

Cover Page

Order ID : Q1744

Project ID : Amtrak Sawtooth Bridges 2025

Client : Portal Partners Tri-Venture

Lab Sample Number

Q1744-01
Q1744-02
Q1744-03
Q1744-04

Client Sample Number

B-158-SB01
B-158-SB01
B-158-SB02
B-158-SB02

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: 4/12/2025

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012



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

CASE NARRATIVE

Portal Partners Tri-Venture

Project Name: Amtrak Sawtooth Bridges 2025

Project # N/A

Chemtech Project # Q1744

Test Name: Hexavalent Chromium, Corrosivity, pH, Trivalent Chromium, Ignitability, Reactive Cyanide, Reactive Sulfide

A. Number of Samples and Date of Receipt:

4 Solid samples were received on 04/07/2025.

B. Parameters:

According to the Chain of Custody document, the following analyses were requested: Corrosivity, EPH, Hexavalent Chromium, Ignitability, Mercury, Metals ICP-TAL, METALS-TAL, PCB, pH, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-TCL BNA -20, TCLP BNA, TCLP Extraction, TCLP Herbicide, TCLP ICP Metals, TCLP Mercury, TCLP Pesticide, TCLP VOA, TCLP ZHE Extraction, TCLP-FULL, TPH GC, Trivalent Chromium and VOC-TCLVOA-10. This data package contains results for Hexavalent Chromium, Corrosivity, pH, Trivalent Chromium, Ignitability, Reactive Cyanide, Reactive Sulfide.

C. Analytical Techniques:

The analysis of Ignitability was based on method 1030, The analysis of Trivalent Chromium was based on method 6010D, The analysis of Hexavalent Chromium was based on method 7196A, The analysis of Reactive Cyanide was based on method 9012B, The analysis of Reactive Sulfide was based on method 9034 and The analysis of Corrosivity, pH was based on method 9045D.

D. QA/ QC Samples:

The Holding Times were met for all samples except for B-158-SB01 of pH, for B-158-SB01 of Corrosivity. for B-158-SB02 of pH. for B-158-SB02 of Corrosivity as samples were receive out of holding time.

The Blank Spike met requirements for all samples.

The Duplicate analysis met criteria for all samples.

The Matrix Spike analysis met criteria for all samples.

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

The Calibration met the requirements.

E. Additional Comments:



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 #: Q1744

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 Castody

✓

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: 04/12/2025

LAB CHRONICLE

OrderID:	Q1744	OrderDate:	4/7/2025 11:34:00 AM
Client:	Portal Partners Tri-Venture	Project:	Amtrak Sawtooth Bridges 2025
Contact:	Joseph Krupansky	Location:	L41,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
Q1744-01	B-158-SB01	SOIL			04/05/25 15:20			04/07/25
			Hexavalent Chromium	7196A		04/07/25	04/07/25 15:22	
			pH	9045D			04/07/25 16:30	
			Trivalent Chromium	6010D			04/10/25 14:15	
Q1744-02	B-158-SB01	SOIL			04/05/25 15:20			04/07/25
			Corrosivity	9045D			04/07/25 16:30	
			Ignitability	1030			04/08/25 11:10	
			Reactive Cyanide	9012B		04/07/25	04/08/25 11:06	
			Reactive Sulfide	9034		04/08/25	04/08/25 15:12	
Q1744-03	B-158-SB02	SOIL			04/05/25 17:10			04/07/25
			Hexavalent Chromium	7196A		04/07/25	04/07/25 15:23	
			pH	9045D			04/07/25 16:33	
			Trivalent Chromium	6010D			04/10/25 14:19	
Q1744-04	B-158-SB02	SOIL			04/05/25 17:10			04/07/25
			Corrosivity	9045D			04/07/25 16:33	

LAB CHRONICLE

Ignitability	1030		04/08/25 11:24
Reactive Cyanide	9012B	04/07/25	04/08/25 11:13
Reactive Sulfide	9034	04/08/25	04/08/25 15:15



SAMPLE DATA

Report of Analysis

Client:	Portal Partners Tri-Venture	Date Collected:	04/05/25 15:20
Project:	Amtrak Sawtooth Bridges 2025	Date Received:	04/07/25
Client Sample ID:	B-158-SB01	SDG No.:	Q1744
Lab Sample ID:	Q1744-01	Matrix:	SOIL
		% Solid:	90

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.
Hexavalent Chromium	0.076	U	1	0.076	0.43	mg/Kg	04/07/25 11:40	04/07/25 15:22	7196A
pH	6.52	H	1	0	0	pH		04/07/25 16:30	9045D
Trivalent Chromium	8.24		1	0.56	0.56	mg/Kg		04/10/25 14:15	6010D

Comments: pH result reported at temperature 22.4 °C

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:	Portal Partners Tri-Venture	Date Collected:	04/05/25 15:20
Project:	Amtrak Sawtooth Bridges 2025	Date Received:	04/07/25
Client Sample ID:	B-158-SB01	SDG No.:	Q1744
Lab Sample ID:	Q1744-02	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	6.52	H	1	0	0	pH		04/07/25 16:30	9045D
Ignitability	NO		1	0	0	oC		04/08/25 11:10	1030
Reactive Cyanide	0.0083	U	1	0.0083	0.050	mg/Kg	04/07/25 15:00	04/08/25 11:06	9012B
Reactive Sulfide	1.58	J	1	0.20	10.0	mg/Kg	04/08/25 12:50	04/08/25 15:12	9034

Comments: pH result reported at temperature 22.4 °C

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:	Portal Partners Tri-Venture	Date Collected:	04/05/25 17:10
Project:	Amtrak Sawtooth Bridges 2025	Date Received:	04/07/25
Client Sample ID:	B-158-SB02	SDG No.:	Q1744
Lab Sample ID:	Q1744-03	Matrix:	SOIL
		% Solid:	56

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.
Hexavalent Chromium	0.12	U	1	0.12	0.71	mg/Kg	04/07/25 11:40	04/07/25 15:23	7196A
pH	6.45	H	1	0	0	pH		04/07/25 16:33	9045D
Trivalent Chromium	25.6		1	0.89	0.89	mg/Kg		04/10/25 14:19	6010D

Comments: pH result reported at temperature 22.4 °C

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:	Portal Partners Tri-Venture	Date Collected:	04/05/25 17:10
Project:	Amtrak Sawtooth Bridges 2025	Date Received:	04/07/25
Client Sample ID:	B-158-SB02	SDG No.:	Q1744
Lab Sample ID:	Q1744-04	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	6.45	H	1	0	0	pH		04/07/25 16:33	9045D
Ignitability	NO		1	0	0	oC		04/08/25 11:24	1030
Reactive Cyanide	0.0083	U	1	0.0083	0.050	mg/Kg	04/07/25 15:00	04/08/25 11:13	9012B
Reactive Sulfide	1.58	J	1	0.20	10.0	mg/Kg	04/08/25 12:50	04/08/25 15:15	9034

Comments: pH result reported at temperature 23.4 °C

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: Portal Partners Tri-Venture
Project: Amtrak Sawtooth Bridges 2025

SDG No.: Q1744
RunNo.: LB135327

Analyte		Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID: Corrosivity	ICV	pH	7.01	7	100	90-110	04/07/2025
Sample ID: Corrosivity	CCV1	pH	2.02	2.00	101	90-110	04/07/2025
Sample ID: Corrosivity	CCV2	pH	12.02	12.00	100	90-110	04/07/2025

Initial and Continuing Calibration Verification

Client: Portal Partners Tri-Venture

SDG No.: Q1744

Project: Amtrak Sawtooth Bridges 2025

RunNo.: LB135328

Analyte		Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID:	ICV						
pH		pH	7.01	7	100	90-110	04/07/2025
Sample ID:	CCV1						
pH		pH	2.02	2.00	101	90-110	04/07/2025
Sample ID:	CCV2						
pH		pH	12.02	12.00	100	90-110	04/07/2025

Initial and Continuing Calibration Verification

Client: Portal Partners Tri-Venture

SDG No.: Q1744

Project: Amtrak Sawtooth Bridges 2025

RunNo.: LB135331

Analyte	Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID: ICV Hexavalent Chromium	mg/L	0.495	0.5	99	90-110	04/07/2025
Sample ID: CCV1 Hexavalent Chromium	mg/L	0.484	0.5	97	90-110	04/07/2025
Sample ID: CCV2 Hexavalent Chromium	mg/L	0.489	0.5	98	90-110	04/07/2025
Sample ID: CCV3 Hexavalent Chromium	mg/L	0.485	0.5	97	90-110	04/07/2025

Initial and Continuing Calibration Verification

Client: Portal Partners Tri-Venture

SDG No.: Q1744

Project: Amtrak Sawtooth Bridges 2025

RunNo.: LB135341

Analyte	Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID: ICV1 Reactive Cyanide	mg/L	0.09	0.099	91	85-115	04/08/2025
Sample ID: CCV1 Reactive Cyanide	mg/L	0.24	0.25	96	90-110	04/08/2025
Sample ID: CCV2 Reactive Cyanide	mg/L	0.24	0.25	96	90-110	04/08/2025
Sample ID: CCV3 Reactive Cyanide	mg/L	0.24	0.25	96	90-110	04/08/2025

Initial and Continuing Calibration Blank Summary

Client: Portal Partners Tri-Venture
Project: Amtrak Sawtooth Bridges 2025

SDG No.: Q1744
RunNo.: LB135331

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	04/07/2025
Sample ID: CCB1 Hexavalent Chromium	mg/L	< 0.0050	0.0050	U	0.0029	0.01	04/07/2025
Sample ID: CCB2 Hexavalent Chromium	mg/L	< 0.0050	0.0050	U	0.0029	0.01	04/07/2025
Sample ID: CCB3 Hexavalent Chromium	mg/L	< 0.0050	0.0050	U	0.0029	0.01	04/07/2025

Initial and Continuing Calibration Blank Summary

Client: Portal Partners Tri-Venture
Project: Amtrak Sawtooth Bridges 2025

SDG No.: Q1744
RunNo.: LB135341

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: ICB1 Reactive Cyanide	mg/L	< 0.0025	0.0025	U	0.00096	0.005	04/08/2025
Sample ID: CCB1 Reactive Cyanide	mg/L	< 0.0025	0.0025	U	0.00096	0.005	04/08/2025
Sample ID: CCB2 Reactive Cyanide	mg/L	< 0.0025	0.0025	U	0.00096	0.005	04/08/2025
Sample ID: CCB3 Reactive Cyanide	mg/L	< 0.0025	0.0025	U	0.00096	0.005	04/08/2025

Preparation Blank Summary

Client: Portal Partners Tri-Venture

SDG No.: Q1744

Project: Amtrak Sawtooth Bridges 2025

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: PB167461BL Hexavalent Chromium	mg/Kg	< 0.2000	0.2000	U	0.07	0.4	04/07/2025
Sample ID: PB167494BL Reactive Sulfide	mg/Kg	< 5.0000	5.0000	U	0.201	10	04/08/2025
Sample ID: PB167498BL Reactive Cyanide	mg/Kg	< 0.0250	0.0250	U	0.0084	0.05	04/08/2025

Matrix Spike Summary

Client:	Portal Partners Tri-Venture	SDG No.:	Q1744
Project:	Amtrak Sawtooth Bridges 2025	Sample ID:	Q1712-01
Client ID:	Z-05AMS	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
Hexavalent Chromium	mg/Kg	75-125	1410		0.080	U	1470	40	96		04/07/2025

Matrix Spike Summary

Client:	Portal Partners Tri-Venture	SDG No.:	Q1744
Project:	Amtrak Sawtooth Bridges 2025	Sample ID:	Q1712-01
Client ID:	Z-05AMS	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
Hexavalent Chromium	mg/Kg	85-115	44.1		0.080	U	45.7	2	96		04/07/2025

Matrix Spike Summary

Client:	Portal Partners Tri-Venture	SDG No.:	Q1744
Project:	Amtrak Sawtooth Bridges 2025	Sample ID:	Q1712-01
Client ID:	Z-05AMS	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
Hexavalent Chromium	mg/Kg	75-125	37.6		0.080	U	45.7	2	82		04/07/2025

Duplicate Sample Summary

Client:	Portal Partners Tri-Venture	SDG No.:	Q1744
Project:	Amtrak Sawtooth Bridges 2025	Sample ID:	Q1712-01
Client ID:	Z-05ADUP	Percent Solids for Spike Sample:	87.5

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Hexavalent Chromium	mg/Kg	+/-20	0.080	U	0.080	U	1	0		04/07/2025

Duplicate Sample Summary

Client:	Portal Partners Tri-Venture	SDG No.:	Q1744
Project:	Amtrak Sawtooth Bridges 2025	Sample ID:	Q1712-04
Client ID:	Z-05ADUP	Percent Solids for Spike Sample:	100

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Reactive Sulfide	mg/Kg	+/-20	1.58	J	1.58	J	1	0		04/08/2025

Duplicate Sample Summary

Client:	Portal Partners Tri-Venture	SDG No.:	Q1744
Project:	Amtrak Sawtooth Bridges 2025	Sample ID:	Q1732-04
Client ID:	TT-8DUP	Percent Solids for Spike Sample:	100

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Reactive Cyanide	mg/Kg	+/-20	0.0083	U	0.0084	U	1	0		04/08/2025

Duplicate Sample Summary

Client: Portal Partners Tri-Venture Project: Amtrak Sawtooth Bridges 2025 Client ID: B-158-SB01DUP	SDG No.: Q1744 Sample ID: Q1744-02 Percent Solids for Spike Sample: 100
---	--

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Ignitability	oC	+/-20	NO		NO		1	0		04/08/2025

Duplicate Sample Summary

Client: Portal Partners Tri-Venture Project: Amtrak Sawtooth Bridges 2025 Client ID: B-149-SB02DUP	SDG No.: Q1744 Sample ID: Q1746-03 Percent Solids for Spike Sample: 100
---	--

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
pH	pH	+/-20	7.52		7.53		1	0.13		04/07/2025

Duplicate Sample Summary

Client: Portal Partners Tri-Venture	SDG No.: Q1744
Project: Amtrak Sawtooth Bridges 2025	Sample ID: Q1746-04
Client ID: B-149-SB02DUP	Percent Solids for Spike Sample: 100

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Corrosivity	pH	+/-20	7.52		7.53		1	0.13		04/07/2025

Laboratory Control Sample Summary

Client: Portal Partners Tri-Venture

SDG No.: Q1744

Project: Amtrak Sawtooth Bridges 2025

Run No.: LB135331

Analyte	Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID	PB167461BS							
Hexavalent Chromium	mg/Kg	20	20.0		100	1	84-110	04/07/2025



RAW DATA

Analytical Summary Report

Analysis Method: 9045D

Analyst By : jignesh

Parameter: Corrosivity

Supervisor Review By : Iwona

Run Number: LB135327

Slope : 98.6

BalanceID: WC SC-7

pH Meter ID : WC PH METER-1

Calibration Standards	Chemtech Log#
PH 4 BUFFER SOLUTION	W3178
BUFFER PH 7.00 GREEN 1PINT PK6	W3093
PH 10.01 BUFFER, COLOR CD 475ML	W3191
buffer solution pH 7 yellow	W3071
Buffer Solution, PH2 (500ml)	W3161
Buffer Solution, PH12 (500ml)	W3072

True Value of ICV = 7.00 Control Limits[+/- 0.1].

True Value of CCV1 = 2.00 Control Limits[+/- 0.1].

True Value of CCV2 = 12.00 Control Limits[+/- 0.1].

Seq	LabID	DF	Matrix	Weight (gm)	Volume (ml)	Temperature (°C)	Result (pH)	Anal Date	Anal Time
1	CAL1	1	Water	NA	NA	20.2	4.01	04/07/2025	16:10
2	CAL2	1	Water	NA	NA	20.2	7.00	04/07/2025	16:11
3	CAL3	1	Water	NA	NA	20.3	10.02	04/07/2025	16:12
4	ICV	1	Water	NA	NA	20.3	7.01	04/07/2025	16:15
5	CCV1	1	Water	NA	NA	20.1	2.02	04/07/2025	16:20
6	Q1743-04	1	Solid	20.02	20	22.8	8.21	04/07/2025	16:25
7	Q1744-02	1	Solid	20.03	20	22.4	6.52	04/07/2025	16:30
8	Q1744-04	1	Solid	20.02	20	23.4	6.45	04/07/2025	16:33
9	Q1745-04	1	Solid	20.03	20	23.1	7.78	04/07/2025	16:40
10	Q1745-12	1	Solid	20.02	20	22.9	7.49	04/07/2025	16:47
11	Q1746-02	1	Solid	20.03	20	22.3	7.07	04/07/2025	16:50
12	Q1746-04	1	Solid	20.03	20	22.9	7.52	04/07/2025	17:00
13	Q1746-04DUP	1	Solid	20.04	20	22.6	7.53	04/07/2025	17:01
14	CCV2	1	Water	NA	NA	20.3	12.02	04/07/2025	17:05

WORKLIST(Hardcopy Internal Chain)

VB 135327

WorkList Name : corrosion p1744 WorkList ID : 188784 Department : Wet-Chemistry Date : 04-07-2025 15:44:26

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q1743-04	TP-16	Solid	Corrosivity	Cool 4 deg C	PSEG03	L33	04/07/2025	9045D
Q1744-02	B-158-SB01	Solid	Corrosivity	Cool 4 deg C	PORT06	L41	04/05/2025	9045D
Q1744-04	B-158-SB02	Solid	Corrosivity	Cool 4 deg C	PORT06	L41	04/05/2025	9045D
Q1745-04	IB-6A-WC	Solid	Corrosivity	Cool 4 deg C	PSEG03	L41	04/07/2025	9045D
Q1745-12	IB-6.5-WC	Solid	Corrosivity	Cool 4 deg C	PSEG03	L41	04/07/2025	9045D
Q1746-02	B-149-SB01	Solid	Corrosivity	Cool 4 deg C	PORT06	L41	04/05/2025	9045D
Q1746-04	B-149-SB02	Solid	Corrosivity	Cool 4 deg C	PORT06	L41	04/06/2025	9045D

Date/Time 04/07/25 16:00
Raw Sample Received by: J.C. (san)
Raw Sample Relinquished by:

Date/Time 04/10/25 18:00
Raw Sample Received by: J.C. (san)
Raw Sample Relinquished by:

Analytical Summary Report

Analysis Method: 9045D

Analyst By : jignesh

Parameter: pH

Supervisor Review By : Iwona

Run Number: LB135328

Slope : 98.6

BalanceID: WC SC-7

pH Meter ID : WC PH METER-1

Calibration Standards	Chemtech Log#
PH 4 BUFFER SOLUTION	W3178
BUFFER PH 7.00 GREEN 1PINT PK6	W3093
PH 10.01 BUFFER, COLOR CD 475ML	W3191
buffer solution pH 7 yellow	W3071
Buffer Solution, PH2 (500ml)	W3161
Buffer Solution, PH12 (500ml)	W3072

True Value of ICV = 7.00 Control Limits[+/- 0.1].

True Value of CCV1 = 2.00 Control Limits[+/- 0.1].

True Value of CCV2 = 12.00 Control Limits[+/- 0.1].

Seq	LabID	DF	Matrix	Weight (gm)	Volume (ml)	Temperature (°C)	Result (pH)	Anal Date	Anal Time
1	CAL1	1	Water	NA	NA	20.2	4.01	04/07/2025	16:10
2	CAL2	1	Water	NA	NA	20.2	7.00	04/07/2025	16:11
3	CAL3	1	Water	NA	NA	20.3	10.02	04/07/2025	16:12
4	ICV	1	Water	NA	NA	20.3	7.01	04/07/2025	16:15
5	CCV1	1	Water	NA	NA	20.1	2.02	04/07/2025	16:20
6	Q1744-01	1	Solid	20.03	20	22.4	6.52	04/07/2025	16:30
7	Q1744-03	1	Solid	20.02	20	22.4	6.45	04/07/2025	16:33
8	Q1746-01	1	Solid	20.03	20	22.9	7.07	04/07/2025	16:50
9	Q1746-03	1	Solid	20.03	20	22.5	7.52	04/07/2025	17:00
10	Q1746-03DUP	1	Solid	20.04	20	22.7	7.53	04/07/2025	17:01
11	CCV2	1	Water	NA	NA	20.3	12.02	04/07/2025	17:05

WORKLIST(Hardcopy Internal Chain)

WB 135328

WorkList Name : ph q1744 WorkList ID : 188785 Department : Wet-Chemistry Date : 04-07-2025 15:45:14

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q1744-01	B-158-SB01	Solid	pH	Cool 4 deg C	PORT06	L41	04/05/2025	9045D
Q1744-03	B-158-SB02	Solid	pH	Cool 4 deg C	PORT06	L41	04/05/2025	9045D
Q1746-01	B-149-SB01	Solid	pH	Cool 4 deg C	PORT06	L41	04/05/2025	9045D
Q1746-03	B-149-SB02	Solid	pH	Cool 4 deg C	PORT06	L41	04/06/2025	9045D

Date/Time 04/07/25 16:00
Raw Sample Received by: JB GDC
Raw Sample Relinquished by: L.C. (sm)

Date/Time 04/07/25 18:00
Raw Sample Received by: L.C. (sm)
Raw Sample Relinquished by: JB GDC

Analytical Summary Report

Analysis Method: 7196A

ANALYST: rubina

Parameter: ~~Hexavalent Chromium~~

SUPERVISOR REVIEW BY: Iwona

Run Number: LB135331

pH Meter ID: WC pH Meter-1

Reagent/Standard	Lot/Log #
hexavalent chromium color reagent	WP112566
5N sulfuric acid	WP110380
HNO3 Hex-Chrome, 5M	WP110381
Hexchrome Cleaning Solution	WP111249

Intercept: 0.0009

Slope: 0.7644

Regression: 0.999984

Seq	Lab ID	True Value (mg/l)	DF	Initial Vol (ml)	Final Vol (ml)	pH HNO3	pH H2SO4	Absorb.at 540nm		Absorbance Difference	Result (mg/L)	%D	Anal Date	Anal Time
								Backgrnd	Color					
1	CAL1	0	1	100	100	7.30	1.79	0.000	0.000	0.000	-0.00		04/07/2025	14:55
2	CAL2	0.01	1	100	100	7.36	1.90	0.000	0.007	0.007	0.007	-30	04/07/2025	14:56
3	CAL3	0.025	1	100	100	7.44	1.84	0.000	0.021	0.021	0.026	4	04/07/2025	14:57
4	CAL4	0.05	1	100	100	7.39	2.01	0.000	0.039	0.039	0.049	-2	04/07/2025	14:58
5	CAL5	0.1	1	100	100	7.36	1.89	0.000	0.080	0.080	0.103	3	04/07/2025	14:59
6	CAL6	0.5	1	100	100	7.38	1.95	0.000	0.381	0.381	0.497	-0.6	04/07/2025	15:00
7	CAL7	1	1	100	100	7.41	1.98	0.000	0.766	0.766	1.000	0	04/07/2025	15:01

Analytical Summary Report

Analysis Method: 7196A

ANALYST:rubina

Parameter: Hexavalent Chromium

SUPERVISOR REVIEW BY:Iwona

Run Number: LB135331

pH Meter ID:WC 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	7.40	1.83	0.000	0.379	0.379	0.495	04/07/2025	15:02
2	ICB		1	100	100	7.25	1.76	0.000	0.001	0.001	0.000	04/07/2025	15:03
3	CCV1	0.5	1	100	100	7.38	1.90	0.000	0.371	0.371	0.484	04/07/2025	15:04
4	CCB1		1	100	100	7.29	1.98	0.000	0.000	0.000	-0.001	04/07/2025	15:05
5	RL Check	0.01	1	100	100	7.40	2.01	0.000	0.009	0.009	0.011	04/07/2025	15:06
6	PB167461BL		1	2.50	100	7.36	1.82	0.000	0.000	0.000	-0.001	04/07/2025	15:07
7	PB167461BS	20	1	2.50	100	7.43	1.94	0.000	0.382	0.382	0.499	04/07/2025	15:08
8	Q1656-04		1	2.56	100	7.36	2.06	0.036	0.037	0.001	0.000	04/07/2025	15:09
9	Q1712-01		1	2.51	100	7.31	2.24	0.004	0.004	0.000	-0.001	04/07/2025	15:10
10	Q1712-01DU		1	2.51	100	7.36	2.29	0.004	0.004	0.000	-0.001	04/07/2025	15:11
11	Q1712-01MS	40	2	2.52	100	7.42	2.30	0.000	0.317	0.317	0.414	04/07/2025	15:12
12	Q1712-01MS	1284	40	2.52	100	7.39	2.27	0.000	0.593	0.593	0.775	04/07/2025	15:13
13	Q1712-01MS	40	2	2.51	100	7.34	2.25	0.000	0.371	0.371	0.484	04/07/2025	15:14
14	Q1712-05		1	2.55	100	7.60	2.10	0.004	0.004	0.000	-0.001	04/07/2025	15:15
15	Q1732-01		1	2.57	100	7.52	2.06	0.001	0.002	0.001	0.000	04/07/2025	15:16
16	CCV2	0.5	1	100	100	7.52	2.33	0.000	0.375	0.375	0.489	04/07/2025	15:17
17	CCB2		1	100	100	7.36	1.72	0.000	0.001	0.001	0.000	04/07/2025	15:18
18	Q1737-01		1	2.52	100	7.60	2.06	0.002	0.002	0.000	-0.001	04/07/2025	15:19
19	Q1740-01		1	2.55	100	7.69	2.10	0.002	0.002	0.000	-0.001	04/07/2025	15:20
20	Q1743-01		1	2.57	100	7.64	2.19	0.001	0.002	0.001	0.000	04/07/2025	15:21
21	Q1744-01		1	2.56	100	7.60	2.40	0.010	0.011	0.001	0.000	04/07/2025	15:22
22	Q1744-03		1	2.53	100	7.55	2.29	0.036	0.037	0.001	0.000	04/07/2025	15:23
23	Q1745-01		1	2.51	100	7.51	2.20	0.020	0.020	0.000	-0.001	04/07/2025	15:24
24	Q1745-09		1	2.52	100	7.58	2.29	0.004	0.005	0.001	0.000	04/07/2025	15:25
25	Q1746-01		1	2.58	100	7.42	2.10	0.012	0.013	0.001	0.000	04/07/2025	15:26
26	Q1746-03		1	2.54	100	7.36	2.06	0.007	0.008	0.001	0.000	04/07/2025	15:27
27	CCV3	0.5	1	100	100	7.40	1.88	0.000	0.372	0.372	0.485	04/07/2025	15:28
28	CCB3		1	100	100	7.27	1.92	0.000	0.001	0.001	0.000	04/07/2025	15:29

Analytical Summary Report

Analysis Method: 1030
Parameter: Ignitability
Run Number: LB135338

Reviewed By: rubina

Supervisor Review By: Iwona

Seq	LabID	ClientID	DF	matrix	Result Status	Burning Rate	Anal Date	Anal Time
1	Q1744-02	B-158-SB01	1	Solid	NO	0.00	04/08/2025	11:10
2	Q1744-02DUP	B-158-SB01DUP	1	Solid	NO	0.00	04/08/2025	11:17
3	Q1744-04	B-158-SB02	1	Solid	NO	0.00	04/08/2025	11:24
4	Q1745-01	IB-6A-WC	1	Solid	NO	0.00	04/08/2025	11:32
5	Q1745-04	IB-6A-WC	1	Solid	NO	0.00	04/08/2025	11:40
6	Q1745-09	IB-6.5-WC	1	Solid	NO	0.00	04/08/2025	11:48
7	Q1745-12	IB-6.5-WC	1	Solid	NO	0.00	04/08/2025	11:55
8	Q1746-02	B-149-SB01	1	Solid	NO	0.00	04/08/2025	12:02
9	Q1746-04	B-149-SB02	1	Solid	NO	0.00	04/08/2025	12:10

Burning Rate = $\frac{\text{Length (mm)}}{\text{Total Time (sec)}}$

WORKLIST(Hardcopy Internal Chain)

12135338

WorkList Name : ign-4-8 WorkList ID : 188798 Department : Wet-Chemistry Date : 04-08-2025 08:38:44

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q1744-02 F	B-158-SB01	Solid	Ignitability	Cool 4 deg C	PORT06	L41	04/05/2025	1030
Q1744-04 F	B-158-SB02	Solid	Ignitability	Cool 4 deg C	PORT06	L41	04/05/2025	1030
Q1745-01 C	IB-6A-WC	Solid	Ignitability	Cool 4 deg C	PSEG03	L41	04/07/2025	1030
Q1745-04 C	IB-6A-WC	Solid	Ignitability	Cool 4 deg C	PSEG03	L41	04/07/2025	1030
Q1745-09 C	IB-6.5-WC	Solid	Ignitability	Cool 4 deg C	PSEG03	L41	04/07/2025	1030
Q1745-12 C	IB-6.5-WC	Solid	Ignitability	Cool 4 deg C	PSEG03	L41	04/07/2025	1030
Q1746-02 C	B-149-SB01	Solid	Ignitability	Cool 4 deg C	PORT06	L41	04/05/2025	1030
Q1746-04	B-149-SB02	Solid	Ignitability	Cool 4 deg C	PORT06	L41	04/06/2025	1030

Date/Time 04/08/2025 11.00
Raw Sample Received by: R14 wv
Raw Sample Relinquished by: J wv

Date/Time 04/08/2025 15.00
Raw Sample Received by: M wv
Raw Sample Relinquished by: R14 wv

LB135

Test results

Aquakem 7.2AQ1

Page:

1

CHEMTECH CONSULTING GROUP INC
284 Sheffield Street, Mountainside, NJ 07092

Reviewed by : NF Instrument ID : Konelab

4/8/2025 11:34

Test: Total CN

Sample Id	Result	Dil. 1 +	Response	Errors
ICV1	89.849	0.0	0.077	
ICB1	-0.630	0.0	0.001	
CCV1	237.485	0.0	0.202	
CCB1	-0.871	0.0	0.000	
PB167498BL	-1.116	0.0	0.000	
Q1732-04	-1.149	0.0	0.000	
Q1732-04DUP	-1.028	0.0	0.000	
Q1737-02	-1.124	0.0	0.000	
Q1740-04	-1.127	0.0	0.000	
Q1743-04	-0.955	0.0	0.000	
Q1744-02	-0.913	0.0	0.000	
Q1744-04	-1.142	0.0	0.000	
Q1745-04	-0.902	0.0	0.000	
Q1745-12	-1.112	0.0	0.000	
CCV2	236.287	0.0	0.201	
CCB2	-0.950	0.0	0.000	
Q1746-02	-0.086	0.0	0.001	
Q1746-04	-1.151	0.0	0.000	
PB167505BL	-0.907	0.0	0.000	
Q1739-02	-1.052	0.0	0.000	
Q1739-02DUP	-1.133	0.0	0.000	
CCV3	236.140	0.0	0.201	
CCB3	-0.885	0.0	0.000	

N 23
Mean 33.979
SD 82.4423
CV% 242.62

Aquakem v. 7.2AQ1

Results from time period:

Tue Apr 08 10:05:28 2025

Tue Apr 08 11:31:21 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	-1.2556	µg/l	4/8/2025 10:23:40
5.0PPBCN	A	Total CN	P	4.0682	µg/l	4/8/2025 10:23:41
10PPBCN	A	Total CN	P	9.7741	µg/l	4/8/2025 10:23:42
50PPBCN	A	Total CN	P	47.2117	µg/l	4/8/2025 10:23:43
100PPBCN	A	Total CN	P	94.7045	µg/l	4/8/2025 10:23:44
250PPBCN	A	Total CN	P	268.2905	µg/l	4/8/2025 10:23:45
500PPBCN	A	Total CN	P	492.2065	µg/l	4/8/2025 10:23:46
ICV1	S	Total CN	P	89.8489	µg/l	4/8/2025 10:58:17
ICB1	S	Total CN	P	-0.6301	µg/l	4/8/2025 10:58:19
CCV1	S	Total CN	P	237.4847	µg/l	4/8/2025 10:58:21
CCB1	S	Total CN	P	-0.8714	µg/l	4/8/2025 10:58:23
PB167498BL	S	Total CN	P	-1.1165	µg/l	4/8/2025 10:58:25
Q1732-04	S	Total CN	P	-1.1494	µg/l	4/8/2025 10:58:26
Q1732-04DUP	S	Total CN	P	-1.0279	µg/l	4/8/2025 11:05:52
Q1737-02	S	Total CN	P	-1.1243	µg/l	4/8/2025 11:05:55
Q1740-04	S	Total CN	P	-1.1269	µg/l	4/8/2025 11:05:56
Q1743-04	S	Total CN	P	-0.9549	µg/l	4/8/2025 11:05:59
Q1744-02	S	Total CN	P	-0.9126	µg/l	4/8/2025 11:06:00
Q1744-04	S	Total CN	P	-1.1417	µg/l	4/8/2025 11:13:26
Q1745-04	S	Total CN	P	-0.9016	µg/l	4/8/2025 11:13:29
Q1745-12	S	Total CN	P	-1.1119	µg/l	4/8/2025 11:13:30
CCV2	S	Total CN	P	236.2873	µg/l	4/8/2025 11:13:36
CCB2	S	Total CN	P	-0.9505	µg/l	4/8/2025 11:20:59
Q1746-02	S	Total CN	P	-0.0863	µg/l	4/8/2025 11:21:02
Q1746-04	S	Total CN	P	-1.1509	µg/l	4/8/2025 11:21:04
PB167505BL	S	Total CN	P	-0.907	µg/l	4/8/2025 11:21:08
Q1739-02	S	Total CN	P	-1.0516	µg/l	4/8/2025 11:28:34
Q1739-02DUP	S	Total CN	P	-1.1334	µg/l	4/8/2025 11:28:35
CCV3	S	Total CN	P	236.1396	µg/l	4/8/2025 11:28:41
CCB3	S	Total CN	P	-0.8852	µg/l	4/8/2025 11:28:43

Calibration results

Aquakem 7.2AQ1

Page: 1

CHEMTECH CONSULTING GROUP INC
284 Sheffield Street, Mountainside, NJ 07092

Reviewed by : NF Instrument ID : Konelab

4/8/2025 10:24

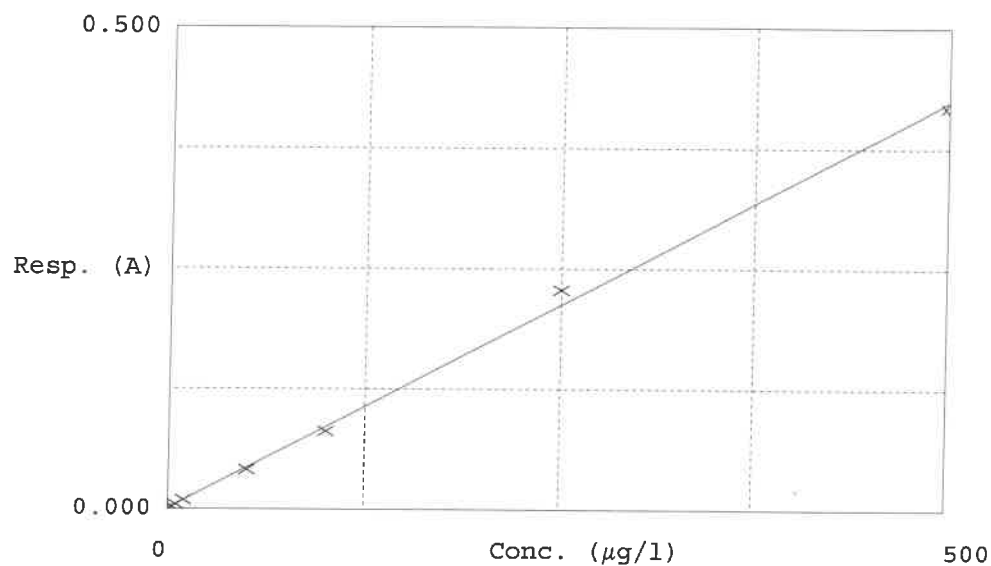
Test Total CN

Accepted 4/8/2025 10:24

Factor 1183
Bias 0.001

Coeff. of det. 0.997895

Errors



	Calibrator	Response	Calc. con.	Conc.	Re Errors
1	0.0PPBCN	0.000	-1.2556	0.0000	
2	5.0PPBCN	0.005	4.0682	5.0000	- 18.6
3	10PPBCN	0.009	9.7741	10.0000	- 2.3
4	50PPBCN	0.041	47.2117	50.0000	- 5.6
5	100PPBCN	0.081	94.7045	100.0000	- 5.3
6	250PPBCN	0.228	268.2905	250.0000	7.3
7	500PPBCN	0.417	492.2065	500.0000	- 1.6

NF
04.08.2025

Analysis Method: 9034

ANALYST: rubina

Parameter: Reactive Sulfide

SUPERVISOR REVIEW BY: Iwona

Run Number: LB135345

Constant: 16000

Normality1: 0.025

Normality2: 0.025

Reagent/Standard	Lot/Log #
SODIUM THIOSULFATE, 0.025N, 4LITRE	W3105
IODINE SOLUTION .025N 1L	W3114
Starch Solution, 4L	W3149

Seq	Lab ID	True Value (mg/l)	DF	Initial Weight (g)	Final Volume (ml)	T1 (ml)	T2 Initial	T2 Final	T2 Diff. (ml)	T1 - T2 Diff (mL)	Value Corrected With Blank	Result (ppm)	Anal Date	Anal Time
1	PB167494BL		1	5.00	50	2.00	0.00	1.90	1.90	0.10	0.00	0.00	04/08/2025	14:50
2	Q1712-04		1	5.07	50	2.00	0.00	1.88	1.88	0.12	0.02	1.58	04/08/2025	14:53
3	Q1712-04DUP		1	5.07	50	2.00	0.00	1.88	1.88	0.12	0.02	1.58	04/08/2025	14:56
4	Q1712-08		1	5.04	50	2.00	0.00	1.84	1.84	0.16	0.06	4.76	04/08/2025	14:58
5	Q1732-04		1	5.04	50	2.00	0.00	1.88	1.88	0.12	0.02	1.59	04/08/2025	15:00
6	Q1737-02		1	5.07	50	2.00	0.00	1.86	1.86	0.14	0.04	3.16	04/08/2025	15:03
7	Q1740-04		1	5.01	50	2.00	0.00	1.86	1.86	0.14	0.04	3.19	04/08/2025	15:06
8	Q1743-04		1	5.05	50	2.00	0.00	1.84	1.84	0.16	0.06	4.75	04/08/2025	15:09
9	Q1744-02		1	5.06	50	2.00	0.00	1.88	1.88	0.12	0.02	1.58	04/08/2025	15:12
10	Q1744-04		1	5.07	50	2.00	0.00	1.88	1.88	0.12	0.02	1.58	04/08/2025	15:15
11	Q1745-04		1	5.02	50	2.00	0.00	1.86	1.86	0.14	0.04	3.19	04/08/2025	15:18
12	Q1745-12		1	5.04	50	2.00	0.00	1.88	1.88	0.12	0.02	1.59	04/08/2025	15:20

T1 = Titrant1

T2 = Titrant2

T2 Diff = T2 Final - T2 Initial

Value Corrected With Blank = ((T1 - T2 Diff) - Blank Correction(BL))

Result = ((T1 * Normality1) - ((T1 - Value Corrected With Blank) * Normality2)) * Constant / Initial Volume

Analysis Method: 9034

Parameter: Reactive Sulfide

Run Number: LB135345

ANALYST: rubina

SUPERVISOR REVIEW BY: Iwona

Constant: 16000

Normality1: 0.025

Normality2: 0.025

Reagent/Standard	Lot/Log #
SODIUM THIOSULFATE, 0.025N, 4LITRE	W3105
IODINE SOLUTION .025N 1L	W3114
Starch Solution, 4L	W3149

Seq	Lab ID	True Value (mg/l)	DF	Initial Weight (g)	Final Volume (ml)	T1 (ml)	T2 Initial	T2 Final	T2 Diff. (ml)	T1 - T2 Diff (mL)	Value Corrected With Blank	Result (ppm)	Anal Date	Anal Time
13	Q1746-02		1	5.01	50	2.00	0.00	1.86	1.86	0.14	0.04	3.19	04/08/2025	15:22
14	Q1746-04		1	5.03	50	2.00	0.00	1.84	1.84	0.16	0.06	4.77	04/08/2025	15:24
15	Q1748-04		1	5.01	50	2.00	0.00	1.86	1.86	0.14	0.04	3.19	04/08/2025	15:26
16	Q1748-08		1	5.05	50	2.00	0.00	1.88	1.88	0.12	0.02	1.58	04/08/2025	15:28
17	Q1749-04		1	5.04	50	2.00	0.00	1.84	1.84	0.16	0.06	4.76	04/08/2025	15:30

T1 = Titrant1

T2 = Titrant2

T2 Diff = T2 Final - T2 Initial

Value Corrected With Blank = ((T1 - T2 Diff) - Blank Correction(BL))

Result = ((T1 * Normality1) - ((T1 - Value Corrected With Blank) * Normality2)) * Constant / Initial Volume

SOP ID : M3060A,7196A-Hex.Chromium-26

SDG No : N/A

Start Digest Date: 04/07/2025 Time : 11:40 Temp : 90 °C

Matrix : SOIL

End Digest Date: 04/07/2025 Time : 12:40 Temp : 95 °C

Pipette ID : WC

11 batch
04/07/2025 13:00 90 °C
04/07/2025 14:00 95 °C *RM*

Balance ID : WC SC-7

Hood ID : HOOD#3

Digestion tube ID : M6054

Block Thermometer ID : WC-Block#1

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

Filter paper ID : 400213

Prep Technician Signature: *RM*

Weigh By : RM

pH Meter ID : WC pH meter-1

Supervisor Signature: *12*

Standardized Name	MLS USED	STD REF. # FROM LOG
PRE-DIGESTION SPIKE	2.0ML	WP111315
INSOLUBLE SPIKE	0.02GM	W2202
POST-DIGESTION SPIKE	2.0ML	WP111315
LCSS	1.0ML	WP111316
PBS003	50ML	W3112

Chemical Used	ML/SAMPLE USED	Lot Number
MAGNESIUM CHLORIDE	0.4GM	W3152
PHOSPHATE BUFFER	0.5ML	WP110498
HEX. DIGESTION SOLN.	50.0ML	WP112281
5M HNO3	5-7ML	WP110381
5N H2SO4	1-3ML	WP110380
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	Vol(ml)	Comment
CAL1	CAL1	2.5ML	W3112
CAL2	CAL2	0.2ML	WP112618
CAL3	CAL3	0.5ML	WP112618
CAL4	CAL4	1ML	WP112618
CAL5	CAL5	0.2ML	WP111315
CAL6	CAL6	1ML	WP111315
CAL7	CAL7	2.0ML	WP111315
ICV	ICV	1ML	WP111316
ICB	ICB	2.5ML	W3112
CCV	CCV	1ML	WP111315
CCB	CCB	2.5ML	W3112

Extraction Conformance/Non-Conformance Comments:

04/07/2025 *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
PB167461BL	PBS461	2.50	100	N/A	N/A	N/A	N/A	N/A	N/A
PB167461BS	LCS461	2.50	100	N/A	N/A	N/A	N/A	N/A	N/A
Q1656-04	VNJ239	2.56	100	N/A	N/A	N/A	N/A	N/A	N/A
Q1712-01	Z-05A	2.51	100	N/A	N/A	N/A	N/A	N/A	N/A
Q1712-01DUP	Z-05ADUP	2.51	100	N/A	N/A	N/A	N/A	N/A	N/A
Q1712-01MSPre	Z-05AMSPRE	2.52	100	N/A	N/A	N/A	N/A	N/A	N/A
Q1712-01MS2Ins	Z-05AMS2INS	2.52	100	N/A	N/A	N/A	N/A	N/A	N/A
Q1712-01MS3Post	Z-05AMS3POST	2.51	100	N/A	N/A	N/A	N/A	N/A	N/A
Q1712-05	TT-7	2.55	100	N/A	N/A	N/A	N/A	N/A	N/A
Q1732-01	TT-8	2.57	100	N/A	N/A	N/A	N/A	N/A	N/A
Q1737-01	RT3069	2.52	100	N/A	N/A	N/A	N/A	N/A	N/A
Q1740-01	TP-20	2.55	100	N/A	N/A	N/A	N/A	N/A	N/A
Q1743-01	TP-16	2.57	100	N/A	N/A	N/A	N/A	N/A	N/A
Q1744-01	B-158-SB01	2.56	100	N/A	N/A	N/A	N/A	N/A	N/A
Q1744-03	B-158-SB02	2.53	100	N/A	N/A	N/A	N/A	N/A	N/A
Q1745-01	IB-6A-WC	2.51	100	N/A	N/A	N/A	N/A	N/A	N/A
Q1745-09	IB-6.5-WC	2.52	100	N/A	N/A	N/A	N/A	N/A	N/A
Q1746-01	B-149-SB01	2.58	100	N/A	N/A	N/A	N/A	N/A	N/A
Q1746-03	B-149-SB02	2.54	100	N/A	N/A	N/A	N/A	N/A	N/A

WORKLIST(Hardcopy Internal Chain)

WorkList Name : hex-4-07

WorkList ID : 188755

Department : Distillation

Date : 04-07-2025 08:12:25

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q1656-04	VNJ239	Solid	Hexavalent Chromium	Cool 4 deg C	PSEG03	I41	03/26/2025	7196A
Q1712-01	Z-05A	Solid	Hexavalent Chromium	Cool 4 deg C	PSEG03	L22	04/02/2025	7196A
Q1712-05	TT-7	Solid	Hexavalent Chromium	Cool 4 deg C	PSEG03	L22	04/03/2025	7196A
Q1732-01	TT-8	Solid	Hexavalent Chromium	Cool 4 deg C	PSEG03	L31	04/04/2025	7196A
Q1737-01	RT3069	Solid	Hexavalent Chromium	Cool 4 deg C	PSEG03	L31	04/04/2025	7196A
Q1740-01	TP-20	Solid	Hexavalent Chromium	Cool 4 deg C	PSEG03	L21	04/04/2025	7196A
Q1743-01	TP-16	Solid	Hexavalent Chromium	Cool 4 deg C	PSEG03	L33	04/07/2025	7196A

Date/Time

Raw Sample Received by:

Raw Sample Relinquished by:

Date/Time

Raw Sample Received by:

Raw Sample Relinquished by:

WORKLIST(Hardcopy Internal Chain)

WorkList Name : HEX-04-07

WorkList ID : 188783

Department : Distillation

Date : 04-07-2025 11:15:26

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q1744-01	B-158-SB01	Solid	Hexavalent Chromium	Cool 4 deg C	PORT06	L41	04/05/2025	7196A
Q1744-03	B-158-SB02	Solid	Hexavalent Chromium	Cool 4 deg C	PORT06	L41	04/05/2025	7196A
Q1745-01	IB-6A-WC	Solid	Hexavalent Chromium	Cool 4 deg C	PSEG03	L41	04/07/2025	7196A
Q1745-09	IB-6.5-WC	Solid	Hexavalent Chromium	Cool 4 deg C	PSEG03	L41	04/07/2025	7196A
Q1746-01	B-149-SB01	Solid	Hexavalent Chromium	Cool 4 deg C	PORT06	L41	04/05/2025	7196A
Q1746-03	B-149-SB02	Solid	Hexavalent Chromium	Cool 4 deg C	PORT06	L41	04/06/2025	7196A

Date/Time 04/07/2025 11:55
 Raw Sample Received by: R17 Lewis
 Raw Sample Relinquished by: 20760007

Date/Time 04/07/2025 13:15
 Raw Sample Received by: 20760007
 Raw Sample Relinquished by: R17 Lewis

SOP ID : M9030B-Sulfide-12

SDG No : N/A

Matrix : SOIL

Pipette ID : WC

Balance ID : WC SC-7

Hood ID : HOOD#1

Block ID : MC-1,MC-2

Weigh By : RM

Start Digest Date: 04/08/2025 Time : 12:50 Temp : N/A

End Digest Date: 04/08/2025 Time : 14:20 Temp : N/A

Digestion tube ID : M5595

Filter paper ID : N/A

pH Meter ID : N/A

Block Thermometer ID : N/A

Prep Technician Signature: RM

Supervisor Signature: 12

Standard Name	MLS USED	STD REF. # FROM LOG
PBS003	50.0ML	W3112
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Chemical Used	ML/SAMPLE USED	Lot Number
0.5M ZINC ACETATE	5.0ML	WP111004
FORMALDEHYDE	2.0ML	W2725
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
N/A	N/A	N/A

Extraction Conformance/Non-Conformance Comments:

N/A

04/08/2025
RM

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
PB167494BL	PBS494	5.00	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1712-04DUP	Z-05ADUP	5.07	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1712-04	Z-05A	5.07	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1712-08	TT-7	5.04	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1732-04	TT-8	5.04	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1737-02	RT3069	5.07	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1740-04	TP-20	5.01	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1743-04	TP-16	5.05	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1744-02	B-158-SB01	5.06	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1744-04	B-158-SB02	5.07	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1745-04	IB-6A-WC	5.02	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1745-12	IB-6.5-WC	5.04	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1746-02	B-149-SB01	5.01	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1746-04	B-149-SB02	5.03	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1748-04	IB-1.5-WC	5.01	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1748-08	IB-2A-WC	5.05	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1749-04	TP-14	5.04	50	N/A	N/A	N/A	N/A	N/A	N/A

WORKLIST(Hardcopy Internal Chain)

WorkList Name : rsul-4-07 WorkList ID : 188756 Department : Distillation Date : 04-07-2025 08:12:32

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q1712-04	Z-05A	Solid	Reactive Sulfide	Cool 4 deg C	PSEG03	L22	04/02/2025	9034
Q1712-08	TT-7	Solid	Reactive Sulfide	Cool 4 deg C	PSEG03	L22	04/03/2025	9034
Q1732-04	TT-8	Solid	Reactive Sulfide	Cool 4 deg C	PSEG03	L31	04/04/2025	9034
Q1737-02	RT3069	Solid	Reactive Sulfide	Cool 4 deg C	PSEG03	L31	04/04/2025	9034
Q1740-04	TP-20	Solid	Reactive Sulfide	Cool 4 deg C	PSEG03	L21	04/04/2025	9034
Q1743-04	TP-16	Solid	Reactive Sulfide	Cool 4 deg C	PSEG03	L33	04/07/2025	9034
Q1744-02	B-158-SB01	Solid	Reactive Sulfide	Cool 4 deg C	PORT06	L41	04/05/2025	9034
Q1744-04	B-158-SB02	Solid	Reactive Sulfide	Cool 4 deg C	PORT06	L41	04/05/2025	9034
Q1745-04	IB-6A-WC	Solid	Reactive Sulfide	Cool 4 deg C	PSEG03	L41	04/07/2025	9034
Q1745-12	IB-6.5-WC	Solid	Reactive Sulfide	Cool 4 deg C	PSEG03	L41	04/07/2025	9034
Q1746-02	B-149-SB01	Solid	Reactive Sulfide	Cool 4 deg C	PORT06	L41	04/05/2025	9034
Q1746-04	B-149-SB02	Solid	Reactive Sulfide	Cool 4 deg C	PORT06	L41	04/06/2025	9034
Q1748-04	IB-1.5-WC	Solid	Reactive Sulfide	Cool 4 deg C	PSEG03	L31	04/08/2025	9034
Q1748-08	IB-2A-WC	Solid	Reactive Sulfide	Cool 4 deg C	PSEG03	L31	04/08/2025	9034
Q1749-04	TP-14	Solid	Reactive Sulfide	Cool 4 deg C	PSEG03	L31	04/07/2025	9034

Date/Time 04/08/2025 11:00
 Raw Sample Received by: RM CWL
 Raw Sample Relinquished by: JOE (CWL)

Date/Time 04/08/2025 15:00
 Raw Sample Received by: RM CWL
 Raw Sample Relinquished by: RM CWL

SOP ID : M9012B-Total, Amenable and Reactive Cyanide-20

SDG No : N/A

NF

Start Digest Date: 04/07/2025
04/08/2025

Time : 15:00 Temp : N/A

Matrix : SOIL

04/11/25

End Digest Date: 04/08/2025

Time : 16:30 Temp : N/A

Pipette ID : N/A

04/07/2025

Balance ID : WC SC-7

Hood ID : HOOD#1

Digestion tube ID : M5595

Block Thermometer ID : WC CYANIDE

Block ID : MC-1, MC-2

Filter paper ID : N/A

Prep Technician Signature: NF

Weigh By : NF

pH Meter ID : N/A

Supervisor Signature: 12

Standardized Name	MLS USED	STD REF. # FROM LOG
PBS003	50ML	W3112
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Chemical Used	ML/SAMPLE USED	Lot Number
0.25N NaOH	50.0ML	WP111294
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
N/A	N/A	N/A
N/A	N/A	N/A

LAB SAMPLE ID	CLIENT SAMPLE ID	Comment

Extraction Conformance/Non-Conformance Comments:

N/A

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
04/08/2025 16:45	NF/WC	NF/WC
04/07/2025	Preparation Group	Analysis Group

Lab Sample ID	Client Sample ID	Initial Weight (g)	Final Vol (ml)	pH	Sulfide	Oxidizing	Nitrate/Nitrite	Comment	Prep Pos
PB167498BL	PBS498	5.00	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1732-04DUP	TT-8DUP	5.01	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1732-04	TT-8	5.03	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1737-02	RT3069	5.04	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1740-04	TP-20	5.01	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1743-04	TP-16	5.04	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1744-02	B-158-SB01	5.03	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1744-04	B-158-SB02	5.04	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1745-04	IB-6A-WC	5.03	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1745-12	IB-6.5-WC	5.01	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1746-02	B-149-SB01	5.02	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1746-04	B-149-SB02	5.02	50	N/A	N/A	N/A	N/A	N/A	N/A

WORKLIST(Hardcopy Internal Chain)

WorkList Name : RCN S-04072025

WorkList ID : 188793

Department : Distillation

Date : 04-07-2025 14:16:08

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q1732-04	TT-8	Solid	Reactive Cyanide	Cool 4 deg C	PSEG03	L31	04/04/2025	9012B
Q1737-02	RT3069	Solid	Reactive Cyanide	Cool 4 deg C	PSEG03	L31	04/04/2025	9012B
Q1740-04	TP-20	Solid	Reactive Cyanide	Cool 4 deg C	PSEG03	L21	04/04/2025	9012B
Q1743-04	TP-16	Solid	Reactive Cyanide	Cool 4 deg C	PSEG03	L33	04/07/2025	9012B
Q1744-02	B-158-SB01	Solid	Reactive Cyanide	Cool 4 deg C	PORT06	L41	04/05/2025	9012B
Q1744-04	B-158-SB02	Solid	Reactive Cyanide	Cool 4 deg C	PORT06	L41	04/05/2025	9012B
Q1745-04	IB-6A-WC	Solid	Reactive Cyanide	Cool 4 deg C	PSEG03	L41	04/07/2025	9012B
Q1745-12	IB-6.5-WC	Solid	Reactive Cyanide	Cool 4 deg C	PSEG03	L41	04/07/2025	9012B
Q1746-02	B-149-SB01	Solid	Reactive Cyanide	Cool 4 deg C	PORT06	L41	04/05/2025	9012B
Q1746-04	B-149-SB02	Solid	Reactive Cyanide	Cool 4 deg C	PORT06	L41	04/06/2025	9012B

Date/Time 04-07-2025 14:25
 Raw Sample Received by: NF(WC)
 Raw Sample Relinquished by: Macc

Date/Time 04-07-2025 16:00
 Raw Sample Received by: JH Gooey
 Raw Sample Relinquished by: NF(WC)

SOP ID : M9012B-Total, Amenable and Reactive Cyanide-20

SDG No : N/A

Start Digest Date: ~~04/07/2025~~ 04/08/2025 Time : 15:00 Temp : N/A

Matrix : WATER

End Digest Date: ~~04/07/2025~~ 04/08/2025 Time : 16:30 Temp : N/A

Pipette ID : N/A

04/07/2025

Balance ID : N/A

Hood ID : HOOD#1

Digestion tube ID : M5595

Block Thermometer ID : N/A

Block ID : MC-1, MC-2

Filter paper ID : N/A

Prep Technician Signature: NF

Weigh By : N/A

pH Meter ID : N/A

Supervisor Signature: 12

Standardized Name	MLS USED	STD REF. # FROM LOG
PBW	50.0ML	W3112
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Chemical Used	ML/SAMPLE USED	Lot Number
0.25N NaOH	50.0ML	WP111294
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
N/A	N/A	N/A
N/A	N/A	N/A

LAB SAMPLE ID	CLIENT SAMPLE ID	Comment

Extraction Conformance/Non-Conformance Comments:

N/A

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
04/07/2025 04/08/2025, 16:45	NF/WC	NF/WC
04/07/2025	Preparation Group	Analysis Group

Lab Sample ID	Client Sample ID	Initial Vol (ml)	Final Vol (ml)	pH	Sulfide	Oxidizing	Nitrate/ Nitrite	Comment	Prep Pos
PB167505BL	PBW505	50	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1739-02DUP	WC-LIQUID-20250404DUP	50	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1739-02	WC-LIQUID-20250404	50	50	N/A	N/A	N/A	N/A	N/A	N/A

WORKLIST(Hardcopy Internal Chain)

WorkList Name : RCN W-04072025 WorkList ID : 188795 Department : Distillation Date : 04-07-2025 14:18:22

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q1739-02	WC-LIQUID-20250404	Water	Reactive Cyanide	Cool 4 deg C	PARS02	L31	04/04/2025	9012B

Date/Time 04.07.2025 , 14:25
 Raw Sample Received by: NF(WC)
 Raw Sample Relinquished by: JH WNC

Date/Time 04.07.2025 , 16:00
 Raw Sample Received by: JH WNC
 Raw Sample Relinquished by: NFWC

Instrument ID: WC PH METER-1

Daily Analysis Runlog For Sequence/QC Batch ID # LB135327

Review By	jignesh	Review On	4/7/2025 4:11:26 PM
Supervise By	Iwona	Supervise On	4/7/2025 4:25:16 PM
SubDirectory	LB135327	Test	Corrosivity
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	W3178,W3093,W3191,W3071,W3161,W3072		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	CAL1	CAL1	CAL	04/07/25 16:10		Jignesh	OK
2	CAL2	CAL2	CAL	04/07/25 16:11		Jignesh	OK
3	CAL3	CAL3	CAL	04/07/25 16:12		Jignesh	OK
4	ICV	ICV	ICV	04/07/25 16:15		Jignesh	OK
5	CCV1	CCV1	CCV	04/07/25 16:20		Jignesh	OK
6	Q1743-04	TP-16	SAM	04/07/25 16:25		Jignesh	OK
7	Q1744-02	B-158-SB01	SAM	04/07/25 16:30		Jignesh	OK
8	Q1744-04	B-158-SB02	SAM	04/07/25 16:33		Jignesh	OK
9	Q1745-04	IB-6A-WC	SAM	04/07/25 16:40		Jignesh	OK
10	Q1745-12	IB-6.5-WC	SAM	04/07/25 16:47		Jignesh	OK
11	Q1746-02	B-149-SB01	SAM	04/07/25 16:50		Jignesh	OK
12	Q1746-04	B-149-SB02	SAM	04/07/25 17:00		Jignesh	OK
13	Q1746-04DUP	B-149-SB02DUP	DUP	04/07/25 17:01		Jignesh	OK
14	CCV2	CCV2	CCV	04/07/25 17:05		Jignesh	OK

Instrument ID: WC PH METER-1

Daily Analysis Runlog For Sequence/QC Batch ID # LB135328

Review By	jignesh	Review On	4/7/2025 4:09:30 PM
Supervise By	Iwona	Supervise On	4/7/2025 4:25:02 PM
SubDirectory	LB135328	Test	pH
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	W3178,W3093,W3191,W3071,W3161,W3072		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	CAL1	CAL1	CAL	04/07/25 16:10		Jignesh	OK
2	CAL2	CAL2	CAL	04/07/25 16:11		Jignesh	OK
3	CAL3	CAL3	CAL	04/07/25 16:12		Jignesh	OK
4	ICV	ICV	ICV	04/07/25 16:15		Jignesh	OK
5	CCV1	CCV1	CCV	04/07/25 16:20		Jignesh	OK
6	Q1744-01	B-158-SB01	SAM	04/07/25 16:30		Jignesh	OK
7	Q1744-03	B-158-SB02	SAM	04/07/25 16:33		Jignesh	OK
8	Q1746-01	B-149-SB01	SAM	04/07/25 16:50		Jignesh	OK
9	Q1746-03	B-149-SB02	SAM	04/07/25 17:00		Jignesh	OK
10	Q1746-03DUP	B-149-SB02DUP	DUP	04/07/25 17:01		Jignesh	OK
11	CCV2	CCV2	CCV	04/07/25 17:05		Jignesh	OK

Instrument ID: SPECTROPHOTOMETER-1

Daily Analysis Runlog For Sequence/QC Batch ID # LB135331

Review By	rubina	Review On	4/7/2025 4:24:48 PM
Supervise By	Iwona	Supervise On	4/11/2025 3:14:36 PM
SubDirectory	LB135331	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	WP112566,WP110380,WP110381,WP111249		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	CAL1	CAL1	CAL	04/07/25 14:55		rubina	OK
2	CAL2	CAL2	CAL	04/07/25 14:56		rubina	OK
3	CAL3	CAL3	CAL	04/07/25 14:57		rubina	OK
4	CAL4	CAL4	CAL	04/07/25 14:58		rubina	OK
5	CAL5	CAL5	CAL	04/07/25 14:59		rubina	OK
6	CAL6	CAL6	CAL	04/07/25 15:00		rubina	OK
7	CAL7	CAL7	CAL	04/07/25 15:01		rubina	OK
8	ICV	ICV	ICV	04/07/25 15:02		rubina	OK
9	ICB	ICB	ICB	04/07/25 15:03		rubina	OK
10	CCV1	CCV1	CCV	04/07/25 15:04		rubina	OK
11	CCB1	CCB1	CCB	04/07/25 15:05		rubina	OK
12	RL Check	RL Check	SAM	04/07/25 15:06		rubina	OK
13	PB167461BL	PB167461BL	MB	04/07/25 15:07		rubina	OK
14	PB167461BS	PB167461BS	LCS	04/07/25 15:08		rubina	OK
15	Q1656-04	VNJ239	SAM	04/07/25 15:09		rubina	OK
16	Q1712-01	Z-05A	SAM	04/07/25 15:10		rubina	OK
17	Q1712-01DUP	Z-05ADUP	DUP	04/07/25 15:11		rubina	OK
18	Q1712-01MSPre	Z-05AMS	MS	04/07/25 15:12		rubina	OK

Instrument ID: SPECTROPHOTOMETER-1

Daily Analysis Runlog For Sequence/QC Batch ID # LB135331

Review By	rubina	Review On	4/7/2025 4:24:48 PM
Supervise By	Iwona	Supervise On	4/11/2025 3:14:36 PM
SubDirectory	LB135331	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	WP112566,WP110380,WP110381,WP111249		

19	Q1712-01MS2Ins	Z-05AMS	MS	04/07/25 15:13		rubina	OK
20	Q1712-01MS3Post	Z-05AMS	MS	04/07/25 15:14		rubina	OK
21	Q1712-05	TT-7	SAM	04/07/25 15:15		rubina	OK
22	Q1732-01	TT-8	SAM	04/07/25 15:16		rubina	OK
23	CCV2	CCV2	CCV	04/07/25 15:17		rubina	OK
24	CCB2	CCB2	CCB	04/07/25 15:18		rubina	OK
25	Q1737-01	RT3069	SAM	04/07/25 15:19		rubina	OK
26	Q1740-01	TP-20	SAM	04/07/25 15:20		rubina	OK
27	Q1743-01	TP-16	SAM	04/07/25 15:21		rubina	OK
28	Q1744-01	B-158-SB01	SAM	04/07/25 15:22		rubina	OK
29	Q1744-03	B-158-SB02	SAM	04/07/25 15:23		rubina	OK
30	Q1745-01	IB-6A-WC	SAM	04/07/25 15:24		rubina	OK
31	Q1745-09	IB-6.5-WC	SAM	04/07/25 15:25		rubina	OK
32	Q1746-01	B-149-SB01	SAM	04/07/25 15:26		rubina	OK
33	Q1746-03	B-149-SB02	SAM	04/07/25 15:27		rubina	OK
34	CCV3	CCV3	CCV	04/07/25 15:28		rubina	OK
35	CCB3	CCB3	CCB	04/07/25 15:29		rubina	OK

Instrument ID: FLAME

Daily Analysis Runlog For Sequence/QC Batch ID # LB135338

Review By	rubina	Review On	4/8/2025 4:16:45 PM
Supervise By	Iwona	Supervise On	4/8/2025 4:16:54 PM
SubDirectory	LB135338	Test	Ignitability
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	N/A		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	Q1744-02	B-158-SB01	SAM	04/08/25 11:10		rubina	OK
2	Q1744-02DUP	B-158-SB01DUP	DUP	04/08/25 11:17		rubina	OK
3	Q1744-04	B-158-SB02	SAM	04/08/25 11:24		rubina	OK
4	Q1745-01	IB-6A-WC	SAM	04/08/25 11:32		rubina	OK
5	Q1745-04	IB-6A-WC	SAM	04/08/25 11:40		rubina	OK
6	Q1745-09	IB-6.5-WC	SAM	04/08/25 11:48		rubina	OK
7	Q1745-12	IB-6.5-WC	SAM	04/08/25 11:55		rubina	OK
8	Q1746-02	B-149-SB01	SAM	04/08/25 12:02		rubina	OK
9	Q1746-04	B-149-SB02	SAM	04/08/25 12:10		rubina	OK

Instrument ID: KONELAB

Daily Analysis Runlog For Sequence/QC Batch ID # LB135341

Review By	Niha	Review On	4/8/2025 4:17:46 PM
Supervise By	Iwona	Supervise On	4/8/2025 4:36:03 PM
SubDirectory	LB135341	Test	Reactive Cyanide
STD. NAME	STD REF.#		
ICAL Standard	WP112629,WP112630,WP112631,WP112632,WP112633,WP112634,WP112635		
ICV Standard	WP112636		
CCV Standard	WP112630		
ICSA Standard	N/A		
CRI Standard	N/A		
LCS Standard	N/A		
Chk Standard	WP111035,WP110103,WP112637		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	0.0PPBCN	0.0PPBCN	CAL1	04/08/25 10:23		Niha	OK
2	5.0PPBCN	5.0PPBCN	CAL2	04/08/25 10:23		Niha	OK
3	10PPBCN	10PPBCN	CAL3	04/08/25 10:23		Niha	OK
4	50PPBCN	50PPBCN	CAL4	04/08/25 10:23		Niha	OK
5	100PPBCN	100PPBCN	CAL5	04/08/25 10:23		Niha	OK
6	250PPBCN	250PPBCN	CAL6	04/08/25 10:23		Niha	OK
7	500PPBCN	500PPBCN	CAL7	04/08/25 10:23		Niha	OK
8	ICV1	ICV1	ICV	04/08/25 10:58		Niha	OK
9	ICB1	ICB1	ICB	04/08/25 10:58		Niha	OK
10	CCV1	CCV1	CCV	04/08/25 10:58		Niha	OK
11	CCB1	CCB1	CCB	04/08/25 10:58		Niha	OK
12	PB167498BL	PB167498BL	MB	04/08/25 10:58		Niha	OK
13	Q1732-04	TT-8	SAM	04/08/25 10:58		Niha	OK
14	Q1732-04DUP	TT-8DUP	DUP	04/08/25 11:05		Niha	OK
15	Q1737-02	RT3069	SAM	04/08/25 11:05		Niha	OK
16	Q1740-04	TP-20	SAM	04/08/25 11:05		Niha	OK
17	Q1743-04	TP-16	SAM	04/08/25 11:05		Niha	OK
18	Q1744-02	B-158-SB01	SAM	04/08/25 11:06		Niha	OK

Instrument ID: KONELAB

Daily Analysis Runlog For Sequence/QC Batch ID # LB135341

Review By	Niha	Review On	4/8/2025 4:17:46 PM
Supervise By	Iwona	Supervise On	4/8/2025 4:36:03 PM
SubDirectory	LB135341	Test	Reactive Cyanide
STD. NAME	STD REF.#		
ICAL Standard	WP112629,WP112630,WP112631,WP112632,WP112633,WP112634,WP112635		
ICV Standard	WP112636		
CCV Standard	WP112630		
ICSA Standard	N/A		
CRI Standard	N/A		
LCS Standard	N/A		
Chk Standard	WP111035,WP110103,WP112637		

19	Q1744-04	B-158-SB02	SAM	04/08/25 11:13		Niha	OK
20	Q1745-04	IB-6A-WC	SAM	04/08/25 11:13		Niha	OK
21	Q1745-12	IB-6.5-WC	SAM	04/08/25 11:13		Niha	OK
22	CCV2	CCV2	CCV	04/08/25 11:13		Niha	OK
23	CCB2	CCB2	CCB	04/08/25 11:20		Niha	OK
24	Q1746-02	B-149-SB01	SAM	04/08/25 11:21		Niha	OK
25	Q1746-04	B-149-SB02	SAM	04/08/25 11:21		Niha	OK
26	PB167505BL	PB167505BL	MB	04/08/25 11:21		Niha	OK
27	Q1739-02	WC-LIQUID-20250404	SAM	04/08/25 11:28		Niha	OK
28	Q1739-02DUP	WC-LIQUID-20250404	DUP	04/08/25 11:28		Niha	OK
29	CCV3	CCV3	CCV	04/08/25 11:28		Niha	OK
30	CCB3	CCB3	CCB	04/08/25 11:28		Niha	OK

Instrument ID: TITRAMETRIC

Daily Analysis Runlog For Sequence/QC Batch ID # LB135345

Review By	rubina	Review On	4/8/2025 3:47:43 PM
Supervise By	Iwona	Supervise On	4/8/2025 4:16:02 PM
SubDirectory	LB135345	Test	Reactive Sulfide
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	W3105,W3114,W3149		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	PB167494BL	PB167494BL	MB	04/08/25 14:50		rubina	OK
2	Q1712-04	Z-05A	SAM	04/08/25 14:53		rubina	OK
3	Q1712-04DUP	Z-05ADUP	DUP	04/08/25 14:56		rubina	OK
4	Q1712-08	TT-7	SAM	04/08/25 14:58		rubina	OK
5	Q1732-04	TT-8	SAM	04/08/25 15:00		rubina	OK
6	Q1737-02	RT3069	SAM	04/08/25 15:03		rubina	OK
7	Q1740-04	TP-20	SAM	04/08/25 15:06		rubina	OK
8	Q1743-04	TP-16	SAM	04/08/25 15:09		rubina	OK
9	Q1744-02	B-158-SB01	SAM	04/08/25 15:12		rubina	OK
10	Q1744-04	B-158-SB02	SAM	04/08/25 15:15		rubina	OK
11	Q1745-04	IB-6A-WC	SAM	04/08/25 15:18		rubina	OK
12	Q1745-12	IB-6.5-WC	SAM	04/08/25 15:20		rubina	OK
13	Q1746-02	B-149-SB01	SAM	04/08/25 15:22		rubina	OK
14	Q1746-04	B-149-SB02	SAM	04/08/25 15:24		rubina	OK
15	Q1748-04	IB-1.5-WC	SAM	04/08/25 15:26		rubina	OK
16	Q1748-08	IB-2A-WC	SAM	04/08/25 15:28		rubina	OK
17	Q1749-04	TP-14	SAM	04/08/25 15:30		rubina	OK

Prep Standard - Chemical Standard Summary

Order ID : Q1744

Test : Corrosivity, Hexavalent Chromium, Ignitability, Percent Solids, pH, Reactive Cyanide, Reactive Sulfide, Trivalent Chromium

Prepbatch ID : PB167461, PB167494, PB167498,

Sequence ID/Qc Batch ID: LB135327, LB135328, LB135331, LB135338, LB135341, LB135345, LB135401,

Standard ID :

WP110103, WP110380, WP110381, WP110498, WP111004, WP111035, WP111249, WP111294, WP111296, WP111315, WP111316, WP1112281, WP1112566, WP112628, WP112629, WP112630, WP112631, WP112632, WP112633, WP112634, WP112635, WP112636, WP112637,

Chemical ID :

E3915, M5673, M6096, M6121, M6126, W2202, W2511, W2651, W2652, W2668, W2708, W2725, W2882, W2926, W2979, W3019, W3071, W3072, W3093, W3105, W3112, W3113, W3114, W3138, W3139, W3149, W3152, W3154, W3161, W3163, W3178, W3191,

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>
539	CN BUFFER	WP110103	10/08/2024	04/08/2025	Rubina Mughal	WETCHEM_SCALE_5 (WC SC-5)	None	Iwona Zarych 10/08/2024

FROM 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>
126	5N sulfuric acid	WP110380	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

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>
1836	HNO3 Hex-Chrome, 5M	WP110381	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	WP110498	10/31/2024	04/29/2025	Rubina Mughal	WETCHEM_SCALE_5 (WC SC-5)	None	Iwona Zarych
								10/31/2024

FROM 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>
160	0.5M ZINC ACETATE	WP111004	12/09/2024	05/13/2025	Rubina Mughal	WETCHEM_SCALE_8 (WC-7)	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 12/09/2024
FROM 0.88900L of W3112 + 1.00000ml of M6121 + 110.00000gram of W2926 = 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>
607	PYRIDINE-BARBITURIC ACID	WP111035	12/09/2024	04/30/2025	Niha Farheen Shaik	WETCHEM_S CALE_5 (WC SC-5)	Glass Pipette-A	Iwona Zarych 12/10/2024
<u>FROM</u>	145.00000ml of W3112 + 15.00000gram of W2882 + 15.00000ml of M6121 + 75.00000ml of W3019 = Final Quantity: 250.000 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>
3354	Hexchrome Cleaning Solution	WP111249	12/30/2024	05/13/2025	Rubina Mughal	None	None	Iwona Zarych
								01/02/2025

FROM 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>
11	Sodium hydroxide absorbing solution 0.25 N	WP111294	01/07/2025	07/07/2025	Niha Farheen Shaik	WETCHEM_S CALE_5 (WC SC-5)	None	Iwona Zarych
								01/07/2025

FROM 21.00000L of W3112 + 210.00000gram of W3113 = Final Quantity: 21.000 L

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>
3371	Cyanide LCS Spike Solution, 5PPM	WP111296	01/07/2025	07/07/2025	Niha Farheen Shaik	None	WETCHEM_FIPETTE_3 (WC)	Iwona Zarych 01/07/2025

FROM 1.00000ml of W3138 + 199.00000ml of WP111294 = 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	WP111315	01/09/2025	07/09/2025	Rubina Mughal	WETCHEM_SCALE_5 (WC SC-5)	None	Iwona Zarych 01/09/2025

FROM 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	WP111316	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 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	WP112281	03/13/2025	04/13/2025	Rubina Mughal	WETCHEM_SCALE_8 (WC SC-7)	None	Iwona Zarych 03/13/2025
<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>
114	hexavalent chromium color reagent	WP112566	04/02/2025	04/09/2025	Rubina Mughal	WETCHEM_SCALE_5 (WC SC-5)	None	Iwona Zarych 04/03/2025
<u>FROM</u> 0.25000gram of W2979 + 50.00000ml of E3915 = 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>
3456	Cyanide Intermediate Working Std, 5PPM	WP112628	04/08/2025	04/09/2025	Niha Farheen Shaik	None	WETCHEM_PIPETTE_3	Iwona Zarych
FROM 0.25000ml of W3154 + 49.75000ml of WP111294 = 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>
4	Calibration standard 500 ppb	WP112629	04/08/2025	04/09/2025	Niha Farheen Shaik	None	Glass Pipette-A	Iwona Zarych 04/09/2025

FROM 45.00000ml of WP111294 + 5.00000ml of WP112628 = 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>
3761	Calibration-CCV CN Standard 250 ppb	WP112630	04/08/2025	04/09/2025	Niha Farheen Shaik	None	Glass Pipette-A	Iwona Zarych 04/09/2025

FROM 2.50000ml of WP112628 + 47.50000ml of WP111294 = 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>
6	Calibration Standard 100 ppb	WP112631	04/08/2025	04/09/2025	Niha Farheen Shaik	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 04/09/2025
<u>FROM</u>	1.00000ml of WP112628 + 49.00000ml of WP111294 = 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	WP112632	04/08/2025	04/09/2025	Niha Farheen Shaik	None	WETCHEM_PIPETTE_3	Iwona Zarych 04/09/2025
<u>FROM</u> 0.50000ml of WP112628 + 49.50000ml of WP111294 = 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	WP112633	04/08/2025	04/09/2025	Niha Farheen Shaik	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 04/09/2025
<u>FROM</u>	1.00000ml of WP112629 + 49.00000ml of WP111294 = 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>
9	Calibration Standard 5 ppb	WP112634	04/08/2025	04/09/2025	Niha Farheen Shaik	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 04/09/2025
<u>FROM</u>	0.50000ml of WP112629 + 49.50000ml of WP111294 = 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>
167	0 ppb CN calibration std	WP112635	04/08/2025	04/09/2025	Niha Farheen Shaik	None	None	Iwona Zarych
								04/09/2025

FROM 100.00000ml of WP111294 = 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>
2168	RCN ICV STD, 100 PPB	WP112636	04/08/2025	04/09/2025	Niha Farheen Shaik	None	WETCHEM_FIPETTE_3	Iwona Zarych
							(WC)	04/09/2025

FROM 1.00000ml of WP111296 + 49.00000ml of WP111294 = 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	WP112637	04/08/2025	04/09/2025	Niha Farheen Shaik	WETCHEM_SCALE_5 (WCS-5)	None	Iwona Zarych 04/09/2025
<u>FROM</u>	0.08000gram of W3139 + 20.00000ml of W3112 = Final Quantity: 20.000 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	09/26/2025	03/26/2025 / Rajesh	03/19/2025 / RUPESH	E3915

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

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

CHEMICAL RECEIPT LOG BOOK

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.	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 #
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.	EMD-FX0410-5 / FORMALDEHYDE SOLUTION 450ML	60045	06/22/2025	08/19/2024 / lwona	06/22/2020 / apatel	W2725

CHEMICAL RECEIPT LOG BOOK

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	1.00132.0100	04/30/2025	12/07/2021 /	11/30/2021 / apatel	W2882

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	J4296-1 / ZINC ACETATE,DIHYD,CRYST,AC S,500G	383058	07/05/2027	07/05/2022 / ketankumar	07/05/2022 / ketankumar	W2926

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

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 #
PCI Scientific Supply, Inc.	AL14455-3 / buffer solution pH 7 yellow	4308H30	07/31/2025	01/02/2024 / JIGNESH	12/06/2023 / lwona	W3071

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	AL14940-1 / Buffer Solution, PH12 (500ml)	2310P21	04/30/2025	01/02/2024 / JIGNESH	12/07/2023 / lwona	W3072

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	566002 / BUFFER PH 7.00 GREEN 1PINT PK6	44001f99	12/31/2025	04/03/2024 / jignesh	04/02/2024 / jignesh	W3093

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	AL69870-8 / SODIUM THIOSULFATE,0.025N,4LITRE	4403S13	09/30/2025	04/22/2024 / lwona	04/22/2024 / lwona	W3105

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.	AL35830-4 / IODINE SOLUTION .025N 1L	2405D89	05/31/2025	07/10/2024 / lwona	07/10/2024 / lwona	W3114

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	44080060	01/30/2025	09/06/2024 / lwona	08/28/2024 / lwona	W3138

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.	AL70850-8 / Starch Solution, 4L	4408P62	08/31/2026	10/16/2024 / Iwona	10/16/2024 / Iwona	W3149

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	01237-10KG / Megnasium 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.	RC2543-4 / CYANIDE STD 1000PPM 4OZ	1411J58	05/31/2025	12/02/2024 / Iwona	12/02/2024 / Iwona	W3154

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	AL13850-1 / Buffer Solution, PH2 (500ml)	2411E26	10/31/2026	12/09/2024 / Iwona	12/09/2024 / Iwona	W3161

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

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	AL14055-3 / PH 4 BUFFER SOLUTION	2411A93	10/30/2026	04/01/2025 / JIGNESH	01/27/2025 / jignesh	W3178

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	1601-1 / PH 10.01 BUFFER,COLOR CD 475ML	2410F80	03/31/2026	04/01/2025 / JIGNESH	03/13/2025 / jignesh	W3191

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

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

Order our products online www.alfa.com

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 %

Order our products online [alfa.com](https://www.thermofisher.com)

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

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.

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 ₂ HPO ₄) (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 ₄)	<= 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, FSC22000
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

W3071
Rec 12/6/23

Certificate of Analysis 12

Buffer, Reference Standard, pH 7.00 ± 0.01 at 25°C (Color Coded Yellow)

Lot Number: 4308H30

Product Number: 1551

Manufacture Date: AUG 09, 2023

Expiration Date: JUL 2025

The certified value for this product is confirmed in independent testing by a second qualified chemist.

The NIST traceable pH value is certified to ±0.01 at 25 °C only. All other pH values at their corresponding temperatures are accurate to ± 0.05.

°C	0	5	10	15	20	25	30	35	40	45	50
pH	7.12	7.09	7.06	7.04	7.02	7.00	6.99	6.98	6.98	6.97	6.97

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Sodium Phosphate Dibasic	7558-79-4	ACS
Potassium Dihydrogen Phosphate	7778-77-0	ACS
Preservative	Proprietary	
Yellow Dye	Proprietary	
Sodium Hydroxide	1310-73-2	Reagent

Test	Specification	Result
Appearance	Yellow liquid	Passed

*Not a certified value.

Test	Certified Value	Uncertainty	NIST SRM#
pH at 25°C (Method: SQCP027, SQCP033)	7.002	0.02	186-I-g, 186-II-g, 191d

Specification	Reference
Commercial Buffer Solutions	ASTM (D 1293 B)
Buffer A	ASTM (D 5464)
Buffer A	ASTM (D 5128)

pH measurements were performed in our Batesville, IN laboratory under ISO/IEC 17025 accreditation (ANAB Certificate L2387.02) and are certified traceable to National Institute of Standards and Technology (NIST) Standard Reference Material as indicated above via an unbroken chain of comparisons. The uncertainty is calculated from the uncertainty of the measurement variation from sample to sample, the uncertainty in the NIST Standard Reference Material, and the uncertainty of the measurement process. The uncertainty is multiplied by k=2, corresponding to 95% coverage in a normal distribution. 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)
1551-2.5	10 L Cubitainer®	24 months
1551-5	20 L Cubitainer®	24 months

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



Paul Brandon (08/09/2023)

Production Manager

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

This product was tested in an ISO 17025 Accredited Laboratory

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

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:

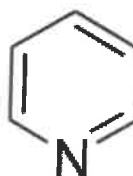
C₅H₅N

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.





RICCA CHEMICAL COMPANY®

1841 Broad Street
Pocomoke City, MD 21851
<http://www.riccachemical.com>
1-888-GO-RICCA
customerservice@riccachemical.com

W 3072
REC. 12/01/23
12

Certificate of Analysis

Buffer, Reference Standard, pH 12.00 ± 0.01 at 25°C

Lot Number: 2310P21

Product Number: 1615

Manufacture Date: OCT 24, 2023

Expiration Date: APR 2025

The certified value for this product is confirmed in independent testing by a second qualified chemist.

°C	15	20	25	30	35	40
pH	12.35	12.17	11.99	11.78	11.62	11.46

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Potassium Chloride	7447-40-7	ACS
Sodium Hydroxide	1310-73-2	Reagent

Test	Specification	Result
Appearance	Colorless liquid	Passed

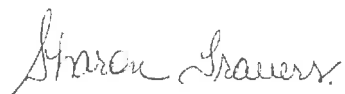
*Not a certified value.

Test	Certified Value	Uncertainty	NIST SRM#
pH at 25°C (Method: SQCP027, SQCP033)	12.005	0.02	186-I-g, 186-II-g, 191d

pH measurements were performed in our Pocomoke City, MD laboratory under ISO/IEC 17025 accreditation (ANAB Certificate L2387.01) and are certified traceable to National Institute of Standards and Technology (NIST) Standard Reference Material as indicated above via an unbroken chain of comparisons. The uncertainty is calculated from the uncertainty of the measurement variation from sample to sample, the uncertainty in the NIST Standard Reference Material, and the uncertainty of the measurement process. The uncertainty is multiplied by k=2, corresponding to 95% coverage in a normal distribution. 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)
1615-1	4 L natural poly	18 months
1615-16	500 mL clear PET-G	18 months
1615-32	1 L natural poly	18 months
1615-5	20 L Cubitainer®	18 months

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



Sharon Travers (10/24/2023)

Operations Manager

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

This product was tested in an ISO 17025 Accredited Laboratory

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



Certificate of Analysis

Date of Release: 2/26/2020

Name: Formaldehyde Solution
GR ACS
Meets ACS Specifications

Item No: FX0410 all size codes

Lot / Batch No: 60045

Country of Origin: USA

Characteristic	Requirement		Results	Units
	Min.	Max.		
Assay	36.5	38.0	36.71	%
Chloride (Cl)		5	<5	ppm
Color (APHA)		10	<10	
Form			Passes test	
Heavy metals (as Pb)		5	<5	ppm
Iron (Fe)		5	0.6	ppm
Residue after ignition		0.005	<0.0050	%
Sulfate (SO ₄)		0.002	<0.0020	%
Titration acid		0.006	<0.0060	meq/g

Heather Sinn,

Quality Control Manager

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

EMD Millipore Corporation, an affiliate of Merck KGaA, Darmstadt, Germany
290 Concord Road
Billerica, MA 01821
U.S.A

The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the U.S. and Canada.



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 ₃) ₂ 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 ₂ 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

Recd. by RS on 3/19/25

Country of Origin: United States

Packaging Site: Phillipsburg Mfg Ctr & DC

E3915

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 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

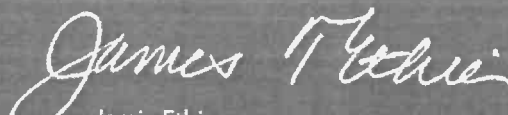


Material No.: 9673-33
Batch No.: 23D2462010

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

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 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



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
------	---------------	--------

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 ₂)	≤ 0.5 ppm	< 0.5
Phosphate (PO ₄)	≤ 0.05 ppm	< 0.03
Sulfate (SO ₄)	≤ 0.5 ppm	< 0.3
Sulfite (SO ₃)	≤ 0.8 ppm	0.3
Ammonium (NH ₄)	≤ 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

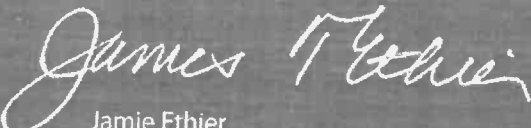
Avantor Performance Materials, LLC

100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

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

 **avantor**TM



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

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

For Microelectronic Use

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



Jamie Croak
Director Quality Operations, Bioscience Production



Certificate of Analysis

1.00132.0000 Barbituric acid for analysis EMSURE®
Batch N020065932

	Spec. Values		Batch Values	
Assay (acidimetric)	≥ 99	%	99.6	%
Identity (IR-spectrum)	passes test		passes test	
Chloride (Cl)	≤ 40	ppm	≤ 40	ppm
Heavy metals (as Pb)	≤ 50	ppm	≤ 50	ppm
Fe (Iron)	≤ 10	ppm	≤ 10	ppm
Sulfated ash	≤ 0.1	%	≤ 0.1	%
Loss on Drying (105 °C)	≤ 0.1	%	≤ 0.1	%
Suitability as reagent (for cyanide determination)	passes test		passes test	

Date of release (DD.MM.YYYY) 17.04.2020
Minimum shelf life (DD.MM.YYYY) 30.04.2025

Ioannis Chartomatsidis
Responsible laboratory manager quality control

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



CHAMPA PURIE-CHEM INDUSTRIES

ISO 9001 : 2015 CERTIFIED COMPANY

Importers Exporters Manufacturers & Marketing of Fine Chemicals & 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	
	RESULT OBTAINED	LIMITS
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

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	$\leq 0.01 \%$	< 0.01
Chloride (Cl)	$\leq 5 \text{ ppm}$	< 5
ACS – Sulfate (SO_4)	$\leq 0.003 \%$	< 0.003
Calcium (Ca)	$\leq 0.005 \%$	< 0.005
Potassium (K)	$\leq 0.01 \%$	< 0.01
Heavy Metals (as Pb)	$\leq 0.001 \%$	< 0.001
Trace Impurities – Iron (Fe)	$\leq 0.001 \%$	< 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

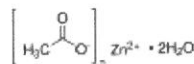
For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

Certificate of Analysis

Product Name:

Zinc acetate dihydrate - ACS reagent, $\geq 98\%$

Product Number: 383058
Batch Number: MKCQ9159
Brand: SIGALD
CAS Number: 5970-45-6
MDL Number: MFCD00066961
Formula: $C_4H_6O_4Zn \cdot 2H_2O$
Formula Weight: 219.51 g/mol
Quality Release Date: 06 JAN 2022



W2926
Open 7/5/22
received
on 7/5/22

Test	Specification	Result
Appearance (Color)	White	White
Appearance (Form)	Powder or Crystal or Chunk(s)	Powder
Infrared Spectrum	Conforms to Structure	Conforms
Insoluble Matter	$\leq 0.005 \%$	0.003 %
Calcium (Ca)	$\leq 0.005 \%$	0.003 %
Chloride (Cl)	$\leq 5 \text{ ppm}$	$< 5 \text{ ppm}$
Iron (Fe)	$\leq 5 \text{ ppm}$	$< 5 \text{ ppm}$
Potassium (K)	$\leq 0.01 \%$	0.00 %
Magnesium (Mg)	$\leq 0.005 \%$	0.003 %
Sodium (Na)	$\leq 0.05 \%$	0.03 %
Lead (Pb)	$\leq 0.002 \%$	$< 0.001 \%$
pH	6.0 - 7.0	6.1
Sulfate (SO ₄)	$\leq 0.005 \%$	$< 0.005 \%$
Complexometric EDTA	98.0 - 101.0 %	100.3 %
Meets ACS Requirements	Meets Requirements	Meets Requirements


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.



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:

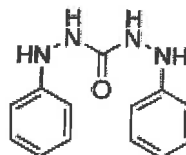
C₁₃H₁₄N₄O

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. 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.





RICCA CHEMICAL COMPANY®

1490 Lammers Pike
Batesville, IN 47006

<http://www.riccachemical.com>

1-888-GO-RICCA

customerservice@riccachemical.com

Certificate of Analysis

W3093
004121
04/03/2024
16

Buffer, Reference Standard, pH 7.00 ± 0.01 at 25°C (Color Coded Yellow)

Lot Number: 4401F99

Product Number: 1551

Manufacture Date: JAN 08, 2024

Expiration Date: DEC 2025

The certified value for this product is confirmed in independent testing by a second qualified chemist.

The NIST traceable pH value is certified to ±0.01 at 25 °C only. All other pH values at their corresponding temperatures are accurate to ± 0.05.

°C	0	5	10	15	20	25	30	35	40	45	50
pH	7.12	7.09	7.06	7.04	7.02	7.00	6.99	6.98	6.98	6.97	6.97

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Sodium Phosphate Dibasic	7558-79-4	ACS
Potassium Dihydrogen Phosphate	7778-77-0	ACS
Preservative	Proprietary	
Yellow Dye	Proprietary	
Sodium Hydroxide	1310-73-2	

Test	Specification	Result
Appearance	Yellow liquid	Passed

*Not a certified value.

Test	Certified Value	Uncertainty	NIST SRM#
pH at 25°C (Method: SQCP027, SQCP033)	7.004	0.02	186-I-g, 186-II-g, 191d

Specification	Reference
Commercial Buffer Solutions	ASTM (D 1293 B)
Buffer A	ASTM (D 5464)
Buffer A	ASTM (D 5128)

pH measurements were performed in our Batesville, IN laboratory under ISO/IEC 17025 accreditation (ANAB Certificate L2387.02) and are certified traceable to National Institute of Standards and Technology (NIST) Standard Reference Material as indicated above via an unbroken chain of comparisons. The uncertainty is calculated from the uncertainty of the measurement variation from sample to sample, the uncertainty in the NIST Standard Reference Material, and the uncertainty of the measurement process. The uncertainty is multiplied by k=2, corresponding to 95% coverage in a normal distribution. 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)
1551-1	4 L natural poly	24 months
1551-1CT	4 L Cubitainer®	24 months
1551-2.5	10 L Cubitainer®	24 months
1551-5	20 L Cubitainer®	24 months

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



Paul Brandon (01/08/2024)

Production Manager

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

This product was tested in an ISO 17025 Accredited Laboratory

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

Certificate of Analysis

Sodium Thiosulfate, 0.0250 Normal (N/40)

Lot Number: 4403S13

Product Number: 7900

Manufacture Date: MAR 29, 2024

Expiration Date: SEP 2025

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

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

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

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

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

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

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



Paul Brandon (03/29/2024)

Production Manager

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

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



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.

Certificate of Analysis

Iodine (Iodine-Iodide), 0.0250 Normal (N/40), 1 mL = 0.4008 mg S²⁻**Lot Number:** 2405D89**Product Number:** 3975**Manufacture Date:** MAY 10, 2024**Expiration Date:** MAY 2025

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Potassium Iodide	7681-11-0	ACS
Iodine	7553-56-2	ACS

Test	Specification	Result	NIST SRM#
Appearance	Dark brown liquid	Passed	
Assay (vs. Sodium Thiosulfate/Starch)	0.02498-0.02502 N at 20°C	0.02502 N at 20°C	136

Specification	Reference
Standard Iodine Solution, 0.0250 N	APHA (4500-S2- F)
Iodine Solution (approximately 0.025 N)	EPA (SW-846) (9031)
Standard Iodine Solution, 0.0250 N	EPA (376.1)
Iodine Solution (approximately 0.025 N)	EPA (SW-846) (9034)

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

Part Number	Size / Package Type	Shelf Life (Unopened Container)
3975-1	4 L amber glass	12 months
3975-16	500 mL amber glass	12 months
3975-32	1 L amber glass	12 months

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

Jose Pena (05/10/2024)
Operations Manager

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



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: August 01, 2024

Lot Number: **44080060**

Expiration Date: January 30, 2025

Test	Specification	Result
Appearance (clarity)	clear solution	clear solution
Appearance (color)	colorless	colorless
Concentration (CN)	0.990 - 1.010mg/mL	1.008mg/mL
Concentration (CN)	990 - 1,010ppm	1,008ppm
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 standards.

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 or g	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

ISO9001:2015 Registration #0306-01

2024080113:32:16bsturges-0-0

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

Order our products online thermofisher.com/chemicals

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

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



Certificate of Analysis

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

Lot Number: 4408P62

Product Number: 8000

Manufacture Date: AUG 28, 2024

Expiration Date: AUG 2026

This product is Mercury-free.

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

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

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

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

Part Number	Size / Package Type	Shelf Life (Unopened Container)
8000-1	4 L natural poly	24 months
8000-16	500 mL natural poly	24 months
8000-32	1 L natural poly	24 months

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

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

Paul Brandon (08/28/2024)
Production Manager

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

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



Certificate of Analysis

Cyanide Standard, 1000 ppm CN⁻

Lot Number: 1411J58**Product Number:** 2543**Manufacture Date:** NOV 22, 2024**Expiration Date:** MAY 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

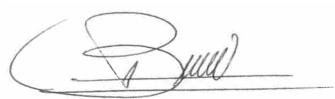
Test	Specification	Result
Appearance	Colorless liquid	Passed
Cyanide (CN ⁻)	995-1005 ppm	1000 ppm

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)

A handwritten signature in black ink, appearing to read 'Luis Briceno', is written over a horizontal line.

Luis Briceno (11/22/2024)
Operations Supervisor

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



Certificate of Analysis

Buffer, Reference Standard, pH 2.00 ± 0.01 at 25°C**Lot Number:** 2411E26**Product Number:** 1493**Manufacture Date:** NOV 11, 2024**Expiration Date:** OCT 2026

The certified value for this product is confirmed in independent testing by a second qualified chemist.

The NIST traceable pH value is certified to ±0.01 at 25 °C only. All other pH values at their corresponding temperatures are accurate to ± 0.05.

°C	10	15	20	25	30	35	40	45	50
pH	1.93	1.98	1.98	2.00	2.01	2.03	2.03	2.04	2.04

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Potassium Chloride	7447-40-7	ACS
Hydrochloric Acid	7647-01-0	ACS

Test	Specification	Result
Appearance	Colorless liquid	Passed

*Not a certified value.

Test	Certified Value	Uncertainty	NIST SRM#
pH at 25°C (Method: SQCP027, SQCP033)	1.994	0.02	185i, 186-I-g, 186-II-g

pH measurements were performed in our Pocomoke City, MD laboratory under ISO/IEC 17025 accreditation (ANAB Certificate L2387.01) and are certified traceable to National Institute of Standards and Technology (NIST) Standard Reference Material as indicated above via an unbroken chain of comparisons. The uncertainty is calculated from the uncertainty of the measurement variation from sample to sample, the uncertainty in the NIST Standard Reference Material, and the uncertainty of the measurement process. The uncertainty is multiplied by k=2, corresponding to 95% coverage in a normal distribution. 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)
1493-1	4 L natural poly	24 months
1493-16	500 mL natural poly	24 months
1493-1CT	4 L Cubitainer®	24 months
1493-2.5	10 L Cubitainer®	24 months
1493-32	1 L natural poly	24 months

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



Jose Pena (11/11/2024)
Operations Manager

This product was tested in an ISO 17025 Accredited Laboratory

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



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 Na₂CO₃
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.

**RICCA CHEMICAL COMPANY®**

1841 Broad Street
Pocomoke City, MD 21851
<http://www.riccachemical.com>
1-888-GO-RICCA
customerservice@riccachemical.com

Certificate of Analysis

W21758 58

Buffer, Reference Standard, pH 4.00 ± 0.01 at 25°C (Color Coded Red)

Lot Number: 2411A93

Product Number: 1501

Manufacture Date: NOV 04, 2024

Expiration Date: OCT 2026

The certified value for this product is confirmed in independent testing by a second qualified chemist.

The NIST Traceable pH value is certified to ±0.01 at 25 °C only. All other pH values at their corresponding temperatures are accurate to ± 0.05.

°C	0	5	10	15	20	25	30	35	40	45	50
pH	4.00	4.00	4.00	4.00	4.00	4.00	4.01	4.02	4.03	4.04	4.06

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Potassium Acid Phthalate	877-24-7	Buffer
Preservative	Proprietary	Commercial
Red Dye	Proprietary	Purified

Test	Specification	Result
Appearance	Red liquid	Passed

*Not a certified value.

Test	Certified Value	Uncertainty	NIST SRM#
pH at 25°C (Method: SQCP027, SQCP033)	4.008	0.02	185i, 186-I-g, 186-II-g

Specification	Reference
Commercial Buffer Solutions	
Buffer B	ASTM (D 1293 B)
Buffer B	ASTM (D 5464)
Buffer B	ASTM (D 5128)

pH measurements were performed in our Pocomoke City, MD laboratory under ISO/IEC 17025 accreditation (ANAB Certificate L2387.01) and are certified traceable to National Institute of Standards and Technology (NIST) Standard Reference Material as indicated above via an unbroken chain of comparisons. The uncertainty is calculated from the uncertainty of the measurement variation from sample to sample, the uncertainty in the NIST Standard Reference Material, and the uncertainty of the measurement process. The uncertainty is multiplied by k=2, corresponding to 95% coverage in a normal distribution. 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)
1501-16	500 mL natural poly	24 months
1501-2.5	10 L Cubitainer®	24 months
1501-5	20 L Cubitainer®	24 months

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



RICCA CHEMICAL COMPANY®

1841 Broad Street
Pocomoke City, MD 21851
<http://www.riccachemical.com>
1-888-GO-RICCA
customerservice@riccachemical.com

Certificate of Analysis

Buffer, Reference Standard, pH 10.00 ± 0.01 at 25°C (Color Coded Blue)

Lot Number: 2410F80

Product Number: 1601

Manufacture Date: OCT 09, 2024

Expiration Date: MAR 2026

The certified value for this product is confirmed in independent testing by a second qualified chemist.
The NIST traceable pH value is certified to ±0.01 at 25 °C only. All other pH values at their corresponding temperatures are accurate to ± 0.05.

°C	0	5	10	15	20	25	30	35	40	50
pH	10.31	10.23	10.17	10.11	10.05	10.00	9.95	9.91	9.87	9.81

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Sodium Carbonate	497-19-8	ACS
Sodium Bicarbonate	144-55-8	ACS
Sodium Hydroxide	1310-73-2	Reagent
Preservative	Proprietary	
Blue Dye	Proprietary	

Test	Specification	Result
Appearance	Blue liquid	Passed

Test	Certified Value	Uncertainty	NIST SRM#
pH at 25°C (Method: SQCP027, SQCP033)	10.009	0.02	186-I-g, 186-II-g, 191d

Specification	Reference
Commercial Buffer Solutions	
Buffer C	ASTM (D 1293 B)
Buffer C	ASTM (D 5464)
	ASTM (D 5128)

pH measurements were performed in our Pocomoke City, MD laboratory under ISO/IEC 17025 accreditation (ANAB Certificate L2387.01) and are certified traceable to National Institute of Standards and Technology (NIST) Standard Reference Material as indicated above via an unbroken chain of comparisons. The uncertainty is calculated from the uncertainty of the measurement variation from sample to sample, the uncertainty in the NIST Standard Reference Material, and the uncertainty of the measurement process. The uncertainty is multiplied by k=2, corresponding to 95% coverage in a normal distribution. 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)
1601-1	4 L natural poly	18 months
1601-16	500 mL natural poly	18 months
1601-1CT	4 L Cubitainer®	18 months
1601-2.5	10 L Cubitainer®	18 months
1601-32	1 L natural poly	18 months
1601-5	20 L Cubitainer®	18 months

Version: 1.3

Lot Number: 2410F80

Product Number: 1601

Page 1 of 2



PERCENT SOLID

Supervisor: Iwona
Analyst: jignesh
Date: 4/8/2025

OVENTEMP IN Celsius(°C): 107
Time IN: 17:05
In Date: 04/07/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 103
Time OUT: 08:19
Out Date: 04/08/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % SOLID- OVEN

QC:LB135324

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
Q1740-01	TP-20	1	1.14	9.97	11.11	9.88	87.7	
Q1740-02	TP-20-E2	2	1.15	10.14	11.29	10.06	87.9	
Q1740-03	TP-20-VOC	3	1.18	11.96	13.14	11.9	89.6	
Q1742-01	TR-06-040725	17	1.14	10.11	11.25	10.00	87.6	
Q1742-02	TR-06-040725-E2	18	1.18	10.20	11.38	10.24	88.8	
Q1743-01	TP-16	4	1.14	10.15	11.29	10.74	94.6	
Q1743-02	TP-16-EPH	5	1.16	9.91	11.07	9.27	81.8	
Q1743-03	TP-16-VOC	6	1.14	10.34	11.48	10.84	93.8	
Q1744-01	B-158-SB01	7	1.12	9.66	10.78	9.81	90.0	
Q1744-03	B-158-SB02	8	1.18	10.73	11.91	7.19	56.0	
Q1745-01	IB-6A-WC	9	1.17	10.10	11.27	9.76	85.0	
Q1745-02	IB-6A-EPH	10	1.18	9.96	11.14	9.56	84.1	
Q1745-03	IB-6A-VOC	11	1.18	10.06	11.24	9.98	87.5	
Q1745-09	IB-6.5-WC	12	1.15	10.49	11.64	8.65	71.5	
Q1745-10	IB-6.5-EPH	13	1.18	10.26	11.44	8.46	71.0	
Q1745-11	IB-6.5-VOC	14	1.15	9.98	11.13	7.93	67.9	
Q1746-01	B-149-SB01	15	1.14	10.17	11.31	10.22	89.3	
Q1746-03	B-149-SB02	16	1.14	10.23	11.37	9.81	84.8	
Q1747-01	ARS20-0008	19	1.15	10.33	11.48	11.08	96.1	
Q1747-02	ARS20-0008-E2	20	1.19	10.08	11.27	10.8	95.3	

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

WORKLIST(Hardcopy Internal Chain)

135324

WorkList Name : %1-040725 WorkList ID : 188763 Department : Wet-Chemistry Date : 04-07-2025 08:21:09

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q1740-01	TP-20	Solid	Percent Solids	Cool 4 deg C	PSEG03	L21	04/04/2025	Chemtech -SO
Q1740-02	TP-20-E2	Solid	Percent Solids	Cool 4 deg C	PSEG03	L21	04/04/2025	Chemtech -SO
Q1740-03	TP-20-VOC	Solid	Percent Solids	Cool 4 deg C	PSEG03	L21	04/04/2025	Chemtech -SO
Q1742-01	TR-06-040725	Solid	Percent Solids	Cool 4 deg C	PSEG05		04/04/2025	Chemtech -SO
Q1742-02	TR-06-040725-E2	Solid	Percent Solids	Cool 4 deg C	PSEG05		04/04/2025	Chemtech -SO
Q1743-01	TP-16	Solid	Percent Solids	Cool 4 deg C	PSEG03	L33	04/07/2025	Chemtech -SO
Q1743-02	TP-16-EPH	Solid	Percent Solids	Cool 4 deg C	PSEG03	L33	04/07/2025	Chemtech -SO
Q1743-03	TP-16-VOC	Solid	Percent Solids	Cool 4 deg C	PSEG03	L33	04/07/2025	Chemtech -SO
Q1744-01	B-158-SB01	Solid	Percent Solids	Cool 4 deg C	PORT06	L41	04/05/2025	Chemtech -SO
Q1744-03	B-158-SB02	Solid	Percent Solids	Cool 4 deg C	PORT06	L41	04/05/2025	Chemtech -SO
Q1745-01	IB-6A-WC	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/07/2025	Chemtech -SO
Q1745-02	IB-6A-EPH	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/07/2025	Chemtech -SO
Q1745-03	IB-6A-VOC	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/07/2025	Chemtech -SO
Q1745-09	IB-6.5-WC	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/07/2025	Chemtech -SO
Q1745-10	IB-6.5-EPH	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/07/2025	Chemtech -SO
Q1745-11	IB-6.5-VOC	Solid	Percent Solids	Cool 4 deg C	PSEG03	L41	04/07/2025	Chemtech -SO
Q1746-01	B-149-SB01	Solid	Percent Solids	Cool 4 deg C	PORT06	L41	04/05/2025	Chemtech -SO
Q1746-03	B-149-SB02	Solid	Percent Solids	Cool 4 deg C	PORT06	L41	04/06/2025	Chemtech -SO
Q1747-01	ARS20-0008	Solid	Percent Solids	Cool 4 deg C	PSEG03	I41	04/07/2025	Chemtech -SO
Q1747-02	ARS20-0008-E2	Solid	Percent Solids	Cool 4 deg C	PSEG03	I41	04/07/2025	Chemtech -SO

Date/Time 04/07/25 15:25
 Raw Sample Received by: [Signature]
 Raw Sample Relinquished by: [Signature]

Date/Time 04/07/25
 Raw Sample Received by: [Signature]
 Raw Sample Relinquished by: [Signature]

17.15
 [Signature]



SHIPPING DOCUMENTS

CLIENT INFORMATION

REPORT TO BE SENT TO:
COMPANY: Gannett Fleming
ADDRESS: 1010 Adams Ave
CITY: Arlabon STATE: PA ZIP: 19405
ATTENTION: Joe Krupansky
PHONE: 610-301-8342 FAX:

CLIENT PROJECT INFORMATION

PROJECT NAME: Amtrak replacement of SR
PROJECT NO.: 950000818 LOCATION: Kearny, NJ
PROJECT MANAGER: Joe Krupansky
e-mail: QASC@BEMSYS.com
PHONE: 610-301-8432 FAX:

CLIENT BILLING INFORMATION

BILL TO: Alliance PO#:
ADDRESS: 284 Sheffield St
CITY: Mountainside STATE: NJ ZIP: 07093
ATTENTION: Samavla Beasley PHONE: 908-788-3148

ANALYSIS

DATA TURNAROUND INFORMATION

FAX (RUSH) _____ DAYS*
HARDCOPY (DATA PACKAGE): 10 DAYS*
EDD: 10 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 BEMED0

1. Full TCLP Analysis
2. RCRA parameters
3. PCBs
4. TAL Metals
5. TCL-VOC+10
6. Cr(VI) Cr(VI)
7. TCL-SVOCs-BVA+20
8. EPH
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	← Specify Preservatives A-HCl D-NaOH B-HNO3 E-ICE C-H2SO4 F-OTHER	
1.	B-188-SB01	S		X	4/5/25	13:20	9	X	X	X	X	X	X	X	X			
2.	B-158-SB02	S		X	4/5/25	17:10	9	X	X	X	X	X	X	X	X			
3.	IB				NA	NA						X						
4.																		
5.																		
6.																		
7.																		
8.																		
9.																		
10.																		

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

RELINQUISHED BY SAMPLER:	DATE/TIME: <u>1040</u>	RECEIVED BY:	Conditions of bottles or coolers at receipt: ☐ COMPLIANT ☐ NON COMPLIANT ☐ COOLER TEMP <u>2.1</u> °C
1. <u>[Signature]</u>	<u>4-5-25</u>	1. <u>[Signature]</u>	Comments:
RELINQUISHED BY SAMPLER:	DATE/TIME: <u>1040</u>	RECEIVED BY:	
2. <u>Natalia Zaca</u>	<u>4-7-25</u>	2. <u>[Signature]</u>	
RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:	
3.		3.	

Page ____ of ____ CLIENT: ☐ Hand Delivered ☐ Other
Shipment Complete ☐ YES ☐ NO

IR. Cur # 1
"Adjust factor +1"

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

LOGIN REPORT/SAMPLE TRANSFER

Order ID : Q1744 PORT06

Client Name : Portal Partners Tri-Venture

Client Contact : Joseph Krupansky

Invoice Name : Portal Partners Tri-Venture

Invoice Contact : Joseph Krupansky

Order Date : 4/7/2025 11:34:00 AM

Project Name : Amtrak Sawtooth Bridges 2

Receive DateTime : 4/7/2025 10:40:00 AM

Purchase Order :

Project Mgr :

Report Type : NJ Reduced

EDD Type : EXCEL NJCLEANUP

Hard Copy Date :

Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
Q1744-01	B-158-SB01	Solid	04/05/2025	13:20					
					VOC-TCLVOA-10				
Q1744-03	B-158-SB02	Solid	04/05/2025	17:10			8260D	10 Bus. Days	
					VOC-TCLVOA-10		8260D	10 Bus. Days	

Relinquished By : alDate / Time : 4-7-25 1255Received By : plDate / Time : 4-7-25 12:55

Storage Area : VOA Refridgerator Room