

## Prep Standard - Chemical Standard Summary

**Order ID :** Q3235

**Test :** SVOC-SIMGroup1

**Prepbatch ID :** PB169939,

**Sequence ID/Qc Batch ID:** BN100625,BN100725,

**Standard ID :**

EP2609,EP2610,EP2646,SP6830,SP6841,SP6842,SP6843,SP6844,SP6845,SP6846,SP6847,SP6848,SP6853,SP6854,SP6870,SP6875,SP6876,

**Chemical ID :**

1ul/100ul

sample,E3657,E3875,E3942,E3943,E3965,E3972,E3973,M6157,S10105,S11073,S11496,S11652,S11828,S12115,S12197,S12220,S12273,S12499,S12552,S12560,S12577,S12670,S12986,S13058,S13097,S13120,S13245,W3112,

## 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>            |
|------------------------------------------------------------------------------------------|----------------------------|------------------------|------------------|------------------------|--------------------|----------------------------------|------------------|---------------------------------|
| 1874                                                                                     | 10 N SODIUM HYDROXIDE SOLN | <a href="#">EP2609</a> | 05/07/2025       | 11/07/2025             | RUPESHKUMAR SHAH   | Extraction_SC ALE_2<br>(EX-SC-2) | None             | Riteshkumar Patel<br>05/07/2025 |
| <b>FROM</b> 1000.00000ml of W3112 + 400.00000gram of E3657 = Final Quantity: 1000.000 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>            |
|-----------------------------------------------------------------------------------------|----------------|------------------------|------------------|------------------------|--------------------|----------------------------------|------------------|---------------------------------|
| 314                                                                                     | 1.1 H2SO4 SOLN | <a href="#">EP2610</a> | 05/07/2025       | 11/07/2025             | RUPESHKUMAR SHAH   | Extraction_SC ALE_2<br>(EX-SC-2) | None             | Riteshkumar Patel<br>05/07/2025 |
| <b>FROM</b> 1000.00000ml of M6157 + 1000.00000ml of W3112 = 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>                |
|----------------------------------------------------------------------------|----------------------|------------------------|------------------|------------------------|--------------------|-------------------------------------|------------------|-------------------------------------|
| 3923                                                                       | Baked Sodium Sulfate | <a href="#">EP2646</a> | 09/26/2025       | 01/28/2026             | Evelyn Huang       | Extraction_SC<br>ALE_2<br>(EX-SC-2) | None             | Riteshkumar Patel<br><br>09/26/2025 |
| <b><u>FROM</u></b> 4000.00000gram of E3875 = 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>       |
|------------------|---------------------------------------------------------------------|------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------------|
| 3493             | Internal Standard 0.4 PPM                                           | <a href="#">SP6830</a> | 06/17/2025       | 12/13/2025             | Jagrut Upadhyay    | None           | None             | Rahul Chavli<br>06/19/2025 |
| <u>FROM</u>      | 0.10000ml of S12670 + 4.90000ml of E3942 = Final Quantity: 5.000 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>       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------------|
| 3339                                                                                                                                                                                                   | 8270 sim calibration stock 10ppm (CPI) | <a href="#">SP6841</a> | 06/25/2025       | 10/28/2025             | Jagrut Upadhyay    | None           | None             | Rahul Chavli<br>06/25/2025 |
| <b><u>FROM</u></b> 0.03350ml of S10105 + 0.05000ml of S11496 + 0.12500ml of S11828 + 0.12500ml of S12115 + 0.25000ml of S12273 + 0.25000ml of S13058 + 24.16650ml of E3943 = Final Quantity: 25.000 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>           |
|--------------------------------------------------------------------------------------------------------------|-------------------------------------------|------------------------|------------------|------------------------|--------------------|----------------|------------------|--------------------------------|
| 3361                                                                                                         | 8270-SIM MDL-5PPM<br>CALIBRATION SOLUTION | <a href="#">SP6842</a> | 06/25/2025       | 10/28/2025             | Jagrut<br>Upadhyay | None           | None             | Rahul Chavli<br><br>06/25/2025 |
| <b><u>FROM</u></b> 0.50000ml of E3943 + 0.01000ml of SP6830 + 0.50000ml of SP6841 = 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> |
|------------------|------------------------------------------|------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 3341             | 8270-SIM MDL-3.2PPM CALIBRATION SOLUTION | <a href="#">SP6843</a> | 06/25/2025       | 10/28/2025             | Jagrut Upadhyay    | None           | None             | Rahul Chavli         |
|                  |                                          |                        |                  |                        |                    |                |                  | 06/25/2025           |

**FROM** 0.68000ml of E3943 + 0.01000ml of SP6830 + 0.32000ml of SP6841 = 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> |
|------------------|------------------------------------------|------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 3344             | 8270-SIM MDL-1.6PPM CALIBRATION SOLUTION | <a href="#">SP6844</a> | 06/25/2025       | 10/28/2025             | Jagrut Upadhyay    | None           | None             | Rahul Chavli         |
|                  |                                          |                        |                  |                        |                    |                |                  | 06/25/2025           |

**FROM** 0.84000ml of E3943 + 0.01000ml of SP6830 + 0.16000ml of SP6841 = 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> |
|------------------|------------------------------------------|------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 3342             | 8270-SIM MDL-0.8PPM CALIBRATION SOLUTION | <a href="#">SP6845</a> | 06/25/2025       | 10/28/2025             | Jagrut Upadhyay    | None           | None             | Rahul Chavli         |
|                  |                                          |                        |                  |                        |                    |                |                  | 06/25/2025           |

**FROM** 0.92000ml of E3943 + 0.01000ml of SP6830 + 0.08000ml of SP6841 = 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> |
|------------------|------------------------------------------|------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 3343             | 8270-SIM MDL-0.4PPM CALIBRATION SOLUTION | <a href="#">SP6846</a> | 06/25/2025       | 10/28/2025             | Jagrut Upadhyay    | None           | None             | Rahul Chavli         |
|                  |                                          |                        |                  |                        |                    |                |                  | 06/25/2025           |

**FROM** 0.96000ml of E3943 + 0.01000ml of SP6830 + 0.04000ml of SP6841 = 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> |
|------------------|------------------------------------------|------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 3345             | 8270-SIM MDL-0.2PPM CALIBRATION SOLUTION | <a href="#">SP6847</a> | 06/25/2025       | 10/28/2025             | Jagrut Upadhyay    | None           | None             | Rahul Chavli         |
|                  |                                          |                        |                  |                        |                    |                |                  | 06/25/2025           |

**FROM** 0.50000ml of E3943 + 0.01000ml of SP6830 + 0.50000ml of SP6846 = 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> |
|------------------|------------------------------------------|------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 3346             | 8270-SIM MDL-0.1PPM CALIBRATION SOLUTION | <a href="#">SP6848</a> | 06/25/2025       | 10/28/2025             | Jagrut Upadhyay    | None           | None             | Rahul Chavli         |
|                  |                                          |                        |                  |                        |                    |                |                  | 06/25/2025           |

**FROM** 0.75000ml of E3943 + 0.01000ml of SP6830 + 0.25000ml of SP6846 = 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> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 3355                                                                                                                                                                                                                          | 8270-SIM MDL-3.2PPM<br>CALIBRATION STOCK SOL- 2ND | <a href="#">SP6853</a> | 07/02/2025       | 09/30/2025             | Jagrut Upadhyay    | None           | None             | Rahul Chavli         |
| <b>SOURCE</b><br>0.00630ml of S12197 + 0.01280ml of S12220 + 0.03200ml of S11073 + 0.03200ml of S11828 + 0.06400ml of S12499 +<br>0.06400ml of S12552 + 0.06400ml of S12986 + 19.72490ml of E3943 = Final Quantity: 20.000 ml |                                                   |                        |                  |                        |                    |                |                  |                      |
| <b>FROM</b><br>0.00630ml of S12197 + 0.01280ml of S12220 + 0.03200ml of S11073 + 0.03200ml of S11828 + 0.06400ml of S12499 +<br>0.06400ml of S12552 + 0.06400ml of S12986 + 19.72490ml of E3943 = Final Quantity: 20.000 ml   |                                                   |                        |                  |                        |                    |                |                  |                      |

| <u>Recipe ID</u>                                                                                                       | <u>NAME</u>                                    | <u>NO.</u>             | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u> | <u>Supervised By</u>           |
|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|------------------------|------------------|------------------------|--------------------|----------------|------------------|--------------------------------|
| 3356                                                                                                                   | 8270-SIM MDL-0.4PPM<br>CALIBRATION SOL ICV-2ND | <a href="#">SP6854</a> | 07/02/2025       | 09/30/2025             | Jagrut Upadhyay    | None           | None             | Rahul Chavli<br><br>07/16/2025 |
| <b>SOURCE</b><br><b>FROM</b> 0.87500ml of E3943 + 0.01000ml of SP6830 + 0.12500ml of SP6853 = 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> |
|------------------|----------------------------|------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 3491             | 8270-SIM-Surrogate 0.4 PPM | <a href="#">SP6870</a> | 09/16/2025       | 12/09/2025             | Jagrut Upadhyay    | None           | None             | Rahul Chavli         |
|                  |                            |                        |                  |                        |                    |                |                  | 09/16/2025           |

**FROM** 0.00400ml of S12197 + 0.00800ml of S12220 + 0.02000ml of S11828 + 99.96800ml of E3965 = Final Quantity: 100.000 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 DFTTP 8270E | <a href="#">SP6875</a> | 09/30/2025       | 03/30/2026             | Rahul Chavli       | None           | None             | Jagrut Upadhyay      |
|                  |                      |                        |                  |                        |                    |                |                  | 09/30/2025           |

**FROM** 1.00000ml of S12577 + 19.00000ml of E3973 = Final Quantity: 20.000 ml



| <u>Recipe ID</u> | <u>NAME</u>                                                                                                                                                   | <u>NO.</u>             | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u> | <u>Supervised By</u>       |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------------|
| 3492             | 8270-SIM-Spike 0.4 PPM                                                                                                                                        | <a href="#">SP6876</a> | 09/30/2025       | 11/30/2025             | Jagrut Upadhyay    | None           | None             | Rahul Chavli<br>09/30/2025 |
| <u>FROM</u>      | 0.00080ml of S11652 + 0.01000ml of S13120 + 0.02000ml of S12560 + 0.02000ml of S13097 + 0.02000ml of S13245 + 49.92920ml of E3972 = Final Quantity: 50.000 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. | PC19510-5 / Sodium Hydroxide Pellets 2.5 Kg, Pk of 4 | 23B1556310 | 12/31/2025      | 12/04/2023 / Rajesh     | 12/01/2023 / Rajesh         | E3657          |

| 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 | 417203 | 01/28/2026      | 07/28/2025 / RUPESH     | 01/29/2025 / Rajesh         | E3875          |

| 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 | 12/13/2025      | 06/13/2025 / Rajesh     | 02/28/2025 / Rajesh         | E3942          |

| 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 | 12/13/2025      | 06/13/2025 / Rajesh     | 02/28/2025 / Rajesh         | E3943          |

| 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 | 05/24/2027      | 08/22/2025 / RUPESH     | 08/20/2025 / RUPESH         | E3965          |

| 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 | 05/24/2027      | 09/16/2025 / Evelyn     | 09/04/2025 / Riteshkumar    | E3972          |

## CHEMICAL RECEIPT LOG BOOK

| Supplier         | ItemCode / ItemName                                         | Lot #      | Expiration Date | Date Opened / Opened By  | Received Date / Received By | Chemtech Lot # |
|------------------|-------------------------------------------------------------|------------|-----------------|--------------------------|-----------------------------|----------------|
| Seidler Chemical | BA-9644-A4 / Methylene Chloride,U-Resi, Cycle-Tainer (215L) | 25C1262005 | 04/16/2026      | 09/15/2025 / Riteshkumar | 09/15/2025 / Riteshkumar    | E3973          |

| Supplier         | ItemCode / ItemName                                     | Lot #      | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|------------------|---------------------------------------------------------|------------|-----------------|-------------------------|-----------------------------|----------------|
| Seidler Chemical | BA-9673-33 / Sulfuric Acid, Instra-Analyzed (cs/6c2.5L) | 24i1262013 | 11/07/2025      | 05/07/2025 / RUPESH     | 02/18/2025 / Mohan          | M6157          |

| 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 | 12/19/2025      | 06/19/2025 / Jagrut     | 12/09/2021 / Christian      | S10105         |

| 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 | A0187043 | 11/16/2025      | 05/16/2025 / Jagrut     | 02/06/2023 / Christian      | S11073         |

| 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 | 01/30/2026      | 07/30/2025 / Rahul      | 11/09/2023 / Yogesh         | S11652         |

## CHEMICAL RECEIPT LOG BOOK

| Supplier | ItemCode / ItemName                                         | Lot #    | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|----------|-------------------------------------------------------------|----------|-----------------|-------------------------|-----------------------------|----------------|
| Restek   | 33913 / SOM01.0 SIM Analysis Standard (Surrogate), 2000 PPM | A0201976 | 12/09/2025      | 06/09/2025 / Jagrut     | 11/21/2023 / rahul          | S11828         |

| 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 | 01/02/2026      | 07/02/2025 / Jagrut     | 03/15/2024 / Rahul          | S12197         |

| Supplier | ItemCode / ItemName                                                             | Lot #    | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|----------|---------------------------------------------------------------------------------|----------|-----------------|-------------------------|-----------------------------|----------------|
| Restek   | 31086 / Base Neutral Surrogate 5000ug/ml, CH <sub>2</sub> Cl <sub>2</sub> , 5ml | A0206381 | 01/02/2026      | 07/02/2025 / Jagrut     | 03/15/2024 / Rahul          | S12220         |

| 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 | 12/25/2025      | 06/25/2025 / Jagrut     | 05/24/2024 / Rahul          | S12273         |

| 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 | 01/01/2026      | 07/01/2025 / Rahul      | 07/23/2024 / RAHUL          | S12499         |

[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 | 01/01/2026      | 07/01/2025 / Rahul      | 07/23/2024 / RAHUL          | S12552         |

[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 | 03/22/2026      | 09/22/2025 / Jagrut     | 07/23/2024 / RAHUL          | S12560         |

[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 <sub>2</sub> Cl <sub>2</sub> , 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 <sub>2</sub> Cl <sub>2</sub> , 1mL | A0212266 | 12/16/2025      | 06/16/2025 / anahy      | 09/20/2024 / anahy          | S12670         |

| Supplier | ItemCode / ItemName                                                                                                                    | Lot #    | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|----------|----------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------|-------------------------|-----------------------------|----------------|
| Restek   | 31850 / 8270 SV Mix, 8270 Mega Mix 1mL, 1000ug/mL, CH <sub>2</sub> Cl <sub>2</sub> [New Solvent 100% CH <sub>2</sub> Cl <sub>2</sub> ] | A0219438 | 09/30/2025      | 06/04/2025 / Jagrut     | 12/11/2024 / anahy          | S12986         |

| 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) | 531243 | 12/25/2025      | 06/25/2025 / Jagrut     | 01/16/2025 / anahy          | S13058         |

## CHEMICAL RECEIPT LOG BOOK

| Supplier | ItemCode / ItemName                                                                                                                    | Lot #    | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|----------|----------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------|-------------------------|-----------------------------|----------------|
| Restek   | 31850 / 8270 SV Mix, 8270 Mega Mix 1mL, 1000ug/mL, CH <sub>2</sub> Cl <sub>2</sub> [New Solvent 100% CH <sub>2</sub> Cl <sub>2</sub> ] | A0221014 | 11/30/2025      | 09/03/2025 / Jagrut     | 05/20/2025 / Rahul          | S13097         |

| 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 | A0218894 | 02/25/2026      | 08/25/2025 / Jagrut     | 05/20/2025 / Rahul          | S13120         |

| 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]<br>[CS 4978-1] | A0228451 | 03/23/2026      | 09/22/2025 / Jagrut     | 08/06/2025 / Rahul          | S13245         |

| Supplier         | ItemCode / ItemName | Lot #               | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|------------------|---------------------|---------------------|-----------------|-------------------------|-----------------------------|----------------|
| Seidler Chemical | DIW / DI Water      | Daily Lab-Certified | 07/03/2029      | 07/03/2024 / Iwona      | 07/03/2024 / Iwona          | W3112          |



5580 Skylane Blvd  
Santa Rosa, CA 95403

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

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

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

## Certificate of Analysis

Rev 0

Page 1 of 1

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

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

Received on

02/25/21

by  
CG

S9236  
to

S9240

\*Not a certified value

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

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





# CERTIFIED REFERENCE MATERIAL

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

www.restek.com

## Certificate of Analysis



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

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

Received on  
02/08/23

b1

CG

S 11071

to

S 11075

Catalog No. : 31853

Lot No.: A0187043

Description : 1,4-dioxane

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

Container Size : 2 mL

Pkg Amt: > 1 mL

Expiration Date : July 31, 2027

Storage: 0°C or colder

Ship: Ambient

### CERTIFIED VALUES

| Elution Order | Compound                                                      | Grav. Conc. (weight/volume) | Expanded Uncertainty (95% C.L.; K=2)                                                        |
|---------------|---------------------------------------------------------------|-----------------------------|---------------------------------------------------------------------------------------------|
| 1             | 1,4-Dioxane<br>CAS # 123-91-1<br>Purity 99%<br>(Lot SHBN5929) | 2,019.0 µg/mL               | +/- 11.8486 µg/mL Gravimetric<br>+/- 43.2570 µg/mL Unstressed<br>+/- 44.5129 µg/mL Stressed |

Solvent: Methylene chloride

CAS # 75-09-2

Purity 99%

**Column:**

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

**Carrier Gas:**

hydrogen-constant pressure 11.0 psi.

**Temp. Program:**

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

**Inj. Temp:**

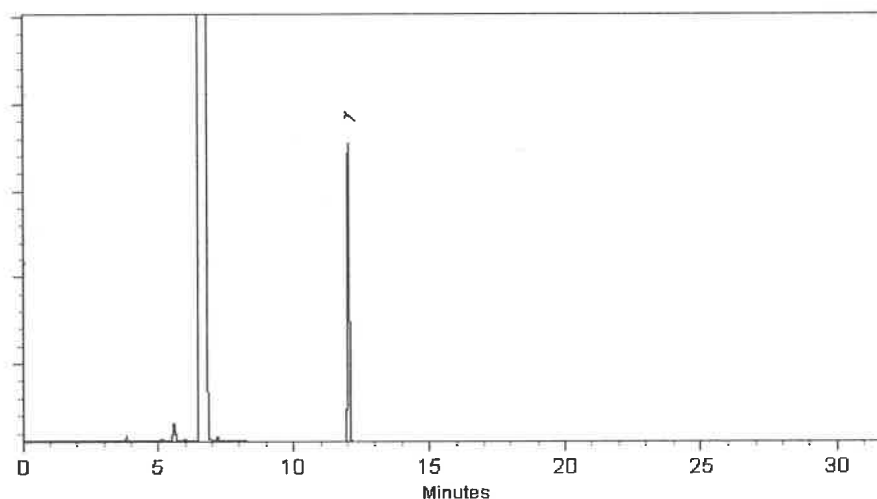
200°C

**Det. Temp:**

250°C

**Det. Type:**

FID



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

Brittany Federinko - Operations Tech I

Date Mixed: 07-Jul-2022

Balance: 1128360905

Marlina Cowan - Operations Tech II ARM QC

Date Passed: 12-Jul-2022

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

Acetone  
BAKER RESI-ANALYZED® Reagent  
For Organic Residue Analysis

 **avantors™**



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 <sub>3</sub> ) <sub>2</sub> 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 <sub>2</sub> 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

Country of Origin: United States

Packaging Site: Phillipsburg Mfg Ctr & DC

*Rec on 8/20/25*

**E3965**

*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



# Certificate of Analysis

## Sodium Hydroxide (Pellets)

**Material:** 0583  
**Grade:** ACS GRADE  
**Batch Number:** 23B1556310

Chemical Formula: NaOH  
Molecular Weight: 40  
CAS #: 1310-73-2  
Appearance:

Manufacture Date: 12/14/2022  
Expiration Date: 12/31/2025

Storage: Room Temperature

Pellets

| TEST               | SPECIFICATION          | ANALYSIS            | DISPOSITION |
|--------------------|------------------------|---------------------|-------------|
| Calcium            | $\leq 0.005 \%$        | $< 0.005 \%$        | PASS        |
| Chloride           | $\leq 0.005 \%$        | 0.002 %             | PASS        |
| Heavy Metals       | $\leq 0.002 \%$        | $< 0.002 \%$        | PASS        |
| Iron               | $\leq 0.001 \%$        | $< 0.001 \%$        | PASS        |
| Magnesium          | $\leq 0.002 \%$        | $< 0.002 \%$        | PASS        |
| Mercury            | $\leq 0.1 \text{ ppm}$ | $< 0.1 \text{ ppm}$ | PASS        |
| Nickel             | $\leq 0.001 \%$        | $< 0.001 \%$        | PASS        |
| Nitrogen Compounds | $\leq 0.001 \%$        | $< 0.001 \%$        | PASS        |
| Phosphate          | $\leq 0.001 \%$        | $< 0.001 \%$        | PASS        |
| Potassium          | $\leq 0.02 \%$         | $< 0.02 \%$         | PASS        |
| Purity             | $\geq 97.0 \%$         | 99.2 %              | PASS        |
| Sodium Carbonate   | $\leq 1.0 \%$          | 0.5 %               | PASS        |
| Sulfate            | $\leq 0.003 \%$        | $< 0.003 \%$        | PASS        |

Internal ID #: 710

### Signature

We certify that this batch conforms to the specifications listed.

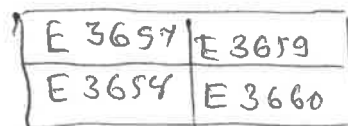
This document has been electronically produced and is valid without a signature.

Leona Edwardson, Quality Control Sr. Manager - Solon  
VWR Chemicals, LLC.  
28600 Fountain Parkway, Solon OH 44139 USA

### Additional Information

Analysis may have been rounded to significant digits in specification limits.

Product meets analytical specifications of the grades listed.





**PRODUCTOS  
QUÍMICOS  
MONTERREY, S.A. DE C.V.**

MIRADOR 201, COL. MIRADOR  
MONTERREY, N.L. MÉXICO  
CP 64070  
TEL +52 81 13 52 67 67  
www.pqm.com.mx

# CERTIFICATE OF ANALYSIS

|                       |                                   |               |                                 |
|-----------------------|-----------------------------------|---------------|---------------------------------|
| PRODUCT :             | SODIUM SULFATE CRYSTALS ANHYDROUS |               |                                 |
| QUALITY :             | ACS (CODE RMB3375)                | FORMULA :     | Na <sub>2</sub> SO <sub>4</sub> |
| SPECIFICATION NUMBER: | 6399                              | RELEASE DATE: | MAY/23/2024                     |
| LOT NUMBER :          | 417203                            |               |                                 |

| TEST                                     | SPECIFICATIONS | LOT VALUES  |
|------------------------------------------|----------------|-------------|
| Assay (Na <sub>2</sub> SO <sub>4</sub> ) | Min. 99.0%     | 99.8 %      |
| pH of a 5% solution at 25°C              | 5.2 - 9.2      | 6.2         |
| Insoluble matter                         | Max. 0.01%     | 0.001 %     |
| Loss on ignition                         | Max. 0.5%      | 0.1 %       |
| Chloride (Cl)                            | Max. 0.001%    | <0.001 %    |
| Nitrogen compounds (as N)                | Max. 5 ppm     | <5 ppm      |
| Phosphate (PO <sub>4</sub> )             | Max. 0.001%    | <0.001 %    |
| Heavy metals (as Pb)                     | Max. 5 ppm     | <5 ppm      |
| Iron (Fe)                                | Max. 0.001%    | <0.001 %    |
| Calcium (Ca)                             | Max. 0.01%     | 0.001 %     |
| Magnesium (Mg)                           | Max. 0.005%    | 0.001 %     |
| Potassium (K)                            | Max. 0.008%    | 0.001 %     |
| 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%        | 0.2 %       |
| Retained on US Standard No. 60 sieve     | Min. 94%       | 96.2 %      |
| Through US Standard No. 60 sieve         | Max. 5%        | 3.5 %       |
| 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.

RE-02-01, Ed. 3

E 3875

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)                       | $\leq 5$               | <1      |
| ECD Sensitive Impurities (as HeptachlorEpoxide) Single Peak (pg/mL)                        | $\leq 10$              | 2       |
| Assay ( $\text{CH}_2\text{Cl}_2$ ) (by GC, exclusive of preservative, corrected for water) | $\geq 99.8 \%$         | 99.9 %  |
| Color (APHA)                                                                               | $\leq 10$              | 5       |
| Residue after Evaporation                                                                  | $\leq 1.0 \text{ ppm}$ | 0.3 ppm |
| Titration Acid ( $\mu\text{eq/g}$ )                                                        | $\leq 0.3$             | <0.1    |
| Chloride (Cl)                                                                              | $\leq 10 \text{ ppm}$  | <5 ppm  |
| Water (by KF, coulometric)                                                                 | $\leq 0.02 \%$         | <0.01 % |

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

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

E3942

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)

avantor™



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)                       | $\leq 5$       | <1      |
| ECD Sensitive Impurities (as HeptachlorEpoxide) Single Peak (pg/mL)                        | $\leq 10$      | 2       |
| Assay ( $\text{CH}_2\text{Cl}_2$ ) (by GC, exclusive of preservative, corrected for water) | $\geq 99.8\%$  | 99.9%   |
| Color (APHA)                                                                               | $\leq 10$      | 5       |
| Residue after Evaporation                                                                  | $\leq 1.0$ ppm | 0.3 ppm |
| Titration Acid ( $\mu\text{eq/g}$ )                                                        | $\leq 0.3$     | <0.1    |
| Chloride (Cl)                                                                              | $\leq 10$ ppm  | <5 ppm  |
| Water (by KF, coulometric)                                                                 | $\leq 0.02\%$  | <0.01%  |

For Laboratory, Research, or Manufacturing Use

MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: United States

Packaging Site: Phillipsburg Mfg Ctr & DC

E3942

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

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 <sub>3</sub> ) <sub>2</sub> 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 <sub>2</sub> 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

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

E3972

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



Sulfuric Acid  
BAKER INSTRA-ANALYZED® Reagent  
For Trace Metal Analysis  
Low Selenium

avantor™



MG157  
MS

Material No.: 9673-33

Batch No.: 24I1262013

Manufactured Date: 2024-08-07

Retest Date: 2029-08-06

Revision No.: 0

## Certificate of Analysis

| Test                                                        | Specification | Result      |
|-------------------------------------------------------------|---------------|-------------|
| ACS – Assay (H <sub>2</sub> SO <sub>4</sub> )               | 95.0 – 98.0 % | 96.2 %      |
| Appearance                                                  | Passes Test   | Passes Test |
| ACS – Color (APHA)                                          | <= 10         | 5           |
| ACS – Residue after Ignition                                | <= 3 ppm      | <1 ppm      |
| ACS – Substances Reducing Permanganate(as SO <sub>2</sub> ) | <= 2 ppm      | <2 ppm      |
| Ammonium (NH <sub>4</sub> )                                 | <= 1 ppm      | <1 ppm      |
| Chloride (Cl)                                               | <= 0.1 ppm    | <0.1 ppm    |
| Nitrate (NO <sub>3</sub> )                                  | <= 0.2 ppm    | 0.1 ppm     |
| Phosphate (PO <sub>4</sub> )                                | <= 0.5 ppm    | <0.1 ppm    |
| Trace Impurities – Aluminum (Al)                            | <= 30.0 ppb   | <5.0 ppb    |
| Arsenic & Antimony (as As)                                  | <= 4.0 ppb    | <2.0 ppb    |
| Trace Impurities – Boron (B)                                | <= 10.0 ppb   | <5.0 ppb    |
| Trace Impurities – Cadmium (Cd)                             | <= 2.0 ppb    | <1.0 ppb    |
| Trace Impurities – Chromium (Cr)                            | <= 6.0 ppb    | <1.0 ppb    |
| Trace Impurities – Cobalt (Co)                              | <= 0.5 ppb    | <0.3 ppb    |
| Trace Impurities – Copper (Cu)                              | <= 1.0 ppb    | <1.0 ppb    |
| Trace Impurities – Gold (Au)                                | <= 10.0 ppb   | <5.0 ppb    |
| Heavy Metals (as Pb)                                        | <= 500.0 ppb  | <100.0 ppb  |
| Trace Impurities – Iron (Fe)                                | <= 50.0 ppb   | <1.0 ppb    |
| Trace Impurities – Lead (Pb)                                | <= 0.5 ppb    | <0.5 ppb    |
| Trace Impurities – Magnesium (Mg)                           | <= 7.0 ppb    | <1.0 ppb    |
| Trace Impurities – Manganese (Mn)                           | <= 1.0 ppb    | <1.0 ppb    |
| Trace Impurities – Mercury (Hg)                             | <= 0.5 ppb    | <0.1 ppb    |
| Trace Impurities – Nickel (Ni)                              | <= 2.0 ppb    | <0.3 ppb    |
| Trace Impurities – Potassium (K)                            | <= 500.0 ppb  | <10.0 ppb   |
| Trace Impurities – Selenium (Se)                            | <= 50.0 ppb   | 7.2 ppb     |
| Trace Impurities – Silicon (Si)                             | <= 100.0 ppb  | 12.8 ppb    |
| Trace Impurities – Silver (Ag)                              | <= 1.0 ppb    | <1.0 ppb    |

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

Avantor Performance Materials LLC

Sulfuric Acid

BAKER INSTRA-ANALYZED® Reagent

For Trace Metal Analysis

Low Selenium

 **avantors**™



Material No.: 9673-33

Batch No.: 2411262013

| Test                              | Specification    | Result      |
|-----------------------------------|------------------|-------------|
| Trace Impurities – Sodium (Na)    | $\leq 500.0$ ppb | $< 5.0$ ppb |
| Trace Impurities – Strontium (Sr) | $\leq 5.0$ ppb   | $< 1.0$ ppb |
| Trace Impurities – Tin (Sn)       | $\leq 5.0$ ppb   | 1.1 ppb     |
| Trace Impurities – Zinc (Zn)      | $\leq 5.0$ ppb   | $< 1.0$ ppb |

For Laboratory, Research, or Manufacturing Use

Country of Origin: United States

Packaging Site: Phillipsburg Mfg Ctr & DC



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



5580 Skyline Blvd  
Santa Rosa, CA 95403

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

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

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

## Certificate of Analysis

Page 1 of 1

| Catalog No.: Lot No.:              | 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 <sub>4</sub> |          | 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.





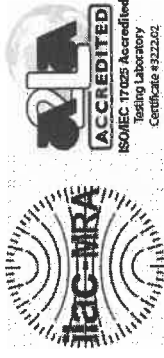
110 Benner Circle  
Bellefonte, PA 16823-8812  
Tel: 1-814-353-1300  
Fax: 1-814-353-1309

[www.restek.com](http://www.restek.com)

## CERTIFIED REFERENCE MATERIAL

# Certificate of Analysis

gravimetric



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

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

Catalog No.: 555872      Lot No.: 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.



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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. :** 33913 **Lot No.:** A0201976  
**Description :** SOM01.0 SIM Analysis Standard  
SOM01.0 SIM Analysis Standard 2000µg/mL, Methylene chloride, 1mL /ampul  
**Container Size :** 2 mL **Pkg Amt:** > 1 mL  
**Expiration Date :** August 31, 2029 **Storage:** 10°C or colder  
**Handling:** Sonication required. Mix is photosensitive. **Ship:** Ambient

S11828  
↓  
S11832 } RC/  
11/30/23

## CERTIFIED VALUES

| Elution Order | Compound                | CAS #      | Lot #    | Purity | Grav. Conc. (weight/volume) | Expanded Uncertainty * (95% C.L.; K=2) |
|---------------|-------------------------|------------|----------|--------|-----------------------------|----------------------------------------|
| 1             | 2-Methylnaphthalene-d10 | 7297-45-2  | EF-135   | 98%    | 2,015.9 µg/mL               | +/- 90.8098                            |
| 2             | Fluoranthene-d10        | 93951-69-0 | PR-32557 | 99%    | 2,020.0 µg/mL               | +/- 90.9963                            |

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

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

## Quality Confirmation Test

**Column:**

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

**Carrier Gas:**

hydrogen-constant pressure 10 psi.

**Temp. Program:**

75°C (hold 1 min.) to 330°C  
@ 20°C/min. (hold 10 min.)

**Inj. Temp:**

250°C

**Det. Temp:**

330°C

**Det. Type:**

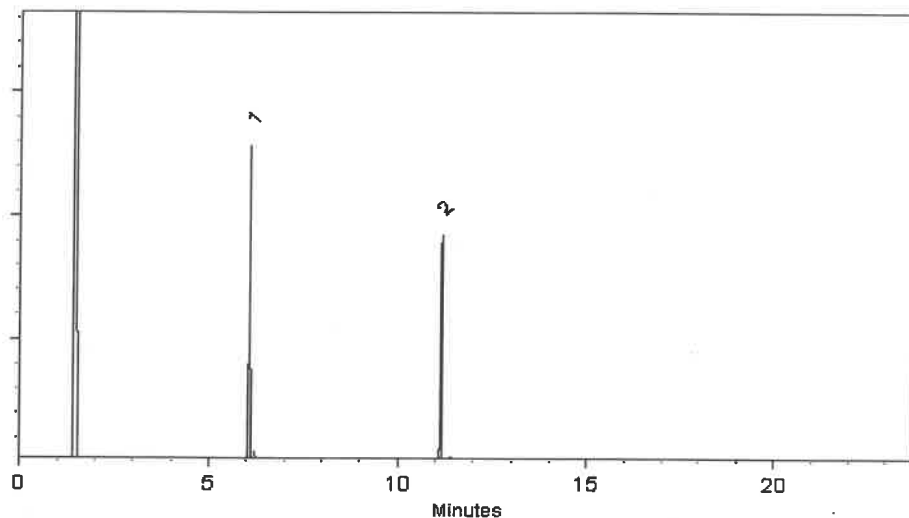
FID

**Split Vent:**

10 ml/min.

**Inj. Vol**

1µl

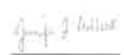


This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

  
Dakota Parson - Operations Technician I

Date Mixed: 13-Sep-2023

Balance Serial # B442140311

  
Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 28-Sep-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.



5580 Skylane Blvd  
Santa Rosa, CA 95403

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(707)545-7901 Fax

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

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

## Certificate of Analysis

Rev 0

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

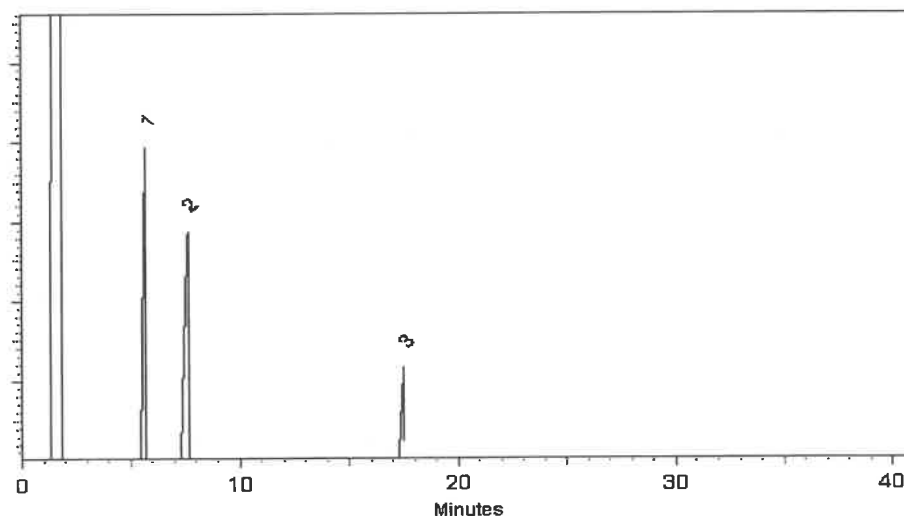
FID

**Split Vent:**

2 ml/min.

**Inj. Vol**

1µl



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



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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. :** 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:**

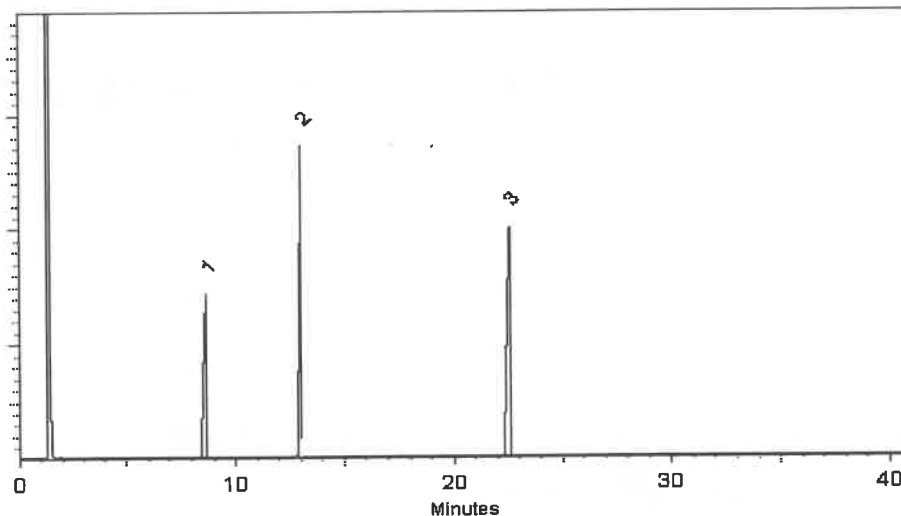
FID

**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



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Santa Rosa, CA 95403

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

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

## Certificate of Analysis

Rev 0

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

| Compound               | CAS No.  | Purity (%) | Compound Lot No. | Concentration, mg/L |
|------------------------|----------|------------|------------------|---------------------|
| 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

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



110 Benner Circle  
Bellefonte, PA 16823-8812  
Tel: 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                            |
| 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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### 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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## 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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## 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. :** 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 } RC  
↓  
S12579 } 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:**

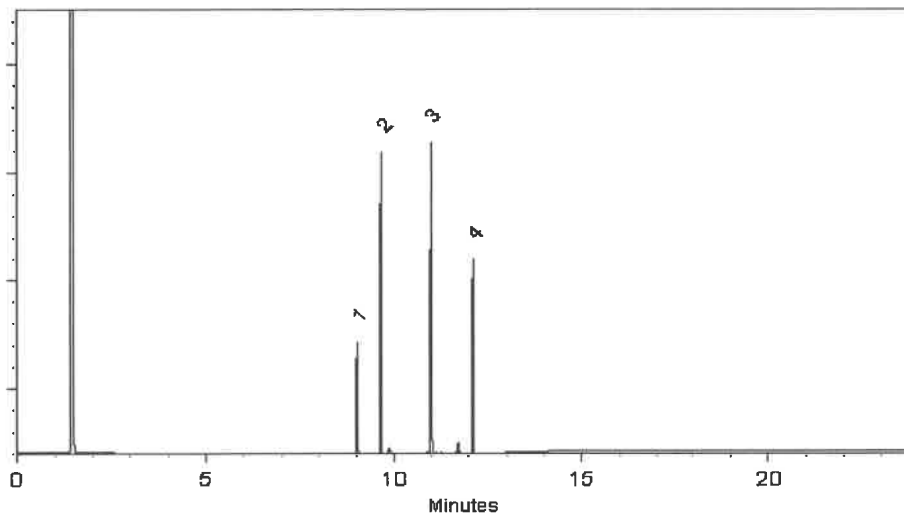
FID

**Split Vent:**

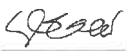
10 ml/min.

**Inj. Vol**

1µl

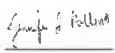


This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

  
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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## CERTIFIED REFERENCE MATERIAL

# Certificate of Analysis

chromatographic plus



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

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

**Catalog No. :** 31206 **Lot No.:** 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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## 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 Skyline Blvd  
Santa Rosa, CA 95403

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

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

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

## Certificate of Analysis

Rev 0

Page 1 of 1

|              |          |                            |                    |            |                                           |
|--------------|----------|----------------------------|--------------------|------------|-------------------------------------------|
| Catalog No.: | Lot No.: | Storage:                   | Solvent:           | Exp. Date: | Description:                              |
| Z-110816-01  | 531243   | $\leq -10^{\circ}\text{C}$ | Methylene Chloride | 1/2/2030   | Custom 8270 Mix, 4-79,<br>1000 mg/L, 1 mL |

| Compound    | CAS No.   | Purity (%) | Compound Lot No. | Concentration, mg/L |
|-------------|-----------|------------|------------------|---------------------|
| atrazine    | 1912-24-9 | 99.5       | 337.7.4P         | 997 $\pm$ 5.81      |
| benzidine   | 92-87-5   | 99.9       | 124.18.6.2P      | 993.8 $\pm$ 5.78    |
| caprolactam | 105-60-2  | 99.9       | 271.1.6P         | 999 $\pm$ 5.82      |

513057  
↓  
513061 } AC  
1/16/25

\*Not a certified value

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

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

Melissa Workoff  
Chemist

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





110 Benner Circle  
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.: A0221014

Description : 8270 MegaMix®

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

Container Size : 2 mL

Pkg Amt: > 1 mL

Expiration Date : November 30, 2025

Storage: 0°C or colder

Handling: Sonication required. Mix is photosensitive.

Ship: Ambient

513088 }  
↓  
513117 } 24  
5/20/25.

### CERTIFIED VALUES

| Elution Order | Compound                     | CAS #    | Lot #       | Purity | Grav. Conc. (weight/volume) | Expanded Uncertainty * (95% C.L.; K=2) |
|---------------|------------------------------|----------|-------------|--------|-----------------------------|----------------------------------------|
| 1             | Pyridine                     | 110-86-1 | SHBR4811    | 99%    | 1,005.2 µg/mL               | +/- 36.5730                            |
| 2             | N-Nitrosodimethylamine       | 62-75-9  | S241226RSR  | 99%    | 1,005.5 µg/mL               | +/- 36.5848                            |
| 3             | Phenol                       | 108-95-2 | MKCK1120    | 99%    | 1,005.3 µg/mL               | +/- 36.5780                            |
| 4             | Aniline                      | 62-53-3  | X22F726     | 99%    | 1,005.4 µg/mL               | +/- 36.5816                            |
| 5             | Bis(2-chloroethyl)ether      | 111-44-4 | 002891T24M  | 99%    | 1,004.7 µg/mL               | +/- 36.5562                            |
| 6             | 2-Chlorophenol               | 95-57-8  | STBJ3909    | 99%    | 1,005.3 µg/mL               | +/- 36.5766                            |
| 7             | 1,3-Dichlorobenzene          | 541-73-1 | BCCD5315    | 99%    | 1,004.6 µg/mL               | +/- 36.5530                            |
| 8             | 1,4-Dichlorobenzene          | 106-46-7 | MKBS7929V   | 99%    | 1,006.3 µg/mL               | +/- 36.6125                            |
| 9             | Benzyl alcohol               | 100-51-6 | SHBK5469    | 99%    | 1,005.5 µg/mL               | +/- 36.5853                            |
| 10            | 1,2-Dichlorobenzene          | 95-50-1  | SHBL6287    | 99%    | 1,004.6 µg/mL               | +/- 36.5507                            |
| 11            | 2-Methylphenol (o-cresol)    | 95-48-7  | SHBN7598    | 99%    | 1,004.8 µg/mL               | +/- 36.5575                            |
| 12            | 2,2'-oxybis(1-chloropropane) | 108-60-1 | 29-MAR-45-5 | 99%    | 1,005.4 µg/mL               | +/- 36.5803                            |
| 13            | 3-Methylphenol (m-cresol)    | 108-39-4 | STBL3873    | 99%    | 502.7 µg/mL                 | +/- 18.2888                            |
| 14            | 4-Methylphenol (p-cresol)    | 106-44-5 | SHBN3411    | 99%    | 502.6 µg/mL                 | +/- 18.2869                            |
| 15            | N-Nitroso-di-n-propylamine   | 621-64-7 | N63MG       | 99%    | 1,004.6 µg/mL               | +/- 36.5502                            |
| 16            | Hexachloroethane             | 67-72-1  | DAXRI       | 99%    | 1,004.6 µg/mL               | +/- 36.5530                            |
| 17            | Nitrobenzene                 | 98-95-3  | 10224044    | 99%    | 1,005.3 µg/mL               | +/- 36.5780                            |

|    |                                               |           |                  |     |         |       |             |
|----|-----------------------------------------------|-----------|------------------|-----|---------|-------|-------------|
| 18 | Isophorone                                    | 78-59-1   | MKCR3249         | 99% | 1,004.6 | µg/mL | +/- 36.5511 |
| 19 | 2-Nitrophenol                                 | 88-75-5   | RP230710         | 99% | 1,005.7 | µg/mL | +/- 36.5916 |
| 20 | 2,4-Dimethylphenol                            | 105-67-9  | DIRAF            | 99% | 1,004.9 | µg/mL | +/- 36.5612 |
| 21 | Bis(2-chloroethoxy)methane                    | 111-91-1  | 15705100         | 99% | 1,004.3 | µg/mL | +/- 36.5402 |
| 22 | 2,4-Dichlorophenol                            | 120-83-2  | BCCK6969         | 99% | 1,004.7 | µg/mL | +/- 36.5571 |
| 23 | 1,2,4-Trichlorobenzene                        | 120-82-1  | SHBP5900         | 99% | 1,004.6 | µg/mL | +/- 36.5516 |
| 24 | Naphthalene                                   | 91-20-3   | STBL1057         | 99% | 1,006.8 | µg/mL | +/- 36.6335 |
| 25 | 4-Chloroaniline                               | 106-47-8  | BCCJ3217         | 99% | 1,005.9 | µg/mL | +/- 36.5980 |
| 26 | Hexachlorobutadiene                           | 87-68-3   | X05J             | 98% | 1,004.1 | µg/mL | +/- 36.5328 |
| 27 | 4-Chloro-3-methylphenol                       | 59-50-7   | BCCD4461         | 99% | 1,005.4 | µg/mL | +/- 36.5793 |
| 28 | 2-Methylnaphthalene                           | 91-57-6   | STBL3028         | 99% | 1,006.3 | µg/mL | +/- 36.6144 |
| 29 | 1-Methylnaphthalene                           | 90-12-0   | 5234.00-8        | 98% | 990.2   | µg/mL | +/- 36.0269 |
| 30 | Hexachlorocyclopentadiene                     | 77-47-4   | 099063P13G       | 99% | 1,005.9 | µg/mL | +/- 36.5975 |
| 31 | 2,4,6-Trichlorophenol                         | 88-06-2   | STBK8870         | 99% | 1,004.7 | µg/mL | +/- 36.5566 |
| 32 | 2,4,5-Trichlorophenol                         | 95-95-4   | 3YFRE            | 97% | 1,004.7 | µg/mL | +/- 36.5571 |
| 33 | 2-Chloronaphthalene                           | 91-58-7   | RPN7O            | 99% | 1,005.3 | µg/mL | +/- 36.5757 |
| 34 | 2-Nitroaniline                                | 88-74-4   | RP240715RSR      | 99% | 1,004.8 | µg/mL | +/- 36.5584 |
| 35 | 1,4-Dinitrobenzene                            | 100-25-4  | RP240703RSR      | 99% | 1,004.5 | µg/mL | +/- 36.5475 |
| 36 | Acenaphthylene                                | 208-96-8  | 214935V18H       | 95% | 1,000.1 | µg/mL | +/- 36.3888 |
| 37 | 1,3-Dinitrobenzene                            | 99-65-0   | TRC3-1075941-2-1 | 99% | 1,004.9 | µg/mL | +/- 36.5616 |
| 38 | Dimethylphthalate                             | 131-11-3  | 358221L17K       | 99% | 1,004.5 | µg/mL | +/- 36.5489 |
| 39 | 2,6-Dinitrotoluene                            | 606-20-2  | BCCG1833         | 99% | 1,005.2 | µg/mL | +/- 36.5734 |
| 40 | 1,2-Dinitrobenzene                            | 528-29-0  | RP240701RSR      | 99% | 1,005.9 | µg/mL | +/- 36.6003 |
| 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 | +/- 36.5525 |
| 43 | 2,4-Dinitrophenol                             | 51-28-5   | D240927RSR       | 99% | 1,005.0 | µg/mL | +/- 36.5657 |
| 44 | Dibenzofuran                                  | 132-64-9  | MKCN1772         | 99% | 1,005.4 | µg/mL | +/- 36.5803 |
| 45 | 2,4-Dinitrotoluene                            | 121-14-2  | 102869V26E       | 99% | 1,005.4 | µg/mL | +/- 36.5803 |
| 46 | 4-Nitrophenol                                 | 100-02-7  | 20241120-1-AN    | 99% | 1,005.7 | µg/mL | +/- 36.5930 |
| 47 | 2,3,4,6-Tetrachlorophenol                     | 58-90-2   | PR-34476         | 99% | 1,004.9 | µg/mL | +/- 36.5616 |
| 48 | 2,3,5,6-Tetrachlorophenol                     | 935-95-5  | RP240523RSR      | 99% | 1,005.2 | µg/mL | +/- 36.5739 |
| 49 | Fluorene                                      | 86-73-7   | 10246250         | 98% | 1,005.8 | µg/mL | +/- 36.5948 |
| 50 | 4-Chlorophenyl phenyl ether                   | 7005-72-3 | 002531K02D       | 99% | 1,004.8 | µg/mL | +/- 36.5584 |
| 51 | Diethylphthalate                              | 84-66-2   | STBL3611         | 99% | 1,005.3 | µg/mL | +/- 36.5762 |
| 52 | 4-Nitroaniline                                | 100-01-6  | RP240830RSR      | 99% | 1,005.5 | µg/mL | +/- 36.5844 |
| 53 | 4,6-Dinitro-2-methylphenol (Dinitro-o-cresol) | 534-52-1  | S241008RSR       | 99% | 1,004.8 | µg/mL | +/- 36.5589 |

|    |                            |          |               |     |         |       |             |
|----|----------------------------|----------|---------------|-----|---------|-------|-------------|
| 54 | Diphenylamine              | 122-39-4 | MKCT1512      | 99% | 1,005.2 | µg/mL | +/- 36.5725 |
| 55 | Azobenzene                 | 103-33-3 | BCCL3292      | 99% | 1,004.7 | µg/mL | +/- 36.5566 |
| 56 | 4-Bromophenyl phenyl ether | 101-55-3 | STBH6361      | 99% | 1,005.6 | µg/mL | +/- 36.5875 |
| 57 | Hexachlorobenzene          | 118-74-1 | 15828800      | 99% | 1,005.3 | µg/mL | +/- 36.5789 |
| 58 | Pentachlorophenol          | 87-86-5  | RP240517RSR   | 99% | 1,005.4 | µg/mL | +/- 36.5825 |
| 59 | Phenanthrene               | 85-01-8  | MKCT3391      | 99% | 1,004.8 | µg/mL | +/- 36.5584 |
| 60 | Anthracene                 | 120-12-7 | MKCW9141      | 99% | 1,005.5 | µg/mL | +/- 36.5834 |
| 61 | Carbazole                  | 86-74-8  | 15630800      | 99% | 1,005.3 | µg/mL | +/- 36.5789 |
| 62 | Di-n-butylphthalate        | 84-74-2  | MKCN4337      | 99% | 1,005.5 | µg/mL | +/- 36.5848 |
| 63 | Fluoranthene               | 206-44-0 | A0458721      | 99% | 1,005.4 | µg/mL | +/- <0.0001 |
| 64 | Pyrene                     | 129-00-0 | BCCL8032      | 99% | 1,005.2 | µg/mL | +/- 36.5734 |
| 65 | Benzyl butyl phthalate     | 85-68-7  | X12I018       | 99% | 1,004.8 | µg/mL | +/- 36.5584 |
| 66 | Bis(2-ethylhexyl)adipate   | 103-23-1 | MKCR8567      | 99% | 1,004.5 | µg/mL | +/- 36.5480 |
| 67 | Benz(a)anthracene          | 56-55-3  | I60012022BAA  | 99% | 1,005.5 | µg/mL | +/- 36.5844 |
| 68 | Chrysene                   | 218-01-9 | RP241212RSR   | 99% | 1,005.5 | µg/mL | +/- 36.5848 |
| 69 | Bis(2-ethylhexyl)phthalate | 117-81-7 | MKCS8065      | 99% | 1,004.7 | µg/mL | +/- 36.5548 |
| 70 | Di-n-octyl phthalate       | 117-84-0 | 15817300      | 99% | 1,004.8 | µg/mL | +/- 36.5607 |
| 71 | Benzo(b)fluoranthene       | 205-99-2 | 022013B       | 99% | 1,005.1 | µg/mL | +/- 36.5716 |
| 72 | Benzo(k)fluoranthene       | 207-08-9 | 012022K       | 98% | 1,004.6 | µg/mL | +/- 36.5511 |
| 73 | Benzo(a)pyrene             | 50-32-8  | NQLXA         | 98% | 1,004.2 | µg/mL | +/- 36.5377 |
| 74 | Indeno(1,2,3-cd)pyrene     | 193-39-5 | 12-JKL-118-9  | 97% | 1,004.1 | µg/mL | +/- 36.5337 |
| 75 | Dibenz(a,h)anthracene      | 53-70-3  | 712061504-1-1 | 99% | 1,005.7 | µg/mL | +/- 36.5930 |
| 76 | Benzo(g,h,i)perylene       | 191-24-2 | RP241014RSR   | 98% | 1,005.4 | µg/mL | +/- 36.5814 |

\* 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.

## 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:**

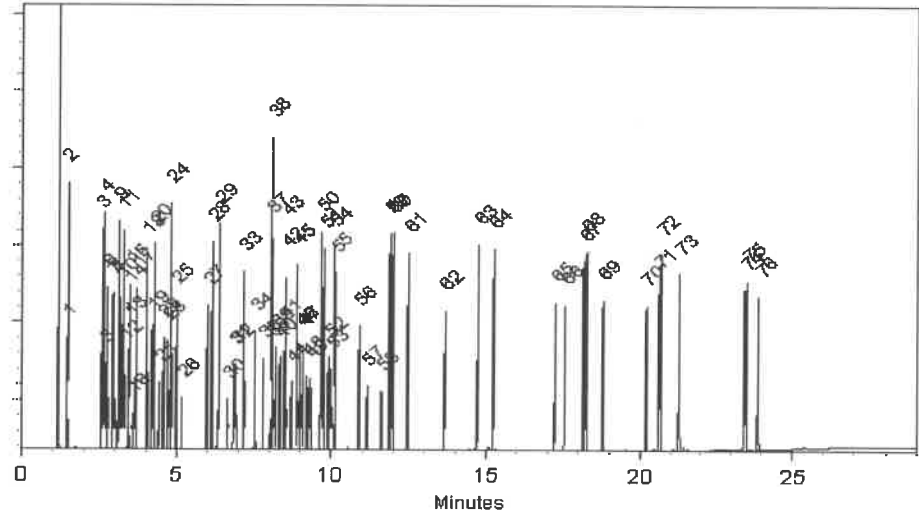
FID

**Split Vent:**

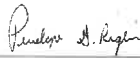
100 ml/min.

**Inj. Vol**

1µl

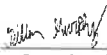


This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

  
Penelope Riglin - Operations Tech I

Date Mixed: 12-Jan-2025

Balance Serial # 1128360905

  
Dillan Murphy - Operations Technician I

Date Passed: 21-Jan-2025

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



110 Benner Circle  
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Fax: 1-814-353-1309

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## CERTIFIED REFERENCE MATERIAL

# Certificate of Analysis

*chromatographic plus*



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

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

**Catalog No. :** 31853 **Lot No.:** A0218894  
**Description :** 1,4-dioxane  
1,4-Dioxane 2,000µg/mL, Methylene Chloride, 1mL/ampul  
**Container Size :** 2 mL **Pkg Amt:** > 1 mL  
**Expiration Date :** November 30, 2029 **Storage:** 0°C or colder  
**Ship:** Ambient

513118 } RC/  
↓  
513147 } 5/20/25.

### 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%    | 2,002.4 µg/mL               | +/- 24.9202                            |

\* 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:**

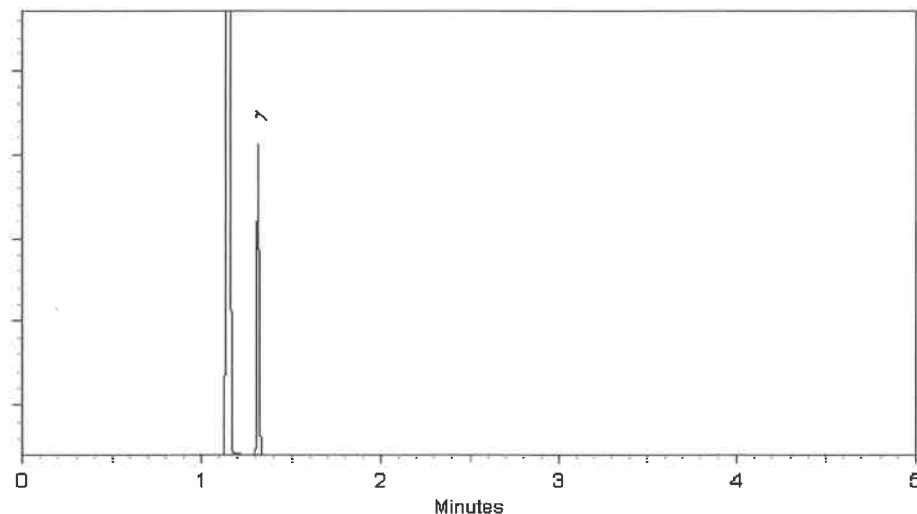
FID

**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: 07-Nov-2024

Balance Serial # 1128360905

Dillan Murphy - Operations Technician I

Date Passed: 11-Nov-2024

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



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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.:** A0228451

**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 :** August 31, 2027 **Storage:** 10°C or colder

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

S13239 } RC/  
↓  
S13268 } 08/06/25

## 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   | S250226RSR | 99%    | 1,006.0 µg/mL               | +/- 23.0947                            |
| 2           | Atrazine               | 1912-24-9 | 5FYWL      | 99%    | 1,007.0 µg/mL               | +/- 23.1176                            |
| 3           | Benzidine              | 92-87-5   | S250227ECS | 99%    | 1,003.0 µg/mL               | +/- 23.0258                            |
| 4           | epsilon-Caprolactam    | 105-60-2  | Y16H012    | 99%    | 1,003.0 µg/mL               | +/- 23.0258                            |

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

Tom Sucka - Mix Technician

**Date Mixed:** 01-Aug-2025

**Balance:** 1128360905

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