

## **DATA PACKAGE GENERAL CHEMISTRY**

**PROJECT NAME : RFP 916**

**WESTON SOLUTIONS, INC.  
1090 King Georges Post Road  
Suite 201  
Edison, NJ - 08837-3703  
Phone No: 732-585-4410**

**ORDER ID : Q3179  
ATTENTION : Smita Sumbaly**



**Laboratory Certification ID # 20012**



|                                                       |    |
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| 13 |

## Cover Page

**Order ID :** Q3179

**Project ID :** RFP 916

**Client :** Weston Solutions, Inc.

**Lab Sample Number**

Q3179-01  
Q3179-02  
Q3179-03

**Client Sample Number**

EME-TS14-01  
EME-TS14-01MS  
EME-TS14-01MSD

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

Signature : \_\_\_\_\_

Date: 10/1/2025

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012



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

## **CASE NARRATIVE**

**Weston Solutions, Inc.**

**Project Name: RFP 916**

**Project # N/A**

**Order ID # Q3179**

**Test Name: SPLP Cyanide**

### **A. Number of Samples and Date of Receipt:**

3 Solid samples were received on 09/23/2025.

### **B. Parameters:**

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

### **C. Analytical Techniques:**

The analysis of SPLP Cyanide was based on method 9012B.

### **D. QA/ QC Samples:**

The Holding Times were met for all analysis.

The Blank Spike met requirements for all compounds.

The Duplicate analysis met criteria for all compounds.

The Matrix Spike analysis met criteria for all compounds.

The Matrix Spike Duplicate analysis met criteria for all compounds.

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

The Calibration met the requirements.

### **E. Additional Comments:**

---

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

Signature\_\_\_\_\_

## DATA REPORTING QUALIFIERS- INORGANIC

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

|           |                                                                                                                                                                                                                                                                                                                                                                               |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <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<br>“P” for ICP instrument<br>“PM” for ICP when Microwave Digestion is used<br>“CV” for Manual Cold Vapor AA<br>“AV” for automated Cold Vapor AA<br>“CA” for MIDI-Distillation Spectrophotometric<br>“AS” for Semi -Automated Spectrophotometric<br>“C” for Manual Spectrophotometric<br>“T” for Titrimetric<br>“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                                                                                                                                                                                                                                                                                                                                              |

**GENERAL CHEMISTRY CONFORMANCE/NON-CONFORMANCE SUMMARY**

ORDER ID: Q3179

MATRIX: Solid

METHOD: 9012B

|                                                                                                | NA | NO | YES |
|------------------------------------------------------------------------------------------------|----|----|-----|
| 1. Blank Contamination - If yes, list compounds and concentrations in each blank:              |    | ✓  |     |
| 2. Matrix Spike Duplicate Recoveries Met Criteria                                              |    |    | ✓   |
| If not met, list those compounds and their recoveries which fall outside the acceptable range. |    |    |     |
| The Blank Spike met requirements for all compounds.                                            |    |    |     |
| 3. Sample Duplicate Analysis Met QC Criteria                                                   |    |    | ✓   |
| If not met, list those compounds and their recoveries which fall outside the acceptable range. |    |    |     |
| 4. Digestion Holding Time Met                                                                  |    |    | ✓   |
| If not met, list number of days exceeded for each sample:                                      |    |    |     |

ADDITIONAL COMMENTS:

\_\_\_\_\_  
QA REVIEW

\_\_\_\_\_  
Date

APPENDIX A

**QA REVIEW GENERAL DOCUMENTATION**

Project #: Q3179

Completed

For thorough review, the report must have the following:

**GENERAL:**

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

✓

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

✓

Is the chain of custody signed and complete

✓

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

✓

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

✓

**COVER PAGE:**

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

✓

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

✓

**CHAIN OF CUSTODY:**

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

✓

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

✓

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

✓

Were the samples received within hold time

✓

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

✓

**ANALYTICAL:**

Was method requirement followed?

✓

Was client requirement followed?

✓

Does the case narrative summarize all QC failure?

✓

All runlogs and manual integration are reviewed for requirements

✓

All manual calculations and /or hand notations verified

✓

QA Review Signature: SOHIL JODHANI

Date: 10/01/2025

## LAB CHRONICLE

|                 |                        |                   |                       |
|-----------------|------------------------|-------------------|-----------------------|
| <b>OrderID:</b> | Q3179                  | <b>OrderDate:</b> | 9/24/2025 11:08:00 AM |
| <b>Client:</b>  | Weston Solutions, Inc. | <b>Project:</b>   | RFP 916               |
| <b>Contact:</b> | Smita Sumbaly          | <b>Location:</b>  | J42                   |

| LabID    | ClientID    | Matrix | Test         | Method | Sample Date       | Prep Date | Anal Date         | Received |
|----------|-------------|--------|--------------|--------|-------------------|-----------|-------------------|----------|
| Q3179-01 | EME-TS14-01 | WATER  |              |        | 09/23/25<br>12:45 |           |                   | 09/23/25 |
|          |             |        | SPLP Cyanide | 9012B  |                   | 09/29/25  | 09/29/25<br>15:57 |          |



# SAMPLE DATA

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

## Report of Analysis

|                   |                        |                 |                |
|-------------------|------------------------|-----------------|----------------|
| Client:           | Weston Solutions, Inc. | Date Collected: | 09/23/25 12:45 |
| Project:          | RFP 916                | Date Received:  | 09/23/25       |
| Client Sample ID: | EME-TS14-01            | SDG No.:        | Q3179          |
| Lab Sample ID:    | Q3179-01               | Matrix:         | WATER          |
|                   |                        | % Solid:        | 0              |

| Parameter | Conc.  | Qua. | DF | MDL     | LOQ / CRQL | Units | Prep Date      | Date Ana.      | Ana Met. |
|-----------|--------|------|----|---------|------------|-------|----------------|----------------|----------|
| Cyanide   | 0.0032 | J    | 1  | 0.00096 | 0.0050     | mg/L  | 09/29/25 08:45 | 09/29/25 15:57 | 9012B    |

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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

## Initial and Continuing Calibration Verification

**Client:** Weston Solutions, Inc.

**SDG No.:** Q3179

**Project:** RFP 916

**RunNo.:** LB137352

| Analyte                                  | Units | Result | True Value | % Recovery | Acceptance Window (%R) | Analysis Date |
|------------------------------------------|-------|--------|------------|------------|------------------------|---------------|
| Sample ID: <b>ICV1</b><br><b>Cyanide</b> | mg/L  | 0.099  | 0.099      | 100        | 90-110                 | 09/29/2025    |
| Sample ID: <b>CCV1</b><br><b>Cyanide</b> | mg/L  | 0.24   | 0.25       | 96         | 90-110                 | 09/29/2025    |
| Sample ID: <b>CCV2</b><br><b>Cyanide</b> | mg/L  | 0.24   | 0.25       | 96         | 90-110                 | 09/29/2025    |

### Initial and Continuing Calibration Blank Summary

**Client:** Weston Solutions, Inc.

**SDG No.:** Q3179

**Project:** RFP 916

**RunNo.:** LB137352

| Analyte                           | Units | Result   | Acceptance Limits | Conc Qual | MDL     | RDL   | Analysis Date |
|-----------------------------------|-------|----------|-------------------|-----------|---------|-------|---------------|
| Sample ID: <b>ICB1</b><br>Cyanide | mg/L  | < 0.0025 | 0.0025            | U         | 0.00096 | 0.005 | 09/29/2025    |
| Sample ID: <b>CCB1</b><br>Cyanide | mg/L  | < 0.0025 | 0.0025            | U         | 0.00096 | 0.005 | 09/29/2025    |
| Sample ID: <b>CCB2</b><br>Cyanide | mg/L  | 0.0014   | 0.0025            | J         | 0.00096 | 0.005 | 09/29/2025    |

## Preparation Blank Summary

**Client:** Weston Solutions, Inc.

**SDG No.:** Q3179

**Project:** RFP 916

| Analyte                                 | Units | Result   | Acceptance Limits | Conc Qual | MDL     | RDL   | Analysis Date |
|-----------------------------------------|-------|----------|-------------------|-----------|---------|-------|---------------|
| Sample ID: <b>PB169878BL</b><br>Cyanide | mg/L  | < 0.0025 | 0.0025            | U         | 0.00096 | 0.005 | 09/29/2025    |
| Sample ID: <b>PB169878TB</b><br>Cyanide | mg/L  | 0.0012   | 0.0025            | J         | 0.00096 | 0.005 | 09/29/2025    |

## Matrix Spike Summary

|                   |                        |                                         |          |
|-------------------|------------------------|-----------------------------------------|----------|
| <b>Client:</b>    | Weston Solutions, Inc. | <b>SDG No.:</b>                         | Q3179    |
| <b>Project:</b>   | RFP 916                | <b>Sample ID:</b>                       | Q3179-01 |
| <b>Client ID:</b> | EME-TS14-01MS          | <b>Percent Solids for Spike Sample:</b> | 0        |

| Analyte | Units | Acceptance<br>Limit %R | Spiked<br>Result | Conc.<br>Qualifier | Sample<br>Result | Conc.<br>Qualifier | Spike<br>Added | Dilution<br>Factor | %<br>Rec | Qual | Analysis<br>Date |
|---------|-------|------------------------|------------------|--------------------|------------------|--------------------|----------------|--------------------|----------|------|------------------|
| Cyanide | mg/L  | 75-125                 | 0.041            |                    | 0.0032           | J                  | 0.04           | 1                  | 95       |      | 09/29/2025       |

## Matrix Spike Summary

|                   |                        |                                         |          |
|-------------------|------------------------|-----------------------------------------|----------|
| <b>Client:</b>    | Weston Solutions, Inc. | <b>SDG No.:</b>                         | Q3179    |
| <b>Project:</b>   | RFP 916                | <b>Sample ID:</b>                       | Q3179-01 |
| <b>Client ID:</b> | EME-TS14-01MSD         | <b>Percent Solids for Spike Sample:</b> | 0        |

| Analyte | Units | Acceptance<br>Limit %R | Spiked<br>Result | Conc.<br>Qualifier | Sample<br>Result | Conc.<br>Qualifier | Spike<br>Added | Dilution<br>Factor | %<br>Rec | Qual | Analysis<br>Date |
|---------|-------|------------------------|------------------|--------------------|------------------|--------------------|----------------|--------------------|----------|------|------------------|
| Cyanide | mg/L  | 75-125                 | 0.040            |                    | 0.0032           | J                  | 0.04           | 1                  | 92       |      | 09/29/2025       |

### Duplicate Sample Summary

|                   |                        |                                         |          |
|-------------------|------------------------|-----------------------------------------|----------|
| <b>Client:</b>    | Weston Solutions, Inc. | <b>SDG No.:</b>                         | Q3179    |
| <b>Project:</b>   | RFP 916                | <b>Sample ID:</b>                       | Q3179-01 |
| <b>Client ID:</b> | EME-TS14-01DUP         | <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 |
|---------|-------|------------------|---------------|-----------------|------------------|-----------------|-----------------|--------|------|---------------|
| Cyanide | mg/L  | +/-20            | 0.0032        | J               | 0.0030           | J               | 1               | 6      |      | 09/29/2025    |

### Duplicate Sample Summary

|                   |                        |                                         |          |
|-------------------|------------------------|-----------------------------------------|----------|
| <b>Client:</b>    | Weston Solutions, Inc. | <b>SDG No.:</b>                         | Q3179    |
| <b>Project:</b>   | RFP 916                | <b>Sample ID:</b>                       | Q3179-01 |
| <b>Client ID:</b> | EME-TS14-01MSD         | <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 |
|---------|-------|------------------|---------------|-----------------|------------------|-----------------|-----------------|--------|------|---------------|
| Cyanide | mg/L  | +/-20            | 0.041         |                 | 0.040            |                 | 1               | 2      |      | 09/29/2025    |

### Laboratory Control Sample Summary

**Client:** Weston Solutions, Inc.

**SDG No.:** Q3179

**Project:** RFP 916

**Run No.:** LB137352

| Analyte   | Units      | True Value | Result | Conc. Qualifier | % Recovery | Dilution Factor | Acceptance Limit %R | Analysis Date |
|-----------|------------|------------|--------|-----------------|------------|-----------------|---------------------|---------------|
| Sample ID | PB169878BS |            |        |                 |            |                 |                     |               |
| Cyanide   | mg/L       | 0.1        | 0.095  |                 | 95         | 1               | 85-115              | 09/29/2025    |



# RAW DATA

- 1
- 2
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- 12
- 13

LB13

Test results

Aquakem 7.2AQ1

Page: 1

Alliance Technical Group  
284 Sheffield Street, Mountainside, NJ 07092

Reviewed by : RM Instrument ID : Konelab

9/29/2025 16:07

Test: Total CN

| Sample Id   | Result  | Dil. 1 + | Response | Errors |
|-------------|---------|----------|----------|--------|
| ICV1        | 98.562  | 0.0      | 0.087    |        |
| ICB1        | 0.948   | 0.0      | 0.001    |        |
| CCV1        | 236.792 | 0.0      | 0.209    |        |
| CCB1        | 0.915   | 0.0      | 0.001    |        |
| PB169878BL  | 0.922   | 0.0      | 0.001    |        |
| PB169878BS  | 95.388  | 0.0      | 0.084    |        |
| PB169878TB  | 1.167   | 0.0      | 0.001    |        |
| Q3177-01    | 2.023   | 0.0      | 0.002    |        |
| Q3177-02    | 1.432   | 0.0      | 0.001    |        |
| Q3177-03    | 2.849   | 0.0      | 0.002    |        |
| Q3179-01    | 3.224   | 0.0      | 0.003    |        |
| Q3179-01DUP | 3.027   | 0.0      | 0.002    |        |
| Q3179-02MS  | 41.016  | 0.0      | 0.036    |        |
| Q3179-03MSD | 40.388  | 0.0      | 0.036    |        |
| CCV2        | 240.582 | 0.0      | 0.212    |        |
| CCB2        | 1.407   | 0.0      | 0.001    |        |
| N           | 16      |          |          |        |
| Mean        | 48.165  |          |          |        |
| SD          | 81.2398 |          |          |        |
| CV%         | 168.67  |          |          |        |

Aquakem v. 7.2AQ1

Results from time period:

Mon Sep 29 15:04:31 2025

Mon Sep 29 16:04:39 2025

| Sample Id   | Sam/Ctr/c/ | Test short r | Test type | Result   | Result unit | Result date and time | Stat |
|-------------|------------|--------------|-----------|----------|-------------|----------------------|------|
| 0.0PPBCN    | A          | Total CN     | P         | 1.6875   | µg/l        | 9/29/2025 15:22:22   |      |
| 5.0PPBCN    | A          | Total CN     | P         | 6.1275   | µg/l        | 9/29/2025 15:22:23   |      |
| 10PPBCN     | A          | Total CN     | P         | 10.9412  | µg/l        | 9/29/2025 15:22:24   |      |
| 50PPBCN     | A          | Total CN     | P         | 47.623   | µg/l        | 9/29/2025 15:22:25   |      |
| 100PPBCN    | A          | Total CN     | P         | 99.8707  | µg/l        | 9/29/2025 15:22:26   |      |
| 250PPBCN    | A          | Total CN     | P         | 247.0333 | µg/l        | 9/29/2025 15:22:27   |      |
| 500PPBCN    | A          | Total CN     | P         | 501.7168 | µg/l        | 9/29/2025 15:22:28   |      |
| ICV1        | S          | Total CN     | P         | 98.5621  | µg/l        | 9/29/2025 15:49:52   |      |
| ICB1        | S          | Total CN     | P         | 0.9485   | µg/l        | 9/29/2025 15:49:53   |      |
| CCV1        | S          | Total CN     | P         | 236.7922 | µg/l        | 9/29/2025 15:49:56   |      |
| CCB1        | S          | Total CN     | P         | 0.9154   | µg/l        | 9/29/2025 15:49:58   |      |
| PB169878BL  | S          | Total CN     | P         | 0.9222   | µg/l        | 9/29/2025 15:50:00   |      |
| PB169878BS  | S          | Total CN     | P         | 95.3878  | µg/l        | 9/29/2025 15:50:01   |      |
| PB169878TB  | S          | Total CN     | P         | 1.1667   | µg/l        | 9/29/2025 15:57:24   |      |
| Q3177-01    | S          | Total CN     | P         | 2.0225   | µg/l        | 9/29/2025 15:57:26   |      |
| Q3177-02    | S          | Total CN     | P         | 1.4325   | µg/l        | 9/29/2025 15:57:27   |      |
| Q3177-03    | S          | Total CN     | P         | 2.849    | µg/l        | 9/29/2025 15:57:28   |      |
| Q3179-01    | S          | Total CN     | P         | 3.2236   | µg/l        | 9/29/2025 15:57:30   |      |
| Q3179-01DUP | S          | Total CN     | P         | 3.0273   | µg/l        | 9/29/2025 15:57:32   |      |
| Q3179-02MS  | S          | Total CN     | P         | 41.0157  | µg/l        | 9/29/2025 15:57:33   |      |
| Q3179-03MSD | S          | Total CN     | P         | 40.3877  | µg/l        | 9/29/2025 16:04:30   |      |
| CCV2        | S          | Total CN     | P         | 240.5816 | µg/l        | 9/29/2025 16:04:36   |      |
| CCB2        | S          | Total CN     | P         | 1.4067   | µg/l        | 9/29/2025 16:04:38   |      |

=====

Calibration results                      Aquakem 7.2AQ1                      Page: 1

Alliance Technical Group  
284 Sheffield Street, Mountainside, NJ 07092

9/29/2025 15:23                      Reviewed by : RM                      Instrument ID : Konelab

-----

Test      Total CN

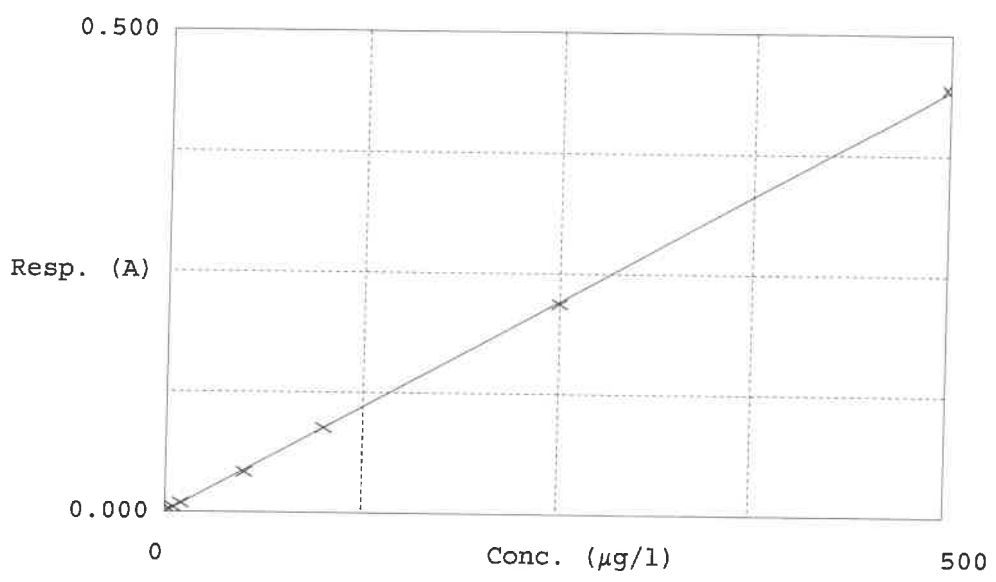
Accepted                      9/29/2025      15:23

Factor                      1131

Bias                      0

Coeff. of det.                      0.999891

Errors



|   | Calibrator | Response | Calc. con. | Conc.    | Errors |
|---|------------|----------|------------|----------|--------|
| 1 | 0.0PPBCN   | 0.001    | 1.6875     | 0.0000   | 0      |
| 2 | 5.0PPBCN   | 0.005    | 6.1275     | 5.0000   | 22.6   |
| 3 | 10PPBCN    | 0.009    | 10.9412    | 10.0000  | 9.4    |
| 4 | 50PPBCN    | 0.042    | 47.6230    | 50.0000  | -4.8   |
| 5 | 100PPBCN   | 0.088    | 99.8707    | 100.0000 | -0.1   |
| 6 | 250PPBCN   | 0.218    | 247.0333   | 250.0000 | -1.2   |
| 7 | 500PPBCN   | 0.443    | 501.7168   | 500.0000 | 0.3    |

09/29/2025  
RM

SOP ID : N/A

SDG No : N/A

Matrix : WATER

Pipette ID : WC

Balance ID : N/A

Hood ID : HOOD#1

Block ID : MC-1,MC-2

Weigh By : N/A

Start Digest Date: 09/29/2025 Time : 08:45 Temp : 123 °C

End Digest Date: 09/29/2025 Time : 10:15 Temp : 127 °C

 11 batch 09/29/2025 10:45 123°C  
 09/29/2025 12:15 127°C

Digestion tube ID : M5595

Block Thermometer ID : WC CYANIDE

Filter paper ID : N/A

Prep Technician Signature:

pH Meter ID : N/A

Supervisor Signature:

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

| Chemical Used         | ML/SAMPLE USED | Lot Number |
|-----------------------|----------------|------------|
| 0.25N NaOH            | 50.0ML         | WP113836   |
| 50% v/v H2SO4         | 5.0ML          | WP112826   |
| 51% w/v MgCL2         | 2.0ML          | WP112827   |
| pH Paper 0-14         | N/A            | W3215      |
| Nitrate/Nitrite Strip | N/A            | W3182      |
| Lead Acetate strip    | N/A            | W3134      |
| KI-starch paper       | N/A            | W3155      |
| N/A                   | N/A            | N/A        |
| N/A                   | N/A            | N/A        |
| N/A                   | N/A            | N/A        |

| LAB SAMPLE ID | CLIENT SAMPLE ID | Wt(g)/Vol(ml) | Comment         |
|---------------|------------------|---------------|-----------------|
| S0            | S0               | N/A           | N/A             |
| S5.0          | S5.0             | N/A           | N/A             |
| S10.0         | S10.0            | N/A           | N/A             |
| S100.0        | S100.0           | N/A           | N/A             |
| S250.0        | S250.0           | N/A           | N/A             |
| S500.0        | S500.0           | N/A           | N/A             |
| ICV           | ICV              | N/A           | AS PER PB169884 |
| ICB           | ICB              | N/A           | N/A             |
| CCV           | CCV              | N/A           | N/A             |
| CCB           | CCB              | N/A           | N/A             |
| Midrange      | Midrange         | N/A           | N/A             |
| HIGHSTD       | HIGHSTD          | N/A           | AS PER PB169884 |
| LOWSTD        | LOWSTD           | N/A           | AS PER PB169884 |

## Extraction Conformance/Non-Conformance Comments:

N/A

| Date / Time      | Prepped Sample Relinquished By/Location | Received By/Location |
|------------------|-----------------------------------------|----------------------|
| 09/29/2025 12:30 | JP/WC                                   | RM CW17              |
|                  | Preparation Group                       | Analysis Group       |

| Lab Sample ID | Client Sample ID | Initial Vol (ml) | Final Vol (ml) | pH  | Sulfide  | Oxidizing | Nitrate/ Nitrite | Comment | Prep Pos |
|---------------|------------------|------------------|----------------|-----|----------|-----------|------------------|---------|----------|
| PB169878BL    | PBS878           | 50               | 50             | >12 | Negative | Negative  | Negative         | N/A     | N/A      |
| PB169878BS    | LCS878           | 50               | 50             | >12 | Negative | Negative  | Negative         | N/A     | N/A      |
| PB169878TB    | LEB878           | 50               | 50             | >12 | Negative | Negative  | Negative         | N/A     | N/A      |
| Q3177-01      | EME-TS12-01      | 50               | 50             | >12 | Negative | Negative  | Negative         | N/A     | N/A      |
| Q3177-02      | EME-TS13-01      | 50               | 50             | >12 | Negative | Negative  | Negative         | N/A     | N/A      |
| Q3177-03      | EME-TS14-02      | 50               | 50             | >12 | Negative | Negative  | Negative         | N/A     | N/A      |
| Q3179-01      | EME-TS14-01      | 50               | 50             | >12 | Negative | Negative  | Negative         | N/A     | N/A      |
| Q3179-01DUP   | EME-TS14-01DUP   | 50               | 50             | >12 | Negative | Negative  | Negative         | N/A     | N/A      |
| Q3179-02      | EME-TS14-01MS    | 50               | 50             | >12 | Negative | Negative  | Negative         | N/A     | N/A      |
| Q3179-03      | EME-TS14-01MSD   | 50               | 50             | >12 | Negative | Negative  | Negative         | N/A     | N/A      |

# WORKLIST(Hardcopy Internal Chain)

WorkList Name : SPLP CN      WorkList ID : 192156      Department : Distillation      Date : 09-29-2025 07:24:26

| Sample   | Customer Sample | Matrix | Test         | Preservative | Customer | Raw Sample Storage Location | Collect Date | Method |
|----------|-----------------|--------|--------------|--------------|----------|-----------------------------|--------------|--------|
| Q3177-01 | EME-TS12-01     | Solid  | SPLP Cyanide | Cool 4 deg C | ROYF02   | J23                         | 09/23/2025   | 9012B  |
| Q3177-02 | EME-TS13-01     | Solid  | SPLP Cyanide | Cool 4 deg C | ROYF02   | J23                         | 09/23/2025   | 9012B  |
| Q3177-03 | EME-TS14-02     | Solid  | SPLP Cyanide | Cool 4 deg C | ROYF02   | J23                         | 09/23/2025   | 9012B  |
| Q3179-01 | EME-TS14-01     | Solid  | SPLP Cyanide | Cool 4 deg C | ROYF02   | J42                         | 09/23/2025   | 9012B  |
| Q3179-02 | EME-TS14-01MS   | Solid  | SPLP Cyanide | Cool 4 deg C | ROYF02   | J42                         | 09/23/2025   | 9012B  |
| Q3179-03 | EME-TS14-01MSD  | Solid  | SPLP Cyanide | Cool 4 deg C | ROYF02   | J42                         | 09/23/2025   | 9012B  |

Date/Time 09/29/2025 07:50  
 Raw Sample Received by: [Signature]  
 Raw Sample Relinquished by: [Signature]

Date/Time NA  
 Raw Sample Received by: 4  
 Raw Sample Relinquished by: 4

Instrument ID: KONELAB

**Daily Analysis Runlog For Sequence/QC Batch ID # LB137352**

|                  |                                                                |              |                       |
|------------------|----------------------------------------------------------------|--------------|-----------------------|
| Review By        | rubina                                                         | Review On    | 9/30/2025 9:45:47 AM  |
| Supervise By     | Iwona                                                          | Supervise On | 9/30/2025 12:22:03 PM |
| SubDirectory     | LB137352                                                       | Test         | SPLP Cyanide          |
| <b>STD. NAME</b> | <b>STD REF.#</b>                                               |              |                       |
| ICAL Standard    | WP114945,WP114946,WP114947,WP114948,WP114949,WP114950,WP114951 |              |                       |
| ICV Standard     | W3012                                                          |              |                       |
| CCV Standard     | WP114946                                                       |              |                       |
| ICSA Standard    | N/A                                                            |              |                       |
| CRI Standard     | N/A                                                            |              |                       |
| LCS Standard     | WP113838                                                       |              |                       |
| Chk Standard     | WP112643,WP114324,WP114952                                     |              |                       |

| Sr# | SampleId   | ClientID    | QcType | Date           | Comment | Operator | Status |
|-----|------------|-------------|--------|----------------|---------|----------|--------|
| 1   | 0.0PPBCN   | 0.0PPBCN    | CAL1   | 09/29/25 15:22 |         | rubina   | OK     |
| 2   | 5.0PPBCN   | 5.0PPBCN    | CAL2   | 09/29/25 15:22 |         | rubina   | OK     |
| 3   | 10PPBCN    | 10PPBCN     | CAL3   | 09/29/25 15:22 |         | rubina   | OK     |
| 4   | 50PPBCN    | 50PPBCN     | CAL4   | 09/29/25 15:22 |         | rubina   | OK     |
| 5   | 100PPBCN   | 100PPBCN    | CAL5   | 09/29/25 15:22 |         | rubina   | OK     |
| 6   | 250PPBCN   | 250PPBCN    | CAL6   | 09/29/25 15:22 |         | rubina   | OK     |
| 7   | 500PPBCN   | 500PPBCN    | CAL7   | 09/29/25 15:22 |         | rubina   | OK     |
| 8   | ICV1       | ICV1        | ICV    | 09/29/25 15:49 |         | rubina   | OK     |
| 9   | ICB1       | ICB1        | ICB    | 09/29/25 15:49 |         | rubina   | OK     |
| 10  | CCV1       | CCV1        | CCV    | 09/29/25 15:49 |         | rubina   | OK     |
| 11  | CCB1       | CCB1        | CCB    | 09/29/25 15:49 |         | rubina   | OK     |
| 12  | PB169878BL | PB169878BL  | MB     | 09/29/25 15:50 |         | rubina   | OK     |
| 13  | PB169878BS | PB169878BS  | LCS    | 09/29/25 15:50 |         | rubina   | OK     |
| 14  | PB169878TB | PB169878TB  | MB     | 09/29/25 15:57 |         | rubina   | OK     |
| 15  | Q3177-01   | EME-TS12-01 | SAM    | 09/29/25 15:57 |         | rubina   | OK     |
| 16  | Q3177-02   | EME-TS13-01 | SAM    | 09/29/25 15:57 |         | rubina   | OK     |
| 17  | Q3177-03   | EME-TS14-02 | SAM    | 09/29/25 15:57 |         | rubina   | OK     |
| 18  | Q3179-01   | EME-TS14-01 | SAM    | 09/29/25 15:57 |         | rubina   | OK     |

Instrument ID: KONELAB

**Daily Analysis Runlog For Sequence/QC Batch ID # LB137352**

|                  |                                                                |              |                       |
|------------------|----------------------------------------------------------------|--------------|-----------------------|
| Review By        | rubina                                                         | Review On    | 9/30/2025 9:45:47 AM  |
| Supervise By     | Iwona                                                          | Supervise On | 9/30/2025 12:22:03 PM |
| SubDirectory     | LB137352                                                       | Test         | SPLP Cyanide          |
| <b>STD. NAME</b> | <b>STD REF.#</b>                                               |              |                       |
| ICAL Standard    | WP114945,WP114946,WP114947,WP114948,WP114949,WP114950,WP114951 |              |                       |
| ICV Standard     | W3012                                                          |              |                       |
| CCV Standard     | WP114946                                                       |              |                       |
| ICSA Standard    | N/A                                                            |              |                       |
| CRI Standard     | N/A                                                            |              |                       |
| LCS Standard     | WP113838                                                       |              |                       |
| Chk Standard     | WP112643,WP114324,WP114952                                     |              |                       |

|    |             |                |     |                |  |        |    |
|----|-------------|----------------|-----|----------------|--|--------|----|
| 19 | Q3179-01DUP | EME-TS14-01DUP | DUP | 09/29/25 15:57 |  | rubina | OK |
| 20 | Q3179-02    | EME-TS14-01MS  | MS  | 09/29/25 15:57 |  | rubina | OK |
| 21 | Q3179-03    | EME-TS14-01MSD | MSD | 09/29/25 16:04 |  | rubina | OK |
| 22 | CCV2        | CCV2           | CCV | 09/29/25 16:04 |  | rubina | OK |
| 23 | CCB2        | CCB2           | CCB | 09/29/25 16:04 |  | rubina | OK |

## Prep Standard - Chemical Standard Summary

**Order ID :** Q3179  
**Test :** SPLP Cyanide  
**Prepbatch ID :** PB169878,  
**Sequence ID/Qc Batch ID:** LB137352,

**Standard ID :**  
WP112643,WP112826,WP112827,WP113836,WP113837,WP113838,WP114324,WP114944,WP114945,WP114946,WP114947,WP114948,WP114949,WP114950,WP114951,WP114952,

**Chemical ID :**  
M6041,M6151,W2668,W3012,W3019,W3112,W3113,W3139,W3152,W3182,W3203,W3214,W3215,W3224,

## Wet Chemistry STANDARD PREPARATION LOG

| <u>Recipe ID</u>                                                                        | <u>NAME</u> | <u>NO.</u>               | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u>            | <u>PipetteID</u> | <u>Supervised By</u>       |
|-----------------------------------------------------------------------------------------|-------------|--------------------------|------------------|------------------------|--------------------|---------------------------|------------------|----------------------------|
| 539                                                                                     | CN BUFFER   | <a href="#">WP112643</a> | 04/09/2025       | 10/09/2025             | Niha Farheen Shaik | WETCHEM_SCALE_5 (WC SC-5) | None             | Iwona Zarych<br>04/09/2025 |
| <b>FROM</b> 138.00000gram of W2668 + 862.00000ml of W3112 = Final Quantity: 1000.000 ml |             |                          |                  |                        |                    |                           |                  |                            |

| <u>Recipe ID</u>                                                                        | <u>NAME</u>              | <u>NO.</u>               | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u> | <u>Supervised By</u>       |
|-----------------------------------------------------------------------------------------|--------------------------|--------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------------|
| 1714                                                                                    | Sulfuric Acid, 50% (v/v) | <a href="#">WP112826</a> | 04/25/2025       | 10/25/2025             | Rubina Mughal      | None           | None             | Iwona Zarych<br>04/25/2025 |
| <b>FROM</b> 1000.00000ml of M6041 + 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>           |
|-----------------------------------------------------------------------------------------|------------------------------------------------|--------------------------|------------------|------------------------|--------------------|----------------------------------|------------------|--------------------------------|
| 3214                                                                                    | Magnesium Chloride For Cyanide<br>2.5M(51%W/V) | <a href="#">WP112827</a> | 04/25/2025       | 10/25/2025             | Rubina Mughal      | WETCHEM_S<br>CALE_8 (WC<br>SC-7) | None             | Iwona Zarych<br><br>04/25/2025 |
| <b>FROM</b> 500.00000ml of W3112 + 510.00000gram of W3152 = Final Quantity: 1000.000 ml |                                                |                          |                  |                        |                    |                                  |                  |                                |

| <u>Recipe ID</u>                                                                   | <u>NAME</u>                                   | <u>NO.</u>               | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u>                   | <u>PipetteID</u> | <u>Supervised By</u>           |
|------------------------------------------------------------------------------------|-----------------------------------------------|--------------------------|------------------|------------------------|--------------------|----------------------------------|------------------|--------------------------------|
| 11                                                                                 | Sodium hydroxide absorbing<br>solution 0.25 N | <a href="#">WP113836</a> | 07/08/2025       | 12/31/2025             | Rubina Mughal      | WETCHEM_S<br>CALE_8 (WC<br>SC-7) | None             | Iwona Zarych<br><br>07/08/2025 |
| <b>FROM</b> 21.00000L of W3112 + 210.00000gram of W3113 = Final Quantity: 21.000 L |                                               |                          |                  |                        |                    |                                  |                  |                                |

## Wet Chemistry STANDARD PREPARATION LOG

| <u>Recipe ID</u>                                                                      | <u>NAME</u>                           | <u>NO.</u>               | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>          | <u>Supervised By</u>       |
|---------------------------------------------------------------------------------------|---------------------------------------|--------------------------|------------------|------------------------|--------------------|----------------|---------------------------|----------------------------|
| 3850                                                                                  | Cyanide MS-MSD spiking solution, 5PPM | <a href="#">WP113837</a> | 07/08/2025       | 11/30/2025             | Rubina Mughal      | None           | WETCHEM_FIPETTE_3<br>(WC) | Iwona Zarych<br>07/08/2025 |
| <b>FROM</b> 1.00000ml of W3214 + 199.00000ml of WP113836 = Final Quantity: 200.000 ml |                                       |                          |                  |                        |                    |                |                           |                            |

| <u>Recipe ID</u>                                                                      | <u>NAME</u>                      | <u>NO.</u>               | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>          | <u>Supervised By</u>       |
|---------------------------------------------------------------------------------------|----------------------------------|--------------------------|------------------|------------------------|--------------------|----------------|---------------------------|----------------------------|
| 3371                                                                                  | Cyanide LCS Spike Solution, 5PPM | <a href="#">WP113838</a> | 07/08/2025       | 12/24/2025             | Rubina Mughal      | None           | WETCHEM_FIPETTE_3<br>(WC) | Iwona Zarych<br>07/08/2025 |
| <b>FROM</b> 1.00000ml of W3224 + 199.00000ml of WP113836 = 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>         |
|-----------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|------------------|------------------------|--------------------|---------------------------|------------------|------------------------------|
| 607                                                                                                                               | PYRIDINE-BARBITURIC ACID | <a href="#">WP114324</a> | 08/19/2025       | 02/17/2026             | Rubina Mughal      | WETCHEM_SCALE_5 (WC SC-5) | Glass Pipette-A  | Jignesh Parikh<br>08/19/2025 |
| <b>FROM</b> 145.00000ml of W3112 + 15.00000gram of W3203 + 15.00000ml of M6151 + 75.00000ml of W3019 = Final Quantity: 250.000 ml |                          |                          |                  |                        |                    |                           |                  |                              |

| <u>Recipe ID</u>                                                                    | <u>NAME</u>                            | <u>NO.</u>               | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>       | <u>Supervised By</u>       |
|-------------------------------------------------------------------------------------|----------------------------------------|--------------------------|------------------|------------------------|--------------------|----------------|------------------------|----------------------------|
| 3456                                                                                | Cyanide Intermediate Working Std, 5PPM | <a href="#">WP114944</a> | 09/29/2025       | 09/30/2025             | Rubina Mughal      | None           | WETCHEM_FIPETTE_3 (WC) | Iwona Zarych<br>09/29/2025 |
| <b>FROM</b> 0.25000ml of W3214 + 49.75000ml of WP113836 = Final Quantity: 50.000 ml |                                        |                          |                  |                        |                    |                |                        |                            |

## Wet Chemistry STANDARD PREPARATION LOG

| <u>Recipe ID</u>                                                                       | <u>NAME</u>                  | <u>NO.</u>               | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>          | <u>Supervised By</u>       |
|----------------------------------------------------------------------------------------|------------------------------|--------------------------|------------------|------------------------|--------------------|----------------|---------------------------|----------------------------|
| 4                                                                                      | Calibration standard 500 ppb | <a href="#">WP114945</a> | 09/29/2025       | 09/30/2025             | Rubina Mughal      | None           | WETCHEM_FIPETTE_3<br>(WC) | Iwona Zarych<br>09/29/2025 |
| <b>FROM</b> 45.00000ml of WP113836 + 5.00000ml of WP114944 = Final Quantity: 50.000 ml |                              |                          |                  |                        |                    |                |                           |                            |

| <u>Recipe ID</u>                                                                       | <u>NAME</u>                         | <u>NO.</u>               | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>          | <u>Supervised By</u>       |
|----------------------------------------------------------------------------------------|-------------------------------------|--------------------------|------------------|------------------------|--------------------|----------------|---------------------------|----------------------------|
| 3761                                                                                   | Calibration-CCV CN Standard 250 ppb | <a href="#">WP114946</a> | 09/29/2025       | 09/30/2025             | Rubina Mughal      | None           | WETCHEM_FIPETTE_3<br>(WC) | Iwona Zarych<br>09/29/2025 |
| <b>FROM</b> 2.50000ml of WP114944 + 47.50000ml of WP113836 = Final Quantity: 50.000 ml |                                     |                          |                  |                        |                    |                |                           |                            |

## Wet Chemistry STANDARD PREPARATION LOG

| <u>Recipe ID</u>                                                                       | <u>NAME</u>                  | <u>NO.</u>               | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>          | <u>Supervised By</u>       |
|----------------------------------------------------------------------------------------|------------------------------|--------------------------|------------------|------------------------|--------------------|----------------|---------------------------|----------------------------|
| 6                                                                                      | Calibration Standard 100 ppb | <a href="#">WP114947</a> | 09/29/2025       | 09/30/2025             | Rubina Mughal      | None           | WETCHEM_FIPETTE_3<br>(WC) | Iwona Zarych<br>09/29/2025 |
| <b>FROM</b> 1.00000ml of WP114944 + 49.00000ml of WP113836 = Final Quantity: 50.000 ml |                              |                          |                  |                        |                    |                |                           |                            |

| <u>Recipe ID</u>                                                                       | <u>NAME</u>                 | <u>NO.</u>               | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>          | <u>Supervised By</u>       |
|----------------------------------------------------------------------------------------|-----------------------------|--------------------------|------------------|------------------------|--------------------|----------------|---------------------------|----------------------------|
| 7                                                                                      | Calibration Standard 50 ppb | <a href="#">WP114948</a> | 09/29/2025       | 09/30/2025             | Rubina Mughal      | None           | WETCHEM_FIPETTE_3<br>(WC) | Iwona Zarych<br>09/29/2025 |
| <b>FROM</b> 0.50000ml of WP114944 + 49.50000ml of WP113836 = Final Quantity: 50.000 ml |                             |                          |                  |                        |                    |                |                           |                            |

## Wet Chemistry STANDARD PREPARATION LOG

| <u>Recipe ID</u>                                                                       | <u>NAME</u>                 | <u>NO.</u>               | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>              | <u>Supervised By</u>       |
|----------------------------------------------------------------------------------------|-----------------------------|--------------------------|------------------|------------------------|--------------------|----------------|-------------------------------|----------------------------|
| 8                                                                                      | Calibration Standard 10 ppb | <a href="#">WP114949</a> | 09/29/2025       | 09/30/2025             | Rubina Mughal      | None           | WETCHEM_F<br>IPETTE_3<br>(WC) | Iwona Zarych<br>09/29/2025 |
| <b>FROM</b> 1.00000ml of WP114945 + 49.00000ml of WP113836 = Final Quantity: 50.000 ml |                             |                          |                  |                        |                    |                |                               |                            |

| <u>Recipe ID</u>                                                                       | <u>NAME</u>                | <u>NO.</u>               | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u>              | <u>Supervised By</u>       |
|----------------------------------------------------------------------------------------|----------------------------|--------------------------|------------------|------------------------|--------------------|----------------|-------------------------------|----------------------------|
| 9                                                                                      | Calibration Standard 5 ppb | <a href="#">WP114950</a> | 09/29/2025       | 09/30/2025             | Rubina Mughal      | None           | WETCHEM_F<br>IPETTE_3<br>(WC) | Iwona Zarych<br>09/29/2025 |
| <b>FROM</b> 0.50000ml of WP114945 + 49.50000ml of WP113836 = Final Quantity: 50.000 ml |                            |                          |                  |                        |                    |                |                               |                            |

## Wet Chemistry STANDARD PREPARATION LOG

| <u>Recipe ID</u>                                               | <u>NAME</u>              | <u>NO.</u>               | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u> | <u>Supervised By</u>       |
|----------------------------------------------------------------|--------------------------|--------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------------|
| 167                                                            | 0 ppb CN calibration std | <a href="#">WP114951</a> | 09/29/2025       | 09/30/2025             | Rubina Mughal      | None           | None             | Iwona Zarych<br>09/29/2025 |
| <b>FROM</b> 50.00000ml of WP113836 = Final Quantity: 50.000 ml |                          |                          |                  |                        |                    |                |                  |                            |

| <u>Recipe ID</u>                                                                   | <u>NAME</u>                   | <u>NO.</u>               | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u>                   | <u>PipetteID</u>   | <u>Supervised By</u>       |
|------------------------------------------------------------------------------------|-------------------------------|--------------------------|------------------|------------------------|--------------------|----------------------------------|--------------------|----------------------------|
| 1582                                                                               | Chloramine T solution, 0.014M | <a href="#">WP114952</a> | 09/29/2025       | 09/30/2025             | Rubina Mughal      | WETCHEM_S<br>CALE_5 (WC<br>SC-5) | Glass<br>Pipette-A | Iwona Zarych<br>09/29/2025 |
| <b>FROM</b> 0.08000gram of W3139 + 20.00000ml of W3112 = Final Quantity: 20.000 ml |                               |                          |                  |                        |                    |                                  |                    |                            |

## CHEMICAL RECEIPT LOG BOOK

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

| Supplier         | ItemCode / ItemName                                         | Lot #      | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|------------------|-------------------------------------------------------------|------------|-----------------|-------------------------|-----------------------------|----------------|
| Seidler Chemical | BA-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L) | 22G2862015 | 02/17/2026      | 02/18/2025 / Sagar      | 01/15/2025 / Sagar          | M6151          |

| Supplier                    | ItemCode / ItemName                                         | Lot #      | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|-------------------------------------------------------------|------------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | J3818-5 / SODIUM PHOSPHATE, MONOBAS/HYD, CRYST, ACS, 2.5 KG | 0000225799 | 12/03/2025      | 04/05/2021 / Alexander  | 02/10/2020 / apatel         | W2668          |

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

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

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

## CHEMICAL RECEIPT LOG BOOK

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

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

| Supplier                    | ItemCode / ItemName                                  | Lot #           | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|------------------------------------------------------|-----------------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | 01237-10KG / Magnesium Chloride Hexahydrate ACS 10KG | 002126-2019-201 | 11/25/2029      | 11/25/2024 / lwona      | 11/25/2024 / lwona          | W3152          |

| 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 | 436101 | 04/30/2027      | 08/05/2025 / lwona      | 02/26/2025 / lwona          | W3182          |

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

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

### CHEMICAL RECEIPT LOG BOOK

| 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 SENS,100PK | 10D3242 | 12/31/2028      | 06/09/2025 / Iwona      | 06/09/2025 / Iwona          | W3215          |

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

W3019  
rec 4/3/23

3050 Spruce Street, Saint Louis, MO 63103, USA

Website: [www.sigmaaldrich.com](http://www.sigmaaldrich.com)Email USA: [techserv@sial.com](mailto:techserv@sial.com)Outside USA: [eurtechserv@sial.com](mailto: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:

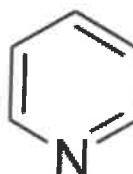
C<sub>5</sub>H<sub>5</sub>N

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](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.





QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY  
"An ISO 9001:2015 Certified Program"

Instructions for QATS Reference Material: *Inorganic ICV Solutions*

QATS LABORATORY INORGANIC REFERENCE MATERIAL  
INITIAL CALIBRATION VERIFICATION SOLUTIONS  
(ICV1, ICV5, AND ICV6)

**NOTE:** These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the analytical protocol or your contract, disregard these instructions.

**APPLICATION:** For use with the CLP SFAM01.0 SOW and revisions.

**CAUTION:** Read instructions carefully before opening bottle(s) and proceeding with the analyses.

Contains Metals in Dilute Acidic or  
Cyanide in Basic Aqueous Solutions  
**HAZARDOUS MATERIAL**

Safety Data Sheets  
Available Upon Request

W2160, W2161, W2162,  
W2163, W2164 Receive by  
AP on 9/2/2016

**(A) SAMPLE DESCRIPTION**

Enclosed is a set of one (1) or more Aqueous Inorganic Reference Materials containing various analyte concentrations. ICV1 and ICV5 are in a matrix of dilute nitric acid. ICV6 is in a matrix of dilute basic solution. **For the reference material source in reporting ICVs use "USEPA". For the reference material lot number for the ICV1, ICV5, and ICV6 solutions use "ICV1-1014", "ICV5-0415", and "ICV6-0400", respectively.**

**(B) BREAKAGE OR MISSING ITEMS**

Check the contents of the shipment carefully for any broken, leaking, or missing items. Check that the seal is intact on each bottle. Refer to the enclosed chain of custody record. Report any problems to Mr. Keith Strout, APTIM Federal Services, LLC, at (702) 895-8722. If requested, return the chain-of-custody record with appropriate annotations and signatures to the address provided below.

QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY  
APTIM Federal Services, LLC  
2700 Chandler Avenue - Building C  
Las Vegas, NV 89120

**(C) ANALYSIS OF SAMPLES**

The Initial Calibration Verification Solutions (ICVs) are to be used to evaluate the accuracy of the initial calibrations of ICP, AA, and Cyanide colorimetric instruments, and are to be used with the CLP SOWs and revisions. The values for each element in the ICVs are listed below in µg/L (ppb) for the resulting solution(s) after the dilution of the concentrate(s) according to the following instructions. Use Class 'A' glassware to prepare the solution(s).

**ICV1-1014** For ICP-AES analysis, use a 10-fold dilution by pipetting 10 mL of the ICV1 concentrate into a 100 mL volumetric flask and dilute to volume with 2% (v/v) nitric acid.



Instructions for QATS Reference Material: *Inorganic ICV Solutions*

- ICV1-1014** For ICP-MS analysis, use a 50-fold dilution by pipetting 2 mL of the ICV1 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, use a 100-fold dilution by pipetting 1 mL of the ICV5 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<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> and 5% (v/v) nitric acid.
- ICV6-0400** For the analysis of cyanide, use a 100-fold dilution by pipetting 1 mL of the ICV6 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<sub>3</sub>Fe(CN)<sub>6</sub>, 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)<br>(after 10-fold dilution) | Concentration (µg/L)<br>(after 50-fold dilution) |
| Al        | 2500                                             | 500                                              |
| Sb        | 1000                                             | 200                                              |
| As        | 1000                                             | 200                                              |
| Ba        | 520                                              | 100                                              |
| Be        | 510                                              | 100                                              |
| Cd        | 510                                              | 100                                              |
| Ca        | 10000                                            | 2000                                             |
| Cr        | 520                                              | 100                                              |
| Co        | 520                                              | 100                                              |
| Cu        | 510                                              | 100                                              |
| Fe        | 10000                                            | 2000                                             |
| Pb        | 1000                                             | 200                                              |
| Mg        | 6000                                             | 1200                                             |
| Mn        | 520                                              | 100                                              |
| Ni        | 530                                              | 110                                              |
| K         | 9900                                             | 2000                                             |
| Se        | 1000                                             | 200                                              |
| Ag        | 250                                              | 50                                               |
| Na        | 10000                                            | 2000                                             |
| Tl        | 1000                                             | 210                                              |
| V         | 500                                              | 100                                              |
| Zn        | 1000                                             | 200                                              |

| ICV5-0415 |                                                   | ICV6-0400       |                                                   |
|-----------|---------------------------------------------------|-----------------|---------------------------------------------------|
| Element   | Concentration (µg/L)<br>(after 100-fold dilution) | Analyte         | Concentration (µg/L)<br>(after 100-fold dilution) |
| Hg        | 4.0                                               | CN <sup>-</sup> | 99                                                |

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

 **avantorsm**

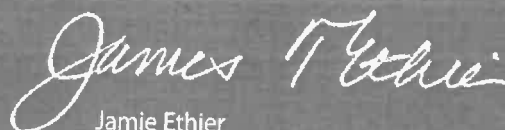


Material No.: 9673-33  
Batch No.: 23D2462010

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

For Laboratory, Research, or Manufacturing Use

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



Jamie Ethier  
Vice President Global Quality

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

avantor™



M6151

R → 11/15/25

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

## Certificate of Analysis

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

>>> Continued on page 2 >>>

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

 **avantorsm**



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

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

>>> Continued on page 3 >>>

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

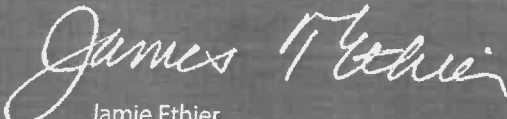


Material No.: 9530-33  
Batch No.: 22G2862015

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

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

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

  
Jamie Ethier  
Vice President Global Quality

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

(sodium dihydrogen phosphate, monohydrate)



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

## Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

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

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

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

  
Jamie Ethier  
Vice President Global Quality

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

## 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      | Manufacture Date: | 12/14/2022       |
| Molecular Weight: | 40        | Expiration Date:  | 12/31/2025       |
| CAS #:            | 1310-73-2 |                   |                  |
| Appearance:       |           | Storage:          | Room Temperature |

Pellets

Spec Set: 0583ACS

Internal ID #: 710

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

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

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

# 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

|                         |                                       |
|-------------------------|---------------------------------------|
| <b>Catalogue Number</b> | 01237                                 |
| <b>Lot Number</b>       | 002126-2019-201                       |
| <b>Product</b>          | <b>Magnesium chloride hexahydrate</b> |

Magnesium chloride•6H<sub>2</sub>O

|                          |                                      |
|--------------------------|--------------------------------------|
| <b>CAS Number</b>        | 7791-18-6                            |
| <b>Molecular Formula</b> | MgCl <sub>2</sub> •6H <sub>2</sub> O |

|                         |       |
|-------------------------|-------|
| <b>Molecular Weight</b> | 203.3 |
|-------------------------|-------|

|                           |                                                                                                                                                                                                                             |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Appearance</b>         | White crystals                                                                                                                                                                                                              |
| <b>Solubility</b>         | 167 g in 100 mL water                                                                                                                                                                                                       |
| <b>Melting Point</b>      | ~ 115 °C                                                                                                                                                                                                                    |
| <b>Heavy Metals</b>       | 4.393 ppm                                                                                                                                                                                                                   |
| <b>Anion</b>              | Nitrate (NO <sub>3</sub> ) : < 0.001%<br>Phosphate (PO <sub>4</sub> ) : < 5 ppm<br>Sulfate (SO <sub>4</sub> ) : < 0.002%                                                                                                    |
| <b>Cation</b>             | Ammonium (NH <sub>4</sub> ) : < 0.002%<br>Barium (Ba) : 0.005%<br>Calcium (Ca) : 0.01%<br>Iron (Fe) : 4.5 ppm<br>Manganese (Mn) : 0.624 ppm<br>Potassium (K) : 0.004%<br>Sodium (Na) : 0.000003%<br>Strontium (Sr) : 0.005% |
| <b>Insoluble material</b> | 0.0021%                                                                                                                                                                                                                     |
| <b>Assay by titration</b> | 100.83%                                                                                                                                                                                                                     |
| <b>Grade</b>              | ACS reagent                                                                                                                                                                                                                 |
| <b>Storage</b>            | Store at RT                                                                                                                                                                                                                 |

## ***Certificate of Analysis***

**Catalog Number: 01237**

**Lot Number: 002126-2019-201**

---

**Remarks**

See material safety data sheet for additional information  
For laboratory use only

**The foregoing is a copy of the Certificate of Analysis as provided by our supplier**



**Bala Kumar**  
**Quality Control Manager**

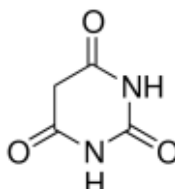
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## Certificate of Analysis

Product Name:

Barbituric acid - ReagentPlus® , 99%

Product Number: 185698  
Batch Number: WXBFB3271V  
Brand: SIAL  
CAS Number: 67-52-7  
Formula: C<sub>4</sub>H<sub>4</sub>N<sub>2</sub>O<sub>3</sub>  
Formula Weight: 128,09 g/mol  
Quality Release Date: 16 MAY 2024



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

Kang Chen  
Quality Manager  
Wuxi , China CN

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at [Sigma-Aldrich.com](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

## Cyanide Standard, 1000 ppm CN<sup>-</sup>

**Lot Number:** 1505H73

**Product Number:** 2543

**Manufacture Date:** MAY 08, 2025

**Expiration Date:** NOV 2025

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

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

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

| Test                       | Specification    | Result   |
|----------------------------|------------------|----------|
| Appearance                 | Colorless liquid | Passed   |
| Cyanide (CN <sup>-</sup> ) | 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 <sup>-</sup> ) | 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 <sup>-</sup> )        | ASTM (D 4374)          |

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

| Part Number | Size / Package Type | Shelf Life (Unopened Container) |
|-------------|---------------------|---------------------------------|
| 2543-16     | 500 mL amber poly   | 6 months                        |
| 2543-32     | 1 L amber poly      | 6 months                        |
| 2543-4      | 120 mL amber poly   | 6 months                        |

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



Ernest Mahan (05/08/2025)  
Plant Manager

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

## Certificate of Analysis

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

Product Code: **LC13545**

Manufacture Date: June 25, 2025

Lot Number: **45060288**

Expiration Date: December 24, 2025

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

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

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

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

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

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

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



Michael Monteleone  
Chemistry Supervisor - Quality Control  
2025070315:30:45ahoffman-0-0

ISO9001:2015 Registration #0306-01



# SHIPPING DOCUMENTS

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## USEPA

DateShipped: 9/23/2025

CarrierName: Hand-Delivered

AirbillNo:

## CHAIN OF CUSTODY RECORD

Case #:

Contact Name: Leticia Campiglia

Contact Phone: 732-570-4993

No: 2-092325-0004-0049-02

Cooler #: 2 of 2

Lab: Alliance Technical Group LLC (non-CLP)

Lab Phone: 908-789-8900

[illegible]

Special Instructions: RFP # 916. Please email results to leticia.campiglia@westonsolutions.com, smita.sumbaly@westonsolutions.com, ronan.clynch@westonsolutions.com and michael.lang@westonsolutions.com. 7 day preliminary TAT.

**SAMPLES TRANSFERRED FROM**

CHAIN OF CUSTODY #

| Items/Reason | Relinquished by (Signature and Organization)                                                             | Date/Time       | Received by (Signature and Organization)                                              | Date/Time       | Sample Condition Upon Receipt                                    |
|--------------|----------------------------------------------------------------------------------------------------------|-----------------|---------------------------------------------------------------------------------------|-----------------|------------------------------------------------------------------|
| All Samples  |  / START VI<br>Weston | 9/23/25<br>1700 |  | 9-23-25<br>1700 | 1.3°C<br>IR Gun #1<br>custody seals intact<br>Temp. Bill present |
|              |                                                                                                          |                 |                                                                                       |                 |                                                                  |

### 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           |