- 36.5939 |
| 48 | 2,3,5,6-Tetrachlorophenol | 935-95-5 | RP231219RSR | 99% | 1,006.4 | µg/mL | +/- 36.6166 |
| 49 | Fluorene | 86-73-7 | 10246250 | 98% | 1,000.7 | µg/mL | +/- 36.4102 |
| 50 | 4-Chlorophenyl phenyl ether | 7005-72-3 | MKCT7248 | 99% | 1,004.9 | µg/mL | +/- 36.5621 |
| 51 | Diethylphthalate | 84-66-2 | BCCJ6241 | 99% | 1,003.9 | µg/mL | +/- 36.5257 |
| 52 | 4-Nitroaniline | 100-01-6 | RP230111 | 99% | 1,006.6 | µg/mL | +/- 36.6257 |
| 53 | 4,6-Dinitro-2-methylphenol (Dinitro-o-cresol) | 534-52-1 | S241008RSR | 99% | 1,001.3 | µg/mL | +/- 36.4302 |

| | | | | | | | |
|----|----------------------------|----------|--------------|-----|---------|-------|-------------|
| 54 | Diphenylamine | 122-39-4 | MKCT1512 | 99% | 1,003.0 | µg/mL | +/- 36.4938 |
| 55 | Azobenzene | 103-33-3 | BCKK0887 | 99% | 1,002.4 | µg/mL | +/- 36.4711 |
| 56 | 4-Bromophenyl phenyl ether | 101-55-3 | STBH6361 | 99% | 1,008.8 | µg/mL | +/- 36.7031 |
| 57 | Hexachlorobenzene | 118-74-1 | 15458400 | 99% | 1,005.1 | µg/mL | +/- 36.5712 |
| 58 | Pentachlorophenol | 87-86-5 | RP240517RSR | 99% | 1,005.9 | µg/mL | +/- 36.5984 |
| 59 | Phenanthrene | 85-01-8 | MKCT3391 | 99% | 1,004.9 | µg/mL | +/- 36.5621 |
| 60 | Anthracene | 120-12-7 | 101492T18R | 99% | 1,005.1 | µg/mL | +/- 36.5712 |
| 61 | Carbazole | 86-74-8 | 15276700 | 99% | 1,005.4 | µg/mL | +/- 36.5803 |
| 62 | Di-n-butylphthalate | 84-74-2 | MKCN4337 | 99% | 1,006.3 | µg/mL | +/- 36.6121 |
| 63 | Fluoranthene | 206-44-0 | MKCQ4728 | 99% | 1,003.5 | µg/mL | +/- 36.5120 |
| 64 | Pyrene | 129-00-0 | BCKK2592 | 99% | 1,002.0 | µg/mL | +/- 36.4575 |
| 65 | Benzyl butyl phthalate | 85-68-7 | X12I018 | 99% | 1,007.5 | µg/mL | +/- 36.6576 |
| 66 | Bis(2-ethylhexyl)adipate | 103-23-1 | MKCM1988 | 99% | 1,005.9 | µg/mL | +/- 36.5984 |
| 67 | Benz(a)anthracene | 56-55-3 | I70012022BAA | 99% | 1,005.5 | µg/mL | +/- 36.5848 |
| 68 | Chrysene | 218-01-9 | RP241007RSR | 99% | 1,005.3 | µg/mL | +/- 36.5757 |
| 69 | Bis(2-ethylhexyl)phthalate | 117-81-7 | MKCS8065 | 99% | 1,007.5 | µg/mL | +/- 36.6576 |
| 70 | Di-n-octyl phthalate | 117-84-0 | 15566400 | 99% | 1,002.3 | µg/mL | +/- 36.4666 |
| 71 | Benzo(b)fluoranthene | 205-99-2 | 052013B | 99% | 1,004.1 | µg/mL | +/- 36.5348 |
| 72 | Benzo(k)fluoranthene | 207-08-9 | 012022K | 99% | 1,002.8 | µg/mL | +/- 36.4847 |
| 73 | Benzo(a)pyrene | 50-32-8 | NQLXA | 98% | 1,006.2 | µg/mL | +/- 36.6108 |
| 74 | Indeno(1,2,3-cd)pyrene | 193-39-5 | 12-JKL-118-9 | 97% | 1,001.8 | µg/mL | +/- 36.4490 |
| 75 | Dibenz(a,h)anthracene | 53-70-3 | 2-ASA-59-1 | 99% | 1,003.3 | µg/mL | +/- 36.5029 |
| 76 | Benzo(g,h,i)perylene | 191-24-2 | RP241014RSR | 98% | 1,003.8 | µg/mL | +/- 36.5217 |

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

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

Tech Tips:

N-Nitrosodiphenylamine (86-30-6) is prone to breakdown in the injection port and will be converted to Diphenylamine (122-39-4). When comparing the response of Diphenylamine to mixtures manufactured using N-Nitrosodiphenylamine, a difference in response will be observed. The ratio of the MW can be used to calculate the theoretical concentration of the N-Nitrosodiphenylamine.



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.:** A0219438

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

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

Expiration Date : September 30, 2025 **Storage:** 0°C or colder

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

S12963
↓
S12992 } AC
12/17/24

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% | 1,008.3 µg/mL | +/- 36.6849 |
| 2 | N-Nitrosodimethylamine | 62-75-9 | S240313RSR | 99% | 1,008.6 µg/mL | +/- 36.6985 |
| 3 | Phenol | 108-95-2 | MKCK1120 | 99% | 1,003.5 µg/mL | +/- 36.5120 |
| 4 | Aniline | 62-53-3 | X22F726 | 99% | 1,002.9 µg/mL | +/- 36.4893 |
| 5 | Bis(2-chloroethyl)ether | 111-44-4 | 002891T24M | 99% | 1,003.0 µg/mL | +/- 36.4938 |
| 6 | 2-Chlorophenol | 95-57-8 | STBJ3909 | 99% | 1,005.6 µg/mL | +/- 36.5894 |
| 7 | 1,3-Dichlorobenzene | 541-73-1 | BCCD5315 | 99% | 1,004.1 µg/mL | +/- 36.5348 |
| 8 | 1,4-Dichlorobenzene | 106-46-7 | MKBS7929V | 99% | 1,002.1 µg/mL | +/- 36.4620 |
| 9 | Benzyl alcohol | 100-51-6 | SHBK5469 | 99% | 1,003.5 µg/mL | +/- 36.5120 |
| 10 | 1,2-Dichlorobenzene | 95-50-1 | SHBL6287 | 99% | 1,005.3 µg/mL | +/- 36.5757 |
| 11 | 2-Methylphenol (o-cresol) | 95-48-7 | SHBN7598 | 99% | 1,008.4 µg/mL | +/- 36.6894 |
| 12 | 2,2'-oxybis(1-chloropropane) | 108-60-1 | 29-MAR-45-5 | 99% | 1,004.6 µg/mL | +/- 36.5530 |
| 13 | 3-Methylphenol (m-cresol) | 108-39-4 | STBJ0710 | 99% | 502.1 µg/mL | +/- 18.2697 |
| 14 | 4-Methylphenol (p-cresol) | 106-44-5 | SHBN3411 | 99% | 503.8 µg/mL | +/- 18.3288 |
| 15 | N-Nitroso-di-n-propylamine | 621-64-7 | N63MG | 99% | 1,006.5 µg/mL | +/- 36.6212 |
| 16 | Hexachloroethane | 67-72-1 | DAXRI | 99% | 1,004.5 µg/mL | +/- 36.5484 |
| 17 | Nitrobenzene | 98-95-3 | 10224044 | 99% | 1,002.5 µg/mL | +/- 36.4757 |

| | | | | | | | |
|----|---|-----------|------------------|-------|---------|-------|-------------|
| 18 | Isophorone | 78-59-1 | MKCR3249 | 99% | 1,003.4 | µg/mL | +/- 36.5075 |
| 19 | 2-Nitrophenol | 88-75-5 | RP230710 | 99% | 1,002.5 | µg/mL | +/- 36.4757 |
| 20 | 2,4-Dimethylphenol | 105-67-9 | XW5GK | 99% | 1,006.5 | µg/mL | +/- 36.6212 |
| 21 | Bis(2-chloroethoxy)methane | 111-91-1 | 15705100 | 99% | 1,006.6 | µg/mL | +/- 36.6257 |
| 22 | 2,4-Dichlorophenol | 120-83-2 | BCKK6969 | 99% | 1,001.5 | µg/mL | +/- 36.4393 |
| 23 | 1,2,4-Trichlorobenzene | 120-82-1 | SHBP5900 | 99% | 1,006.4 | µg/mL | +/- 36.6166 |
| 24 | Naphthalene | 91-20-3 | STBL1057 | 99% | 1,002.1 | µg/mL | +/- 36.4620 |
| 25 | 4-Chloroaniline | 106-47-8 | BCCJ3217 | 99% | 1,004.4 | µg/mL | +/- 36.5439 |
| 26 | Hexachlorobutadiene | 87-68-3 | X05J | 98% | 1,002.5 | µg/mL | +/- 36.4771 |
| 27 | 4-Chloro-3-methylphenol | 59-50-7 | BCCD4461 | 99% | 1,004.5 | µg/mL | +/- 36.5484 |
| 28 | 2-Methylnaphthalene | 91-57-6 | STBL3028 | 99% | 1,000.0 | µg/mL | +/- 36.3847 |
| 29 | 1-Methylnaphthalene | 90-12-0 | 5234.00-8 | 98% | 990.2 | µg/mL | +/- 36.0269 |
| 30 | Hexachlorocyclopentadiene | 77-47-4 | 099063I14L | 98% | 1,001.3 | µg/mL | +/- 36.4325 |
| 31 | 2,4,6-Trichlorophenol | 88-06-2 | STBK8870 | 99% | 1,006.4 | µg/mL | +/- 36.6166 |
| 32 | 2,4,5-Trichlorophenol | 95-95-4 | 3YFRE | 97% | 1,004.6 | µg/mL | +/- 36.5505 |
| 33 | 2-Chloronaphthalene | 91-58-7 | RPN7O | 99% | 1,004.3 | µg/mL | +/- 36.5393 |
| 34 | 2-Nitroaniline | 88-74-4 | RP240715RSR | 99% | 1,004.4 | µg/mL | +/- 36.5439 |
| 35 | 1,4-Dinitrobenzene | 100-25-4 | RP240703RSR | 99% | 1,002.8 | µg/mL | +/- 36.4847 |
| 36 | Acenaphthylene | 208-96-8 | RP241029RSR | 98% | 1,000.0 | µg/mL | +/- 36.3835 |
| 37 | 1,3-Dinitrobenzene | 99-65-0 | TRC3-1075941-2-1 | 99% | 1,006.3 | µg/mL | +/- 36.6121 |
| 38 | Dimethylphthalate | 131-11-3 | 358221L17K | 99% | 1,008.9 | µg/mL | +/- 36.7076 |
| 39 | 2,6-Dinitrotoluene | 606-20-2 | BCCG1833 | 99% | 1,006.6 | µg/mL | +/- 36.6257 |
| 40 | 1,2-Dinitrobenzene | 528-29-0 | RP240701RSR | 99% | 1,002.5 | µg/mL | +/- 36.4757 |
| 41 | Acenaphthene | 83-32-9 | MKCR7169 | 99% | 1,000.0 | µg/mL | +/- 36.3847 |
| 42 | 3-Nitroaniline | 99-09-2 | RP240708RSR | 99% | 1,004.6 | µg/mL | +/- 36.5530 |
| 43 | 2,4-Dinitrophenol | 51-28-5 | D240927RSR | ----% | 1,005.6 | µg/mL | +/- 36.5894 |
| 44 | Dibenzofuran | 132-64-9 | MKCN1772 | 99% | 1,003.5 | µg/mL | +/- 36.5120 |
| 45 | 2,4-Dinitrotoluene | 121-14-2 | 102869V26E | 99% | 1,008.3 | µg/mL | +/- 36.6849 |
| 46 | 4-Nitrophenol | 100-02-7 | 20241029-2-AN | 99% | 1,004.8 | µg/mL | +/- 36.5575 |
| 47 | 2,3,4,6-Tetrachlorophenol | 58-90-2 | PR-34476 | 99% | 1,005.8 | µg/mL | +/- 36.5939 |
| 48 | 2,3,5,6-Tetrachlorophenol | 935-95-5 | RP231219RSR | 99% | 1,006.4 | µg/mL | +/- 36.6166 |
| 49 | Fluorene | 86-73-7 | 10246250 | 98% | 1,000.7 | µg/mL | +/- 36.4102 |
| 50 | 4-Chlorophenyl phenyl ether | 7005-72-3 | MKCT7248 | 99% | 1,004.9 | µg/mL | +/- 36.5621 |
| 51 | Diethylphthalate | 84-66-2 | BCCJ6241 | 99% | 1,003.9 | µg/mL | +/- 36.5257 |
| 52 | 4-Nitroaniline | 100-01-6 | RP230111 | 99% | 1,006.6 | µg/mL | +/- 36.6257 |
| 53 | 4,6-Dinitro-2-methylphenol (Dinitro-o-cresol) | 534-52-1 | S241008RSR | 99% | 1,001.3 | µg/mL | +/- 36.4302 |

| | | | | | | | |
|----|----------------------------|----------|--------------|-----|---------|-------|-------------|
| 54 | Diphenylamine | 122-39-4 | MKCT1512 | 99% | 1,003.0 | µg/mL | +/- 36.4938 |
| 55 | Azobenzene | 103-33-3 | BCKK0887 | 99% | 1,002.4 | µg/mL | +/- 36.4711 |
| 56 | 4-Bromophenyl phenyl ether | 101-55-3 | STBH6361 | 99% | 1,008.8 | µg/mL | +/- 36.7031 |
| 57 | Hexachlorobenzene | 118-74-1 | 15458400 | 99% | 1,005.1 | µg/mL | +/- 36.5712 |
| 58 | Pentachlorophenol | 87-86-5 | RP240517RSR | 99% | 1,005.9 | µg/mL | +/- 36.5984 |
| 59 | Phenanthrene | 85-01-8 | MKCT3391 | 99% | 1,004.9 | µg/mL | +/- 36.5621 |
| 60 | Anthracene | 120-12-7 | 101492T18R | 99% | 1,005.1 | µg/mL | +/- 36.5712 |
| 61 | Carbazole | 86-74-8 | 15276700 | 99% | 1,005.4 | µg/mL | +/- 36.5803 |
| 62 | Di-n-butylphthalate | 84-74-2 | MKCN4337 | 99% | 1,006.3 | µg/mL | +/- 36.6121 |
| 63 | Fluoranthene | 206-44-0 | MKCQ4728 | 99% | 1,003.5 | µg/mL | +/- 36.5120 |
| 64 | Pyrene | 129-00-0 | BCKK2592 | 99% | 1,002.0 | µg/mL | +/- 36.4575 |
| 65 | Benzyl butyl phthalate | 85-68-7 | X12I018 | 99% | 1,007.5 | µg/mL | +/- 36.6576 |
| 66 | Bis(2-ethylhexyl)adipate | 103-23-1 | MKCM1988 | 99% | 1,005.9 | µg/mL | +/- 36.5984 |
| 67 | Benz(a)anthracene | 56-55-3 | I70012022BAA | 99% | 1,005.5 | µg/mL | +/- 36.5848 |
| 68 | Chrysene | 218-01-9 | RP241007RSR | 99% | 1,005.3 | µg/mL | +/- 36.5757 |
| 69 | Bis(2-ethylhexyl)phthalate | 117-81-7 | MKCS8065 | 99% | 1,007.5 | µg/mL | +/- 36.6576 |
| 70 | Di-n-octyl phthalate | 117-84-0 | 15566400 | 99% | 1,002.3 | µg/mL | +/- 36.4666 |
| 71 | Benzo(b)fluoranthene | 205-99-2 | 052013B | 99% | 1,004.1 | µg/mL | +/- 36.5348 |
| 72 | Benzo(k)fluoranthene | 207-08-9 | 012022K | 99% | 1,002.8 | µg/mL | +/- 36.4847 |
| 73 | Benzo(a)pyrene | 50-32-8 | NQLXA | 98% | 1,006.2 | µg/mL | +/- 36.6108 |
| 74 | Indeno(1,2,3-cd)pyrene | 193-39-5 | 12-JKL-118-9 | 97% | 1,001.8 | µg/mL | +/- 36.4490 |
| 75 | Dibenz(a,h)anthracene | 53-70-3 | 2-ASA-59-1 | 99% | 1,003.3 | µg/mL | +/- 36.5029 |
| 76 | Benzo(g,h,i)perylene | 191-24-2 | RP241014RSR | 98% | 1,003.8 | µg/mL | +/- 36.5217 |

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

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

Tech Tips:

N-Nitrosodiphenylamine (86-30-6) is prone to breakdown in the injection port and will be converted to Diphenylamine (122-39-4). When comparing the response of Diphenylamine to mixtures manufactured using N-Nitrosodiphenylamine, a difference in response will be observed. The ratio of the MW can be used to calculate the theoretical concentration of the N-Nitrosodiphenylamine.



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-010074-07 | 525551 | -18°C +/- 4°C | Methylene Chloride | 9/3/2029 | 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 | 97.9 | 74.421.2P | 994.7 ± 30.56 |

This RM is intended for use as a calibration standard or a quality control standard for chromatography equipment such as GC, GC/MS, HPLC, and HPLC/MS. It may also be used for various USEPA, NIOSH and ASTM methods.

Recommended storage container for ampuled products after opening is a 12 mm x 32 mm amber vial with screw cap Teflon lined silicon septum. The modeled % change per day can be calculated using the following:

$$\% \text{ Change} = 116192x^{-2.578} + 40.383e^{-0.03y}$$

where x = boiling point of the most volatile analyte in the mix (in degrees K)

y = boiling point of the solvent (in degrees K)

This model assumes the container is stored at -10 °C and is unopened during storage. The user should determine what the acceptable error for their process is and calculate the maximum number of days the opened ampule should be stored. The minimum sample size recommended for use is 1µL.

513078 } AC
↓
513087 } 3/10/25

Manufactured by

Raevyn Steele

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.