EPA SAMPLE NO.

MBHCJ7

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011

Lab Code: ACE Case No.: 51698 MA No. : SDG No.: MBHCJ7

Matrix: SOIL Lab Sample ID: P4499-01

% Solids: 84.4 Date Received: 10/23/2024

Analytical Method: CN

Concentration Units (µg/L, mg/L, mg/kg dry weight, µg, or µg/cm²): mg/kg

| CAS No. | Analyte | Concentration | Q | Date Analyzed | Time Analyzed |
|---|---|---|---|---|---|
| 57-12-5 | Cyanide | 0.58 | U | 10/25/2024 | 1251 |

NOTE: Hardness (total) is reported in mg/L

Comments:

EPA SAMPLE NO.

MBHCJ8

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011

Lab Code: ACE Case No.: 51698 MA No. : SDG No.: MBHCJ7

Matrix: SOIL Lab Sample ID: P4499-02

% Solids: 84.8 Date Received: 10/23/2024

Analytical Method: CN

Concentration Units (µg/L, mg/L, mg/kg dry weight, µg, or µg/cm²): mg/kg

| CAS No. | Analyte | Concentration | Q | Date Analyzed | Time Analyzed |
|---|---|---|---|---|---|
| 57-12-5 | Cyanide | 0.57 | U | 10/25/2024 | 1251 |

NOTE: Hardness (total) is reported in mg/L

Comments:

EPA SAMPLE NO.

MBHCJ9

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011

Lab Code: ACE Case No.: 51698 MA No. : SDG No.: MBHCJ7

Matrix: SOIL Lab Sample ID: P4499-03

% Solids: 79.1 Date Received: 10/23/2024

Analytical Method: CN

Concentration Units (µg/L, mg/L, mg/kg dry weight, µg, or µg/cm²): mg/kg

| CAS No. | Analyte | Concentration | Q | Date Analyzed | Time Analyzed |
|---|---|---|---|---|---|
| 57-12-5 | Cyanide | 0.24 | J | 10/25/2024 | 1251 |

NOTE: Hardness (total) is reported in mg/L

Comments:

EPA SAMPLE NO.

MBHCK0

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011

Lab Code: ACE Case No.: 51698 MA No. : SDG No.: MBHCJ7

Matrix: SOIL Lab Sample ID: P4499-04

% Solids: 80.3 Date Received: 10/23/2024

Analytical Method: CN

Concentration Units (µg/L, mg/L, mg/kg dry weight, µg, or µg/cm²): mg/kg

| CAS No. | Analyte | Concentration | Q | Date Analyzed | Time Analyzed |
|---|---|---|---|---|---|
| 57-12-5 | Cyanide | 0.62 | U | 10/25/2024 | 1251 |

NOTE: Hardness (total) is reported in mg/L

Comments:

EPA SAMPLE NO.

MBHCK1

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011

Lab Code: ACE Case No.: 51698 MA No. : SDG No.: MBHCJ7

Matrix: SOIL Lab Sample ID: P4499-05

% Solids: 79.6 Date Received: 10/23/2024

Analytical Method: CN

Concentration Units (µg/L, mg/L, mg/kg dry weight, µg, or µg/cm²): mg/kg

| CAS No. | Analyte | Concentration | Q | Date Analyzed | Time Analyzed |
|---|---|---|---|---|---|
| 57-12-5 | Cyanide | 0.62 | U | 10/25/2024 | 1251 |

NOTE: Hardness (total) is reported in mg/L

Comments:

EPA SAMPLE NO.

MBHCK2

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011

Lab Code: ACE Case No.: 51698 MA No. : SDG No.: MBHCJ7

Matrix: SOIL Lab Sample ID: P4499-06

% Solids: 77.8 Date Received: 10/23/2024

Analytical Method: CN

Concentration Units (µg/L, mg/L, mg/kg dry weight, µg, or µg/cm²): mg/kg

| CAS No. | Analyte | Concentration | Q | Date Analyzed | Time Analyzed |
|---|---|---|---|---|---|
| 57-12-5 | Cyanide | 0.61 | U | 10/25/2024 | 1251 |

NOTE: Hardness (total) is reported in mg/L

Comments:

EPA SAMPLE NO.

MBHCK8

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011

Lab Code: ACE Case No.: 51698 MA No. : SDG No.: MBHCJ7

Matrix: SOIL Lab Sample ID: P4499-07

% Solids: 93.5 Date Received: 10/23/2024

Analytical Method: CN

Concentration Units (µg/L, mg/L, mg/kg dry weight, µg, or µg/cm²): mg/kg

| CAS No. | Analyte | Concentration | Q | Date Analyzed | Time Analyzed |
|---|---|---|---|---|---|
| 57-12-5 | Cyanide | 0.52 | U | 10/25/2024 | 1252 |

NOTE: Hardness (total) is reported in mg/L

Comments:

EPA SAMPLE NO.

MBHCK9

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011

Lab Code: ACE Case No.: 51698 MA No. : SDG No.: MBHCJ7

Matrix: SOIL Lab Sample ID: P4499-08

% Solids: 91.8 Date Received: 10/23/2024

Analytical Method: CN

Concentration Units (µg/L, mg/L, mg/kg dry weight, µg, or µg/cm²): mg/kg

| CAS No. | Analyte | Concentration | Q | Date Analyzed | Time Analyzed |
|---|---|---|---|---|---|
| 57-12-5 | Cyanide | 0.53 | U | 10/25/2024 | 1315 |

NOTE: Hardness (total) is reported in mg/L

Comments:

EPA SAMPLE NO.

MBHCL0

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011

Lab Code: ACE Case No.: 51698 MA No. : SDG No.: MBHCJ7

Matrix: SOIL Lab Sample ID: P4499-09

% Solids: 92.3 Date Received: 10/23/2024

Analytical Method: CN

Concentration Units (µg/L, mg/L, mg/kg dry weight, µg, or µg/cm²): mg/kg

| CAS No. | Analyte | Concentration | Q | Date Analyzed | Time Analyzed |
|---|---|---|---|---|---|
| 57-12-5 | Cyanide | 0.52 | U | 10/25/2024 | 1258 |

NOTE: Hardness (total) is reported in mg/L

Comments:

EPA SAMPLE NO.

MBHCL1

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011

Lab Code: ACE Case No.: 51698 MA No. : SDG No.: MBHCJ7

Matrix: SOIL Lab Sample ID: P4499-10

% Solids: 91.6 Date Received: 10/23/2024

Analytical Method: CN

Concentration Units (µg/L, mg/L, mg/kg dry weight, µg, or µg/cm²): mg/kg

| CAS No. | Analyte | Concentration | Q | Date Analyzed | Time Analyzed |
|---|---|---|---|---|---|
| 57-12-5 | Cyanide | 0.51 | U | 10/25/2024 | 1258 |

NOTE: Hardness (total) is reported in mg/L

Comments:

EPA SAMPLE NO.

MBHCL2

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011

Lab Code: ACE Case No.: 51698 MA No. : SDG No.: MBHCJ7

Matrix: SOIL Lab Sample ID: P4499-11

% Solids: 88.4 Date Received: 10/23/2024

Analytical Method: CN

Concentration Units (µg/L, mg/L, mg/kg dry weight, µg, or µg/cm²): mg/kg

| CAS No. | Analyte | Concentration | Q | Date Analyzed | Time Analyzed |
|---|---|---|---|---|---|
| 57-12-5 | Cyanide | 0.56 | U | 10/25/2024 | 1258 |

NOTE: Hardness (total) is reported in mg/L

Comments:

EPA SAMPLE NO.

MBHCL8

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011

Lab Code: ACE Case No.: 51698 MA No. : SDG No.: MBHCJ7

Matrix: SOIL Lab Sample ID: P4499-13

% Solids: 83.4 Date Received: 10/23/2024

Analytical Method: CN

Concentration Units (µg/L, mg/L, mg/kg dry weight, µg, or µg/cm²): mg/kg

| CAS No. | Analyte | Concentration | Q | Date Analyzed | Time Analyzed |
|---|---|---|---|---|---|
| 57-12-5 | Cyanide | 0.57 | U | 10/25/2024 | 1258 |

NOTE: Hardness (total) is reported in mg/L

Comments:

EPA SAMPLE NO.

MBHCL9

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011

Lab Code: ACE Case No.: 51698 MA No. : SDG No.: MBHCJ7

Matrix: SOIL Lab Sample ID: P4499-14

% Solids: 84.9 Date Received: 10/23/2024

Analytical Method: CN

Concentration Units (µg/L, mg/L, mg/kg dry weight, µg, or µg/cm²): mg/kg

| CAS No. | Analyte | Concentration | Q | Date Analyzed | Time Analyzed |
|---|---|---|---|---|---|
| 57-12-5 | Cyanide | 0.55 | U | 10/25/2024 | 1258 |

NOTE: Hardness (total) is reported in mg/L

Comments:

EPA SAMPLE NO.

MBHCM0

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011

Lab Code: ACE Case No.: 51698 MA No. : SDG No.: MBHCJ7

Matrix: SOIL Lab Sample ID: P4499-15

% Solids: 77.4 Date Received: 10/23/2024

Analytical Method: CN

Concentration Units (µg/L, mg/L, mg/kg dry weight, µg, or µg/cm²): mg/kg

| CAS No. | Analyte | Concentration | Q | Date Analyzed | Time Analyzed |
|---|---|---|---|---|---|
| 57-12-5 | Cyanide | 0.62 | U | 10/25/2024 | 1315 |

NOTE: Hardness (total) is reported in mg/L

Comments:

EPA SAMPLE NO.

MBHCM1

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011

Lab Code: ACE Case No.: 51698 MA No. : SDG No.: MBHCJ7

Matrix: SOIL Lab Sample ID: P4499-16

% Solids: 89.1 Date Received: 10/23/2024

Analytical Method: CN

Concentration Units (µg/L, mg/L, mg/kg dry weight, µg, or µg/cm²): mg/kg

| CAS No. | Analyte | Concentration | Q | Date Analyzed | Time Analyzed |
|---|---|---|---|---|---|
| 57-12-5 | Cyanide | 0.53 | U | 10/25/2024 | 1315 |

NOTE: Hardness (total) is reported in mg/L

Comments:

EPA SAMPLE NO.

MBHCM2

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011

Lab Code: ACE Case No.: 51698 MA No. : SDG No.: MBHCJ7

Matrix: SOIL Lab Sample ID: P4499-17

% Solids: 80.1 Date Received: 10/23/2024

Analytical Method: CN

Concentration Units (µg/L, mg/L, mg/kg dry weight, µg, or µg/cm²): mg/kg

| CAS No. | Analyte | Concentration | Q | Date Analyzed | Time Analyzed |
|---|---|---|---|---|---|
| 57-12-5 | Cyanide | 0.59 | U | 10/25/2024 | 1315 |

NOTE: Hardness (total) is reported in mg/L

Comments:

EPA SAMPLE NO.

MBHCM8

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011

Lab Code: ACE Case No.: 51698 MA No. : SDG No.: MBHCJ7

Matrix: SOIL Lab Sample ID: P4499-18

% Solids: 82 Date Received: 10/23/2024

Analytical Method: CN

Concentration Units (µg/L, mg/L, mg/kg dry weight, µg, or µg/cm²): mg/kg

| CAS No. | Analyte | Concentration | Q | Date Analyzed | Time Analyzed |
|---|---|---|---|---|---|
| 57-12-5 | Cyanide | 0.60 | U | 10/25/2024 | 1315 |

NOTE: Hardness (total) is reported in mg/L

Comments:

EPA SAMPLE NO.

MBHCM9

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011

Lab Code: ACE Case No.: 51698 MA No. : SDG No.: MBHCJ7

Matrix: SOIL Lab Sample ID: P4499-19

% Solids: 90.5 Date Received: 10/23/2024

Analytical Method: CN

Concentration Units (µg/L, mg/L, mg/kg dry weight, µg, or µg/cm²): mg/kg

| CAS No. | Analyte | Concentration | Q | Date Analyzed | Time Analyzed |
|---|---|---|---|---|---|
| 57-12-5 | Cyanide | 0.53 | U | 10/25/2024 | 1315 |

NOTE: Hardness (total) is reported in mg/L

Comments:

EPA SAMPLE NO.

MBHCN0

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011

Lab Code: ACE Case No.: 51698 MA No. : SDG No.: MBHCJ7

Matrix: SOIL Lab Sample ID: P4499-20

% Solids: 85.6 Date Received: 10/23/2024

Analytical Method: CN

Concentration Units (µg/L, mg/L, mg/kg dry weight, µg, or µg/cm²): mg/kg

| CAS No. | Analyte | Concentration | Q | Date Analyzed | Time Analyzed |
|---|---|---|---|---|---|
| 57-12-5 | Cyanide | 0.87 | | 10/25/2024 | 1315 |

NOTE: Hardness (total) is reported in mg/L

Comments:

EPA SAMPLE NO.

MBHCY0

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011

Lab Code: ACE Case No.: 51698 MA No. : SDG No.: MBHCJ7

Matrix: SOIL Lab Sample ID: P4499-12

% Solids: 72 Date Received: 10/23/2024

Analytical Method: CN

Concentration Units (µg/L, mg/L, mg/kg dry weight, µg, or µg/cm²): mg/kg

| CAS No. | Analyte | Concentration | Q | Date Analyzed | Time Analyzed |
|---|---|---|---|---|---|
| 57-12-5 | Cyanide | 0.67 | U | 10/25/2024 | 1258 |

NOTE: Hardness (total) is reported in mg/L

Comments:

LB133312

Test results | Aquakem 7.2AQ1 | Page:

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

Reviewed by : NF | Instrument ID : Konelab

10/25/2024 14:04

Test: CNEPA-NEW

| Sample Id | Result | Dil. 1 + | Response | Errors |
|---|---|---|---|---|
| ICV001 ICV001 | 96.880 | 0.0 | 0.086 | |
| ICB001 ICB001 | 0.447 | 0.0 | 0.001 | |
| CCV001 CCV001 | 247.147 | 0.0 | 0.219 | |
| CCB001 CCB001 | 0.262 | 0.0 | 0.001 | |
| NF 10.25.2024 PB164384BLPBS384 | 0.160 | 0.0 | 0.001 | |
| P4498-01 MBHDD1 | -0.050 | 0.0 | 0.001 | |
| P4498-02 MBHDD2 | 0.016 | 0.0 | 0.001 | |
| P4498-03 MBHDD8 | -0.013 | 0.0 | 0.001 | |
| P4498-04 MBHDD9 | 0.272 | 0.0 | 0.001 | |
| P4498-05 MBHDE0 | -0.102 | 0.0 | 0.000 | |
| P4498-06 MBHDE1 | 0.429 | 0.0 | 0.001 | |
| P4498-07 MBHDE2 | 0.520 | 0.0 | 0.001 | |
| P4498-08 MBHDE8 | 2.068 | 0.0 | 0.002 | |
| P4498-10 MBHDF0 | 0.055 | 0.0 | 0.001 | |
| P4498-11 MBHDF0D | -0.443 | 0.0 | 0.000 | |
| P4498-12 MBHDF0S | 92.226 | 0.0 | 0.082 | |
| P4498-13 MBHDF1 | 0.532 | 0.0 | 0.001 | |
| P4498-14 MBHDF2 | 0.775 | 0.0 | 0.001 | |
| P4498-15 MBHCH8 | 1.187 | 0.0 | 0.002 | |
| P4498-16 MBHCH9 | -0.115 | 0.0 | 0.000 | |
| P4498-17 MBHCJ0 | 0.666 | 0.0 | 0.001 | |
| P4498-18 MCHCJ1 | 0.874 | 0.0 | 0.001 | |
| P4498-19 MBHCJ2 | 0.375 | 0.0 | 0.001 | |
| P4498-20 MBHCJ3 | 0.699 | 0.0 | 0.001 | |
| P4498-21 MBHCJ5 | 0.690 | 0.0 | 0.001 | |
| P4498-22 MBHCJ6 | 6.280 | 0.0 | 0.006 | |
| CCV002 CCV002 | 237.625 | 0.0 | 0.211 | |
| CCB002 CCB002 | 1.059 | 0.0 | 0.002 | |
| NF 10.25.2024 PB164385BLPBS385 | 1.123 | 0.0 | 0.002 | |
| P4499-01 MBHCJ7 | 0.526 | 0.0 | 0.001 | |
| P4499-02 MBHCJ8 | 1.118 | 0.0 | 0.002 | |
| P4499-03 MBHCJ9 | 3.795 | 0.0 | 0.004 | |
| P4499-04 MBHCK0 | 2.613 | 0.0 | 0.003 | |
| P4499-05 MBHCK1 | 2.496 | 0.0 | 0.003 | |
| P4499-06 MBHCK2 | 1.589 | 0.0 | 0.002 | |
| P4499-07 MBHCK8 | 1.733 | 0.0 | 0.002 | |
| P4499-09 MBHCL0 | 0.051 | 0.0 | 0.001 | |
| P4499-10 MBHCL1 | 0.476 | 0.0 | 0.001 | |
| P4499-11 MBHCL2 | 0.606 | 0.0 | 0.001 | |
| P4499-12 MBHCY0 | 0.264 | 0.0 | 0.001 | |
| P4499-13 MBHCL8 | 0.268 | 0.0 | 0.001 | |
| P4499-14 MBHCL9 | 0.681 | 0.0 | 0.001 | |
| P4499-15 MBHCM0 | 0.410 | 0.0 | 0.001 | |
| P4499-16 MBHCM1 | 0.603 | 0.0 | 0.001 | |
| P4499-17 MBHCM2 | 0.280 | 0.0 | 0.001 | |
| P4499-18 MBHCM8 | 1.566 | 0.0 | 0.002 | |
| P4499-19 MBHCM9 | 2.447 | 0.0 | 0.003 | |
| P4499-20 MBHCN0 | 15.353 | 0.0 | 0.014 | |
| P4499-21 MBHCN0D | 15.678 | 0.0 | 0.014 | |
| P4499-22 MBHCN0S | 99.058 | 0.0 | 0.088 | |
| P4499-08 MBHCK9 | 0.728 | 0.0 | 0.001 | |
| P4498-09 MBHDE9 | 0.121 | 0.0 | 0.001 | |
| CCV003 CCV003 | 255.865 | 0.0 | 0.227 | |
| CCB003 CCB003 | 0.526 | 0.0 | 0.001 | |

Test results | Aquakem 7.2AQ1 | Page: 1

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

Reviewed by : NF | Instrument ID : Konelab

10/25/2024 14:04

Test: CNEPA-NEW

| Sample Id | Result | Dil. 1 + | Response | Ô□„ |
|---|---|---|---|---|

| | |
|---|---|
| N | 54 |
| Mean | 20.380 |
| SD | 59.6957 |
| CV% | 292.92 |

Aquakem v. 7.2AQ1
Results from time period:
Fri Oct 25 10:21:12 2024
Fri Oct 25 13:50:28 2024

| Sample Id | Sam/C | Test short name | Test type | Result | Result unit | Result date and time |
|---|---|---|---|---|---|---|
| S0.0 | A | CNEPA-NEW | P | 0.1673 | µg/l | 10/25/2024 11:21:17 |
| S5.0 | A | CNEPA-NEW | P | 4.976 | µg/l | 10/25/2024 11:21:18 |
| S10.0 | A | CNEPA-NEW | P | 10.4804 | µg/l | 10/25/2024 11:21:19 |
| S100.0 | A | CNEPA-NEW | P | 100.863 | µg/l | 10/25/2024 11:21:20 |
| S250.0 | A | CNEPA-NEW | P | 247.3906 | µg/l | 10/25/2024 11:21:21 |
| S500.0 | A | CNEPA-NEW | P | 501.1227 | µg/l | 10/25/2024 11:21:22 |
| ICV001 ICV001 | S | CNEPA-NEW | P | 96.8795 | µg/l | 10/25/2024 12:29:09 |
| ICB001 ICB001 | S | CNEPA-NEW | P | 0.4472 | µg/l | 10/25/2024 12:29:11 |
| CCV001 CCV001 | S | CNEPA-NEW | P | 247.1472 | µg/l | 10/25/2024 12:29:13 |
| CCB001 CCB001 | S | CNEPA-NEW | P | 0.262 | µg/l | 10/25/2024 12:29:15 |
| PB164384BL PBS384 | S | CNEPA-NEW | P | 0.1598 | µg/l | 10/25/2024 12:29:17 |
| P4498-01 MBHDD1 | S | CNEPA-NEW | P | -0.0498 | µg/l | 10/25/2024 12:29:18 |
| P4498-02 MBHDD2 | S | CNEPA-NEW | P | 0.0159 | µg/l | 10/25/2024 12:36:42 |
| P4498-03 MBHDD8 | S | CNEPA-NEW | P | -0.0126 | µg/l | 10/25/2024 12:36:43 |
| P4498-04 MBHDD9 | S | CNEPA-NEW | P | 0.272 | µg/l | 10/25/2024 12:36:44 |
| P4498-05 MBHDE0 | S | CNEPA-NEW | P | -0.1023 | µg/l | 10/25/2024 12:36:45 |
| P4498-06 MBHDE1 | S | CNEPA-NEW | P | 0.4293 | µg/l | 10/25/2024 12:36:46 |
| P4498-07 MBHDE2 | S | CNEPA-NEW | P | 0.5197 | µg/l | 10/25/2024 12:36:48 |
| P4498-08 MBHDE8 | S | CNEPA-NEW | P | 2.0677 | µg/l | 10/25/2024 12:36:49 |
| P4498-10 MBHDF0 | S | CNEPA-NEW | P | 0.0554 | µg/l | 10/25/2024 12:36:51 |
| P4498-11 MBHDF0D | S | CNEPA-NEW | P | -0.4425 | µg/l | 10/25/2024 12:36:52 |
| P4498-12 MBHDF0S | S | CNEPA-NEW | P | 92.2264 | µg/l | 10/25/2024 12:44:18 |
| P4498-13 MBHDF1 | S | CNEPA-NEW | P | 0.5319 | µg/l | 10/25/2024 12:44:20 |
| P4498-14 MBHDF2 | S | CNEPA-NEW | P | 0.7747 | µg/l | 10/25/2024 12:44:21 |
| P4498-15 MBHCH8 | S | CNEPA-NEW | P | 1.1874 | µg/l | 10/25/2024 12:44:22 |
| P4498-16 MBHCH9 | S | CNEPA-NEW | P | -0.1153 | µg/l | 10/25/2024 12:44:23 |
| P4498-17 MBHCJ0 | S | CNEPA-NEW | P | 0.6662 | µg/l | 10/25/2024 12:44:24 |
| P4498-18 MCHCJ1 | S | CNEPA-NEW | P | 0.8739 | µg/l | 10/25/2024 12:44:25 |
| P4498-19 MBHCJ2 | S | CNEPA-NEW | P | 0.3745 | µg/l | 10/25/2024 12:44:26 |
| P4498-20 MBHCJ3 | S | CNEPA-NEW | P | 0.6986 | µg/l | 10/25/2024 12:44:27 |
| P4498-21 MBHCJ5 | S | CNEPA-NEW | P | 0.6903 | µg/l | 10/25/2024 12:44:28 |
| P4498-22 MBHCJ6 | S | CNEPA-NEW | P | 6.2798 | µg/l | 10/25/2024 12:51:50 |
| CCV002 CCV002 | S | CNEPA-NEW | P | 237.6251 | µg/l | 10/25/2024 12:51:51 |
| CCB002 CCB002 | S | CNEPA-NEW | P | 1.0587 | µg/l | 10/25/2024 12:51:52 |
| PB164385BL PBS385 | S | CNEPA-NEW | P | 1.1227 | µg/l | 10/25/2024 12:51:53 |
| P4499-01 MBHCJ7 | S | CNEPA-NEW | P | 0.5265 | µg/l | 10/25/2024 12:51:54 |
| P4499-02 MBHCJ8 | S | CNEPA-NEW | P | 1.1185 | µg/l | 10/25/2024 12:51:55 |
| P4499-03 MBHCJ9 | S | CNEPA-NEW | P | 3.7953 | µg/l | 10/25/2024 12:51:56 |
| P4499-04 MBHCK0 | S | CNEPA-NEW | P | 2.6125 | µg/l | 10/25/2024 12:51:57 |

| | | | | | |
|---|---|---|---|---|---|
| P4499-05 MBHCK1 | S | CNEPA-NEW | P | 2.4957 µg/l | 10/25/2024 12:51:58 |
| P4499-06 MBHCK2 | S | CNEPA-NEW | P | 1.5894 µg/l | 10/25/2024 12:51:59 |
| P4499-07 MBHCK8 | S | CNEPA-NEW | P | 1.7334 µg/l | 10/25/2024 12:52:00 |
| P4499-09 MBHCL0 | S | CNEPA-NEW | P | 0.0509 µg/l | 10/25/2024 12:58:50 |
| P4499-10 MBHCL1 | S | CNEPA-NEW | P | 0.4764 µg/l | 10/25/2024 12:58:51 |
| P4499-11 MBHCL2 | S | CNEPA-NEW | P | 0.6065 µg/l | 10/25/2024 12:58:52 |
| P4499-12 MBHCY0 | S | CNEPA-NEW | P | 0.2637 µg/l | 10/25/2024 12:58:53 |
| P4499-13 MBHCL8 | S | CNEPA-NEW | P | 0.2685 µg/l | 10/25/2024 12:58:54 |
| P4499-14 MBHCL9 | S | CNEPA-NEW | P | 0.6809 µg/l | 10/25/2024 12:58:55 |
| P4499-15 MBHCM0 | S | CNEPA-NEW | P | 0.4103 µg/l | 10/25/2024 13:15:45 |
| P4499-16 MBHCM1 | S | CNEPA-NEW | P | 0.603 µg/l | 10/25/2024 13:15:46 |
| P4499-17 MBHCM2 | S | CNEPA-NEW | P | 0.2802 µg/l | 10/25/2024 13:15:47 |
| P4499-18 MBHCM8 | S | CNEPA-NEW | P | 1.5664 µg/l | 10/25/2024 13:15:48 |
| P4499-19 MBHCM9 | S | CNEPA-NEW | P | 2.4466 µg/l | 10/25/2024 13:15:49 |
| P4499-20 MBHCN0 | S | CNEPA-NEW | P | 15.3533 µg/l | 10/25/2024 13:15:50 |
| P4499-21 MBHCN0D | S | CNEPA-NEW | P | 15.6775 µg/l | 10/25/2024 13:15:51 |
| P4499-22 MBHCN0S | S | CNEPA-NEW | P | 99.0579 µg/l | 10/25/2024 13:15:53 |
| P4499-08 MBHCK9 | S | CNEPA-NEW | P | 0.7276 µg/l | 10/25/2024 13:15:54 |
| P4498-09 MBHDE9 | S | CNEPA-NEW | P | 0.1212 µg/l | 10/25/2024 13:15:55 |
| CCV003 CCV003 | S | CNEPA-NEW | P | 255.8655 µg/l | 10/25/2024 13:20:05 |
| CCB003 CCB003 | S | CNEPA-NEW | P | 0.5257 µg/l | 10/25/2024 13:20:06 |

Calibration results  Aquakem 7.2AQ1  Page:

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

Reviewed by : NF  Instrument ID : Konelab

10/25/2024 11:21

Test  CNEPA-NEW

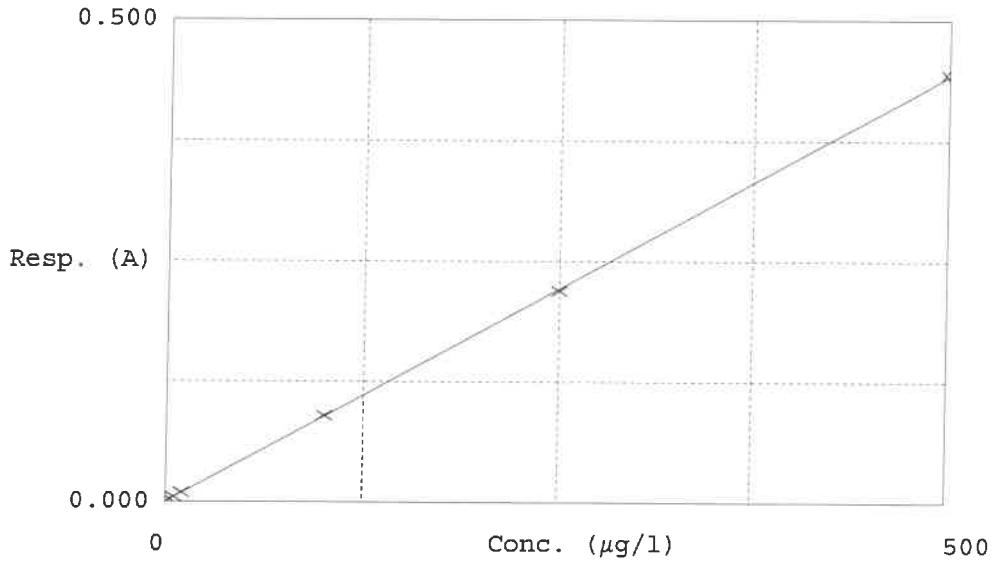
Accepted  10/25/2024  11:21

~~Factor~~ Slope  ~~1131~~ 0.000884
~~Bias~~ Intercept  0.001

NF
10.30.2024

Coeff. of det.  0.999954

Errors




| | Calibrator | Response | Calc. con. | Conc. | Rc Errors |
|---|---|---|---|---|---|
| 1 | 0.0PPBCN S0.0 | 0.001 | 0.1673 | 0.0000 | ~~0~~ |
| 2 | 5.0PPBCN S5.0 | 0.005 | 4.9760 | 5.0000 | -0.5 |
| 3 | 10PPBCN S10.0 | 0.010 | 10.4804 | 10.0000 | 4.8 |
| 4 | 100PPBCN S100.0 | 0.090 | 100.8630 | 100.0000 | 0.9 |
| 5 | 250PPBCN S250.0 | 0.219 | 247.3906 | 250.0000 | -1.0 |
| 6 | 500PPBCN S500.0 | 0.444 | 501.1227 | 500.0000 | 0.2 |

NF
10.25.2024

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

# Prep Standard - Chemical Standard Summary

**Order ID :** P4499

**Test :** Cyanide

**Prepbatch ID :** PB164385,

**Sequence ID/Qc Batch ID:** LB133132,

**Standard ID :**
WP108640,WP108688,WP109089,WP110035,WP110103,WP110389,WP110390,WP110391,WP110392,WP110393,WP110394,WP110395,WP110396,WP110397,WP110398,WP110399,WP110434,

**Chemical ID :**
E3657,M5673,M5951,W2668,W2882,W3001,W3011,W3019,W3112,W3113,W3139,W3142,

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

# Wet Chemistry STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 11 | Sodium hydroxide absorbing solution 0.25 N | WP108640 | 07/05/2024 | 01/05/2025 | Rubina Mughal | WETCHEM_SCALE_4 (WCSC-4) | None | Iwona Zarych 07/08/2024 |

**FROM** 21.00000L of W3112 + 210.00000gram of E3657 = Final Quantity: 21.000 L

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1581 | Sodium hydroxide solution, 1.25N | WP108688 | 07/11/2024 | 01/11/2025 | Niha Farheen Shaik | WETCHEM_SCALE_5 (WCSC-5) | None | Iwona Zarych 07/11/2024 |

**FROM** 50.00000gram of W3113 + 950.00000ml of W3112 = Final Quantity: 1000.000 ml

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Fax : 908 789 8922

# Wet Chemistry STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 2816 | CN-EPA Pyridine-Burbituric Acid solution | WP109089 | 08/07/2024 | 12/27/2024 | Rubina Mughal | WETCHEM_SCALE_5 (WCSC-5) | None | Iwona Zarych 08/07/2024 |

**FROM** 15.00000gram of W2882 + 15.00000ml of M5951 + 75.00000ml of W3019 + 895.00000ml of W3112 = Final Quantity: 1000.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 3850 | Cyanide MS-MSD spiking solution, 5PPM | WP110035 | 10/03/2024 | 11/30/2024 | Rubina Mughal | None | WETCHEM_PIPETTE_3 (WC) | Iwona Zarych 10/04/2024 |

**FROM** 1.00000ml of W3142 + 199.00000ml of WP108640 = Final Quantity: 200.000 ml

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# Wet Chemistry STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 539 | CN BUFFER | WP110103 | 10/08/2024 | 04/08/2025 | Rubina Mughal | WETCHEM_SCALE_5 (WCSC-5) | None | Iwona Zarych 10/08/2024 |

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

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1585 | Cyanide Intermediate standard solution, 10PPM | WP110389 | 10/24/2024 | 10/25/2024 | Niha Farheen Shaik | None | WETCHEM_PIPETTE_3 (WC) | Iwona Zarych 10/24/2024 |

**FROM** 1.00000ml of W3142 + 79.00000ml of W3112 + 20.00000ml of WP108688 = Final Quantity: 100.000 ml

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Fax : 908 789 8922

# Wet Chemistry STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 3214 | Magnesium Chloride For Cyanide 2.5M(51%W/V) | WP110390 | 10/24/2024 | 04/24/2025 | Niha Farheen Shaik | WETCHEM_SCALE_5 (WCSC-5) | None | Iwona Zarych 10/24/2024 |

**FROM** 500.00000ml of W3112 + 510.00000gram of W3001 = Final Quantity: 1000.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1714 | Sulfuric Acid, 50% (v/v) | WP110391 | 10/24/2024 | 04/24/2025 | Niha Farheen Shaik | None | None | Iwona Zarych 10/24/2024 |

**FROM** 1000.00000ml of M5673 + 1000.00000ml of W3112 = Final Quantity: 2000.000 ml

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Fax : 908 789 8922

# Wet Chemistry STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1586 | Cyanide Cal Std, 500 PPB | WP110392 | 10/24/2024 | 10/25/2024 | Niha Farheen Shaik | None | None | Iwona Zarych 10/25/2024 |

**FROM** 5.00000ml of WP110389 + 95.00000ml of WP108640 = Final Quantity: 0.100 L

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1587 | Cyanide Cal Std, 250 PPB | WP110393 | 10/24/2024 | 10/25/2024 | Niha Farheen Shaik | None | None | Iwona Zarych 10/25/2024 |

**FROM** 2.50000ml of WP110389 + 97.50000ml of WP108640 = Final Quantity: 0.100 L

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Fax : 908 789 8922

# Wet Chemistry STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1588 | Cyanide Cal Std, 100 PPB | WP110394 | 10/24/2024 | 10/25/2024 | Niha Farheen Shaik | None | None | Iwona Zarych 10/25/2024 |

**FROM** 1.00000ml of WP110389 + 99.00000ml of WP108640 = Final Quantity: 0.100 L

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1589 | Cyanide Cal Std, 10 PPB | WP110395 | 10/24/2024 | 10/25/2024 | Niha Farheen Shaik | None | None | Iwona Zarych 10/25/2024 |

**FROM** 4.00000ml of WP110393 + 96.00000ml of WP108640 = Final Quantity: 0.100 L

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# Wet Chemistry STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1590 | Cyanide Cal Std, 5 PPB | WP110396 | 10/24/2024 | 10/25/2024 | Niha Farheen Shaik | None | None | Iwona Zarych 10/25/2024 |

**FROM** 2.00000ml of WP110393 + 98.00000ml of WP108640 = Final Quantity: 0.100 L

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1591 | Cyanide blank std, 0 PPB | WP110397 | 10/24/2024 | 10/25/2024 | Niha Farheen Shaik | None | None | Iwona Zarych 10/25/2024 |

**FROM** 100.00000ml of WP108640 = Final Quantity: 0.100 L

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Fax : 908 789 8922

# Wet Chemistry STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1763 | Cyanide ICV Std | WP110398 | 10/24/2024 | 10/25/2024 | Niha Farheen Shaik | None | WETCHEM_PIPETTE_3 (WC) | Iwona Zarych 10/25/2024 |

**FROM** 0.50000ml of W3011 + 49.50000ml of WP108640 = Final Quantity: 50.000 ml

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1592 | Cyanide CCV Std, 250 PPB | WP110399 | 10/24/2024 | 10/25/2024 | Niha Farheen Shaik | None | None | Iwona Zarych 10/25/2024 |

**FROM** 2.50000ml of WP110389 + 97.50000ml of WP108640 = Final Quantity: 0.100 L

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Fax : 908 789 8922

# Wet Chemistry STANDARD PREPARATION LOG

| Recipe ID | NAME | NO. | Prep Date | Expiration Date | Prepared By | ScaleID | PipetteID | Supervised By |
|---|---|---|---|---|---|---|---|---|
| 1582 | Chloramine T solution, 0.014M | WP110434 | 10/25/2024 | 10/26/2024 | Niha Farheen Shaik | None | WETCHEM_PIPETTE_3 (WC) | Iwona Zarych 10/25/2024 |

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

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

# CHEMICAL RECEIPT LOG BOOK

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| PCI Scientific Supply, Inc. | PC19510-5 / Sodium Hydroxide Pellets 2.5 Kg, Pk of 4 | 23B1556310 | 12/31/2025 | 12/04/2023 / Rajesh | 12/01/2023 / Rajesh | E3657 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Seidler Chemical | BA-9673-33 / Sulfuric Acid, Instra-Analyzed (cs/6c2.5L) | 23D2462010 | 03/20/2028 | 09/21/2023 / mohan | 09/05/2023 / mohan | M5673 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| Seidler Chemical | BA-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L) | 22G2862015 | 12/27/2024 | 07/04/2024 / Jaswal | 06/23/2024 / Al-Terek | M5951 |

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

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| PCI Scientific Supply, Inc. | EM-BX0035-3 / Barbituric Acid, 100 gms | 1.00132.0100 | 04/30/2025 | 12/07/2021 / jaswal | 11/30/2021 / apatel | W2882 |

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| PCI Scientific Supply, Inc. | 01237-10KG / Megnasium Chloride Hexahydrate ACS 10KG | 002251-03319 | 06/06/2027 | 01/23/2023 / Iwona | 06/06/2022 / Iwona | W3001 |

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

# CHEMICAL RECEIPT LOG BOOK

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

| Supplier | ItemCode / ItemName | Lot # | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|---|---|---|---|---|---|---|
| SIGMA ALDRICH | 270970-1L / Pyridine 1L | SHBQ2113 | 04/03/2028 | 04/03/2023 / Iwona | 04/03/2023 / Iwona | 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 / Iwona | 07/03/2024 / Iwona | W3112 |

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

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

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

~~W2918~~ W3001 Rec. 06/06/22 exp. 06/06/27

# Chem-Impex International, Inc.


**Tel: (630) 766-2112**
**E-mail: sales@chemimpex.com**
**Shipping and Correspondence:**
935 Dillon Drive
Wood Dale, IL 60191

**Fax: (630) 766-2218**
**Web site: www.chemimpex.com**
**Manufacturing site:**
825 Dillon Drive
Wood Dale, IL 60191


## *Certificate of Analysis*

| | |
|---|---|
| **Catalogue Number** | 01237 |
| **Product** | **Magnesium chloride hexahydrate** |
| **Lot Number** | 002251-03319 |
| | Magnesium chloride•$6H_2O$ |
| **CAS Number** | 7791-18-6 |
| **Molecular Formula** | $MgCl_2$•$6H_2O$ |
| **Molecular Weight** | 203.3 |

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

# *Certificate of Analysis*

**Catalog Number: 01237** **Lot Number: 002251-03319**

| | |
|---|---|
| **Remarks** | See material safety data sheet for additional information |
| | For laboratory use only |

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

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

Sigma-Aldrich.

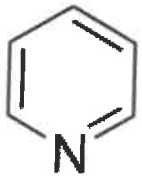
W3019
Rec 4/3/23

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

# Certificate of Analysis

Product Name:
**Pyridine - anhydrous, 99.8%**

| | |
|---|---|
| **Product Number:** | **270970** |
| **Batch Number:** | **SHBQ2113** |
| Brand: | SIAL |
| CAS Number: | 110-86-1 |
| MDL Number: | MFCD00011732 |
| Formula: | C5H5N |
| Formula Weight: | 79.10 g/mol |
| Quality Release Date: | 15 DEC 2022 |




| Test | Specification | Result |
|---|---|---|
| Appearance (Color) | Colorless | Colorless |
| Appearance (Form) | Liquid | Liquid |
| Infrared Spectrum | Conforms to Structure | Conforms |
| Purity (GC) | ≥ 99.75 % | 99.99 % |
| Water (by Karl Fischer) | ≤ 0.003 % | 0.002 % |
| Residue on Evaporation | ≤ 0.0005 % | < 0.0001 % |

Larry Coers, Director
Quality Control
Sheboygan Falls, WI US

VWR®

# Certificate of Analysis

## Sodium Hydroxide (Pellets)

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

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

Pellets

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

Storage: Room Temperature

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

Internal ID #: 710

### Signature

We certify that this batch conforms to the specifications listed.

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

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

### Additional Information

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

Product meets analytical specifications of the grades listed.

| | |
|---|---|
| E 3657 | E 3659 |
| E 3654 | E 3660 |

## 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.

**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) $K_2Cr_2O_7$ 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 $K_3Fe(CN)_6$, Type II water, and 0.1 % sodium hydroxide, and will decompose rapidly if exposed to light.

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

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

| ICV1-1014 | | |
|---|---|---|
| **Element** | **Concentration (µg/L) (after 10-fold dilution)** | **Concentration (µg/L) (after 50-fold dilution)** |
| **Al** | 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) (after 100-fold dilution)** | **Analyte** | **Concentration (µg/L) (after 100-fold dilution)** |
| **Hg** | 4.0 | **$CN^-$** | 99 |

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

avantor™ | J.T.Baker®

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 ($H_2SO_4$) | 95.0 – 98.0 % | 96.1 % |
| Appearance | Passes Test | Passes Test |
| ACS – Color (APHA) | ≤ 10 | 5 |
| ACS – Residue after Ignition | ≤ 3 ppm | < 1 ppm |
| ACS – Substances Reducing Permanganate (as SO2) | ≤ 2 ppm | < 2 ppm |
| Ammonium ($NH_4$) | ≤ 1 ppm | 1 ppm |
| Chloride (Cl) | ≤ 0.1 ppm | < 0.1 ppm |
| Nitrate ($NO_3$) | ≤ 0.2 ppm | < 0.1 ppm |
| Phosphate ($PO_4$) | ≤ 0.5 ppm | < 0.1 ppm |
| Trace Impurities – Aluminum (Al) | ≤ 30.0 ppb | < 5.0 ppb |
| Arsenic and Antimony (as As) | ≤ 4.0 ppb | < 2.0 ppb |
| Trace Impurities – Boron (B) | ≤ 10.0 ppb | 8.5 ppb |
| Trace Impurities – Cadmium (Cd) | ≤ 2.0 ppb | < 0.3 ppb |
| Trace Impurities – Chromium (Cr) | ≤ 6.0 ppb | < 0.4 ppb |
| Trace Impurities – Cobalt (Co) | ≤ 0.5 ppb | < 0.3 ppb |
| Trace Impurities – Copper (Cu) | ≤ 1.0 ppb | < 0.1 ppb |
| Trace Impurities – Gold (Au) | ≤ 10.0 ppb | 0.5 ppb |
| Heavy Metals (as Pb) | ≤ 500.0 ppb | < 100.0 ppb |
| Trace Impurities – Iron (Fe) | ≤ 50.0 ppb | 1.3 ppb |
| Trace Impurities – Lead (Pb) | ≤ 0.5 ppb | < 0.5 ppb |
| Trace Impurities – Magnesium (Mg) | ≤ 7.0 ppb | 0.8 ppb |
| Trace Impurities – Manganese (Mn) | ≤ 1.0 ppb | < 0.4 ppb |
| Trace Impurities – Mercury (Hg) | ≤ 0.5 ppb | < 0.1 ppb |
| Trace Impurities – Nickel (Ni) | ≤ 2.0 ppb | 0.3 ppb |
| Trace Impurities – Potassium (K) | ≤ 500.0 ppb | < 2.0 ppb |
| Trace Impurities – Selenium (Se) | ≤ 50.0 ppb | < 0.1 ppb |
| Trace Impurities – Silicon (Si) | ≤ 100.0 ppb | 31.5 ppb |
| Trace Impurities – Silver (Ag) | ≤ 1.0 ppb | < 0.3 ppb |

>>> Continued on page 2 >>>

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

avantor™ | J.T.Baker®

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

James T Ethier

Jamie Ethier
Vice President Global Quality

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

avantor™ | J.T.Baker®

MS947 MS948 MS949
MS950 MS951 MS952

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 $Cl_2$) | ≤ 0.5 ppm | < 0.5 ppm |
| Phosphate ($PO_4$) | ≤ 0.05 ppm | < 0.03 ppm |
| Sulfate ($SO_4$) | ≤ 0.5 ppm | < 0.3 ppm |
| Sulfite ($SO_3$) | ≤ 0.8 ppm | 0.3 ppm |
| Ammonium ($NH_4$) | ≤ 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

avantor™ | J.T.Baker®

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

avantor™ | J.T.Baker®

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

James T Ethier

Jamie Ethier
Vice President Global Quality

# Certificate of Analysis

1.00132.0000 Barbituric acid for analysis EMSURE®
Batch N020065932

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

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

Ioannis Chartomatsidis
Responsible laboratory manager quality control

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

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

(sodium dihydrogen phosphate, monohydrate)

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

# Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

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

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

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

Jamie Ethier
Vice President Global Quality

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

# Certificate of Analysis

# Sodium Hydroxide (Pellets)

**Material:** 0583

**Grade:** ACS GRADE

**Batch Number:** 23B1556310

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

Pellets

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

Storage: Room Temperature

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

Internal ID #: 710

## Signature

We certify that this batch conforms to the specifications listed.

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

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

## Additional Information

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

Product meets analytical specifications of the grades listed.

# Certificate of Analysis

# Sodium Hydroxide (Pellets)

**Material:** **0583**

**Grade:** **ACS GRADE**

**Batch Number:** **23B1556310**

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

Pellets

Spec Set: 0583ACS

Internal ID #: 710

## Signature

We certify that this batch conforms to the specifications listed.

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

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

## Additional Information

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

Product meets analytical specifications of the grades listed.

ThermoFisher SCIENTIFIC

# Certificate of Analysis

W3139 Received on 9/9/24 by IZ

| | |
|---|---|
| Product No.: | A12044 |
| Product: | Chloramine-T trihydrate, 98% |
| Lot No.: | 10239484 |

| | |
|---|---|
| Appearance: | White powder |
| Melting Point: | 166°C(dec) |
| Assay (Iodometric titration): | 100.5% |
| Identification (FTIR): | Conforms |

Order our products online **thermofisher.com/chemicals**

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RICCA CHEMICAL COMPANY®

448 West Fork Dr
Arlington, TX 76012
http://www.riccachemical.com
1-888-GO-RICCA
customerservice@riccachemical.com

# Certificate of Analysis

## Cyanide Standard, 1000 ppm $CN^-$

**Lot Number:** 1405J81 **Product Number:** 2543

**Manufacture Date:** MAY 20, 2024
**Expiration Date:** NOV 2024

This standard is prepared using accurate volumetric techniques from material that has been assayed against Silver Nitrate solution certified traceable to NIST Standard Reference Material 999. The certified value reported is the prepared value based upon the method of preparation of the material. The uncertainty in the prepared value is the combined uncertainty based on the stability of the assayed Potassium Cyanide, and the uncertainty in the mass and volume measurements.
Use 0.16% (w/v) (0.04 N) Sodium Hydroxide or 0.225 % (w/v) (0.04 N) Potassium Hydroxide to make dilutions of this standard. Restandardize weekly if extreme accuracy is required.

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

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

| Specification | Reference |
|---|---|
| Stock Standard Cyanide Solution | APHA (4500-CN- F) |
| Stock Cyanide Solution | APHA (4500-CN- E) |
| Stock Cyanide Solution | APHA (4500-CN- K) |
| Stock Cyanide Solution | APHA (4500-CN- H) |
| Cyanide Reference Solution (1000 mg/L) | EPA (SW-846) (7.3.3.2) |
| Cyanide Calibration Stock Solution (1,000 mg/L CN-) | EPA (SW-846) (9213) |
| Stock Cyanide Solution | EPA (335.3) |
| Stock Cyanide Solution | EPA (335.2) |
| Cyanide Solution Stock | ASTM (D 4282) |
| Simple Cyanide Solution, Stock (1.0 g/L CN) | ASTM (D 4374) |

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

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

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

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

Alliance TECHNICAL GROUP

**Soil/Sludge Cyanide Preparation Sheet**

PB164385

**SOP ID :** MSFAM01.1-Cyanide-2

**SDG No :** MBHCJ7

**Matrix :** SOLID

**Pippete ID :** WC

**Balance ID :** WC SC-4

**Hood ID :** HOOD#1

**Block ID :** MC-1, MC-2

**Weigh By :** JP

**Start Digest Date:** 10/24/2024 **Time :** 10:20 **Temp :** 123 °C

**End Digest Date:** 10/24/2024 **Time :** 11:50 **Temp :** 126 °C

II batch 10/24/2024 14:10 124
10/24/2024 15:40 126
III batch 10/24/2024 16:00 123
10/24/2024 17:30 127 } JP

**Digestion tube ID :** M5595

**Filter paper ID :** N/A

**pH Meter ID :** N/A

**Block Thermometer ID :** WC CYANIDE

**Prep Technician Signature:** JP

**Supervisor Signature:** JP

| Standared Name | MLS USED | STD REF. # FROM LOG |
|---|---|---|
| PBS003 | 50.0ML | W3112 |
| MATRIX SPIKE SOLUTION | 1.0ML | WP110035 |
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |

| Chemical Used | ML/SAMPLE USED | Lot Number |
|---|---|---|
| 0.25N NaOH | 50.0ML | WP108640 |
| 50% v/v H2SO4 | 5.0ML | WP110391 |
| 51% w/v MgCL2 | 2.0ML | WP110390 |
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |
| N/A | N/A | N/A |

| LAB SAMPLE ID | CLIENT SAMPLE ID | Wt(g)/Vol(ml) | Comment |
|---|---|---|---|
| S0 | S0 | N/A | WP110397 I batch |
| S5.0 | S5.0 | N/A | WP110396 " |
| S10.0 | S10.0 | N/A | WP110395 " |
| S100.0 | S100.0 | N/A | WP110394 " |
| S250.0 | S250.0 | N/A | WP110393 " |
| S500.0 | S500.0 | N/A | WP110392 " |
| ICV | ICV | N/A | WP110398 " |
| ICB | ICB | N/A | WP108640 " |
| CCV | CCV | N/A | WP110399 " |
| CCB | CCB | N/A | WP108640 " |
| Midrange | Midrange | N/A | N/A |
| HIGHSTD | HIGHSTD | N/A | N/A |
| LOWSTD | LOWSTD | N/A | N/A |

**Extraction Conformance/Non-Conformance Comments:**

MIDI-DISTILATION_SOIL; I-ST BATCH MC-2 START TEMP:123 C; MC-2 END TEMP: 127 C; II-ND BATCH MC-2 START TEMP:124 C; MC-2 END TEMP: 128 C; Block Therm.ID: WC-CYANIDE-2

| Date / Time | Prepped Sample Relinquished By/Location | Received By/Location |
|---|---|---|
| 10.24.2024. 17.45 | JP / WC | NF(WC) |
| | Preparation Group | Analysis Group |

Alliance TECHNICAL GROUP

## Soil/Sludge Cyanide Preparation Sheet

**PB164385**

| Lab Sample ID | Client Sample ID | Initial Weight (g) | Final Vol (ml) | pH | Sulfide | Oxidizing | Nitrate/ Nitrite | Comment | Prep Pos |
|---|---|---|---|---|---|---|---|---|---|
| P4499-01 | MBHCJ7 | 1.02 | 50 | N/A | N/A | N/A | N/A | N/A II batch | N/A |
| P4499-02 | MBHCJ8 | 1.04 | 50 | N/A | N/A | N/A | N/A | N/A " | N/A |
| P4499-03 | MBHCJ9 | 1.02 | 50 | N/A | N/A | N/A | N/A | N/A " | N/A |
| P4499-04 | MBHCK0 | 1.01 | 50 | N/A | N/A | N/A | N/A | N/A " | N/A |
| P4499-05 | MBHCK1 | 1.01 | 50 | N/A | N/A | N/A | N/A | N/A " | N/A |
| P4499-06 | MBHCK2 | 1.06 | 50 | N/A | N/A | N/A | N/A | N/A " | N/A |
| P4499-07 | MBHCK8 | 1.03 | 50 | N/A | N/A | N/A | N/A | N/A " | N/A |
| P4499-08 | MBHCK9 | 1.02 | 50 | N/A | N/A | N/A | N/A | N/A " | N/A |
| P4499-09 | MBHCL0 | 1.04 | 50 | N/A | N/A | N/A | N/A | N/A " | N/A |
| P4499-10 | MBHCL1 | 1.07 | 50 | N/A | N/A | N/A | N/A | N/A " | N/A |
| P4499-11 | MBHCL2 | 1.02 | 50 | N/A | N/A | N/A | N/A | N/A " | N/A |
| P4499-12 | MBHCY0 | 1.03 | 50 | N/A | N/A | N/A | N/A | N/A " | N/A |
| P4499-13 | MBHCL8 | 1.05 | 50 | N/A | N/A | N/A | N/A | N/A " | N/A |
| P4499-14 | MBHCL9 | 1.08 | 50 | N/A | N/A | N/A | N/A | N/A " | N/A |
| P4499-15 | MBHCM0 | 1.04 | 50 | N/A | N/A | N/A | N/A | N/A " | N/A |
| P4499-16 | MBHCM1 | 1.05 | 50 | N/A | N/A | N/A | N/A | N/A " | N/A |
| P4499-17 | MBHCM2 | 1.06 | 50 | N/A | N/A | N/A | N/A | N/A " | N/A |
| P4499-18 | MBHCM8 | 1.02 | 50 | N/A | N/A | N/A | N/A | N/A III batch | N/A |
| P4499-19 | MBHCM9 | 1.04 | 50 | N/A | N/A | N/A | N/A | N/A " | N/A |
| P4499-20 | MBHCN0 | 1.03 | 50 | N/A | N/A | N/A | N/A | N/A " | N/A |
| P4499-21 | MBHCN0D | 1.05 | 50 | N/A | N/A | N/A | N/A | N/A " | N/A |
| P4499-22 | MBHCN0S | 1.02 | 50 | N/A | N/A | N/A | N/A | N/A " | N/A |
| PB164385BL | PBS385 | 1.00 | 50 | N/A | N/A | N/A | N/A | N/A II batch | N/A |

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Fax : 908 789 8922

**Instrument ID:** KONELAB

## Daily Analysis Runlog For Sequence/QCBatch ID # LB133132

| | | | |
|---|---|---|---|
| Review By | Niha Farheen Shaik | Review On | 10/30/2024 9:51:45 AM |
| Supervise By | Iwona Zarych | Supervise On | 10/30/2024 1:28:01 PM |

| STD. NAME | STD REF.# |
|---|---|
| ICAL Standard | WP110397,WP110396,WP110395,WP110394,WP110393,WP110392 |
| ICV Standard | WP110398 |
| CCV Standard | WP110399 |
| ICSA Standard | |
| CRI Standard | |
| LCS Standard | |
| Chk Standard | WP110103,WP109089,WP110434 |

| Sr# | SampleId | ClientID | QcType | Date | Comment | Operator | Status |
|---|---|---|---|---|---|---|---|
| 1 | S0.0 | S0 | CAL1 | 10/25/24 11:21 | | Niha | OK |
| 2 | S5.0 | S01 | CAL2 | 10/25/24 11:21 | | Niha | OK |
| 3 | S10.0 | S02 | CAL3 | 10/25/24 11:21 | | Niha | OK |
| 4 | S100.0 | S03 | CAL4 | 10/25/24 11:21 | | Niha | OK |
| 5 | S250.0 | S04 | CAL5 | 10/25/24 11:21 | | Niha | OK |
| 6 | S500.0 | S05 | CAL6 | 10/25/24 11:21 | | Niha | OK |
| 7 | ICV001 | ICV001 | ICV | 10/25/24 12:29 | | Niha | OK |
| 8 | ICB001 | ICB001 | ICB | 10/25/24 12:29 | | Niha | OK |
| 9 | CCV001 | CCV001 | CCV | 10/25/24 12:29 | | Niha | OK |
| 10 | CCB001 | CCB001 | CCB | 10/25/24 12:29 | | Niha | OK |
| 11 | PB164384BL | PBS384 | MB | 10/25/24 12:29 | | Niha | OK |
| 12 | P4498-01 | MBHDD1 | SAM | 10/25/24 12:29 | | Niha | OK |
| 13 | P4498-02 | MBHDD2 | SAM | 10/25/24 12:36 | | Niha | OK |
| 14 | P4498-03 | MBHDD8 | SAM | 10/25/24 12:36 | | Niha | OK |
| 15 | P4498-04 | MBHDD9 | SAM | 10/25/24 12:36 | | Niha | OK |
| 16 | P4498-05 | MBHDE0 | SAM | 10/25/24 12:36 | | Niha | OK |
| 17 | P4498-06 | MBHDE1 | SAM | 10/25/24 12:36 | | Niha | OK |
| 18 | P4498-07 | MBHDE2 | SAM | 10/25/24 12:36 | | Niha | OK |

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|---|---|
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| ICV Standard | WP110398 |
| CCV Standard | WP110399 |
| ICSA Standard | |
| CRI Standard | |
| LCS Standard | |
| Chk Standard | WP110103,WP109089,WP110434 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 19 | P4498-08 | MBHDE8 | SAM | 10/25/24 12:36 | | Niha | OK |
| 20 | P4498-10 | MBHDF0 | SAM | 10/25/24 12:36 | | Niha | OK |
| 21 | P4498-11 | MBHDF0D | DUP | 10/25/24 12:36 | | Niha | OK |
| 22 | P4498-12 | MBHDF0S | MS | 10/25/24 12:44 | | Niha | OK |
| 23 | P4498-13 | MBHDF1 | SAM | 10/25/24 12:44 | | Niha | OK |
| 24 | P4498-14 | MBHDF2 | SAM | 10/25/24 12:44 | | Niha | OK |
| 25 | P4498-15 | MBHCH8 | SAM | 10/25/24 12:44 | | Niha | OK |
| 26 | P4498-16 | MBHCH9 | SAM | 10/25/24 12:44 | | Niha | OK |
| 27 | P4498-17 | MBHCJ0 | SAM | 10/25/24 12:44 | | Niha | OK |
| 28 | P4498-18 | MBHCJ1 | SAM | 10/25/24 12:44 | | Niha | OK |
| 29 | P4498-19 | MBHCJ2 | SAM | 10/25/24 12:44 | | Niha | OK |
| 30 | P4498-20 | MBHCJ3 | SAM | 10/25/24 12:44 | | Niha | OK |
| 31 | P4498-21 | MBHCJ5 | SAM | 10/25/24 12:44 | | Niha | OK |
| 32 | P4498-22 | MBHCJ6 | SAM | 10/25/24 12:51 | | Niha | OK |
| 33 | CCV002 | CCV002 | CCV | 10/25/24 12:51 | | Niha | OK |
| 34 | CCB002 | CCB002 | CCB | 10/25/24 12:51 | | Niha | OK |
| 35 | PB164385BL | PBS385 | MB | 10/25/24 12:51 | | Niha | OK |
| 36 | P4499-01 | MBHCJ7 | SAM | 10/25/24 12:51 | | Niha | OK |
| 37 | P4499-02 | MBHCJ8 | SAM | 10/25/24 12:51 | | Niha | OK |
| 38 | P4499-03 | MBHCJ9 | SAM | 10/25/24 12:51 | | Niha | OK |

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| Supervise By | Iwona Zarych | Supervise On | 10/30/2024 1:28:01 PM |

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| CCV Standard | WP110399 |
| ICSA Standard | |
| CRI Standard | |
| LCS Standard | |
| Chk Standard | WP110103,WP109089,WP110434 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 39 | P4499-04 | MBHCK0 | SAM | 10/25/24 12:51 | | Niha | OK |
| 40 | P4499-05 | MBHCK1 | SAM | 10/25/24 12:51 | | Niha | OK |
| 41 | P4499-06 | MBHCK2 | SAM | 10/25/24 12:51 | | Niha | OK |
| 42 | P4499-07 | MBHCK8 | SAM | 10/25/24 12:52 | | Niha | OK |
| 43 | P4499-09 | MBHCL0 | SAM | 10/25/24 12:58 | | Niha | OK |
| 44 | P4499-10 | MBHCL1 | SAM | 10/25/24 12:58 | | Niha | OK |
| 45 | P4499-11 | MBHCL2 | SAM | 10/25/24 12:58 | | Niha | OK |
| 46 | P4499-12 | MBHCY0 | SAM | 10/25/24 12:58 | | Niha | OK |
| 47 | P4499-13 | MBHCL8 | SAM | 10/25/24 12:58 | | Niha | OK |
| 48 | P4499-14 | MBHCL9 | SAM | 10/25/24 12:58 | | Niha | OK |
| 49 | P4499-15 | MBHCM0 | SAM | 10/25/24 13:15 | | Niha | OK |
| 50 | P4499-16 | MBHCM1 | SAM | 10/25/24 13:15 | | Niha | OK |
| 51 | P4499-17 | MBHCM2 | SAM | 10/25/24 13:15 | | Niha | OK |
| 52 | P4499-18 | MBHCM8 | SAM | 10/25/24 13:15 | | Niha | OK |
| 53 | P4499-19 | MBHCM9 | SAM | 10/25/24 13:15 | | Niha | OK |
| 54 | P4499-20 | MBHCN0 | SAM | 10/25/24 13:15 | | Niha | OK |
| 55 | P4499-21 | MBHCN0D | DUP | 10/25/24 13:15 | | Niha | OK |
| 56 | P4499-22 | MBHCN0S | MS | 10/25/24 13:15 | | Niha | OK |
| 57 | P4499-08 | MBHCK9 | SAM | 10/25/24 13:15 | | Niha | OK |
| 58 | P4498-09 | MBHDE9 | SAM | 10/25/24 13:15 | | Niha | OK |

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| CCV Standard | WP110399 |
| ICSA Standard | |
| CRI Standard | |
| LCS Standard | |
| Chk Standard | WP110103,WP109089,WP110434 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 59 | CCV003 | CCV003 | CCV | 10/25/24 13:20 | | Niha | OK |
| 60 | CCB003 | CCB003 | CCB | 10/25/24 13:20 | | Niha | OK |