

## DATA REPORTING QUALIFIERS- INORGANIC

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

<b>J</b>	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).
<b>U</b>	Indicates the analyte was analyzed for, but not detected.
<b>ND</b>	Indicates the analyte was analyzed for, but not detected
<b>E</b>	Indicates the reported value is estimated because of the presence of interference
<b>M</b>	Indicates Duplicate injection precision not met.
<b>N</b>	Indicates the spiked sample recovery is not within control limits.
<b>S</b>	Indicates the reported value was determined by the Method of Standard Addition (MSA).
<b>*</b>	Indicates that the duplicate analysis is not within control limits.
<b>+</b>	Indicates the correlation coefficient for the MSA is less than 0.995.
<b>D</b>	Indicates the reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.
<b>M</b>	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
<b>OR</b>	Indicates the analyte’s concentration exceeds the calibrated range of the instrument for that specific analysis.
<b>Q</b>	Indicates the LCS did not meet the control limits requirements
<b>H</b>	Sample Analysis Out Of Hold Time

## LAB CHRONICLE

<b>OrderID:</b>	Q3268	<b>OrderDate:</b>	10/2/2025 12:46:00 PM
<b>Client:</b>	VERINA CONSULTING GROUP, LLC	<b>Project:</b>	Rotor Clip NJ WTD - 2025
<b>Contact:</b>	Michael Valenzi	<b>Location:</b>	D31

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
Q3268-01	WATER-TREATMENT-D ISCHARGE	WATER			10/02/25 10:15			10/02/25
			Ammonia	SM4500-NH3		10/02/25	10/03/25 10:40	
			Residual Chlorine	SM4500 Cl G			10/02/25 14:09	



# SAMPLE DATA

## Report of Analysis

Client:	VERINA CONSULTING GROUP, LLC	Date Collected:	10/02/25 10:15
Project:	Rotor Clip NJ WTD - 2025	Date Received:	10/02/25
Client Sample ID:	WATER-TREATMENT-DISCHARGE	SDG No.:	Q3268
Lab Sample ID:	Q3268-01	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Ammonia as N	0.64		1	0.030	0.10	mg/L	10/02/25 14:10	10/03/25 10:40	SM 4500-NH3 B plus G-21
Residual Chlorine	0.18	H	1	0.023	0.10	mg/L		10/02/25 14:09	SM 4500-Cl G-11

Comments: \_\_\_\_\_

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

D = Dilution

Q = indicates LCS control criteria did not meet requirements

H = Sample Analysis Out Of Hold Time

J = Estimated Value

B = Analyte Found in Associated Method Blank

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

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

OR = Over Range

N =Spiked sample recovery not within control limits



# QC RESULT SUMMARY



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

### Initial and Continuing Calibration Verification

**Client:** VERINA CONSULTING GROUP, LLC

**SDG No.:** Q3268

**Project:** Rotor Clip NJ WTD - 2025

**RunNo.:** LB137395

Analyte	Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID: <b>ICV</b> Residual Chlorine	mg/L	0.417	0.4	104	90-110	10/02/2025
Sample ID: <b>CCV1</b> Residual Chlorine	mg/L	0.377	0.4	94	90-110	10/02/2025
Sample ID: <b>CCV2</b> Residual Chlorine	mg/L	0.387	0.4	97	90-110	10/02/2025

## Initial and Continuing Calibration Verification

**Client:** VERINA CONSULTING GROUP, LLC

**SDG No.:** Q3268

**Project:** Rotor Clip NJ WTD - 2025

**RunNo.:** LB137417

Analyte	Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID: <b>ICV1</b> Ammonia as N	mg/L	0.98	1	98	90-110	10/03/2025
Sample ID: <b>CCV1</b> Ammonia as N	mg/L	0.97	1	97	90-110	10/03/2025
Sample ID: <b>CCV2</b> Ammonia as N	mg/L	0.97	1	97	90-110	10/03/2025
Sample ID: <b>CCV3</b> Ammonia as N	mg/L	1	1	100	90-110	10/03/2025
Sample ID: <b>CCV4</b> Ammonia as N	mg/L	0.98	1	98	90-110	10/03/2025



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

### Initial and Continuing Calibration Blank Summary

**Client:** VERINA CONSULTING GROUP, LLC

**SDG No.:** Q3268

**Project:** Rotor Clip NJ WTD - 2025

**RunNo.:** LB137395

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: <b>ICB</b> Residual Chlorine	mg/L	< 0.0500	0.0500	U	0.023	0.1	10/02/2025
Sample ID: <b>CCB1</b> Residual Chlorine	mg/L	< 0.0500	0.0500	U	0.023	0.1	10/02/2025
Sample ID: <b>CCB2</b> Residual Chlorine	mg/L	< 0.0500	0.0500	U	0.023	0.1	10/02/2025



### Initial and Continuing Calibration Blank Summary

**Client:** VERINA CONSULTING GROUP, LLC

**SDG No.:** Q3268

**Project:** Rotor Clip NJ WTD - 2025

**RunNo.:** LB137417

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: <b>ICB1</b> Ammonia as N	mg/L	< 0.0500	0.0500	U	0.030	0.1	10/03/2025
Sample ID: <b>CCB1</b> Ammonia as N	mg/L	< 0.0500	0.0500	U	0.030	0.1	10/03/2025
Sample ID: <b>CCB2</b> Ammonia as N	mg/L	< 0.0500	0.0500	U	0.030	0.1	10/03/2025
Sample ID: <b>CCB3</b> Ammonia as N	mg/L	< 0.0500	0.0500	U	0.030	0.1	10/03/2025
Sample ID: <b>CCB4</b> Ammonia as N	mg/L	< 0.0500	0.0500	U	0.030	0.1	10/03/2025

## Preparation Blank Summary

**Client:** VERINA CONSULTING GROUP, LLC

**SDG No.:** Q3268

**Project:** Rotor Clip NJ WTD - 2025

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: <b>LB137395BL</b>							
Residual Chlorine	mg/L	< 0.0500	0.0500	U	0.023	0.1	10/02/2025
Sample ID: <b>PB169946BL</b>							
Ammonia as N	mg/L	< 0.0500	0.0500	U	0.03	0.1	10/03/2025

## Matrix Spike Summary

<b>Client:</b>	VERINA CONSULTING GROUP, LLC	<b>SDG No.:</b>	Q3268
<b>Project:</b>	Rotor Clip NJ WTD - 2025	<b>Sample ID:</b>	Q3263-02
<b>Client ID:</b>	266380MS	<b>Percent Solids for Spike Sample:</b>	0

Analyte	Units	Acceptance Limit %R	Spiked Result	Conc. Qualifier	Sample Result	Conc. Qualifier	Spike Added	Dilution Factor	% Rec	Qual	Analysis Date
Ammonia as N	mg/L	75-125	1.00		0.030	U	1	1	100		10/03/2025

### Matrix Spike Summary

<b>Client:</b>	VERINA CONSULTING GROUP, LLC	<b>SDG No.:</b>	Q3268
<b>Project:</b>	Rotor Clip NJ WTD - 2025	<b>Sample ID:</b>	Q3263-02
<b>Client ID:</b>	266380MSD	<b>Percent Solids for Spike Sample:</b>	0

Analyte	Units	Acceptance Limit %R	Spiked Result	Conc. Qualifier	Sample Result	Conc. Qualifier	Spike Added	Dilution Factor	% Rec	Qual	Analysis Date
Ammonia as N	mg/L	75-125	1.00		0.030	U	1	1	100		10/03/2025

### Matrix Spike Summary

<b>Client:</b>	VERINA CONSULTING GROUP, LLC	<b>SDG No.:</b>	Q3268
<b>Project:</b>	Rotor Clip NJ WTD - 2025	<b>Sample ID:</b>	Q3268-01
<b>Client ID:</b>	WATER-TREATMENT-DISCHARGEMS	<b>Percent Solids for Spike Sample:</b>	0

Analyte	Units	Acceptance Limit %R	Spiked Result	Conc. Qualifier	Sample Result	Conc. Qualifier	Spike Added	Dilution Factor	% Rec	Qual	Analysis Date
Residual Chlorine	mg/L	71-148	0.57		0.18		0.4	1	96		10/02/2025

### Matrix Spike Summary

<b>Client:</b>	VERINA CONSULTING GROUP, LLC	<b>SDG No.:</b>	Q3268
<b>Project:</b>	Rotor Clip NJ WTD - 2025	<b>Sample ID:</b>	Q3268-01
<b>Client ID:</b>	WATER-TREATMENT-DISCHARGEMSD	<b>Percent Solids for Spike Sample:</b>	0

Analyte	Units	Acceptance Limit %R	Spiked Result	Conc. Qualifier	Sample Result	Conc. Qualifier	Spike Added	Dilution Factor	% Rec	Qual	Analysis Date
Residual Chlorine	mg/L	71-148	0.56		0.18		0.4	1	94		10/02/2025

## Duplicate Sample Summary

<b>Client:</b> VERINA CONSULTING GROUP, LLC	<b>SDG No.:</b> Q3268
<b>Project:</b> Rotor Clip NJ WTD - 2025	<b>Sample ID:</b> Q3263-02
<b>Client ID:</b> 266380DUP	<b>Percent Solids for Spike Sample:</b> 0

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Ammonia as N	mg/L	+/-20	0.030	U	0.030	U	1	0		10/03/2025

### Duplicate Sample Summary

<b>Client:</b>	VERINA CONSULTING GROUP, LLC	<b>SDG No.:</b>	Q3268
<b>Project:</b>	Rotor Clip NJ WTD - 2025	<b>Sample ID:</b>	Q3263-02
<b>Client ID:</b>	266380MSD	<b>Percent Solids for Spike Sample:</b>	0

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Ammonia as N	mg/L	+/-20	1.00		1.00		1	0		10/03/2025



### Duplicate Sample Summary

<b>Client:</b>	VERINA CONSULTING GROUP, LLC	<b>SDG No.:</b>	Q3268
<b>Project:</b>	Rotor Clip NJ WTD - 2025	<b>Sample ID:</b>	Q3268-01
<b>Client ID:</b>	WATER-TREATMENT-DISCHARGEDUP	<b>Percent Solids for Spike Sample:</b>	0

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Residual Chlorine	mg/L	+/-20	0.18		0.17		1	5.59		10/02/2025

### Duplicate Sample Summary

<b>Client:</b>	VERINA CONSULTING GROUP, LLC	<b>SDG No.:</b>	Q3268
<b>Project:</b>	Rotor Clip NJ WTD - 2025	<b>Sample ID:</b>	Q3268-01
<b>Client ID:</b>	WATER-TREATMENT-DISCHARGEMSD	<b>Percent Solids for Spike Sample:</b>	0

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Residual Chlorine	mg/L	+/-20	0.57		0.56		1	1.77		10/02/2025

### Laboratory Control Sample Summary

<b>Client:</b>	VERINA CONSULTING GROUP, LLC	<b>SDG No.:</b>	Q3268
<b>Project:</b>	Rotor Clip NJ WTD - 2025	<b>Run No.:</b>	LB137395

Analyte	Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID	LB137395BS							
Residual Chlorine	mg/L	0.4	0.41		102	1	90-110	10/02/2025

### Laboratory Control Sample Summary

<b>Client:</b>	VERINA CONSULTING GROUP, LLC	<b>SDG No.:</b>	Q3268
<b>Project:</b>	Rotor Clip NJ WTD - 2025	<b>Run No.:</b>	LB137417

Analyte	Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID	PB169946BS							
Ammonia as N	mg/L	1	1.00		100	1	90-110	10/03/2025



# RAW DATA

## Analytical Summary Report

Analysis Method: SM4500 Cl G

ANALYST: Iwona

Parameter: Residual Chlorine

SUPERVISOR REVIEW BY: jignesh

Run Number: LB137395

Reagent/Standard	Lot/Log #
Residual chlorine ICV-LCS, 0.4PPM	WP115030
Chlorine Calibration std, 0.1ppm	WP115025
Chlorine Calibration std, 0.2ppm	WP115026
Chlorine Calibration std, 0.8ppm	WP115028
Chlorine Calibration std, 0.0ppm	WP115024
Chlorine Calibration std, 1.6ppm	WP115029
Residual Chlorine Calibration and CCV std, 0	WP115027
Total Chlorine Powder Pillows	W3147

Intercept: 0.0080

Slope: 0.9877

Regression: 0.999770

Seq	Lab ID	True Val (mg/l)	DF	Initial Reading	Final Reading	Difference	Result (mg/l)	%D	AnalDate	Anal Time
1	CAL1	0	1	0.000	0.000	0.000	-0.01		10/02/2025	13:30
2	CAL2	0.1	1	0.000	0.110	0.110	0.10	3	10/02/2025	13:33
3	CAL3	0.2	1	0.000	0.210	0.210	0.21	2.5	10/02/2025	13:36
4	CAL4	0.4	1	0.000	0.390	0.390	0.39	-3.3	10/02/2025	13:40
5	CAL5	0.8	1	0.000	0.820	0.820	0.82	2.7	10/02/2025	13:43
6	CAL6	1.6	1	0.000	1.580	1.580	1.59	-0.5	10/02/2025	13:46

## Analytical Summary Report

Analysis Method: SM4500 Cl G

ANALYST: Iwona

Parameter: Residual Chlorine

SUPERVISOR REVIEW BY: jignesh

Run Number: LB137395

Seq	Lab ID	Initial Weight	Final Vol	True Value (mg/L)	DF	Initial Reading	Final Reading	Diff.	Result (mg/L)	Anal Date	Anal Time
1	ICV			0.4	1	0.0000	0.4200	0.4200	0.4170	10/02/2025	13:50
2	ICB				1	0.0000	0.0100	0.0100	0.0020	10/02/2025	13:53
3	CCV1			0.4	1	0.0000	0.3800	0.3800	0.3770	10/02/2025	13:56
4	CCB1				1	0.0000	0.0010	0.0010	-0.0070	10/02/2025	14:00
5	LB137395BL	50	50		1	0.0000	0.0010	0.0010	-0.0070	10/02/2025	14:03
6	LB137395BS	50	50	0.4	1	0.0000	0.4100	0.4100	0.4070	10/02/2025	14:06
7	Q3268-01	50	50		1	0.0000	0.1900	0.1900	0.1840	10/02/2025	14:09
8	Q3268-01DUP	50	50		1	0.0000	0.1800	0.1800	0.1740	10/02/2025	14:12
9	Q3268-01MS	50	50	0.4	1	0.0000	0.5700	0.5700	0.5690	10/02/2025	14:15
10	Q3268-01MSD	50	50	0.4	1	0.0000	0.5600	0.5600	0.5590	10/02/2025	14:18
11	CCV2			0.4	1	0.0000	0.3900	0.3900	0.3870	10/02/2025	14:21
12	CCB2				1	0.0000	0.0000	0.0000	-0.0080	10/02/2025	14:24

# WORKLIST(Hardcopy Internal Chain)

LB137395

WorkList Name : RESCHLORINE-100225

WorkList ID : 192252

Department : Wet-Chemistry

Date : 10-02-2025 12:24:07

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q3268-01	WATER-TREATMENT-DISCHA	Water	Residual Chlorine	Cool 4 deg C	VER101	D31	10/02/2025	SM4500 Cl G

Date/Time 10/02/25 13:10  
 Raw Sample Received by: 12/201  
 Raw Sample Relinquished by: 28/001

Date/Time 10/02/25 14:30  
 Raw Sample Received by: 28/001  
 Raw Sample Relinquished by: 12/201



661374

Test results

Aquakem 7.2AQ1

Page:

Alliance Technical Group  
284 Sheffield Street, Mountainside, NJ 07092Reviewed by : RM

Instrument ID : Konelab

10/3/2025 11:15

Test: Ammonia-N

Sample Id	Result	Dil. 1 +	Response	Errors
ICV1	0.982	0.0	0.215	
ICB1	0.009	0.0	0.026	
CCV1	0.970	0.0	0.212	
CCB1	0.009	0.0	0.026	
RL CHECK	0.093	0.0	0.043	
PB169946BL	0.009	0.0	0.026	
PB169946BS	1.027	0.0	0.223	
Q3254-01	0.019	0.0	0.028	
Q3254-03	11.838	0.0	2.317	Test limit high
Q3254-05	4.803	0.0	0.955	Test limit high
Q3254-07	11.716	0.0	2.293	Test limit high
Q3258-06	0.316	0.0	0.086	
Q3263-01	0.016	0.0	0.028	
Q3263-02	0.010	0.0	0.027	
CCV2	0.968	0.0	0.212	
CCB2	0.011	0.0	0.027	
Q3263-02DUP	0.008	0.0	0.026	
Q3263-02MS	1.038	0.0	0.226	
Q3263-02MSD	1.041	0.0	0.226	
Q3268-01	0.639	0.0	0.148	
CCV3	1.014	0.0	0.221	
CCB3	0.015	0.0	0.028	
Q3254-03DLX10	1.107	0.0	0.239	
Q3254-05DLX5	0.919	0.0	0.202	
Q3254-07DLX10	1.118	0.0	0.241	
CCV4	0.978	0.0	0.214	
CCB4	0.011	0.0	0.027	
N	27			
Mean	1.507			
SD	3.1074			
CV%	206.22			

93% CSO-ISO  
10/03/2025  
RM

Aquakem v. 7.2AQ1

Results from time period:

Fri Oct 03 09:28:04 2025

Fri Oct 03 11:10:19 2025

Sample Id	Sam/Ctr/c/	Test short r	Test type	Result	Result unit	Result date and time	Stat
0.0PPM	A	Ammonia-† P		0.0099	mg/l	10/3/2025 9:28:04	
0.1PPM	A	Ammonia-† P		0.1173	mg/l	10/3/2025 9:28:05	
0.2PPM	A	Ammonia-† P		0.2087	mg/l	10/3/2025 9:28:06	
0.4PPM	A	Ammonia-† P		0.3836	mg/l	10/3/2025 9:28:07	
1.0PPM	A	Ammonia-† P		0.9767	mg/l	10/3/2025 9:28:08	
1.3PPM	A	Ammonia-† P		1.3053	mg/l	10/3/2025 9:28:09	
2.0PPM	A	Ammonia-† P		2.0319	mg/l	10/3/2025 9:28:10	
ICV1	S	Ammonia-† P		0.9818	mg/l	10/3/2025 10:18:24	
ICB1	S	Ammonia-† P		0.0094	mg/l	10/3/2025 10:18:26	
CCV1	S	Ammonia-† P		0.9696	mg/l	10/3/2025 10:18:29	
CCB1	S	Ammonia-† P		0.0089	mg/l	10/3/2025 10:18:31	
RL CHECK	S	Ammonia-† P		0.0932	mg/l	10/3/2025 10:18:33	
PB169946BL	S	Ammonia-† P		0.0095	mg/l	10/3/2025 10:29:09	
PB169946BS	S	Ammonia-† P		1.0265	mg/l	10/3/2025 10:29:12	
Q3254-01	S	Ammonia-† P		0.0192	mg/l	10/3/2025 10:29:13	
Q3254-03	S	Ammonia-† P		11.8381	mg/l	10/3/2025 10:29:14	
Q3254-05	S	Ammonia-† P		4.8029	mg/l	10/3/2025 10:29:15	
Q3254-07	S	Ammonia-† P		11.716	mg/l	10/3/2025 10:29:16	
Q3258-06	S	Ammonia-† P		0.316	mg/l	10/3/2025 10:29:17	
Q3263-01	S	Ammonia-† P		0.0156	mg/l	10/3/2025 10:29:18	
Q3263-02	S	Ammonia-† P		0.0103	mg/l	10/3/2025 10:29:19	
CCV2	S	Ammonia-† P		0.9675	mg/l	10/3/2025 10:39:53	
CCB2	S	Ammonia-† P		0.0108	mg/l	10/3/2025 10:39:56	
Q3263-02DUP	S	Ammonia-† P		0.0078	mg/l	10/3/2025 10:39:57	
Q3263-02MS	S	Ammonia-† P		1.0379	mg/l	10/3/2025 10:39:59	
Q3263-02MSD	S	Ammonia-† P		1.0414	mg/l	10/3/2025 10:40:00	
Q3268-01	S	Ammonia-† P		0.6394	mg/l	10/3/2025 10:40:01	
CCV3	S	Ammonia-† P		1.0144	mg/l	10/3/2025 10:46:30	
CCB3	S	Ammonia-† P		0.0151	mg/l	10/3/2025 10:46:32	
Q3254-03DLX10	S	Ammonia-† P		1.107	mg/l	10/3/2025 11:10:10	
Q3254-05DLX5	S	Ammonia-† P		0.9186	mg/l	10/3/2025 11:10:13	
Q3254-07DLX10	S	Ammonia-† P		1.1184	mg/l	10/3/2025 11:10:14	
CCV4	S	Ammonia-† P		0.9777	mg/l	10/3/2025 11:10:16	
CCB4	S	Ammonia-† P		0.0106	mg/l	10/3/2025 11:10:18	

Calibration results

Aquakem 7.2AQ1

Page:

Alliance Technical Group

284 Sheffield Street, Mountainside, NJ 07092

Reviewed by : RM

Instrument ID : Konelab

10/3/2025 9:30

Test Ammonia-N

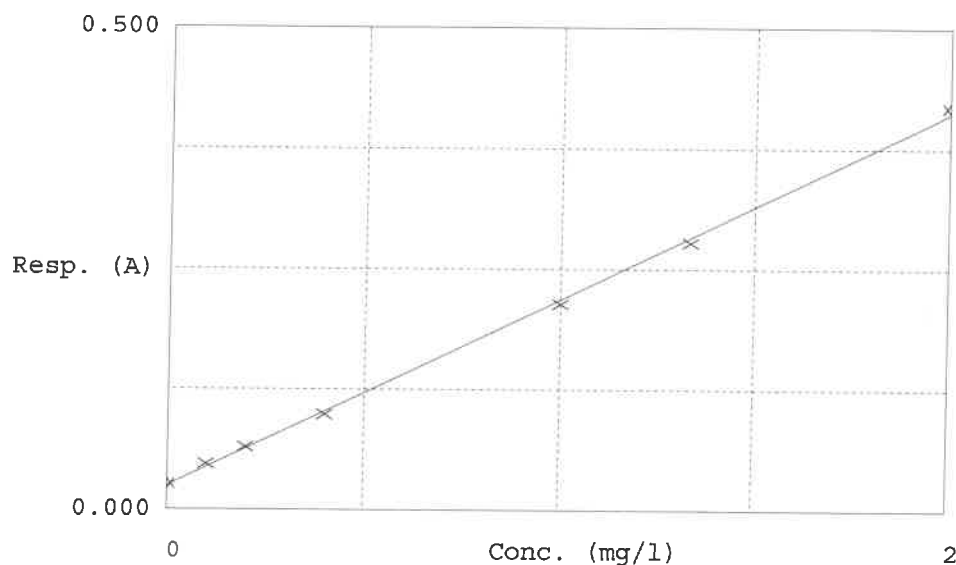
Accepted 10/3/2025 9:30

Factor 5.164

Bias 0.025

Coeff. of det. 0.999084

Errors



	Calibrator	Response	Calc. con.	Conc.	Errors
1	0.00PPM	0.026	0.0099	0.0000	-
2	NH3-2PPM	0.047	0.1173	0.1000	17.3
3	NH3-2PPM	0.065	0.2087	0.2000	4.3
4	NH3-2PPM	0.099	0.3836	0.4000	-4.1
5	NH3-2PPM	0.214	0.9767	1.0000	-2.3
6	NH3-2PPM	0.277	1.3053	1.3333	0.4
7	NH3-2PPM	0.418	2.0319	2.0000	1.6

10/03/2025  
RM

SOP ID : MSM4500-NH3 B,G-Ammonia-18

SDG No : N/A

Start Digest Date: 10/02/2025 Time : 14:10 Temp : 150 °C

Matrix : WATER

End Digest Date: 10/02/2025 Time : 15:10 Temp : 160 °C

Pipette ID : WC

*π batch*  
10/02/2025 15:45 150°C  
10/02/2025 16:45 160°C

Balance ID : N/A

Hood ID : HOOD#2

Digestion tube ID : M5595

Block Thermometer ID : WC CYANIDE

Block ID : WC-DIST-BLOCK-1

Filter paper ID : N/A

Prep Technician Signature: *RH*

Weigh By : N/A

pH Meter ID : N/A

Supervisor Signature: *12*

Standard Name	MLS USED	STD REF. # FROM LOG
LCSW	1.0ML	WP114786
MS/MSD SPIKE SOL.	1.0ML	WP114785
PBW	50.0ML	W3112
RL CHECK	0.1ML	WP114785
N/A	N/A	N/A

Chemical Used	ML/SAMPLE USED	Lot Number
BORATE BUFFER	2.5ML	WP113886
NAOH 6N	0.5-2.0ML	WP113887
H2SO4 0.04N	5.0ML	WP112828
pH strip-Ammonia	N/A	W3133
KI-starch paper	N/A	W3155
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:**

ALL GLASSWEAR ARE STEAMED OUT AND THERE WERE NO TRACE OF AMMONIA USING NESLER REAGENT  
WP114104,

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
10/02/2025 17:00	<i>RH (WC)</i>	<i>RH (WC)</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
PB169946BL	PBW946	50	50	<2	N/A	Negative	N/A	AFTER ADDING 6N NAOH PH IS 9.5	N/A
PB169946BS	LCS946	50	50	<2	N/A	Negative	N/A	AFTER ADDING 6N NAOH PH IS 9.5	N/A
Q3254-01	MW-1	50	50	<2	N/A	Negative	N/A	AFTER ADDING 6N NAOH PH IS 9.5	N/A
Q3254-03	MW-2	50	50	<2	N/A	Negative	N/A	AFTER ADDING 6N NAOH PH IS 9.5	N/A
Q3254-05	MW-3	50	50	<2	N/A	Negative	N/A	AFTER ADDING 6N NAOH PH IS 9.5	N/A
Q3254-07	MW-4	50	50	<2	N/A	Negative	N/A	AFTER ADDING 6N NAOH PH IS 9.5	N/A
Q3258-06	COMPOSITE	50	50	<2	N/A	Negative	N/A	AFTER ADDING 6N NAOH PH IS 9.5	N/A
Q3263-01	251818	50	50	<2	N/A	Negative	N/A	AFTER ADDING 6N NAOH PH IS 9.5	N/A
Q3263-02	266380	50	50	<2	N/A	Negative	N/A	AFTER ADDING 6N NAOH PH IS 9.5	N/A
Q3263-02DUP	266380DUP	50	50	<2	N/A	Negative	N/A	AFTER ADDING 6N NAOH PH IS 9.5	N/A
Q3263-02MS	266380MS	50	50	<2	N/A	Negative	N/A	AFTER ADDING 6N NAOH PH IS 9.5	N/A
Q3263-02MSD	266380MSD	50	50	<2	N/A	Negative	N/A	AFTER ADDING 6N NAOH PH IS 9.5	N/A
Q3268-01	WATER-TREATMENT-DISCHARGE	50	50	<2	N/A	Negative	N/A	AFTER ADDING 6N NAOH PH IS 9.5	N/A

# WORKLIST(Hardcopy Internal Chain)

WorkList Name : ammonia-10-01      WorkList ID : 192223      Department : Distillation      Date : 10-01-2025 15:47:51

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q3254-01	MW-1	Water	Ammonia	Conc H2SO4 to pH < 2	LOCK01	D31	09/29/2025	SM4500-NH3
Q3254-03	MW-2	Water	Ammonia	Conc H2SO4 to pH < 2	LOCK01	D31	09/29/2025	SM4500-NH3
Q3254-05	MW-3	Water	Ammonia	Conc H2SO4 to pH < 2	LOCK01	D31	09/29/2025	SM4500-NH3
Q3254-07	MW-4	Water	Ammonia	Conc H2SO4 to pH < 2	LOCK01	D31	09/29/2025	SM4500-NH3
Q3258-06	COMPOSITE	Water	Ammonia	Conc H2SO4 to pH < 2	DALT01	D31	09/30/2025	SM4500-NH3
Q3263-01	251818	Water	Ammonia	Conc H2SO4 to pH < 2	PSEG03	D31	10/01/2025	SM4500-NH3
Q3263-02	266380	Water	Ammonia	Conc H2SO4 to pH < 2	PSEG03	D31	10/01/2025	SM4500-NH3

Date/Time 10/02/2025 08:10  
 Raw Sample Received by: RHCW  
 Raw Sample Relinquished by: JF (0801)

Date/Time 10/02/2025 16:00  
 Raw Sample Received by: JF (0801)  
 Raw Sample Relinquished by: RHCW

# WORKLIST(Hardcopy Internal Chain)

WorkList Name : ammonia-3268

WorkList ID : 192256

Department : Distillation

Date : 10-02-2025 13:03:07

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q3268-01	WATER-TREATMENT-DISCHA	Water	Ammonia	Conc H2SO4 to pH < 2	VERI01	D31	10/02/2025	SM4500-NH3

Date/Time 10/02/2025 14:30  
 Raw Sample Received by: RH CWG  
 Raw Sample Relinquished by: afwcl

Date/Time 10/02/2025 16:00  
 Raw Sample Received by: afwcl  
 Raw Sample Relinquished by: RH CWG

**Instrument ID:** SPECTROPHOTOMETER-1

**Daily Analysis Runlog For Sequence/QC Batch ID # LB137395**

Review By	Iwona	Review On	10/2/2025 2:40:07 PM
Supervise By	jignesh	Supervise On	10/2/2025 2:41:51 PM
SubDirectory	LB137395	Test	Residual Chlorine
<b>STD. NAME</b>	<b>STD REF.#</b>		
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	WP115030,WP115025,WP115026,WP115028,WP115024,WP115029,WP115027,W3147		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	CAL1	CAL1	CAL	10/02/25 13:30		Iwona	OK
2	CAL2	CAL2	CAL	10/02/25 13:33		Iwona	OK
3	CAL3	CAL3	CAL	10/02/25 13:36		Iwona	OK
4	CAL4	CAL4	CAL	10/02/25 13:40		Iwona	OK
5	CAL5	CAL5	CAL	10/02/25 13:43		Iwona	OK
6	CAL6	CAL6	CAL	10/02/25 13:46		Iwona	OK
7	ICV	ICV	ICV	10/02/25 13:50		Iwona	OK
8	ICB	ICB	ICB	10/02/25 13:53		Iwona	OK
9	CCV1	CCV1	CCV	10/02/25 13:56		Iwona	OK
10	CCB1	CCB1	CCB	10/02/25 14:00		Iwona	OK
11	LB137395BL	LB137395BL	MB	10/02/25 14:03		Iwona	OK
12	LB137395BS	LB137395BS	LCS	10/02/25 14:06		Iwona	OK
13	Q3268-01	WATER-TREATMENT	SAM	10/02/25 14:09		Iwona	OK
14	Q3268-01DUP	WATER-TREATMENT	DUP	10/02/25 14:12		Iwona	OK
15	Q3268-01MS	WATER-TREATMENT	MS	10/02/25 14:15		Iwona	OK
16	Q3268-01MSD	WATER-TREATMENT	MSD	10/02/25 14:18		Iwona	OK
17	CCV2	CCV2	CCV	10/02/25 14:21		Iwona	OK
18	CCB2	CCB2	CCB	10/02/25 14:24		Iwona	OK



**Instrument ID:** KONELAB

**Daily Analysis Runlog For Sequence/QC Batch ID # LB137417**

Review By	rubina	Review On	10/3/2025 1:41:40 PM
Supervise By	Iwona	Supervise On	10/3/2025 4:37:40 PM
SubDirectory	LB137417	Test	Ammonia
<b>STD. NAME</b>	<b>STD REF.#</b>		
ICAL Standard	WP115036		
ICV Standard	WP115038		
CCV Standard	WP115037		
ICSA Standard	N/A		
CRI Standard	N/A		
LCS Standard	WP114786		
Chk Standard	WP114799,WP114133,WP113929,WP114132		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	0.0PPM	0.0PPM	CAL1	10/03/25 09:28		rubina	OK
2	0.1PPM	0.1PPM	CAL2	10/03/25 09:28		rubina	OK
3	0.2PPM	0.2PPM	CAL3	10/03/25 09:28		rubina	OK
4	0.4PPM	0.4PPM	CAL4	10/03/25 09:28		rubina	OK
5	1.0PPM	1.0PPM	CAL5	10/03/25 09:28		rubina	OK
6	1.3PPM	1.3PPM	CAL6	10/03/25 09:28		rubina	OK
7	2.0PPM	2.0PPM	CAL7	10/03/25 09:28		rubina	OK
8	ICV1	ICV1	ICV	10/03/25 10:18		rubina	OK
9	ICB1	ICB1	ICB	10/03/25 10:18		rubina	OK
10	CCV1	CCV1	CCV	10/03/25 10:18		rubina	OK
11	CCB1	CCB1	CCB	10/03/25 10:18		rubina	OK
12	RL	RL	LOQ	10/03/25 10:18		rubina	OK
13	PB169946BL	PB169946BL	MB	10/03/25 10:29		rubina	OK
14	PB169946BS	PB169946BS	LCS	10/03/25 10:29		rubina	OK
15	Q3254-01	MW-1	SAM	10/03/25 10:29		rubina	OK
16	Q3254-03	MW-2	SAM	10/03/25 10:29	NH3 is high , need dilution	rubina	Dilution
17	Q3254-05	MW-3	SAM	10/03/25 10:29	NH3 is high , need dilution	rubina	Dilution
18	Q3254-07	MW-4	SAM	10/03/25 10:29	NH3 is high , need dilution	rubina	Dilution

Instrument ID: KONELAB

**Daily Analysis Runlog For Sequence/QC Batch ID # LB137417**

Review By	rubina	Review On	10/3/2025 1:41:40 PM
Supervise By	Iwona	Supervise On	10/3/2025 4:37:40 PM
SubDirectory	LB137417	Test	Ammonia
<b>STD. NAME</b>	<b>STD REF.#</b>		
ICAL Standard	WP115036		
ICV Standard	WP115038		
CCV Standard	WP115037		
ICSA Standard	N/A		
CRI Standard	N/A		
LCS Standard	WP114786		
Chk Standard	WP114799,WP114133,WP113929,WP114132		

19	Q3258-06	COMPOSITE	SAM	10/03/25 10:29		rubina	OK
20	Q3263-01	251818	SAM	10/03/25 10:29		rubina	OK
21	Q3263-02	266380	SAM	10/03/25 10:29		rubina	OK
22	CCV2	CCV2	CCV	10/03/25 10:39		rubina	OK
23	CCB2	CCB2	CCB	10/03/25 10:39		rubina	OK
24	Q3263-02DUP	266380DUP	DUP	10/03/25 10:39		rubina	OK
25	Q3263-02MS	266380MS	MS	10/03/25 10:39		rubina	OK
26	Q3263-02MSD	266380MSD	MSD	10/03/25 10:40		rubina	OK
27	Q3268-01	WATER-TREATMENT	SAM	10/03/25 10:40		rubina	OK
28	CCV3	CCV3	CCV	10/03/25 10:46		rubina	OK
29	CCB3	CCB3	CCB	10/03/25 10:46		rubina	OK
30	Q3254-03DL	MW-2DL	SAM	10/03/25 11:10	10X For NH3	rubina	Confirms
31	Q3254-05DL	MW-3DL	SAM	10/03/25 11:10	5X For NH3	rubina	Confirms
32	Q3254-07DL	MW-4DL	SAM	10/03/25 11:10	10X For NH3	rubina	Confirms
33	CCV4	CCV4	CCV	10/03/25 11:10		rubina	OK
34	CCB4	CCB4	CCB	10/03/25 11:10		rubina	OK

## Prep Standard - Chemical Standard Summary

**Order ID :** Q3268

**Test :** Ammonia,Residual Chlorine

**Prepbatch ID :** PB169946,

**Sequence ID/Qc Batch ID:** LB137395,LB137417,

**Standard ID :**

WP112611,WP112612,WP112828,WP113885,WP113886,WP113887,WP113929,WP114132,WP114133,WP114785,WP114786,WP114799,WP115022,WP115023,WP115024,WP115025,WP115026,WP115027,WP115028,WP115029,WP115030,WP115036,WP115037,WP115038,

**Chemical ID :**

M6041,W2663,W2666,W3112,W3113,W3130,W3131,W3132,W3133,W3147,W3155,W3195,W3196,W3201,W3222,



<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>
153	Ammonia Stock Std. (1000 ppm)	<a href="#">WP112611</a>	04/07/2025	10/07/2025	Rubina Mughal	WETCHEM_SCALE_8 (WC SC-7)	None	Iwona Zarych 04/07/2025
<b><u>FROM</u></b> 3.81900gram of W3196 + 996.18100ml 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>
1895	Ammonia Stock Std, 1000PPM-SS	<a href="#">WP112612</a>	04/07/2025	10/07/2025	Rubina Mughal	WETCHEM_S CALE_8 (WC SC-7)	None	Iwona Zarych  04/07/2025
<u>FROM</u>	3.81900gram of W3195 + 996.18100ml of W3112 = Final Quantity: 1000.000 ml							

## Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1597	0.04 N H2SO4	<a href="#">WP112828</a>	04/25/2025	10/25/2025	Rubina Mughal	None	WETCHEM_FIPETTE_3 (WC)	Iwona Zarych 04/25/2025

**FROM** 1.00000ml of M6041 + 999.00000ml 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>
1796	NaOH, 0.1N	<a href="#">WP113885</a>	07/10/2025	12/31/2025	Rubina Mughal	WETCHEM_SCALE_8 (WC SC-7)	None	Iwona Zarych 07/10/2025

**FROM** 4.00000gram of W3113 + 996.00000ml 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>
1494	BORATE BUFFER	<a href="#">WP113886</a>	07/10/2025	12/31/2025	Rubina Mughal	WETCHEM_SCALE_8 (WCS-7)	None	Iwona Zarych
<b>FROM</b> 0.90250L of W3112 + 9.50000gram of W3201 + 88.00000ml of WP113885 = Final Quantity: 1.000 L								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1471	NaOH Solution, 6N	<a href="#">WP113887</a>	07/10/2025	12/31/2025	Rubina Mughal	WETCHEM_S CALE_8 (WC SC-7)	None	Iwona Zarych  07/10/2025
<b><u>FROM</u></b> 240.00000gram of W3113 + 760.00000ml 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>
290	Phenol reagent for Ammonia	<a href="#">WP113929</a>	07/14/2025	12/31/2025	Rubina Mughal	WETCHEM_SCALE_8 (WC SC-7)	None	Iwona Zarych 07/15/2025
<b><u>FROM</u></b> 3.20000gram of W3113 + 8.30000gram of W2663 + 88.80000ml of W3112 = Final Quantity: 100.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
635	EDTA BUFFER FOR AMMONIA	<a href="#">WP114132</a>	07/31/2025	12/31/2025	Rubina Mughal	WETCHEM_SCALE_8 (WC SC-7)	None	Iwona Zarych 07/31/2025
<b><u>FROM</u></b> 5.50000gram of W3113 + 50.00000gram of W3132 + 950.00000ml of W3112 = Final Quantity: 1000.000 ml								

## Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
289	Sodium Hypochlorite for Ammonia	<a href="#">WP114133</a>	07/31/2025	12/31/2025	Rubina Mughal	None	None	Iwona Zarych
								08/04/2025

**FROM** 50.00000ml of W3112 + 50.00000ml of W3222 = Final Quantity: 100.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1322	Ammonia Intermediate Std, 50PPM	<a href="#">WP114785</a>	09/16/2025	10/07/2025	Rubina Mughal	None	WETCHEM_FIPETTE_3	Iwona Zarych
							(WC)	09/17/2025

**FROM** 95.00000ml of W3112 + 5.00000ml of WP112611 = Final Quantity: 100.000 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>
1639	Ammonia Intermediate Std-Second source, 50PPM	<a href="#">WP114786</a>	09/16/2025	10/07/2025	Rubina Mughal	None	WETCHEM_F IPETTE_3 (WC)	Iwona Zarych  09/17/2025

**FROM** 95.00000ml of W3112 + 5.00000ml of WP112612 = Final Quantity: 100.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
740	sodium nitroferricyanide for ammonia	<a href="#">WP114799</a>	09/17/2025	10/17/2025	Rubina Mughal	WETCHEM_S CALE_5 (WC SC-5)	None	Jignesh Parikh  09/18/2025

**FROM** 0.05000gram of W2666 + 99.95000ml of W3112 = Final Quantity: 100.000 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>
3443	Residual chlorine std, Intermediate 10PPM	<a href="#">WP115022</a>	10/02/2025	10/03/2025	Iwona Zarych	None	Glass Pipette-A	Jignesh Parikh 10/03/2025

**FROM** 42.75000ml of W3112 + 7.25000ml of W3130 = 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>
3444	Residual chlorine std, Intermediate-SS 10PPM	<a href="#">WP115023</a>	10/02/2025	10/03/2025	Iwona Zarych	None	Glass Pipette-A	Jignesh Parikh 10/03/2025

**FROM** 42.50000ml of W3112 + 7.50000ml of W3131 = 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>
3710	Chlorine Calibration std, 0.0ppm	<a href="#">WP115024</a>	10/02/2025	10/03/2025	Iwona Zarych	None	None	Jignesh Parikh
								10/03/2025

**FROM** 50.00000ml of W3112 = 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>
3707	Chlorine Calibration std, 0.1ppm	<a href="#">WP115025</a>	10/02/2025	10/03/2025	Iwona Zarych	None	None	Jignesh Parikh
								10/03/2025

**FROM** 49.50000ml of W3112 + 0.50000ml of WP115022 = 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>
3708	Chlorine Calibration std, 0.2ppm	<a href="#">WP115026</a>	10/02/2025	10/03/2025	Iwona Zarych	None	WETCHEM_FIPETTE_3 (WC)	Jignesh Parikh 10/03/2025

**FROM** 49.00000ml of W3112 + 1.00000ml of WP115022 = 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>
3799	Residual Chlorine Calibration and CCV std, 0.4PPM	<a href="#">WP115027</a>	10/02/2025	10/03/2025	Iwona Zarych	None	WETCHEM_FIPETTE_3 (WC)	Jignesh Parikh 10/03/2025

**FROM** 96.00000ml of W3112 + 4.00000ml of WP115022 = Final Quantity: 100.000 ml



<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3709	Chlorine Calibration std, 0.8ppm	<a href="#">WP115028</a>	10/02/2025	10/03/2025	Iwona Zarych	None	WETCHEM_PIPETTE_3	Jignesh Parikh
<p>(WC)</p> <p><b>FROM</b> 46.00000ml of W3112 + 4.00000ml of WP115022 = Final Quantity: 50.000 ml</p>								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3711	Chlorine Calibration std, 1.6ppm	<a href="#">WP115029</a>	10/02/2025	10/03/2025	Iwona Zarych	None	Glass Pipette-A	Jignesh Parikh  10/03/2025
<b><u>FROM</u></b> 42.00000ml of W3112 + 8.00000ml of WP115022 = 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>
3452	Residual chlorine ICV-LCS, 0.4PPM	<a href="#">WP115030</a>	10/02/2025	10/03/2025	Iwona Zarych	None	WETCHEM_PIPETTE_3 (WC)	Jignesh Parikh 10/03/2025
<b><u>FROM</u></b> 48.00000ml of W3112 + 2.00000ml of WP115023 = 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>
275	Ammonia Calibration Std. (2 ppm)	<a href="#">WP115036</a>	10/03/2025	10/04/2025	Rubina Mughal	None	WETCHEM_PIPETTE_3	Iwona Zarych
<p><b>FROM</b> 48.00000ml of W3112 + 2.00000ml of WP114785 = Final Quantity: 50.000 ml</p>								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
285	Ammonia CCV Std. (1 ppm)	<a href="#">WP115037</a>	10/03/2025	10/04/2025	Rubina Mughal	None	WETCHEM_PIPETTE_3	Iwona Zarych
<b>FROM</b>		49.00000ml of W3112 + 1.00000ml of WP114785 = 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>
286	Ammonia ICV Std. (1 ppm)	<a href="#">WP115038</a>	10/03/2025	10/04/2025	Rubina Mughal	None	WETCHEM_PIPETTE_3	Iwona Zarych
<u>FROM</u>		49.00000ml of W3112 + 1.00000ml of WP114786 = Final Quantity: 50.000 ml						

## CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9673-33 / Sulfuric Acid, Instra-Analyzed (cs/6c2.5L)	23D2462010	03/20/2028	08/16/2024 / mohan	08/16/2024 / mohan	M6041

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	P1060-10 / PHENOL, ACS, 500G	2HD0179	01/27/2030	01/27/2020 / apatel	01/27/2020 / apatel	W2663

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	87683 / Sodium Nitroferricyanide 250g	W12F013	02/10/2030	02/10/2020 / apatel	02/10/2020 / apatel	W2666

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	DIW / DI Water	Daily Lab-Certified	07/03/2029	07/03/2024 / lwona	07/03/2024 / lwona	W3112

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	PC19510-7 / Sodium Hydroxide Pellets 12 Kg	23B1556310	12/31/2025	07/08/2024 / lwona	07/08/2024 / lwona	W3113

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
HACH	14268-10 / Chlorine Std, Pk of 16	A4144	01/31/2026	07/25/2024 / lwona	07/25/2024 / lwona	W3130



## CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
HACH	14268-10 / Chlorine Std, Pk of 16	A4166	02/28/2026	07/25/2024 / lwona	07/25/2024 / lwona	W3131

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	PC05050-1 / EDTA, disodium salt, dihydrate 1 lb	2ND0156	07/10/2026	07/26/2024 / lwona	07/26/2024 / lwona	W3132

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	140476 / Test Paper,PH Short Range 9.0/10.0	L23	08/22/2029	08/22/2024 / lwona	08/22/2024 / lwona	W3133

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
HACH	14064-99 / Total Chlorine Powder Pillows	A4230	08/31/2029	10/01/2024 / lwona	10/01/2024 / lwona	W3147

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	140730 / TEST PAPER,POT.IOD-STRCH,P K100,CS12	14-860	12/02/2029	12/02/2024 / lwona	12/02/2024 / lwona	W3155

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	J0660-1 / AMMONIUM CHLORIDE, ACS, 500G	24L0356561	08/31/2027	03/19/2025 / lwona	03/19/2025 / lwona	W3195

### CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	J0660-1 / AMMONIUM CHLORIDE, ACS, 500G	MKCV1009	09/30/2026	03/19/2025 / Iwona	03/19/2025 / Iwona	W3196

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	J3568-1 / Sodium Borate, 500 gms	BCCL9613	05/31/2029	04/16/2025 / Iwona	04/16/2025 / Iwona	W3201

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	J9416-1 / Sodium Hypochlorite 500 ml	2506M51	12/31/2025	07/02/2025 / Iwona	07/02/2025 / Iwona	W3222



# Certificate Of Analysis

Item Number	P1060	Lot Number	2HD0179
Item	Phenol, Loose Crystal, Reagent, ACS		
CAS Number	108-95-2		
Molecular Formula	C <sub>6</sub> H <sub>6</sub> O	Molecular Weight	94.11

Test	Specification		Result
	min	max	
ASSAY (C <sub>6</sub> H <sub>5</sub> OH)	99.0 %		100.02 %
FREEZING POINT (DRY)	40.5 C		40.5°C
CLARITY OF SOLUTION	TO PASS TEST		PASSES TEST
RESIDUE AFTER EVAPORATION		0.05 %	<0.05 %
WATER		0.5 %	0.0087 %
DATE OF MANUFACTURE			06-MAR-2018

Spectrum Chemical Mfg Corp  
755 Jersey Avenue  
New Brunswick 08901 NJ



Certificate Of Analysis Results Certified by

Ibad Tirmizi  
Director of Quality  
Spectrum Chemical Mfg. Corp.

All pharmaceutical ingredients are tested using current edition of applicable pharmacopeia.

Read and understand label and SDS before handling any chemicals. All Spectrum's chemicals are for manufacturing, processing, repacking or research purposes by experienced personnel only. It is the customer's responsibility to provide adequate hazardous material training and ensure that appropriate Personal Protective Equipment (PPE) is used before handling any chemical.

W2666 Recived on 02/10/2020 by AP

Product No.: 87683

Product: Sodium pentacyanonitrosylferrate(III) dihydrate, ACS, 99.0-102.0%

Lot No.: W12F013

Test	Limits	Results
Assay	99.0 - 102.0 %	99.67 %
Insoluble	0.01 % max	0.0079 %
Chloride	0.02 % max	Not detected
Sulfate	To pass test	Passes test
Aqueous solubility	To pass test	Passes test
Limit on Ferricyanide	To pass test	Passes test
Limit on Ferrocyanide	To pass test	Passes test

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

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

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

avantor™



M 6041-4b  
MS

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

## Certificate of Analysis

Test	Specification	Result
ACS – Assay (H <sub>2</sub> SO <sub>4</sub> )	95.0 – 98.0 %	96.1 %
Appearance	Passes Test	Passes Test
ACS – Color (APHA)	≤ 10	5
ACS – Residue after Ignition	≤ 3 ppm	< 1 ppm
ACS – Substances Reducing Permanganate (as SO <sub>2</sub> )	≤ 2 ppm	< 2 ppm
Ammonium (NH <sub>4</sub> )	≤ 1 ppm	1 ppm
Chloride (Cl)	≤ 0.1 ppm	< 0.1 ppm
Nitrate (NO <sub>3</sub> )	≤ 0.2 ppm	< 0.1 ppm
Phosphate (PO <sub>4</sub> )	≤ 0.5 ppm	< 0.1 ppm
Trace Impurities – Aluminum (Al)	≤ 30.0 ppb	< 5.0 ppb
Arsenic and Antimony (as As)	≤ 4.0 ppb	< 2.0 ppb
Trace Impurities – Boron (B)	≤ 10.0 ppb	8.5 ppb
Trace Impurities – Cadmium (Cd)	≤ 2.0 ppb	< 0.3 ppb
Trace Impurities – Chromium (Cr)	≤ 6.0 ppb	< 0.4 ppb
Trace Impurities – Cobalt (Co)	≤ 0.5 ppb	< 0.3 ppb
Trace Impurities – Copper (Cu)	≤ 1.0 ppb	< 0.1 ppb
Trace Impurities – Gold (Au)	≤ 10.0 ppb	0.5 ppb
Heavy Metals (as Pb)	≤ 500.0 ppb	< 100.0 ppb
Trace Impurities – Iron (Fe)	≤ 50.0 ppb	1.3 ppb
Trace Impurities – Lead (Pb)	≤ 0.5 ppb	< 0.5 ppb
Trace Impurities – Magnesium (Mg)	≤ 7.0 ppb	0.8 ppb
Trace Impurities – Manganese (Mn)	≤ 1.0 ppb	< 0.4 ppb
Trace Impurities – Mercury (Hg)	≤ 0.5 ppb	< 0.1 ppb
Trace Impurities – Nickel (Ni)	≤ 2.0 ppb	0.3 ppb
Trace Impurities – Potassium (K)	≤ 500.0 ppb	< 2.0 ppb
Trace Impurities – Selenium (Se)	≤ 50.0 ppb	< 0.1 ppb
Trace Impurities – Silicon (Si)	≤ 100.0 ppb	31.5 ppb
Trace Impurities – Silver (Ag)	≤ 1.0 ppb	< 0.3 ppb

>>> Continued on page 2 >>>

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

 **avantor™**

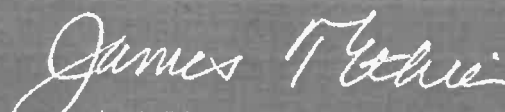


Material No.: 9673-33  
Batch No.: 23D2462010

Test	Specification	Result
Trace Impurities – Sodium (Na)	$\leq 500.0$ ppb	5.4 ppb
Trace Impurities – Strontium (Sr)	$\leq 5.0$ ppb	< 0.2 ppb
Trace Impurities – Tin (Sn)	$\leq 5.0$ ppb	< 0.8 ppb
Trace Impurities – Zinc (Zn)	$\leq 5.0$ ppb	0.4 ppb

For Laboratory, Research, or Manufacturing Use

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

  
Jamie Ethier  
Vice President Global Quality



# Certificate of Analysis



## Sodium Hydroxide (Pellets)

**Material:** 0583  
**Grade:** ACS GRADE  
**Batch Number:** 23B1556310

Chemical Formula: NaOH  
Molecular Weight: 40  
CAS #: 1310-73-2  
Appearance:

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

Storage: Room Temperature

Pellets

TEST	SPECIFICATION	ANALYSIS	DISPOSITION
Calcium	<= 0.005 %	<0.005 %	PASS
Chloride	<= 0.005 %	0.002 %	PASS
Heavy Metals	<= 0.002 %	<0.002 %	PASS
Iron	<= 0.001 %	<0.001 %	PASS
Magnesium	<= 0.002 %	<0.002 %	PASS
Mercury	<= 0.1 ppm	<0.1 ppm	PASS
Nickel	<= 0.001 %	<0.001 %	PASS
Nitrogen Compounds	<= 0.001 %	<0.001 %	PASS
Phosphate	<= 0.001 %	<0.001 %	PASS
Potassium	<= 0.02 %	<0.02 %	PASS
Purity	>= 97.0 %	99.2 %	PASS
Sodium Carbonate	<= 1.0 %	0.5 %	PASS
Sulfate	<= 0.003 %	<0.003 %	PASS

Internal ID #: 710

### Signature

We certify that this batch conforms to the specifications listed.

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

Leona Edwardson, Quality Control Sr. Manager - Solon  
VWR Chemicals, LLC.  
28600 Fountain Parkway, Solon OH 44139 USA

### Additional Information

Analysis may have been rounded to significant digits in specification limits.

Product meets analytical specifications of the grades listed.



## Sodium Hydroxide (Pellets)

**Material:** 0583  
**Grade:** ACS GRADE  
**Batch Number:** 23B1556310

Chemical Formula: NaOH  
Molecular Weight: 40  
CAS #: 1310-73-2  
Appearance:

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

Storage: Room Temperature

Pellets

Spec Set: 0583ACS

Internal ID #: 710

### Signature

We certify that this batch conforms to the specifications listed.

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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.





An ISO 9001 Certified Company

Loveland, CO 80539

(970) 669-3050

## *Certificate of Analysis*

**PRODUCT:** Chlorine Solution Ampule 50-75 mg/l

**PRODUCT NUMBER:** 1426810

**LOT NUMBER:** A4144

**MANUFACTURE DATE:** 05/28/2024

**DATE OF ANALYSIS:** 05/30/2024

---

TEST	SPECIFICATIONS	RESULTS
Standard Deviation for the ampules sampled	0 to 0.4 mg/L	0.10 mg/L
Mean Chlorine Concentration ampules sampled.	50 to 75 mg/L	60.9 mg/L

The expiration date is Jan 2026

Certified by: *Scott Als*

Analytical Services Chemist



An ISO 9001 Certified Company

Loveland, CO 80539

(970) 669-3050

## *Certificate of Analysis*

**PRODUCT:** Chlorine Solution Ampule 50-75 mg/l

**PRODUCT NUMBER:** 1426810

**LOT NUMBER:** A4166

**MANUFACTURE DATE:** 06/24/2024

**DATE OF ANALYSIS:** 06/25/2024

---

TEST	SPECIFICATIONS	RESULTS
Standard Deviation for the ampules sampled	0 to 0.4 mg/L	0.10 mg/L
Mean Chlorine Concentration ampules sampled.	50 to 75 mg/L	61.9 mg/L

The expiration date is Feb 2026

Certified by: *Scott Als*

Analytical Services Chemist

Item Number	ED150	Lot Number	2ND0156
Item	Edetate Disodium, Dihydrate, USP	CAS Number	6381-92-6
Molecular Formula	$C_{10}H_{14}N_2Na_2O_8 \cdot 2H_2O$	Molecular Weight	372.24

TEST	SPECIFICATION		RESULT
	MIN	MAX	
ASSAY (DRIED BASIS)	99.0	101.0 %	99.5 %
pH OF A 5% SOLUTION @ 25°C	4.0	6.0	4.6
LOSS ON DRYING	8.7	11.4 %	8.90 %
CALCIUM (Ca)	NO PRECIPITATE IS FORMED		NO PRECIPITATE IS FORMED
ELEMENTAL IMPURITIES:			.
NICKEL (Ni)	AS REPORTED		<0.3 ppm
CHROMIUM (Cr)	AS REPORTED		<0.3 ppm
NITRILOTRIACETIC ACID[n[(HOCOCH <sub>2</sub> ) <sub>3</sub> N]		0.1 %	<0.10 %
IDENTIFICATION A	MATCHES REFERENCE		MATCHES REFERENCE
IDENTIFICATION B	RED COLOR IS DISCHARGED, LEAVING A YELLOWISH SOLUTION		RED COLOR IS DISCHARGED, LEAVING A YELLOWISH SOLUTION
IDENTIFICATION C	MEETS THE REQUIREMENTS FOR SODIUM		MEETS THE REQUIREMENTS FOR SODIUM
CERTIFIED HALAL			CERTIFIED HALAL
EXPIRATION DATE			10-JUL-2026
DATE OF MANUFACTURE			11-JUL-2023
APPEARANCE			WHITE CRYSTALLINE POWDER
RESIDUAL SOLVENTS		AS REPORTED	NO RESIDUAL SOLVENTS PRESENT
MONOGRAPH EDITION			USP 2024

Certificate of Analysis Results Entered By:

CACEVEDO  
Charmian Acevedo  
22-MAY-24 08:12:30

Certificate of Analysis Results Approved By:

GHERRERA  
Genaro Herrera  
22-MAY-24 12:32:01

Spectrum Chemical Mfg Corp  
755 Jersey Avenue  
New Brunswick 08901 NJ



**All pharmaceutical ingredients are tested using current edition of applicable pharmacopeia.**

**Read and understand label and SDS before handling any chemicals. All Spectrum's chemicals are for manufacturing, processing, repacking or research purposes by experienced personnel only. It is the customer's responsibility to provide adequate hazardous material training and ensure that appropriate Personal Protective Equipment (PPE) is used before handling any chemical.**

The Elemental Impurities standards implemented by USP and other Pharmaceutical Compendia reflect a growing understanding of the toxicology of trace levels of elemental impurities that can remain in drug substances originating from either raw materials or manufacturing processes. Identifying and quantifying impurities can be critical to predicting the best possible patient outcomes. Elemental Impurities has been a requirement of all products meeting USP/NF, EP and BP monographs since January 1, 2018. More information can be found in USP sections <232> Elemental Impurities – Limits and <233> Elemental Impurities – Procedures. Data for drug substances furnished by Spectrum Chemical Mfg. Corp can be used to ensure that patient daily exposures by oral administration to the selected elements are not exceeded in the formulation of pharmaceutical products.



An ISO 9001 Certified Company

Loveland, CO 80539

(970) 669-3050

## Certificate of Analysis

**PRODUCT:** DPD Total Chlorine Reagent

**PRODUCT NUMBER:** 1406499

**LOT NUMBER:** A4230

**MANUFACTURE DATE:** 08/27/2024

**DATE OF ANALYSIS:** 08/28/2024

TEST	SPECIFICATIONS	RESULTS
Percent Recovery for a 2.5 ppm Standard. Chlorine concentration determined using DPD compared to the actual concentration.	93 to 107 %	95.7 %
pH of reagent in 50 mL of DI water.	6.2 to 6.5	6.40
Percent Recovery for a 5.0 ppm Standard. Chlorine concentration determined using DPD compared to the actual concentration.	93 to 107 %	96.2 %
Hardness Blank: 1000 ppm as Calcium Carbonate Hardness standard vs DI water measured at 530 nm in 1 cm cells.	0 to 0.009 abs	0.0020 abs

The expiration date is Aug 2029

Certified by: *Scott Als*

Analytical Services Chemist



W3195 Received on 03/19/2025 by IZ

# Certificate of Analysis



Material	BDH9208-500G
Material Description	BDH AMMONIUM CHLORIDE ACS 500G
Grade	U S P REAGENT (ACS GRADE)
Batch	24L0356561
Reassay Date	08/31/2027
CAS Number	12125-02-9
Molecular Formula	NH <sub>4</sub> Cl
Molecular Mass	53.49
Date of Manufacture	08/01/2024
Storage	Room Temperature

Characteristics	Specifications	Measured Values
Appearance	White granular powder	White granular powder
Calcium	<= 0.001 %	0.001 %
Heavy Metals (as Pb)	<= 0.0005 %	<0.0002 %
Insolubles	<= 0.005 %	0.001 %
Iron	<= 0.0002 %	<0.0002 %
Magnesium	<= 0.0005 %	0.0001 %
pH (5%, Water) @25C	4.5 - 5.5	4.8
Phosphate	<= 0.0002 %	<0.0002 %
Purity	>= 99.5 %	99.8 %
Residue on Ignition	<= 0.01 %	0.003 %
Sulfate	<= 0.002 %	<0.002 %
Extra Description:	Meets Reagent Specifications for testing USP/NF monographs	

Internal ID #: 710

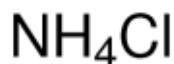
Signature	Additional Information
We certify that this batch conforms to the specifications listed above.  This document has been electronically produced and is valid without a signature.  Leona Edwardson, Quality Control Sr. Manager - Solon VWR Chemicals, LLC. 28600 Fountain Parkway, Solon OH 44139 USA	Analysis may have been rounded to significant digits in specification limits  Product meets analytical specifications of the grades listed.

W3196 Received on 03/19/2025 by IZ

## Certificate of Analysis

Product Name:

Ammonium chloride - ACS reagent, ≥99.5%



**Product Number:** 213330  
**Batch Number:** MKCV1009  
**Brand:** SIGALD  
**CAS Number:** 12125-02-9  
**MDL Number:** MFCD00011420  
**Formula:** H4CIN  
**Formula Weight:** 53.49 g/mol  
**Quality Release Date:** 23 OCT 2023  
**Recommended Retest Date:** SEP 2026

Test	Specification	Result
Appearance (Color)	White	White
Appearance (Form)	Powder or Crystals or Chunk(s)	Crystals
Titration by AgNO <sub>3</sub>	≥ 99.5 %	100.2 %
pH	4.5 - 5.5	4.9
@ 25 Deg c (5% Solution)		
Insoluble Matter	≤ 0.005 %	0.001 %
10%, H <sub>2</sub> O		
Residue on ignition (Ash)	≤ 0.01 %	< 0.01 %
Calcium (Ca)	≤ 0.001 %	< 0.001 %
Magnesium (Mg)	≤ 5 ppm	1 ppm
Heavy Metals	≤ 5 ppm	< 1 ppm
by ICP		
Iron (Fe)	≤ 2 ppm	< 1 ppm
Phosphate (PO <sub>4</sub> )	≤ 2 ppm	< 2 ppm
Sulfate (SO <sub>4</sub> )	≤ 0.002 %	< 0.002 %
Meets ACS Requirements	Current ACS Specification	Conforms
Recommended Retest Period	-----	-----
3 Years		



Larry Coers, Director

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



## Certificate of Analysis

**Product Number:** 213330  
**Batch Number:** MKCV1009

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Quality Control  
Milwaukee, WI US

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





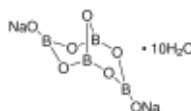
W3201 Received on 4/16/25 by IZ

## Certificate of Analysis

Product Name:

Sodium tetraborate decahydrate - ACS reagent, ≥99.5%

**Product Number:** S9640  
**Batch Number:** BCCL9613  
**Brand:** SIGALD  
**CAS Number:** 1303-96-4  
**Formula:** B<sub>4</sub>Na<sub>2</sub>O<sub>7</sub> · 10H<sub>2</sub>O  
**Formula Weight:** 381,37 g/mol  
**Quality Release Date:** 05 JUL 2024  
**Recommended Retest Date:** MAY 2029



Test	Specification	Result
Appearance (Color)	White	White
Appearance (Form)	Powder or Crystals	Powder
Titration with NaOH	99.5 - 105.0 %	100.7 %
pH	9.15 - 9.20	9.20
0.01 m Solution at 25 Deg C		
Meets ACS Requirements	Corresponds to Requirements	Corresponds
ACS Specifications	Corresponds to Requirements	Corresponds
Insoluble Matter ≤ 0.005% / Heavy		
Metals (As Pb) ≤ 0.001%		
Calcium (Ca)	≤ 50 mg/kg	< 50 mg/kg
Iron (Fe)	≤ 5 mg/kg	< 5 mg/kg
Total Sulfur	≤ 50 mg/kg	< 50 mg/kg
as SO <sub>4</sub> (ICP)		
Chloride (Cl)	≤ 10 mg/kg	< 10 mg/kg
Phosphate (PO <sub>4</sub> )	≤ 10 mg/kg	< 10 mg/kg

Dr. Reinhold Schwenninger  
Quality Assurance  
Buchs, Switzerland CH

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# Certificate of Analysis

## Sodium Hypochlorite Solution, 5% available Chlorine

**Lot Number:** 2506M51**Product Number:** 7495.5**Manufacture Date:** JUN 18, 2025**Expiration Date:** DEC 2025

This solution is subject to slow decomposition upon exposure to air. Keep container tightly capped. Refrigeration may improve stability.  
When used in the Phenate method for Ammonia, APHA recommends replacing this solution about every 2 months.

Name	CAS#	Grade
Water	7732-18-5	Commercial
Sodium Hypochlorite	7681-52-9	Commercial

Test	Specification	Result	NIST SRM#
Appearance	Colorless to greenish-yellow liquid	Passed	
Assay (vs. Sodium Thiosulfate/Starch)	4.75-5.25 % (w/w) Cl <sub>2</sub>	5.17 % (w/w) Cl <sub>2</sub>	136

Specification	Reference
Sodium Hypochlorite, 5%	APHA (4500-NH3 F)
Sodium Hypochlorite	ASTM (D 4785)

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)
7495.5-1	4 L black poly	6 months
7495.5-16	500 mL amber poly	6 months
7495.5-32	1 L amber poly	6 months

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

Jose Pena (06/18/2025)  
Operations Manager

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



# SHIPPING DOCUMENTS

CLIENT INFORMATION

CLIENT PROJECT INFORMATION

CLIENT BILLING INFORMATION

REPORT TO BE SENT TO:

COMPANY: Verina Consulting Group  
ADDRESS: 1011 US Highway 22, Suite 302  
CITY: Bridgewater STATE: ZIP: 08807  
ATTENTION: Michael Valenzi  
PHONE: 908-864-4400 FAX: 908-864-4401

PROJECT NAME: Rotarclip  
PROJECT NO.: 5183.0001 LOCATION: NJ  
PROJECT MANAGER: Michael Valenzi  
e-mail: mvalenzi@vcg-llc.com  
PHONE: 908-864-4400 FAX: 908-864-4401

BILL TO: see left PO#: ADDRESS:  
CITY STATE: ZIP: ATTENTION: PHONE:

ANALYSIS

DATA TURNAROUND INFORMATION

FAX (RUSH) 5 DAYS\*  
HARDCOPY (DATA PACKAGE): 5 DAYS\*  
EDD: 5 DAYS\*

\*TO BE APPROVED BY CHEMTECH

STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS

DATA DELIVERABLE INFORMATION

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

Cr, Cu, Ni, Zn  
(Chlorine demand)  
(Ammonia)

ALLIANCE SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS
			COMP	GRAB	DATE	TIME		B	E	C							
1.	Water Treatment Discharge	WW	X		10/2/25	10:15	3	X	X	X							← Specify Preservatives A-HCl D-NaOH B-HNO3 E-ICE C-H2SO4 F-OTHER
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:	DATE/TIME:	RECEIVED BY:	Conditions of bottles or coolers at receipt: <input type="checkbox"/> COMPLIANT <input type="checkbox"/> NON COMPLIANT <input type="checkbox"/> COOLER TEMP
1.	10/2/25 10:45	1.	Comments: Flow rate = 46 PH = 9.4 temperature = 70.4 Cr, Cu, Ni, Zn = Metals group 4
RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:	
2.		2.	
RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:	
3.	10-225	3.	

Page 1 of 1

CLIENT: ☐ Hand Delivered ☐ Other

Shipment Complete  
☐ YES ☐ NO

### Laboratory Certification

Certified By	License No.
Connecticut	PH-0830
DOD ELAP (ANAB)	L2219
Maine	2024021
Maryland	296
New Hampshire	255425
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	525-24-234-08441
Texas	TX-C25-00189
Virginia	460312