

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

LAB CHRONICLE

OrderID:	P4861	OrderDate:	11/14/2024 1:44:00 PM
Client:	AECOM	Project:	Meeker Ave Plumes Superfund Site RI FS
Contact:	Amit Haryani	Location:	L41

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
P4861-01	WC-11-A-202411	WATER			11/13/24 15:00			11/14/24
			Cyanide	9012B		11/18/24	11/18/24 13:12	
			Flash Point	1010B			11/15/24 14:25	
			pH	9040C			11/15/24 17:29	
			Reactive Cyanide	9012B		11/15/24	11/15/24 12:59	
			Reactive Sulfide	9034		11/18/24	11/19/24 10:03	



SAMPLE DATA

Report of Analysis

Client:	AECOM	Date Collected:	11/13/24 15:00
Project:	Meeker Ave Plumes Superfund Site RI FS	Date Received:	11/14/24
Client Sample ID:	WC-11-A-202411	SDG No.:	P4861
Lab Sample ID:	P4861-01	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Cyanide	0.18		1	0.00099	0.0050	mg/L	11/18/24 08:30	11/18/24 13:12	9012B
Flash Point	>212		1	0	0	o F		11/15/24 14:25	1010B
pH	7.37	H	1	0	0	pH		11/15/24 17:29	9040C
Reactive Cyanide	0.00099	U	1	0.00099	0.0050	mg/L	11/15/24 10:20	11/15/24 12:59	9012B
Reactive Sulfide	0.43	U	1	0.43	1.00	mg/L	11/18/24 16:35	11/19/24 10:03	9034

Comments: Other method reference for flash point : Pensky-Martens Closed Cup Flash Point ASTM D 93 - IP 34, pH result reported at temperature

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,
Fax : 908 789 8922

Initial and Continuing Calibration Verification

Client: AECOM

SDG No.: P4861

Project: Meeker Ave Plumes Superfund Site RI FS

RunNo.: LB133474

Analyte	Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID: Flash Point	ICV ° F	82.1	81	101	78-84	11/15/2024

Initial and Continuing Calibration Verification

Client: AECOM

SDG No.: P4861

Project: Meeker Ave Plumes Superfund Site RI FS

RunNo.: LB133475

Analyte	Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID: ICV1 Reactive Cyanide	mg/L	0.095	0.099	96	85-115	11/15/2024
Sample ID: CCV1 Reactive Cyanide	mg/L	0.24	0.25	96	90-110	11/15/2024
Sample ID: CCV2 Reactive Cyanide	mg/L	0.24	0.25	96	90-110	11/15/2024
Sample ID: CCV3 Reactive Cyanide	mg/L	0.24	0.25	96	90-110	11/15/2024
Sample ID: CCV4 Reactive Cyanide	mg/L	0.26	0.25	104	90-110	11/15/2024

Initial and Continuing Calibration Verification

Client: AECOM

SDG No.: P4861

Project: Meeker Ave Plumes Superfund Site RI FS

RunNo.: LB133477

Analyte		Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID:	ICV						
pH		pH	7.00	7	100	90-110	11/15/2024
Sample ID:	CCV1						
pH		pH	2.01	2.00	101	90-110	11/15/2024
Sample ID:	CCV2						
pH		pH	12.02	12.00	100	90-110	11/15/2024

Initial and Continuing Calibration Verification

Client: AECOM

SDG No.: P4861

Project: Meeker Ave Plumes Superfund Site RI FS

RunNo.: LB133498

Analyte		Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID:	ICV1						
Cyanide		mg/L	0.095	0.099	96	90-110	11/18/2024
Sample ID:	CCV1						
Cyanide		mg/L	0.24	0.25	96	90-110	11/18/2024
Sample ID:	CCV2						
Cyanide		mg/L	0.24	0.25	96	90-110	11/18/2024
Sample ID:	CCV3						
Cyanide		mg/L	0.26	0.25	104	90-110	11/18/2024

Initial and Continuing Calibration Blank Summary

Client: AECOM

SDG No.: P4861

Project: Meeker Ave Plumes Superfund Site RI FS

RunNo.: LB133475

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: ICB1 Reactive Cyanide	mg/L	0.001	0.0025	J	0.00099	0.005	11/15/2024
Sample ID: CCB1 Reactive Cyanide	mg/L	< 0.0025	0.0025	U	0.00099	0.005	11/15/2024
Sample ID: CCB2 Reactive Cyanide	mg/L	< 0.0025	0.0025	U	0.00099	0.005	11/15/2024
Sample ID: CCB3 Reactive Cyanide	mg/L	< 0.0025	0.0025	U	0.00099	0.005	11/15/2024
Sample ID: CCB4 Reactive Cyanide	mg/L	0.0011	0.0025	J	0.00099	0.005	11/15/2024

Initial and Continuing Calibration Blank Summary

Client: AECOM

SDG No.: P4861

Project: Meeker Ave Plumes Superfund Site RI FS

RunNo.: LB133498

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: ICB1 Cyanide	mg/L	< 0.0025	0.0025	U	0.00099	0.005	11/18/2024
Sample ID: CCB1 Cyanide	mg/L	< 0.0025	0.0025	U	0.00099	0.005	11/18/2024
Sample ID: CCB2 Cyanide	mg/L	< 0.0025	0.0025	U	0.00099	0.005	11/18/2024
Sample ID: CCB3 Cyanide	mg/L	< 0.0025	0.0025	U	0.00099	0.005	11/18/2024

Preparation Blank Summary

Client: AECOM

SDG No.: P4861

Project: Meeker Ave Plumes Superfund Site RI FS

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: PB165009BL Reactive Cyanide	mg/L	< 0.0025	0.0025	U	0.00099	0.005	11/15/2024
Sample ID: PB165017BL Cyanide	mg/L	< 0.0025	0.0025	U	0.00099	0.005	11/18/2024
Sample ID: PB165069BL Reactive Sulfide	mg/L	< 0.5000	0.5000	U	0.43	1	11/19/2024

Matrix Spike Summary

Client:	AECOM	SDG No.:	P4861
Project:	Meeker Ave Plumes Superfund Site RI FS	Sample ID:	P4871-01
Client ID:	WC-10-A-202411MS	Percent Solids for Spike Sample:	0

Analyte	Units	Acceptance Limit %R	Spiked Result	Conc. Qualifier	Sample Result	Conc. Qualifier	Spike Added	Dilution Factor	% Rec	Qual	Analysis Date
Cyanide	mg/L	75-125	0.048		0.0034	J	0.04	1	112		11/18/2024

Matrix Spike Summary

Client:	AECOM	SDG No.:	P4861
Project:	Meeker Ave Plumes Superfund Site RI FS	Sample ID:	P4871-01
Client ID:	WC-10-A-202411MSD	Percent Solids for Spike Sample:	0

Analyte	Units	Acceptance Limit %R	Spiked Result	Conc. Qualifier	Sample Result	Conc. Qualifier	Spike Added	Dilution Factor	% Rec	Qual	Analysis Date
Cyanide	mg/L	75-125	0.047		0.0034	J	0.04	1	109		11/18/2024

Duplicate Sample Summary

Client:	AECOM	SDG No.:	P4861
Project:	Meeker Ave Plumes Superfund Site RI FS	Sample ID:	P4812-03
Client ID:	270DUP	Percent Solids for Spike Sample:	0

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Reactive Cyanide	mg/L	+/-20	0.00099	U	0.00099	U	1	0		11/15/2024

Duplicate Sample Summary

Client:	AECOM	SDG No.:	P4861
Project:	Meeker Ave Plumes Superfund Site RI FS	Sample ID:	P4861-01
Client ID:	WC-11-A-202411DUP	Percent Solids for Spike Sample:	0

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
pH	pH	+/-20	7.37		7.38		1	0.14		11/15/2024
Reactive Sulfide	mg/L	+/-20	0.43	U	0.43	U	1	0		11/19/2024

Duplicate Sample Summary

Client:	AECOM	SDG No.:	P4861
Project:	Meeker Ave Plumes Superfund Site RI FS	Sample ID:	P4871-01
Client ID:	WC-10-A-202411DUP	Percent Solids for Spike Sample:	0

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/AD	Qual	Analysis Date
Flash Point	o F	+/-2	>212.0		>212.0		1	0		11/15/2024
Cyanide	mg/L	+/-20	0.0034	J	0.0025	J	1	31	*	11/18/2024

Duplicate Sample Summary

Client:	AECOM	SDG No.:	P4861
Project:	Meeker Ave Plumes Superfund Site RI FS	Sample ID:	P4871-01
Client ID:	WC-10-A-202411MSD	Percent Solids for Spike Sample:	0

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Cyanide	mg/L	+/-20	0.048		0.047		1	2		11/18/2024

Laboratory Control Sample Summary

Client: AECOM

SDG No.: P4861

Project: Meeker Ave Plumes Superfund Site RI FS

Run No.: LB133498

Analyte	Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID	PB165017BS							
Cyanide	mg/L	0.1	0.095		95	1	85-115	11/18/2024



RAW DATA

Analytical Summary Report

Analysis Method: 1010B

Reviewed By: rubina

Parameter: Flash Point

Supervisor Review By: Iwona

Run Number: LB133474

Ambient Barometric Pressure (mmHg): 765.00

Thermometer ID: Flash Point

Barometric Scale ID: 0511064

Reagent/Standard	Lot/Log #
p-xylene (ICV)	W3088

Seq	LabID	True Value °F	DL	Initial Sample °C	Celsius °C	Result °F	Final Result °F	Anal Date	Anal Time
1	ICV	81	1	8	28.00	82.4	82.1	11/15/2024	13:25
2	P4843-01		1	14	100.00	>212.0	>212.0	11/15/2024	13:55
3	P4861-01		1	12	100.00	>212.0	>212.0	11/15/2024	14:25
4	P4871-01		1	13	100.00	>212.0	>212.0	11/15/2024	14:55
5	P4871-01DUP		1	13	100.00	>212.0	>212.0	11/15/2024	15:25

Result = (Celsius * 1.8) + 32

Final Result = Result + (760 - Ambient Barometric Pressure) * 0.06

WORKLIST(Hardcopy Internal Chain)

WorkList Name : fp-11-15 WorkList ID : 185478 Department : Wet-Chemistry Date : 11-15-2024 12:15:14 *LB133474*

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P4843-01	SW-WTS-01	Water	Flash Point	Cool 4 deg C	ENTA05	L23	11/13/2024	1010B
P4861-01	WC-11-A-202411	Water	Flash Point	Cool 4 deg C	AECO02	L41	11/13/2024	1010B
P4871-01	WC-10-A-202411	Water	Flash Point	Cool 4 deg C	AECO02	M11	11/13/2024	1010B

Date/Time 11/15/2024 13:15
Raw Sample Received by: RM cwc
Raw Sample Relinquished by: JS (cwc)

Date/Time 11/15/2024 16:05
Raw Sample Received by: JP (cwc)
Raw Sample Relinquished by: RM cwc

Test results

Aquakem 7.2AQ1

Page:

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

Reviewed by : NF

Instrument ID : Konelab

11/15/2024 13:49

Test: Total CN

Sample Id	Result	Dil. 1 +	Response	Errors
ICV1	95.358	0.0	0.070	
ICB1	1.015	0.0	0.002	
CCV1	243.566	0.0	0.177	
CCB1	0.807	0.0	0.002	
PB165008BL	0.844	0.0	0.002	
P4809-04	0.285	0.0	0.002	
P4809-04DUP	0.150	0.0	0.002	
P4813-02	0.157	0.0	0.002	
P4813-05	0.169	0.0	0.002	
P4821-04	0.397	0.0	0.002	
P4821-08	0.550	0.0	0.002	
P4823-04	0.500	0.0	0.002	
P4833-04	0.351	0.0	0.002	
P4833-08	0.437	0.0	0.002	
CCV2	237.211	0.0	0.173	
CCB2	0.204	0.0	0.002	
P4848-02	0.368	0.0	0.002	
P4849-02	0.566	0.0	0.002	
P4870-13	0.456	0.0	0.002	
P4870-14	0.562	0.0	0.002	
P4870-15	0.524	0.0	0.002	
P4870-16	0.541	0.0	0.002	
PB165009BL	0.597	0.0	0.002	
P4812-03	0.516	0.0	0.002	
P4812-03DUP	0.552	0.0	0.002	
P4813-01	0.482	0.0	0.002	
CCV3	241.821	0.0	0.176	
CCB3	0.606	0.0	0.002	
P4813-04	0.531	0.0	0.002	
P4861-01	0.405	0.0	0.002	
P4871-01	0.492	0.0	0.002	
P4813-03	0.575	0.0	0.002	
CCV4	259.298	0.0	0.189	
CCB4	1.057	0.0	0.002	
N	34			
Mean	32.116			
SD	80.7801			
CV%	251.52			

Aquakem v. 7.2AQ1

Results from time period:

Fri Nov 15 10:43:37 2024

Fri Nov 15 13:03:47 2024

Sample Id	Sam/Ctr/c/	Test short r	Test type	Result	Result unit	Result date and time	Stat
0.0PPBCN	A	Total CN	P	0.0251	µg/l	11/15/2024 10:43:37	
5.0PPBCN	A	Total CN	P	5.1462	µg/l	11/15/2024 10:43:38	
10PPBCN	A	Total CN	P	10.3136	µg/l	11/15/2024 10:43:39	
50PPBCN	A	Total CN	P	48.5273	µg/l	11/15/2024 10:43:40	
100PPBCN	A	Total CN	P	98.9192	µg/l	11/15/2024 10:43:41	
250PPBCN	A	Total CN	P	253.4259	µg/l	11/15/2024 10:43:42	
500PPBCN	A	Total CN	P	498.6428	µg/l	11/15/2024 10:43:43	
ICV1	S	Total CN	P	95.3581	µg/l	11/15/2024 12:37:13	
ICB1	S	Total CN	P	1.0154	µg/l	11/15/2024 12:37:14	
CCV1	S	Total CN	P	243.5659	µg/l	11/15/2024 12:37:16	
CCB1	S	Total CN	P	0.807	µg/l	11/15/2024 12:37:19	
PB165008BL	S	Total CN	P	0.844	µg/l	11/15/2024 12:37:20	
P4809-04	S	Total CN	P	0.2851	µg/l	11/15/2024 12:37:22	
P4809-04DUP	S	Total CN	P	0.1505	µg/l	11/15/2024 12:44:47	
P4813-02	S	Total CN	P	0.1573	µg/l	11/15/2024 12:44:48	
P4813-05	S	Total CN	P	0.1686	µg/l	11/15/2024 12:44:49	
P4821-04	S	Total CN	P	0.3974	µg/l	11/15/2024 12:44:50	
P4821-08	S	Total CN	P	0.5503	µg/l	11/15/2024 12:44:51	
P4823-04	S	Total CN	P	0.4996	µg/l	11/15/2024 12:44:52	
P4833-04	S	Total CN	P	0.3512	µg/l	11/15/2024 12:44:53	
P4833-08	S	Total CN	P	0.437	µg/l	11/15/2024 12:44:54	
CCV2	S	Total CN	P	237.211	µg/l	11/15/2024 12:44:57	
CCB2	S	Total CN	P	0.2043	µg/l	11/15/2024 12:52:19	
P4848-02	S	Total CN	P	0.368	µg/l	11/15/2024 12:52:20	
P4849-02	S	Total CN	P	0.5664	µg/l	11/15/2024 12:52:21	
P4870-13	S	Total CN	P	0.4557	µg/l	11/15/2024 12:52:22	
P4870-14	S	Total CN	P	0.5623	µg/l	11/15/2024 12:52:23	
P4870-15	S	Total CN	P	0.5241	µg/l	11/15/2024 12:52:24	
P4870-16	S	Total CN	P	0.5408	µg/l	11/15/2024 12:52:25	
PB165009BL	S	Total CN	P	0.5968	µg/l	11/15/2024 12:52:26	
P4812-03	S	Total CN	P	0.5156	µg/l	11/15/2024 12:52:27	
P4812-03DUP	S	Total CN	P	0.5522	µg/l	11/15/2024 12:52:28	
P4813-01	S	Total CN	P	0.4815	µg/l	11/15/2024 12:52:29	
CCV3	S	Total CN	P	241.8213	µg/l	11/15/2024 12:59:56	
CCB3	S	Total CN	P	0.606	µg/l	11/15/2024 12:59:57	
P4813-04	S	Total CN	P	0.5308	µg/l	11/15/2024 12:59:58	
P4861-01	S	Total CN	P	0.4047	µg/l	11/15/2024 12:59:59	
P4871-01	S	Total CN	P	0.492	µg/l	11/15/2024 13:00:00	
P4813-03	S	Total CN	P	0.5753	µg/l	11/15/2024 13:00:02	
CCV4	S	Total CN	P	259.2982	µg/l	11/15/2024 13:03:46	
CCB4	S	Total CN	P	1.0568	µg/l	11/15/2024 13:03:47	

Calibration results

Aquakem 7.2AQ1

Page:

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

Reviewed by : NF Instrument ID : Konelab

11/15/2024 11:58

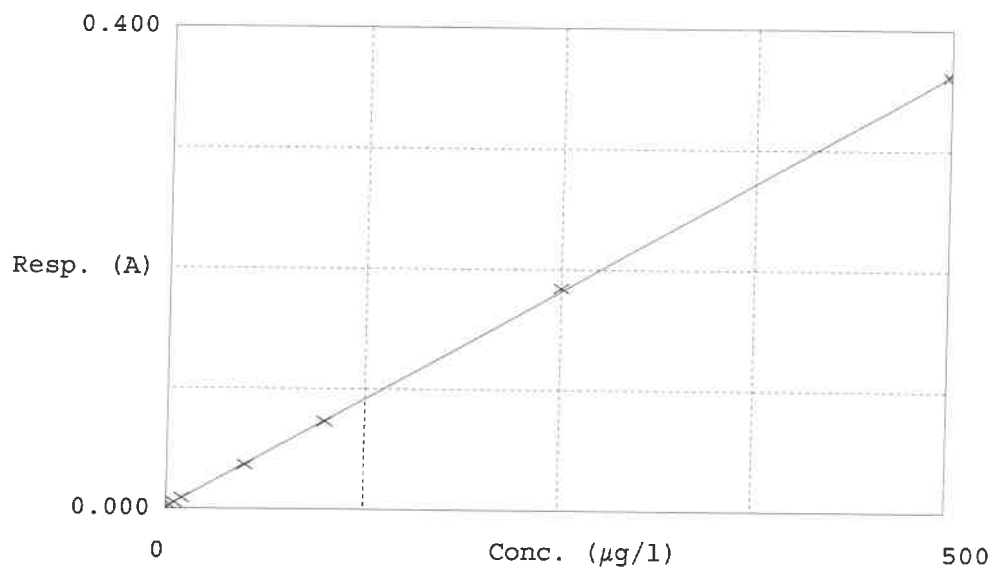
Test Total CN

Accepted 11/15/2024 11:58

Factor 1386
Bias 0.002

Coeff. of det. 0.999917

Errors



	Calibrator	Response	Calc. con.	Conc.	Re Errors
1	0.0PPBCN	0.002	0.0251	0.0000	
2	5.0PPBCN	0.005	5.1462	5.0000	2.9
3	10PPBCN	0.009	10.3136	10.0000	3.1
4	50PPBCN	0.037	48.5273	50.0000	-2.9
5	100PPBCN	0.073	98.9192	100.0000	-1.1
6	250PPBCN	0.184	253.4259	250.0000	1.4
7	500PPBCN	0.361	498.6428	500.0000	-0.3

NF
11.15.2024

Analytical Summary Report

Analysis Method: 9040C
Parameter: pH
Run Number: LB133477

Analyst By : jignesh

Supervisor Review By : Iwona

Slope : 98.5

pH Meter ID : WC PH METER-1

Calibration Standards	Chemtech Log#
PH 4 BUFFER SOLUTION	W3107
BUFFER PH 7.00 GREEN 1PINT PK6	W3093
PH 10.01 BUFFER, COLOR CD 475ML	W3094
buffer solution pH 7 yellow	W3071
Buffer Solution, PH2 (500ml)	W3005
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	11/15/2024	17:15
2	CAL2	1	Water	NA	NA	20.2	7.00	11/15/2024	17:16
3	CAL3	1	Water	NA	NA	20.4	10.02	11/15/2024	17:20
4	ICV	1	Water	NA	NA	20.3	7.00	11/15/2024	17:25
5	CCV1	1	Water	NA	NA	20.2	2.01	11/15/2024	17:26
6	P4861-01	1	Water	NA	NA	20.1	7.37	11/15/2024	17:29
7	P4861-01DUP	1	Water	NA	NA	20.2	7.38	11/15/2024	17:30
8	P4864-01	1	Water	NA	NA	21.1	2.76	11/15/2024	17:35
9	P4867-02	1	Water	NA	NA	20.2	7.22	11/15/2024	17:40
10	P4867-03	1	Water	NA	NA	20.2	6.82	11/15/2024	17:45
11	P4871-01	1	Water	NA	NA	20.6	7.37	11/15/2024	17:48
12	P4890-01	1	Water	NA	NA	20.1	6.42	11/15/2024	17:50
13	P4890-02	1	Water	NA	NA	20.7	7.01	11/15/2024	17:52
14	P4890-03	1	Water	NA	NA	20.7	7.01	11/15/2024	17:55
15	P4890-04	1	Water	NA	NA	20.8	6.20	11/15/2024	17:59
16	CCV2	1	Water	NA	NA	20.3	12.02	11/16/2024	18:00

WORKLIST(Hardcopy Internal Chain)

UB 133477

WorkList Name : ph p4862 water WorkList ID : 185496 Department : Wet-Chemistry Date : 11-15-2024 17:05:44

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P4861-01	WC-11-A-202411	Water	pH	Cool 4 deg C	AECO02	L41	11/13/2024	9040C
P4864-01	MONTCLAIR-TOTE-2	Water	pH	Cool 4 deg C	PSEG03	M11	11/15/2024	9040C
P4867-02	TT-070-IDWGW-20241113	Water	pH	Cool 4 deg C	TETR06	L41	11/13/2024	9040C
P4867-03	TT-071-IDWGW-20241113	Water	pH	Cool 4 deg C	TETR06	L41	11/13/2024	9040C
P4867-04	TT-072-IDWGW-20241113	Water	pH	Cool 4 deg C	TETR06	L41	11/13/2024	9040C
P4871-01	WC-10-A-202411	Water	pH	Cool 4 deg C	AECO02	M11	11/13/2024	9040C
P4890-01	#3711	Water	pH	Cool 4 deg C	PSEG03	M11	11/15/2024	9040C
P4890-02	D3617	Water	pH	Cool 4 deg C	PSEG03	M11	11/15/2024	9040C
P4890-03	D3690	Water	pH	Cool 4 deg C	PSEG03	M11	11/15/2024	9040C
P4890-04	D3721	Water	pH	Cool 4 deg C	PSEG03	M11	11/15/2024	9040C

78

78

Date/Time 11-15-24 17:10
 Raw Sample Received by: 78 wgs
 Raw Sample Relinquished by: 78 wgs

Date/Time 11-15-24 17:15-24 19:13
 Raw Sample Received by: 78 wgs
 Raw Sample Relinquished by: 78 wgs

===== LBI
Test results Aquakem 7.2AQ1 Page: 1

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

11/18/2024 13:35 Reviewed by : NF Instrument ID : Konelab

Test: Total CN

Sample Id	Result	Dil. 1 +	Response	Errors
ICV1	94.698	0.0	0.069	
ICB1	0.390	0.0	0.002	
CCV1	241.471	0.0	0.174	
CCB1	0.609	0.0	0.002	
PB165017BL	0.757	0.0	0.002	
PB165017BS	94.708	0.0	0.069	
LOWPB165017	10.034	0.0	0.009	
HIGHPB165017	484.119	0.0	0.347	
P4861-01	178.280	0.0	0.129	
P4871-01	3.382	0.0	0.004	
P4871-01DUP	2.531	0.0	0.003	
P4871-01MS	47.782	0.0	0.036	
P4871-01MSD	47.203	0.0	0.035	
PB165063BL	0.484	0.0	0.002	
CCV2	241.550	0.0	0.174	
CCB2	0.417	0.0	0.002	
PB165063BS	95.815	0.0	0.070	
P4889-01	2.868	0.0	0.004	
P4889-01DUP	2.449	0.0	0.003	
P4889-01MS	39.633	0.0	0.030	
P4889-01MSD	39.737	0.0	0.030	
P4889-03	2.533	0.0	0.003	
P4889-05	3.666	0.0	0.004	
CCV3	255.712	0.0	0.184	
CCB3	0.523	0.0	0.002	

N 25
Mean 75.654
SD 119.0313
CV% 157.34

Aquakem v. 7.2AQ1

Results from time period:

Mon Nov 18 11:28:52 2024

Mon Nov 18 13:25:16 2024

Sample Id	Sam/Ctr/c/	Test short r	Test type	Result	Result unit	Result date and time	Stat
0.OPPBCN	A	Total CN	P	-0.8172	µg/l	11/18/2024 11:50:34	
5.OPPBCN	A	Total CN	P	5.3999	µg/l	11/18/2024 11:50:35	
10PPBCN	A	Total CN	P	10.086	µg/l	11/18/2024 11:50:36	
50PPBCN	A	Total CN	P	48.4619	µg/l	11/18/2024 11:50:37	
100PPBCN	A	Total CN	P	99.0095	µg/l	11/18/2024 11:50:38	
250PPBCN	A	Total CN	P	255.0272	µg/l	11/18/2024 11:50:39	
500PPBCN	A	Total CN	P	497.8326	µg/l	11/18/2024 11:50:40	
ICV1	S	Total CN	P	94.6978	µg/l	11/18/2024 13:05:18	
ICB1	S	Total CN	P	0.3899	µg/l	11/18/2024 13:05:20	
CCV1	S	Total CN	P	241.4715	µg/l	11/18/2024 13:05:22	
CCB1	S	Total CN	P	0.6087	µg/l	11/18/2024 13:05:25	
PB165017BL	S	Total CN	P	0.7574	µg/l	11/18/2024 13:05:26	
PB165017BS	S	Total CN	P	94.7081	µg/l	11/18/2024 13:05:28	
LOWPB165017	S	Total CN	P	10.0339	µg/l	11/18/2024 13:12:54	
HIGHPB165017	S	Total CN	P	484.1185	µg/l	11/18/2024 13:12:56	
P4861-01	S	Total CN	P	178.2801	µg/l	11/18/2024 13:12:58	
P4871-01	S	Total CN	P	3.3817	µg/l	11/18/2024 13:12:59	
P4871-01DUP	S	Total CN	P	2.5308	µg/l	11/18/2024 13:13:00	
P4871-01MS	S	Total CN	P	47.7817	µg/l	11/18/2024 13:13:01	
P4871-01MSD	S	Total CN	P	47.2028	µg/l	11/18/2024 13:13:02	
PB165063BL	S	Total CN	P	0.4836	µg/l	11/18/2024 13:20:26	
CCV2	S	Total CN	P	241.5499	µg/l	11/18/2024 13:20:27	
CCB2	S	Total CN	P	0.417	µg/l	11/18/2024 13:20:28	
PB165063BS	S	Total CN	P	95.8154	µg/l	11/18/2024 13:20:29	
P4889-01	S	Total CN	P	2.8682	µg/l	11/18/2024 13:20:30	
P4889-01DUP	S	Total CN	P	2.4486	µg/l	11/18/2024 13:20:31	
P4889-01MS	S	Total CN	P	39.6329	µg/l	11/18/2024 13:20:32	
P4889-01MSD	S	Total CN	P	39.7371	µg/l	11/18/2024 13:20:33	
P4889-03	S	Total CN	P	2.5327	µg/l	11/18/2024 13:25:12	
P4889-05	S	Total CN	P	3.6663	µg/l	11/18/2024 13:25:13	
CCV3	S	Total CN	P	255.7116	µg/l	11/18/2024 13:25:14	
CCB3	S	Total CN	P	0.5229	µg/l	11/18/2024 13:25:15	

Calibration results

Aquakem 7.2AQ1

Page: 1

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

11/18/2024 12:10

Reviewed by : NF

Instrument ID : Konelab

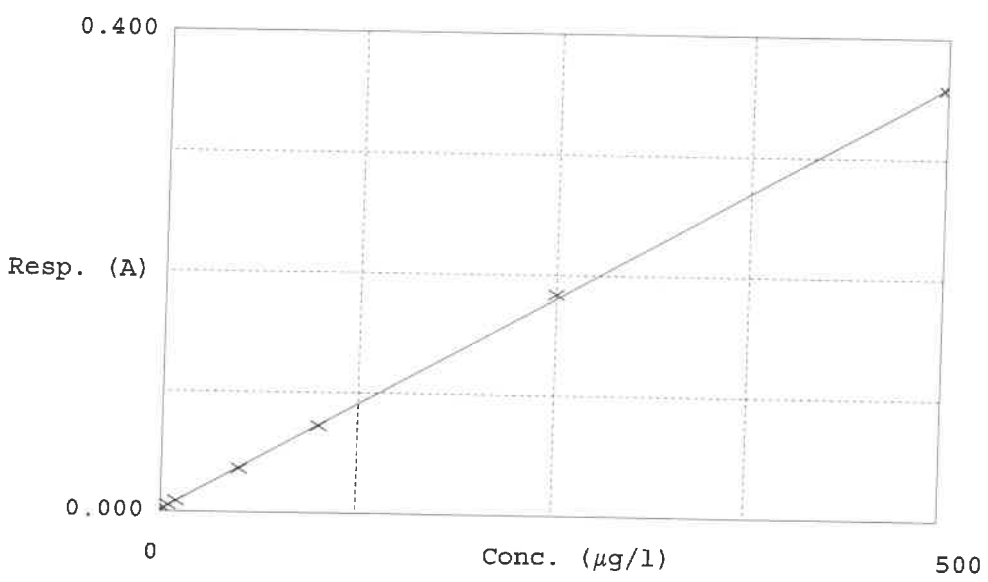
Test Total CN

Accepted 11/18/2024 12:09

Factor 1400
 Bias 0.002

Coeff. of det. 0.999834

Errors



	Calibrator	Response	Calc. con.	Conc.	R_c Errors
1	0.0PPBCN	0.001	-0.8172	0.0000	
2	5.0PPBCN	0.005	5.3999	5.0000	8.0
3	10PPBCN	0.009	10.0860	10.0000	0.9
4	50PPBCN	0.036	48.4619	50.0000	-3.1
5	100PPBCN	0.072	99.0095	100.0000	-1.0
6	250PPBCN	0.184	255.0272	250.0000	2.0
7	500PPBCN	0.357	497.8326	500.0000	-0.4

NF
 11.18.2024

Analysis Method: 9034

Parameter: Reactive Sulfide

Run Number: LB133507

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 Volume (mL)	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	PB165069BL		1	50	50	2.00	0.00	1.92	1.92	0.08	0.00	0.00	11/19/2024	10:00
2	P4861-01		1	50	50	2.00	0.00	1.90	1.90	0.10	0.02	0.16	11/19/2024	10:03
3	P4861-01DUP		1	50	50	2.00	0.00	1.90	1.90	0.10	0.02	0.16	11/19/2024	10:05
4	P4871-01		1	50	50	2.00	0.00	1.86	1.86	0.14	0.06	0.48	11/19/2024	10:08
5	P4890-01		1	50	50	2.00	0.00	1.90	1.90	0.10	0.02	0.16	11/19/2024	10:10
6	P4890-02		1	50	50	2.00	0.00	1.88	1.88	0.12	0.04	0.32	11/19/2024	10:13
7	P4890-03		1	50	50	2.00	0.00	1.88	1.88	0.12	0.04	0.32	11/19/2024	10:16

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 : M9012B-Total, Amenable and Reactive Cyanide-20

SDG No : N/A

Start Digest Date: 11/15/2024 Time : 10:20 Temp : N/A

Matrix : WATER

End Digest Date: 11/15/2024 Time : 11:50 Temp : N/A

Pipette ID : N/A

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: NP

Weigh By : N/A

pH Meter ID : N/A

Supervisor Signature: 12

Standard 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	WP108640
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
11.15.2024, 12:00	NF(WC)	NF(WC)
	Preparation Group	Analysis Group

Lab Sample ID	Client Sample ID	Initial Vol (ml)	Final Vol (ml)	pH	Sulfide	Oxidizing	Nitrate/ Nitrite	Comment	Prep Pos
P4812-03	270	50	50	N/A	N/A	N/A	N/A	N/A	N/A
P4812-03DUP	270DUP	50	50	N/A	N/A	N/A	N/A	N/A	N/A
P4813-01	416	50	50	N/A	N/A	N/A	N/A	N/A	N/A
P4813-04	419	50	50	N/A	N/A	N/A	N/A	N/A	N/A
P4861-01	WC-11-A-202411	50	50	N/A	N/A	N/A	N/A	N/A	N/A
P4871-01	WC-10-A-202411	50	50	N/A	N/A	N/A	N/A	N/A	N/A
PB165009BL	PBW009	50	50	N/A	N/A	N/A	N/A	N/A	N/A

WORKLIST(Hardcopy Internal Chain)

WorkList Name : RCN W-11152024

WorkList ID : 185471

Department : Distillation

Date : 11-15-2024 08:12:01

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P4812-03	270	Water	Reactive Cyanide	Cool 4 deg C	PSEG03	L41	11/11/2024	9012B
P4813-01	416	Water	Reactive Cyanide	Cool 4 deg C	PSEG03	L31	11/11/2024	9012B
P4813-04	419	Water	Reactive Cyanide	Cool 4 deg C	PSEG03	L31	11/11/2024	9012B
P4861-01	WC-11-A-202411	Water	Reactive Cyanide	Cool 4 deg C	AECO02	L41	11/13/2024	9012B
P4871-01	WC-10-A-202411	Water	Reactive Cyanide	Cool 4 deg C	AECO02	M11	11/13/2024	9012B

Date/Time 11.15.2024, 08:20
 Raw Sample Received by: NFLWCJ
 Raw Sample Relinquished by: AB Wey

Date/Time 11.15.2024, 12:30
 Raw Sample Received by: JD WDC
 Raw Sample Relinquished by: NFLWCJ

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

SDG No : N/A

Start Digest Date: 11/18/2024 Time : 08:30 Temp : 124 °C

Matrix : WATER

End Digest Date: 11/18/2024 Time : 10:00 Temp : 126 °C

Pipette ID : WC

Balance ID : N/A

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: *[Signature]*

Weigh By : N/A

pH Meter ID : N/A

Supervisor Signature: 12

Standard Name	MLS USED	STD REF. # FROM LOG
LCSW	1ML	WP109549
MS/MSD SPIKE SOL.	0.40ML	WP110035
PBW	50ML	W3112
N/A	N/A	N/A
N/A	N/A	N/A

Chemical Used	ML/SAMPLE USED	Lot Number
0.25N NaOH	50ML	WP108640
50% v/v H2SO4	5ML	WP110391
51% w/v MgCl2	2ML	WP110390
pH Paper 0-14	N/A	W3121
Nitrate/Nitrite Strip	N/A	W3101
Lead Acetate strip	N/A	W3134
KI-starch paper	N/A	W2965
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

LAB SAMPLE ID	CLIENT SAMPLE ID	Wt(g)/Vol(ml)	Comment
S0	S0	N/A	N/A
S5.0	S5.0	N/A	N/A
S10.0	S10.0	N/A	N/A
S100.0	S100.0	N/A	N/A
S250.0	S250.0	N/A	N/A
S500.0	S500.0	N/A	N/A
ICV	ICV	0.5ML	W3011
ICB	ICB	N/A	N/A
CCV	CCV	N/A	N/A
CCB	CCB	N/A	N/A
Midrange	Midrange	N/A	N/A
HIGHSTD	HIGHSTD	5.0ML	WP110035
LOWSTD	LOWSTD	0.1ML	WP110035

Extraction Conformance/Non-Conformance Comments:

N/A

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
11/18/2024, 10:15	<i>[Signature]</i>	<i>[Signature]</i>
	Preparation Group	Analysis Group

Lab Sample ID	Client Sample ID	Initial Vol (ml)	Final Vol (ml)	pH	Sulfide	Oxidizing	Nitrate/ Nitrite	Comment	Prep Pos
P4861-01DUP	WC-11-A-202411DUP	50	50	>12	Negative	Negative	Negative	N/A	N/A
P4861-01MS	WC-11-A-202411MS	50	50	>12	Negative	Negative	Negative	N/A	N/A
P4861-01MSD	WC-11-A-202411MSD	50	50	>12	Negative	Negative	Negative	N/A	N/A
P4861-01	WC-11-A-202411	50	50	>12	Negative	Negative	Negative	N/A	N/A
P4871-01	WC-10-A-202411	50	50	>12	Negative	Negative	Negative	N/A	N/A
PB165017BL	PBW017	50	50	>12	Negative	Negative	Negative	N/A	N/A
PB165017BS	LCS017	50	50	>12	Negative	Negative	Negative	N/A	N/A

WORKLIST(Hardcopy Internal Chain)

WorkList Name : CN W-11152024 WorkList ID : 185488 Department : Distillation Date : 11-15-2024 13:58:43

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P4861-01	WC-11-A-202411	Water	Cyanide	1:1 NaOH to pH >12	AECO02	L41	11/13/2024	9012B
P4871-01	WC-10-A-202411	Water	Cyanide	1:1 NaOH to pH >12	AECO02	M11	11/13/2024	9012B

Date/Time 11.18.2024, 08:00
Raw Sample Received by: [Signature]
Raw Sample Relinquished by: [Signature]

Date/Time 11.18.2024, 10:00
Raw Sample Received by: [Signature]
Raw Sample Relinquished by: [Signature]

SOP ID : M9030B-Sulfide-12
SDG No : N/A
Matrix : WATER
Pipette ID : WC
Balance ID : N/A
Hood ID : HOOD#1
Block ID : MC-1,
Weigh By : N/A

Start Digest Date: 11/18/2024 **Time :** 16:35 **Temp :** N/A
End Digest Date: 11/18/2024 **Time :** 18:05 **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
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
N/A	N/A	N/A

Chemical Used	ML/SAMPLE USED	Lot Number
0.5M ZINC ACETATE	5.0ML	WP108780
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

11/18/2024 RM

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

Lab Sample ID	Client Sample ID	Initial Vol (ml)	Final Vol (ml)	pH	Sulfide	Oxidizing	Nitrate/ Nitrite	Comment	Prep Pos
P4861-01	WC-11-A-202411	50	50	N/A	N/A	N/A	N/A	N/A	N/A
P4861-01DUP	WC-11-A-202411DUP	50	50	N/A	N/A	N/A	N/A	N/A	N/A
P4871-01	WC-10-A-202411	50	50	N/A	N/A	N/A	N/A	N/A	N/A
P4890-01	#3711	50	50	N/A	N/A	N/A	N/A	N/A	N/A
P4890-02	D3617	50	50	N/A	N/A	N/A	N/A	N/A	N/A
P4890-03	D3690	50	50	N/A	N/A	N/A	N/A	N/A	N/A
PB165069BL	PBW069	50	50	N/A	N/A	N/A	N/A	N/A	N/A

WORKLIST(Hardcopy Internal Chain)

WorkList Name : RSUL-W-11-18

WorkList ID : 185521

Department : Distillation

Date : 11-18-2024 10:18:19

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P4861-01	WC-11-A-202411	Water	Reactive Sulfide	Cool 4 deg C	AECO02	L41	11/13/2024	9034
P4871-01	WC-10-A-202411	Water	Reactive Sulfide	Cool 4 deg C	AECO02	M11	11/13/2024	9034
P4890-01	#3711	Water	Reactive Sulfide	Cool 4 deg C	PSEG03	M11	11/15/2024	9034
P4890-02	D3617	Water	Reactive Sulfide	Cool 4 deg C	PSEG03	M11	11/15/2024	9034
P4890-03	D3690	Water	Reactive Sulfide	Cool 4 deg C	PSEG03	M11	11/15/2024	9034

Date/Time 11/18/2024 14:15
 Raw Sample Received by: R14 CWG
 Raw Sample Relinquished by: RD CWG

Date/Time 11/18/2024 16:00
 Raw Sample Received by: RD CWG
 Raw Sample Relinquished by: R14 CWG

Instrument ID: IGN-1

Daily Analysis Runlog For Sequence/QC Batch ID # LB133474

Review By	rubina	Review On	11/15/2024 4:24:35 PM
Supervise By	Iwona	Supervise On	11/15/2024 4:31:27 PM
SubDirectory	LB133474	Test	Flash Point
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	W3088		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	ICV	ICV	ICV	11/15/24 13:25		rubina	OK
2	P4843-01	SW-WTS-01	SAM	11/15/24 13:55		rubina	OK
3	P4861-01	WC-11-A-202411	SAM	11/15/24 14:25		rubina	OK
4	P4871-01	WC-10-A-202411	SAM	11/15/24 14:55		rubina	OK
5	P4871-01DUP	WC-10-A-202411DUP	DUP	11/15/24 15:25		rubina	OK

Instrument ID: KONELAB

Daily Analysis Runlog For Sequence/QC Batch ID # LB133475

Review By	Niha	Review On	11/18/2024 4:56:46 PM
Supervise By	Iwona	Supervise On	11/18/2024 4:58:55 PM
SubDirectory	LB133475	Test	Reactive Cyanide
STD. NAME	STD REF.#		
ICAL Standard	WP110724,WP110725,WP110726,WP110727,WP110728,WP110729,WP110730		
ICV Standard	WP110732		
CCV Standard	WP110725		
ICSA Standard	N/A		
CRI Standard	N/A		
LCS Standard	N/A		
Chk Standard	WP109068,WP110103,WP110731		

Sr#	SampleID	ClientID	QcType	Date	Comment	Operator	Status
1	0.0PPBCN	0.0PPBCN	CAL1	11/15/24 10:43		Niha	
2	5.0PPBCN	5.0PPBCN	CAL2	11/15/24 10:43		Niha	
3	10PPBCN	10PPBCN	CAL3	11/15/24 10:43		Niha	
4	50PPBCN	50PPBCN	CAL4	11/15/24 10:43		Niha	
5	100PPBCN	100PPBCN	CAL5	11/15/24 10:43		Niha	
6	250PPBCN	250PPBCN	CAL6	11/15/24 10:43		Niha	
7	500PPBCN	500PPBCN	CAL7	11/15/24 10:43		Niha	
8	ICV1	ICV1	ICV	11/15/24 12:37		Niha	
9	ICB1	ICB1	ICB	11/15/24 12:37		Niha	
10	CCV1	CCV1	CCV	11/15/24 12:37		Niha	
11	CCB1	CCB1	CCB	11/15/24 12:37		Niha	
12	PB165008BL	PB165008BL	MB	11/15/24 12:37		Niha	
13	P4809-04	MH-5	SAM	11/15/24 12:37		Niha	
14	P4809-04DUP	MH-5DUP	DUP	11/15/24 12:44		Niha	
15	P4813-02	417	SAM	11/15/24 12:44		Niha	
16	P4813-05	420	SAM	11/15/24 12:44		Niha	
17	P4821-04	BP-F-24	SAM	11/15/24 12:44		Niha	
18	P4821-08	BP-F-2	SAM	11/15/24 12:44		Niha	

Instrument ID: KONELAB

Daily Analysis Runlog For Sequence/QC Batch ID # LB133475

Review By	Niha	Review On	11/18/2024 4:56:46 PM
Supervise By	Iwona	Supervise On	11/18/2024 4:58:55 PM
SubDirectory	LB133475	Test	Reactive Cyanide
STD. NAME	STD REF.#		
ICAL Standard	WP110724,WP110725,WP110726,WP110727,WP110728,WP110729,WP110730		
ICV Standard	WP110732		
CCV Standard	WP110725		
ICSA Standard	N/A		
CRI Standard	N/A		
LCS Standard	N/A		
Chk Standard	WP109068,WP110103,WP110731		

19	P4823-04	MH-4	SAM	11/15/24 12:44		Niha	
20	P4833-04	MH-731	SAM	11/15/24 12:44		Niha	
21	P4833-08	TP-2	SAM	11/15/24 12:44		Niha	
22	CCV2	CCV2	CCV	11/15/24 12:44		Niha	
23	CCB2	CCB2	CCB	11/15/24 12:52		Niha	
24	P4848-02	TP-1	SAM	11/15/24 12:52		Niha	
25	P4849-02	RR-1	SAM	11/15/24 12:52		Niha	
26	P4870-13	TP-1	SAM	11/15/24 12:52		Niha	
27	P4870-14	MH-735	SAM	11/15/24 12:52		Niha	
28	P4870-15	MH-736	SAM	11/15/24 12:52		Niha	
29	P4870-16	TP-15	SAM	11/15/24 12:52		Niha	
30	PB165009BL	PB165009BL	MB	11/15/24 12:52		Niha	
31	P4812-03	270	SAM	11/15/24 12:52		Niha	
32	P4812-03DUP	270DUP	DUP	11/15/24 12:52		Niha	
33	P4813-01	416	SAM	11/15/24 12:52		Niha	
34	CCV3	CCV3	CCV	11/15/24 12:59		Niha	
35	CCB3	CCB3	CCB	11/15/24 12:59		Niha	
36	P4813-04	419	SAM	11/15/24 12:59		Niha	
37	P4861-01	WC-11-A-202411	SAM	11/15/24 12:59		Niha	
38	P4871-01	WC-10-A-202411	SAM	11/15/24 13:00		Niha	

Instrument ID: KONELAB

Daily Analysis Runlog For Sequence/QCBatch ID # LB133475

Review By	Niha	Review On	11/18/2024 4:56:46 PM
Supervise By	Iwona	Supervise On	11/18/2024 4:58:55 PM
SubDirectory	LB133475	Test	Reactive Cyanide
STD. NAME	STD REF.#		
ICAL Standard	WP110724,WP110725,WP110726,WP110727,WP110728,WP110729,WP110730		
ICV Standard	WP110732		
CCV Standard	WP110725		
ICSA Standard	N/A		
CRI Standard	N/A		
LCS Standard	N/A		
Chk Standard	WP109068,WP110103,WP110731		

39	P4813-03	418	SAM	11/15/24 13:00		Niha	
40	CCV4	CCV4	CCV	11/15/24 13:03		Niha	
41	CCB4	CCB4	CCB	11/15/24 13:03		Niha	

Instrument ID: WC PH METER-1

Daily Analysis Runlog For Sequence/QC Batch ID # LB133477

Review By	jignesh	Review On	11/16/2024 8:36:40 AM
Supervise By	Iwona	Supervise On	11/18/2024 10:21:51 AM
SubDirectory	LB133477	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	W3107,W3093,W3094,W3071,W3005,W3072		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	CAL1	CAL1	CAL	11/15/24 17:15		jignesh	OK
2	CAL2	CAL2	CAL	11/15/24 17:16		jignesh	OK
3	CAL3	CAL3	CAL	11/15/24 17:20		jignesh	OK
4	ICV	ICV	ICV	11/15/24 17:25		jignesh	OK
5	CCV1	CCV1	CCV	11/15/24 17:26		jignesh	OK
6	P4861-01	WC-11-A-202411	SAM	11/15/24 17:29		jignesh	OK
7	P4861-01DUP	WC-11-A-202411DUP	DUP	11/15/24 17:30		jignesh	OK
8	P4864-01	MONTCLAIR-TOTE-2	SAM	11/15/24 17:35		jignesh	OK
9	P4867-02	TT-070-IDWGW-2024	SAM	11/15/24 17:40		jignesh	OK
10	P4867-03	TT-071-IDWGW-2024	SAM	11/15/24 17:45		jignesh	OK
11	P4871-01	WC-10-A-202411	SAM	11/15/24 17:48		jignesh	OK
12	P4890-01	#3711	SAM	11/15/24 17:50		jignesh	OK
13	P4890-02	D3617	SAM	11/15/24 17:52		jignesh	OK
14	P4890-03	D3690	SAM	11/15/24 17:55		jignesh	OK
15	P4890-04	D3721	SAM	11/15/24 17:59		jignesh	OK
16	CCV2	CCV2	CCV	11/16/24 18:00		jignesh	OK

Instrument ID: KONELAB

Daily Analysis Runlog For Sequence/QC Batch ID # LB133498

Review By	Niha	Review On	11/19/2024 9:38:44 AM
Supervise By	Iwona	Supervise On	11/19/2024 1:45:46 PM
SubDirectory	LB133498	Test	Cyanide
STD. NAME	STD REF.#		
ICAL Standard	WP110743,WP110744,WP110745,WP110746,WP110747,WP110748,WP110749		
ICV Standard	W3011		
CCV Standard	WP110744		
ICSA Standard	N/A		
CRI Standard	N/A		
LCS Standard	WP109549		
Chk Standard	WP109068,WP110103,WP110750		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	0.0PPBCN	0.0PPBCN	CAL1	11/18/24 11:50		Niha	
2	5.0PPBCN	5.0PPBCN	CAL2	11/18/24 11:50		Niha	
3	10PPBCN	10PPBCN	CAL3	11/18/24 11:50		Niha	
4	50PPBCN	50PPBCN	CAL4	11/18/24 11:50		Niha	
5	100PPBCN	100PPBCN	CAL5	11/18/24 11:50		Niha	
6	250PPBCN	250PPBCN	CAL6	11/18/24 11:50		Niha	
7	500PPBCN	500PPBCN	CAL7	11/18/24 11:50		Niha	
8	ICV1	ICV1	ICV	11/18/24 13:05		Niha	
9	ICB1	ICB1	ICB	11/18/24 13:05		Niha	
10	CCV1	CCV1	CCV	11/18/24 13:05		Niha	
11	CCB1	CCB1	CCB	11/18/24 13:05		Niha	
12	PB165017BL	PB165017BL	MB	11/18/24 13:05		Niha	
13	PB165017BS	PB165017BS	LCS	11/18/24 13:05		Niha	
14	LOWPB165017	LOWPB165017	SAM	11/18/24 13:12		Niha	
15	HIGHPB165017	HIGHPB165017	SAM	11/18/24 13:12		Niha	
16	P4861-01	WC-11-A-202411	SAM	11/18/24 13:12		Niha	
17	P4871-01	WC-10-A-202411	SAM	11/18/24 13:12		Niha	
18	P4871-01DUP	WC-10-A-202411DUP	DUP	11/18/24 13:13		Niha	

Instrument ID: KONELAB

Daily Analysis Runlog For Sequence/QC Batch ID # LB133498

Review By	Niha	Review On	11/19/2024 9:38:44 AM
Supervise By	Iwona	Supervise On	11/19/2024 1:45:46 PM
SubDirectory	LB133498	Test	Cyanide
STD. NAME	STD REF.#		
ICAL Standard	WP110743,WP110744,WP110745,WP110746,WP110747,WP110748,WP110749		
ICV Standard	W3011		
CCV Standard	WP110744		
ICSA Standard	N/A		
CRI Standard	N/A		
LCS Standard	WP109549		
Chk Standard	WP109068,WP110103,WP110750		

19	P4871-01MS	WC-10-A-202411MS	MS	11/18/24 13:13		Niha	
20	P4871-01MSD	WC-10-A-202411MSD	MSD	11/18/24 13:13		Niha	
21	PB165063BL	PB165063BL	MB	11/18/24 13:20		Niha	
22	CCV2	CCV2	CCV	11/18/24 13:20		Niha	
23	CCB2	CCB2	CCB	11/18/24 13:20		Niha	
24	PB165063BS	PB165063BS	LCS	11/18/24 13:20		Niha	
25	P4889-01	VNJ-228	SAM	11/18/24 13:20		Niha	
26	P4889-01DUP	VNJ-228DUP	DUP	11/18/24 13:20		Niha	
27	P4889-01MS	VNJ-228MS	MS	11/18/24 13:20		Niha	
28	P4889-01MSD	VNJ-228MSD	MSD	11/18/24 13:20		Niha	
29	P4889-03	#72-11978	SAM	11/18/24 13:25		Niha	
30	P4889-05	#72-11930	SAM	11/18/24 13:25		Niha	
31	CCV3	CCV3	CCV	11/18/24 13:25		Niha	
32	CCB3	CCB3	CCB	11/18/24 13:25		Niha	

Instrument ID: TITRAMETRIC

Daily Analysis Runlog For Sequence/QC Batch ID # LB133507

Review By	rubina	Review On	11/19/2024 10:44:34 AM
Supervise By	Iwona	Supervise On	11/19/2024 10:50:05 AM
SubDirectory	LB133507	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	PB165069BL	PB165069BL	MB	11/19/24 10:00		rubina	OK
2	P4861-01	WC-11-A-202411	SAM	11/19/24 10:03		rubina	OK
3	P4861-01DUP	WC-11-A-202411DUP	DUP	11/19/24 10:05		rubina	OK
4	P4871-01	WC-10-A-202411	SAM	11/19/24 10:08		rubina	OK
5	P4890-01	#3711	SAM	11/19/24 10:10		rubina	OK
6	P4890-02	D3617	SAM	11/19/24 10:13		rubina	OK
7	P4890-03	D3690	SAM	11/19/24 10:16		rubina	OK

Prep Standard - Chemical Standard Summary

Order ID : P4861

Test : Cyanide,Flash Point,pH,Reactive Cyanide,Reactive Sulfide

Prepbatch ID : PB165009,PB165017,PB165069,

Sequence ID/Qc Batch ID: LB133474,LB133475,LB133477,LB133498,LB133507,

Standard ID :

WP108640,WP108780,WP109068,WP109549,WP110035,WP110103,WP110390,WP110391,WP110723,WP110724,W
P110725,WP110726,WP110727,WP110728,WP110729,WP110730,WP110731,WP110732,WP110742,WP110743,WP11
0744,WP110745,WP110746,WP110747,WP110748,WP110749,WP110750,

Chemical ID :

E3657,M5673,M5929,W2668,W2725,W2882,W2926,W3001,W3005,W3011,W3019,W3071,W3072,W3088,W3093,W30
94,W3101,W3105,W3107,W3112,W3114,W3121,W3138,W3139,W3142,W3149,



<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	WP108640	07/05/2024	01/05/2025	Rubina Mughal	WETCHEM_S CALE_4 (WC SC-4)	None	Iwona Zarych 07/08/2024
<u>FROM</u> 21.00000L of W3112 + 210.00000gram of E3657 = Final Quantity: 21.000 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	WP108780	07/22/2024	12/08/2024	Rubina Mughal	WETCHEM_SCALE_5 (WC-5)	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 07/23/2024
<u>FROM</u> 0.88900L of W3112 + 1.00000ml of M5929 + 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	WP109068	08/06/2024	12/08/2024	Niha Farheen Shaik	WETCHEM_S CALE_5 (WC SC-5)	None	Iwona Zarych 08/07/2024
<u>FROM</u> 145.00000ml of W3112 + 15.00000gram of W2882 + 15.00000ml of M5929 + 75.00000ml of W3019 = Final Quantity: 250.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3371	Cyanide LCS Spike Solution, 5PPM	WP109549	09/06/2024	01/05/2025	Niha Farheen Shaik	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 09/06/2024
<u>FROM</u>	1.00000ml of W3138 + 199.00000ml of WP108640 = Final Quantity: 200.000 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>
3850	Cyanide MS-MSD spiking solution, 5PPM	WP110035	10/03/2024	11/30/2024	Rubina Mughal	None	WETCHEM_FIPETTE_3 (WC)	Iwona Zarych 10/04/2024

FROM 1.00000ml of W3142 + 199.00000ml of WP108640 = 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>
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>
3214	Magnesium Chloride For Cyanide 2.5M(51%W/V)	WP110390	10/24/2024	04/24/2025	Niha Farheen Shaik	WETCHEM_S CALE_5 (WC SC-5)	None	Iwona Zarych 10/24/2024
<u>FROM</u> 500.00000ml of W3112 + 510.00000gram of W3001 = Final Quantity: 1000.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1714	Sulfuric Acid, 50% (v/v)	WP110391	10/24/2024	04/24/2025	Niha Farheen Shaik	None	None	Iwona Zarych 10/24/2024
<u>FROM</u> 1000.00000ml of M5673 + 1000.00000ml of W3112 = Final Quantity: 2000.000 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>
3456	Cyanide Intermediate Working Std, 5PPM	WP110723	11/15/2024	11/16/2024	Niha Farheen Shaik	None	WETCHEM_FIPETTE_3 (WC)	Iwona Zarych 11/18/2024

FROM 0.25000ml of W3142 + 47.50000ml of WP108640 = Final Quantity: 50.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
4	Calibration standard 500 ppb	WP110724	11/15/2024	11/16/2024	Niha Farheen Shaik	None	None	Iwona Zarych 11/18/2024

FROM 45.00000ml of WP108640 + 5.00000ml of WP110723 = 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>
3761	Calibration-CCV CN Standard 250 ppb	WP110725	11/15/2024	11/16/2024	Niha Farheen Shaik	None	None	Iwona Zarych
								11/18/2024

FROM 2.00000ml of WP110723 + 47.50000ml of WP108640 = 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	WP110726	11/15/2024	11/16/2024	Niha Farheen Shaik	None	None	Iwona Zarych
								11/18/2024

FROM 1.00000ml of WP110723 + 49.00000ml of WP108640 = 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	WP110727	11/15/2024	11/16/2024	Niha Farheen Shaik	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 11/18/2024
<u>FROM</u> 0.50000ml of WP110723 + 49.50000ml of WP108640 = 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	WP110728	11/15/2024	11/16/2024	Niha Farheen Shaik	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 11/18/2024
<u>FROM</u>	1.00000ml of WP110724 + 49.00000ml of WP108640 = 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	WP110729	11/15/2024	11/16/2024	Niha Farheen Shaik	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 11/18/2024
<u>FROM</u> 0.50000ml of WP110724 + 49.50000ml of WP108640 = 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>
167	0 ppb CN calibration std	WP110730	11/15/2024	11/16/2024	Niha Farheen Shaik	None	None	Iwona Zarych 11/18/2024
<u>FROM</u> 50.00000ml of WP108640 = 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>
1582	Chloramine T solution, 0.014M	WP110731	11/15/2024	11/16/2024	Niha Farheen Shaik	WETCHEM_SCALE_5 (WC SC-5)	None	Iwona Zarych 11/18/2024

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

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
2168	RCN ICV STD, 100 PPB	WP110732	11/15/2024	11/16/2024	Niha Farheen Shaik	None	None	Iwona Zarych 11/18/2024

FROM 1.00000ml of WP109549 + 49.00000ml of WP108640 = 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>
3456	Cyanide Intermediate Working Std, 5PPM	WP110742	11/18/2024	11/19/2024	Niha Farheen Shaik	None	WETCHEM_FIPETTE_3 (WC)	Iwona Zarych 11/19/2024

FROM 0.25000ml of W3142 + 49.75000ml of WP108640 = Final Quantity: 50.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
4	Calibration standard 500 ppb	WP110743	11/18/2024	11/19/2024	Niha Farheen Shaik	None	None	Iwona Zarych 11/19/2024

FROM 45.00000ml of WP108640 + 5.00000ml of WP110742 = 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>
3761	Calibration-CCV CN Standard 250 ppb	WP110744	11/18/2024	11/19/2024	Niha Farheen Shaik	None	None	Iwona Zarych
								11/19/2024

FROM 2.50000ml of WP110742 + 47.50000ml of WP108640 = 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	WP110745	11/18/2024	11/19/2024	Niha Farheen Shaik	None	None	Iwona Zarych
								11/19/2024

FROM 1.00000ml of WP110742 + 49.00000ml of WP108640 = 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	WP110746	11/18/2024	11/19/2024	Niha Farheen Shaik	None	WETCHEM_FIPETTE_3 (WC)	Iwona Zarych 11/19/2024
<u>FROM</u> 0.50000ml of WP110742 + 49.50000ml of WP108640 = 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	WP110747	11/18/2024	11/19/2024	Niha Farheen Shaik	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 11/19/2024
<u>FROM</u>	1.00000ml of WP110743 + 49.00000ml of WP108640 = 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	WP110748	11/18/2024	11/19/2024	Niha Farheen Shaik	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 11/19/2024
<u>FROM</u> 0.50000ml of WP110743 + 49.50000ml of WP108640 = 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>
167	0 ppb CN calibration std	WP110749	11/18/2024	11/19/2024	Niha Farheen Shaik	None	None	Iwona Zarych
<u>FROM</u> 50.00000ml of WP108640 = 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>
1582	Chloramine T solution, 0.014M	WP110750	11/18/2024	11/19/2024	Niha Farheen Shaik	WETCHEM_S CALE_5 (WC SC-5)	None	Iwona Zarych 11/19/2024
FROM 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 #
PCI Scientific Supply, Inc.	PC19510-5 / Sodium Hydroxide Pellets 2.5 Kg, Pk of 4	23B1556310	12/31/2025	12/04/2023 / Rajesh	12/01/2023 / Rajesh	E3657

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-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L)	22G2862015	12/08/2024	06/24/2024 / Al-Terek	06/07/2024 / Al-Terek	M5929

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.	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

CHEMICAL RECEIPT LOG BOOK

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 #
PCI Scientific Supply, Inc.	01237-10KG / Megnasium Chloride Hexahydrate ACS 10KG	002251-03319	06/06/2027	01/23/2023 / lwona	06/06/2022 / lwona	W3001

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)	4212E45	12/31/2024	01/31/2023 / lwona	01/31/2023 / lwona	W3005

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	/ ICV-CN	ICV6-400	12/31/2024	01/03/2024 / lwona	02/20/2020 / lwona	W3011

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

CHEMICAL RECEIPT LOG BOOK

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.	TCX0014-500ML / p-xylene	Y348K-RX	03/20/2029	09/19/2024 / rubina	03/20/2024 / Iwona	W3088

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.	1601-1 / PH 10.01 BUFFER,COLOR CD 475ML	4310g83	03/31/2025	04/03/2024 / jignesh	04/02/2024 / jignesh	W3094

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	470112-662 / TEST STRIPES, NITRATE/NITRITE, PK50	402403	04/30/2026	05/02/2024 / Iwona	04/10/2024 / Iwona	W3101

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,4LIT RE	4403S13	09/30/2025	04/22/2024 / Iwona	04/22/2024 / Iwona	W3105

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	AL14055-3	02/27/2026	09/05/2024 / jignesh	05/13/2024 / jignesh	W3107

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.	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.	140444 / TEST PAPERS,PH 0-14,.5 SENSI,100PK	HC446507	07/25/2029	07/25/2024 / lwona	07/25/2024 / lwona	W3121

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

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 / lwona	09/09/2024 / lwona	W3139

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	RC2543-4 / CYANIDE STD 1000PPM 4OZ	1405J81	11/30/2024	09/25/2024 / Iwona	09/25/2024 / Iwona	W3142

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


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.

W2918
W3001
rec. 06/06/22
exp. 06/06/27

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
Product	Magnesium chloride hexahydrate
Lot Number	002251-03319 Magnesium chloride•6H ₂ O
CAS Number	7791-18-6
Molecular Formula	MgCl ₂ •6H ₂ O
Molecular Weight	203.3

Appearance	Colorless crystals, very deliquescent
Heavy Metals	< 5 ppm
Anion	Nitrate : < 0.001% Phosphate : < 5 ppm Sulfate : < 0.002%
Cation	Ammonium : < 0.002% Barium : < 0.005% Calcium : 0.0006% Iron : < 5 ppm Manganese : 1.8 ppm Potassium : 0.0006% Sodium : 0.0008% Strontium : 0.0015%
Insoluble material	0.0025%
Assay by titration	100.29%
Grade	ACS reagent
Storage	Store at RT
Country of Origin	India

Certificate of Analysis

Catalog Number: 01237

Lot Number: 002251-03319

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



Bala Kumar
Quality Control Manager

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:

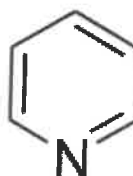
C₅H₅N

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®

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Pocomoke City, MD 21851
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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

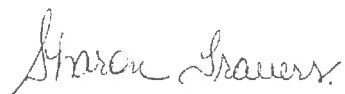
*Not a certified value.

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	%
Titrate 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

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	$\leq 0.005 \%$	$< 0.005 \%$	PASS
Chloride	$\leq 0.005 \%$	0.002 %	PASS
Heavy Metals	$\leq 0.002 \%$	$< 0.002 \%$	PASS
Iron	$\leq 0.001 \%$	$< 0.001 \%$	PASS
Magnesium	$\leq 0.002 \%$	$< 0.002 \%$	PASS
Mercury	$\leq 0.1 \text{ ppm}$	$< 0.1 \text{ ppm}$	PASS
Nickel	$\leq 0.001 \%$	$< 0.001 \%$	PASS
Nitrogen Compounds	$\leq 0.001 \%$	$< 0.001 \%$	PASS
Phosphate	$\leq 0.001 \%$	$< 0.001 \%$	PASS
Potassium	$\leq 0.02 \%$	$< 0.02 \%$	PASS
Purity	$\geq 97.0 \%$	99.2 %	PASS
Sodium Carbonate	$\leq 1.0 \%$	0.5 %	PASS
Sulfate	$\leq 0.003 \%$	$< 0.003 \%$	PASS

Internal ID #: 710

Signature

We certify that this batch conforms to the specifications listed.

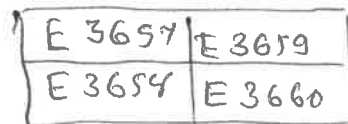
This document has been electronically produced and is valid without a signature.

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.





R: 02/20/20
53

Instructions for QATS Reference Material: *Inorganic ICV Solutions*

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

ICV5-0415

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

ICV6-0400

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

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

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

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

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

W3011
W3012
W3013
W3014
W3015

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

 **avantor**™



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

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



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

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

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


Jamie Ethier
Vice President Global Quality

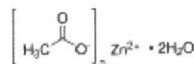
For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

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)	≤ 5 ppm	< 5 ppm
Iron (Fe)	≤ 5 ppm	< 5 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.



**RICCA CHEMICAL COMPANY®**

W 3005

REC- 1/31/23

12

1490 Lammers Pike

Batesville, IN 47006

<http://www.riccachemical.com>

1-888-GO-RICCA

customerservice@riccachemical.com

Certificate of Analysis

Buffer, Reference Standard, pH 2.00 ± 0.01 at 25°C**Lot Number: 4212E45****Product Number: 1493****Manufacture Date: DEC 20, 2022****Expiration Date: DEC 2024**

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)	2.000	0.02	185i, 186-I-g, 186-II-g

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)
1493-1	4 L natural poly	24 months
1493-16	500 mL natural poly	24 months
1493-32	1 L natural poly	24 months
1493-5	20 L Cubitainer®	24 months

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



Paul Brandon (12/20/2022)

Production Manager

This Certificate of Analysis 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.



W3084-W3088 Received on 3/20/24 by IZ

Certificate of Analysis

03/20/2024(JST)

TOKYO CHEMICAL INDUSTRY CO.,LTD.

T-PLUS Nihonbashi-Kodemmacho

16-12 Nihonbashi-kodemmacho, Chuo-ku, Tokyo 103-0001, Japan

Chemical Name: p-Xylene		
Product Number: X0014 CAS RN: 106-42-3	Lot: Y348K	

Tests	Results	Specifications
Appearance	Colorless clear liquid	Colorless to Almost colorless clear liquid
Purity(GC)	99.7 %	min. 99.0 %

TCI Lot numbers are 4-5 characters in length. Characters listed after the first 4-5 characters are control numbers for internal purpose only.

The contents of the specifications are subject to change without advance notice. The specification values displayed here are the most up to date values. There may be cases where the product labels display a different specification, however, the product quality still meets the latest specification.

Customer Service:

TCI AMERICA

Tel: +1-800-423-8616 / +1-503-283-1681

Fax: +1-888-520-1075 / +1-503-283-1987

E-mail: Sales-US@TCIchemicals.com

Takuya Nishioka
Quality Assurance Department Manager

**RICCA CHEMICAL COMPANY®**

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Batesville, IN 47006

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Certificate of Analysis

W3093
094121
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

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Certificate of Analysis

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

Lot Number: 4310G83

Product Number: 1601

Manufacture Date: OCT 09, 2023

Expiration Date: MAR 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	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)	10.003	0.02	186-I-g, 186-II-g, 191d

Specification	Reference
Commercial Buffer Solutions	ASTM (D 1293 B)
Buffer C	ASTM (D 5464)
Buffer C	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)
1601-16	500 mL natural poly	18 months
1601-5	20 L Cubitainer®	18 months

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



Paul Brandon (10/09/2023)

Production Manager

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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

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Contents of Certificates and Labels."

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Certificate of Analysis

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

Lot Number: 4403F90

Product Number: 1501

Manufacture Date: MAR 09, 2024

Expiration Date: FEB 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)	4.000	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 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)
1501-2.5	10 L Cubitainer®	24 months
1501-32	1 L natural poly	24 months
1501-5	20 L Cubitainer®	24 months

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



Paul Brandon (03/09/2024)

Production Manager

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Contents of Certificates and Labels."

This product was tested in an ISO 17025 Accredited Laboratory

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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

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Part of TCP Analytical Group

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

Certificate of Analysis

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

Product Code: **LC13545**

Manufacture Date: 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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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

Cyanide Standard, 1000 ppm CN⁻

Lot Number: 1405J81

Product Number: 2543

Manufacture Date: MAY 20, 2024

Expiration Date: NOV 2024

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
2543-4	120 mL amber poly	6 months

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



Heidi J Green (05/20/2024)
Operations Manager

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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-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

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SHIPPING DOCUMENTS

CHEMTECH

CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 • Fax (908) 789-8922
www.chemtech.net

CHEMTECH PROJECT NO. **P4861**
QUOTE NO.
COC Number **2041712**

CLIENT INFORMATION

REPORT TO BE SENT TO:

COMPANY: **AECOM**
ADDRESS: **605 3rd Ave**
CITY **New York** STATE: **NY** ZIP: **10158**
ATTENTION: **Amit Haryani**
PHONE: FAX:

CLIENT PROJECT INFORMATION

PROJECT NAME: **Meeker Ave Superfund**
PROJECT NO.: **60705866** LOCATION: **Brooklyn**
PROJECT MANAGER: **Amit Haryani**
e-mail: **amit.haryani@aecom.com**
PHONE: FAX:

CLIENT BILLING INFORMATION

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

ANALYSIS

DATA TURNAROUND INFORMATION

FAX (RUSH) **3 day** DAYS*
HARDCOPY (DATA PACKAGE): DAYS*
EDD: DAYS*
*TO BE APPROVED BY CHEMTECH
STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION

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

1 **TCLP VOA**
2 **TCLP BVA**
3 **TCLP ICP Metals**
4 **TCLP Mercury**
5 **Paint Filter**
6 **Reactive Cyanide**
7 **Reactive Sulfide**
8 **pH**
9 **TCLP Pesticide**
PCB + Flashpoint

CHEMTECH 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-JCE C-H2SO4 F-OTHER	
1 B2406004	WC-11-A-202411	GW	X		11/13/24	1500	12	/	/	/	/	/	/	/	/	/		
2.																		
3.																		
4.																		
5.																		
6.																		
7.																		
8.																		
9.																		
10.																		

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

RELINQUISHED BY SAMPLER: 1. Hannah Dwyer	DATE/TIME: 11/14/24 1200	RECEIVED BY: [Signature] 1326 11-14-24	Conditions of bottles or coolers at receipt: ☐ COMPLIANT ☐ NON COMPLIANT ☐ COOLER TEMP 3.36 °C
RELINQUISHED BY SAMPLER: 2. [Signature]	DATE/TIME:	RECEIVED BY: 2. [Signature]	Comments:
RELINQUISHED BY SAMPLER: 3. [Signature]	DATE/TIME: 11-14-24	RECEIVED BY: 3. [Signature]	Page 1 of 1

CLIENT: ☐ Hand Delivered ☐ Other
CHEMTECH: ☐ Picked Up ☐ Field Sampling
Shipment Complete ☐ YES ☐ NO



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