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

DATA PACKAGE

GENERAL CHEMISTRY

PROJECT NAME : CON ED UTEN MOUNT VERNON, NY

CDM SMITH

110 Fieldcrest Ave

Raritan Center

Edison, NJ - 08837

Phone No: 732-225-7000

ORDER ID : Q1915

ATTENTION : Marcie Ann Encinas

Laboratory Certification ID # 20012

Table Of Contents for Q1915

284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
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Cover Page

Order ID : Q1915

Project ID : Con Ed UTEN Mount Vernon, NY

Client : CDM Smith

Lab Sample Number	Client Sample Number
Q1915-01	WC-04282025

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 : APPROVED
By Nimisha Pandya, QA/QC Supervisor at 11:33 am, May 15, 2025

Date: 5/15/2025

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

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

CASE NARRATIVE

CDM Smith
Project Name: Con Ed UTEN Mount Vernon, NY
Project # N/A
Order ID# Q1915
Test Name: Corrosivity,Ignitability,Reactive Cyanide,Reactive Sulfide

A. Number of Samples and Date of Receipt:
1 Solid sample was received on 04/29/2025.

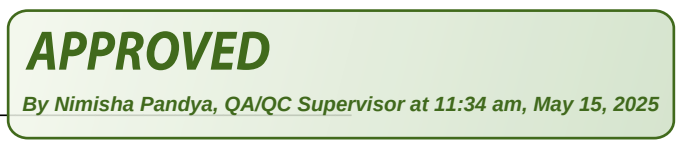
B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Ignitability, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, TCLP BNA, TCLP Extraction, TCLP ICP Metals, TCLP Mercury, TCLP METALS, TCLP VOA and TCLP ZHE Extraction. This data package contains results for Corrosivity,Ignitability,Reactive Cyanide,Reactive Sulfide.

C. Analytical Techniques:
The analysis of Ignitability was based on method 1030, 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 was based on method 9045D.

D. QA/ QC Samples:
The Holding Times were met for all samples except for WC-04282025 of Corrosivity as sample was receive out of holding time.
The Blank Spike met requirements for all samples.
The Duplicate 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:
The Data package has been revised due the data package type changed as per client request

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 

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Tel. 908-789-8900 Fax: 908-789-8922

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

GENERAL CHEMISTRY CONFORMANCE/NON-CONFORMANCE SUMMARY

CHEMTECH PROJECT NUMBER: Q1915 MATRIX: Solid

METHOD: 1030,9012B,9034,9045D

		NA	NO	YES
1.	Blank Contamination - If yes, list compounds and concentrations in each blank:		✓	
2.	Sample Duplicate Analysis Met QC Criteria			✓
	If not met, list those compounds and their recoveries which fall outside the acceptable range.			
3.	Digestion Holding Time Met		✓	
	If not met, list number of days exceeded for each sample:			
	The Holding Times were met for all samples except for WC-04282025 of Corrosivity as sample was receive out of holding time.			

ADDITIONAL COMMENTS:

The Data package has been revised due the data package type changed as per client request

QA REVIEW

REVIEWED
By Sohil Jodhani, QA/QC Director at 10:03 am, May 15, 2025

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

APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: Q1915

	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: SOHIL JODHANI **Date:** 05/15/2025

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LAB CHRONICLE

OrderID:	Q1915	**OrderDate:**	4/29/2025 2:29:00 PM
Client:	CDM Smith	**Project:**	Con Ed UTEN Mount Vernon, NY
Contact:	Marcie Ann Encinas	**Location:**	L41

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
Q1915-01	**WC-04282025**	**SOIL**			**04/28/25 14:15**			**04/29/25**
			Corrosivity	9045D			04/29/25 18:00	
			Ignitability	1030			05/01/25 12:38	
			Reactive Cyanide	9012B		04/30/25	04/30/25 11:54	
			Reactive Sulfide	9034		05/01/25	05/01/25 11:20	

SAMPLE DATA

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Report of Analysis

Client:	CDM Smith	Date Collected:	04/28/25 14:15
Project:	Con Ed UTEN Mount Vernon, NY	Date Received:	04/29/25
Client Sample ID:	WC-04282025	SDG No.:	Q1915
Lab Sample ID:	Q1915-01	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	8.41	H	1	0	0	pH		04/29/25 18:00	9045D
Ignitability	NO		1	0	0	oC		05/01/25 12:38	1030
Reactive Cyanide	0.050	U	1	0.0084	0.050	mg/Kg	04/30/25 08:50	04/30/25 11:54	9012B
Reactive Sulfide	1.58	J	1	0.20	10.0	mg/Kg	05/01/25 08:50	05/01/25 11:20	9034

Comments: pH result reported at temperature 22.5 °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

284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
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Initial and Continuing Calibration Verification

Client: CDM Smith **SDG No.:** Q1915

Project: Con Ed UTEN Mount Vernon, NY **RunNo.:** LB135607

Analyte		Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID:	**ICV**						
Corrosivity		pH	6.99	7	100	90-110	04/29/2025
Sample ID:	**CCV1**						
Corrosivity		pH	2.01	2.00	101	90-110	04/29/2025
Sample ID:	**CCV2**						
Corrosivity		pH	12.02	12.00	100	90-110	04/29/2025

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Initial and Continuing Calibration Verification

Client:	CDM Smith	**SDG No.:**	Q1915
Project:	Con Ed UTEN Mount Vernon, NY	**RunNo.:**	LB135608

Analyte	Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID: ICV1						
Reactive Cyanide	mg/L	0.092	0.099	93	85-115	04/30/2025
Sample ID: CCV1						
Reactive Cyanide	mg/L	0.25	0.25	100	90-110	04/30/2025
Sample ID: CCV2						
Reactive Cyanide	mg/L	0.23	0.25	92	90-110	04/30/2025
Sample ID: CCV3						
Reactive Cyanide	mg/L	0.25	0.25	100	90-110	04/30/2025

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Initial and Continuing Calibration Blank Summary

Client:	CDM Smith	**SDG No.:**	Q1915
Project:	Con Ed UTEN Mount Vernon, NY	**RunNo.:**	LB135608

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	04/30/2025
Sample ID: CCB1							
Reactive Cyanide	mg/L	< 0.0025	0.0025	U	0.00096	0.005	04/30/2025
Sample ID: CCB2							
Reactive Cyanide	mg/L	< 0.0025	0.0025	U	0.00096	0.005	04/30/2025
Sample ID: CCB3							
Reactive Cyanide	mg/L	< 0.0025	0.0025	U	0.00096	0.005	04/30/2025

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Preparation Blank Summary

Client: CDM Smith **SDG No.:** Q1915

Project: Con Ed UTEN Mount Vernon, NY

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: PB167792BL							
Reactive Cyanide	mg/Kg	< 0.0250	0.0250	U	0.0084	0.05	04/30/2025
Sample ID: PB167811BL							
Reactive Sulfide	mg/Kg	< 5.0000	5.0000	U	0.201	10	05/01/2025

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Duplicate Sample Summary

Client: CDM Smith
Project: Con Ed UTEN Mount Vernon, NY
Client ID: MH-GDUP
SDG No.: Q1915
Sample ID: Q1905-04
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	0.0083	U	1	0		04/30/2025
Reactive Sulfide	mg/Kg	+/-20	3.16	J	3.16	J	1	0		05/01/2025

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Duplicate Sample Summary

Client: CDM Smith
SDG No.: Q1915
Project: Con Ed UTEN Mount Vernon, NY
Sample ID: Q1912-01
Client ID: MH-EDUP
Percent Solids for Spike Sample: 92.5

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		05/01/2025

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Duplicate Sample Summary

Client: CDM Smith
Project: Con Ed UTEN Mount Vernon, NY
Client ID: WC-04282025DUP
SDG No.: Q1915
Sample ID: Q1915-01
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	8.41		8.42		1	0.12		04/29/2025

RAW DATA

Alliance TECHNICAL GROUP

Analytical Summary Report

Analysis Method: 9045D
Analyst By : jignesh
Parameter: Corrosivity
Supervisor Review By : Iwona
Run Number: LB135607
Slope : 99.2
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	20.3	4.01	04/29/2025	17:25
2	CAL2	1	Water	NA	NA	20.2	7.01	04/29/2025	17:26
3	CAL3	1	Water	NA	NA	20.3	10.02	04/29/2025	17:30
4	ICV	1	Water	NA	NA	20.3	6.99	04/29/2025	17:33
5	CCV1	1	Water	NA	NA	20.3	2.01	04/29/2025	17:35
6	Q1912-04	1	Solid	20.02	20	22.6	6.74	04/29/2025	17:45
7	Q1912-08	1	Solid	20.03	20	21.9	6.46	04/29/2025	17:50
8	Q1915-01	1	Solid	20.02	20	22.5	8.41	04/29/2025	18:00
9	Q1915-01DUP	1	Solid	20.03	20	22.6	8.42	04/29/2025	18:01
10	CCV2	1	Water	NA	NA	20.3	12.02	04/29/2025	18:05

WORKLIST(Hardcopy Internal Chain)

VB 135607

WorkList Name : corrsovity q1912 **WorkList ID :** 189213 **Department :** Wet-Chemistry **Date :** 04-29-2025 13:35:50

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q1912-04	MH-E	Solid	Corrosivity	Cool 4 deg C	PSEG03	L51	04/29/2025	9045D
Q1912-08	MH-F	Solid	Corrosivity	Cool 4 deg C	PSEG03	L51	04/29/2025	9045D
Q1915-01	WC-04282025	Solid	Corrosivity	Cool 4 deg C	CAMP02	L41	04/28/2025	9045D

Date/Time 04/29/25 17:10

Raw Sample Received by: SA WOC

Raw Sample Relinquished by: JDCSM

Date/Time 04/29/25 19:30

Raw Sample Received by: JDCSM

Raw Sample Relinquished by: SA WOC

LB135

Test results | Aquakem 7.2AQ1 | Page: 1

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

Reviewed by : RM

4/30/2025 12:08 | Instrument ID : Konelab

Test: Total CN

Sample Id	Result	Dil. 1 +	Response	Errors
ICV1	92.174	0.0	0.063	
ICB1	0.429	0.0	0.001	
CCV1	245.461	0.0	0.166	
CCB1	0.282	0.0	0.001	
PB167792BL	-0.002	0.0	0.001	
Q1904-02	-0.129	0.0	0.001	
Q1905-04	0.159	0.0	0.001	
Q1905-04DUP	0.172	0.0	0.001	
Q1905-08	0.046	0.0	0.001	
Q1906-04	0.079	0.0	0.001	
Q1906-08	0.137	0.0	0.001	
Q1906-12	0.023	0.0	0.001	
Q1906-16	0.058	0.0	0.001	
Q1907-02	0.017	0.0	0.001	
CCV2	230.992	0.0	0.156	
CCB2	0.139	0.0	0.001	
Q1912-04	0.174	0.0	0.001	
Q1912-08	0.167	0.0	0.001	
Q1915-01	0.203	0.0	0.001	
PB167802BL	-0.036	0.0	0.001	
Q1913-02	0.083	0.0	0.001	
Q1913-02DUP	0.069	0.0	0.001	
Q1913-04	0.077	0.0	0.001	
CCV3	251.376	0.0	0.169	
CCB3	0.156	0.0	0.001	

N	25
Mean	32.892
SD	81.2013
CV%	246.87

Aquakem v. 7.2AQ1
Results from time period:
Wed Apr 30 11:39:09 2025
Wed Apr 30 12:05:44 2025

Sample Id	Sam/Ctr/cA	Test short r	Test type	Result	Result unit	Result date and time	Stat
0.0PPBCN	A	Total CN	P	-0.1667	µg/l	4/30/2025 9:44:52	
5.0PPBCN	A	Total CN	P	4.9771	µg/l	4/30/2025 9:44:53	
10PPBCN	A	Total CN	P	9.7002	µg/l	4/30/2025 9:44:54	
50PPBCN	A	Total CN	P	49.9686	µg/l	4/30/2025 9:44:55	
100PPBCN	A	Total CN	P	100.5264	µg/l	4/30/2025 9:44:56	
250PPBCN	A	Total CN	P	250.1804	µg/l	4/30/2025 9:44:57	
500PPBCN	A	Total CN	P	499.8139	µg/l	4/30/2025 9:44:58	
ICV1	S	Total CN	P	92.1741	µg/l	4/30/2025 11:39:10	
ICB1	S	Total CN	P	0.4286	µg/l	4/30/2025 11:39:11	
CCV1	S	Total CN	P	245.4609	µg/l	4/30/2025 11:39:13	
CCB1	S	Total CN	P	0.2816	µg/l	4/30/2025 11:39:16	
PB167792BL	S	Total CN	P	-0.0015	µg/l	4/30/2025 11:39:18	
Q1904-02	S	Total CN	P	-0.1286	µg/l	4/30/2025 11:46:44	
Q1905-04	S	Total CN	P	0.159	µg/l	4/30/2025 11:46:46	
Q1905-04DUP	S	Total CN	P	0.1718	µg/l	4/30/2025 11:46:47	
Q1905-08	S	Total CN	P	0.0457	µg/l	4/30/2025 11:46:48	
Q1906-04	S	Total CN	P	0.0791	µg/l	4/30/2025 11:46:49	
Q1906-08	S	Total CN	P	0.1375	µg/l	4/30/2025 11:46:50	
Q1906-12	S	Total CN	P	0.0226	µg/l	4/30/2025 11:46:51	
Q1906-16	S	Total CN	P	0.0577	µg/l	4/30/2025 11:46:52	
Q1907-02	S	Total CN	P	0.0175	µg/l	4/30/2025 11:46:53	
CCV2	S	Total CN	P	230.9925	µg/l	4/30/2025 11:54:19	
CCB2	S	Total CN	P	0.1385	µg/l	4/30/2025 11:54:21	
Q1912-04	S	Total CN	P	0.1744	µg/l	4/30/2025 11:54:22	
Q1912-08	S	Total CN	P	0.1674	µg/l	4/30/2025 11:54:23	
Q1915-01	S	Total CN	P	0.2031	µg/l	4/30/2025 11:54:24	
PB167802BL	S	Total CN	P	-0.036	µg/l	4/30/2025 12:01:51	
Q1913-02	S	Total CN	P	0.0829	µg/l	4/30/2025 12:01:53	
Q1913-02DUP	S	Total CN	P	0.0695	µg/l	4/30/2025 12:01:55	
Q1913-04	S	Total CN	P	0.0767	µg/l	4/30/2025 12:01:57	
CCV3	S	Total CN	P	251.376	µg/l	4/30/2025 12:05:42	
CCB3	S	Total CN	P	0.1563	µg/l	4/30/2025 12:05:43	

Calibration results Aquakem 7.2AQ1 Page: 1

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

Reviewed by : RM Instrument ID : Konelab

4/30/2025 9:47

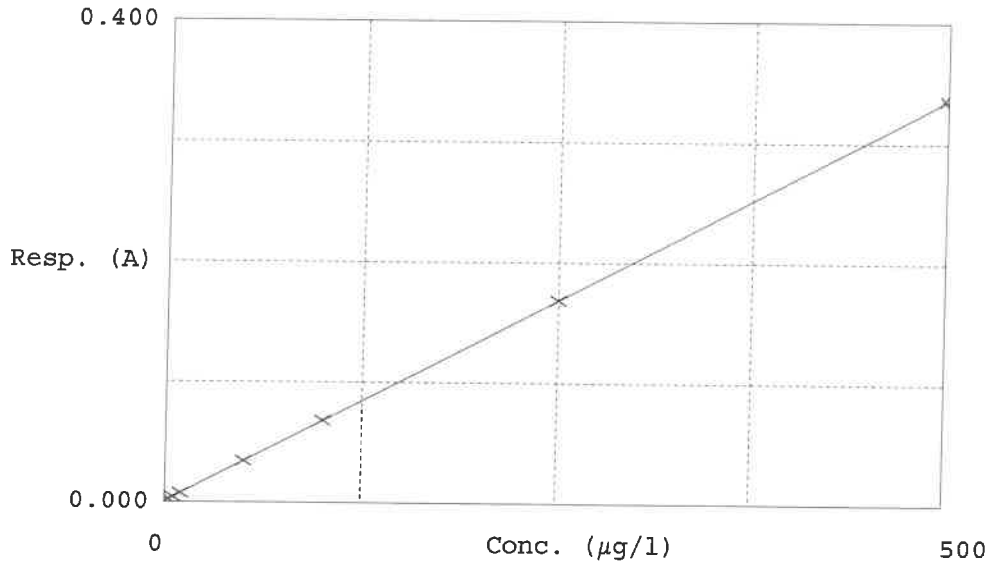
Test Total CN

Accepted 4/30/2025 9:47

Factor 1492
Bias 0.001

Coeff. of det. 0.999998

Errors



	Calibrator	Response	Calc. con.	Conc.	Errors
1	0.0PPBCN	0.001	-0.1667	0.0000	-
2	5.0PPBCN	0.004	4.9771	5.0000	-0.5
3	10PPBCN	0.008	9.7002	10.0000	-3.0
4	50PPBCN	0.035	49.9686	50.0000	-0.1
5	100PPBCN	0.068	100.5264	100.0000	0.5
6	250PPBCN	0.169	250.1804	250.0000	0.1
7	500PPBCN	0.336	499.8139	500.0000	0.0

RR

04/30/2025
RM

Alliance TECHNICAL GROUP

Analytical Summary Report

Analysis Method: 1030 **Reviewed By:** rubina

Parameter: Ignitability **Supervisor Review By:** Iwona

Run Number: LB135622

Seq	LabID	ClientID	DF	matrix	Result Status	Burning Rate	Anal Date	Anal Time
1	Q1912-01	MH-E	1	Solid	NO	0.00	05/01/2025	12:00
2	Q1912-01DUP	MH-EDUP	1	Solid	NO	0.00	05/01/2025	12:08
3	Q1912-04	MH-E	1	Solid	NO	0.00	05/01/2025	12:16
4	Q1912-05	MH-F	1	Solid	NO	0.00	05/01/2025	12:23
5	Q1912-08	MH-F	1	Solid	NO	0.00	05/01/2025	12:30
6	Q1915-01	WC-04282025	1	Solid	NO	0.00	05/01/2025	12:38
7	Q1916-01	WC-12	1	Solid	NO	0.00	05/01/2025	12:45
8	Q1916-04	WC-12	1	Solid	NO	0.00	05/01/2025	12:52
9	Q1917-01	MH-JJ	1	Solid	NO	0.00	05/01/2025	13:00
10	Q1917-04	MH-JJ	1	Solid	NO	0.00	05/01/2025	13:08
11	Q1922-01	MH-R	1	Solid	NO	0.00	05/01/2025	13:15
12	Q1922-04	MH-R	1	Solid	NO	0.00	05/01/2025	13:22
13	Q1922-05	MH-S	1	Solid	NO	0.00	05/01/2025	13:30
14	Q1922-08	MH-S	1	Solid	NO	0.00	05/01/2025	13:37
15	Q1925-01	AUD-25-0068	1	Solid	NO	0.00	05/01/2025	13:45
16	Q1925-02	AUD-25-0069	1	Solid	NO	0.00	05/01/2025	13:52
17	Q1925-03	AUD-25-0070	1	Solid	NO	0.00	05/01/2025	14:00

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

WORKLIST(Hardcopy Internal Chain)

LB135622

WorkList Name : IGN-04-30 **WorkList ID :** 189242 **Department :** Wet-Chemistry **Date :** 04-30-2025 15:11:23

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q1912-01	MH-E	Solid	Ignitability	Cool 4 deg C	PSEG03	L51	04/29/2025	1030
Q1912-04	MH-E	Solid	Ignitability	Cool 4 deg C	PSEG03	L51	04/29/2025	1030
Q1912-05	MH-F	Solid	Ignitability	Cool 4 deg C	PSEG03	L51	04/29/2025	1030
Q1912-08	MH-F	Solid	Ignitability	Cool 4 deg C	PSEG03	L51	04/29/2025	1030
Q1915-01	WC-04282025	Solid	Ignitability	Cool 4 deg C	PSEG03	L51	04/29/2025	1030
Q1916-01	WC-12	Solid	Ignitability	Cool 4 deg C	CAMP02	L41	04/28/2025	1030
Q1916-04	WC-12	Solid	Ignitability	Cool 4 deg C	PSEG03	L41	04/30/2025	1030
Q1917-01	MH-JJ	Solid	Ignitability	Cool 4 deg C	PSEG03	L41	04/30/2025	1030
Q1917-04	MH-JJ	Solid	Ignitability	Cool 4 deg C	PSEG03	L41	04/30/2025	1030
Q1922-01	MH-R	Solid	Ignitability	Cool 4 deg C	PSEG03	L41	04/30/2025	1030
Q1922-04	MH-R	Solid	Ignitability	Cool 4 deg C	PSEG03	L31	04/30/2025	1030
Q1922-05	MH-S	Solid	Ignitability	Cool 4 deg C	PSEG03	L31	04/30/2025	1030
Q1922-08	MH-S	Solid	Ignitability	Cool 4 deg C	PSEG03	L31	04/30/2025	1030
Q1925-01	AUD-25-0068	Solid	Ignitability	Cool 4 deg C	PSEG03	L31	04/30/2025	1030
Q1925-02	AUD-25-0069	Solid	Ignitability	Cool 4 deg C	PSEG03	L31	04/30/2025	1030
Q1925-03	AUD-25-0070	Solid	Ignitability	Cool 4 deg C	PSEG03	L31	04/30/2025	1030

Date/Time 05/01/2025 08:20

Raw Sample Received by: RM (WL)

Raw Sample Relinquished by:

Date/Time 05/01/2025 14:20

Raw Sample Received by:

Raw Sample Relinquished by: RM (WL)

CHEMTECH

Analytical Summary Report

Analysis Method: 9034
Parameter: Reactive Sulfide
Run Number: LB135629

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
1	PB167811BL		1	5.00	50	2.00	0.00	1.92	1.92	0.08	0.00	0.00	05/01/2025	11:00
2	Q1905-04		1	5.06	50	2.00	0.00	1.88	1.88	0.12	0.04	3.16	05/01/2025	11:03
3	Q1905-04DUP		1	5.06	50	2.00	0.00	1.88	1.88	0.12	0.04	3.16	05/01/2025	11:06
4	Q1905-08		1	5.04	50	2.00	0.00	1.84	1.84	0.16	0.08	6.35	05/01/2025	11:08
5	Q1907-02		1	5.03	50	2.00	0.00	1.90	1.90	0.10	0.02	1.59	05/01/2025	11:11
6	Q1912-04		1	5.07	50	2.00	0.00	1.86	1.86	0.14	0.06	4.73	05/01/2025	11:14
7	Q1912-08		1	5.01	50	2.00	0.00	1.86	1.86	0.14	0.06	4.79	05/01/2025	11:17
8	Q1915-01		1	5.07	50	2.00	0.00	1.90	1.90	0.10	0.02	1.58	05/01/2025	11:20
9	Q1916-04		1	5.05	50	2.00	0.00	1.88	1.88	0.12	0.04	3.17	05/01/2025	11:23
10	Q1917-04		1	5.07	50	2.00	0.00	1.90	1.90	0.10	0.02	1.58	05/01/2025	11:25
11	Q1922-04		1	5.02	50	2.00	0.00	1.86	1.86	0.14	0.06	4.78	05/01/2025	11:27
12	Q1922-08		1	5.03	50	2.00	0.00	1.90	1.90	0.10	0.02	1.59	05/01/2025	11:30

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

Alliance TECHNICAL GROUP

Soil/Sludge Reactive Cyanide Preparation Sheet

PB167792

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

SDG No : N/A

Matrix : SOIL

Pippete ID : N/A

Balance ID : WC SC-7

Hood ID : HOOD#1

Block ID : MC-1, MC-2

Weigh By : RM

Start Digest Date: 04/30/2025 **Time :** 08:50 **Temp :** N/A

End Digest Date: 04/30/2025 **Time :** 10:20 **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: JZ

Standared 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
0.25N 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

LAB SAMPLE ID	CLIENT SAMPLE ID		Comment

Extraction Conformance/Non-Conformance Comments:

N/A

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
04/30/2025 10:35	RM (WC)	RM (WC)
	Preparation Group	Analysis Group

Alliance TECHNICAL GROUP

Soil/Sludge Reactive Cyanide Preparation Sheet

PB167792

Lab Sample ID	Client Sample ID	Initial Weight (g)	Final Vol (ml)	pH	Sulfide	Oxidizing	Nitrate/ Nitrite	Comment	Prep Pos
PB167792BL	PBS792	5.00	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1904-02	VNJ-210	5.07	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1905-04	MH-G	5.03	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1905-04DUP	MH-GDUP	5.03	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1905-08	MH-H	5.01	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1906-04	WC-4	5.04	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1906-08	WC-5	5.01	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1906-12	WC-6	5.03	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1906-16	WC-7	5.06	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1907-02	CO-8R-WC	5.03	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1912-04	MH-E	5.02	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1912-08	MH-F	5.04	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1915-01	WC-04282025	5.01	50	N/A	N/A	N/A	N/A	N/A	N/A

WORKLIST(Hardcopy Internal Chain)

WorkList Name : rcn-04-30 **WorkList ID :** 189231 **Department :** Distillation **Date :** 04-30-2025 08:14:51

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q1904-02	VNJ-210	Solid	Reactive Cyanide	Cool 4 deg C	PSEG03	L41	04/28/2025	9012B
Q1905-04	MH-G	Solid	Reactive Cyanide	Cool 4 deg C	PSEG03	L51	04/28/2025	9012B
Q1905-08	MH-H	Solid	Reactive Cyanide	Cool 4 deg C	PSEG03	L51	04/28/2025	9012B
Q1906-04	WC-4	Solid	Reactive Cyanide	Cool 4 deg C	PSEG03	L41	04/28/2025	9012B
Q1906-08	WC-5	Solid	Reactive Cyanide	Cool 4 deg C	PSEG03	L41	04/28/2025	9012B
Q1906-12	WC-6	Solid	Reactive Cyanide	Cool 4 deg C	PSEG03	L41	04/28/2025	9012B
Q1906-16	WC-7	Solid	Reactive Cyanide	Cool 4 deg C	PSEG03	L41	04/28/2025	9012B
Q1907-02	CO-8R-WC	Solid	Reactive Cyanide	Cool 4 deg C	PSEG03	L41	04/28/2025	9012B
Q1912-04	MH-E	Solid	Reactive Cyanide	Cool 4 deg C	WALS01	L51	04/28/2025	9012B
Q1912-08	MH-F	Solid	Reactive Cyanide	Cool 4 deg C	PSEG03	L51	04/29/2025	9012B
Q1915-01	WC-04282025	Solid	Reactive Cyanide	Cool 4 deg C	CAMP02	L41	04/28/2025	9012B

Date/Time 04/30/2025 08:20
Raw Sample Received by: RM (WC)
Raw Sample Relinquished by: JH Coel C

Date/Time 04/30/2025 10:40
Raw Sample Received by: JH Coel C
Raw Sample Relinquished by: RM (WC)

Alliance TECHNICAL GROUP

Soil/Sludge Reactive Sulfide Preparation Sheet

PB167811

SOP ID : M9030B-Sulfide-12

SDG No : N/A

Start Digest Date: 05/01/2025 **Time :** 08:50 **Temp :** N/A

Matrix : SOIL

End Digest Date: 05/01/2025 **Time :** 10:20 **Temp :** N/A

Pippete ID : WC

Balance ID : WC SC-7

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: RM

Weigh By : RM

pH Meter ID : N/A

Supervisor Signature: JR

Standared 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

Extraction Conformance/Non-Conformance Comments:

05/01/2025 RM

N/A

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

Alliance TECHNICAL GROUP

Soil/Sludge Reactive Sulfide Preparation Sheet

PB167811

Lab Sample ID	Client Sample ID	Initial Weight (g)	Final Vol (ml)	pH	Sulfide	Oxidizing	Nitrate/ Nitrite	Comment	Prep Pos
PB167811BL	PBS811	5.00	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1905-04DUP	MH-GDUP	5.06	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1905-04	MH-G	5.06	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1905-08	MH-H	5.04	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1907-02	CO-8R-WC	5.03	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1912-04	MH-E	5.07	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1912-08	MH-F	5.01	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1915-01	WC-04282025	5.07	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1916-04	WC-12	5.05	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1917-04	MH-JJ	5.07	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1922-04	MH-R	5.02	50	N/A	N/A	N/A	N/A	N/A	N/A
Q1922-08	MH-S	5.03	50	N/A	N/A	N/A	N/A	N/A	N/A

WORKLIST(Hardcopy Internal Chain)

WorkList Name : RSUL 5-01 **WorkList ID :** 189255 **Department :** Distillation **Date :** 05-01-2025 08:17:34

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q1905-04	MH-G	Solid	Reactive Sulfide	Cool 4 deg C	PSEG03	L51	04/28/2025	9034
Q1905-08	MH-H	Solid	Reactive Sulfide	Cool 4 deg C	PSEG03	L51	04/28/2025	9034
Q1907-02	CO-8R-WC	Solid	Reactive Sulfide	Cool 4 deg C	PSEG03	L51	04/28/2025	9034
Q1912-04	MH-E	Solid	Reactive Sulfide	Cool 4 deg C	WALS01	L51	04/28/2025	9034
Q1912-08	MH-F	Solid	Reactive Sulfide	Cool 4 deg C	PSEG03	L51	04/29/2025	9034
Q1915-01	WC-04282025	Solid	Reactive Sulfide	Cool 4 deg C	PSEG03	L51	04/29/2025	9034
Q1916-04	WC-12	Solid	Reactive Sulfide	Cool 4 deg C	CAMP02	L41	04/28/2025	9034
Q1917-04	MH-JJ	Solid	Reactive Sulfide	Cool 4 deg C	PSEG03	L41	04/30/2025	9034
Q1922-04	MH-R	Solid	Reactive Sulfide	Cool 4 deg C	PSEG03	L41	04/30/2025	9034
Q1922-08	MH-S	Solid	Reactive Sulfide	Cool 4 deg C	PSEG03	L31	04/30/2025	9034

Date/Time 05/01/2025 08:20

Raw Sample Received by: RM (WC)

Raw Sample Relinquished by: [signature] (WC)

Date/Time 05/01/2025 10:10

Raw Sample Received by: [signature]

Raw Sample Relinquished by: RM (WC)

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

Instrument ID: WC PH METER-1

Daily Analysis Runlog For Sequence/QCBatch ID # LB135607

Review By	jignesh	Review On	4/30/2025 11:52:39 AM
Supervise By	Iwona	Supervise On	4/30/2025 1:24:28 PM
SubDirectory	LB135607	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	04/29/25 17:25		Jignesh	OK
2	CAL2	CAL2	CAL	04/29/25 17:26		Jignesh	OK
3	CAL3	CAL3	CAL	04/29/25 17:30		Jignesh	OK
4	ICV	ICV	ICV	04/29/25 17:33		Jignesh	OK
5	CCV1	CCV1	CCV	04/29/25 17:35		Jignesh	OK
6	Q1912-04	MH-E	SAM	04/29/25 17:45		Jignesh	OK
7	Q1912-08	MH-F	SAM	04/29/25 17:50		Jignesh	OK
8	Q1915-01	WC-04282025	SAM	04/29/25 18:00		Jignesh	OK
9	Q1915-01DUP	WC-04282025DUP	DUP	04/29/25 18:01		Jignesh	OK
10	CCV2	CCV2	CCV	04/29/25 18:05		Jignesh	OK

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

Instrument ID: KONELAB

Daily Analysis Runlog For Sequence/QCBatch ID # LB135608

Review By	rubina	Review On	5/1/2025 9:02:04 AM
Supervise By	Iwona	Supervise On	5/1/2025 12:51:40 PM
SubDirectory	LB135608	Test	Reactive Cyanide

STD. NAME	STD REF.#
ICAL Standard	WP112882,WP112883,WP112884,WP112885,WP112886,WP112887,WP112888
ICV Standard	WP112889
CCV Standard	WP112883
ICSA Standard	N/A
CRI Standard	N/A
LCS Standard	N/A
Chk Standard	WP112643,WP111035,WP112890

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	0.0PPBCN	0.0PPBCN	CAL1	04/30/25 09:44		rubina	OK
2	5.0PPBCN	5.0PPBCN	CAL2	04/30/25 09:44		rubina	OK
3	10PPBCN	10PPBCN	CAL3	04/30/25 09:44		rubina	OK
4	50PPBCN	50PPBCN	CAL4	04/30/25 09:44		rubina	OK
5	100PPBCN	100PPBCN	CAL5	04/30/25 09:44		rubina	OK
6	250PPBCN	250PPBCN	CAL6	04/30/25 09:44		rubina	OK
7	500PPBCN	500PPBCN	CAL7	04/30/25 09:44		rubina	OK
8	ICV1	ICV1	ICV	04/30/25 11:39		rubina	OK
9	ICB1	ICB1	ICB	04/30/25 11:39		rubina	OK
10	CCV1	CCV1	CCV	04/30/25 11:39		rubina	OK
11	CCB1	CCB1	CCB	04/30/25 11:39		rubina	OK
12	PB167792BL	PB167792BL	MB	04/30/25 11:39		rubina	OK
13	Q1904-02	VNJ-210	SAM	04/30/25 11:46		rubina	OK
14	Q1905-04	MH-G	SAM	04/30/25 11:46		rubina	OK
15	Q1905-04DUP	MH-GDUP	DUP	04/30/25 11:46		rubina	OK
16	Q1905-08	MH-H	SAM	04/30/25 11:46		rubina	OK
17	Q1906-04	WC-4	SAM	04/30/25 11:46		rubina	OK
18	Q1906-08	WC-5	SAM	04/30/25 11:46		rubina	OK

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

Instrument ID: KONELAB

Daily Analysis Runlog For Sequence/QCBatch ID # LB135608

Review By	rubina	Review On	5/1/2025 9:02:04 AM
Supervise By	Iwona	Supervise On	5/1/2025 12:51:40 PM
SubDirectory	LB135608	Test	Reactive Cyanide

STD. NAME	STD REF.#
ICAL Standard	WP112882,WP112883,WP112884,WP112885,WP112886,WP112887,WP112888
ICV Standard	WP112889
CCV Standard	WP112883
ICSA Standard	N/A
CRI Standard	N/A
LCS Standard	N/A
Chk Standard	WP112643,WP111035,WP112890

19	Q1906-12	WC-6	SAM	04/30/25 11:46		rubina	OK
20	Q1906-16	WC-7	SAM	04/30/25 11:46		rubina	OK
21	Q1907-02	CO-8R-WC	SAM	04/30/25 11:46		rubina	OK
22	CCV2	CCV2	CCV	04/30/25 11:54		rubina	OK
23	CCB2	CCB2	CCB	04/30/25 11:54		rubina	OK
24	Q1912-04	MH-E	SAM	04/30/25 11:54		rubina	OK
25	Q1912-08	MH-F	SAM	04/30/25 11:54		rubina	OK
26	Q1915-01	WC-04282025	SAM	04/30/25 11:54		rubina	OK
27	PB167802BL	PB167802BL	MB	04/30/25 12:01		rubina	OK
28	Q1913-02	WC-12-A-202504	SAM	04/30/25 12:01		rubina	OK
29	Q1913-02DUP	WC-12-A-202504DUP	DUP	04/30/25 12:01		rubina	OK
30	Q1913-04	WC-13-A-202504	SAM	04/30/25 12:01		rubina	OK
31	CCV3	CCV3	CCV	04/30/25 12:05		rubina	OK
32	CCB3	CCB3	CCB	04/30/25 12:05		rubina	OK

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

Instrument ID: FLAME

Daily Analysis Runlog For Sequence/QCBatch ID # LB135622

Review By	rubina	Review On	5/1/2025 3:17:42 PM
Supervise By	Iwona	Supervise On	5/1/2025 3:17:51 PM
SubDirectory	LB135622	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	Q1912-01	MH-E	SAM	05/01/25 12:00		rubina	OK
2	Q1912-01DUP	MH-EDUP	DUP	05/01/25 12:08		rubina	OK
3	Q1912-04	MH-E	SAM	05/01/25 12:16		rubina	OK
4	Q1912-05	MH-F	SAM	05/01/25 12:23		rubina	OK
5	Q1912-08	MH-F	SAM	05/01/25 12:30		rubina	OK
6	Q1915-01	WC-04282025	SAM	05/01/25 12:38		rubina	OK
7	Q1916-01	WC-12	SAM	05/01/25 12:45		rubina	OK
8	Q1916-04	WC-12	SAM	05/01/25 12:52		rubina	OK
9	Q1917-01	MH-JJ	SAM	05/01/25 13:00		rubina	OK
10	Q1917-04	MH-JJ	SAM	05/01/25 13:08		rubina	OK
11	Q1922-01	MH-R	SAM	05/01/25 13:15		rubina	OK
12	Q1922-04	MH-R	SAM	05/01/25 13:22		rubina	OK
13	Q1922-05	MH-S	SAM	05/01/25 13:30		rubina	OK
14	Q1922-08	MH-S	SAM	05/01/25 13:37		rubina	OK
15	Q1925-01	AUD-25-0068	SAM	05/01/25 13:45		rubina	OK
16	Q1925-02	AUD-25-0069	SAM	05/01/25 13:52		rubina	OK
17	Q1925-03	AUD-25-0070	SAM	05/01/25 14:00		rubina	OK

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Instrument ID: TITRAMETRIC

Daily Analysis Runlog For Sequence/QCBatch ID # LB135629

Review By	rubina	Review On	5/1/2025 2:49:43 PM
Supervise By	Iwona	Supervise On	5/1/2025 3:16:25 PM
SubDirectory	LB135629	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	PB167811BL	PB167811BL	MB	05/01/25 11:00		rubina	OK
2	Q1905-04	MH-G	SAM	05/01/25 11:03		rubina	OK
3	Q1905-04DUP	MH-GDUP	DUP	05/01/25 11:06		rubina	OK
4	Q1905-08	MH-H	SAM	05/01/25 11:08		rubina	OK
5	Q1907-02	CO-8R-WC	SAM	05/01/25 11:11		rubina	OK
6	Q1912-04	MH-E	SAM	05/01/25 11:14		rubina	OK
7	Q1912-08	MH-F	SAM	05/01/25 11:17		rubina	OK
8	Q1915-01	WC-04282025	SAM	05/01/25 11:20		rubina	OK
9	Q1916-04	WC-12	SAM	05/01/25 11:23		rubina	OK
10	Q1917-04	MH-JJ	SAM	05/01/25 11:25		rubina	OK
11	Q1922-04	MH-R	SAM	05/01/25 11:27		rubina	OK
12	Q1922-08	MH-S	SAM	05/01/25 11:30		rubina	OK

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Prep Standard - Chemical Standard Summary

Order ID : Q1915

Test : Corrosivity,Ignitability,Reactive Cyanide,Reactive Sulfide

Prepbatch ID : PB167792,PB167811,

Sequence ID/Qc Batch ID: LB135607,LB135608,LB135622,LB135629,

Standard ID :
WP111004,WP111035,WP111294,WP111296,WP112643,WP112881,WP112882,WP112883,WP112884,WP112885,WP112886,WP112887,WP112888,WP112889,WP112890,

Chemical ID :
M6121,W2668,W2725,W2882,W2926,W3019,W3071,W3072,W3093,W3105,W3112,W3113,W3114,W3138,W3139,W3149,W3154,W3161,W3178,W3191,

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
160	0.5M ZINC ACETATE	WP111004	12/09/2024	05/13/2025	Rubina Mughal	WETCHEM_SCALE_8 (WC SC-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

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
607	PYRIDINE-BARBITURIC ACID	WP111035	12/09/2024	04/30/2025	Niha Farheen Shaik	WETCHEM_SCALE_5 (WC SC-5)	Glass Pipette-A	Iwona Zarych 12/10/2024

FROM 145.00000ml of W3112 + 15.00000gram of W2882 + 15.00000ml of M6121 + 75.00000ml of W3019 = Final Quantity: 250.000 ml

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
11	Sodium hydroxide absorbing solution 0.25 N	WP111294	01/07/2025	07/07/2025	Niha Farheen Shaik	WETCHEM_SCALE_5 (WCSC-5)	None	Iwona Zarych 01/07/2025

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

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3371	Cyanide LCS Spike Solution, 5PPM	WP111296	01/07/2025	07/07/2025	Niha Farheen Shaik	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 01/07/2025

FROM 1.00000ml of W3138 + 199.00000ml of WP111294 = Final Quantity: 200.000 ml

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
539	CN BUFFER	WP112643	04/09/2025	10/09/2025	Niha Farheen Shaik	WETCHEM_SCALE_5 (WCSC-5)	None	Iwona Zarych 04/09/2025

FROM 138.00000gram of W2668 + 862.00000ml of W3112 = Final Quantity: 1000.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3456	Cyanide Intermediate Working Std, 5PPM	WP112881	04/30/2025	05/01/2025	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 04/30/2025

FROM 0.25000ml of W3154 + 49.75000ml of WP111294 = Final Quantity: 50.000 ml

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
4	Calibation standard 500 ppb	WP112882	04/30/2025	05/01/2025	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 04/30/2025

FROM 45.00000ml of WP111294 + 5.00000ml of WP112881 = Final Quantity: 50.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3761	Calibration-CCV CN Standard 250 ppb	WP112883	04/30/2025	05/01/2025	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 04/30/2025

FROM 2.50000ml of WP112881 + 47.50000ml of WP111294 = Final Quantity: 50.000 ml

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
6	Calibration Standard 100 ppb	WP112884	04/30/2025	05/01/2025	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 04/30/2025

FROM 1.00000ml of WP112881 + 49.00000ml of WP111294 = Final Quantity: 50.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
7	Calibration Standard 50 ppb	WP112885	04/30/2025	05/01/2025	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 04/30/2025

FROM 0.50000ml of WP112881 + 49.50000ml of WP111294 = Final Quantity: 50.000 ml

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
8	Calibration Standard 10 ppb	WP112886	04/30/2025	05/01/2025	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 04/30/2025

FROM 1.00000ml of WP112882 + 49.00000ml of WP111294 = Final Quantity: 50.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
9	Calibration Standard 5 ppb	WP112887	04/30/2025	05/01/2025	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 04/30/2025

FROM 0.50000ml of WP112882 + 49.50000ml of WP111294 = Final Quantity: 50.000 ml

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
167	0 ppb CN calibration std	WP112888	04/30/2025	05/01/2025	Rubina Mughal	None	None	Iwona Zarych 04/30/2025

FROM 50.00000ml of WP111294 = Final Quantity: 50.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
2168	RCN ICV STD, 100 PPB	WP112889	04/30/2025	05/01/2025	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 04/30/2025

FROM 1.00000ml of WP111296 + 49.00000ml of WP111294 = Final Quantity: 50.000 ml

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1582	Chloramine T solution, 0.014M	WP112890	04/30/2025	05/01/2025	Rubina Mughal	WETCHEM_SCALE_5 (WCSC-5)	Glass Pipette-A	Iwona Zarych 04/30/2025

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

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CHEMICAL RECEIPT LOG BOOK

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 #
PCI Scientific Supply, Inc.	J3818-5 / SODIUM PHOSPHATE, MONOBAS/HYD, CRYS, 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.	EMD-FX0410-5 / FORMALDEHYDE SOLUTION 450ML	60045	06/22/2025	08/19/2024 / Iwona	06/22/2020 / apatel	W2725

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,CRYS,ACS,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 #
SIGMA ALDRICH	270970-1L / Pyridine 1L	SHBQ2113	04/03/2028	04/03/2023 / Iwona	04/03/2023 / Iwona	W3019

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CHEMICAL RECEIPT LOG BOOK

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 / Iwona	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 / Iwona	W3072

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 / Iwona	04/22/2024 / Iwona	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 / Iwona	07/03/2024 / Iwona	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 / Iwona	07/08/2024 / Iwona	W3113

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CHEMICAL RECEIPT LOG BOOK

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 / Iwona	07/10/2024 / Iwona	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 / Iwona	08/28/2024 / Iwona	W3138

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.	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

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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

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W3071
Rec 12/6/23

Certificate of Analysis

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

Sigma-Aldrich.

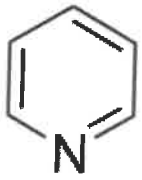
W3019
Rec 4/3/23

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside 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

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W3072
Rec. 12/01/23
, 2

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

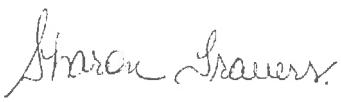
Test	Specification	Result	
Appearance	Colorless liquid	Passed	*Not a certified value.

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

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 (SO4)		0.002	<0.0020	%
Titrable 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

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

avantor™ | J.T.Baker®

R → 10/13/24
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

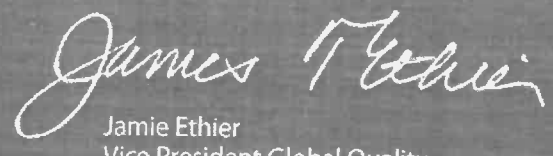
For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

Material No.: 9530-33
Batch No.: 0000275677

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

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.

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 ($NaH_2PO_4 \cdot H_2O$)	98.0 - 102.0 %	99.5
pH of 5% Solution at 25°C	4.1 - 4.5	4.3
Insoluble Matter	<= 0.01 %	< 0.01
Chloride (Cl)	<= 5 ppm	< 5
ACS - Sulfate (SO_4)	<= 0.003 %	< 0.003
Calcium (Ca)	<= 0.005 %	<0.005
Potassium (K)	<= 0.01 %	< 0.01
Heavy Metals (as Pb)	<= 0.001 %	< 0.001
Trace Impurities - Iron (Fe)	<= 0.001 %	< 0.001

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

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

Jamie Ethier
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
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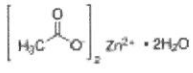
W2926
open 7/5/22
received
on
7/5/22

Certificate of Analysis

Product Name:
Zinc acetate dihydrate - ACS reagent, ≥98%



Product Number:	**383058**
Batch Number:	**MKCQ9159**
Brand:	SIGALD
CAS Number:	5970-45-6
MDL Number:	MFCD00066961
Formula:	C4H6O4Zn · 2H2O
Formula Weight:	219.51 g/mol
Quality Release Date:	06 JAN 2022

Test	Specification	Result
Appearance (Color)	White	White
Appearance (Form)	Powder or Crystal or Chunk(s)	Powder
Infrared Spectrum	Conforms to Structure	Conforms
Insoluble Matter	≤ 0.005 %	0.003 %
Calcium (Ca)	≤ 0.005 %	0.003 %
Chloride (Cl)	≤ 5 ppm	< 5 ppm
Iron (Fe)	≤ 5 ppm	< 5 ppm
Potassium (K)	≤ 0.01 %	0.00 %
Magnesium (Mg)	≤ 0.005 %	0.003 %
Sodium (Na)	≤ 0.05 %	0.03 %
Lead (Pb)	≤ 0.002 %	< 0.001 %
pH	6.0 - 7.0	6.1
Sulfate (SO4)	≤ 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

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W3093 09412.. 04/03/2024 LG

Certificate of Analysis

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

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W3105 Received on 4/22/24 by IZ

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-Cl 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."

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:

Pellets

Manufacture Date: 12/14/2022
Expiration Date: 12/31/2025

Storage: Room Temperature

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.

Certificate of Analysis

Sodium Hydroxide (Pellets)

Material: **0583**

Grade: **ACS GRADE**

Batch Number: **23B1556310**

Chemical Formula:	NaOH	Manufacture Date:	12/14/2022
Molecular Weight:	40	Expiration Date:	12/31/2025
CAS #:	1310-73-2		
Appearance:		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.

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Certificate of Analysis

Iodine (Iodine-Iodide), 0.0250 Normal (N/40), 1 mL = 0.4008 mg S^{2-}

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

LabChem
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

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W3149 Received on 10/16/24 by IZ

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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-Cl 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-Cl 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)

Paul Brandon (08/28/2024)
Production Manager

RICCA CHEMICAL COMPANY®
W3154 Rec. on 12/2/24 by IZ

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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 certifiec 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)

Luis Briceno (11/22/2024)
Operations Supervisor

RICCA CHEMICAL COMPANY®
W3161 Rec. on 12/09/24 by IZ

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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

RICCA CHEMICAL COMPANY®

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

Certificate of Analysis

W3178 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	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)

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Pocomoke City, MD 21851
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1-888-GO-RICCA
customerservice@riccachemical.com

W3191 W3191 Receive Date: 03/18/25 JP

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	*Not a certified value.

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

SHIPPING DOCUMENTS

Alliance TECHNICAL GROUP
284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 · Fax (908) 789-8922
www.chemtech.net

ALLIANCE PROJECT NO.
QUOTE NO. Q1915
COC Number 2046745

CLIENT INFORMATION

REPORT TO BE SENT TO:
COMPANY: CDM Smith
ADDRESS: 110 Fieldcrest Ave #8 6th Flr
CITY Edison STATE: NJ ZIP: 08837
ATTENTION: M Encinas
PHONE: 732 590 4697 FAX:

CLIENT PROJECT INFORMATION

PROJECT NAME: UTEN UST
PROJECT NO.: LOCATION: Mt Vernon NY
PROJECT MANAGER: M. Encinas
e-mail: EncinasMA@cdmsmith.com
PHONE: 732 590 4697 FAX:

CLIENT BILLING INFORMATION

BILL TO: CDM Smith PO#:
ADDRESS: 110 Fieldcrest Ave #8 6th Flr
CITY Edison STATE: NJ ZIP: 08837
ATTENTION: M. Encinas PHONE: 732 590 4697

DATA TURNAROUND INFORMATION

FAX (RUSH) _____ DAYS*
HARDCOPY (DATA PACKAGE): _____ DAYS*
EDD: _____ DAYS*
*TO BE APPROVED BY CHEMTECH
STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS

DATA DELIVERABLE INFORMATION

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

ANALYSIS

1: TCLP VOC
2
3. TCLP SVOC
4
5: TCLP metals Ignitability Corrosivity Reactivity
6
7
8
9.

ALLIANCE SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	# OF BOTTLES	PRESERVATIVES 1	2	3	4	5	6	7	8	9	COMMENTS
1.	WC 04282025	Soil	✓	VOC only	4/28/25	1415	4	✓	✓	✓	✓	✓	✓				
2.																	
3.																	
4.																	
5.																	
6.																	
7.																	
8.																	
9.																	
10.																	

← Specify Preservatives
A-HCl D-NaOH
B-HNO3 E-ICE
C-H2SO4 F-OTHER

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

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:
1.	4/29/25 1345	1. 1345 4/29/25
2.		2.
3.	4-29-25 1650	3.

Conditions of bottles or coolers at receipt: ❑ COMPLIANT ❑ NON COMPLIANT ❑ COOLER TEMP 2.5 °C
Comments: Temp 2.5° CAdjustment factor +1) IR Gun #1

Page _____ of
CLIENT: ❑ Hand Delivered ❑ Other
Shipment Complete ❑ YES ❑ NO

From: Chenenko, Ricky A. <chenenkora@cdmsmith.com>
Sent: Wednesday, May 14, 2025 1:16 PM
To: Yazmeen Gomez; yazmeen; Jordan Hedvat
Cc: Encinas, Marcie (Puskarik)
Subject: RE: Lab report Q1914

Thanks very much.

From: Yazmeen Gomez <Yazmeen.Gomez@alliancetg.com>
Sent: Wednesday, May 14, 2025 1:07 PM
To: Chenenko, Ricky A. <chenenkora@cdmsmith.com>; yazmeen <yazmeen@chemtech.net>; Jordan Hedvat <Jordan.Hedvat@AllianceTG.com>
Cc: Encinas, Marcie (Puskarik) <EncinasMA@cdmsmith.com>
Subject: RE: Lab report Q1914

Ricky,

I have let QA/QC know to create NYS B reports.

They should be uploaded by EOB.

Best Regards,

Yazmeen Gomez
Sr. Project Manager
An Alliance Technical Group Company
Main: 908-789-8900
Direct: 908-728-3147
Address: 284 Sheffield St, Ste 1, Mountainside, NJ 07092
www.alliancetg.com

From: Chenenko, Ricky A. <chenenkora@cdmsmith.com>
Sent: Wednesday, May 14, 2025 11:53 AM
To: yazmeen <yazmeen@chemtech.net>; Jordan Hedvat <jordan.hedvat@alliancetg.com>
Cc: Encinas, Marcie (Puskarik) <EncinasMA@cdmsmith.com>
Subject: Lab report Q1914

Yazmeen,

Can we get the ASP B report for Q1914? I think I checked off ASP A by mistake.

Thanks,

Ricky

284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

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