

## Prep Standard - Chemical Standard Summary

**Order ID :** Q1415  
**Test :** Hexavalent Chromium,Percent Solids,trivalent Chromium

**Prepbatch ID :** PB166851,  
**Sequence ID/Qc Batch ID:** LB134791,LB134815,LB134970,LB134971,

**Standard ID :**  
WP110380,WP110381,WP110498,WP111249,WP111315,WP111316,WP111908,WP111960,WP112026,WP112027,WP112028,WP112029,WP112030,WP112031,WP112032,WP112033,WP112034,WP112061,

**Chemical ID :**  
E3873,E3876,M5673,M6096,M6121,M6126,W2202,W2511,W2651,W2652,W2708,W2979,W3112,W3113,W3152,W3163,

## 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>
126	5N sulfuric acid	<a href="#">WP110380</a>	10/24/2024	04/24/2025	Rubina Mughal	None	None	Iwona Zarych
								10/24/2024

**FROM** 140.00000ml of M5673 + 860.00000ml of W3112 = Final Quantity: 1.000 L

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1836	HNO3 Hex-Chrome, 5M	<a href="#">WP110381</a>	10/24/2024	04/24/2025	Rubina Mughal	None	None	Iwona Zarych
								10/24/2024

**FROM** 320.00000ml of M6096 + 680.00000ml 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>
190	HEX CHROME PHOSPHATE BUFFER	<a href="#">WP110498</a>	10/31/2024	04/29/2025	Rubina Mughal	WETCHEM_S CALE_5 (WC SC-5)	None	Iwona Zarych  10/31/2024
<b><u>FROM</u></b> 0.84500L of W3112 + 68.04000gram of W2708 + 87.09000gram of W2511 = 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>
3354	Hexchrome Cleaning Solution	<a href="#">WP111249</a>	12/30/2024	05/13/2025	Rubina Mughal	None	None	Iwona Zarych 01/02/2025
<b><u>FROM</u></b> 182.00000ml of M6121 + 727.00000ml of W3112 + 91.00000ml of M6126 = 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>
1993	HEXAVALENTCHROMIUM STOCK STD 1, 50PPM	<a href="#">WP111315</a>	01/09/2025	07/09/2025	Rubina Mughal	WETCHEM_SCALE_5 (WCS-5)	None	Iwona Zarych 01/09/2025
<u>FROM</u>	0.14140gram of W2651 + 1000.00000ml 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>
1994	HEXAVALENTCHROMIUM STOCK STD 2, 50PPM	<a href="#">WP111316</a>	01/09/2025	07/09/2025	Rubina Mughal	WETCHEM_SCALE_5 (WC SC-5)	None	Iwona Zarych 01/09/2025
<b><u>FROM</u></b> 0.14140gram of W2652 + 1000.00000ml 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>
148	hexchrome digestion fluid	<a href="#">WP111908</a>	02/13/2025	03/13/2025	Rubina Mughal	WETCHEM_S CALE_8 (WC SC-7)	None	Iwona Zarych  02/14/2025
<b><u>FROM</u></b>	120.00000gram of W3163 + 4.00000L of W3112 + 80.00000gram of W3113 = Final Quantity: 4000.000 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>
114	hexavalent chromium color reagent	<a href="#">WP111960</a>	02/19/2025	02/26/2025	Rubina Mughal	WETCHEM_S CALE_5 (WC SC-5)	None	Iwona Zarych  02/19/2025
<b><u>FROM</u></b> 0.25000gram of W2979 + 50.00000ml of E3873 = 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>
1103	HEX CHROME INTERMEDIATE STD SOURCE 1 (5PPM)	<a href="#">WP112026</a>	02/24/2025	02/25/2025	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 02/24/2025
<b><u>FROM</u></b> 9.00000ml of W3112 + 1.00000ml of WP111315 = 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>
110	calibration std. hexchrome 0 ppm	<a href="#">WP112027</a>	02/24/2025	02/25/2025	Rubina Mughal	None	None	Iwona Zarych 02/24/2025
<b><u>FROM</u></b> 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>
109	calibration std. hexchrome 0.01 ppm	<a href="#">WP112028</a>	02/24/2025	02/25/2025	Rubina Mughal	None	WETCHEM_PIPETTE_3	Iwona Zarych
(WC) <b><u>FROM</u></b> 99.80000ml of W3112 + 0.20000ml of WP112026 = 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>
3800	Calibration Std Hexachrome 0.025 ppm	<a href="#">WP112029</a>	02/24/2025	02/25/2025	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 02/24/2025
<b><u>FROM</u></b> 99.50000ml of W3112 + 0.50000ml of WP112026 = Final Quantity: 100.000 ml								

## Wet Chemistry STANDARD PREPARATION LOG

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108	Calibration Std. hexchrome 0.05 ppm	<a href="#">WP112030</a>	02/24/2025	02/25/2025	Rubina Mughal	None	WETCHEM_F IPETTE_3 (WC)	Iwona Zarych  02/24/2025
<b>FROM</b> 99.00000ml of W3112 + 1.00000ml of WP112026 = 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>
107	Calibration Std. hexchrome 0.1 ppm	<a href="#">WP112031</a>	02/24/2025	02/25/2025	Rubina Mughal	None	WETCHEM_F IPETTE_3 (WC)	Iwona Zarych  02/24/2025
<b>FROM</b> 99.80000ml of W3112 + 0.20000ml of WP111315 = 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>
3808	Calibration and CCV std HexChrome 0.5PPM	<a href="#">WP112032</a>	02/24/2025	02/25/2025	Rubina Mughal	None	WETCHEM_PIPETTE_3	Iwona Zarych  02/24/2025
<b><u>FROM</u></b> 99.00000ml of W3112 + 1.00000ml of WP111315 = 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>
3809	Calibration std HexChrome 1.0PPM	<a href="#">WP112033</a>	02/24/2025	02/25/2025	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 02/24/2025
<b><u>FROM</u></b> 98.00000ml of W3112 + 2.00000ml of WP111315 = 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>
3804	Hexavalent Chromium ICV-LCS Std	<a href="#">WP112034</a>	02/24/2025	02/25/2025	Rubina Mughal	None	WETCHEM_PIPETTE_3	Iwona Zarych
<p>(WC)</p> <p><b>FROM</b> 99.00000ml of W3112 + 1.00000ml of WP111316 = Final Quantity: 100.000 ml</p>								

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114	hexavalent chromium color reagent	<a href="#">WP112061</a>	02/26/2025	03/05/2025	Rubina Mughal	WETCHEM_SCALE_5 (WC SC-5)	None	Iwona Zarych 02/27/2025
<b><u>FROM</u></b> 0.25000gram of W2979 + 50.00000ml of E3876 = Final Quantity: 50.000 ml								

## CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9254-03 / Acetone, Ultra Resi (cs/4x4L)	24H2762008	07/29/2025	01/29/2025 / Rajesh	01/29/2025 / Rajesh	E3873

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9254-03 / Acetone, Ultra Resi (cs/4x4L)	24H2762008	08/25/2025	02/25/2025 /	02/12/2025 / Rajesh	E3876

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	09/21/2023 / mohan	09/05/2023 / mohan	M5673

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L)	24D1062002	03/25/2029	10/22/2024 / Janvi	09/21/2024 / Janvi	M6096

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)	0000275677	05/13/2025	11/13/2024 / Eman	10/13/2024 / Eman	M6121

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L)	24D1062002	06/03/2025	12/03/2024 / Janvi	11/12/2024 / Janvi	M6126

## CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	AA14125-36 / LEAD (II) CHROMATE, ACS, 500G	U19B018	01/23/2027	01/23/2017 / apatel	01/23/2017 / apatel	W2202

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	0000207436	04/29/2025	05/22/2019 / AMANDEEP	03/21/2019 / apatel	W2511

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	AA13450-36 / Potassium Dichromate, 500g(NEW)	T15F019	01/24/2030	01/24/2020 / apatel	01/24/2020 / apatel	W2651

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	P188-500 / Potassium Dichromate, 500g(new-2nd lot)	194664	01/24/2030	01/24/2020 / apatel	01/24/2020 / apatel	W2652

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	99/2019-20	05/05/2025	05/05/2020 / apatel	05/05/2020 / apatel	W2708

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	31390 / 1,5-Diphenylcarbazine	MKCR6636	12/09/2027	12/09/2022 / lwona	12/09/2022 / lwona	W2979

## CHEMICAL RECEIPT LOG BOOK

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.	01237-10KG / Magnesium Chloride Hexahydrate ACS 10KG	002126-2019-201	11/25/2029	11/25/2024 / lwona	11/25/2024 / lwona	W3152

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

# Certificate of analysis

Product No. 14125  
Product: Lead(II) chromate, ACS, 98%  
Lot No.: U19B018

Test	Limits	Results
Assay	98.0 % min	99.3 %
Soluble matter	0.15 % max	< 0.02 %
Carbon compounds	0.01 % max	< 0.01 %

Traceable to NIST? Yes

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

Product No.: 13450  
Product: Potassium dichromate, ACS, 99.0% min  
Lot No.: T15F019

Test	Limits	Results
Appearance	Orange-red crystals	Orange-red crystals
Identification	To Pass	Passes
Purity	99.0 % min	99.67 %
Insoluble matter	0.005 % max	0.004 %
Loss on drying	0.05 % max	0.03 %
Chloride	0.001 % max	< 0.001 %
Sulfate	0.005 % max	< 0.005 %
Iron	0.001 % max	< 0.001 %
Calcium	0.003 % max	0.0012 %
Sodium	0.02 % max	0.0047 %

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Potassium Phosphate, Dibasic, Powder  
BAKER ANALYZED® A.C.S. Reagent

(dipotassium hydrogen phosphate)



Material No.: 3252-01  
Batch No.: 0000207436  
Manufactured Date: 2018/05/01  
Retest Date: 2025/04/29  
Revision No: 1

## Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

Test	Specification	Result
Assay (K <sub>2</sub> HPO <sub>4</sub> ) (by acidimetry)	>= 98.0 %	99.2
Insoluble Matter	<= 0.01 %	< 0.01
Loss on Drying at 105°C	<= 1.0 %	< 1.0
pH of 5% Solution at 25°C	8.5 – 9.6	9.1
Chloride (Cl)	<= 0.003 %	< 0.003
Fluoride (F)	<= 0.001 %	< 0.001
Nitrogen Compounds (as N)	<= 0.001 %	< 0.001
Sulfate (SO <sub>4</sub> )	<= 0.005 %	< 0.005
Trace Impurities – Iron (Fe)	<= 0.001 %	< 0.001
Sodium (Na)	<= 0.05 %	< 0.05
Trace Impurities – Arsenic (As)	<= 1.000 ppm	< 1.000
Trace Impurities – ACS – Heavy Metals (as Pb)	<= 5 ppm	< 5
Trace Impurities – Lead (Pb)	<= 5.000 ppm	< 5.000
Color (APHA), For Information Only		5

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

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



Phillipsburg, NJ 9001:2015, FSSC22000  
Paris, KY 9001:2008  
Mexico City, Mexico 9001:2008  
Gliwice, Poland 9001:2015, 13485:2012  
Selangor, Malaysia 9001:2008  
Dehradun, India, 9001:2008, 14001:2004, 13485:2003  
Mumbai, India, 9001:2015, 17025:2005  
Panoli, India 9001:2015

*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



## 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	P188	Quality Test / Release Date	08/12/2019
Lot Number	194664		
Description	POTASSIUM DICHROMATE, A.C.S.		
Country of Origin	United States	Suggested Retest Date	Aug/2024
Chemical Origin	Inorganic-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.		
Chemical Comment			

N/A			
Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	Fine, orange-red crystals
ASSAY	%	>= 99	99.2
CALCIUM	%	<= 0.003	<0.003
CHLORIDE	%	<= 0.001	<0.001
LOSS ON DRYING @ 105 C	%	<= 0.05	<0.05
SULFATE (SO4)	%	<= 0.005	<0.005
INSOLUBLE MATTER	%	<= 0.005	0.003
IRON (Fe)	%	<= 0.001	<0.001
SODIUM (Na)	%	<= 0.02	<0.02
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST

*Jerusa 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.

Acetone

BAKER RESI-ANALYZED® Reagent

For Organic Residue Analysis

avantor™



Material No.: 9254-03

Batch No.: 24H2762008

Manufactured Date: 2024-04-18

Expiration Date: 2027-04-18

Revision No.: 0

## Certificate of Analysis

Test	Specification	Result
Assay ((CH <sub>3</sub> ) <sub>2</sub> CO) (by GC, corrected for water)	>= 99.4 %	100.0 %
Color (APHA)	<= 10	5
Residue after Evaporation	<= 1.0 ppm	0.0 ppm
Substances Reducing Permanganate	Passes Test	Passes Test
Titration Acid (μeq/g)	<= 0.3	0.2
Titration Base (μeq/g)	<= 0.6	<0.1
Water (H <sub>2</sub> O)	<= 0.5 %	<0.1 %
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	<= 5	1
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	<= 10	1

For Laboratory, Research, or Manufacturing Use

MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: United States

Packaging Site: Phillipsburg Mfg Ctr & DC

Recd. by RP on 1/29/25

E 3873

Jamie Croak  
Director Quality Operations, Bioscience Production

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

Avantor Performance Materials LLC

Acetone  
BAKER RESI-ANALYZED® Reagent  
For Organic Residue Analysis

 **avantors**™



Material No.: 9254-03

Batch No.: 24H2762008

Manufactured Date: 2024-04-18

Expiration Date: 2027-04-18

Revision No.: 0

## Certificate of Analysis

Test	Specification	Result
Assay ((CH <sub>3</sub> ) <sub>2</sub> CO) (by GC, corrected for water)	>= 99.4 %	100.0 %
Color (APHA)	<= 10	5
Residue after Evaporation	<= 1.0 ppm	0.0 ppm
Substances Reducing Permanganate	Passes Test	Passes Test
Titration Acid (μeq/g)	<= 0.3	0.2
Titration Base (μeq/g)	<= 0.6	<0.1
Water (H <sub>2</sub> O)	<= 0.5 %	<0.1 %
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	<= 5	1
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	<= 10	1

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

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

Recd. by RP on 2/12/25

E 3876



Jamie Croak  
Director Quality Operations, Bioscience Production

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

Avantor Performance Materials LLC

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

 **avantor**™



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

  
Jamie Ethier  
Vice President Global Quality

Nitric Acid 69%  
CMOS

avantor™



M6096  
M6097  
M6098  
M6099  
M6100

Mutdig  
9/21/24

Material No.: 9606-03  
Batch No.: 24D1062002  
Manufactured Date: 2024-03-26  
Retest Date: 2029-03-25  
Revision No.: 0

## Certificate of Analysis

Test	Specification	Result
Assay (HNO <sub>3</sub> )	69.0 – 70.0 %	69.7 %
Appearance	Passes Test	Passes Test
Color (APHA)	≤ 10	5
Residue after Ignition	≤ 2 ppm	1 ppm
Chloride (Cl)	≤ 0.08 ppm	< 0.03 ppm
Phosphate (PO <sub>4</sub> )	≤ 0.10 ppm	< 0.03 ppm
Sulfate (SO <sub>4</sub> )	≤ 0.2 ppm	< 0.2 ppm
Trace Impurities – Aluminum (Al)	≤ 40.0 ppb	< 1.0 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities – Barium (Ba)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Beryllium (Be)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Bismuth (Bi)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities – Boron (B)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Cadmium (Cd)	≤ 50 ppb	< 1 ppb
Trace Impurities – Calcium (Ca)	≤ 50.0 ppb	2.3 ppb
Trace Impurities – Chromium (Cr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities – Cobalt (Co)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Copper (Cu)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Gallium (Ga)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Germanium (Ge)	≤ 20 ppb	< 10 ppb
Trace Impurities – Gold (Au)	≤ 20 ppb	< 5 ppb
Heavy Metals (as Pb)	≤ 100 ppb	100 ppb
Trace Impurities – Iron (Fe)	≤ 40.0 ppb	< 1.0 ppb
Trace Impurities – Lead (Pb)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities – Lithium (Li)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Magnesium (Mg)	≤ 20 ppb	< 1 ppb
Trace Impurities – Manganese (Mn)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Nickel (Ni)	≤ 20.0 ppb	< 5.0 ppb

>>> Continued on page 2 >>>

Nitric Acid 69%  
CMOS



Material No.: 9606-03  
Batch No.: 24D1062002

Test	Specification	Result
Trace Impurities – Niobium (Nb)	≤ 50.0 ppb	< 1.0 ppb
Trace Impurities – Potassium (K)	≤ 50 ppb	16 ppb
Trace Impurities – Silicon (Si)	≤ 50 ppb	< 10 ppb
Trace Impurities – Silver (Ag)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Sodium (Na)	≤ 150.0 ppb	< 5.0 ppb
Trace Impurities – Strontium (Sr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities – Tantalum (Ta)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Thallium (Tl)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Tin (Sn)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities – Titanium (Ti)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Vanadium (V)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Zinc (Zn)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Zirconium (Zr)	≤ 10.0 ppb	< 1.0 ppb
Particle Count – 0.5 µm and greater	≤ 60 par/ml	10 par/ml
Particle Count – 1.0 µm and greater	≤ 10 par/ml	3 par/ml

>>> Continued on page 3 >>>

Nitric Acid 69%  
CMOS



Material No.: 9606-03  
Batch No.: 24D1062002

Test	Specification	Result
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For Microelectronic Use  
Country of Origin: USA  
Packaging Site: Phillipsburg Mfg Ctr & DC

  
Jamie Croak  
Director Quality Operations, Bioscience Production

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

avantor™



R → 16/13/24  
Met dig

M 6121

Material No.: 9530-33  
Batch No.: 0000275677  
Manufactured Date: 2020/12/16  
Retest Date: 2025/12/15  
Revision No: 1

## Certificate of Analysis

Test	Specification	Result
ACS - Assay (as HCl) (by acid-base titrn)	36.5 - 38.0 %	37.6
ACS - Color (APHA)	<= 10	5
ACS - Residue after Ignition	<= 3 ppm	1
ACS - Specific Gravity at 60°/60°F	1.185 - 1.192	1.190
ACS - Bromide (Br)	<= 0.005 %	< 0.005
ACS - Extractable Organic Substances	<= 5 ppm	1
ACS - Free Chlorine (as Cl <sub>2</sub> )	<= 0.5 ppm	< 0.5
Phosphate (PO <sub>4</sub> )	<= 0.05 ppm	< 0.03
Sulfate (SO <sub>4</sub> )	<= 0.5 ppm	< 0.3
Sulfite (SO <sub>3</sub> )	<= 0.8 ppm	0.3
Ammonium (NH <sub>4</sub> )	<= 3 ppm	< 1
Trace Impurities - Arsenic (As)	<= 0.010 ppm	< 0.003
Trace Impurities - Aluminum (Al)	<= 10.0 ppb	< 0.2
Arsenic and Antimony (as As)	<= 5 ppb	< 3
Trace Impurities - Barium (Ba)	<= 1.0 ppb	< 0.2
Trace Impurities - Beryllium (Be)	<= 1.0 ppb	< 0.2
Trace Impurities - Bismuth (Bi)	<= 10.0 ppb	< 1.0
Trace Impurities - Boron (B)	<= 20.0 ppb	< 5.0
Trace Impurities - Cadmium (Cd)	<= 1.0 ppb	< 0.3
Trace Impurities - Calcium (Ca)	<= 50.0 ppb	29.7
Trace Impurities - Chromium (Cr)	<= 1.0 ppb	< 0.4
Trace Impurities - Cobalt (Co)	<= 1.0 ppb	< 0.3
Trace Impurities - Copper (Cu)	<= 1.0 ppb	< 0.1
Trace Impurities - Gallium (Ga)	<= 1.0 ppb	< 0.2

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

Material No.: 9530-33

Batch No.: 0000275677

Test	Specification	Result
Trace Impurities – Germanium (Ge)	$\leq 3.0$ ppb	< 2.0
Trace Impurities – Gold (Au)	$\leq 4.0$ ppb	< 0.2
Heavy Metals (as Pb)	$\leq 100$ ppb	< 50
Trace Impurities – Iron (Fe)	$\leq 15.0$ ppb	< 1
Trace Impurities – Lead (Pb)	$\leq 1.0$ ppb	< 0.5
Trace Impurities – Lithium (Li)	$\leq 1.0$ ppb	0.2
Trace Impurities – Magnesium (Mg)	$\leq 10.0$ ppb	0.4
Trace Impurities – Manganese (Mn)	$\leq 1.0$ ppb	< 0.4
Trace Impurities – Mercury (Hg)	$\leq 0.5$ ppb	0.1
Trace Impurities – Molybdenum (Mo)	$\leq 10.0$ ppb	< 5.0
Trace Impurities – Nickel (Ni)	$\leq 4.0$ ppb	< 0.3
Trace Impurities – Niobium (Nb)	$\leq 1.0$ ppb	< 0.2
Trace Impurities – Potassium (K)	$\leq 9.0$ ppb	< 2.0
Trace Impurities – Selenium (Se), For Information Only	ppb	1.0
Trace Impurities – Silicon (Si)	$\leq 100.0$ ppb	< 10.0
Trace Impurities – Silver (Ag)	$\leq 1.0$ ppb	< 0.3
Trace Impurities – Sodium (Na)	$\leq 100.0$ ppb	< 5.0
Trace Impurities – Strontium (Sr)	$\leq 1.0$ ppb	< 0.2
Trace Impurities – Tantalum (Ta)	$\leq 1.0$ ppb	< 0.9
Trace Impurities – Thallium (Tl)	$\leq 5.0$ ppb	< 2.0
Trace Impurities – Tin (Sn)	$\leq 5.0$ ppb	< 0.8
Trace Impurities – Titanium (Ti)	$\leq 1.0$ ppb	0.2
Trace Impurities – Vanadium (V)	$\leq 1.0$ ppb	< 0.2
Trace Impurities – Zinc (Zn)	$\leq 5.0$ ppb	0.3
Trace Impurities – Zirconium (Zr)	$\leq 1.0$ ppb	< 0.1

For Laboratory, Research or Manufacturing Use

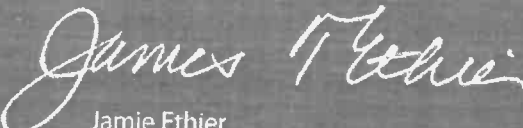
Product Information (not specifications):

Appearance (clear, fuming liquid)

Meets ACS Specifications

Country of Origin: US

Packaging Site: Phillipsburg Mfg Ctr &amp; 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

Nitric Acid 69%  
CMOS



R → 11/12/24

M6126

Material No.: 9606-03  
Batch No.: 24D1062002  
Manufactured Date: 2024-03-26  
Retest Date: 2029-03-25  
Revision No.: 0

## Certificate of Analysis

Test	Specification	Result
Assay (HNO <sub>3</sub> )	69.0 – 70.0 %	69.7 %
Appearance	Passes Test	Passes Test
Color (APHA)	≤ 10	5
Residue after Ignition	≤ 2 ppm	1 ppm
Chloride (Cl)	≤ 0.08 ppm	< 0.03 ppm
Phosphate (PO <sub>4</sub> )	≤ 0.10 ppm	< 0.03 ppm
Sulfate (SO <sub>4</sub> )	≤ 0.2 ppm	< 0.2 ppm
Trace Impurities – Aluminum (Al)	≤ 40.0 ppb	< 1.0 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities – Barium (Ba)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Beryllium (Be)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Bismuth (Bi)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities – Boron (B)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Cadmium (Cd)	≤ 50 ppb	< 1 ppb
Trace Impurities – Calcium (Ca)	≤ 50.0 ppb	2.3 ppb
Trace Impurities – Chromium (Cr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities – Cobalt (Co)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Copper (Cu)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Gallium (Ga)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Germanium (Ge)	≤ 20 ppb	< 10 ppb
Trace Impurities – Gold (Au)	≤ 20 ppb	< 5 ppb
Heavy Metals (as Pb)	≤ 100 ppb	100 ppb
Trace Impurities – Iron (Fe)	≤ 40.0 ppb	< 1.0 ppb
Trace Impurities – Lead (Pb)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities – Lithium (Li)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Magnesium (Mg)	≤ 20 ppb	< 1 ppb
Trace Impurities – Manganese (Mn)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Nickel (Ni)	≤ 20.0 ppb	< 5.0 ppb

>>> Continued on page 2 >>>

Nitric Acid 69%  
CMOS

 **avantor**<sup>TM</sup>



Material No.: 9606-03  
Batch No.: 24D1062002

Test	Specification	Result
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For Microelectronic Use

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



Jamie Croak  
Director Quality Operations, Bioscience Production



# CHAMPA PURIE-CHEM INDUSTRIES

ISO 9001 : 2015 CERTIFIED COMPANY

Importers Exporters Manufacturers &amp; Marketing of Fine Chemicals &amp; Pharmaceuticals

262-263, G.I.D.C. Estate,  
Makarpura,  
Vadodara - 390 010.  
Gujarat - INDIA.

Phone : (F) +91-265-2633314 / 2643723  
Fax : (F) +91-265-2638036  
E-mail : info@cpcindia.com  
Web : www.cpcindia.com

W2708 Received on 05/05/20 by AP

## CERTIFICATE OF ANALYSIS

PRODUCT	: POTASSIUM PHOSPHATE MONOBASIC Anhy. - ACS	
CERTIFICATE NO	: 99/2019- 20	DATE 26-08-2019
Date of receipt of sample	: 22.08.2019	Quantity : 1000 KGS
Batch No. /Lot No	: 99/2019- 20	
Mfg. Date	: Aug-2019	
1. Characteristic	: A White powder	
2. Identification	: Positive	
	<b>RESULT OBTAINED</b>	<b>LIMITS</b>
3. Clarity and colour of solution	: 10% solution is clear and colourless	
4. Assay (on dry basis)	: 99.27%	Min.99.00%
5. PH (5% solution)	: 4.4	4.1-4.5
6. Loss on Drying	: 0.1%	Max 0.2%
7. Heavy Metals	: 0.0003%	Max.0.001%
8. Iron	: 0.001%	Max 0.002%
9. Sulphate	: 0.001%	Max. 0.003%
10. Chloride	: 0.0005%	Max.0.001%
11. Insoluble Matter	: 0.003%	Max. 0.01%
12. Sodium	: 0.004%	Max. 0.005%
The sample does comply with specification as per Above.		
Analysed by	<u>J.A. PATHAK</u>	Quality Control Department

W 2979

Rec: 12/09/22

exp. 12/09/27

Product Name:

1,5-Diphenylcarbazide - ACS reagent

Product Number:

259225

Batch Number:

MKCR6636

Brand:

SIAL

CAS Number:

140-22-7

MDL Number:

MFCD00003013

Formula:

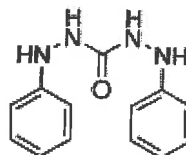
C<sub>13</sub>H<sub>14</sub>N<sub>4</sub>O

Formula Weight:

242.28 g/mol


Quality Release Date:

02 JUN 2022



## Certificate of Analysis

Test	Specification	Result
Appearance (Color)	Conforms to Requirements	Pink
Off-White to Pink, Light Purple or Tan		
Appearance (Form)	Powder or Chunks	Powder
Melting Point	173.0 - 176.0 °C	173.0 °C
Infrared Spectrum	Conforms to Structure	Conforms
Residue on ignition (Ash)	≤ 0.05 %	0.01 %
15 minutes, 800 Degrees Celsius		
Solubility	Pass	Pass
Sensitivity Test	Pass	Pass
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



## 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.

# *Chem-Impex International, Inc.*

---

**Tel: (630) 766-2112****E-mail: sales@chemimpex.com****Shipping and Correspondence:**

935 Dillon Drive

Wood Dale, IL 60191

**Fax: (630) 766-2218****Web site: www.chemimpex.com****Manufacturing site:**

825 Dillon Drive

Wood Dale, IL 60191

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## *Certificate of Analysis*

<b>Catalogue Number</b>	01237
<b>Lot Number</b>	002126-2019-201
<b>Product</b>	<b>Magnesium chloride hexahydrate</b>

Magnesium chloride•6H<sub>2</sub>O

<b>CAS Number</b>	7791-18-6
<b>Molecular Formula</b>	MgCl <sub>2</sub> •6H <sub>2</sub> O
<b>Molecular Weight</b>	203.3

---

<b>Appearance</b>	White crystals
<b>Solubility</b>	167 g in 100 mL water
<b>Melting Point</b>	~ 115 °C
<b>Heavy Metals</b>	4.393 ppm
<b>Anion</b>	Nitrate (NO <sub>3</sub> ) : < 0.001% Phosphate (PO <sub>4</sub> ) : < 5 ppm Sulfate (SO <sub>4</sub> ) : < 0.002%
<b>Cation</b>	Ammonium (NH <sub>4</sub> ) : < 0.002% Barium (Ba) : 0.005% Calcium (Ca) : 0.01% Iron (Fe) : 4.5 ppm Manganese (Mn) : 0.624 ppm Potassium (K) : 0.004% Sodium (Na) : 0.000003% Strontium (Sr) : 0.005%
<b>Insoluble material</b>	0.0021%
<b>Assay by titration</b>	100.83%
<b>Grade</b>	ACS reagent
<b>Storage</b>	Store at RT

## ***Certificate of Analysis***

**Catalog Number: 01237**

**Lot Number: 002126-2019-201**

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**Remarks**

See material safety data sheet for additional information

For laboratory use only

**The foregoing is a copy of the Certificate of Analysis as provided by our supplier**

A handwritten signature in black ink, appearing to read 'Bala Kumar', with a stylized flourish at the end.

**Bala Kumar**  
**Quality Control Manager**



W3163 Rec. on 12/10/24 by IZ

# Certificate of Analysis



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

Batch 24E3156178  
Reassay Date 09/30/2027  
CAS Number 497-19-8  
Molecular Formula Na<sub>2</sub>CO<sub>3</sub>  
Molecular Mass 105.99

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

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

Internal ID #: 710

Signature	Additional Information
We certify that this batch conforms to the specifications listed above.  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	Analysis may have been rounded to significant digits in specification limits  Product meets analytical specifications of the grades listed.