

## Prep Standard - Chemical Standard Summary

**Order ID :** Q3575

**Test :** Ammonia,BOD5,Oil and Grease,TSS

**Prepbatch ID :** PB170466,

**Sequence ID/Qc Batch ID:** LB137848,LB137852,LB137871,LB137877,

**Standard ID :**

EP2655,WP113878,WP113885,WP113886,WP113887,WP113929,WP114132,WP114133,WP115016,WP115017,WP115018,WP115085,WP115086,WP115290,WP115336,WP115342,WP115513,WP115514,WP115515,WP115585,WP115588,WP115589,WP115590,WP115598,WP115599,WP115600,

**Chemical ID :**

E3875,E3972,M6069,M6151,M6186,W2653,W2654,W2663,W2666,W2817,W2871,W3009,W3082,W3103,W3109,W3112,W3113,W3132,W3133,W3139,W3149,W3155,W3195,W3196,W3201,W3222,W3240,W3247,W3248,W3252,



| <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_SC<br>ALE_2<br>(EX-SC-2) | None             | Riteshkumar Patel<br><br>10/24/2025 |
| <b><u>FROM</u></b> 4000.00000gram of E3875 = Final Quantity: 4000.000 gram |                      |                        |                  |                        |                    |                                     |                  |                                     |

| <u>Recipe ID</u>                                                                           | <u>NAME</u>          | <u>NO.</u>               | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u>                   | <u>PipetteID</u> | <u>Supervised By</u>             |
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| 1571                                                                                       | Sodium hydroxide, 1N | <a href="#">WP113878</a> | 07/09/2025       | 12/31/2025             | Iwona Zarych       | WETCHEM_S<br>CALE_7 (WC<br>SC-6) | None             | Jignesh Parikh<br><br>07/09/2025 |
| <b><u>FROM</u></b> 4.00000gram of W3113 + 96.00000ml 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>           |
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| 1796                                                                                         | NaOH, 0.1N  | <a href="#">WP113885</a> | 07/10/2025       | 12/31/2025             | Rubina Mughal      | WETCHEM_S<br>CALE_8 (WC<br>SC-7) | None             | Iwona Zarych<br><br>07/10/2025 |
| <b><u>FROM</u></b> 4.00000gram of W3113 + 996.00000ml 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>           |
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| 1494                                                                                                           | BORATE BUFFER | <a href="#">WP113886</a> | 07/10/2025       | 12/31/2025             | Rubina Mughal      | WETCHEM_S<br>CALE_8 (WC<br>SC-7) | None             | Iwona Zarych<br><br>07/10/2025 |
| <b><u>FROM</u></b> 0.90250L of W3112 + 9.50000gram of W3201 + 88.00000ml of WP113885 = 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>       |
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| 1471                                                                                           | NaOH Solution, 6N | <a href="#">WP113887</a> | 07/10/2025       | 12/31/2025             | Rubina Mughal      | WETCHEM_SCALE_8 (WCS-7) | None             | Iwona Zarych<br>07/10/2025 |
| <b><u>FROM</u></b> 240.00000gram of W3113 + 760.00000ml 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>       |
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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-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 |                            |                          |                  |                        |                    |                        |                  |                            |



| <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>       |
|----------------------------------------------------------------------------------------------------------------------|-------------------------|--------------------------|------------------|------------------------|--------------------|---------------------------|------------------|----------------------------|
| 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 |                         |                          |                  |                        |                    |                           |                  |                            |

| <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>       |
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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<br>08/04/2025 |
| <b><u>FROM</u></b> 50.00000ml of W3112 + 50.00000ml of W3222 = 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> |
|------------------|-------------|--------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 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

| <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> |
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| 2470             | 1664A SPIKING SOLN | <a href="#">WP115017</a> | 10/02/2025       | 04/02/2026             | Jignesh Parikh     | WETCHEM_S<br>CALE_7 (WC<br>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



| <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>       |
|------------------|---------------------------------------------------------------------------------------------------|--------------------------|------------------|------------------------|--------------------|-------------------------|------------------|----------------------------|
| 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 |                          |                  |                        |                    |                         |                  |                            |

| <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>       |
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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 |                               |                          |                  |                        |                    |                           |                  |                            |



| <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>           |
|------------------|---------------------------------------------------------------------------|--------------------------|------------------|------------------------|--------------------|----------------------------------|------------------|--------------------------------|
| 1895             | Ammonia Stock Std,<br>1000PPM-SS                                          | <a href="#">WP115086</a> | 10/08/2025       | 04/08/2026             | Rubina Mughal      | WETCHEM_S<br>CALE_8 (WC<br>SC-7) | None             | Iwona Zarych<br><br>10/08/2025 |
| <u>FROM</u>      | 3.81900gram of W3195 + 996.18100ml 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>       |
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| 740                                                                                        | sodium nitroferricyanide for ammonia | <a href="#">WP115290</a> | 10/22/2025       | 11/22/2025             | Rubina Mughal      | WETCHEM_SCALE_5 (WCS-5) | None             | Iwona Zarych<br>10/24/2025 |
| <b><u>FROM</u></b> 0.05000gram of W2666 + 99.95000ml 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> |
|------------------|--------------|-------------------------------------------------------------------------|------------------|------------------------|--------------------|----------------|-------------------|----------------------|
| 1597             | 0.04 N H2SO4 | <a href="#">WP115336</a>                                                | 10/27/2025       | 04/27/2026             | Rubina Mughal      | None           | WETCHEM_PIPETTE_3 | Jignesh Parikh       |
| <u>FROM</u>      |              | 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>         |
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| 1841                                                                                     | Sulfuric Acid, 1N | <a href="#">WP115342</a> | 10/27/2025       | 04/27/2026             | Rubina Mughal      | None           | WETCHEM_PIPETTE_3<br>(WC) | Jignesh Parikh<br>10/27/2025 |
| <b><u>FROM</u></b> 2.80000ml of M6186 + 97.20000ml of W3112 = 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> |
|------------------|--------------------|--------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 127              | BOD Dilution fluid | <a href="#">WP115513</a> | 11/07/2025       | 11/08/2025             | Rubina Mughal      | None           | None             | Iwona Zarych         |
|                  |                    |                          |                  |                        |                    |                |                  | 11/07/2025           |

**FROM** 18.00000L of W3112 + 3.00000PILLOW of W3247 = Final Quantity: 18.000 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> |
|------------------|-----------------------------------|--------------------------|------------------|------------------------|--------------------|---------------------------|------------------|----------------------|
| 129              | Glutamic acid-glucose mix for BOD | <a href="#">WP115514</a> | 11/07/2025       | 11/08/2025             | Rubina Mughal      | WETCHEM_SCALE_7 (WC SC-6) | None             | Iwona Zarych         |
|                  |                                   |                          |                  |                        |                    |                           |                  | 11/07/2025           |

**FROM** 0.15000gram of W2653 + 0.15000gram of W2654 + 1000.00000ml of W3112 = Final Quantity: 1000.000 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> |
|------------------|-----------------------|--------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 128              | polyseed seed control | <a href="#">WP115515</a> | 11/07/2025       | 11/08/2025             | Rubina Mughal      | None           | None             | Iwona Zarych         |
|                  |                       |                          |                  |                        |                    |                |                  | 11/07/2025           |

**FROM** 1.00000PILLOW of W3252 + 300.00000ml of WP115513 = Final Quantity: 300.000 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> |
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| 1582             | Chloramine T solution, 0.014M | <a href="#">WP115585</a> | 11/10/2025       | 11/11/2025             | Rubina Mughal      | WETCHEM_S<br>CALE_5 (WC<br>SC-5) | Glass<br>Pipette-A | Iwona Zarych         |
|                  |                               |                          |                  |                        |                    |                                  |                    | 11/10/2025           |

**FROM** 0.08000gram of W3139 + 20.00000ml of W3112 = Final Quantity: 20.000 ml



| <u>Recipe ID</u>                                                                            | <u>NAME</u>                     | <u>NO.</u>               | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>          | <u>Supervised By</u>         |
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| 1322                                                                                        | Ammonia Intermediate Std, 50PPM | <a href="#">WP115588</a> | 11/10/2025       | 12/10/2025             | Rubina Mughal      | None           | WETCHEM_PIPETTE_3<br>(WC) | Jignesh Parikh<br>11/11/2025 |
| <b><u>FROM</u></b> 95.00000ml of W3112 + 5.00000ml of WP115085 = 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>         |
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| 1639                                                                                        | Ammonia Intermediate<br>Std-Second source, 50PPM | <a href="#">WP115589</a> | 11/10/2025       | 12/10/2025             | Rubina Mughal      | None           | WETCHEM_PIPETTE_3<br>(WC) | Jignesh Parikh<br>11/11/2025 |
| <b><u>FROM</u></b> 95.00000ml of W3112 + 5.00000ml of WP115086 = 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>         |
|--------------------------------------------------------------------------------------------|--------------------------------------------|--------------------------|------------------|------------------------|--------------------|----------------|---------------------------|------------------------------|
| 3906                                                                                       | Ammonia MDL-LOD-LOQ spiking solution -5ppm | <a href="#">WP115590</a> | 11/10/2025       | 11/11/2025             | Rubina Mughal      | None           | WETCHEM_PIPETTE_3<br>(WC) | Jignesh Parikh<br>11/11/2025 |
| <b><u>FROM</u></b> 45.00000ml of W3112 + 5.00000ml of WP115588 = 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>         |
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| 275                                                                                        | Ammonia Calibration Std. (2 ppm) | <a href="#">WP115598</a> | 11/11/2025       | 11/12/2025             | Rubina Mughal      | None           | WETCHEM_PIPETTE_3<br>(WC) | Jignesh Parikh<br>11/11/2025 |
| <b><u>FROM</u></b> 48.00000ml of W3112 + 2.00000ml of WP115588 = 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> |
|------------------|--------------------------|------------------------------------------------------------------------------|------------------|------------------------|--------------------|----------------|-------------------|----------------------|
| 285              | Ammonia CCV Std. (1 ppm) | <a href="#">WP115599</a>                                                     | 11/11/2025       | 11/12/2025             | Rubina Mughal      | None           | WETCHEM_PIPETTE_3 | Jignesh Parikh       |
| <u>FROM</u>      |                          | 49.00000ml of W3112 + 1.00000ml of WP115588 = Final Quantity: 50.000 ml (WC) |                  |                        |                    |                |                   |                      |

| <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> |
|--------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|------------------|------------------------|--------------------|----------------|-------------------|----------------------|
| 286                                                                                                    | Ammonia ICV Std. (1 ppm) | <a href="#">WP115600</a> | 11/11/2025       | 11/12/2025             | Rubina Mughal      | None           | WETCHEM_PIPETTE_3 | Jignesh Parikh       |
| <p>(WC)</p> <p><b>FROM</b> 49.00000ml of W3112 + 1.00000ml of WP115589 = Final Quantity: 50.000 ml</p> |                          |                          |                  |                        |                    |                |                   |                      |

## 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 | 07/28/2026      | 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 # |
|-----------------------------|----------------------------------------------|---------|-----------------|-------------------------|-----------------------------|----------------|
| 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          |

| Supplier                    | ItemCode / ItemName                           | Lot #    | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|-----------------------------------------------|----------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | AC156212500 / GLUTAMIC ACID BIOCHEM REG, 250G | A0405990 | 01/24/2030      | 01/24/2020 / apatel     | 01/24/2020 / apatel         | W2653          |

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| Supplier                    | ItemCode / ItemName                                 | Lot #   | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|-----------------------------------------------------|---------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | D16-500 / DEXTROSE ANHYDROUS ACS REAGENT, 500G(New) | 186122A | 01/24/2030      | 01/24/2020 / apatel     | 01/24/2020 / apatel         | W2654          |

| 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. | 87683 / Sodium Nitroferrocyanide 250g | W12F013 | 02/10/2030      | 02/10/2020 / apatel     | 02/10/2020 / apatel         | W2666          |

| 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 # |
|------------------|-----------------------------|----------|-----------------|-------------------------|-----------------------------|----------------|
| Seidler Chemical | H223-57 / Hexadecane, 99.0% | SHBP8192 | 02/27/2028      | 02/27/2023 / lwona      | 02/27/2023 / lwona          | W3009          |

## 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 / lwona      | 02/26/2024 / lwona          | W3082          |

| Supplier                    | ItemCode / ItemName                      | Lot #   | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|------------------------------------------|---------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | 4620-32 / MANGANOUS SULFATE SOLUTION-364 | 2403J02 | 03/31/2026      | 04/22/2024 / lwona      | 04/22/2024 / lwona          | W3103          |

| Supplier                    | ItemCode / ItemName                    | Lot #   | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|----------------------------------------|---------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | AL04100-4 / Alkaline Iodide Azide, 1 L | 1405D67 | 04/30/2026      | 05/23/2024 / lwona      | 05/23/2024 / lwona          | W3109          |

| 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 / lwona      | 07/03/2024 / lwona          | 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 / lwona      | 07/08/2024 / lwona          | 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 / lwona      | 07/26/2024 / lwona          | W3132          |

## CHEMICAL RECEIPT LOG BOOK

| Supplier                    | ItemCode / ItemName                         | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|---------------------------------------------|-------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | 140476 / Test Paper,PH Short Range 9.0/10.0 | L23   | 08/22/2029      | 08/22/2024 / lwona      | 08/22/2024 / lwona          | W3133          |

| Supplier                    | ItemCode / ItemName                 | Lot #    | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|-------------------------------------|----------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | JTE494-6 / CHLORAMINE-T BAKER 250GM | 10239484 | 09/09/2029      | 09/09/2024 / lwona      | 09/09/2024 / lwona          | W3139          |

| Supplier                    | ItemCode / ItemName             | Lot #   | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|---------------------------------|---------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | AL70850-8 / Starch Solution, 4L | 4408P62 | 08/31/2026      | 10/16/2024 / lwona      | 10/16/2024 / lwona          | W3149          |

| Supplier                    | ItemCode / ItemName                           | Lot #  | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|-----------------------------------------------|--------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | 140730 / TEST PAPER,POT.IOD-STRCH,P K100,CS12 | 14-860 | 12/02/2029      | 12/02/2024 / lwona      | 12/02/2024 / lwona          | W3155          |

| 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          |

## CHEMICAL RECEIPT LOG BOOK

| Supplier                    | ItemCode / ItemName              | Lot #    | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|----------------------------------|----------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | J3568-1 / Sodium Borate, 500 gms | BCCL9613 | 05/31/2029      | 04/16/2025 / lwona      | 04/16/2025 / lwona          | W3201          |

| 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 # |
|----------|----------------------------------------------------------------------------|-------|-----------------|-------------------------|-----------------------------|----------------|
| HACH     | 1486266 / BOD Nutrient Buffer Pillows, 6 mL concentrate to make 6 L, 50/pk | A5189 | 08/30/2030      | 10/06/2025 / lwona      | 10/06/2025 / lwona          | W3247          |

| Supplier                    | ItemCode / ItemName                           | Lot #   | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|-----------------------------------------------|---------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | AL69870-8 / SODIUM THIOSULFATE,0.025N,4LIT RE | 250904J | 02/28/2027      | 10/03/2025 / lwona      | 10/03/2025 / lwona          | W3248          |

| Supplier                    | ItemCode / ItemName  | Lot #  | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|----------------------|--------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | 136742-80 / POLYSEED | 072505 | 05/31/2027      | 10/31/2025 / lwona      | 10/31/2025 / lwona          | W3252          |



# 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

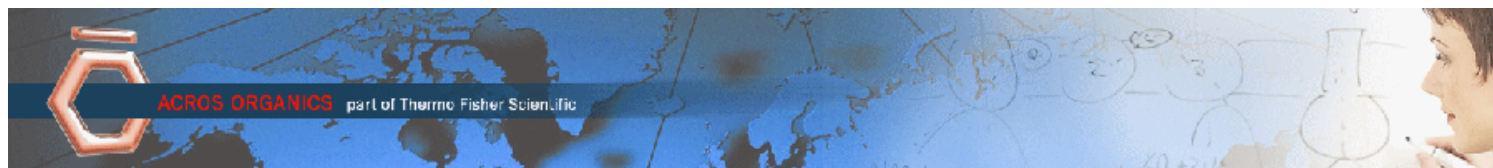
Product: Sodium pentacyanonitrosylferrate(III) dihydrate, ACS, 99.0-102.0%

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

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**ACROS**  
**ORGANICS**

**Version** 0  
**Molecular weight** 147.13  
**Molecular formula** C<sub>5</sub> H<sub>9</sub> N O<sub>4</sub>  
**CAS No** 56-86-0  
**Linear formula** HO<sub>2</sub>CCH<sub>2</sub>CH<sub>2</sub>CH(NH<sub>2</sub>)CO<sub>2</sub>H  
**Flash point (°C)**

## Certificate of Analysis

This is to certify that units of the lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Acros Organics 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 human 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 following information is the actual analytical results obtained.

|                              |                         |                                    |               |
|------------------------------|-------------------------|------------------------------------|---------------|
| <b>Catalog Number</b>        | 15621                   | <b>Quality Test / Release Date</b> | 13 March 2019 |
| <b>Lot Number</b>            | A0405990                | <b>Suggested Retest Date</b>       | March 2022    |
| <b>Description</b>           | L(+)-Glutamic acid, 99% |                                    |               |
| <b>Country of Origin</b>     | CHINA                   |                                    |               |
| <b>Declaration of Origin</b> | plant                   |                                    |               |

|                       |                                                       |
|-----------------------|-------------------------------------------------------|
| <b>Origin Comment</b> | The product is made by fermentation of sugar molasses |
|-----------------------|-------------------------------------------------------|

| Result Name                                     | Specifications                                       | Test Value                               |
|-------------------------------------------------|------------------------------------------------------|------------------------------------------|
| Appearance (Color)                              | White                                                | White                                    |
| Appearance (Form)                               | Powder                                               | Powder                                   |
| Infrared spectrum                               | Conforms                                             | Conforms                                 |
| Titration with NaOH                             | 98.5 to 100.5 % (On dried substance)                 | 99.32 % (On dried substance)             |
| Loss on drying                                  | =<0.5 % (105°C, 3 hrs)                               | 0.002 % (105°C, 3 hrs)                   |
| Heavy metals (as Pb)                            | =<10 ppm                                             | =<10 ppm                                 |
| Sulfated ash                                    | =<0.1 %                                              | 0.08 %                                   |
| Other amino acids                               | not detectable                                       | not detectable                           |
| Specific optical rotation                       | +30.5° to +32.5° (20°C, 589 nm) (on dried substance) | +32° (20°C, 589 nm) (on dried substance) |
| Specific optical rotation                       | (c=10, 2N HCl)                                       | (c=10, 2N HCl)                           |
| Chloride (Cl)                                   | =<200 ppm                                            | =<200 ppm                                |
| Iron (Fe)                                       | =<30 ppm                                             | =<10 ppm                                 |
| Sulfate (SO <sub>4</sub> )                      | =<300 ppm                                            | =<200 ppm                                |
| Ammonium (NH <sub>4</sub> )                     | =<200 ppm                                            | =<200 ppm                                |
| Arsenic oxide (As <sub>2</sub> O <sub>3</sub> ) | =<1 ppm                                              | =<1 ppm                                  |



L. Van den Broek, QA Manager

Issued: 24 January 2020

Acros Organics

ENA23, zone 1, nr 1350, Janssen Pharmaceuticaaan 3a, B-2440 Geel, Belgium

Tel +32 14/57.52.11 - Fax +32 14/59.34.34 Internet: <http://www.acros.com>

1 Reagent Lane, Fair Lawn, NJ 07410, USA Fax 201-796-1329

**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.*

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.





## Certificate of Analysis

1 Reagent Lane  
Fair Lawn, NJ 07410  
201.796.7100 tel  
201.796.1329 fax

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System  
Standard ISO9001:2015 by SAI Global Certificate Number CERT – 0120632

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|                   |                                                                                                                                                                                                   |                             |            |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|------------|
| Catalog Number    | D16                                                                                                                                                                                               | Quality Test / Release Date | 03/19/2019 |
| Lot Number        | 186122A                                                                                                                                                                                           |                             |            |
| Description       | DEXTROSE, ANHYDROUS, A.C.S.                                                                                                                                                                       |                             |            |
| Country of Origin | United States                                                                                                                                                                                     | Suggested Retest Date       | Mar/2022   |
| Chemical Origin   | Organic - Plant                                                                                                                                                                                   |                             |            |
| BSE/TSE Comment   | No animal products are used as starting raw material ingredients, or used in processing, including lubricants, processing aids, or any other material that might migrate to the finished product. |                             |            |
| Chemical Comment  |                                                                                                                                                                                                   |                             |            |

| N/A                      |                  |                                 |                        |
|--------------------------|------------------|---------------------------------|------------------------|
| Result Name              | Units            | Specifications                  | Test Value             |
| APPEARANCE               |                  | REPORT                          | White, granular powder |
| TITRATABLE ACID          | MEQ/G            | <= 0.002                        | <0.002                 |
| STARCH                   |                  | = PASS TEST                     | pass test              |
| SPECIFIC ROTATION @ 25 C | DEGREES (+ OR -) | Inclusive Between +52.5 - +53.0 | 53.0                   |
| SULFATE & SULFITE        | %                | <= 0.005                        | <0.005                 |
| IRON (Fe)                | ppm              | <= 5                            | <5                     |
| CHLORIDE                 | %                | <= 0.01                         | <0.01                  |
| IGNITION RESIDUE         | %                | <= 0.02                         | <0.02                  |
| IDENTIFICATION           | PASS/FAIL        | = PASS TEST                     | pass test              |
| HEAVY METALS (as Pb)     | ppm              | <= 5                            | <5                     |
| LOSS ON DRYING @ 105 C   | %                | <= 0.2                          | <0.2                   |
| INSOLUBLE MATTER         | %                | <= 0.005                        | 0.002                  |

*Jerisa Bailey-Wyche*

Quality Assurance Specialist - Certificate of Analysis Fair Lawn

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above. If there are any questions with this certificate, please call at (800) 227-6701.

\*Based on suggested storage condition.



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

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

# CERTIFICATE OF ANALYSIS

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

| TEST                                     | SPECIFICATIONS | LOT VALUES  |
|------------------------------------------|----------------|-------------|
| Assay (Na <sub>2</sub> SO <sub>4</sub> ) | Min. 99.0%     | 99.8 %      |
| pH of a 5% solution at 25°C              | 5.2 - 9.2      | 6.2         |
| Insoluble matter                         | Max. 0.01%     | 0.001 %     |
| Loss on ignition                         | Max. 0.5%      | 0.1 %       |
| Chloride (Cl)                            | Max. 0.001%    | <0.001 %    |
| Nitrogen compounds (as N)                | Max. 5 ppm     | <5 ppm      |
| Phosphate (PO <sub>4</sub> )             | Max. 0.001%    | <0.001 %    |
| Heavy metals (as Pb)                     | Max. 5 ppm     | <5 ppm      |
| Iron (Fe)                                | Max. 0.001%    | <0.001 %    |
| Calcium (Ca)                             | Max. 0.01%     | 0.001 %     |
| Magnesium (Mg)                           | Max. 0.005%    | 0.001 %     |
| Potassium (K)                            | Max. 0.008%    | 0.001 %     |
| Extraction-concentration suitability     | Passes test    | Passes test |
| Appearance                               | Passes test    | Passes test |
| Identification                           | Passes test    | Passes test |
| Solubility and foreign matter            | Passes test    | Passes test |
| Retained on US Standard No. 10 sieve     | Max. 1%        | 0.2 %       |
| Retained on US Standard No. 60 sieve     | Min. 94%       | 96.2 %      |
| Through US Standard No. 60 sieve         | Max. 5%        | 3.5 %       |
| Through US Standard No. 100 sieve        | Max. 10%       | 0.1 %       |

## COMMENTS

QC: PhC Irma Belmares

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

RE-02-01, Ed. 3

E 3875

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



## 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

Reciev 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 %

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



# Certificate of Analysis

**Manganous Sulfate Solution, 364 g/L****Lot Number:** 2403J02**Product Number:** 4620**Manufacture Date:** MAR 15, 2024**Expiration Date:** MAR 2026

| Name                          | CAS#       | Grade           |
|-------------------------------|------------|-----------------|
| Water                         | 7732-18-5  | ACS/ASTM/USP/EP |
| Manganous Sulfate Monohydrate | 10034-96-5 | Reagent         |
| Sulfuric Acid                 | 7664-93-9  | ACS             |

| Test                        | Specification | Result  |
|-----------------------------|---------------|---------|
| Appearance                  | Pink liquid   | Passed  |
| Assay (by Refractive Index) | 360-368 g/L   | 367 g/L |

| Specification              | Reference       |
|----------------------------|-----------------|
| Manganous Sulfate Solution | ASTM (D 888 A)  |
| Manganous Sulfate Solution | ASTM (D 888 A)  |
| Manganous Sulfate Solution | APHA (4500-O E) |
| Manganous Sulfate Solution | APHA (4500-O F) |
| Manganous Sulfate Solution | APHA (4500-O D) |
| Manganous Sulfate Solution | APHA (4500-O E) |
| Manganous Sulfate Solution | APHA (4500-O F) |
| Manganous Sulfate Solution | APHA (4500-O D) |
| Manganous Sulfate Solution | APHA (4500-O C) |
| Manganous Sulfate Solution | APHA (4500-O C) |
| Manganous Sulfate Solution | EPA (360.2)     |
| Manganous Sulfate Solution | EPA (360.2)     |

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) |
|-------------|---------------------|---------------------------------|
| 4620-32     | 1 L natural poly    | 24 months                       |

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



Jose Pena (03/15/2024)

Operations Manager

This document is designed to comply with ISO Guide 31 "Reference Materials --  
Contents of Certificates and Labels."

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# Certificate of Analysis

## Alkaline-Iodide-Azide, Pomeroy Formulation for Dissolved Oxygen (DO) Analysis

**Lot Number:** 1405D67

**Product Number:** 535

**Manufacture Date:** APR 05, 2024

**Expiration Date:** APR 2026

This solution is intended for use with samples with high Dissolved Oxygen content (above 15 mg/L) and for samples with high concentrations of organic material.

| Name             | CAS#       | Grade           |
|------------------|------------|-----------------|
| Water            | 7732-18-5  | ACS/ASTM/USP/EP |
| Sodium Iodide    | 7681-82-5  | ACS             |
| Sodium Hydroxide | 1310-73-2  | ACS             |
| Sodium Azide     | 26628-22-8 | Reagent         |

| Test        | Specification    | Result |
|-------------|------------------|--------|
| Appearance  | Colorless liquid | Passed |
| Free Iodine | To Pass Test     | Passed |

| Specification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Reference      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| Alkaline Iodide-Sodium Azide Solution II                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ASTM (D 888 A) |
| 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) |
|-------------|---------------------|---------------------------------|
| 535-32      | 1 L natural poly    | 24 months                       |

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



Heidi J Green (04/05/2024)  
Operations Manager

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## 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.

W3139 Received on 9/9/24 by IZ

Product No.: A12044  
Product: Chloramine-T trihydrate, 98%  
Lot No.: 10239484

|                               |              |
|-------------------------------|--------------|
| Appearance:                   | White powder |
| Melting Point:                | 166°C(dec)   |
| Assay (Iodometric titration): | 100.5%       |
| Identification (FTIR):        | Conforms     |

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Products are processed under ISO 9001:2015 quality management systems and samples are tested for conformance to the noted specifications. Certain data may have been supplied by third parties. We disclaim the implied warranties of merchantability and fitness for a particular purpose, and the accuracy of third party data or information associated with the product. Products are for research and development use only. Products are not for direct administration to humans or animals. It is the responsibility of the final formulator or end user to determine suitability, and to qualify and/or validate each product for its intended use.



# Certificate of Analysis

## Starch Indicator, 0.5% (w/v), Mercury Free, for Iodometric Titrations

Lot Number: 4408P62

Product Number: 8000

Manufacture Date: AUG 28, 2024

Expiration Date: AUG 2026

This product is Mercury-free.

| Name            | CAS#      | Grade           |
|-----------------|-----------|-----------------|
| Water           | 7732-18-5 | ACS/ASTM/USP/EP |
| Starch, soluble | 9005-84-9 | ACS             |
| Salicylic Acid  | 69-72-7   | ACS             |

| Test                | Specification                                     | Result |
|---------------------|---------------------------------------------------|--------|
| Appearance          | White translucent liquid                          | Passed |
| Suitability for Use | Colorless (Iodine absent) - Blue (Iodine present) | Passed |

| Specification             | Reference           |
|---------------------------|---------------------|
| Starch Solution           | APHA (4500-S2- F)   |
| Starch Indicator Solution | APHA (4500-CI B)    |
| Starch Indicator          | APHA (4500-SO32- B) |
| Starch indicator solution | APHA (2350 B)       |
| Starch indicator solution | APHA (2350 E)       |
| Starch Solution           | APHA (510 B)        |
| Starch Solution           | APHA (5530 C)       |
| Starch Indicator          | APHA (4500-CI C)    |
| Starch Indicator          | EPA (345.1)         |

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) |
|-------------|---------------------|---------------------------------|
| 8000-1      | 4 L natural poly    | 24 months                       |
| 8000-16     | 500 mL natural poly | 24 months                       |
| 8000-32     | 1 L natural poly    | 24 months                       |

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

A handwritten signature in blue ink that reads "Paul Brandon". The signature is fluid and cursive, with the first name "Paul" and last name "Brandon" clearly distinguishable.

Paul Brandon (08/28/2024)  
Production Manager

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# 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

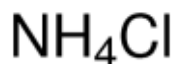
| Signature                                                                                                                                                                                                                                                                                                 | Additional Information                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <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> |

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:** H4ClN  
**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

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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.



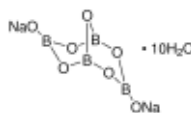
W3201 Received on 4/16/25 by IZ

## Certificate of Analysis

Product Name:

Sodium tetraborate decahydrate - ACS reagent, ≥99.5%

**Product Number:** S9640  
**Batch Number:** BCCL9613  
**Brand:** SIGALD  
**CAS Number:** 1303-96-4  
**Formula:** B<sub>4</sub>Na<sub>2</sub>O<sub>7</sub> · 10H<sub>2</sub>O  
**Formula Weight:** 381,37 g/mol  
**Quality Release Date:** 05 JUL 2024  
**Recommended Retest Date:** MAY 2029



| Test                              | Specification               | Result      |
|-----------------------------------|-----------------------------|-------------|
| Appearance (Color)                | White                       | White       |
| Appearance (Form)                 | Powder or Crystals          | Powder      |
| Titration with NaOH               | 99.5 - 105.0 %              | 100.7 %     |
| pH                                | 9.15 - 9.20                 | 9.20        |
| 0.01 m Solution at 25 Deg C       |                             |             |
| Meets ACS Requirements            | Corresponds to Requirements | Corresponds |
| ACS Specifications                | Corresponds to Requirements | Corresponds |
| Insoluble Matter ≤ 0.005% / Heavy |                             |             |
| Metals (As Pb) ≤ 0.001%           |                             |             |
| Calcium (Ca)                      | ≤ 50 mg/kg                  | < 50 mg/kg  |
| Iron (Fe)                         | ≤ 5 mg/kg                   | < 5 mg/kg   |
| Total Sulfur                      | ≤ 50 mg/kg                  | < 50 mg/kg  |
| as SO <sub>4</sub> (ICP)          |                             |             |
| Chloride (Cl)                     | ≤ 10 mg/kg                  | < 10 mg/kg  |
| Phosphate (PO <sub>4</sub> )      | ≤ 10 mg/kg                  | < 10 mg/kg  |

Dr. Reinhold Schwenninger  
Quality Assurance  
Buchs, Switzerland CH

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

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

 **avantors™**



W3240  
JP  
07/15/2025  
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



An ISO 9001 Certified Company

P.O. Box 389  
Loveland, CO 80539  
(970) 669-3050

## ***Certificate of Analysis***

***This is a Component of 1486266 / LOT A5189***

**PRODUCT:** BOD Nutrient Buffer Pillows

**PRODUCT NUMBER:** 1486227

**LOT NUMBER:** A5189

**MANUFACTURE DATE:** 08/04/2025

**DATE OF ANALYSIS:** 08/18/2025

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| TEST                                              | SPECIFICATIONS   | RESULTS |
|---------------------------------------------------|------------------|---------|
| Ammonia Concentration of a diluted pillow         | 0.57 to 0.79 ppm | 0.570   |
| Calcium Concentration of a diluted pillow         | 0.93 to 1.29 ppm | 1.060   |
| Iron Concentration of a diluted pillow            | 0.27 to 0.36 ppm | 0.331   |
| Magnesium Concentration of a diluted pillow       | 0.35 to 0.48 ppm | 0.430   |
| Phosphorus Concentration of a diluted pillow      | 7.6 to 10.3 ppm  | 8.39    |
| pH in a 6 L of DI water                           | 7.1 to 7.6 ph    | 7.42    |
| Five Day Change in Dissolved Oxygen Concentration | -0.2 to 0.2 ppm  | 0.10    |
| Sterility                                         | To Pass          | Passed  |

The expiration date is Aug 2030

Certified by: *Scott Als*

Analytical Service Chemist

# Certificate of Analysis

## Sodium Thiosulfate, 0.0250 Normal (N/40)

**Lot Number:** 250904J

**Product Number:** 7900

**Manufacture Date:** SEP 03, 2025

**Expiration Date:** FEB 2027

This product is specially formulated to increase its stability. A preservative is added to prevent bacterial contamination. However, all Sodium Thiosulfate solutions are subject to slow chemical deterioration and should be restandardized periodically.

| Name                            | CAS#        | Grade           |
|---------------------------------|-------------|-----------------|
| Water                           | 7732-18-5   | ACS/ASTM/USP/EP |
| Organic Preservative            | Proprietary |                 |
| Sodium Carbonate                | 497-19-8    | ACS             |
| Sodium Thiosulfate Pentahydrate | 10102-17-7  | ACS             |

| Test                                | Specification             | Result            | NIST SRM# |
|-------------------------------------|---------------------------|-------------------|-----------|
| Appearance                          | Colorless liquid          | Passed            |           |
| Assay (vs. Potassium Iodate/Starch) | 0.02499-0.02501 N at 20°C | 0.02501 N at 20°C | 136       |

| Specification                                  | Reference           |
|------------------------------------------------|---------------------|
| Standard Sodium Thiosulfate Solution, 0.0250 N | APHA (4500-S2- F)   |
| Standard Sodium Thiosulfate Titrant            | APHA (4500-O D)     |
| Standard Sodium Thiosulfate Titrant            | APHA (4500-O E)     |
| Standard Sodium Thiosulfate Titrant            | APHA (4500-O F)     |
| Standard Sodium Thiosulfate Titrant, 0.025 N   | APHA (4500-CI B)    |
| Standard Sodium Thiosulfate Titrant            | APHA (4500-O C)     |
| Standard Sodium Thiosulfate Titrant, 0.025 M   | APHA (5530 C)       |
| Standard Sodium Thiosulfate Solution (0.025 N) | EPA (SW-846) (9031) |
| Standard Sodium Thiosulfate solution (0.025 N) | EPA (SW-846) (9034) |

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.

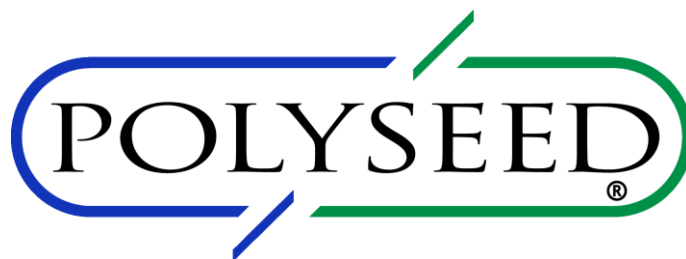
| Part Number | Size / Package Type | Shelf Life (Unopened Container) |
|-------------|---------------------|---------------------------------|
| 7900-1      | 4 L natural poly    | 18 months                       |
| 7900-16     | 500 mL natural poly | 18 months                       |
| 7900-32     | 1 L natural poly    | 18 months                       |

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



Jose Pena (09/03/2025)  
Operations Manager

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## CERTIFICATE OF ANALYSIS

PO BOX 130549 Spring, TX 77393  
Phone: (281) 298-9410 Fax: (281) 298-9411

**FINISHED PRODUCT, LOT NUMBER, MFG. /EXP DATE:**

PolySeed® • Part No. P-110 • Lot 072505 • Mfg. Date: 05/2025 • Exp. Date: 05/2027

**FORMULATION:**

The formulation for this product contains a range of naturally occurring microorganisms, which are known to be non-pathogenic to man or animals.

**VIABLE COUNT, FINAL TEST RESULT:**

The product has been fully tested in accordance with Finished Product Specifications and contains a minimum viable count of  $4.00 \times 10^9$  cfu/g.

**GLUCOSE/GLUTAMIC-ACID RESULTS:**

Tested results within acceptable range 198 +/- 30.5 mg/L (167.5 - 228.5 mg/L). GGA Lot# 43100020 – Average Test Result: 203

See [www.polyseed.com](http://www.polyseed.com) for details.

**SEED CONTROL FACTOR:**

Tested results within acceptable range 0.6 – 1.0 see [www.polyseed.com](http://www.polyseed.com) for details

**SALMONELLA TEST RESULT:**

The product has been shown to be Salmonella negative using procedures recommended in the Microbiology Laboratory Guidebook, published by the USDA Food Safety and Inspection Service.

The purpose of this document is to ensure that the Finished Product conforms to the above specifications.

Signature: \_\_\_\_\_

*Quality Control Department*

Date: 05/07/2025

POLYSEED.Ref.1.19

Revised Jan 25