

### Prep Standard - Chemical Standard Summary

**Order ID :** Q2085  
**Test :** Ammonia,Percent Solids,Phosphorus, Total,TKN,TOC  
**Prepbatch ID :** PB168096,PB168128,PB168183,  
**Sequence ID/Qc Batch ID:** LB135882,LB135888,LB135894,LB135933,

**Standard ID :**

WP111317,WP111318,WP111323,WP111325,WP111385,WP111415,WP111436,WP111437,WP111660,WP111745,WP112403,WP112404,WP112405,WP112406,WP112407,WP112408,WP112446,WP112611,WP112612,WP112615,WP112828,WP112831,WP112897,WP112903,WP112913,WP112914,WP112986,WP112987,WP113112,WP113113,WP113126,WP113127,WP113128,WP113129,WP113135,WP113183,WP113184,WP113185,WP113210,WP113211,WP113219,WP113220,WP113221,WP113222,WP113223,WP113224,WP113225,WP113226,WP113227,WP113228,WP113229,WP113244,WP113245,

**Chemical ID :**

M6041,W2306,W2650,W2664,W2666,W2700,W2784,W2788,W2858,W2860,W2983,W3035,W3074,W3112,W3113,W3132,W3140,W3168,W3169,W3174,W3195,W3196,W3198,W3199,W3206,

### 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>
1796	NaOH, 0.1N	<a href="#">WP111317</a>	01/09/2025	07/09/2025	Rubina Mughal	WETCHEM_S CALE_7 (WC SC-6)	None	Iwona Zarych  01/09/2025

**FROM** 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>
1471	NaOH Solution, 6N	<a href="#">WP111318</a>	01/09/2025	07/09/2025	Rubina Mughal	WETCHEM_S CALE_7 (WC SC-6)	None	Iwona Zarych  01/09/2025

**FROM** 240.00000gram of W3113 + 760.00000ml of W3112 = Final Quantity: 1000.000 ml

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1571	Sodium hydroxide, 1N	<a href="#">WP111323</a>	01/09/2025	07/09/2025	Rubina Mughal	WETCHEM_S CALE_8 (WC SC-7)	None	Iwona Zarych  01/09/2025

**FROM** 4.00000gram of W3113 + 96.00000ml of W3112 = Final Quantity: 100.000 ml

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1494	BORATE BUFFER	<a href="#">WP111325</a>	01/09/2025	07/09/2025	Rubina Mughal	WETCHEM_S CALE_5 (WC SC-5)	None	Iwona Zarych  01/09/2025

**FROM** 100.00000L of W3112 + 9.50000gram of W2700 + 88.00000ml of WP111317 = Final Quantity: 100.000 L

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290	Phenol reagent for Ammonia	<a href="#">WP111385</a>	01/13/2025	07/13/2025	Rubina Mughal	WETCHEM_S CALE_8 (WC SC-7)	None	Iwona Zarych  01/13/2025

**FROM** 3.20000gram of W3113 + 8.30000gram of W2858 + 88.80000ml of W3112 = Final Quantity: 100.000 ml

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1213	Phenolphthalein indicator	<a href="#">WP111415</a>	01/15/2025	06/04/2025	Niha Farheen Shaik	WETCHEM_S CALE_5 (WC SC-5)	None	Iwona Zarych  01/16/2025

**FROM** 0.10000gram of W2650 + 50.00000ml of W2788 + 50.00000ml of W3112 = Final Quantity: 100.000 ml

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2050	TOC STOCK STD, 4000PPM	<a href="#">WP111436</a>	01/15/2025	07/15/2025	Niha Farheen Shaik	WETCHEM_S CALE_5 (WC SC-5)	WETCHEM_F IPETTE_3 (WC)	Iwona Zarych  01/16/2025
<b>FROM</b> 5.00000ml of W2860 + 8.51200gram of W3169 + 990.00000ml of W3112 = Final Quantity: 1000.000 ml								

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2051	TOC STOCK STD-SS, 4000PPM	<a href="#">WP111437</a>	01/15/2025	06/30/2025	Niha Farheen Shaik	WETCHEM_S CALE_5 (WC SC-5)	WETCHEM_F IPETTE_3 (WC)	Iwona Zarych  01/16/2025
<b>FROM</b> 5.00000ml of W2860 + 8.51200gram of W2784 + 990.00000ml of W3112 = Final Quantity: 1000.000 ml								

### Wet Chemistry STANDARD PREPARATION LOG

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635	EDTA BUFFER FOR AMMONIA	<a href="#">WP111660</a>	01/28/2025	07/28/2025	Rubina Mughal	WETCHEM_S CALE_8 (WC SC-7)	None	Iwona Zarych  01/28/2025

**FROM** 5.50000gram of W3113 + 50.00000gram of W3132 + 950.00000ml of W3112 = Final Quantity: 1000.000 ml

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289	Sodium Hypochlorite for Ammonia	<a href="#">WP111745</a>	02/03/2025	07/31/2025	Rubina Mughal	None	None	Iwona Zarych  02/03/2025

**FROM** 50.00000ml of W3112 + 50.00000ml of W3174 = Final Quantity: 100.000 ml

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304	TOC CAL 0.00ppm	<a href="#">WP112403</a>	03/14/2025	03/21/2025	Niha Farheen Shaik	None	None	Iwona Zarych 03/20/2025

**FROM** 100.00000ml of W3112 = Final Quantity: 100.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
712	TOC SOIL cal 250ppm	<a href="#">WP112404</a>	03/14/2025	03/21/2025	Niha Farheen Shaik	None	WETCHEM_FIPETTE_3 (WC)	Iwona Zarych 03/20/2025

**FROM** 15.00000ml of W3112 + 1.00000ml of WP111436 = Final Quantity: 16.000 ml

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710	TOC SOIL cal 500ppm	<a href="#">WP112405</a>	03/14/2025	03/21/2025	Niha Farheen Shaik	None	WETCHEM_FIPETTE_3 (WC)	Iwona Zarych 03/20/2025

**FROM** 14.00000ml of W3112 + 2.00000ml of WP111436 = Final Quantity: 16.000 ml

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3544	TOC SOIL Cal- CCV 1000PPM	<a href="#">WP112406</a>	03/14/2025	03/21/2025	Niha Farheen Shaik	None	Glass Pipette-A	Iwona Zarych 03/20/2025

**FROM** 15.00000ml of W3112 + 5.00000ml of WP111436 = Final Quantity: 20.000 ml



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713	TOC SOIL cal 2000ppm	<a href="#">WP112407</a>	03/14/2025	03/21/2025	Niha Farheen Shaik	None	Glass Pipette-A	Iwona Zarych 03/20/2025

**FROM** 5.00000ml of W3112 + 5.00000ml of WP111436 = Final Quantity: 10.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
2819	TOC ICV-LCSS, 1000PPM	<a href="#">WP112408</a>	03/14/2025	03/21/2025	Niha Farheen Shaik	None	Glass Pipette-A	Iwona Zarych 03/20/2025

**FROM** 15.00000ml of W3112 + 5.00000ml of WP111437 = Final Quantity: 20.000 ml

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613	Phosphoric acid reagent	<a href="#">WP112446</a>	03/25/2025	09/25/2025	Niha Farheen Shaik	None	None	Iwona Zarych 03/26/2025

**FROM** 150.00000ml of W3112 + 50.00000ml of W2860 = Final Quantity: 200.000 ml

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153	Ammonia Stock Std. (1000 ppm)	<a href="#">WP112611</a>	04/07/2025	10/07/2025	Rubina Mughal	WETCHEM_S CALE_8 (WC SC-7)	None	Iwona Zarych 04/07/2025

**FROM** 3.81900gram of W3196 + 996.18100ml of W3112 = Final Quantity: 1000.000 ml

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1895	Ammonia Stock Std, 1000PPM-SS	<a href="#">WP112612</a>	04/07/2025	10/07/2025	Rubina Mughal	WETCHEM_S CALE_8 (WC SC-7)	None	Iwona Zarych  04/07/2025

**FROM** 3.81900gram of W3195 + 996.18100ml of W3112 = Final Quantity: 1000.000 ml

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1211	11 N sulfuric acid	<a href="#">WP112615</a>	04/03/2025	10/07/2025	Niha Farheen Shaik	None	None	Iwona Zarych  04/07/2025

**FROM** 306.00000ml of M6041 + 694.00000ml of W3112 = Final Quantity: 1000.000 ml

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1597	0.04 N H2SO4	<a href="#">WP112828</a>	04/25/2025	10/25/2025	Rubina Mughal	None	WETCHEM_F IPETTE_3 (WC)	Iwona Zarych  04/25/2025

**FROM** 1.00000ml of M6041 + 999.00000ml of W3112 = Final Quantity: 1000.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
126	5N sulfuric acid	<a href="#">WP112831</a>	04/25/2025	10/25/2025	Rubina Mughal	None	None	Iwona Zarych  04/25/2025

**FROM** 140.00000ml of M6041 + 860.00000ml of W3112 = Final Quantity: 1.000 L

### Wet Chemistry STANDARD PREPARATION LOG

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740	sodium nitroferricyanide for ammonia	<a href="#">WP112897</a>	04/30/2025	05/30/2025	Rubina Mughal	WETCHEM_SCALE_5 (WC SC-5)	None	Iwona Zarych 05/01/2025

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

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190	HEX CHROME PHOSPHATE BUFFER	<a href="#">WP112903</a>	05/01/2025	11/01/2025	Rubina Mughal	WETCHEM_SCALE_8 (WC SC-7)	None	Iwona Zarych 05/01/2025

**FROM** 0.84500L of W3112 + 68.04000gram of W3206 + 87.09000gram of W3168 = Final Quantity: 1.000 L

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115	Phosphate Stock Std. (50 ppm)	<a href="#">WP112913</a>	05/01/2025	11/01/2025	Iwona Zarych	WETCHEM_S CALE_5 (WC SC-5)	None	Jignesh Parikh  05/06/2025

**FROM** 0.11000gram of W3198 + 500.00000ml of W3112 = Final Quantity: 500.000 ml

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2790	Phosphate Stock std, 50PPM-SS	<a href="#">WP112914</a>	05/01/2025	11/01/2025	Iwona Zarych	WETCHEM_S CALE_5 (WC SC-5)	None	Jignesh Parikh  05/06/2025

**FROM** 0.11000gram of W3206 + 500.00000ml of W3112 = Final Quantity: 500.000 ml

### Wet Chemistry STANDARD PREPARATION LOG

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1322	Ammonia Intermediate Std, 50PPM	<a href="#">WP112986</a>	05/07/2025	06/07/2025	Rubina Mughal	None	WETCHEM_F IPETTE_3 (WC)	Iwona Zarych  05/07/2025
<b>FROM</b> 95.00000ml of W3112 + 5.00000ml of WP112611 = Final Quantity: 100.000 ml								

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1639	Ammonia Intermediate Std-Second source, 50PPM	<a href="#">WP112987</a>	05/07/2025	06/07/2025	Rubina Mughal	None	WETCHEM_F IPETTE_3 (WC)	Iwona Zarych  05/07/2025
<b>FROM</b> 95.00000ml of W3112 + 5.00000ml of WP112612 = Final Quantity: 100.000 ml								

### Wet Chemistry STANDARD PREPARATION LOG

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648	Ammonium molybdate solution	<a href="#">WP113112</a>	05/16/2025	11/16/2025	Iwona Zarych	WETCHEM_S CALE_5 (WC SC-5)	None	Jignesh Parikh  05/16/2025

**FROM** 20.00000gram of W2664 + 480.00000ml of W3112 = Final Quantity: 500.000 ml

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588	Potassium Antimonyl Tartrate	<a href="#">WP113113</a>	05/16/2025	11/16/2025	Iwona Zarych	WETCHEM_S CALE_5 (WC SC-5)	None	Jignesh Parikh  05/16/2025

**FROM** 1.37150gram of W2306 + 500.00000ml of W3112 = Final Quantity: 500.000 ml



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295	TKN Calibration Std (10 ppm)	<a href="#">WP113126</a>	05/19/2025	05/26/2025	Rubina Mughal	None	WETCHEM_F IPETTE_3 (WC)	Iwona Zarych  05/20/2025

**FROM** 49.50000ml of W3112 + 0.50000ml of WP112611 = Final Quantity: 50.000 ml

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297	TKN CCV STD 5 ppm	<a href="#">WP113127</a>	05/19/2025	05/26/2025	Rubina Mughal	None	WETCHEM_F IPETTE_3 (WC)	Iwona Zarych  05/20/2025

**FROM** 49.75000ml of W3112 + 0.25000ml of WP112611 = Final Quantity: 50.000 ml

### Wet Chemistry STANDARD PREPARATION LOG

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296	TKN ICV STD 5 ppm	<a href="#">WP113128</a>	05/19/2025	05/26/2025	Rubina Mughal	None	WETCHEM_F IPETTE_3 (WC)	Iwona Zarych  05/20/2025

**FROM** 49.75000ml of W3112 + 0.25000ml of WP112612 = Final Quantity: 50.000 ml

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298	TKN LCS STD 5 ppm	<a href="#">WP113129</a>	05/19/2025	05/26/2025	Rubina Mughal	None	WETCHEM_F IPETTE_3 (WC)	Iwona Zarych  05/20/2025

**FROM** 49.75000ml of W3112 + 0.25000ml of WP112612 = Final Quantity: 50.000 ml

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619	TKN digestion solution	<a href="#">WP113135</a>	05/20/2025	11/20/2025	Rubina Mughal	WETCHEM_S CALE_8 (WC SC-7)	None	Iwona Zarych  05/20/2025
<b>FROM</b> 134.00000gram of W2983 + 134.00000ml of M6041 + 7.30000gram of W3199 + 725.00000ml of W3112 = Final Quantity: 1000.000 ml								

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275	Ammonia Calibration Std. (2 ppm)	<a href="#">WP113183</a>	05/22/2025	05/23/2025	Rubina Mughal	None	WETCHEM_F IPETTE_3 (WC)	Jignesh Parikh  05/22/2025
<b>FROM</b> 48.00000ml of W3112 + 2.00000ml of WP112986 = Final Quantity: 50.000 ml								

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285	Ammonia CCV Std. (1 ppm)	<a href="#">WP113184</a>	05/22/2025	05/23/2025	Rubina Mughal	None	WETCHEM_F IPETTE_3 (WC)	Jignesh Parikh  05/22/2025

**FROM** 49.00000ml of W3112 + 1.00000ml of WP112986 = Final Quantity: 50.000 ml

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286	Ammonia ICV Std. (1 ppm)	<a href="#">WP113185</a>	05/22/2025	05/23/2025	Rubina Mughal	None	WETCHEM_F IPETTE_3 (WC)	Jignesh Parikh  05/22/2025

**FROM** 49.00000ml of W3112 + 1.00000ml of WP112987 = Final Quantity: 50.000 ml

### Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3544	TOC SOIL Cal- CCV 1000PPM	<a href="#">WP113210</a>	05/23/2025	05/30/2025	Iwona Zarych	None	Glass Pipette-A	Jignesh Parikh  05/28/2025

**FROM** 15.00000ml of W3112 + 5.00000ml of WP111436 = 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>
2819	TOC ICV-LCSS, 1000PPM	<a href="#">WP113211</a>	05/23/2025	05/30/2025	Iwona Zarych	None	Glass Pipette-A	Jignesh Parikh  05/28/2025

**FROM** 15.00000ml of W3112 + 5.00000ml of WP111437 = Final Quantity: 20.000 ml

### Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
122	calibration std. 0 ppm	<a href="#">WP113219</a>	05/28/2025	05/29/2025	Rubina Mughal	None	None	Iwona Zarych 05/28/2025

**FROM** 100.00000ml of W3112 = Final Quantity: 100.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
121	calibration std. phosphate 0.05 ppm	<a href="#">WP113220</a>	05/28/2025	05/29/2025	Rubina Mughal	None	WETCHEM_F IPETTE_3 (WC)	Iwona Zarych 05/28/2025

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

### Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
120	calibration std. phosphate 0.1 ppm	<a href="#">WP113221</a>	05/28/2025	05/29/2025	Rubina Mughal	None	WETCHEM_F IPETTE_3 (WC)	Iwona Zarych  05/28/2025

**FROM** 99.80000ml of W3112 + 0.20000ml of WP112913 = Final Quantity: 100.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
119	calibration std. phosphate 0.3 ppm	<a href="#">WP113222</a>	05/28/2025	05/29/2025	Rubina Mughal	None	WETCHEM_F IPETTE_3 (WC)	Iwona Zarych  05/28/2025

**FROM** 99.40000ml of W3112 + 0.60000ml of WP112913 = Final Quantity: 100.000 ml

### Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
118	calibration std. phosphate 0.5 ppm	<a href="#">WP113223</a>	05/28/2025	05/29/2025	Rubina Mughal	None	WETCHEM_F IPETTE_3 (WC)	Iwona Zarych  05/28/2025

**FROM** 99.00000ml of W3112 + 1.00000ml of WP112913 = Final Quantity: 100.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
117	calibration std. phosphate 1 ppm	<a href="#">WP113224</a>	05/28/2025	05/29/2025	Rubina Mughal	None	WETCHEM_F IPETTE_3 (WC)	Iwona Zarych  05/28/2025

**FROM** 98.00000ml of W3112 + 2.00000ml of WP112913 = Final Quantity: 100.000 ml



### Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
124	phosphate CCV std.	<a href="#">WP113225</a>	05/28/2025	05/29/2025	Rubina Mughal	None	WETCHEM_F IPETTE_3 (WC)	Iwona Zarych  05/28/2025

**FROM** 99.00000ml of W3112 + 1.00000ml of WP112913 = Final Quantity: 100.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3805	Phosphate ICV-LCS Std	<a href="#">WP113226</a>	05/28/2025	05/29/2025	Rubina Mughal	None	WETCHEM_F IPETTE_3 (WC)	Iwona Zarych  05/28/2025

**FROM** 99.00000ml of W3112 + 1.00000ml of WP112914 = 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>
3907	Phosphate MDL-LOD-LOQ spike solution, 5ppm	<a href="#">WP113227</a>	05/28/2025	05/29/2025	Rubina Mughal	None	WETCHEM_FIPETTE_3 (WC)	Iwona Zarych  05/28/2025

**FROM** 9.00000ml of W3112 + 1.00000ml of WP112913 = Final Quantity: 10.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3814	Phosphate LOD-MDL Std 0.025ppm	<a href="#">WP113228</a>	05/28/2025	05/29/2025	Rubina Mughal	None	WETCHEM_FIPETTE_3 (WC)	Iwona Zarych  05/28/2025

**FROM** 99.50000ml of W3112 + 0.50000ml of WP113227 = 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>
3730	Phosphatase LOQ std, 0.05PPM	<a href="#">WP113229</a>	05/28/2025	05/29/2025	Rubina Mughal	None	WETCHEM_F IPETTE_3 (WC)	Iwona Zarych  05/28/2025

**FROM** 99.00000ml of W3112 + 1.00000ml of WP113227 = 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>
590	Ascorbic Acid	<a href="#">WP113244</a>	05/28/2025	05/29/2025	Iwona Zarych	WETCHEM_S CALE_5 (WC SC-5)	None	Jignesh Parikh  05/28/2025

**FROM** 0.52800gram of W3074 + 30.00000ml of W3112 = Final Quantity: 30.000 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>
658	Combined reagent	<a href="#">WP113245</a>	05/28/2025	05/29/2025	Iwona Zarych	None	Glass Pipette-A	Jignesh Parikh  05/28/2025

**FROM** 15.00000ml of WP113112 + 30.00000ml of WP113244 + 5.00000ml of WP113113 + 50.00000ml of WP112831 = Final Quantity:  
 100.000 ml

## CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9673-33 / Sulfuric Acid, Instra-Analyzed (cs/6c2.5L)	23D2462010	03/20/2028	08/16/2024 / mohan	08/16/2024 / mohan	M6041

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

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

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	87683 / Sodium Nitroferriyanide 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.	J3568-1 / Sodium Borate, 500 gms	2019111354	04/23/2025	04/23/2020 / apatel	03/11/2020 / apatel	W2700

### CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	P243-500 / Potassium Hydrogen Phthalate, 500 gms	201089	06/30/2025	12/23/2020 / apatel	12/16/2020 / apatel	W2784

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	PC16721-3 / Isopropanol, 99%	C20F23007	06/23/2025	12/30/2020 / apatel	12/30/2020 / apatel	W2788

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	P1060-10 / PHENOL, ACS, 500G	M13H048	01/07/2026	07/07/2021 / apatel	07/07/2021 / apatel	W2858

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	J0260-3 / Phosphoric Acid, 2.5 L	0000278313	01/31/2026	07/12/2021 / apatel	07/12/2021 / apatel	W2860

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

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

### CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	J0938-7 / Ascorbic Acid, 500 gms	MKCS4627	09/30/2025	01/16/2024 / lwona	01/16/2024 / lwona	W3074

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	140444 / TEST PAPERS,PH 0-14,.5 SENSI,100PK	10D0142	09/17/2029	09/17/2024 / lwona	09/17/2024 / lwona	W3140

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	J3252-1 / POTAS PHOSPHATE, DIBASIC PWD, ACS, 500G	24H0856239	04/19/2028	01/03/2025 / lwona	01/03/2025 / lwona	W3168

### CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	P243-500 / Potassium Hydrogen Phthalate, 500 gms	24H0956262	04/28/2026	01/03/2025 / lwona	01/03/2025 / lwona	W3169

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	2501J28	07/31/2025	01/24/2025 / lwona	01/24/2025 / lwona	W3174

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

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

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

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



**CHEMICAL RECEIPT LOG BOOK**

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



# CERTIFICATE OF ANALYSIS

Printed: 12/8/2017

Page 1 of 1

Customer No : 30017  
Order Number : 3008126  
Catalog : A1561

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

Customer PO : 6035343  
Lot : 2GH0057

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

Formula Weight : 667.87

W2306  
received  
12/11/17  
AR

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

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

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

Certificate of Analysis Results Certified By:

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

(ammonium heptamolybdate, tetrahydrate)



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

## Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

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

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

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

*James Ethier*  
Jamie Ethier  
Vice President Global Quality

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

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



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

## Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

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

For Laboratory, Research or Manufacturing Use

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

*James Ethier*  
Jamie Ethier  
Vice President Global Quality

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

W2858 Received by AP on 07/07/2021

Product No.: 33213  
Product: Phenol, ACS, 99+%, stab.  
Lot No.: M13H048

Test	Limits	Results
Assay	99.0 % min	99.8 %
Freezing point	40.5°C min	40.5 °C
Clarity of solution	To pass test	Passes
Residue after evaporation	0.05 % max	< 0.05 %
Water	0.5 % max	0.2 %

Retest date: January 7, 2026

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Phosphoric Acid  
BAKER ANALYZED® A.C.S. Reagent

(orthophosphoric acid)



Material No.: 0260-03  
Batch No.: 0000278313  
Manufactured Date: 2021/02/01  
Retest Date: 2026/01/31  
Revision No: 2

## Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

Test	Specification	Result
Assay (H <sub>3</sub> PO <sub>4</sub> ) (by acidimetry)	85.0 - 87.0 %	85.8
Calcium (Ca)	<= 0.002 %	< 0.001
Color (APHA)	<= 10	5
Insoluble Matter	<= 0.001 %	< 0.001
ACS - Magnesium (Mg)	<= 0.002 %	<0.002
Sulfate (SO <sub>4</sub> )	<= 12 ppm	< 4
Volatile Acids (as CH <sub>3</sub> COOH)	<= 0.001 %	0.001
Reducing Substances	Passes Test	PT
Chloride (Cl)	<= 3 ppm	< 1
Nitrate (NO <sub>3</sub> )	<= 5 ppm	< 2
Trace Impurities - Antimony (Sb)	<= 20.000 ppm	0.007
Trace Impurities - Arsenic (As)	<= 0.500 ppm	< 0.001
Trace Impurities - Iron (Fe)	<= 10.000 ppm	< 1.000
Heavy Metals (as Pb)	<= 8 ppm	< 3
Trace Impurities - Manganese (Mn)	<= 0.500 ppm	0.005
Trace Impurities - Potassium (K)	<= 40.000 ppm	< 0.001
Trace Impurities - Sodium (Na)	<= 200.000 ppm	0.082

For Laboratory, Research or Manufacturing Use  
Exceeds A.C.S. Specifications  
Meets Reagent Specifications for testing USP/NF monographs

Country of Origin: US  
Packaging Site: Phillipsburg 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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### CERTIFICATE OF ANALYSIS

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

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

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



**Certification and Compliance Statements**

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

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

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

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

Approved by: D. Simoncelli, Quality Control Chemist

Date of Approval: 06/23/2020



3050 Spruce Street, Saint Louis, MO 63103, USA  
 Website: [www.sigmaaldrich.com](http://www.sigmaaldrich.com)  
 Email USA: [techserv@sial.com](mailto:techserv@sial.com)  
 Outside USA: [eurtechserv@sial.com](mailto:eurtechserv@sial.com)

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

## Certificate of Analysis

Product Name: Potassium sulfate - ReagentPlus®, ≥99.0%

Product Number: P0772  
 Batch Number: SLCM9788  
 Brand: SIGALD  
 CAS Number: 7778-80-5  
 MDL Number: MFCD00011388  
 Formula: K<sub>2</sub>O<sub>4</sub>S  
 Formula Weight: 174.26 g/mol  
 Quality Release Date: 03 MAR 2022



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



Brian Dulle, Supervisor  
 Quality Assurance  
 St. Louis, Missouri US

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

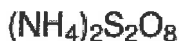


W 3035  
rec. 6/6/23 12

Product Name:

**Certificate of Analysis**Ammonium persulfate - ACS reagent,  $\geq 98.0\%$ 

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



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



Larry Coers, Director  
 Quality Control  
 Milwaukee, WI US

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



# Certificate Of Analysis



Date of Release: 11/14/2019

W2700 Recived by AP on 3/11/2020

Name: **Sodium Borate, Decahydrate**  
ACS

Item No: **SX0355 All Sizes**

Lot / Batch No: **2019111354**

Country of Origin: **India**

Item	Specifications	Analysis
Assay (Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub> • 10H <sub>2</sub> O)	99.5 - 105.0%	101.7%
Calcium (Ca)	0.005% max.	0.003%
Chloride (Cl)	0.001% max.	<0.001%
Color	White	Passes Test
Form	Crystals	Passes Test
Heavy Metals (as Pb)	0.001% max.	<0.001%
Insoluble Matter	0.005% max.	0.002%
Iron (Fe)	5 ppm max.	<5 ppm
pH of a 0.01 M solution at 25C	9.15 - 9.20	9.17
Phosphate (PO <sub>4</sub> )	0.001% max.	<0.001%
Sulfate (SO <sub>4</sub> )	0.005% max.	<0.005%

Joe Schoellkopff

-----  
Quality Control Manager

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

EMD Millipore is a division of Merck KGaA, Darmstadt, Germany

EMD Millipore Corporation

400 Summit Drive  
Burlington, MA 01803  
U.S.A.

Form number: 00005624CA, Rev. 2.0

Certificate of Analysis

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

## 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

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. Thermo Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Products are for research use or further manufacturing. Not for direct administration to humans or animals. It is the responsibility of the final formulator and end user 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.

Catalog Number	P243	Quality Test / Release Date	06/19/2020
Lot Number	201089		
Description	POTASSIUM HYDROGEN PHTHALATE, ACIDIMETRIC STANDARD, A.C.S.		
Country of Origin	Spain	Suggested Retest Date	Jun/2025
Chemical Origin	Organic - non animal		
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.		

N/A			
Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	WHITE CRYSTALS
ASSAY POTASSIUM HYDROGEN PHTHALATE	%	Inclusive Between 99.95 - 100.05	100.03
CHLORINE COMPOUNDS	%	<= 0.003	<0.003
HEAVY METALS (as Pb)	ppm	<= 5	<5
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
INSOLUBLE MATTER	%	<= 0.005	<0.005
IRON (Fe)	ppm	<= 5	<5
PH OF 0.05M SOLUTION		Inclusive Between 4.00 - 4.02	4.00
SODIUM (Na)	%	<= 0.005	<0.005
SULFUR COMPOUNDS	%	<= 0.002	<0.002%
TRACEABLE TO NIST	SOD CARBONATE	= LOT 351a	351a
TRACEABLE TO NIST KHP STD	POT. ACID PHTHALATE	= LOT 84L	84L



Julian Burton - Quality Control Manager – 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.

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

*M 6041-4b*  
*MS*



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

## Certificate of Analysis

Test	Specification	Result
ACS – Assay (H <sub>2</sub> SO <sub>4</sub> )	95.0 – 98.0 %	96.1 %
Appearance	Passes Test	Passes Test
ACS – Color (APHA)	≤ 10	5
ACS – Residue after Ignition	≤ 3 ppm	< 1 ppm
ACS – Substances Reducing Permanganate (as SO <sub>2</sub> )	≤ 2 ppm	< 2 ppm
Ammonium (NH <sub>4</sub> )	≤ 1 ppm	1 ppm
Chloride (Cl)	≤ 0.1 ppm	< 0.1 ppm
Nitrate (NO <sub>3</sub> )	≤ 0.2 ppm	< 0.1 ppm
Phosphate (PO <sub>4</sub> )	≤ 0.5 ppm	< 0.1 ppm
Trace Impurities – Aluminum (Al)	≤ 30.0 ppb	< 5.0 ppb
Arsenic and Antimony (as As)	≤ 4.0 ppb	< 2.0 ppb
Trace Impurities – Boron (B)	≤ 10.0 ppb	8.5 ppb
Trace Impurities – Cadmium (Cd)	≤ 2.0 ppb	< 0.3 ppb
Trace Impurities – Chromium (Cr)	≤ 6.0 ppb	< 0.4 ppb
Trace Impurities – Cobalt (Co)	≤ 0.5 ppb	< 0.3 ppb
Trace Impurities – Copper (Cu)	≤ 1.0 ppb	< 0.1 ppb
Trace Impurities – Gold (Au)	≤ 10.0 ppb	0.5 ppb
Heavy Metals (as Pb)	≤ 500.0 ppb	< 100.0 ppb
Trace Impurities – Iron (Fe)	≤ 50.0 ppb	1.3 ppb
Trace Impurities – Lead (Pb)	≤ 0.5 ppb	< 0.5 ppb
Trace Impurities – Magnesium (Mg)	≤ 7.0 ppb	0.8 ppb
Trace Impurities – Manganese (Mn)	≤ 1.0 ppb	< 0.4 ppb
Trace Impurities – Mercury (Hg)	≤ 0.5 ppb	< 0.1 ppb
Trace Impurities – Nickel (Ni)	≤ 2.0 ppb	0.3 ppb
Trace Impurities – Potassium (K)	≤ 500.0 ppb	< 2.0 ppb
Trace Impurities – Selenium (Se)	≤ 50.0 ppb	< 0.1 ppb
Trace Impurities – Silicon (Si)	≤ 100.0 ppb	31.5 ppb
Trace Impurities – Silver (Ag)	≤ 1.0 ppb	< 0.3 ppb

>>> Continued on page 2 >>>

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



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

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

For Laboratory, Research, or Manufacturing Use

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

Jamie Ethier  
Vice President Global Quality

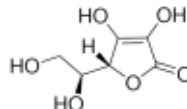
W3074 Rec. on 01/16/24 by IZ

# Certificate of Analysis

Product Name:

L-Ascorbic acid - ACS reagent, ≥99%

**Product Number:** 255564  
**Batch Number:** MKCS4627  
**Brand:** SIAL  
**CAS Number:** 50-81-7  
**MDL Number:** MFCD00064328  
**Formula:** C<sub>6</sub>H<sub>8</sub>O<sub>6</sub>  
**Formula Weight:** 176.12 g/mol  
**Quality Release Date:** 21 NOV 2022  
**Recommended Retest Date:** SEP 2025



Test	Specification	Result
Appearance (Color)	White	White
Appearance (Form)	Conforms to Requirements	Powder
Powder, Crystals, Crystalline Powder, Granules and/or Chunks		
Infrared Spectrum	Conforms to Structure	Conforms
Optical Rotation	20.5 - 21.5 deg	20.7 deg
(+); c = 10%; Water		
Titration by Iodine	≥ 99.0 %	99.4 %
Residue on Ignition	≤ 0.10 %	0.03 %
Iron (Fe)	≤ 0.001 %	< 0.001 %
Heavy Metals	≤ 0.002 %	0.001 %
by ICP-OES		
Recommended Retest Period	-----	-----
3 Years		
Meets ACS Requirements	Current ACS Specification	Conforms

Larry Coers, Director  
 Quality Control  
 Milwaukee, WI US

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







## 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.

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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

Spectrum Chemical Mfg Corp  
755 Jersey Avenue  
New Brunswick 08901 NJ



Certificate of Analysis Results Approved By:

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

**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.



Material	BDH9266-500G
Material Description	BDH POTASS PHOSPHAT DBSC 500GM
Grade	ACS GRADE
Batch	24H0856239
Reassay Date	04/19/2028
CAS Number	7758-11-4
Molecular Formula	K <sub>2</sub> HPO <sub>4</sub>
Molecular Mass	174.18
Date of Manufacture	04/19/2024
Storage	Room Temperature

Characteristics	Specifications	Measured Values
Appearance	Fine white crystalline powder	Fine white crystalline powder
Chloride	<= 0.003 %	0.002 %
Heavy Metals (as Pb)	<= 0.0005 %	<0.0005 %
Insolubles	<= 0.01 %	<0.01 %
Iron	<= 0.001 %	<0.001 %
Loss on Drying	<= 1.0 %	<0.5 %
Nitrogen Compounds	<= 0.001 %	<0.001 %
pH (5%, Water) @25C	8.5 - 9.6	8.8
Purity	>= 98.0 %	99.1 %
Sodium	<= 0.05 %	<0.05 %
Sulfate	<= 0.005 %	<0.002 %
CUSTOMER PART # BDH9266-500G		

Internal ID #: 793

Signature	Additional Information
<p>We certify that this batch conforms to the specifications listed above.</p> <p>This document has been electronically produced and is valid without a signature.</p> <p>Leona Edwardson, Quality Control Sr. Manager - Solon VWR Chemicals, LLC. 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>



Material	BDH9260-500G
Material Description	BDH POTASS HYDRGN PHTHLTE 500G
Grade	ACS GRADE
Batch	24H0956262
Reassay Date	04/28/2026
CAS Number	877-24-7
Molecular Formula	HOCC6H4COOK
Molecular Mass	204.22
Date of Manufacture	04/29/2023
Storage	Room Temperature

Characteristics	Specifications	Measured Values
Appearance	White crystals.	White crystals.
Assay (dried basis)	99.95 - 100.05 %	99.98 %
Chlorine Compounds	<= 0.003 %	<0.003 %
Heavy Metals (as Pb)	<= 5 ppm	<5 ppm
Insoluble Matter	<= 0.005 %	0.003 %
Iron	<= 5 ppm	<5 ppm
pH (0.05M, Water) @25C	4.00 - 4.02	4.00
Sodium	<= 0.005 %	<0.005 %
Sulfur Compounds	<= 0.002 %	<0.002 %

Internal ID #: 322

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 VWR Chemicals, LLC. 28600 Fountain Parkway, Solon OH 44139 USA</p>	<p>Analysis may have been rounded to significant digits in specification limits</p> <p>Product meets analytical specifications of the grades listed.</p>

# Certificate of Analysis

## Sodium Hypochlorite Solution, 5% available Chlorine

**Lot Number:** 2501J28

**Product Number:** 7495.5

**Manufacture Date:** JAN 17, 2025

**Expiration Date:** JUL 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
7495.5-8	250 mL amber poly	6 months

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



 Jose Pena (01/17/2025)  
 Operations Manager

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



W3195 Received on 03/19/2025 by IZ

# Certificate of Analysis



Material	BDH9208-500G
Material Description	BDH AMMONIUM CHLORIDE ACS 500G
Grade	U S P REAGENT (ACS GRADE)
Batch	24L0356561
Reassay Date	08/31/2027
CAS Number	12125-02-9
Molecular Formula	NH4Cl
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 VWR Chemicals, LLC. 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>



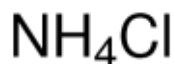
W3196 Received on 03/19/2025 by IZ

# 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

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W3198 Received on 4/11/2025 by IZ

3050 Spruce Street, Saint Louis, MO 63103, USA

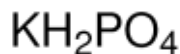
Website: [www.sigmaaldrich.com](http://www.sigmaaldrich.com)Email USA: [techserv@sial.com](mailto:techserv@sial.com)Outside USA: [eurtechserv@sial.com](mailto:eurtechserv@sial.com)

# Certificate of Analysis

Product Name:

Potassium phosphate monobasic - ACS reagent, ≥99.0%

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



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



Larry Coers, Director  
 Quality Control  
 Milwaukee, WI US

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





Material	BDH9312-2.5KG
Material Description	COPPER SULFATE CRYST 2500GM
Grade	U S P REAGENT (ACS GRADE)
Batch	24H0956271
Reassay Date	05/31/2027
CAS Number	7758-99-8
Molecular Formula	CuSO4.5H2O
Molecular Mass	249.68
Date of Manufacture	05/01/2024
Storage	Room Temperature

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

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

CUSTOMER PART# BDH9312-2.5KG

Internal ID #: 793

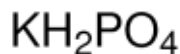
Signature	Additional Information
<p>We certify that this batch conforms to the specifications listed above.</p> <p>This document has been electronically produced and is valid without a signature.</p> <p>Leona Edwardson, Quality Control Sr. Manager - Solon VWR Chemicals, LLC. 28600 Fountain Parkway, Solon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

# Certificate of Analysis

Product Name:

Potassium phosphate monobasic - ACS reagent, ≥99.0%

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



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



Larry Coers, Director  
 Quality Control  
 Milwaukee, WI US

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

