

Cover Page

Order ID : Q2818

Project ID : Reserve Turgyan Farms

Client : Earth Engineering Inc.

Lab Sample Number

Q2818-01
Q2818-02
Q2818-04
Q2818-05

Client Sample Number

B-2-5-1
B-3-5-2
B-2-5-1
B-3-5-2

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature : _____

Date: 8/21/2025



284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

Earth Engineering Inc.

Project Name: Reserve Turgyan Farms

Project # N/A

Order ID # Q2818

Test Name: Cyanide

A. Number of Samples and Date of Receipt:

2 Soil sample was received on 08/11/2025.

B. Parameters:

According to the Chain of Custody document, the following analyses were requested: Cyanide. This data package contains results for Cyanide.

C. Analytical Techniques:

The analysis of Cyanide was based on method 9012B.

D. QA/ QC Samples:

The Holding Times were met for all analysis.

The Blank Spike met requirements for all compounds.

The Duplicate analysis met criteria for all compounds.

The Matrix Spike analysis met criteria for all compounds.

The Matrix Spike Duplicate analysis met criteria for all compounds.

The Blank analysis did not indicate the presence of lab contamination.

The Calibration met the requirements.

E. Additional Comments:

The temperature of the samples at the time of receipt was 6.1°C.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature_____

DATA REPORTING QUALIFIERS- INORGANIC

For reporting results, the following “ Results Qualifiers” are used:

J	Indicates the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL), but greater than or equal to the Instrument Detection Limit (IDL).
U	Indicates the analyte was analyzed for, but not detected.
ND	Indicates the analyte was analyzed for, but not detected
E	Indicates the reported value is estimated because of the presence of interference
M	Indicates Duplicate injection precision not met.
N	Indicates the spiked sample recovery is not within control limits.
S	Indicates the reported value was determined by the Method of Standard Addition (MSA).
*	Indicates that the duplicate analysis is not within control limits.
+	Indicates the correlation coefficient for the MSA is less than 0.995.
D	Indicates the reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.
M	Method qualifiers “P” for ICP instrument “PM” for ICP when Microwave Digestion is used “CV” for Manual Cold Vapor AA “AV” for automated Cold Vapor AA “CA” for MIDI-Distillation Spectrophotometric “AS” for Semi -Automated Spectrophotometric “C” for Manual Spectrophotometric “T” for Titrimetric “NR” for analyte not required to be analyzed
OR	Indicates the analyte’s concentration exceeds the calibrated range of the instrument for that specific analysis.
Q	Indicates the LCS did not meet the control limits requirements
H	Sample Analysis Out Of Hold Time

APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: Q2818

Completed

For thorough review, the report must have the following:

GENERAL:

Are all original paperwork present (chain of custody, record of communication,airbill, sample management lab chronicle, login page)

✓

Check chain-of-custody for proper relinquish/return of samples

✓

Is the chain of custody signed and complete

✓

Check internal chain-of-custody for proper relinquish/return of samples /sample extracts

✓

Collect information for each project id from server. Were all requirements followed

✓

COVER PAGE:

Do numbers of samples correspond to the number of samples in the Chain of Custody on login page

✓

Do lab numbers and client Ids on cover page agree with the Chain of Custody

✓

CHAIN OF CUSTODY:

Do requested analyses on Chain of Custody agree with form I results

✓

Do requested analyses on Chain of Custody agree with the log-in page

✓

Were the correct method log-in for analysis according to the Analytical Request and Chain of Custody

✓

Were the samples received within hold time

✓

Were any problems found with the samples at arrival recorded in the Sample Management Laboratory Chronicle

✓

ANALYTICAL:

Was method requirement followed?

✓

Was client requirement followed?

✓

Does the case narrative summarize all QC failure?

✓

All runlogs and manual integration are reviewed for requirements

✓

All manual calculations and /or hand notations verified

✓

QA Review Signature: KETAN PATEL

Date: 08/21/2025

LAB CHRONICLE

OrderID: Q2818
Client: Earth Engineering Inc.
Contact: Frank Dougherty, LSRP

OrderDate: 8/11/2025 11:57:00 AM
Project: Reserve Turgyan Farms
Location: J21

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
Q2818-01	B-2-5-1	SOIL			08/11/25 08:50			08/11/25
			Cyanide	9012B		08/11/25	08/11/25 15:00	
			Hexavalent Chromium	7196A		08/19/25	08/19/25 12:44	
Q2818-02	B-3-5-2	SOIL			08/11/25 09:35			08/11/25
			Cyanide	9012B		08/11/25	08/11/25 15:05	
			Hexavalent Chromium	7196A		08/19/25	08/19/25 12:45	



SAMPLE DATA

Report of Analysis

Client:	Earth Engineering Inc.	Date Collected:	08/11/25 08:50
Project:	Reserve Turgyan Farms	Date Received:	08/11/25
Client Sample ID:	B-2-5-1	SDG No.:	Q2818
Lab Sample ID:	Q2818-01	Matrix:	SOIL
		% Solid:	87.5

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.
Cyanide	0.40		1	0.048	0.28	mg/Kg	08/11/25 12:45	08/11/25 15:00	9012B
Hexavalent Chromium	0.079	U	1	0.079	0.45	mg/Kg	08/19/25 09:00	08/19/25 12:44	7196A

Comments: _____

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

D = Dilution

Q = indicates LCS control criteria did not meet requirements

H = Sample Analysis Out Of Hold Time

J = Estimated Value

B = Analyte Found in Associated Method Blank

* = indicates the duplicate analysis is not within control limits.

E = Indicates the reported value is estimated because of the presence of interference.

OR = Over Range

N =Spiked sample recovery not within control limits

Report of Analysis

Client:	Earth Engineering Inc.	Date Collected:	08/11/25 09:35
Project:	Reserve Turgyan Farms	Date Received:	08/11/25
Client Sample ID:	B-3-5-2	SDG No.:	Q2818
Lab Sample ID:	Q2818-02	Matrix:	SOIL
		% Solid:	89.1

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.
Cyanide	0.33		1	0.045	0.27	mg/Kg	08/11/25 12:45	08/11/25 15:05	9012B
Hexavalent Chromium	0.078	U	1	0.078	0.45	mg/Kg	08/19/25 09:00	08/19/25 12:45	7196A

Comments: _____

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

D = Dilution

Q = indicates LCS control criteria did not meet requirements

H = Sample Analysis Out Of Hold Time

J = Estimated Value

B = Analyte Found in Associated Method Blank

* = indicates the duplicate analysis is not within control limits.

E = Indicates the reported value is estimated because of the presence of interference.

OR = Over Range

N =Spiked sample recovery not within control limits



QC RESULT SUMMARY

Initial and Continuing Calibration Verification

Client: Earth Engineering Inc.

SDG No.: Q2818

Project: Reserve Turgyan Farms

RunNo.: LB136777

Analyte		Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID: Cyanide	ICV1	mg/L	0.096	0.099	97	90-110	08/11/2025
Sample ID: Cyanide	CCV1	mg/L	0.25	0.25	100	90-110	08/11/2025
Sample ID: Cyanide	CCV2	mg/L	0.25	0.25	100	90-110	08/11/2025

Initial and Continuing Calibration Verification

Client: Earth Engineering Inc.

SDG No.: Q2818

Project: Reserve Turgyan Farms

RunNo.: LB136872

Analyte	Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID: ICV Hexavalent Chromium	mg/L	0.499	0.5	100	90-110	08/19/2025
Sample ID: CCV1 Hexavalent Chromium	mg/L	0.496	0.5	99	90-110	08/19/2025
Sample ID: CCV2 Hexavalent Chromium	mg/L	0.487	0.5	97	90-110	08/19/2025
Sample ID: CCV3 Hexavalent Chromium	mg/L	0.493	0.5	99	90-110	08/19/2025

Initial and Continuing Calibration Blank Summary

Client: Earth Engineering Inc.

SDG No.: Q2818

Project: Reserve Turgyan Farms

RunNo.: LB136777

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: ICB1 Cyanide	mg/L	0.0014	0.0025	J	0.00096	0.005	08/11/2025
Sample ID: CCB1 Cyanide	mg/L	0.0016	0.0025	J	0.00096	0.005	08/11/2025
Sample ID: CCB2 Cyanide	mg/L	0.0014	0.0025	J	0.00096	0.005	08/11/2025

Initial and Continuing Calibration Blank Summary

Client: Earth Engineering Inc.

SDG No.: Q2818

Project: Reserve Turgyan Farms

RunNo.: LB136872

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: ICB Hexavalent Chromium	mg/L	< 0.0050	0.0050	U	0.0029	0.01	08/19/2025
Sample ID: CCB1 Hexavalent Chromium	mg/L	< 0.0050	0.0050	U	0.0029	0.01	08/19/2025
Sample ID: CCB2 Hexavalent Chromium	mg/L	< 0.0050	0.0050	U	0.0029	0.01	08/19/2025
Sample ID: CCB3 Hexavalent Chromium	mg/L	< 0.0050	0.0050	U	0.0029	0.01	08/19/2025

Preparation Blank Summary

Client: Earth Engineering Inc.

SDG No.: Q2818

Project: Reserve Turgyan Farms

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: PB169197BL Cyanide	mg/Kg	0.057	0.1250	J	0.042	0.25	08/11/2025
Sample ID: PB169305BL Hexavalent Chromium	mg/Kg	< 0.2000	0.2000	U	0.07	0.4	08/19/2025

Matrix Spike Summary

Client:	Earth Engineering Inc.	SDG No.:	Q2818
Project:	Reserve Turgyan Farms	Sample ID:	Q2818-01
Client ID:	B-2-5-1MS	Percent Solids for Spike Sample:	87.5

Analyte	Units	Acceptance Limit %R	Spiked Result	Conc. Qualifier	Sample Result	Conc. Qualifier	Spike Added	Dilution Factor	% Rec	Qual	Analysis Date
Cyanide	mg/Kg	75-125	2.40		0.40		2.2	1	91		08/11/2025

Matrix Spike Summary

Client:	Earth Engineering Inc.	SDG No.:	Q2818
Project:	Reserve Turgyan Farms	Sample ID:	Q2818-01
Client ID:	B-2-5-1MSD	Percent Solids for Spike Sample:	87.5

Analyte	Units	Acceptance Limit %R	Spiked Result	Conc. Qualifier	Sample Result	Conc. Qualifier	Spike Added	Dilution Factor	% Rec	Qual	Analysis Date
Cyanide	mg/Kg	75-125	2.50		0.40		2.3	1	91		08/11/2025

Matrix Spike Summary

Client:	Earth Engineering Inc.	SDG No.:	Q2818
Project:	Reserve Turgyan Farms	Sample ID:	Q2888-01
Client ID:	VNJ-210MS	Percent Solids for Spike Sample:	94.9

Analyte	Units	Acceptance Limit %R	Spiked Result	Conc. Qualifier	Sample Result	Conc. Qualifier	Spike Added	Dilution Factor	% Rec	Qual	Analysis Date
Hexavalent Chromium	mg/Kg	75-125	1280		0.073	U	1350	40	95		08/19/2025

Matrix Spike Summary

Client:	Earth Engineering Inc.	SDG No.:	Q2818
Project:	Reserve Turgyan Farms	Sample ID:	Q2888-01
Client ID:	VNJ-210MS	Percent Solids for Spike Sample:	94.9

Analyte	Units	Acceptance Limit %R	Spiked Result	Conc. Qualifier	Sample Result	Conc. Qualifier	Spike Added	Dilution Factor	% Rec	Qual	Analysis Date
Hexavalent Chromium	mg/Kg	85-115	38.3		0.073	U	42.1	2	91		08/19/2025

Matrix Spike Summary

Client:	Earth Engineering Inc.	SDG No.:	Q2818
Project:	Reserve Turgyan Farms	Sample ID:	Q2888-01
Client ID:	VNJ-210MS	Percent Solids for Spike Sample:	94.9

Analyte	Units	Acceptance Limit %R	Spiked Result	Conc. Qualifier	Sample Result	Conc. Qualifier	Spike Added	Dilution Factor	% Rec	Qual	Analysis Date
Hexavalent Chromium	mg/Kg	75-125	33.4		0.073	U	42.1	2	79		08/19/2025

Duplicate Sample Summary

Client: Earth Engineering Inc. Project: Reserve Turgyan Farms Client ID: B-2-5-1DUP	SDG No.: Q2818 Sample ID: Q2818-01 Percent Solids for Spike Sample: 87.5
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Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Cyanide	mg/Kg	+/-20	0.40		0.39		1	3		08/11/2025

Duplicate Sample Summary

Client: Earth Engineering Inc. Project: Reserve Turgyan Farms Client ID: B-2-5-1MSD	SDG No.: Q2818 Sample ID: Q2818-01 Percent Solids for Spike Sample: 87.5
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Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Cyanide	mg/Kg	+/-20	2.40		2.50		1	4		08/11/2025

Duplicate Sample Summary

Client: Earth Engineering Inc. Project: Reserve Turgyan Farms Client ID: VNJ-210DUP	SDG No.: Q2818 Sample ID: Q2888-01 Percent Solids for Spike Sample: 94.9
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Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Hexavalent Chromium	mg/Kg	+/-20	0.073	U	0.072	U	1	0		08/19/2025

Laboratory Control Sample Summary

Client: Earth Engineering Inc.

SDG No.: Q2818

Project: Reserve Turgyan Farms

Run No.: LB136777

Analyte	Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID	PB169197BS							
Cyanide	mg/Kg	5	4.80		96	1	85-115	08/11/2025

Laboratory Control Sample Summary

Client: Earth Engineering Inc.

SDG No.: Q2818

Project: Reserve Turgyan Farms

Run No.: LB136872

Analyte	Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID	PB169305BS							
Hexavalent Chromium	mg/Kg	20	19.7		98	1	84-110	08/19/2025



RAW DATA

Test results

Aquakem 7.2AQ1

Page:

Alliance Technical Group
284 Sheffield Street, Mountainside, NJ 07092

Reviewed by : RM Instrument ID : Konelab

8/11/2025 15:25

Test: Total CN

Sample Id	Result	Dil. 1 +	Response	Errors
ICV1	95.754	0.0	0.079	
ICB1	1.425	0.0	0.001	
CCV1	249.754	0.0	0.206	
CCB1	1.564	0.0	0.001	
PB169197BL	1.137	0.0	0.001	
PB169197BS	96.322	0.0	0.079	
Q2818-01	7.017	0.0	0.006	
Q2818-01DUP	7.014	0.0	0.006	
Q2818-01MS	42.762	0.0	0.035	
Q2818-01MSD	44.475	0.0	0.036	
Q2818-02	6.045	0.0	0.005	
CCV2	254.421	0.0	0.209	
CCB2	1.351	0.0	0.001	

N	13
Mean	62.234
SD	90.8999
CV%	146.06

Aquakem v. 7.2AQ1

Results from time period:

Mon Aug 11 14:52:58 2025

Mon Aug 11 15:24:46 2025

Sample Id	Sam/Ctr/c	Test short r	Test type	Result	Result unit	Result date and time	Stat
0.0PPBCN	A	Total CN	P	1.6181	µg/l	8/11/2025 10:04:52	
5.0PPBCN	A	Total CN	P	5.6869	µg/l	8/11/2025 10:04:53	
10PPBCN	A	Total CN	P	10.3866	µg/l	8/11/2025 10:04:54	
50PPBCN	A	Total CN	P	48.0238	µg/l	8/11/2025 10:04:55	
100PPBCN	A	Total CN	P	100.1562	µg/l	8/11/2025 10:04:56	
250PPBCN	A	Total CN	P	247.9532	µg/l	8/11/2025 10:04:57	
500PPBCN	A	Total CN	P	501.1752	µg/l	8/11/2025 10:04:58	
ICV1	S	Total CN	P	95.7537	µg/l	8/11/2025 14:52:58	
ICB1	S	Total CN	P	1.4252	µg/l	8/11/2025 14:53:00	
CCV1	S	Total CN	P	249.7542	µg/l	8/11/2025 14:53:03	
CCB1	S	Total CN	P	1.5637	µg/l	8/11/2025 14:53:04	
PB169197BL	S	Total CN	P	1.1374	µg/l	8/11/2025 14:53:06	
PB169197BS	S	Total CN	P	96.3218	µg/l	8/11/2025 15:00:30	
Q2818-01	S	Total CN	P	7.0166	µg/l	8/11/2025 15:00:32	
Q2818-01DUP	S	Total CN	P	7.014	µg/l	8/11/2025 15:00:33	
Q2818-01MS	S	Total CN	P	42.7625	µg/l	8/11/2025 15:00:37	
Q2818-01MSD	S	Total CN	P	44.4753	µg/l	8/11/2025 15:00:38	
Q2818-02	S	Total CN	P	6.0454	µg/l	8/11/2025 15:05:45	
CCV2	S	Total CN	P	254.4214	µg/l	8/11/2025 15:05:47	
CCB2	S	Total CN	P	1.3506	µg/l	8/11/2025 15:05:50	

Calibration results

Aquakem 7.2AQ1

Page:

Alliance Technical Group

284 Sheffield Street, Mountainside, NJ 07092

Reviewed by : RM

Instrument ID : Konelab

8/11/2025 11:15

Test Total CN

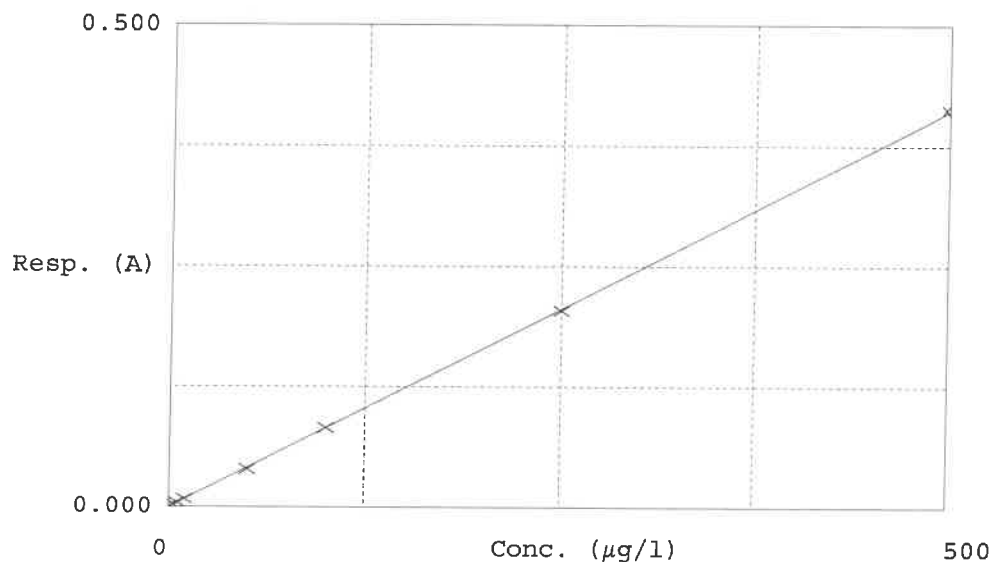
Accepted 8/11/2025 11:15

Factor 1214

Bias 0

Coeff. of det. 0.999938

Errors



	Calibrator	Response	Calc. con.	Conc.	Errors
1	0.0PPBCN	0.001	1.6181	0.0000	-
2	5.0PPBCN	0.004	5.6869	5.0000	137
3	10PPBCN	0.008	10.3866	10.0000	39
4	50PPBCN	0.039	48.0238	50.0000	-4.0
5	100PPBCN	0.082	100.1562	100.0000	0.2
6	250PPBCN	0.204	247.9532	250.0000	-0.8
7	500PPBCN	0.413	501.1752	500.0000	0.2

08/11/2025
RM

Analytical Summary Report

Analysis Method: 7196A

ANALYST: Eman

Parameter: ~~Hexavalent Chromium~~

SUPERVISOR REVIEW BY: jignesh

Run Number: LB136872

pH Meter ID: pH Meter-1

Reagent/Standard	Lot/Log #
5N sulfuric acid	WP112831
HNO3 Hex-Chrome, 5M	WP112830
HEX LOD STD, 0.005PPM	WP114312
Hexchrome Cleaning Solution	WP114310
Hex LOQ Std, 0.01PPM	WP114313

Intercept: 0.001

Slope: 0.7682

Regression: 0.999996

Seq	Lab ID	True Value (mg/l)	DF	Initial Vol (ml)	Final Vol (ml)	pH HN03	pH H2SO4	Absorb.at 540nm		Absorbance Difference	Result (mg/L)	%D	Anal Date	Anal Time
								Backgrnd	Color					
1	CAL1	0	1	100	100	7.52	2.10	0.000	0.000	0.000	-0.00		08/19/2025	12:30
2	CAL2	0.01	1	100	100	7.35	1.86	0.000	0.008	0.008	0.009	-10	08/19/2025	12:31
3	CAL3	0.025	1	100	100	7.65	2.24	0.000	0.021	0.021	0.026	4	08/19/2025	12:32
4	CAL4	0.05	1	100	100	7.46	2.45	0.000	0.039	0.039	0.049	-2	08/19/2025	12:33
5	CAL5	0.1	1	100	100	7.29	1.65	0.000	0.079	0.079	0.101	1	08/19/2025	12:34
6	CAL6	0.5	1	100	100	7.71	1.91	0.000	0.385	0.385	0.499	-0.2	08/19/2025	12:35
7	CAL7	1	1	100	100	7.37	2.15	0.000	0.769	0.769	0.999	-0.1	08/19/2025	12:36

Analytical Summary Report

Analysis Method: 7196A

ANALYST:Eman

Parameter: Hexavalent Chromium

SUPERVISOR REVIEW BY:jignesh

Run Number: LB136872

pH Meter ID:pH Meter-1

Seq	Lab ID	True Value	DF	Initial Vol (ml/gm)	Final Vol (ml)	pH HN03	pH H2SO4	Absorb.at540nm		Absorbance Difference	Intermediate Result (mg/L)	Anal Date	Anal Time
								Backgrnd	Color				
1	ICV	0.5	1	100	100	7.48	1.67	0.000	0.384	0.384	0.499	08/19/2025	12:37
2	ICB		1	100	100	7.61	1.74	0.000	0.000	0.000	-0.001	08/19/2025	12:38
3	CCV1	0.5	1	100	100	7.58	2.36	0.000	0.382	0.382	0.496	08/19/2025	12:39
4	CCB1		1	100	100	7.47	2.29	0.000	0.001	0.001	0.000	08/19/2025	12:40
5	RL Check	0.01	1	100	100	7.69	2.09	0.000	0.009	0.009	0.010	08/19/2025	12:41
6	PB169305BL		1	2.50	100	7.51	1.89	0.000	0.000	0.000	-0.001	08/19/2025	12:42
7	PB169305BS	20	1	2.50	100	7.46	1.75	0.000	0.379	0.379	0.492	08/19/2025	12:43
8	Q2818-01		1	2.52	100	7.43	1.99	0.035	0.035	0.000	-0.001	08/19/2025	12:44
9	Q2818-02		1	2.51	100	7.60	2.10	0.036	0.037	0.001	0.000	08/19/2025	12:45
10	Q2888-01		1	2.54	100	7.67	2.15	0.000	0.000	0.000	-0.001	08/19/2025	12:46
11	Q2888-01DU		1	2.57	100	7.46	2.35	0.000	0.000	0.000	-0.001	08/19/2025	12:47
12	Q2888-01MS	40	2	2.55	100	7.38	2.31	0.000	0.311	0.311	0.404	08/19/2025	12:48
13	Q2888-01MS	1284	40	2.53	100	7.62	2.29	0.000	0.592	0.592	0.769	08/19/2025	12:49
14	Q2888-01MS	40	2	2.57	100	7.39	2.32	0.000	0.360	0.360	0.467	08/19/2025	12:50
15	Q2893-01		1	2.50	100	7.45	2.41	0.000	0.005	0.005	0.005	08/19/2025	12:51
16	CCV2	0.5	1	100	100	7.51	1.96	0.000	0.375	0.375	0.487	08/19/2025	12:52
17	CCB2		1	100	100	7.56	1.87	0.000	0.000	0.000	-0.001	08/19/2025	12:53
18	Q2893-02		1	2.50	100	7.68	1.65	0.000	0.009	0.009	0.010	08/19/2025	12:54
19	CCV3	0.5	1	100	100	7.62	2.74	0.000	0.380	0.380	0.493	08/19/2025	12:55
20	CCB3		1	100	100	7.71	1.95	0.000	0.001	0.001	0.000	08/19/2025	12:56

SOP ID : M9012B-Total, Amenable and Reactive Cyanide-21

SDG No : N/A

Start Digest Date: 08/11/2025 Time : 12:45 Temp : 123 °C

Matrix : SOIL

End Digest Date: 08/11/2025 Time : 14:15 Temp : 126 °C

Pipette ID : WC

Balance ID : WC SC-7

Hood ID : HOOD#1

Digestion tube ID : M5595

Block Thermometer ID : WC CYANIDE

Block ID : MC-1

Filter paper ID : N/A

Prep Technician Signature: *[Signature]*

Weigh By : JP

pH Meter ID : N/A

Supervisor Signature: *[Signature]*

Standardized Name	MLS USED	STD REF. # FROM LOG
LCSS	1.0ML	WP113838
MS/MSD SPIKE SOL.	0.40ML	WP113837
PBS003	50.0ML	W3112
N/A	N/A	N/A
N/A	N/A	N/A

Chemical Used	ML/SAMPLE USED	Lot Number
0.25N NaOH	50.0ML	WP113836
50% v/v H2SO4	5.0ML	WP112826
51% w/v MgCL2	2.0ML	WP112827
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

LAB SAMPLE ID	CLIENT SAMPLE ID	Wt(g)/Vol(ml)	Comment
S0	S0	N/A	N/A
S5.0	S5.0	N/A	N/A
S10.0	S10.0	N/A	N/A
S100.0	S100.0	N/A	N/A
S250.0	S250.0	N/A	N/A
S500.0	S500.0	N/A	N/A
ICV	ICV	N/A	AS PER PB169168
ICB	ICB	N/A	N/A
CCV	CCV	N/A	N/A
CCB	CCB	N/A	N/A
Midrange	Midrange	N/A	N/A
HIGHSTD	HIGHSTD	N/A	AS PER PB169168
LOWSTD	LOWSTD	N/A	AS PER PB169168

Extraction Conformance/Non-Conformance Comments:

N/A

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
08/11/2025 14:25	<i>[Signature]</i> / WC	RM (WC)
	Preparation Group	Analysis Group

Lab Sample ID	Client Sample ID	Initial Weight (g)	Final Vol (ml)	pH	Sulfide	Oxidizing	Nitrate/ Nitrite	Comment	Prep Pos
PB169197BL	PBS197	1.00	50	N/A	N/A	N/A	N/A	N/A	N/A
PB169197BS	LCS197	1.00	50	N/A	N/A	N/A	N/A	N/A	N/A
Q2818-01DUP	B-2-5-1DUP	1.02	50	N/A	N/A	N/A	N/A	N/A	N/A
Q2818-01MS	B-2-5-1MS	1.02	50	N/A	N/A	N/A	N/A	N/A	N/A
Q2818-01MSD	B-2-5-1MSD	1.01	50	N/A	N/A	N/A	N/A	N/A	N/A
Q2818-01	B-2-5-1	1.01	50	N/A	N/A	N/A	N/A	N/A	N/A
Q2818-02	B-3-5-2	1.04	50	N/A	N/A	N/A	N/A	N/A	N/A

WORKLIST(Hardcopy Internal Chain)

WorkList Name : cn s q2818

WorkList ID : 191201

Department : Distillation

Date : 08-11-2025 11:58:01

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q2818-01	B-2-5-1	Solid	Cyanide	Cool 4 deg C	EARTH03		08/11/2025	9012B
Q2818-02	B-3-5-2	Solid	Cyanide	Cool 4 deg C	EARTH03		08/11/2025	9012B

Date/Time 08/11/2025 12:25
 Raw Sample Received by: cf sm
 Raw Sample Relinquished by: cf sm

Date/Time 08/11/2025 13:00
 Raw Sample Received by: cf sm
 Raw Sample Relinquished by: cf sm

SOP ID : M3060A,7196A-Hex.Chromium-27

SDG No : N/A

Matrix : SOIL

Pipette ID : WC

Balance ID : WC SC-7

Hood ID : HOOD#3

Block ID : WC S-2, WC S-1

Weigh By : RM

Start Digest Date: 08/19/2025 Time : 09:00 Temp : 90 °C

End Digest Date: 08/19/2025 Time : 10:00 Temp : 95 °C

if beleh 08/19/2025 10:30 90 °C
08/19/2025 11:30 94 °C

Digestion tube ID : M6054

Block Thermometer ID : WC-Block#1

Filter paper ID : 400213

Prep Technician Signature: *RM*

pH Meter ID : WC pH meter-1

Supervisor Signature: *JB*

Standard Name	MLS USED	STD REF. # FROM LOG
PRE-DIGESTION SPIKE	2.0ML	WP113880
INSOLUBLE SPIKE	0.02GM	W2202
POST-DIGESTION SPIKE	2.0ML	WP113880
LCSS	1.0ML	WP113881
PBS003	50.ML	W3112

Chemical Used	ML/SAMPLE USED	Lot Number
MAGNESIUM CHLORIDE	0.4GM	W3152
PHOSPHATE BUFFER	0.5ML	WP112903
HEX. DIGESTION SOLN.	50.0ML	WP114057
5M HNO3	5-7ML	WP112830
5N H2SO4	1-3ML	WP112831
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

LAB SAMPLE ID	CLIENT SAMPLE ID	Vol(ml)	Comment
CAL1	CAL1	2.5ML	W3112
CAL2	CAL2	0.2ML	WP114309
CAL3	CAL3	0.5ML	WP114309
CAL4	CAL4	1ML	WP114309
CAL5	CAL5	0.2ML	WP113880
CAL6	CAL6	1ML	WP113880
CAL7	CAL7	2.0ML	WP113880
ICV	ICV	1ML	WP113881
ICB	ICB	2.5ML	W3112
CCV	CCV	1ML	WP113880
CCB	CCB	2.5ML	W3112

Extraction Conformance/Non-Conformance Comments:

08/19/2025 *RM*

N/A

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
	Preparation Group	Analysis Group

Lab Sample ID	Client Sample ID	Initial Weight (g)	Final Vol (ml)	pH	Sulfide	Oxidizing	Nitrate/ Nitrite	Comment	Prep Pos
PB169305BL	PBS305	2.50	100	N/A	N/A	N/A	N/A	N/A	N/A
PB169305BS	LCS305	2.50	100	N/A	N/A	N/A	N/A	N/A	N/A
Q2818-01	B-2-5-1	2.52	100	N/A	N/A	N/A	N/A	N/A	N/A
Q2818-02	B-3-5-2	2.51	100	N/A	N/A	N/A	N/A	N/A	N/A
Q2888-01	VNJ-210	2.54	100	N/A	N/A	N/A	N/A	N/A	N/A
Q2888-01DUP	VNJ-210DUP	2.57	100	N/A	N/A	N/A	N/A	N/A	N/A
Q2888-01MSPre	VNJ-210MSPRE	2.55	100	N/A	N/A	N/A	N/A	N/A	N/A
Q2888-01MS2Ins	VNJ-210MS2INS	2.53	100	N/A	N/A	N/A	N/A	N/A	N/A
Q2888-01MS3Post	VNJ-210MS3POST	2.57	100	N/A	N/A	N/A	N/A	N/A	N/A
Q2893-01	LOD-MDL-SOIL-01-QT3-2025	2.50	100	N/A	N/A	N/A	N/A	N/A	N/A
Q2893-02	LOQ-SOIL-02-QT3-2025	2.50	100	N/A	N/A	N/A	N/A	N/A	N/A

WORKLIST(Hardcopy Internal Chain)

WorkList Name : HEX-081925

WorkList ID : 191348

Department : Distillation

Date : 08-19-2025 08:16:47

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q2818-01	B-2-5-1	Solid	Hexavalent Chromium	Cool 4 deg C	EARTH03	J21	08/11/2025	7196A
Q2818-02	B-3-5-2	Solid	Hexavalent Chromium	Cool 4 deg C	EARTH03	J21	08/11/2025	7196A
Q2888-01	VNJ-210	Solid	Hexavalent Chromium	Cool 4 deg C	PSEG03	D21	08/15/2025	7196A
Q2893-01	LOD-MDL-SOIL-01-QT3-2025	Solid	Hexavalent Chromium	NONE	ALLI03	QA Of	08/18/2025	7196A
Q2893-02	LOQ-SOIL-02-QT3-2025	Solid	Hexavalent Chromium	NONE	ALLI03	QA Of	08/18/2025	7196A

Date/Time 08/19/2025 08:25
 Raw Sample Received by: RM w/p
 Raw Sample Relinquished by: [Signature]

Date/Time 08/19/2025 10:45
 Raw Sample Received by: [Signature]
 Raw Sample Relinquished by: RM w/p

Instrument ID: KONELAB

Daily Analysis Runlog For Sequence/QC Batch ID # LB136777

Review By	rubina	Review On	8/12/2025 8:10:38 AM
Supervise By	Sohil	Supervise On	8/12/2025 3:09:49 PM
SubDirectory	LB136777	Test	Cyanide
STD. NAME	STD REF.#		
ICAL Standard	WP114243,WP114244,WP114245,WP114246,WP114247,WP114248,WP114249		
ICV Standard	W3012		
CCV Standard	WP114244		
ICSA Standard	N/A		
CRI Standard	N/A		
LCS Standard	WP113838		
Chk Standard	WP112643,WP112900,WP114251		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	0.0PPBCN	0.0PPBCN	CAL1	08/11/25 10:04		rubina	OK
2	5.0PPBCN	5.0PPBCN	CAL2	08/11/25 10:04		rubina	OK
3	10PPBCN	10PPBCN	CAL3	08/11/25 10:04		rubina	OK
4	50PPBCN	50PPBCN	CAL4	08/11/25 10:04		rubina	OK
5	100PPBCN	100PPBCN	CAL5	08/11/25 10:04		rubina	OK
6	250PPBCN	250PPBCN	CAL6	08/11/25 10:04		rubina	OK
7	500PPBCN	500PPBCN	CAL7	08/11/25 10:04		rubina	OK
8	ICV1	ICV1	ICV	08/11/25 14:52		rubina	OK
9	ICB1	ICB1	ICB	08/11/25 14:53		rubina	OK
10	CCV1	CCV1	CCV	08/11/25 14:53		rubina	OK
11	CCB1	CCB1	CCB	08/11/25 14:53		rubina	OK
12	PB169197BL	PB169197BL	MB	08/11/25 14:53		rubina	OK
13	PB169197BS	PB169197BS	LCS	08/11/25 15:00		rubina	OK
14	Q2818-01	B-2-5-1	SAM	08/11/25 15:00		rubina	OK
15	Q2818-01DUP	B-2-5-1DUP	DUP	08/11/25 15:00		rubina	OK
16	Q2818-01MS	B-2-5-1MS	MS	08/11/25 15:00		rubina	OK
17	Q2818-01MSD	B-2-5-1MSD	MSD	08/11/25 15:00		rubina	OK
18	Q2818-02	B-3-5-2	SAM	08/11/25 15:05		rubina	OK

Instrument ID: KONELAB

Daily Analysis Runlog For Sequence/QC Batch ID # LB136777

Review By	rubina	Review On	8/12/2025 8:10:38 AM
Supervise By	Sohil	Supervise On	8/12/2025 3:09:49 PM
SubDirectory	LB136777	Test	Cyanide
STD. NAME	STD REF.#		
ICAL Standard	WP114243,WP114244,WP114245,WP114246,WP114247,WP114248,WP114249		
ICV Standard	W3012		
CCV Standard	WP114244		
ICSA Standard	N/A		
CRI Standard	N/A		
LCS Standard	WP113838		
Chk Standard	WP112643,WP112900,WP114251		

19	CCV2	CCV2	CCV	08/11/25 15:05		rubina	OK
20	CCB2	CCB2	CCB	08/11/25 15:05		rubina	OK

Instrument ID: SPECTROPHOTOMETER-1

Daily Analysis Runlog For Sequence/QC Batch ID # LB136872

Review By	Eman	Review On	8/19/2025 1:19:09 PM
Supervise By	jignesh	Supervise On	8/19/2025 2:51:17 PM
SubDirectory	LB136872	Test	Hexavalent Chromium
STD. NAME	STD REF.#		
ICAL Standard	N/A		
ICV Standard	N/A		
CCV Standard	N/A		
ICSA Standard	N/A		
CRI Standard	N/A		
LCS Standard	N/A		
Chk Standard	WP112831,WP112830,WP114312,WP114310,WP114313		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	CAL1	CAL1	CAL	08/19/25 12:30		Eman	OK
2	CAL2	CAL2	CAL	08/19/25 12:31		Eman	OK
3	CAL3	CAL3	CAL	08/19/25 12:32		Eman	OK
4	CAL4	CAL4	CAL	08/19/25 12:33		Eman	OK
5	CAL5	CAL5	CAL	08/19/25 12:34		Eman	OK
6	CAL6	CAL6	CAL	08/19/25 12:35		Eman	OK
7	CAL7	CAL7	CAL	08/19/25 12:36		Eman	OK
8	ICV	ICV	ICV	08/19/25 12:37		Eman	OK
9	ICB	ICB	ICB	08/19/25 12:38		Eman	OK
10	CCV1	CCV1	CCV	08/19/25 12:39		Eman	OK
11	CCB1	CCB1	CCB	08/19/25 12:40		Eman	OK
12	RL Check	RL Check	RL	08/19/25 12:41		Eman	OK
13	PB169305BL	PB169305BL	MB	08/19/25 12:42		Eman	OK
14	PB169305BS	PB169305BS	LCS	08/19/25 12:43		Eman	OK
15	Q2818-01	B-2-5-1	SAM	08/19/25 12:44		Eman	OK
16	Q2818-02	B-3-5-2	SAM	08/19/25 12:45		Eman	OK
17	Q2888-01	VNJ-210	SAM	08/19/25 12:46		Eman	OK
18	Q2888-01DUP	VNJ-210DUP	DUP	08/19/25 12:47		Eman	OK

Instrument ID: SPECTROPHOTOMETER-1

Daily Analysis Runlog For Sequence/QC Batch ID # LB136872

Review By	Eman	Review On	8/19/2025 1:19:09 PM
Supervise By	jignesh	Supervise On	8/19/2025 2:51:17 PM
SubDirectory	LB136872	Test	Hexavalent Chromium
STD. NAME	STD REF.#		
ICAL Standard	N/A		
ICV Standard	N/A		
CCV Standard	N/A		
ICSA Standard	N/A		
CRI Standard	N/A		
LCS Standard	N/A		
Chk Standard	WP112831,WP112830,WP114312,WP114310,WP114313		

19	Q2888-01MSPre	VNJ-210MS	MS	08/19/25 12:48		Eman	OK
20	Q2888-01MS2Ins	VNJ-210MS	MS	08/19/25 12:49		Eman	OK
21	Q2888-01MS3Post	VNJ-210MS	MS	08/19/25 12:50		Eman	OK
22	Q2893-01	LOD-MDL-SOIL-01-Q	SAM	08/19/25 12:51		Eman	OK
23	CCV2	CCV2	CCV	08/19/25 12:52		Eman	OK
24	CCB2	CCB2	CCB	08/19/25 12:53		Eman	OK
25	Q2893-02	LOQ-SOIL-02-QT3-20	SAM	08/19/25 12:54		Eman	OK
26	CCV3	CCV3	CCV	08/19/25 12:55		Eman	OK
27	CCB3	CCB3	CCB	08/19/25 12:56		Eman	OK

Prep Standard - Chemical Standard Summary

Order ID : Q2818

Test : Cyanide,Hexavalent Chromium,Percent Solids

Prepbatch ID : PB169197,PB169305,

Sequence ID/Qc Batch ID: LB136777,LB136872,

Standard ID :

WP112643,WP112826,WP112827,WP112830,WP112831,WP112900,WP112903,WP113836,WP113837,WP113838,WP113880,WP113881,WP114057,WP114242,WP114243,WP114244,WP114245,WP114246,WP114247,WP114248,WP114249,WP114251,WP114309,WP114310,WP114312,WP114313,

Chemical ID :

M6041,M6151,M6158,M6162,W2202,W2651,W2652,W2668,W3012,W3019,W3112,W3113,W3139,W3152,W3163,W3168,W3203,W3206,W3214,W3224,



<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>
539	CN BUFFER	WP112643	04/09/2025	10/09/2025	Niha Farheen Shaik	WETCHEM_SCALE_5 (WCS-5)	None	Iwona Zarych 04/09/2025
<u>FROM</u>	138.00000gram of W2668 + 862.00000ml 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>
1714	Sulfuric Acid, 50% (v/v)	WP112826	04/25/2025	10/25/2025	Rubina Mughal	None	None	Iwona Zarych 04/25/2025
<u>FROM</u> 1000.00000ml of M6041 + 1000.00000ml of W3112 = Final Quantity: 2000.000 ml								



<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3214	Magnesium Chloride For Cyanide 2.5M(51%W/V)	WP112827	04/25/2025	10/25/2025	Rubina Mughal	WETCHEM_SCALE_8 (WC SC-7)	None	Iwona Zarych 04/25/2025
<u>FROM</u> 500.00000ml of W3112 + 510.00000gram of W3152 = 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>PipettelID</u>	<u>Supervised By</u>
1836	HNO3 Hex-Chrome, 5M	WP112830	04/25/2025	10/25/2025	Rubina Mughal	None	None	Iwona Zarych 04/25/2025
<u>FROM</u> 320.00000ml of M6158 + 680.00000ml of W3112 = Final Quantity: 1000.000 ml								

Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
126	5N sulfuric acid	WP112831	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

<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>
607	PYRIDINE-BARBITURIC ACID	WP112900	05/01/2025	08/18/2025	Rubina Mughal	WETCHEM_S CALE_8 (WC SC-7)	Glass Pipette-A	Iwona Zarych
								05/01/2025

FROM 145.00000ml of W3112 + 15.00000gram of W3203 + 15.00000ml of M6151 + 75.00000ml of W3019 = Final Quantity: 250.000 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	WP112903	05/01/2025	11/01/2025	Rubina Mughal	WETCHEM_SCALE_8 (WCS-7)	None	Iwona Zarych 05/01/2025
<u>FROM</u> 0.84500L of W3112 + 68.04000gram of W3206 + 87.09000gram of W3168 = Final Quantity: 1.000 L								

[illegible]

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>
3850	Cyanide MS-MSD spiking solution, 5PPM	WP113837	07/08/2025	11/30/2025	Rubina Mughal	None	WETCHEM_FIPETTE_3 (WC)	Iwona Zarych 07/08/2025

FROM 1.00000ml of W3214 + 199.00000ml of WP113836 = Final Quantity: 200.000 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>
3371	Cyanide LCS Spike Solution, 5PPM	WP113838	07/08/2025	12/24/2025	Rubina Mughal	None	WETCHEM_FIPETTE_3 (WC)	Iwona Zarych 07/08/2025

FROM 1.00000ml of W3224 + 199.00000ml of WP113836 = Final Quantity: 200.000 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	WP113880	07/10/2025	01/10/2026	Rubina Mughal	WETCHEM_SCALE_5 (WCS-5)	None	Iwona Zarych 07/10/2025
<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	WP113881	07/10/2025	01/10/2026	Rubina Mughal	WETCHEM_SCALE_5 (WC SC-5)	None	Iwona Zarych 07/10/2025
<u>FROM</u> 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	WP114057	07/24/2025	08/24/2025	Rubina Mughal	WETCHEM_S CALE_8 (WC SC-7)	None	Iwona Zarych 07/24/2025
<u>FROM</u> 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>
3456	Cyanide Intermediate Working Std, 5PPM	WP114242	08/11/2025	08/12/2025	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 08/11/2025
<u>FROM</u> 0.25000ml of W3214 + 49.75000ml of WP113836 = 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>
4	Calibration standard 500 ppb	WP114243	08/11/2025	08/12/2025	Rubina Mughal	None	WETCHEM_PIPETTE_3	Iwona Zarych
<p>(WC)</p> <p>FROM 45.00000ml of WP113836 + 5.00000ml of WP114242 = Final Quantity: 50.000 ml</p>								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3761	Calibration-CCV CN Standard 250 ppb	WP114244	08/11/2025	08/12/2025	Rubina Mughal	None	WETCHEM_FIPETTE_3 (WC)	Iwona Zarych 08/11/2025
<u>FROM</u> 2.50000ml of WP114242 + 47.50000ml of WP113836 = 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>
6	Calibration Standard 100 ppb	WP114245	08/11/2025	08/12/2025	Rubina Mughal	None	WETCHEM_F IPETTE_3 (WC)	Iwona Zarych 08/11/2025
FROM 1.00000ml of WP114242 + 49.00000ml of WP113836 = 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>
7	Calibration Standard 50 ppb	WP114246	08/11/2025	08/12/2025	Rubina Mughal	None	WETCHEM_F IPETTE_3 (WC)	Iwona Zarych 08/11/2025
FROM 0.50000ml of WP114242 + 49.50000ml of WP113836 = 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>
8	Calibration Standard 10 ppb	WP114247	08/11/2025	08/12/2025	Rubina Mughal	None	WETCHEM_PIPETTE_3	Iwona Zarych
<p>(WC)</p> <p>FROM 1.00000ml of WP114243 + 49.00000ml of WP113836 = Final Quantity: 50.000 ml</p>								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
9	Calibration Standard 5 ppb	WP114248	08/11/2025	08/12/2025	Rubina Mughal	None	WETCHEM_PIPETTE_3	Iwona Zarych
<p>FROM 0.50000ml of WP114243 + 49.50000ml of WP113836 = Final Quantity: 50.000 ml</p>								

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>
167	0 ppb CN calibration std	WP114249	08/11/2025	08/12/2025	Rubina Mughal	None	None	Iwona Zarych
								08/11/2025

FROM 50.00000ml of WP113836 = 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>
1582	Chloramine T solution, 0.014M	WP114251	08/11/2025	08/12/2025	Rubina Mughal	WETCHEM_S CALE_5 (WC SC-5)	Glass Pipette-A	Iwona Zarych
								08/11/2025

FROM 0.08000gram of W3139 + 20.00000ml of W3112 = 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>
1103	HEX CHROME INTERMEDIATE STD SOURCE 1 (5PPM)	WP114309	08/19/2025	08/20/2025	Eman Mughal	None	WETCHEM_F IPETTE_3 (WC)	Jignesh Parikh 08/19/2025

FROM 9.00000ml of W3112 + 1.00000ml of WP113880 = 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>
3354	Hexchrome Cleaning Solution	WP114310	08/19/2025	11/27/2025	Rubina Mughal	None	None	Jignesh Parikh 08/19/2025

FROM 182.00000ml of M6151 + 727.00000ml of W3112 + 91.00000ml of M6162 = Final Quantity: 1000.000 ml

Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1986	HEX LOD STD, 0.005PPM	WP114312	08/19/2025	08/20/2025	Eman Mughal	None	WETCHEM_F IPETTE_3 (WC)	Jignesh Parikh 08/19/2025
FROM 99.90000ml of W3112 + 0.10000ml of WP114309 = 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>
3731	Hex LOQ Std, 0.01PPM	WP114313	08/19/2025	08/20/2025	Eman Mughal	None	WETCHEM_F IPETTE_3 (WC)	Jignesh Parikh 08/19/2025
FROM 99.80000ml of W3112 + 0.20000ml of WP114309 = 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 #
Seidler Chemical	BA-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L)	22G2862015	02/17/2026	02/18/2025 / Sagar	01/15/2025 / Sagar	M6151

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L)	24D1062002	09/09/2025	03/10/2025 / Eman	02/02/2025 / Sagar	M6158

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)	24H0162012	11/27/2025	05/27/2025 / Sagar	04/27/2025 / Sagar	M6162

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.	AA13450-36 / Potassium Dichromate, 500g(NEW)	T15F019	01/24/2030	01/24/2020 / apatel	01/24/2020 / apatel	W2651

CHEMICAL RECEIPT LOG BOOK

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.	J3818-5 / SODIUM PHOSPHATE, MONOBAS/HYD, CRYST, ACS, 2.5 KG	0000225799	12/03/2025	04/05/2021 / Alexander	02/10/2020 / apatel	W2668

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	/ ICV-CN	ICV6-400	12/31/2025	01/08/2025 / lwona	02/20/2020 / lwona	W3012

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
SIGMA ALDRICH	270970-1L / Pyridine 1L	SHBQ2113	04/03/2028	04/03/2023 / lwona	04/03/2023 / lwona	W3019

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

CHEMICAL RECEIPT LOG BOOK

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

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 / Iwona	11/25/2024 / Iwona	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 / Iwona	12/10/2024 / Iwona	W3163

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 / Iwona	01/03/2025 / Iwona	W3168

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	EM-BX0035-3 / Barbituric Acid, 100 gms	WXBFB3271V	05/16/2029	04/21/2025 / Iwona	04/21/2025 / Iwona	W3203

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	MKXCX1379	01/31/2029	04/29/2025 / Iwona	04/29/2025 / Iwona	W3206

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	RC2543-4 / CYANIDE STD 1000PPM 4OZ	1505H73	11/30/2025	05/21/2025 / Iwona	05/21/2025 / Iwona	W3214

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	LC135457 / Cyanide Standard, 1000 PPM, Second Source	45060288	12/24/2025	07/07/2025 / Iwona	07/07/2025 / Iwona	W3224

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

W3019
rec 4/3/23

3050 Spruce Street, Saint Louis, MO 63103, USA

Website: www.sigmaaldrich.comEmail USA: techserv@sial.comOutside USA: eurtechserv@sial.com

Certificate of Analysis

Product Name:

Pyridine - anhydrous, 99.8%

Product Number:

270970

Batch Number:

SHBQ2113

Brand:

SIAL

CAS Number:

110-86-1

MDL Number:

MFCD00011732

Formula:

C₅H₅N

Formula Weight:

79.10 g/mol

Quality Release Date:

15 DEC 2022



Test	Specification	Result
Appearance (Color)	Colorless	Colorless
Appearance (Form)	Liquid	Liquid
Infrared Spectrum	Conforms to Structure	Conforms
Purity (GC)	≥ 99.75 %	99.99 %
Water (by Karl Fischer)	≤ 0.003 %	0.002 %
Residue on Evaporation	≤ 0.0005 %	< 0.0001 %


Larry Coers, Director
Quality Control
Sheboygan Falls, WI US

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





Certificate of Analysis

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

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

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Catalog Number	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.



R: 02/20/20
53

Instructions for QATS Reference Material: Inorganic ICV Solutions

For ICP-MS use: dilute the ICV1 concentrate 50-fold with 1% (v/v) nitric acid; pipet 2 mL of the concentrate into a 100 mL volumetric flask and dilute to volume with 1% (v/v) nitric acid.

ICV5-0415

For the cold vapor analysis of mercury by AA: dilute the ICV5 concentrate 100-fold with 2% (v/v) nitric acid; pipet 1 mL of the concentrate into a 100 mL volumetric flask and dilute to volume with 2% (v/v) nitric acid. The ICV5 concentrate is prepared in 0.05% (w/v) $K_2Cr_2O_7$ and 5% (v/v) nitric acid.

ICV6-0400

For the analysis of cyanide: dilute the ICV6 concentrate 100-fold with Type II water; pipet 1 mL of the concentrate into a 100 mL volumetric flask and dilute to volume with Type II water. Distill this solution along with the samples before analysis. The cyanide concentrate is prepared from $K_3Fe(CN)_6$, Type II water, and 0.1 % sodium hydroxide, and will decompose rapidly if exposed to light.

NOTE: USE TYPE II WATER AND HIGH-PURITY ACIDS FOR ALL DILUTIONS.

(D) CERTIFIED CONCENTRATIONS OF QATS ICV1, ICV5, AND ICV6 SOLUTIONS

ICV1-1014		
Element	Concentration (µg/L) (after 10-fold dilution)	Concentration (µg/L) (after 50-fold dilution)
Al	2520	504
Sb	1010	202
As	997	199
Ba	518	104
Be	514	103
Cd	514	103
Ca	10000	2000
Cr	517	103
Co	521	104
Cu	505	101
Fe	10100	2020
Pb	1030	206
Mg	5990	1198
Mn	524	105
Ni	525	105
K	9940	1988
Se	1030	206
Ag	252	50
Na	10100	2020
Tl	1040	208
V	504	101
Zn	1010	202

ICV5-0415		ICV6-0400	
Element	Concentration (µg/L) (after 100-fold dilution)	Analyte	Concentration (µg/L) (after 100-fold dilution)
Hg	4.0	CN ⁻	99

W3011
W3012
W3013
W3014
W3015

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

avantor™



M 6041-4b
MS

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

Certificate of Analysis

Test	Specification	Result
ACS – Assay (H ₂ SO ₄)	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 ₂)	≤ 2 ppm	< 2 ppm
Ammonium (NH ₄)	≤ 1 ppm	1 ppm
Chloride (Cl)	≤ 0.1 ppm	< 0.1 ppm
Nitrate (NO ₃)	≤ 0.2 ppm	< 0.1 ppm
Phosphate (PO ₄)	≤ 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

 **avantorsm**



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

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

 **avantor™**



M6151

R → 11/15/25

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

Certificate of Analysis

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

>>> Continued on page 2 >>>

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

 **avantorsm**



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

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

>>> Continued on page 3 >>>

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



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

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

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

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

Nitric Acid 69%
CMOS

avantor™



R- 0210212025

m - 6158

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 ₃)	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 ₄)	≤ 0.10 ppm	< 0.03 ppm
Sulfate (SO ₄)	≤ 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

 **avantorsTM**



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

 **avantor™**



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

Nitric Acid 69%
CMOS

 **avantorsTM**



m-6162

Material No.: 9606-03
Batch No.: 24H0162012
Manufactured Date: 2024-06-28
Retest Date: 2029-06-27
Revision No.: 0

R. Date :- 04/27/2025

Certificate of Analysis

Test	Specification	Result
Assay (HNO ₃)	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 ₄)	≤ 0.10 ppm	< 0.03 ppm
Sulfate (SO ₄)	≤ 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	< 1.0 ppb
Trace Impurities – Boron (B)	≤ 10.0 ppb	0.1 ppb
Trace Impurities – Cadmium (Cd)	≤ 50 ppb	< 1 ppb
Trace Impurities – Calcium (Ca)	≤ 50.0 ppb	0.3 ppb
Trace Impurities – Chromium (Cr)	≤ 30.0 ppb	0.1 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	< 1 ppb
Trace Impurities – Gold (Au)	≤ 20 ppb	< 1 ppb
Heavy Metals (as Pb)	≤ 100 ppb	< 50 ppb
Trace Impurities – Iron (Fe)	≤ 40.0 ppb	< 1.0 ppb
Trace Impurities – Lead (Pb)	≤ 20.0 ppb	< 1.0 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	< 1.0 ppb

>>> Continued on page 2 >>>

Nitric Acid 69%
CMOS

 **avantorsTM**



Material No.: 9606-03
Batch No.: 24H0162012

Test	Specification	Result
Trace Impurities – Niobium (Nb)	≤ 50.0 ppb	< 1.0 ppb
Trace Impurities – Potassium (K)	≤ 50 ppb	< 1 ppb
Trace Impurities – Silicon (Si)	≤ 50 ppb	1 ppb
Trace Impurities – Silver (Ag)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Sodium (Na)	≤ 150.0 ppb	< 1.0 ppb
Trace Impurities – Strontium (Sr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities – Tantalum (Ta)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Thallium (Tl)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Tin (Sn)	≤ 20.0 ppb	< 1.0 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	13 par/ml
Particle Count – 1.0 µm and greater	≤ 10 par/ml	5 par/ml

>>> Continued on page 3 >>>

Nitric Acid 69%
CMOS

 **avantor™**



Material No.: 9606-03
Batch No.: 24H0162012

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

Sodium Phosphate, Monobasic, Monohydrate,
Crystal
BAKER ANALYZED® A.C.S. Reagent

(sodium dihydrogen phosphate, monohydrate)



Material No.: 3818-05
Batch No.: 0000225799
Manufactured Date: 2018/12/05
Retest Date: 2025/12/03
Revision No: 1

Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

Test	Specification	Result
Assay ($\text{NaH}_2\text{PO}_4 \cdot \text{H}_2\text{O}$)	98.0 – 102.0 %	99.5
pH of 5% Solution at 25°C	4.1 – 4.5	4.3
Insoluble Matter	≤ 0.01 %	< 0.01
Chloride (Cl)	≤ 5 ppm	< 5
ACS – Sulfate (SO_4)	≤ 0.003 %	< 0.003
Calcium (Ca)	≤ 0.005 %	< 0.005
Potassium (K)	≤ 0.01 %	< 0.01
Heavy Metals (as Pb)	≤ 0.001 %	< 0.001
Trace Impurities – Iron (Fe)	≤ 0.001 %	< 0.001

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

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


Jamie Ethier
Vice President Global Quality

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



Sodium 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.

W3139 Received on 9/9/24 by IZ

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

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

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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

Certificate of Analysis

Catalogue Number	01237
Lot Number	002126-2019-201
Product	Magnesium chloride hexahydrate

Magnesium chloride•6H₂O

CAS Number	7791-18-6
Molecular Formula	MgCl ₂ •6H ₂ O
Molecular Weight	203.3

Appearance	White crystals
Solubility	167 g in 100 mL water
Melting Point	~ 115 °C
Heavy Metals	4.393 ppm
Anion	Nitrate (NO ₃) : < 0.001% Phosphate (PO ₄) : < 5 ppm Sulfate (SO ₄) : < 0.002%
Cation	Ammonium (NH ₄) : < 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%
Insoluble material	0.0021%
Assay by titration	100.83%
Grade	ACS reagent
Storage	Store at RT

Certificate of Analysis

Catalog Number: 01237

Lot Number: 002126-2019-201

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_2CO_3
Molecular Mass 105.99

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

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

Internal ID #: 710

Signature	Additional Information
We certify that this batch conforms to the specifications listed above. 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.



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 ₂ HPO ₄
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

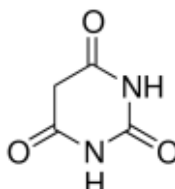
Signature	Additional Information
<p>We certify that this batch conforms to the specifications listed above.</p> <p>This document has been electronically produced and is valid without a signature.</p> <p>Leona Edwardson, Quality Control Sr. Manager - Solon VWR Chemicals, LLC. 28600 Fountain Parkway, Solon 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>

Certificate of Analysis

Product Name:

Barbituric acid - ReagentPlus®, 99%

Product Number: 185698
Batch Number: WXBFB3271V
Brand: SIAL
CAS Number: 67-52-7
Formula: C₄H₄N₂O₃
Formula Weight: 128.09 g/mol
Quality Release Date: 16 MAY 2024



Test	Specification	Result
Appearance (Colour)	White to Off-White	White
Appearance (Form)	Powder	Powder
Infrared spectrum	Conforms to Structure	Conforms
Purity (Titration by NaOH)	98.5 - 101.5 %	100.4 %
GC (area %)	≥ 98 %	100 %
VPCT		



Kang Chen
Quality Manager
Wuxi, China CN

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. 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.

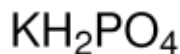


Certificate of Analysis

Product 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: H₂KO₄P
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 ₄)	≤ 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. 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

Cyanide Standard, 1000 ppm CN⁻

Lot Number: 1505H73

Product Number: 2543

Manufacture Date: MAY 08, 2025

Expiration Date: NOV 2025

This standard is prepared using accurate volumetric techniques from material that has been assayed against Silver Nitrate solution certified traceable to NIST Standard Reference Material 999. The certified value reported is the prepared value based upon the method of preparation of the material. The uncertainty in the prepared value is the combined uncertainty based on the stability of the assayed Potassium Cyanide, and the uncertainty in the mass and volume measurements.

Use 0.16% (w/v) (0.04 N) Sodium Hydroxide or 0.225 % (w/v) (0.04 N) Potassium Hydroxide to make dilutions of this standard. Restandardize weekly if extreme accuracy is required.

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Potassium Cyanide	151-50-8	ACS
Sodium Hydroxide	1310-73-2	Reagent (from ACS)

Test	Specification	Result
Appearance	Colorless liquid	Passed
Cyanide (CN ⁻)	995-1005 ppm	1000 ppm

Specification	Reference
Stock Standard Cyanide Solution	APHA (4500-CN- F)
Stock Cyanide Solution	APHA (4500-CN- E)
Stock Cyanide Solution	APHA (4500-CN- K)
Stock Cyanide Solution	APHA (4500-CN- H)
Cyanide Reference Solution (1000 mg/L)	EPA (SW-846) (7.3.3.2)
Cyanide Calibration Stock Solution (1,000 mg/L CN ⁻)	EPA (SW-846) (9213)
Stock Cyanide Solution	EPA (335.3)
Stock Cyanide Solution	EPA (335.2)
Cyanide Solution Stock	ASTM (D 4282)
Simple Cyanide Solution, Stock (1.0 g/L CN ⁻)	ASTM (D 4374)

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)
2543-16	500 mL amber poly	6 months
2543-32	1 L amber poly	6 months
2543-4	120 mL amber poly	6 months

Recommended Storage: 2°C - 8°C (36°F - 46°F)



Ernest Mahan (05/08/2025)
Plant Manager

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Part of TCP Analytical Group

Jackson's Pointe Commerce Park- Building 1000
1010 Jackson's Pointe Court, Zelienople, PA 16063

Certificate of Analysis

Cyanide Standard 1000 ppm (1ml = 1mg CN)

Product Code: **LC13545**

Manufacture Date: June 25, 2025

Lot Number: **45060288**

Expiration Date: December 24, 2025

Test	Specification	Result
Appearance (clarity)	clear solution	clear solution
Appearance (color)	colorless	colorless
Concentration (CN)	0.990 - 1.010mg/mL	1.000mg/mL
Concentration (CN)	990 - 1,010ppm	1,000ppm
Traceable to NIST SRM	Report	999b

Intended Use - Product is intended for use in manufacturing procedures and laboratory procedures and protocols.

Storage Information - Unless noted on the product label, store the product under normal lab conditions in its tightly closed, original container. Do not pipet directly from the container or return unused portions to the container.

Instructions for Handling and Use - Please refer to the associated product label and Safety Data Sheet (SDS) for information regarding safety and handling of this product.

Preparation - All products are manufactured and tested according to established, documented procedures and methodology. Production documentation records manufacturing data, raw material traceability and testing history on a per lot basis. Balances, thermometers, and glassware are calibrated before first use and on a regular schedule with references traceable to NIST

The suffix of the product code may differ from what is on your product label. The suffix will designate the size and be associated with a numeric digit(s). Visit LabChem.com for more information

Suffix	1	2	3/3S/36/36S	4/4C	5	6	7	8	9	20	44	200	246	486
Size	500mL org	1L or 1kg	2.5L/2.5L Coated/6x2.5L/6x2.5L Coated	4L	20L	10L	125mL	25g	100g	20x20mL	4x4L	200L	24x6mL	48x6mL

Michael Monteleone

Michael Monteleone
Chemistry Supervisor - Quality Control
20250703 15:30:45ahoffman-0-0

ISO9001:2015 Registration #0306-01

PERCENT SOLID

Supervisor: rubina
Analyst: jignesh
Date: 8/12/2025

OVENTEMP IN Celsius(°C): 108
Time IN: 17:10
In Date: 08/11/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 104
Time OUT: 08:22
Out Date: 08/12/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % SOLID-OVEN

QC:LB136776

Lab ID	Client SampleID	Dish #	Dish Wt(g) (A)	Sample Wt(g)	Dish + Sample Wt(g) (B)	Dish+Dry Sample Wt(g) (C)	% Solid	Comments
Q2817-01	LEAD-PAINT-CHIPS	1	1.00	1.00	2.00	2.00	100.0	LEAD-PAINT-CHIPS
Q2818-01	B-2-5-1	2	1.15	10.59	11.74	10.42	87.5	
Q2818-02	B-3-5-2	3	1.16	10.66	11.82	10.66	89.1	
Q2823-01	SU-04-081125	4	1.13	10.70	11.83	11.11	93.3	
Q2823-02	SU-04-081125-E2	5	1.14	11.10	12.24	11.34	91.9	
Q2826-01	WC1	6	1.18	10.81	11.99	10.7	88.1	
Q2827-01	TP-8	7	1.16	11.41	12.57	7.33	54.1	
Q2827-02	TP-8-EPH	8	1.16	10.21	11.37	7.68	63.9	
Q2827-03	TP-8-VOC	9	1.18	10.87	12.05	9.22	74.0	
Q2827-05	TP-9	10	1.19	10.61	11.8	9.66	79.8	
Q2827-06	TP-9-EPH	11	1.16	10.06	11.22	8.93	77.2	
Q2827-07	TP-9-VOC	12	1.15	10.48	11.63	9.59	80.5	
Q2828-01	POWDER	13	1.19	10.32	11.51	11.45	99.4	
Q2829-01	SILICA	14	1.00	1.00	2.00	2.00	100.0	silica
Q2830-01	BIN0009-DRIVEWAY-TP-SOUTH-EAST	15	1.18	10.57	11.75	10.37	86.9	
Q2830-02	BIN0009-DRIVEWAY-TP-SOUTH-EAST	16	1.18	10.03	11.21	9.83	86.2	
Q2830-03	BIN0009-DRIVEWAY-TP-WEST	17	1.18	10.74	11.92	10.37	85.6	
Q2830-04	BIN0009-DRIVEWAY-TP-WEST	18	1.15	10.59	11.74	10.21	85.6	
Q2830-05	BIN0009-DRIVEWAY-TP-WESTSIDE	19	1.19	10.46	11.65	9.66	81.0	
Q2830-06	BIN0009-DRIVEWAY-TP-WESTSIDE	20	1.15	10.94	12.09	9.36	75.0	
Q2830-07	BIN0009-DRIVEWAY-TP-EASTSIDE	21	1.18	10.48	11.66	9.22	76.7	
Q2830-08	BIN0009-DRIVEWAY-TP-EASTSIDE	22	1.19	10.66	11.85	9.67	79.5	
Q2831-01	VNJ-238	23	1.18	10.59	11.77	11.04	93.1	
Q2831-02	VNJ-238-VOC	24	1.19	10.62	11.81	11.04	92.7	

$$\% \text{ Solid} = \frac{(C-A) * 100}{(B-A)}$$

WORKLIST(Hardcopy Internal Chain)

136716

WorkList Name : %1-081125 WorkList ID : 191189 Department : Wet-Chemistry Date : 08-11-2025 08:22:53

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q2817-01	LEAD-PAINT-CHIPS	Solid	Percent Solids	Cool 4 deg C	HOME01	D31	08/11/2025	Chemtech -SO
Q2818-01	B-2-5-1	Solid	Percent Solids	Cool 4 deg C	EARTH03	J21	08/11/2025	Chemtech -SO
Q2818-02	B-3-5-2	Solid	Percent Solids	Cool 4 deg C	EARTH03	J21	08/11/2025	Chemtech -SO
Q2823-01	SU-04-081125	Solid	Percent Solids	Cool 4 deg C	PSEG05	D31	08/11/2025	Chemtech -SO
Q2823-02	SU-04-081125-E2	Solid	Percent Solids	Cool 4 deg C	PSEG05	D31	08/11/2025	Chemtech -SO
Q2826-01	WC1	Solid	Percent Solids	Cool 4 deg C	GENV01	D31	08/11/2025	Chemtech -SO
Q2827-01	TP-8	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	08/11/2025	Chemtech -SO
Q2827-02	TP-8-EPH	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	08/11/2025	Chemtech -SO
Q2827-03	TP-8-VOC	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	08/11/2025	Chemtech -SO
Q2827-05	TP-9	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	08/11/2025	Chemtech -SO
Q2827-06	TP-9-EPH	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	08/11/2025	Chemtech -SO
Q2827-07	TP-9-VOC	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	08/11/2025	Chemtech -SO
Q2828-01	POWDER	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	08/11/2025	Chemtech -SO
Q2829-01	SILICA	Solid	Percent Solids	Cool 4 deg C	VIVA01	D21	08/11/2025	Chemtech -SO
Q2830-01	BIN009-DRIVEWAY-TP-SOUTH	Solid	Percent Solids	Cool 4 deg C	VIVA01	D21	08/11/2025	Chemtech -SO
Q2830-02	BIN009-DRIVEWAY-TP-SOUTH	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	08/11/2025	Chemtech -SO
Q2830-03	BIN009-DRIVEWAY-TP-WEST	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	08/11/2025	Chemtech -SO
Q2830-04	BIN009-DRIVEWAY-TP-WEST	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	08/11/2025	Chemtech -SO
Q2830-05	BIN009-DRIVEWAY-TP-WEST	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	08/11/2025	Chemtech -SO
Q2830-06	BIN009-DRIVEWAY-TP-WEST	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	08/11/2025	Chemtech -SO
Q2830-07	BIN009-DRIVEWAY-TP-EASTS	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	08/11/2025	Chemtech -SO

Date/Time 08-11-25 15:10
 Raw Sample Received by: [Signature]
 Raw Sample Relinquished by: [Signature]
 Date/Time 08-11-25 17:20
 Raw Sample Received by: [Signature]
 Raw Sample Relinquished by: [Signature]

WORKLIST(Hardcopy Internal Chain)

136776

WorkList Name : %1-081125 WorkList ID : 191189 Department : Wet-Chemistry Date : 08-11-2025 08:22:53

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q2830-08	BIN009-DRIVEWAY-TP-EASTS	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	08/11/2025	Chemtech -SO
Q2831-01	VNJ-238	Solid	Percent Solids	Cool 4 deg C	PSEG03	D21	08/11/2025	Chemtech -SO
Q2831-02	VNJ-238-VOC	Solid	Percent Solids	Cool 4 deg C	PSEG03	D21	08/11/2025	Chemtech -SO

Date/Time 08.11.25 15:10
 Raw Sample Received by: Sh Woc
 Raw Sample Relinquished by: Sh Woc

Date/Time 08.11.25 17:20
 Raw Sample Received by: Sh Woc
 Raw Sample Relinquished by: Sh Woc



SHIPPING DOCUMENTS

CLIENT INFORMATION

REPORT TO BE SENT TO:

COMPANY: EARTH ENGINEERING INCORPORATED
ADDRESS: 403 Commerce Lane
CITY West Berlin STATE: NJ ZIP: 08091
ATTENTION: Frank Dougherty
PHONE: 856-768-1001 FAX:

CLIENT PROJECT INFORMATION

PROJECT NAME: Reserve @ Turgyan Farms
PROJECT NO. 38745.J0 LOCATION: NJ
PROJECT MANAGER: Frank Dougherty
e-mail: Frank.d@earthengineering.com
PHONE: 856-768-1001 FAX:

CLIENT BILLING INFORMATION

BILL TO: SAME PO#:
ADDRESS:
CITY STATE: ZIP:
ATTENTION: PHONE:

ANALYSIS

DATA TURNAROUND INFORMATION

FAX (RUSH) 3 DAYS*
HARDCOPY (DATA PACKAGE): DAYS*
EDD: DAYS*

*TO BE APPROVED BY CHEMTECH

STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS

DATA DELIVERABLE INFORMATION

☒ Level 1 (Results Only) ☐ Level 4 (QC + Full Raw Data)
☐ Level 2 (Results + QC) ☐ NJ Reduced ☐ US EPA CLP
☐ Level 3 (Results + QC) ☐ NYS ASP A ☐ NYS ASP B
+ Raw Data ☐ Other
☐ EDD FORMAT

1. TCL/TAL
2. EPH AF
3.
4.
5.
6.
7.
8.
9.

ALLIANCE SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS
			COMP	GRAB	DATE	TIME		1	2	3	4	5	6	7	8	9	
1.	B-2-5-1	Soil	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	8-11-25	8:50	3	X	X								
2.	B-3-5-2	Soil	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	8-11-25	9:35	3	X	X								
3.																	
4.																	
5.																	
6.																	
7.																	
8.																	
9.																	
10.																	

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER: <u>1. [Signature]</u>	DATE/TIME: <u>8-11-25</u>	RECEIVED BY: <u>1. [Signature]</u>	Conditions of bottles or coolers at receipt: <input type="checkbox"/> COMPLIANT <input type="checkbox"/> NON COMPLIANT <input type="checkbox"/> COOLER TEMP <u>6.1</u> °C
RELINQUISHED BY SAMPLER: <u>2. [Signature]</u>	DATE/TIME:	RECEIVED BY: <u>2. [Signature]</u>	Comments:
RELINQUISHED BY SAMPLER: <u>3. [Signature]</u>	DATE/TIME:	RECEIVED BY: <u>3. [Signature]</u>	Page <u>1</u> of <u>1</u> CLIENT: <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Other Shipment Complete <input type="checkbox"/> YES <input type="checkbox"/> NO

Laboratory Certification

Certified By	License No.
CAS EPA CLP Contract	68HERH20D0011
Connecticut	PH-0830
DOD ELAP (ANAB)	L2219
Maine	2024021
Maryland	296
New Hampshire	255424 Rev 1
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	525-24-234-08441
Texas	T104704488

DP 08/16/2025

LOGIN REPORT/SAMPLE TRANSFER

Order ID : Q2818	EARTH03	Order Date : 8/11/2025 11:57:00 AM	Project Mgr :
Client Name : Earth Engineering Inc.		Reserve Turgyan Farms	Report Type : NJ Reduced
Client Contact : Frank Dougherty, LSRP		Project Name : Leon Avenue	EDD Type : EXCEL NJCLEANUP
Invoice Name : Earth Engineering Inc.		Receive DateTime : 8/11/2025 11:47:00 AM	Hard Copy Date :
Invoice Contact : Frank Dougherty, LSRP		Purchase Order :	Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
Q2818-01	B-2-5-1	Solid	08/11/2025	08:50					
					VOC-TCLVOA-10	TCL+30/TAL	8260D	3 Bus. Days	
Q2818-02	B-3-5-2	Solid	08/11/2025	09:35					
					VOC-TCLVOA-10	TCL+30/TAL	8260D	3 Bus. Days	

JAN

Stored in VOA Freezer #02
after preservation

Relinquished By:

Date / Time: 8-11-24 1240

Received By:

Date / Time:

[Signature]

8-11-25

12:40 pm

Storage Area : VOA Refridgerator Room