

## Prep Standard - Chemical Standard Summary

**Order ID :** Q3462

**Test :** Anions Group1,Oil and Grease,Phosphorus-Total,TKN,Total Nitrogen,TSS

**Prepbatch ID :** PB170300,PB170350,

**Sequence ID/Qc Batch ID:** LB137648,LB137653,LB137655,LB137696,LB137729,LB137735,

**Standard ID :**

EP2655,WP112913,WP112914,WP113112,WP113113,WP113135,WP113378,WP113878,WP113929,WP114132,WP114133,WP114445,WP115016,WP115017,WP115018,WP115085,WP115086,WP115089,WP115135,WP115136,WP115137,WP115138,WP115139,WP115140,WP115141,WP115142,WP115144,WP115290,WP115318,WP115319,WP115336,WP115340,WP115344,WP115345,WP115372,WP115373,WP115374,WP115375,WP115398,WP115399,WP115400,WP115401,WP115402,WP115403,WP115404,WP115405,WP115406,WP115407,WP115408,

**Chemical ID :**

E3875,E3972,M6041,M6069,M6151,M6186,W2306,W2647,W2650,W2663,W2664,W2666,W2788,W2817,W2871,W2983,W3009,W3035,W3082,W3112,W3113,W3132,W3148,W3163,W3180,W3195,W3196,W3197,W3198,W3199,W3206,W3222,W3240,W3241,W3243,W3246,



| <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="#">EP2655</a> | 10/24/2025       | 01/28/2026             | RUPESHKUMAR SHAH   | Extraction_SCALE_2<br>(EX-SC-2) | None             | Riteshkumar Patel<br><br>10/24/2025 |
| <u>FROM</u>      | 4000.00000gram of E3875 = Final Quantity: 4000.000 gram |                        |                  |                        |                    |                                 |                  |                                     |

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|---|-------------------------------|--------------------------|------------------|------------------------|--------------------|----------------------------------|------------------|----------------------------------|
| 115   | Phosphate Stock Std. (50 ppm) | <a href="#">WP112913</a> | 05/01/2025       | 11/01/2025             | Iwona Zarych       | WETCHEM_S<br>CALE_5 (WC<br>SC-5) | None             | Jignesh Parikh<br><br>05/06/2025 |
| <b><u>FROM</u></b> 0.11000gram of W3198 + 500.00000ml of W3112 = Final Quantity: 500.000 ml |                               |                          |                  |                        |                    |                                  |                  |                                  |



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|------------------|--|--------------------------|------------------|------------------------|--------------------|----------------------------------|------------------|----------------------------------|
| 2790             | Phosphate Stock std, 50PPM-SS  | <a href="#">WP112914</a> | 05/01/2025       | 11/01/2025             | Iwona Zarych       | WETCHEM_S<br>CALE_5 (WC<br>SC-5) | None             | Jignesh Parikh<br><br>05/06/2025 |
| <u>FROM</u>      | 0.11000gram of W3206 + 500.00000ml of W3112 = Final Quantity: 500.000 ml |                          |                  |                        |                    |                                  |                  |                                  |

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|--------------------|---|--------------------------|------------------|------------------------|--------------------|-------------------------|------------------|------------------------------|
| 648                | Ammonium molybdate solution   | <a href="#">WP113112</a> | 05/16/2025       | 11/16/2025             | Iwona Zarych       | WETCHEM_SCALE_5 (WCS-5) | None             | Jignesh Parikh<br>05/16/2025 |
| <b><u>FROM</u></b> | 20.00000gram of W2664 + 480.00000ml of W3112 = Final Quantity: 500.000 ml |                          |                  |                        |                    |                         |                  |                              |



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|--------------------|--|--------------------------|------------------|------------------------|--------------------|-------------------------|------------------|------------------------------|
| 588                | Potassium Antimonyl Tartrate   | <a href="#">WP113113</a> | 05/16/2025       | 11/16/2025             | Iwona Zarych       | WETCHEM_SCALE_5 (WCS-5) | None             | Jignesh Parikh<br>05/16/2025 |
| <b><u>FROM</u></b> | 1.37150gram of W2306 + 500.00000ml of W3112 = Final Quantity: 500.000 ml |                          |                  |                        |                    |                         |                  |                              |

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|---|------------------------|--------------------------|------------------|------------------------|--------------------|---------------------------|------------------|----------------------------|
| 619   | TKN digestion solution | <a href="#">WP113135</a> | 05/20/2025       | 11/20/2025             | Rubina Mughal      | WETCHEM_SCALE_8 (WC SC-7) | None             | Iwona Zarych<br>05/20/2025 |
| <b><u>FROM</u></b> 134.00000gram of W2983 + 134.00000ml of M6041 + 7.30000gram of W3199 + 725.00000ml of W3112 = Final Quantity:<br>1000.000 ml |                        |                          |                  |                        |                    |                           |                  |                            |



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|--|---------------------------|--------------------------|------------------|------------------------|--------------------|-------------------------|------------------|------------------------------|
| 1213   | Phenolphthalein indicator | <a href="#">WP113378</a> | 06/04/2025       | 12/04/2025             | Iwona Zarych       | WETCHEM_SCALE_5 (WCS-5) | None             | Jignesh Parikh<br>06/05/2025 |
| <b><u>FROM</u></b> 0.10000gram of W2650 + 50.00000ml of W2788 + 50.00000ml of W3112 = Final Quantity: 100.000 ml |                           |                          |                  |                        |                    |                         |                  |                              |

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|--|----------------------|--------------------------|------------------|------------------------|--------------------|-------------------------|------------------|----------------------|
| 1571   | Sodium hydroxide, 1N | <a href="#">WP113878</a> | 07/09/2025       | 12/31/2025             | Iwona Zarych       | WETCHEM_SCALE_7 (WCS-6) | None             | Jignesh Parikh       |
| <b><u>FROM</u></b> 4.00000gram of W3113 + 96.00000ml of W3112 = Final Quantity: 100.000 ml |                      |                          |                  |                        |                    |                         |                  |                      |



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|---|----------------------------|--------------------------|------------------|------------------------|--------------------|---------------------------|------------------|----------------------------|
| 290   | Phenol reagent for Ammonia | <a href="#">WP113929</a> | 07/14/2025       | 12/31/2025             | Rubina Mughal      | WETCHEM_SCALE_8 (WC SC-7) | None             | Iwona Zarych<br>07/15/2025 |
| <b><u>FROM</u></b> 3.20000gram of W3113 + 8.30000gram of W2663 + 88.80000ml of W3112 = Final Quantity: 100.000 ml |                            |                          |                  |                        |                    |                           |                  |                            |

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|--|-------------------------|--------------------------|------------------|------------------------|--------------------|---------------------------|------------------|----------------------------|
| 635  | EDTA BUFFER FOR AMMONIA | <a href="#">WP114132</a> | 07/31/2025       | 12/31/2025             | Rubina Mughal      | WETCHEM_SCALE_8 (WC SC-7) | None             | Iwona Zarych<br>07/31/2025 |
| <b><u>FROM</u></b> 5.50000gram of W3113 + 50.00000gram of W3132 + 950.00000ml of W3112 = Final Quantity: 1000.000 ml |                         |                          |                  |                        |                    |                           |                  |                            |

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|------------------|---------------------------------|--------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 289              | Sodium Hypochlorite for Ammonia | <a href="#">WP114133</a> | 07/31/2025       | 12/31/2025             | Rubina Mughal      | None           | None             | Iwona Zarych         |
|                  |                                 |                          |                  |                        |                    |                |                  | 08/04/2025           |

**FROM** 50.00000ml of W3112 + 50.00000ml of W3222 = Final Quantity: 100.000 ml

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|------------------|-----------------------|--------------------------|------------------|------------------------|--------------------|----------------------------------|------------------|----------------------|
| 1338             | TKN DISTILLING BUFFER | <a href="#">WP114445</a> | 08/27/2025       | 12/31/2025             | Rubina Mughal      | WETCHEM_S<br>CALE_8 (WC<br>SC-7) | None             | Iwona Zarych         |
|                  |                       |                          |                  |                        |                    |                                  |                  | 09/03/2025           |

**FROM** 0.47500L of W3112 + 25.00000gram of W3148 + 500.00000gram of W3113 = Final Quantity: 1.000 L

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|------------------|-------------|--------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 229              | 1:1 HCL     | <a href="#">WP115016</a> | 10/02/2025       | 02/17/2026             | Jignesh Parikh     | None           | None             | Iwona Zarych         |
|                  |             |                          |                  |                        |                    |                |                  | 10/02/2025           |

**FROM** 500.00000ml of M6151 + 500.00000ml of W3112 = Final Quantity: 1.000 L

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|------------------|--------------------|--------------------------|------------------|------------------------|--------------------|---------------------------|------------------|----------------------|
| 2470             | 1664A SPIKING SOLN | <a href="#">WP115017</a> | 10/02/2025       | 04/02/2026             | Jignesh Parikh     | WETCHEM_SCALE_7 (WC SC-6) | None             | Iwona Zarych         |
|                  |                    |                          |                  |                        |                    |                           |                  | 10/02/2025           |

**FROM** 1000.00000ml of E3972 + 4.00000gram of W2817 + 4.00000gram of W2871 = Final Quantity: 1000.000 ml





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|------------------|---|--------------------------|------------------|------------------------|--------------------|-------------------------|------------------|----------------------------|
| 3374             | 1664A QCS spiking solution-SS   | <a href="#">WP115018</a> | 10/02/2025       | 04/02/2026             | Jignesh Parikh     | WETCHEM_SCALE_7 (WCS-6) | None             | Iwona Zarych<br>10/02/2025 |
| <u>FROM</u>      | 1000.00000ml of E3972 + 4.00000gram of W3009 + 4.00000gram of W3082 = Final Quantity: 1000.000 ml |                          |                  |                        |                    |                         |                  |                            |

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|--|-------------------------------|--------------------------|------------------|------------------------|--------------------|---------------------------|------------------|----------------------------|
| 153  | Ammonia Stock Std. (1000 ppm) | <a href="#">WP115085</a> | 10/08/2025       | 04/08/2026             | Rubina Mughal      | WETCHEM_SCALE_8 (WC SC-7) | None             | Iwona Zarych<br>10/08/2025 |
| <b><u>FROM</u></b> 3.81900gram of W3196 + 996.18100ml of W3112 = Final Quantity: 1000.000 ml |                               |                          |                  |                        |                    |                           |                  |                            |

[illegible]

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|--|--------------------|--------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------------|
| 1211   | 11 N sulfuric acid | <a href="#">WP115089</a> | 10/08/2025       | 04/08/2026             | Rubina Mughal      | None           | None             | Iwona Zarych<br>10/08/2025 |
| <b><u>FROM</u></b> 306.00000ml of M6186 + 694.00000ml of W3112 = Final Quantity: 1000.000 ml |                    |                          |                  |                        |                    |                |                  |                            |

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|------------------|--|--------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 2487             | Anions 300/9056 calibration standard 1 | <a href="#">WP115135</a> | 10/09/2025       | 10/10/2025             | Iwona Zarych       | None           | None             | Jignesh Parikh       |
|                  |  |                          |                  |                        |                    |                |                  | 10/27/2025           |

**FROM** 10.00000ml of W3112 = Final Quantity: 10.000 ml

| <u>Recipe ID</u> | <u>NAME</u>                            | <u>NO.</u>               | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>  | <u>Supervised By</u> |
|------------------|--|--------------------------|------------------|------------------------|--------------------|----------------|-------------------|----------------------|
| 24               | Anions 300/9056 calibration standard 2 | <a href="#">WP115136</a> | 10/09/2025       | 10/10/2025             | Iwona Zarych       | None           | WETCHEM_FIPETTE_3 | Jignesh Parikh       |
|                  |  |                          |                  |                        |                    |                | (WC)              | 10/27/2025           |

**FROM** 0.20000ml of W3180 + 9.80000ml of W3112 = Final Quantity: 10.000 ml

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|---|--|--------------------------|------------------|------------------------|--------------------|----------------|-------------------------------|----------------------------------|
| 25  | Anions 300/9056 calibration standard 3 | <a href="#">WP115137</a> | 10/09/2025       | 10/10/2025             | Iwona Zarych       | None           | WETCHEM_F<br>IPETTE_3<br>(WC) | Jignesh Parikh<br><br>10/27/2025 |
| <b>FROM</b> 0.40000ml of W3180 + 9.60000ml of W3112 = Final Quantity: 10.000 ml |  |                          |                  |                        |                    |                |                               |                                  |

| <u>Recipe ID</u>  | <u>NAME</u>                            | <u>NO.</u>               | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>              | <u>Supervised By</u>             |
|---|--|--------------------------|------------------|------------------------|--------------------|----------------|-------------------------------|----------------------------------|
| 26  | Anions 300/9056 calibration standard 4 | <a href="#">WP115138</a> | 10/09/2025       | 10/10/2025             | Iwona Zarych       | None           | WETCHEM_F<br>IPETTE_3<br>(WC) | Jignesh Parikh<br><br>10/27/2025 |
| <b>FROM</b> 0.50000ml of W3180 + 9.50000ml of W3112 = Final Quantity: 10.000 ml |  |                          |                  |                        |                    |                |                               |                                  |

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|--|--|--------------------------|------------------|------------------------|--------------------|----------------|-------------------------------|----------------------------------|
| 3680   | Anions 300/9056 calibration standard 5-CCV | <a href="#">WP115139</a> | 10/09/2025       | 10/10/2025             | Iwona Zarych       | None           | WETCHEM_F<br>IPETTE_3<br>(WC) | Jignesh Parikh<br><br>10/27/2025 |
| <b>FROM</b> 45.00000ml of W3112 + 5.00000ml of W3180 = Final Quantity: 50.000 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>             |
|---|--|--------------------------|------------------|------------------------|--------------------|----------------|-------------------------------|----------------------------------|
| 3679  | Anions 300/9056 calibration standard 6 | <a href="#">WP115140</a> | 10/09/2025       | 10/10/2025             | Iwona Zarych       | None           | WETCHEM_F<br>IPETTE_3<br>(WC) | Jignesh Parikh<br><br>10/27/2025 |
| <b>FROM</b> 2.00000ml of W3180 + 8.00000ml of W3112 = Final Quantity: 10.000 ml |  |                          |                  |                        |                    |                |                               |                                  |

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|---|--|--------------------------|------------------|------------------------|--------------------|----------------|-------------------------------|----------------------------------|
| 3681  | Anions 300/9056 calibration standard 7 | <a href="#">WP115141</a> | 10/09/2025       | 10/10/2025             | Iwona Zarych       | None           | WETCHEM_F<br>IPETTE_3<br>(WC) | Jignesh Parikh<br><br>10/27/2025 |
| <b>FROM</b> 2.50000ml of W3180 + 7.50000ml of W3112 = Final Quantity: 10.000 ml |  |                          |                  |                        |                    |                |                               |                                  |

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|--|-----------------------------|--------------------------|------------------|------------------------|--------------------|----------------|-------------------------------|----------------------------------|
| 3233   | Anions 300/9056 ICV-LCS std | <a href="#">WP115142</a> | 10/09/2025       | 10/10/2025             | Iwona Zarych       | None           | WETCHEM_F<br>IPETTE_3<br>(WC) | Jignesh Parikh<br><br>10/27/2025 |
| <b>FROM</b> 45.00000ml of W3112 + 5.00000ml of W3197 = Final Quantity: 50.000 ml |                             |                          |                  |                        |                    |                |                               |                                  |

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|------------------|-------------------|--------------------------|------------------|------------------------|--------------------|----------------|--------------------|----------------------------------|
| 4037             | IC H2SO4 FOR IC-1 | <a href="#">WP115144</a> | 10/09/2025       | 11/09/2025             | Iwona Zarych       | None           | Glass<br>Pipette-A | Jignesh Parikh<br><br>10/27/2025 |

**FROM** 5.60000ml of M6186 + 994.40000ml of W3112 = 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>           |
|------------------|--------------------------------------|--------------------------|------------------|------------------------|--------------------|----------------------------------|------------------|--------------------------------|
| 740              | sodium nitroferricyanide for ammonia | <a href="#">WP115290</a> | 10/22/2025       | 11/22/2025             | Rubina Mughal      | WETCHEM_S<br>CALE_5 (WC<br>SC-5) | None             | Iwona Zarych<br><br>10/24/2025 |

**FROM** 0.05000gram of W2666 + 99.95000ml of W3112 = Final Quantity: 100.000 ml

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|--|--|--------------------------|------------------|------------------------|--------------------|----------------|-------------------------------|----------------------------------|
| 3680   | Anions 300/9056 calibration standard 5-CCV | <a href="#">WP115318</a> | 10/24/2025       | 10/25/2025             | Iwona Zarych       | None           | WETCHEM_F<br>IPETTE_3<br>(WC) | Jignesh Parikh<br><br>10/27/2025 |
| <b>FROM</b> 45.00000ml of W3112 + 5.00000ml of W3180 = Final Quantity: 50.000 ml |  |                          |                  |                        |                    |                |                               |                                  |

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|--|-----------------------------|--------------------------|------------------|------------------------|--------------------|----------------|-------------------------------|----------------------------------|
| 3233   | Anions 300/9056 ICV-LCS std | <a href="#">WP115319</a> | 10/24/2025       | 10/25/2025             | Iwona Zarych       | None           | WETCHEM_F<br>IPETTE_3<br>(WC) | Jignesh Parikh<br><br>10/27/2025 |
| <b>FROM</b> 45.00000ml of W3112 + 5.00000ml of W3197 = Final Quantity: 50.000 ml |                             |                          |                  |                        |                    |                |                               |                                  |



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| <u>Recipe ID</u> | <u>NAME</u>  | <u>NO.</u>               | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>          | <u>Supervised By</u>         |
|------------------|--------------|--------------------------|------------------|------------------------|--------------------|----------------|---------------------------|------------------------------|
| 1597             | 0.04 N H2SO4 | <a href="#">WP115336</a> | 10/27/2025       | 04/27/2026             | Rubina Mughal      | None           | WETCHEM_FIPETTE_3<br>(WC) | Jignesh Parikh<br>10/27/2025 |

**FROM** 1.00000ml of M6186 + 999.00000ml of W3112 = 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>         |
|------------------|------------------|--------------------------|------------------|------------------------|--------------------|----------------|------------------|------------------------------|
| 126              | 5N sulfuric acid | <a href="#">WP115340</a> | 10/27/2025       | 04/27/2026             | Rubina Mughal      | None           | None             | Jignesh Parikh<br>10/27/2025 |

**FROM** 140.00000ml of M6186 + 860.00000ml of W3112 = Final Quantity: 1.000 L



| <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>         |
|--|--------------------------------|--------------------------|------------------|------------------------|--------------------|-------------------------|------------------|------------------------------|
| 4035   | IC ELUENT CONCENTRATE FOR IC-1 | <a href="#">WP115344</a> | 10/23/2025       | 04/23/2026             | Iwona Zarych       | WETCHEM_SCALE_5 (WCS-5) | None             | Jignesh Parikh<br>10/28/2025 |
| <b><u>FROM</u></b> 2.10000gram of W2647 + 84.75000gram of W3163 + 913.15000ml of W3112 = 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>         |
|------------------|--|--------------------------|------------------|------------------------|--------------------|----------------|--------------------|------------------------------|
| 4036             | IC ELUENT FOR IC-1   | <a href="#">WP115345</a> | 10/23/2025       | 11/23/2025             | Iwona Zarych       | None           | Glass<br>Pipette-A | Jignesh Parikh<br>10/28/2025 |
| <u>FROM</u>      | 1980.00000ml of W3112 + 20.00000ml of WP115344 = 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> |
|------------------|---|--------------------------|------------------|------------------------|--------------------|----------------|-------------------|----------------------|
| 295              | TKN Calibration Std (10 ppm)  | <a href="#">WP115372</a> | 10/29/2025       | 11/05/2025             | Rubina Mughal      | None           | WETCHEM_PIPETTE_3 | Iwona Zarych         |
| (WC)             |   |                          |                  |                        |                    |                |                   |                      |
| <u>FROM</u>      | 49.50000ml of W3112 + 0.50000ml of WP115085 = Final Quantity: 50.000 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>       |
|--|-------------------|--------------------------|------------------|------------------------|--------------------|----------------|---------------------------|----------------------------|
| 297  | TKN CCV STD 5 ppm | <a href="#">WP115373</a> | 10/29/2025       | 11/05/2025             | Rubina Mughal      | None           | WETCHEM_PIPETTE_3<br>(WC) | Iwona Zarych<br>10/29/2025 |
| <b><u>FROM</u></b> 49.75000ml of W3112 + 0.25000ml of WP115085 = Final Quantity: 50.000 ml |                   |                          |                  |                        |                    |                |                           |                            |

## Wet Chemistry 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>           |
|---|-------------------|--------------------------|------------------|------------------------|--------------------|----------------|-------------------------------|--------------------------------|
| 296   | TKN ICV STD 5 ppm | <a href="#">WP115374</a> | 10/29/2025       | 11/05/2025             | Rubina Mughal      | None           | WETCHEM_F<br>IPETTE_3<br>(WC) | Iwona Zarych<br><br>10/29/2025 |
| <b>FROM</b> 49.75000ml of W3112 + 0.25000ml of WP115086 = Final Quantity: 50.000 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>           |
|---|-------------------|--------------------------|------------------|------------------------|--------------------|----------------|-------------------------------|--------------------------------|
| 298   | TKN LCS STD 5 ppm | <a href="#">WP115375</a> | 10/29/2025       | 11/05/2025             | Rubina Mughal      | None           | WETCHEM_F<br>IPETTE_3<br>(WC) | Iwona Zarych<br><br>10/29/2025 |
| <b>FROM</b> 49.75000ml of W3112 + 0.25000ml of WP115086 = Final Quantity: 50.000 ml |                   |                          |                  |                        |                    |                |                               |                                |

## Wet Chemistry 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> |
|------------------|------------------------|--------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 122              | calibration std. 0 ppm | <a href="#">WP115398</a> | 10/31/2025       | 11/07/2025             | Rubina Mughal      | None           | None             | Iwona Zarych         |
|                  |                        |                          |                  |                        |                    |                |                  | 11/03/2025           |

**FROM** 100.00000ml of W3112 = 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> |
|------------------|-------------------------------------|--------------------------|------------------|------------------------|--------------------|----------------|-------------------|----------------------|
| 121              | calibration std. phosphate 0.05 ppm | <a href="#">WP115399</a> | 10/31/2025       | 11/01/2025             | Rubina Mughal      | None           | WETCHEM_FIPETTE_3 | Iwona Zarych         |
|                  |                                     |                          |                  |                        |                    |                | (WC)              | 11/03/2025           |

**FROM** 99.90000ml of W3112 + 0.10000ml of WP112913 = Final Quantity: 100.000 ml

## Wet Chemistry 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>           |
|--|------------------------------------|--------------------------|------------------|------------------------|--------------------|----------------|-------------------------------|--------------------------------|
| 120  | calibration std. phosphate 0.1 ppm | <a href="#">WP115400</a> | 10/31/2025       | 11/01/2025             | Rubina Mughal      | None           | WETCHEM_F<br>IPETTE_3<br>(WC) | Iwona Zarych<br><br>11/03/2025 |
| <b>FROM</b> 99.80000ml of W3112 + 0.20000ml of WP112913 = 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>           |
|--|------------------------------------|--------------------------|------------------|------------------------|--------------------|----------------|-------------------------------|--------------------------------|
| 119  | calibration std. phosphate 0.3 ppm | <a href="#">WP115401</a> | 10/31/2025       | 11/01/2025             | Rubina Mughal      | None           | WETCHEM_F<br>IPETTE_3<br>(WC) | Iwona Zarych<br><br>11/03/2025 |
| <b>FROM</b> 99.40000ml of W3112 + 0.60000ml of WP112913 = Final Quantity: 100.000 ml |                                    |                          |                  |                        |                    |                |                               |                                |

## Wet Chemistry 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>           |
|--|------------------------------------|--------------------------|------------------|------------------------|--------------------|----------------|-------------------------------|--------------------------------|
| 118  | calibration std. phosphate 0.5 ppm | <a href="#">WP115402</a> | 10/31/2025       | 11/01/2025             | Rubina Mughal      | None           | WETCHEM_F<br>IPETTE_3<br>(WC) | Iwona Zarych<br><br>11/03/2025 |
| <b>FROM</b> 99.00000ml of W3112 + 1.00000ml of WP112913 = 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>           |
|--|----------------------------------|--------------------------|------------------|------------------------|--------------------|----------------|-------------------------------|--------------------------------|
| 117  | calibration std. phosphate 1 ppm | <a href="#">WP115403</a> | 10/31/2025       | 11/01/2025             | Rubina Mughal      | None           | WETCHEM_F<br>IPETTE_3<br>(WC) | Iwona Zarych<br><br>11/03/2025 |
| <b>FROM</b> 98.00000ml of W3112 + 2.00000ml of WP112913 = Final Quantity: 100.000 ml |                                  |                          |                  |                        |                    |                |                               |                                |

## Wet Chemistry 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>           |
|--|-----------------------|--------------------------|------------------|------------------------|--------------------|----------------|-------------------------------|--------------------------------|
| 3805   | Phosphate ICV-LCS Std | <a href="#">WP115404</a> | 10/31/2025       | 11/01/2025             | Rubina Mughal      | None           | WETCHEM_F<br>IPETTE_3<br>(WC) | Iwona Zarych<br><br>11/03/2025 |
| <b>FROM</b> 99.00000ml of W3112 + 1.00000ml of WP112914 = 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>           |
|--|--------------------|--------------------------|------------------|------------------------|--------------------|----------------|-------------------------------|--------------------------------|
| 124  | phosphate CCV std. | <a href="#">WP115405</a> | 10/31/2025       | 11/01/2025             | Rubina Mughal      | None           | WETCHEM_F<br>IPETTE_3<br>(WC) | Iwona Zarych<br><br>11/03/2025 |
| <b>FROM</b> 99.00000ml of W3112 + 1.00000ml of WP112913 = 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> |
|---|--------------------|--------------------------|------------------|------------------------|--------------------|----------------|-------------------|----------------------|
| 4212  | Phosphate RL CHECK | <a href="#">WP115406</a> | 10/31/2025       | 11/01/2025             | Rubina Mughal      | None           | WETCHEM_PIPETTE_3 | Iwona Zarych         |
| <p>(WC)</p> <p><b>FROM</b> 99.80000ml of W3112 + 0.20000ml of WP112913 = Final Quantity: 100.000 ml</p> |                    |                          |                  |                        |                    |                |                   |                      |

| <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> |
|---|---------------|--------------------------|------------------|------------------------|--------------------|-------------------------|------------------|----------------------|
| 590   | Ascorbic Acid | <a href="#">WP115407</a> | 10/31/2025       | 11/01/2025             | Rubina Mughal      | WETCHEM_SCALE_5 (WCS-5) | None             | Iwona Zarych         |
| <b><u>FROM</u></b> 0.52800gram of W3243 + 30.00000ml of W3112 = Final Quantity: 30.000 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>           |
|---|------------------|--------------------------|------------------|------------------------|--------------------|----------------|--------------------|--------------------------------|
| 658   | Combined reagent | <a href="#">WP115408</a> | 10/31/2025       | 11/01/2025             | Rubina Mughal      | None           | Glass<br>Pipette-A | Iwona Zarych<br><br>11/03/2025 |
| <b><u>FROM</u></b> 15.00000ml of WP113112 + 30.00000ml of WP115407 + 5.00000ml of WP113113 + 50.00000ml of WP115340 = Final Quantity:<br>100.000 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. | 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-9254-03 / Acetone, Ultra Resi (cs/4x4L) | 24H1462005 | 05/24/2027      | 09/16/2025 / Evelyn     | 09/04/2025 / Riteshkumar    | E3972          |

| 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) | 23D2462010 | 03/20/2028      | 08/16/2024 / mohan      | 08/16/2024 / mohan          | M6041          |

| Supplier                    | ItemCode / ItemName                          | Lot #   | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|--|---------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | 140440 / TEST PAPERS,PH,0-2.5,.2SENSI, 100PK | 80A0441 | 02/29/2028      | 09/03/2024 / jignesh    | 08/19/2024 / Jaswal         | M6069          |

| Supplier         | ItemCode / ItemName   | Lot #      | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|------------------|---|------------|-----------------|-------------------------|-----------------------------|----------------|
| Seidler Chemical | BA-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L) | 22G2862015 | 02/17/2026      | 02/18/2025 / Sagar      | 01/15/2025 / Sagar          | M6151          |

| 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) | 23D2462010 | 07/12/2026      | 08/13/2025 / Sagar      | 08/06/2025 / Sagar          | M6186          |

## CHEMICAL RECEIPT LOG BOOK

| Supplier                    | ItemCode / ItemName  | Lot #   | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|--|---------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | A1561-500GM / POTASSIUM ANTIMONY TARTRATE TRIHYDRATE, 500G | 2GH0057 | 12/11/2027      | 12/11/2017 / apatel     | 12/11/2017 / apatel         | W2306          |

| Supplier                    | ItemCode / ItemName                           | Lot #      | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|---|------------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | J3506-5 / SODIUM BICARBONATE, PWD, ACS, 2.5KG | 0000240594 | 06/03/2026      | 02/24/2020 / AMANDEEP   | 01/20/2020 / apatel         | W2647          |

| Supplier                    | ItemCode / ItemName                                    | Lot #      | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|--|------------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | J2870-1 / PHENOLPHTHALEIN, INDICATOR F/TITRATION, 500G | 0000235350 | 06/04/2025      | 01/31/2020 / AMANDEEP   | 01/20/2020 / apatel         | W2650          |

| Supplier                    | ItemCode / ItemName          | Lot #   | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|------------------------------|---------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | P1060-10 / PHENOL, ACS, 500G | 2HD0179 | 01/27/2030      | 01/27/2020 / apatel     | 01/27/2020 / apatel         | W2663          |

| Supplier                    | ItemCode / ItemName                | Lot #      | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|------------------------------------|------------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | J07716-1 / Ammonium Molybdate 500G | 0000234410 | 02/11/2026      | 02/10/2020 / AMANDEEP   | 01/31/2020 / apatel         | W2664          |

| Supplier                    | ItemCode / ItemName                   | Lot #   | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|---------------------------------------|---------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | 87683 / Sodium Nitroferricyanide 250g | W12F013 | 02/10/2030      | 02/10/2020 / apatel     | 02/10/2020 / apatel         | W2666          |

## CHEMICAL RECEIPT LOG BOOK

| Supplier                    | ItemCode / ItemName          | Lot #     | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|------------------------------|-----------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | PC16721-3 / Isopropanol, 99% | C20F23007 | 06/30/2025      | 12/30/2020 / apatel     | 12/30/2020 / apatel         | W2788          |

| Supplier                    | ItemCode / ItemName               | Lot #   | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|-----------------------------------|---------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | A12244 / Stearic acid, 98%, 100 g | U20E006 | 04/02/2026      | 04/02/2021 / apatel     | 04/02/2021 / apatel         | W2817          |

| Supplier         | ItemCode / ItemName         | Lot #      | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|------------------|-----------------------------|------------|-----------------|-------------------------|-----------------------------|----------------|
| Seidler Chemical | H223-57 / Hexadecane, 99.0% | 0000266903 | 05/04/2027      | 09/07/2021 / apatel     | 08/26/2021 / apatel         | W2871          |

| Supplier                    | ItemCode / ItemName                  | Lot #    | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|--------------------------------------|----------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | J3278-5 / Potassium Sulfate, 2.5 Kgs | SLCM9788 | 11/21/2027      | 11/21/2022 / lwona      | 11/21/2022 / lwona          | W2983          |

| Supplier         | ItemCode / ItemName         | Lot #    | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|------------------|-----------------------------|----------|-----------------|-------------------------|-----------------------------|----------------|
| Seidler Chemical | H223-57 / Hexadecane, 99.0% | SHBP8192 | 02/27/2028      | 02/27/2023 / lwona      | 02/27/2023 / lwona          | W3009          |

| Supplier                    | ItemCode / ItemName                              | Lot #    | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|--|----------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | BDH0214-500G / Ammonium Persulfate Crystal, 500g | MKCR9319 | 06/30/2028      | 03/05/2024 / lwona      | 06/06/2023 / lwona          | W3035          |

## CHEMICAL RECEIPT LOG BOOK

| Supplier                    | ItemCode / ItemName               | Lot #   | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|-----------------------------------|---------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | A12244 / Stearic acid, 98%, 100 g | U23E020 | 02/26/2029      | 02/26/2024 / Iwona      | 02/26/2024 / Iwona          | W3082          |

| 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          |

| Supplier                    | ItemCode / ItemName                        | Lot #      | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|--|------------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | PC19510-7 / Sodium Hydroxide Pellets 12 Kg | 23B1556310 | 12/31/2025      | 07/08/2024 / Iwona      | 07/08/2024 / Iwona          | W3113          |

| Supplier                    | ItemCode / ItemName                             | Lot #   | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|---|---------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | PC05050-1 / EDTA, disodium salt, dihydrate 1 lb | 2ND0156 | 07/10/2026      | 07/26/2024 / Iwona      | 07/26/2024 / Iwona          | W3132          |

| Supplier                    | ItemCode / ItemName                                | Lot #    | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|--|----------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | J3946-1 / Sodium Thiosulfate Pentahydrate, 500 gms | MKCW3077 | 07/31/2029      | 10/07/2024 / Iwona      | 10/07/2024 / Iwona          | W3148          |

| Supplier                    | ItemCode / ItemName                         | Lot #      | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|---|------------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | EM-SX0395-3 / SODIUM CARBONATE ANHYDR 2.5KG | 24E3156178 | 09/30/2027      | 12/10/2024 / Iwona      | 12/10/2024 / Iwona          | W3163          |

## CHEMICAL RECEIPT LOG BOOK

| Supplier           | ItemCode / ItemName                                  | Lot #        | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|--------------------|--|--------------|-----------------|-------------------------|-----------------------------|----------------|
| Inorganic Ventures | 300-CAL-A-500ML / 300.0 Calibration Standard, 500 ml | V2-MEB742616 | 02/19/2026      | 02/19/2025 / lwona      | 01/27/2025 / lwona          | W3180          |

| Supplier                    | ItemCode / ItemName                    | Lot #      | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|--|------------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | J0660-1 / AMMONIUM CHLORIDE, ACS, 500G | 24L0356561 | 08/31/2027      | 03/19/2025 / lwona      | 03/19/2025 / lwona          | W3195          |

| Supplier                    | ItemCode / ItemName                    | Lot #    | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|--|----------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | J0660-1 / AMMONIUM CHLORIDE, ACS, 500G | MKCV1009 | 09/30/2026      | 03/19/2025 / lwona      | 03/19/2025 / lwona          | W3196          |

| Supplier           | ItemCode / ItemName                                  | Lot #  | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|--------------------|--|--------|-----------------|-------------------------|-----------------------------|----------------|
| Inorganic Ventures | 300-CAL-A-500ML / 300.0 Calibration Standard, 500 ml | 040525 | 04/05/2027      | 04/08/2025 / lwona      | 04/08/2025 / lwona          | W3197          |

| Supplier                    | ItemCode / ItemName                               | Lot #    | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|---|----------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | J3246-1 / POTAS PHOSPHATE, MONO, CRYST, ACS, 500G | MKCV6723 | 10/31/2028      | 04/11/2025 / lwona      | 04/11/2025 / lwona          | W3198          |

| Supplier                    | ItemCode / ItemName                     | Lot #      | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|---|------------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | 0330-500G / Cupric Sulfate Pentahydrate | 24H0956271 | 05/31/2027      | 04/11/2025 / lwona      | 04/11/2025 / lwona          | W3199          |

## CHEMICAL RECEIPT LOG BOOK

| Supplier                    | ItemCode / ItemName                               | Lot #    | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|---|----------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | J3246-1 / POTAS PHOSPHATE, MONO, CRYST, ACS, 500G | MKCX1379 | 01/31/2029      | 04/29/2025 / lwona      | 04/29/2025 / lwona          | W3206          |

| Supplier                    | ItemCode / ItemName                  | Lot #   | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|--------------------------------------|---------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | J9416-1 / Sodium Hypochlorite 500 ml | 2506M51 | 12/31/2025      | 07/02/2025 / lwona      | 07/02/2025 / lwona          | W3222          |

| Supplier         | ItemCode / ItemName                       | Lot #      | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|------------------|---|------------|-----------------|-------------------------|-----------------------------|----------------|
| Seidler Chemical | BA-9262-03 / Hexane, Ultra-Resi (cs/4x4L) | 25C0362006 | 04/30/2026      | 09/15/2025 / JIGNESH    | 09/12/2025 / JIGNESH        | W3240          |

| Supplier                    | ItemCode / ItemName                        | Lot #      | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|--|------------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | 140444 / TEST PAPERS,PH 0-14,.5 SENS,100PK | 10BDH15251 | 04/30/2029      | 10/02/2025 / lwona      | 10/02/2025 / lwona          | W3241          |

| Supplier                    | ItemCode / ItemName              | Lot #    | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|----------------------------------|----------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | J0938-7 / Ascorbic Acid, 500 gms | MKCX1143 | 01/31/2028      | 10/03/2025 / lwona      | 10/03/2025 / lwona          | W3243          |

| Supplier                    | ItemCode / ItemName                          | Lot #     | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|--|-----------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | 04667-2.5 / Silica Gel (60-200 mesh), 2.5 KG | 072154301 | 10/03/2030      | 10/03/2025 / lwona      | 10/03/2025 / lwona          | W3246          |





# CERTIFICATE OF ANALYSIS

Printed: 12/8/2017

Page 1 of 1

Customer No : 30017  
Order Number : 3008126  
Catalog : A1561

Customer : PCI SCIENTIFIC  
Delivery # : 58495347  
Potassium Antimony Tartrate Trihydrate,  
Reagent, ACS

Customer PO : 6035343  
Lot : 2GH0057

Chemical Formula :  $C_8H_4K_2O_{12}Sb_2 \cdot 3H_2O$   
CAS# : 28300-74-5

Formula Weight : 667.87

W2306  
received  
12/11/17  
AB

## Test

Limit  
Min. Max.

## Results

|   |                |              |
|---|----------------|--------------|
| ASSAY ( $C_8H_4K_2O_{12}Sb_2 \cdot 3HO$ ) | 99.0 - 103.0 % | 101.0 %      |
| TITRATABLE ACID OR BASE                   | -- 0.020 meq/g | <0.020 meq/g |
| LOSS ON DRYING                            | -- 2.7 %       | <2.7 %       |
| ARSENIC (As)                              | -- 0.015 %     | <0.015 %     |
| APPEARANCE                                |                | WHITE POWDER |
| DATE OF MANUFACTURE                       |                | 29-DEC-2015  |

All pharmaceutical ingredients are tested using current edition of applicable pharmacopeia.

Read and understand label and MSDS/SDS before handling any chemical. All Spectrum's chemicals are for manufacturing, processing, repacking or research purposes by experienced personnel only. The customer must ensure to provide its users adequate hazardous material training and appropriate protective gears before handling our chemicals.

Certificate of Analysis Results Certified By:

Ammonium Molybdate, 4-Hydrate, Crystal  
BAKER ANALYZED® A.C.S. Reagent

(ammonium heptamolybdate, tetrahydrate)



Material No.: 0716-01  
Batch No.: 0000234410  
Manufactured Date: 2019/02/13  
Retest Date: 2026/02/11  
Revision No: 1

## Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

| Test  | Specification | Result  |
|---|---------------|---------|
| Assay (as MoO <sub>3</sub> )                            | 81.0 – 83.0 % | 81.4    |
| ACS – Insoluble Matter                                  | <= 0.005 %    | < 0.001 |
| Chloride (Cl)   | <= 0.002 %    | < 0.002 |
| Nitrate (NO <sub>3</sub> )                              | Passes Test   | PT      |
| Arsenate, Phosphate and Silicate (as SiO <sub>2</sub> ) | <= 0.001 %    | < 0.001 |
| ACS – Phosphate (PO <sub>4</sub> )                      | <= 5 ppm      | < 5     |
| Sulfate (SO <sub>4</sub> )                              | <= 0.02 %     | < 0.02  |
| Heavy Metals (as Pb)                                    | <= 0.001 %    | < 0.001 |
| Magnesium (Mg)  | <= 0.005 %    | < 0.001 |
| Potassium (K)   | <= 0.01 %     | < 0.01  |
| Sodium (Na)   | <= 0.01 %     | <0.001  |

For Laboratory, Research or Manufacturing Use

Meets Reagent Specifications for testing USP/NF monographs

Country of Origin: US

Packaging Site: Paris Mfg Ctr & DC

*James Ethier*  
Jamie Ethier  
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700  
Avantor Performance Materials, LLC  
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

Phenolphthalein, Powder  
BAKER ANALYZED® A.C.S. Reagent



Material No.: 2870-01  
Batch No.: 0000235350  
Manufactured Date: 2018/06/06  
Retest Date: 2025/06/04  
Revision No: 1

## Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

| Test  | Specification | Result |
|---|---------------|--------|
| ACS – Clarity of Solution                         | Passes Test   | PT     |
| Visual Transition Interval – pH...8.0 (Colorless) | Passes Test   | PT     |
| Visual Transition Interval – pH...10.0 (Red)      | Passes Test   | PT     |

For Laboratory, Research or Manufacturing Use

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

  
Jamie Ethier  
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700  
Avantor Performance Materials, LLC  
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

Sodium Bicarbonate, Powder  
BAKER ANALYZED® A.C.S. Reagent

(sodium hydrogen carbonate)



Material No.: 3506-05  
Batch No.: 0000240594  
Manufactured Date: 2019/06/05  
Retest Date: 2026/06/03  
Revision No: 1

## Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

| Test  | Specification  | Result  |
|---|----------------|---------|
| Assay (NaHCO <sub>3</sub> ) (dried basis)     | 99.7 – 100.3 % | 100.1   |
| Insoluble Matter                              | <= 0.015 %     | < 0.002 |
| Chloride (Cl)                                 | <= 0.003 %     | 0.003   |
| Phosphate (PO <sub>4</sub> )                  | <= 0.001 %     | 0.001   |
| Sulfur Compounds (as SO <sub>4</sub> )        | <= 0.003 %     | 0.003   |
| Calcium (Ca)                                  | <= 0.02 %      | 0.02    |
| Trace Impurities – Iron (Fe)                  | <= 0.001 %     | 0.001   |
| Magnesium (Mg)                                | <= 0.005 %     | 0.005   |
| Potassium (K)                                 | <= 0.005 %     | 0.005   |
| Ammonium (NH <sub>4</sub> )                   | <= 5 ppm       | 5       |
| Trace Impurities – ACS – Heavy Metals (as Pb) | <= 5 ppm       | 5       |

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

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

  
Jamie Ethier  
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700  
Avantor Performance Materials, LLC  
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700



# Certificate Of Analysis

|                   |                                     |                  |         |
|-------------------|-------------------------------------|------------------|---------|
| Item Number       | P1060                               | Lot Number       | 2HD0179 |
| Item              | Phenol, Loose Crystal, Reagent, ACS |                  |         |
| CAS Number        | 108-95-2                            |                  |         |
| Molecular Formula | C <sub>6</sub> H <sub>6</sub> O     | Molecular Weight | 94.11   |

| Test                                     | Specification |        | Result      |
|--|---------------|--------|-------------|
|  | min           | max    |             |
| ASSAY (C <sub>6</sub> H <sub>5</sub> OH) | 99.0 %        |        | 100.02 %    |
| FREEZING POINT (DRY)                     | 40.5 C        |        | 40.5°C      |
| CLARITY OF SOLUTION                      | TO PASS TEST  |        | PASSES TEST |
| RESIDUE AFTER EVAPORATION                |               | 0.05 % | <0.05 %     |
| WATER                                    |               | 0.5 %  | 0.0087 %    |
| DATE OF MANUFACTURE                      |               |        | 06-MAR-2018 |

Spectrum Chemical Mfg Corp  
755 Jersey Avenue  
New Brunswick 08901 NJ



Certificate Of Analysis Results Certified by

Ibad Tirmizi  
Director of Quality  
Spectrum Chemical Mfg. Corp.

All pharmaceutical ingredients are tested using current edition of applicable pharmacopeia.

Read and understand label and SDS before handling any chemicals. All Spectrum's chemicals are for manufacturing, processing, repacking or research purposes by experienced personnel only. It is the customer's responsibility to provide adequate hazardous material training and ensure that appropriate Personal Protective Equipment (PPE) is used before handling any chemical.

Hexadecane, 99.0%



Material No.: H223-57  
Batch No.: 0000266903  
Manufactured Date: 2020/05/05  
Retest Date: 2027/05/04  
Revision No: 1

## Certificate of Analysis

| Test   | Specification  | Result |
|--|----------------|--------|
| Assay ( $\text{CH}_3(\text{CH}_2)_{14}\text{CH}_3$ ) (by GC) | $\geq 99.0 \%$ | 99.3   |
| Infrared Spectrum  | Passes Test    | PT     |

For Laboratory, Research or Manufacturing Use

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

  
Jamie Ethier  
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700  
Avantor Performance Materials, LLC  
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

W2666 Recived on 02/10/2020 by AP

Product No.: 87683

Product: Sodium pentacyanonitrosylferrate(III) dihydrate, ACS,  
99.0-102.0%

Lot No.: W12F013

| Test                  | Limits         | Results      |
|-----------------------|----------------|--------------|
| Assay                 | 99.0 - 102.0 % | 99.67 %      |
| Insoluble             | 0.01 % max     | 0.0079 %     |
| Chloride              | 0.02 % max     | Not detected |
| Sulfate               | To pass test   | Passes test  |
| Aqueous solubility    | To pass test   | Passes test  |
| Limit on Ferricyanide | To pass test   | Passes test  |
| Limit on Ferrocyanide | To pass test   | Passes test  |

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This is to certify that units of the lot number above were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Thermo Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Products are for research use or further manufacturing. Not for direct administration to humans or animals. It is the responsibility of the purchaser, formulator or those performing further manufacturing to determine suitability based upon the intended use of the end product. Products are tested to meet the analytical requirements of the noted grade. The above information is the actual analytical results obtained.

**Product Name:** Stearic acid, 98%, Thermo Scientific Chemicals  
**Catalog Number:** A12244.14

---

**CAS Number:** 57-11-4  
**Molecular Formula:** C<sub>18</sub>H<sub>36</sub>O<sub>2</sub>  
**Molecular Weight:** 284.48  
**InChI Key:** QIQXTHQIDYTRH-UHFFFAOYSA-N  
**SMILES:** CCCCCCCCCCCCCCCC(O)=O  
**Synonym:** stearic acid acide stearique hydrofol acid 1855 hydrofol acid 1655 industrene 5016  
stearic acid, ion(1-) (8Cl) glycon TP glycon DP acidum stearinicum hydrofol acid 150

### Product Specification

**Appearance (Color):** White  
**Form:** Crystals or powder or crystalline powder or flakes or waxy solid  
**Assay (Silylated GC):** ≥97.5%  
**Melting Point (clear melt):** 67.0-74.0°C

---

**Date Of Print:** 11/30/2023

*Product Specifications are subject to amendment and may change over time. Data contained is accurate as of the date printed.*





## CERTIFICATE OF ANALYSIS

**Product Name** ISOPROPYL ALCOHOL, 99%  
**Grade** Meets ACS/USP/NF Monographs  
**Catalog #** 231000099, zp231000099  
**Lot #** C20F23007  
**Date of Manufacture:** 06/23/20 **W2788 Received on 12/30/2020 by AP**  
**Recommended Retest Date:** Five Years from Date of Manufacture

| TEST                                   | MONO<br>GRAPH    | SPECIFICATION                          | RESULT        |
|--|------------------|--|---------------|
| Assay (corrected for water)            | USP              | 99.0% min                              | 99.92%        |
| Assay (corrected for water)            | ACS              | 99.5% min                              |               |
| Solubility in water                    | ACS <sup>+</sup> | To Pass Test                           | Pass          |
| Appearance                             | ACS <sup>+</sup> | Clear, colorless liquid                | Pass          |
| Color, APHA                            | ACS              | 10 max                                 | 1             |
| Limit of Nonvolatile Residue           | USP <sup>+</sup> | NMT 2.5 mg (0.005%)                    | 0.1 mg        |
| Residue after Evaporation              | ACS <sup>+</sup> | 0.001% max                             | < 0.001%      |
| Specific Gravity                       | USP              | 0.783 - 0.787 @25°C                    | 0.783         |
| Identification A - Infrared Absorption | USP              | To Pass Test                           | Pass          |
| Identification B                       | USP              | To Pass Test                           | Pass          |
| Refractive Index @ 20°C                | USP              | 1.376-1.378                            | 1.377         |
| Acidity                                | USP <sup>+</sup> | NMT 0.70 ml of 0.020N NaOH is required | 0.30 mL       |
| Titration Acid or Base                 | ACS <sup>+</sup> | 0.0001 meq/g max                       | 0.0001 meq/g  |
| Carbonyl Compounds                     | ACS              | Propionaldehyde 0.002% max             | < 0.002%      |
|  |                  | Acetone 0.002% max                     | None Detected |
| Limit of Volatile Impurities           | USP              | Diethyl Ether NMT 0.1%                 | < 0.1%        |
|  |                  | Acetone NMT 0.1%                       | None Detected |
|  |                  | Diisopropyl Ether NMT 0.1%             | < 0.1%        |
|  |                  | n-Propyl Alcohol NMT 0.1%              | < 0.1%        |
|  |                  | 2-Butanol NMT 0.1%                     | < 0.1%        |
|  |                  | Total NMT 1.0%                         | < 0.1%        |
| Water, wt%                             | ACS              | NMT 0.2%                               | 0.05%         |
| Water Determination                    | USP              | NMT 0.5%                               |               |

<sup>+</sup>This test is performed quarterly

**Certification and Compliance Statements**

This lot of Isopropyl Alcohol complies with all of the current requirements listed in the United States Pharmacopeia, American Chemical Society monographs and the National Formulary.

No chemicals whatsoever are used as solvents at any point in the manufacture, processing or packaging of Isopropyl Alcohol. Only Class 2 and Class 3 residual solvents may appear as impurities / related substances / low level contaminants in IPA. Concentration of Class 2 Option 1 and Class 3 residual solvents is below limits in the current USP/NF General Chapter <467>.

This product is not derived, nor does it come in contact with, any materials derived from bovine or other animal sources.

This product is for further commercial manufacturing, laboratory or research use, and may be used as an excipient or a process solvent for pharmaceutical purposes. It is not intended for use as an active ingredient in drug manufacturing nor as a medical device or disinfectant. Appropriate/legal use of this product is the responsibility of the user.

Approved by: D. Simoncelli, Quality Control Chemist

Date of Approval: 06/23/2020



3050 Spruce Street, Saint Louis, MO 63103, USA

Website: [www.sigmaaldrich.com](http://www.sigmaaldrich.com)Email USA: [techserv@sial.com](mailto:techserv@sial.com)Outside USA: [eurtechserv@sial.com](mailto:eurtechserv@sial.com)

~~112778~~ W2983  
Rec. 11/21/22 12

## Certificate of Analysis

Product Name:

Potassium sulfate - ReagentPlus®, ≥99.0%

Product Number:

P0772

Batch Number:

SLCM9788

Brand:

SIGALD

CAS Number:

7778-80-5

MDL Number:

MFCD00011388

Formula:

K<sub>2</sub>O<sub>4</sub>S

Formula Weight:

174.26 g/mol

Quality Release Date:

03 MAR 2022

K<sub>2</sub>SO<sub>4</sub>

| Test                               | Specification | Result    |
|------------------------------------|---------------|-----------|
| Appearance (Color)                 | White         | White     |
| Appearance (Form)                  | Powder        | Powder    |
| Solubility (Color)                 | Colorless     | Colorless |
| Solubility (Turbidity)             | Clear         | Clear     |
| 10 g plus 150 mL, H <sub>2</sub> O |               |           |
| Titration with NaOH                | ≥ 99.0 %      | 99.2 %    |



Brian Dulle, Supervisor

Quality Assurance

St. Louis, Missouri US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at [Sigma-Aldrich.com](http://Sigma-Aldrich.com). For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.



W3009  
rec. 2/27/2023 12

Product Name:

Hexadecane - ReagentPlus®, 99%

## Certificate of Analysis

Product Number:

H6703

Batch Number:

SHBP8192

 $\text{CH}_3(\text{CH}_2)_{14}\text{CH}_3$ 

Brand:

SIAL

CAS Number:

544-76-3

MDL Number:

MFCD00008998

Formula:

C16H34


Formula Weight:

226.44 g/mol

Quality Release Date:

04 AUG 2022

| Test                       | Specification         | Result    |
|----------------------------|-----------------------|-----------|
| Appearance (Color)         | Colorless or White    | Colorless |
| Appearance (Form)          | Liquid or Solid       | Liquid    |
| Infrared Spectrum          | Conforms to Structure | Conforms  |
| Refractive index at 20 ° C | 1.432 - 1.436         | 1.435     |
| Purity (GC)                | ≥ 98.5 %              | 99.3 %    |
| Color Test                 | ≤ 20 APHA             | < 5 APHA  |

  
Larry Coers, Director  
Quality Control  
Sheboygan Falls, WI US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at [Sigma-Aldrich.com](http://Sigma-Aldrich.com). For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.



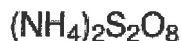
W 3035  
rec. 6/6/23 12

Product Name:


## Certificate of Analysis

Ammonium persulfate - ACS reagent,  $\geq 98.0\%$ 

Product Number: 248614  
Batch Number: MKCR9319  
Brand: SIGALD  
CAS Number: 7727-54-0  
MDL Number: MFCD00003390  
Formula Weight: 228.20 g/mol  
Quality Release Date: 13 OCT 2022



| Test                           | Specification                            | Result    |
|--------------------------------|--|-----------|
| Appearance (Color)             | White to Off White                       | White     |
| Appearance (Form)              | Powder or Crystals or Granules or Chunks | Crystals  |
| ICP Major Analysis             | Confirmed                                | Confirmed |
| Confirms Sulfur Component      |  |           |
| Titration by KMNO <sub>4</sub> | $\geq 98.0 \%$                           | 100.0 %   |
| Residue on ignition (Ash)      | $\leq 0.05 \%$                           | < 0.05 %  |
| Insoluble Matter               | $\leq 0.005 \%$                          | 0.002 %   |
| c = 10 %; In Water             |  |           |
| Chloride and Chlorate (as Cl)  | $\leq 0.001 \%$                          | < 0.001 % |
| Iron (Fe)                      | $\leq 0.001 \%$                          | < 0.001 % |
| Heavy Metal                    | $\leq 0.005 \%$                          | < 0.001 % |
| as Lead                        |  |           |
| Manganese (Mn)                 | $\leq 0.5 \text{ ppm}$                   | < 0.1 ppm |
| Titrateable Acid (meq/g)       | $\leq 0.04$                              | < 0.04    |
| Meets ACS Requirements         | Current ACS Specification                | Conforms  |

  
Larry Coers, Director  
Quality Control  
Milwaukee, WI US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at [Sigma-Aldrich.com](http://Sigma-Aldrich.com). For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.





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

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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

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™



M 6041-4b  
MS

Material No.: 9673-33  
Batch No.: 23D2462010  
Manufactured Date: 2023-03-22  
Retest Date: 2028-03-20  
Revision No.: 0

## Certificate of Analysis

| Test   | Specification | Result      |
|--|---------------|-------------|
| ACS – Assay (H <sub>2</sub> SO <sub>4</sub> )                | 95.0 – 98.0 % | 96.1 %      |
| 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 and Antimony (as As)                                 | ≤ 4.0 ppb     | < 2.0 ppb   |
| Trace Impurities – Boron (B)                                 | ≤ 10.0 ppb    | 8.5 ppb     |
| Trace Impurities – Cadmium (Cd)                              | ≤ 2.0 ppb     | < 0.3 ppb   |
| Trace Impurities – Chromium (Cr)                             | ≤ 6.0 ppb     | < 0.4 ppb   |
| Trace Impurities – Cobalt (Co)                               | ≤ 0.5 ppb     | < 0.3 ppb   |
| Trace Impurities – Copper (Cu)                               | ≤ 1.0 ppb     | < 0.1 ppb   |
| Trace Impurities – Gold (Au)                                 | ≤ 10.0 ppb    | 0.5 ppb     |
| Heavy Metals (as Pb)   | ≤ 500.0 ppb   | < 100.0 ppb |
| Trace Impurities – Iron (Fe)                                 | ≤ 50.0 ppb    | 1.3 ppb     |
| Trace Impurities – Lead (Pb)                                 | ≤ 0.5 ppb     | < 0.5 ppb   |
| Trace Impurities – Magnesium (Mg)                            | ≤ 7.0 ppb     | 0.8 ppb     |
| Trace Impurities – Manganese (Mn)                            | ≤ 1.0 ppb     | < 0.4 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   | < 2.0 ppb   |
| Trace Impurities – Selenium (Se)                             | ≤ 50.0 ppb    | < 0.1 ppb   |
| Trace Impurities – Silicon (Si)                              | ≤ 100.0 ppb   | 31.5 ppb    |
| Trace Impurities – Silver (Ag)                               | ≤ 1.0 ppb     | < 0.3 ppb   |

>>> Continued on page 2 >>>



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

 **avantor™**



Material No.: 9673-33  
Batch No.: 23D2462010

| Test                              | Specification    | Result    |
|-----------------------------------|------------------|-----------|
| Trace Impurities – Sodium (Na)    | $\leq 500.0$ ppb | 5.4 ppb   |
| Trace Impurities – Strontium (Sr) | $\leq 5.0$ ppb   | < 0.2 ppb |
| Trace Impurities – Tin (Sn)       | $\leq 5.0$ ppb   | < 0.8 ppb |
| Trace Impurities – Zinc (Zn)      | $\leq 5.0$ ppb   | 0.4 ppb   |

For Laboratory, Research, or Manufacturing Use

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

  
Jamie Ethier  
Vice President Global Quality



## Certificate of Analysis

### Product information

|                      |                                |
|----------------------|--------------------------------|
| Product              | pH-Fix 0.3-2.3                 |
| REF                  | 92180                          |
| LOT                  | 80A0441                        |
| Expiration date:     | 29.02.2028                     |
| Date of examination: | 23.01.2024                     |
| Gradation:           | pH 0.3-0.7-1.0-1.3-1.6-1.9-2.3 |

### Confirmation

Hereby we confirm, that the above mentioned product has successfully passed our quality control system in accordance with ISO 9001 and meets the specific quality criteria.

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



Hydrochloric Acid, 36.5–38.0%  
BAKER INSTRA-ANALYZED® Reagent  
For Trace Metal Analysis

 **avantor™**



M6151

R → 11/15/25

Material No.: 9530-33  
Batch No.: 22G2862015  
Manufactured Date: 2022-06-15  
Retest Date: 2027-06-14  
Revision No.: 0

## Certificate of Analysis

| Test                                      | Specification | Result      |
|---|---------------|-------------|
| ACS – Assay (as HCl) (by acid–base titrn) | 36.5 – 38.0 % | 37.9 %      |
| ACS – Color (APHA)                        | ≤ 10          | 5           |
| ACS – Residue after Ignition              | ≤ 3 ppm       | < 1 ppm     |
| ACS – Specific Gravity at 60°/60°F        | 1.185 – 1.192 | 1.191       |
| ACS – Bromide (Br)                        | ≤ 0.005 %     | < 0.005 %   |
| ACS – Extractable Organic Substances      | ≤ 5 ppm       | < 1 ppm     |
| ACS – Free Chlorine (as Cl <sub>2</sub> ) | ≤ 0.5 ppm     | < 0.5 ppm   |
| Phosphate (PO <sub>4</sub> )              | ≤ 0.05 ppm    | < 0.03 ppm  |
| Sulfate (SO <sub>4</sub> )                | ≤ 0.5 ppm     | < 0.3 ppm   |
| Sulfite (SO <sub>3</sub> )                | ≤ 0.8 ppm     | 0.3 ppm     |
| Ammonium (NH <sub>4</sub> )               | ≤ 3 ppm       | < 1 ppm     |
| Trace Impurities – Arsenic (As)           | ≤ 0.010 ppm   | < 0.003 ppm |
| Trace Impurities – Aluminum (Al)          | ≤ 10.0 ppb    | 1.3 ppb     |
| Arsenic and Antimony (as As)              | ≤ 5.0 ppb     | < 3.0 ppb   |
| Trace Impurities – Barium (Ba)            | ≤ 1.0 ppb     | 0.2 ppb     |
| Trace Impurities – Beryllium (Be)         | ≤ 1.0 ppb     | < 0.2 ppb   |
| Trace Impurities – Bismuth (Bi)           | ≤ 10.0 ppb    | < 1.0 ppb   |
| Trace Impurities – Boron (B)              | ≤ 20.0 ppb    | < 5.0 ppb   |
| Trace Impurities – Cadmium (Cd)           | ≤ 1.0 ppb     | < 0.3 ppb   |
| Trace Impurities – Calcium (Ca)           | ≤ 50.0 ppb    | 163.0 ppb   |
| Trace Impurities – Chromium (Cr)          | ≤ 1.0 ppb     | 0.7 ppb     |
| Trace Impurities – Cobalt (Co)            | ≤ 1.0 ppb     | < 0.3 ppb   |
| Trace Impurities – Copper (Cu)            | ≤ 1.0 ppb     | < 0.1 ppb   |
| Trace Impurities – Gallium (Ga)           | ≤ 1.0 ppb     | < 0.2 ppb   |
| Trace Impurities – Germanium (Ge)         | ≤ 3.0 ppb     | < 2.0 ppb   |
| Trace Impurities – Gold (Au)              | ≤ 4.0 ppb     | 0.6 ppb     |
| Heavy Metals (as Pb)                      | ≤ 100 ppb     | < 50 ppb    |
| Trace Impurities – Iron (Fe)              | ≤ 15 ppb      | 6 ppb       |

>>> Continued on page 2 >>>

Hydrochloric Acid, 36.5–38.0%  
BAKER INSTRA-ANALYZED® Reagent  
For Trace Metal Analysis

 **avantorsm**



Material No.: 9530-33  
Batch No.: 22G2862015

| Test   | Specification | Result     |
|--|---------------|------------|
| Trace Impurities – Lead (Pb)                           | ≤ 1.0 ppb     | < 0.5 ppb  |
| Trace Impurities – Lithium (Li)                        | ≤ 1.0 ppb     | < 0.2 ppb  |
| Trace Impurities – Magnesium (Mg)                      | ≤ 10.0 ppb    | 2.9 ppb    |
| Trace Impurities – Manganese (Mn)                      | ≤ 1.0 ppb     | < 0.4 ppb  |
| Trace Impurities – Mercury (Hg)                        | ≤ 0.5 ppb     | 0.1 ppb    |
| Trace Impurities – Molybdenum (Mo)                     | ≤ 10.0 ppb    | < 3.0 ppb  |
| Trace Impurities – Nickel (Ni)                         | ≤ 4.0 ppb     | < 0.3 ppb  |
| Trace Impurities – Niobium (Nb)                        | ≤ 1.0 ppb     | 0.8 ppb    |
| Trace Impurities – Potassium (K)                       | ≤ 9.0 ppb     | < 2.0 ppb  |
| Trace Impurities – Selenium (Se), For Information Only |               | < 1.0 ppb  |
| Trace Impurities – Silicon (Si)                        | ≤ 100.0 ppb   | < 10.0 ppb |
| Trace Impurities – Silver (Ag)                         | ≤ 1.0 ppb     | 0.5 ppb    |
| Trace Impurities – Sodium (Na)                         | ≤ 100.0 ppb   | 2.3 ppb    |
| Trace Impurities – Strontium (Sr)                      | ≤ 1.0 ppb     | < 0.2 ppb  |
| Trace Impurities – Tantalum (Ta)                       | ≤ 1.0 ppb     | 1.6 ppb    |
| Trace Impurities – Thallium (Tl)                       | ≤ 5.0 ppb     | < 2.0 ppb  |
| Trace Impurities – Tin (Sn)                            | ≤ 5.0 ppb     | 4.0 ppb    |
| Trace Impurities – Titanium (Ti)                       | ≤ 1.0 ppb     | 1.5 ppb    |
| Trace Impurities – Vanadium (V)                        | ≤ 1.0 ppb     | < 0.2 ppb  |
| Trace Impurities – Zinc (Zn)                           | ≤ 5.0 ppb     | 0.8 ppb    |
| Trace Impurities – Zirconium (Zr)                      | ≤ 1.0 ppb     | 0.3 ppb    |

>>> Continued on page 3 >>>

Hydrochloric Acid, 36.5–38.0%  
BAKER INSTRA–ANALYZED® Reagent  
For Trace Metal Analysis



Material No.: 9530-33  
Batch No.: 22G2862015

| Test | Specification | Result |
|------|---------------|--------|
|------|---------------|--------|

For Laboratory, Research, or Manufacturing Use  
Product Information (not specifications):  
Appearance (clear, fuming liquid)  
Meets ACS Specifications  
Storage Condition: Store below 25 °C.

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

A handwritten signature in cursive script that reads 'Jamie Ethier'.  
Jamie Ethier  
Vice President Global Quality

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

avantor™



M6186

Recieve Date :- 08/06/25

Material No.: 9673-33  
Batch No.: 23D2462010  
Manufactured Date: 2023-03-22  
Retest Date: 2028-03-20  
Revision No.: 0

## Certificate of Analysis

| Test   | Specification | Result      |
|--|---------------|-------------|
| ACS - Assay (H <sub>2</sub> SO <sub>4</sub> )                | 95.0 - 98.0 % | 96.1 %      |
| 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 and Antimony (as As)                                 | ≤ 4.0 ppb     | < 2.0 ppb   |
| Trace Impurities - Boron (B)                                 | ≤ 10.0 ppb    | 8.5 ppb     |
| Trace Impurities - Cadmium (Cd)                              | ≤ 2.0 ppb     | < 0.3 ppb   |
| Trace Impurities - Chromium (Cr)                             | ≤ 6.0 ppb     | < 0.4 ppb   |
| Trace Impurities - Cobalt (Co)                               | ≤ 0.5 ppb     | < 0.3 ppb   |
| Trace Impurities - Copper (Cu)                               | ≤ 1.0 ppb     | < 0.1 ppb   |
| Trace Impurities - Gold (Au)                                 | ≤ 10.0 ppb    | 0.5 ppb     |
| Heavy Metals (as Pb)   | ≤ 500.0 ppb   | < 100.0 ppb |
| Trace Impurities - Iron (Fe)                                 | ≤ 50.0 ppb    | 1.3 ppb     |
| Trace Impurities - Lead (Pb)                                 | ≤ 0.5 ppb     | < 0.5 ppb   |
| Trace Impurities - Magnesium (Mg)                            | ≤ 7.0 ppb     | 0.8 ppb     |
| Trace Impurities - Manganese (Mn)                            | ≤ 1.0 ppb     | < 0.4 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   | < 2.0 ppb   |
| Trace Impurities - Selenium (Se)                             | ≤ 50.0 ppb    | < 0.1 ppb   |
| Trace Impurities - Silicon (Si)                              | ≤ 100.0 ppb   | 31.5 ppb    |
| Trace Impurities - Silver (Ag)                               | ≤ 1.0 ppb     | < 0.3 ppb   |

>>> Continued on page 2 >>>

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



Material No.: 9673-33  
Batch No.: 23D2462010

| Test                              | Specification    | Result      |
|-----------------------------------|------------------|-------------|
| Trace Impurities – Sodium (Na)    | $\leq 500.0$ ppb | 5.4 ppb     |
| Trace Impurities – Strontium (Sr) | $\leq 5.0$ ppb   | $< 0.2$ ppb |
| Trace Impurities – Tin (Sn)       | $\leq 5.0$ ppb   | $< 0.8$ ppb |
| Trace Impurities – Zinc (Zn)      | $\leq 5.0$ ppb   | 0.4 ppb     |

For Laboratory, Research, or Manufacturing Use

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

A handwritten signature in cursive script that reads 'Jamie Ethier'.  
Jamie Ethier  
Vice President Global Quality

# Certificate of analysis

W3082 Received on 2/26/2026 by IZ

Product No.: A12244  
Product: Stearic acid, 98%  
Lot No.: U23E020

Appearance White flakes  
Assay 98.7 %

This document has been electronically generated and does not require a signature.

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**ThermoFisher**  
S C I E N T I F I C





# 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            | <= 0.005 %    | <0.005 % | PASS        |
| Chloride           | <= 0.005 %    | 0.002 %  | PASS        |
| Heavy Metals       | <= 0.002 %    | <0.002 % | PASS        |
| Iron               | <= 0.001 %    | <0.001 % | PASS        |
| Magnesium          | <= 0.002 %    | <0.002 % | PASS        |
| Mercury            | <= 0.1 ppm    | <0.1 ppm | PASS        |
| Nickel             | <= 0.001 %    | <0.001 % | PASS        |
| Nitrogen Compounds | <= 0.001 %    | <0.001 % | PASS        |
| Phosphate          | <= 0.001 %    | <0.001 % | PASS        |
| Potassium          | <= 0.02 %     | <0.02 %  | PASS        |
| Purity             | >= 97.0 %     | 99.2 %   | PASS        |
| Sodium Carbonate   | <= 1.0 %      | 0.5 %    | PASS        |
| Sulfate            | <= 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.



## 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

Spec Set: 0583ACS

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.

|                   |                                      |                  |           |
|-------------------|--------------------------------------|------------------|-----------|
| Item Number       | ED150                                | Lot Number       | 2ND0156   |
| Item              | Edetate Disodium, Dihydrate, USP     | CAS Number       | 6381-92-6 |
| Molecular Formula | $C_{10}H_{14}N_2Na_2O_8 \cdot 2H_2O$ | Molecular Weight | 372.24    |

| TEST   | SPECIFICATION   |             | RESULT  |
|--|---|-------------|---|
|  | MIN   | MAX         |   |
| ASSAY (DRIED BASIS)  | 99.0  | 101.0 %     | 99.5 %  |
| pH OF A 5% SOLUTION @ 25°C                                     | 4.0   | 6.0         | 4.6   |
| LOSS ON DRYING   | 8.7   | 11.4 %      | 8.90 %  |
| CALCIUM (Ca)   | NO PRECIPITATE IS FORMED                              |             | NO PRECIPITATE IS FORMED                              |
| ELEMENTAL IMPURITIES:  |   |             | .   |
| NICKEL (Ni)  | AS REPORTED   |             | <0.3 ppm  |
| CHROMIUM (Cr)  | AS REPORTED   |             | <0.3 ppm  |
| NITRILOTRIACETIC ACID[n[(HOCOCH <sub>2</sub> ) <sub>3</sub> N] |   | 0.1 %       | <0.10 %   |
| IDENTIFICATION A   | MATCHES REFERENCE                                     |             | MATCHES REFERENCE                                     |
| IDENTIFICATION B   | RED COLOR IS DISCHARGED, LEAVING A YELLOWISH SOLUTION |             | RED COLOR IS DISCHARGED, LEAVING A YELLOWISH SOLUTION |
| IDENTIFICATION C   | MEETS THE REQUIREMENTS FOR SODIUM                     |             | MEETS THE REQUIREMENTS FOR SODIUM                     |
| CERTIFIED HALAL  |   |             | CERTIFIED HALAL                                       |
| EXPIRATION DATE  |   |             | 10-JUL-2026   |
| DATE OF MANUFACTURE  |   |             | 11-JUL-2023   |
| APPEARANCE   |   |             | WHITE CRYSTALLINE POWDER                              |
| RESIDUAL SOLVENTS  |   | AS REPORTED | NO RESIDUAL SOLVENTS PRESENT                          |
| MONOGRAPH EDITION  |   |             | USP 2024  |

Certificate of Analysis Results Entered By:

CACEVEDO  
Charmian Acevedo  
22-MAY-24 08:12:30

Certificate of Analysis Results Approved By:

GHERRERA  
Genaro Herrera  
22-MAY-24 12:32:01

Spectrum Chemical Mfg Corp  
755 Jersey Avenue  
New Brunswick 08901 NJ



**All pharmaceutical ingredients are tested using current edition of applicable pharmacopeia.**

**Read and understand label and SDS before handling any chemicals. All Spectrum's chemicals are for manufacturing, processing, repacking or research purposes by experienced personnel only. It is the customer's responsibility to provide adequate hazardous material training and ensure that appropriate Personal Protective Equipment (PPE) is used before handling any chemical.**

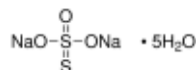
The Elemental Impurities standards implemented by USP and other Pharmaceutical Compendia reflect a growing understanding of the toxicology of trace levels of elemental impurities that can remain in drug substances originating from either raw materials or manufacturing processes. Identifying and quantifying impurities can be critical to predicting the best possible patient outcomes. Elemental Impurities has been a requirement of all products meeting USP/NF, EP and BP monographs since January 1, 2018. More information can be found in USP sections <232> Elemental Impurities – Limits and <233> Elemental Impurities – Procedures. Data for drug substances furnished by Spectrum Chemical Mfg. Corp can be used to ensure that patient daily exposures by oral administration to the selected elements are not exceeded in the formulation of pharmaceutical products.

## Certificate of Analysis

Product Name:

Sodium thiosulfate pentahydrate - ACS reagent, ≥99.5%

**Product Number:** 217247  
**Batch Number:** MKCW3077  
**Brand:** SIGALD  
**CAS Number:** 10102-17-7  
**MDL Number:** MFCD00149186  
**Formula:** Na<sub>2</sub>O<sub>3</sub>S<sub>2</sub> · 5H<sub>2</sub>O  
**Formula Weight:** 248.18 g/mol  
**Quality Release Date:** 12 JUL 2024  
**Recommended Retest Date:** JUL 2029



| Test                                    | Specification                 | Result    |
|---|-------------------------------|-----------|
| Appearance (Color)                      | Colorless or White            | White     |
| Appearance (Form)                       | Powder or Crystals or Pellets | Crystals  |
| ICP Major Analysis                      | Confirmed                     | Confirmed |
| Confirms Sodium and Sulfur Components   |                               |           |
| Titration by Iodine                     | 99.5 - 101.0 %                | 100.2 %   |
| pH                                      | 6.0 - 8.4                     | 6.1       |
| c = 5%; Water; At 25 Deg C              |                               |           |
| Insoluble Matter                        | ≤ 0.005 %                     | < 0.001 % |
| c = 10%; Water                          |                               |           |
| Nitrogen Compounds                      | ≤ 0.002 %                     | < 0.002 % |
| Sulfate & Sulfite (as SO <sub>4</sub> ) | ≤ 0.1 %                       | < 0.1 %   |
| Sulfide                                 | Pass                          | Pass      |
| Meets ACS Requirements                  | Current ACS Specification     | Conforms  |
| Recommended Retest Period               | -----                         | -----     |
| 5 Years                                 |                               |           |



Larry Coers, Director  
Quality Control  
Milwaukee, WI US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at [Sigma-Aldrich.com](http://Sigma-Aldrich.com). For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.





W3163 Rec. on 12/10/24 by IZ

# Certificate of Analysis



Material BDH9284-2.5KG  
Material Description BDH SODIUM CARB ANHYD ACS 2.5KG  
Grade U S P REAGENT (ACS GRADE)

Batch 24E3156178  
Reassay Date 09/30/2027  
CAS Number 497-19-8  
Molecular Formula  $\text{Na}_2\text{CO}_3$   
Molecular Mass 105.99

Date of Manufacture 09/01/2023  
Storage Room Temperature  
Material is hygroscopic. Protect from Moisture.  
Additional Product Description:

| Characteristics      | Specifications   | Measured Values            |
|----------------------|--|----------------------------|
| Appearance           | Fine white granular powder                                 | Fine white granular powder |
| Calcium              | $\leq 0.03 \%$   | 0.003 %                    |
| Chloride             | $\leq 0.001 \%$  | 0.0003 %                   |
| Heavy Metals (as Pb) | $\leq 0.0005 \%$   | 0.0001 %                   |
| Insolubles           | $\leq 0.01 \%$   | 0.001 %                    |
| Iron                 | $\leq 0.0005 \%$   | 0.0001 %                   |
| Loss on Heating      | $\leq 1.0 \%$  | 0.03 %                     |
| Magnesium            | $\leq 0.005 \%$  | 0.001 %                    |
| Phosphate            | $\leq 0.001 \%$  | 0.001 %                    |
| Potassium            | $\leq 0.005 \%$  | 0.003 %                    |
| Purity               | $\geq 99.5 \%$   | 100.0 %                    |
| Silica               | $\leq 0.005 \%$  | 0.001 %                    |
| Sulfur Compounds     | $\leq 0.003 \%$  | 0.002 %                    |
| Extra Description:   | Meets Reagent Specifications for testing USP/NF monographs |                            |

Internal ID #: 710

| Signature  | Additional Information  |
|--|---|
| We certify that this batch conforms to the specifications listed above.<br><br>This document has been electronically produced and is valid without a signature.<br><br>Leona Edwardson, Quality Control Sr. Manager - Solon<br>VWR Chemicals, LLC.<br>28600 Fountain Parkway, Solon OH 44139 USA | Analysis may have been rounded to significant digits in specification limits<br><br>Product meets analytical specifications of the grades listed. |



Refine your results. Redefine your industry.

# Certificate of Analysis

300 Technology Drive  
Christiansburg, VA 24073 USA  
inorganicventures.com

P: 800-669-6799/540-585-3030  
F: 540-585-3012  
info@inorganicventures.com

## 1.0 ACCREDITATION / REGISTRATION

**INORGANIC VENTURES** is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



## 2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Ion Chromatography Solution  
Catalog Number: 300-CAL-A  
Lot Number: V2-MEB742616  
Matrix: H<sub>2</sub>O  
Value / Analyte(s):  
150 µg/mL ea:  
Sulfate,  
100 µg/mL ea:  
Bromide,  
50 µg/mL ea:  
o-Phosphate as P,  
30 µg/mL ea:  
Chloride, Nitrite as N,  
25 µg/mL ea:  
Nitrate as N,  
20 µg/mL ea:  
Fluoride

## 3.0 CERTIFIED VALUES AND UNCERTAINTIES

| ANALYTE                          | CERTIFIED VALUE    | ANALYTE                            | CERTIFIED VALUE    |
|----------------------------------|--------------------|------------------------------------|--------------------|
| Bromide, Br                      | 100.0 ± 0.5 µg/mL  | Chloride, Cl                       | 30.01 ± 0.13 µg/mL |
| Fluoride, F-                     | 20.00 ± 0.07 µg/mL | Nitrate as N, NNO <sub>3</sub> -   | 25.00 ± 0.10 µg/mL |
| Nitrite as N, NNO <sub>2</sub> - | 30.00 ± 0.10 µg/mL | o-Phosphate as P, PPO <sub>4</sub> | 50.00 ± 0.18 µg/mL |
| Sulfate, SO <sub>4</sub>         | 150.0 ± 0.8 µg/mL  |                                    |                    |

Density: 0.999 g/mL (measured at 20 ± 4 °C)

Assay Information:

| ANALYTE | METHOD     | NIST SRM#        | SRM LOT#   |
|---------|------------|------------------|------------|
| Br      | IC Assay   | 3184             | 151130     |
| Br      | Fajans     | 999c             | 999c       |
| Cl      | IC Assay   | 3182             | 190830     |
| Cl      | Fajans     | 999c             | 999c       |
| F-      | IC Assay   | 3183             | 140203     |
| NNO3-   | IC Assay   | 3185             | 170309     |
| NNO2-   | IC Assay   | Traceable to 40H | 08228TH-H2 |
| NNO2-   | Calculated | 40h              | 40h        |
| PPO4    | IC Assay   | 3186             | 170606     |
| SO4     | IC Assay   | 3181             | 080603     |

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

#### Characterization of CRM/RM by Two or More Methods

Certified Value,  $X_{CRM/RM}$ , where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

$X_i$  = mean of Assay Method i with standard uncertainty  $u_{char i}$

$w_i$  = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char i}^2) / (\sum(1/u_{char i}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k(u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char} = [\sum(w_i)^2(u_{char i}^2)]^{1/2}$  where  $u_{char i}$  are the errors from each characterization method

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

#### Characterization of CRM/RM by One Method

Certified Value,  $X_{CRM/RM}$ , where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a)(u_{char a})$$

$X_a$  = mean of Assay Method A with

$u_{char a}$  = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k(u_{char a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char a}$  = the errors from characterization

$u_{bb}$  = bottle to bottle homogeneity standard uncertainty

$u_{lts}$  = long term stability standard uncertainty (storage)

$u_{ts}$  = transport stability standard uncertainty

## 4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

### 4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

### 4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

### 4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

## 5.0 CHROMATOGRAM

N/A

## 6.0 INTENDED USE

**6.1** This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.



**6.2** For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures [Terms and Conditions of Sale](https://www.inorganicventures.com/terms-and-conditions-sale). The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

## **7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL**

### **7.1 Storage and Handling Recommendations**

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit [www.inorganicventures.com/TCT](http://www.inorganicventures.com/TCT)

## **8.0 HAZARDOUS INFORMATION**

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

## **9.0 HOMOGENEITY**

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

## **10.0 QUALITY STANDARD DOCUMENTATION**

### **10.1 ISO 9001 Quality Management System Registration**

- QSR Certificate Number QSR-1034

### **10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"**

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

### **10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"**

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; [inorganicventures.com](http://inorganicventures.com); [info@inorganicventures.com](mailto:info@inorganicventures.com)

## **11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY**

### 11.1 Certification Issue Date

April 02, 2024

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

### 11.2 Lot Expiration Date

- **April 02, 2029**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

### 11.3 Period of Validity

- Sealed TCT Bag Open Date: \_\_\_\_\_

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

## 12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS


### Certificate Prepared By:

Uyen Truong  
Custom Processing Supervisor



### Certificate Approved By:

Thomas Kozikowski  
Stock VS Manager



### Certifying Officer:

Paul Gaines  
Chairman / Senior Technical Director





W3195 Received on 03/19/2025 by IZ

# Certificate of Analysis



|                      |                                |
|----------------------|--------------------------------|
| Material             | BDH9208-500G                   |
| Material Description | BDH AMMONIUM CHLORIDE ACS 500G |
| Grade                | U S P REAGENT (ACS GRADE)      |
| Batch                | 24L0356561                     |
| Reassay Date         | 08/31/2027                     |
| CAS Number           | 12125-02-9                     |
| Molecular Formula    | NH <sub>4</sub> Cl             |
| Molecular Mass       | 53.49                          |
| Date of Manufacture  | 08/01/2024                     |
| Storage              | Room Temperature               |

| Characteristics      | Specifications   | Measured Values       |
|----------------------|--|-----------------------|
| Appearance           | White granular powder                                      | White granular powder |
| Calcium              | <= 0.001 %   | 0.001 %               |
| Heavy Metals (as Pb) | <= 0.0005 %  | <0.0002 %             |
| Insolubles           | <= 0.005 %   | 0.001 %               |
| Iron                 | <= 0.0002 %  | <0.0002 %             |
| Magnesium            | <= 0.0005 %  | 0.0001 %              |
| pH (5%, Water) @25C  | 4.5 - 5.5  | 4.8                   |
| Phosphate            | <= 0.0002 %  | <0.0002 %             |
| Purity               | >= 99.5 %  | 99.8 %                |
| Residue on Ignition  | <= 0.01 %  | 0.003 %               |
| Sulfate              | <= 0.002 %   | <0.002 %              |
| Extra Description:   | Meets Reagent Specifications for testing USP/NF monographs |                       |

Internal ID #: 710

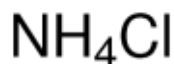
| Signature  | Additional Information  |
|--|---|
| We certify that this batch conforms to the specifications listed above.<br><br>This document has been electronically produced and is valid without a signature.<br><br>Leona Edwardson, Quality Control Sr. Manager - Solon<br>VWR Chemicals, LLC.<br>28600 Fountain Parkway, Solon OH 44139 USA | Analysis may have been rounded to significant digits in specification limits<br><br>Product meets analytical specifications of the grades listed. |

W3196 Received on 03/19/2025 by IZ

## Certificate of Analysis

Product Name:

Ammonium chloride - ACS reagent, ≥99.5%



**Product Number:** 213330  
**Batch Number:** MKCV1009  
**Brand:** SIGALD  
**CAS Number:** 12125-02-9  
**MDL Number:** MFCD00011420  
**Formula:** H4CIN  
**Formula Weight:** 53.49 g/mol  
**Quality Release Date:** 23 OCT 2023  
**Recommended Retest Date:** SEP 2026

| Test                           | Specification                  | Result    |
|--------------------------------|--------------------------------|-----------|
| Appearance (Color)             | White                          | White     |
| Appearance (Form)              | Powder or Crystals or Chunk(s) | Crystals  |
| Titration by AgNO <sub>3</sub> | ≥ 99.5 %                       | 100.2 %   |
| pH                             | 4.5 - 5.5                      | 4.9       |
| @ 25 Deg c (5% Solution)       |                                |           |
| Insoluble Matter               | ≤ 0.005 %                      | 0.001 %   |
| 10%, H <sub>2</sub> O          |                                |           |
| Residue on ignition (Ash)      | ≤ 0.01 %                       | < 0.01 %  |
| Calcium (Ca)                   | ≤ 0.001 %                      | < 0.001 % |
| Magnesium (Mg)                 | ≤ 5 ppm                        | 1 ppm     |
| Heavy Metals                   | ≤ 5 ppm                        | < 1 ppm   |
| by ICP                         |                                |           |
| Iron (Fe)                      | ≤ 2 ppm                        | < 1 ppm   |
| Phosphate (PO <sub>4</sub> )   | ≤ 2 ppm                        | < 2 ppm   |
| Sulfate (SO <sub>4</sub> )     | ≤ 0.002 %                      | < 0.002 % |
| Meets ACS Requirements         | Current ACS Specification      | Conforms  |
| Recommended Retest Period      | -----                          | -----     |
| 3 Years                        |                                |           |



Larry Coers, Director

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at [Sigma-Aldrich.com](http://Sigma-Aldrich.com). For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.



## Certificate of Analysis

**Product Number:** 213330  
**Batch Number:** MKCV1009

---

Quality Control  
Milwaukee, WI US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at [Sigma-Aldrich.com](http://Sigma-Aldrich.com). For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.



| Ident         | Instrument IC-1 |         |         |         | Analyst: NF |          | Method: 300.0 / 9056A |                       | Initial Analyst |          |
|---------------|-----------------|---------|---------|---------|-------------|----------|-----------------------|-----------------------|-----------------|----------|
|               | Con F-          | Con CL- | Con NO2 | Con BR- | Con NO3     | Con HPO4 | Con SO4               | Method name date time |                 |          |
| STD1          | 0               | 0       | 0       | 0       | 0           | 0        | 0                     | 0 IC1-032125          | 3/21/2025 10:45 | 10 NF/IZ |
| STD2          | 0.421           | 0.619   | 0.631   | 2.075   | 0.523       | 1.052    | 3.247                 | IC1-032125            | 3/21/2025 11:07 | 10 NF/IZ |
| STD3          | 0.795           | 1.199   | 1.203   | 3.994   | 1.001       | 1.993    | 5.998                 | IC1-032125            | 3/21/2025 11:28 | 10 NF/IZ |
| STD4          | 0.977           | 1.475   | 1.468   | 4.904   | 1.226       | 2.407    | 7.216                 | IC1-032125            | 3/21/2025 11:50 | 10 NF/IZ |
| STD5          | 1.993           | 3.009   | 2.995   | 10.03   | 2.493       | 4.968    | 14.842                | IC1-032125            | 3/21/2025 12:11 | 10 NF/IZ |
| STD6          | 4.034           | 5.988   | 5.986   | 19.975  | 5.011       | 10.256   | 30.502                | IC1-032125            | 3/21/2025 12:32 | 10 NF/IZ |
| STD7          | 4.979           | 7.51    | 7.517   | 25.022  | 6.247       | 12.323   | 36.695                | IC1-032125            | 3/21/2025 12:54 | 10 NF/IZ |
| ICV           | 2.031           | 3.038   | 3.08    | 10.364  | 2.568       | 5.199    | 15.269                | IC1-032125            | 3/21/2025 13:37 | 10 NF/IZ |
| ICB           | 0               | 0.122   | 0.08    | 0       | 0           | 0        | 0                     | IC1-032125            | 3/21/2025 13:58 | 10 NF/IZ |
| CCV           | 2.034           | 3.119   | 3.093   | 10.383  | 2.559       | 5.188    | 15.179                | IC1-032125            | 4/3/2025 9:38   | 10 NF/IZ |
| CCB           | 0               | 0       | 0       | 0       | 0           | 0        | 0                     | IC1-032125            | 4/3/2025 9:59   | 10 NF/IZ |
| LB135296BSW   | 2.028           | 3.121   | 3.103   | 10.387  | 2.561       | 5.226    | 15.185                | IC1-032125            | 4/3/2025 10:43  | 10 NF/IZ |
| LB135296BLW   | 0               | 0       | 0       | 0       | 0           | 0        | 0                     | IC1-032125            | 4/3/2025 11:04  | 10 NF/IZ |
| Q1711-01      | 0.332           | 26.59   | 0       | 0.215   | 0           | 2.108    | 10.666                | IC1-032125            | 4/3/2025 12:29  | 10 NF/IZ |
| Q1711-02MS    | 2.301           | 28.881  | 3.076   | 10.43   | 2.571       | 2.367    | 24.892                | IC1-032125            | 4/3/2025 12:50  | 10 NF/IZ |
| Q1711-03MSD   | 2.172           | 28.857  | 2.983   | 10.101  | 2.479       | 1.573    | 24.485                | IC1-032125            | 4/3/2025 13:12  | 10 NF/IZ |
| Q1711-04      | 0.275           | 20.1    | 0       | 0.221   | 0           | 0        | 4.529                 | IC1-032125            | 4/3/2025 13:55  | 10 NF/IZ |
| Q1711-08      | 0               | 0.047   | 0       | 0       | 0           | 0        | 0                     | IC1-032125            | 4/3/2025 14:16  | 10 NF/IZ |
| Q1716-01      | 0.433           | 427.687 | 0       | 0.63    | 0.296       | 0        | 54.697                | IC1-032125            | 4/3/2025 14:38  | 10 NF/IZ |
| Q1711-01DLX10 | 0.054           | 2.364   | 0       | 0       | 0           | 0        | 1.413                 | IC1-032125            | 4/3/2025 14:59  | 10 NF/IZ |
| Q1711-04DLX5  | 0.071           | 3.687   | 0       | 0       | 0           | 0        | 1.238                 | IC1-032125            | 4/3/2025 15:21  | 10 NF/IZ |
| CCV           | 2.072           | 3.107   | 3.112   | 10.418  | 2.589       | 5.237    | 15.386                | IC1-032125            | 4/3/2025 15:43  | 10 NF/IZ |
| CCB           | 0               | 0       | 0       | 0       | 0           | 0        | 0                     | IC1-032125            | 4/3/2025 17:16  | 10 NF/IZ |

W3198 Received on 4/11/2025 by IZ

3050 Spruce Street, Saint Louis, MO 63103, USA

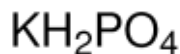
Website: [www.sigmaaldrich.com](http://www.sigmaaldrich.com)Email USA: [techserv@sial.com](mailto:techserv@sial.com)Outside USA: [eurtechserv@sial.com](mailto:eurtechserv@sial.com)

## Certificate of Analysis

Product Name:

Potassium phosphate monobasic - ACS reagent, ≥99.0%

**Product Number:** P0662  
**Batch Number:** MKCW6723  
**Brand:** SIGALD  
**CAS Number:** 7778-77-0  
**MDL Number:** MFCD00011401  
**Formula:** H<sub>2</sub>KO<sub>4</sub>P  
**Formula Weight:** 136.09 g/mol  
**Quality Release Date:** 16 OCT 2024  
**Recommended Retest Date:** OCT 2028



| Test                       | Specification      | Result    |
|----------------------------|--------------------|-----------|
| Appearance (Color)         | White              | White     |
| Appearance (Form)          | Powder or Crystals | Crystals  |
| Assay                      | ≥ 99.0 %           | 99.8 %    |
| Insoluble Matter           | ≤ 0.01 %           | < 0.01 %  |
| Loss on Drying             | ≤ 0.2 %            | < 0.1 %   |
| At 105°C                   |                    |           |
| pH                         | 4.1 - 4.5          | 4.5       |
| (c = 5%, 25 deg C)         |                    |           |
| Chloride Content           | ≤ 0.001 %          | < 0.001 % |
| Sulfate (SO <sub>4</sub> ) | ≤ 0.003 %          | < 0.003 % |
| Heavy Metals               | ≤ 0.001 %          | < 0.001 % |
| by ICP                     |                    |           |
| Iron (Fe)                  | ≤ 0.002 %          | < 0.001 % |
| Sodium (Na)                | ≤ 0.005 %          | < 0.001 % |
| Recommended Retest Period  | -----              | -----     |
| 4 Years                    |                    |           |



Larry Coers, Director  
Quality Control  
Milwaukee, WI US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at [Sigma-Aldrich.com](http://Sigma-Aldrich.com). For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.





Material BDH9312-2.5KG  
Material Description COPPER SULFATE CRYST 2500GM  
Grade U S P REAGENT (ACS GRADE)

Batch 24H0956271  
Reassay Date 05/31/2027  
CAS Number 7758-99-8  
Molecular Formula  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$   
Molecular Mass 249.68

Date of Manufacture 05/01/2024  
Storage Room Temperature

| Characteristics           | Specifications  | Measured Values |
|---------------------------|-----------------|-----------------|
| Appearance                | Blue crystals   | Blue crystals   |
| Calcium                   | $\leq 0.005 \%$ | 0.003 %         |
| Chloride                  | $\leq 0.001 \%$ | 0.0001 %        |
| Insolubles                | $\leq 0.005 \%$ | 0.001 %         |
| Iron                      | $\leq 0.003 \%$ | 0.001 %         |
| Nickel                    | $\leq 0.005 \%$ | 0.003 %         |
| Nitrogen Compounds (as N) | $\leq 0.002 \%$ | 0.001 %         |
| Potassium                 | $\leq 0.01 \%$  | 0.0004 %        |
| Purity                    | 98.0 - 102.0 %  | 99.7 %          |
| Sodium                    | $\leq 0.02 \%$  | 0.003 %         |

Extra Description: Meets Reagent Specifications for testing USP/NF monographs

CUSTOMER PART# BDH9312-2.5KG

Internal ID #: 793

| Signature   | Additional Information   |
|---|--|
| <p>We certify that this batch conforms to the specifications listed above.</p> <p>This document has been electronically produced and is valid without a signature.</p> <p>Leona Edwardson, Quality Control Sr. Manager - Solon<br/>VWR Chemicals, LLC.<br/>28600 Fountain Parkway, Solon OH 44139 USA</p> | <p>Analysis may have been rounded to significant digits in specification limits</p> <p>Product meets analytical specifications of the grades listed.</p> |

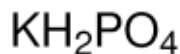


## Certificate of Analysis

Product Name:

Potassium phosphate monobasic - ACS reagent, ≥99.0%

Product Number: P0662  
Batch Number: MKCX1379  
Brand: SIGALD  
CAS Number: 7778-77-0  
MDL Number: MFCD00011401  
Formula: H<sub>2</sub>KO<sub>4</sub>P  
Formula Weight: 136.09 g/mol  
Quality Release Date: 27 JAN 2025  
Recommended Retest Date: JAN 2029



| Test                       | Specification      | Result    |
|----------------------------|--------------------|-----------|
| Appearance (Color)         | White              | White     |
| Appearance (Form)          | Powder or Crystals | Crystals  |
| Assay                      | ≥ 99.0 %           | 99.9 %    |
| Insoluble Matter           | ≤ 0.01 %           | < 0.01 %  |
| Loss on Drying             | ≤ 0.2 %            | < 0.1 %   |
| At 105°C                   |                    |           |
| pH                         | 4.1 - 4.5          | 4.5       |
| (c = 5%, 25 deg C)         |                    |           |
| Chloride Content           | ≤ 0.001 %          | < 0.001 % |
| Sulfate (SO <sub>4</sub> ) | ≤ 0.003 %          | < 0.003 % |
| Heavy Metals               | ≤ 0.001 %          | < 0.001 % |
| by ICP                     |                    |           |
| Iron (Fe)                  | ≤ 0.002 %          | < 0.001 % |
| Sodium (Na)                | ≤ 0.005 %          | < 0.001 % |
| Recommended Retest Period  | -----              | -----     |
| 4 Years                    |                    |           |



Larry Coers, Director  
Quality Control  
Milwaukee, WI US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at [Sigma-Aldrich.com](http://Sigma-Aldrich.com). For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.



# Certificate of Analysis

## Sodium Hypochlorite Solution, 5% available Chlorine

**Lot Number:** 2506M51**Product Number:** 7495.5**Manufacture Date:** JUN 18, 2025**Expiration Date:** DEC 2025

This solution is subject to slow decomposition upon exposure to air. Keep container tightly capped. Refrigeration may improve stability.  
When used in the Phenate method for Ammonia, APHA recommends replacing this solution about every 2 months.

| Name                | CAS#      | Grade      |
|---------------------|-----------|------------|
| Water               | 7732-18-5 | Commercial |
| Sodium Hypochlorite | 7681-52-9 | Commercial |

| Test                                  | Specification                       | Result                       | NIST SRM# |
|---------------------------------------|-------------------------------------|------------------------------|-----------|
| Appearance                            | Colorless to greenish-yellow liquid | Passed                       |           |
| Assay (vs. Sodium Thiosulfate/Starch) | 4.75-5.25 % (w/w) Cl <sub>2</sub>   | 5.17 % (w/w) Cl <sub>2</sub> | 136       |

| Specification           | Reference         |
|-------------------------|-------------------|
| Sodium Hypochlorite, 5% | APHA (4500-NH3 F) |
| Sodium Hypochlorite     | ASTM (D 4785)     |

Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

| Part Number | Size / Package Type | Shelf Life (Unopened Container) |
|-------------|---------------------|---------------------------------|
| 7495.5-1    | 4 L black poly      | 6 months                        |
| 7495.5-16   | 500 mL amber poly   | 6 months                        |
| 7495.5-32   | 1 L amber poly      | 6 months                        |

**Recommended Storage:** 15°C - 30°C (59°F - 86°F)

Jose Pena (06/18/2025)  
Operations Manager

This test report shall not be reproduced, except in full, without the written approval of Ricca Chemical Company.

n-Hexane 95%  
ULTRA RESI-ANALYZED  
For Organic Residue Analysis

 **avantors<sup>TM</sup>**



W3240  
JP  
Op4tel. 07/15/2025

Material No.: 9262-03  
Batch No.: 25C0362006  
Manufactured Date: 2025-01-29  
Expiration Date: 2026-04-30  
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)            | $\leq 10$      | 6           |
| ECD-Sensitive Impurities (as EthyleneDibromide) - Single Impurity Peak (ng/mL) | $\leq 5$       | 4           |
| Assay (Total Saturated C <sub>6</sub> Isomers) (by GC, corrected for water)    | $\geq 99.5 \%$ | 100.0 %     |
| Assay (as n-Hexane) (by GC, corrected for water)                               | $\geq 95 \%$   | 100 %       |
| Color (APHA)   | $\leq 10$      | 10          |
| Residue after Evaporation  | $\leq 1.0$ ppm | 0.2 ppm     |
| Substances Darkened by H <sub>2</sub> SO <sub>4</sub>                          | Passes Test    | Passes Test |
| Water (by KF, coulometric)   | $\leq 0.05 \%$ | $< 0.01 \%$ |

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

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



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

W3243 Received on 10/3/25 by IZ

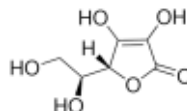
Website: [www.sigmaaldrich.com](http://www.sigmaaldrich.com)Email USA: [techserv@sial.com](mailto:techserv@sial.com)Outside USA: [eurtechserv@sial.com](mailto:eurtechserv@sial.com)

## Certificate of Analysis

Product Name:

L-Ascorbic acid - ACS reagent, ≥99%

**Product Number:** 255564  
**Batch Number:** MKCX1143  
**Brand:** SIAL  
**CAS Number:** 50-81-7  
**MDL Number:** MFCD00064328  
**Formula:** C<sub>6</sub>H<sub>8</sub>O<sub>6</sub>  
**Formula Weight:** 176.12 g/mol  
**Quality Release Date:** 17 JAN 2025  
**Recommended Retest Date:** JAN 2028



| Test                                     | Specification                            | Result    |
|--|--|-----------|
| Appearance (Color)                       | White                                    | White     |
| Appearance (Form)                        | Powder or Crystals or Granules or Chunks | Powder    |
| Infrared Spectrum                        | Conforms to Structure                    | Conforms  |
| Optical Rotation<br>(+ ); c = 10%; Water | 20.5 - 21.5 deg                          | 21.0 deg  |
| Titration by Iodine                      | ≥ 99.0 %                                 | 100.0 %   |
| Residue on Ignition                      | ≤ 0.10 %                                 | 0.02 %    |
| Iron (Fe)                                | ≤ 0.001 %                                | < 0.001 % |
| Heavy Metals<br>by ICP-OES               | ≤ 0.002 %                                | 0.001 %   |
| Recommended Retest Period<br>3 Years     | -----                                    | -----     |
| Meets ACS Requirements                   | Current ACS Specification                | Conforms  |

Larry Coers, Director  
Quality Control  
Milwaukee, WI US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at [Sigma-Aldrich.com](http://Sigma-Aldrich.com). For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.



## Certificate of Analysis

### Product information

Product: Silica 60, 0.063 - 0.200 mm  
REF: 815330.25  
LOT: 072154301

### Technical data

Material: Synthetic amorphous silica (irregular shaped)  
Description: White powder

| Parameter   | Specifications    | Result |
|---|-------------------|--------|
| Specific surface (m <sup>2</sup> /g, N2 adsorption) : | 450 - 550         | 537    |
| Particle size distribution (screen analysis) :        | < 63 µm max. 5 %  | 0.3    |
|   | > 200 µm max. 5 % | 0.1    |
| pH value :  | 6.0 - 7.5         | 7      |
| Water content (%) :                                   | < 7               | 3.6    |
| Pore volume (mL/g, N2 adsorption) :                   | 0.65 - 0.85       | 0.82   |
| Mean pore size (Å, N2 adsorption) :                   | 50 - 70           | 62     |

### Expiry

This product has no stated expiration date or shelf life.

We recommend to use the product within a time period of 5 years after date of QC release.

This time period is valid only if the product is stored under dry and frost-free conditions.

After 5 years we recommend retesting the adsorbent to make sure that the expected performance is still given.

### Confirmation

Hereby we confirm, that the above mentioned product has successfully passed our quality control system in accordance with ISO 9001 and meets the specific quality criteria.

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

Date of measurement: 16.02.2023 22:00