

FORM 1 - IN  
INORGANIC ANALYSIS DATA SHEET

MBHCY5

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011  
Lab Code: ACE Case No.: 51698 MA No. :                      SDG No.: MBHCY5  
Matrix: SOIL Lab Sample ID: P4497-01  
% Solids: 81.2 Date Received: 10/23/2024  
Analytical Method: CN  
Concentration Units ( $\mu\text{g/L}$ ,  $\text{mg/L}$ ,  $\text{mg/kg}$  dry weight,  $\mu\text{g}$ , or  $\mu\text{g/cm}^2$ ): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
57-12-5	Cyanide	0.41	J	10/29/2024	1114

NOTE: Hardness (total) is reported in  $\text{mg/L}$ Comments:  

---

---

---

FORM 1 - IN  
INORGANIC ANALYSIS DATA SHEET

MBHCZ5

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011  
Lab Code: ACE Case No.: 51698 MA No. :                      SDG No.: MBHCY5  
Matrix: SOIL Lab Sample ID: P4497-02  
% Solids: 87.1 Date Received: 10/23/2024  
Analytical Method: CN  
Concentration Units ( $\mu\text{g/L}$ ,  $\text{mg/L}$ ,  $\text{mg/kg}$  dry weight,  $\mu\text{g}$ , or  $\mu\text{g/cm}^2$ ):                      mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
57-12-5	Cyanide	0.78		10/29/2024	1114

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

Comments:  

---

---

---

FORM 1 - IN  
INORGANIC ANALYSIS DATA SHEET

MBHDA3

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011  
Lab Code: ACE Case No.: 51698 MA No. :                      SDG No.: MBHCY5  
Matrix: SOIL Lab Sample ID: P4497-03  
% Solids: 88.6 Date Received: 10/23/2024  
Analytical Method: CN  
Concentration Units ( $\mu\text{g/L}$ ,  $\text{mg/L}$ ,  $\text{mg/kg}$  dry weight,  $\mu\text{g}$ , or  $\mu\text{g/cm}^2$ ):                      mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
57-12-5	Cyanide	1.1		10/29/2024	1114

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

Comments:  

---

---

---

FORM 1 - IN  
INORGANIC ANALYSIS DATA SHEET

MBHDA4

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011  
Lab Code: ACE Case No.: 51698 MA No. :                      SDG No.: MBHCY5  
Matrix: SOIL Lab Sample ID: P4497-04  
% Solids: 83.2 Date Received: 10/23/2024  
Analytical Method: CN  
Concentration Units ( $\mu\text{g/L}$ ,  $\text{mg/L}$ ,  $\text{mg/kg}$  dry weight,  $\mu\text{g}$ , or  $\mu\text{g/cm}^2$ ):                      mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
57-12-5	Cyanide	1.8		10/29/2024	1114

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

Comments:  

---

---

---

FORM 1 - IN  
INORGANIC ANALYSIS DATA SHEET

MBHDA5

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011  
Lab Code: ACE Case No.: 51698 MA No. :                      SDG No.: MBHCY5  
Matrix: SOIL Lab Sample ID: P4497-05  
% Solids: 84.9 Date Received: 10/23/2024  
Analytical Method: CN  
Concentration Units ( $\mu\text{g/L}$ ,  $\text{mg/L}$ ,  $\text{mg/kg}$  dry weight,  $\mu\text{g}$ , or  $\mu\text{g/cm}^2$ ):                      mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
57-12-5	Cyanide	0.35	J	10/29/2024	1114

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

Comments:  

---

---

---

FORM 1 - IN  
INORGANIC ANALYSIS DATA SHEET

MBHDA6

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011  
Lab Code: ACE Case No.: 51698 MA No. :                      SDG No.: MBHCY5  
Matrix: SOIL Lab Sample ID: P4497-06  
% Solids: 84 Date Received: 10/23/2024  
Analytical Method: CN  
Concentration Units ( $\mu\text{g/L}$ ,  $\text{mg/L}$ ,  $\text{mg/kg}$  dry weight,  $\mu\text{g}$ , or  $\mu\text{g/cm}^2$ ): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
57-12-5	Cyanide	0.62		10/29/2024	1114

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

Comments:  

---

---

---

FORM 1 - IN  
INORGANIC ANALYSIS DATA SHEET

MBHDA7

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011  
Lab Code: ACE Case No.: 51698 MA No. :                      SDG No.: MBHCY5  
Matrix: SOIL Lab Sample ID: P4497-07  
% Solids: 81.5 Date Received: 10/23/2024  
Analytical Method: CN  
Concentration Units ( $\mu\text{g/L}$ ,  $\text{mg/L}$ ,  $\text{mg/kg}$  dry weight,  $\mu\text{g}$ , or  $\mu\text{g/cm}^2$ ):                      mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
57-12-5	Cyanide	0.54	J	10/29/2024	1121

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

Comments:  

---

---

---

FORM 1 - IN  
INORGANIC ANALYSIS DATA SHEET

MBHDB3

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011  
Lab Code: ACE Case No.: 51698 MA No. :                      SDG No.: MBHCY5  
Matrix: SOIL Lab Sample ID: P4497-08  
% Solids: 88.3 Date Received: 10/23/2024  
Analytical Method: CN  
Concentration Units ( $\mu\text{g/L}$ ,  $\text{mg/L}$ ,  $\text{mg/kg}$  dry weight,  $\mu\text{g}$ , or  $\mu\text{g/cm}^2$ ): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
57-12-5	Cyanide	0.52	J	10/29/2024	1121

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

Comments:  

---

---

---



FORM 1 - IN  
INORGANIC ANALYSIS DATA SHEET

MBHDB4

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011  
Lab Code: ACE Case No.: 51698 MA No. :                      SDG No.: MBHCY5  
Matrix: SOIL Lab Sample ID: P4497-09  
% Solids: 82.8 Date Received: 10/23/2024  
Analytical Method: CN  
Concentration Units ( $\mu\text{g/L}$ ,  $\text{mg/L}$ ,  $\text{mg/kg}$  dry weight,  $\mu\text{g}$ , or  $\mu\text{g/cm}^2$ ):                      mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
57-12-5	Cyanide	0.53	J	10/29/2024	1121

NOTE: Hardness (total) is reported in  $\text{mg/L}$ Comments:  

---

---

---

FORM 1 - IN  
INORGANIC ANALYSIS DATA SHEET

MBHDB5

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011  
Lab Code: ACE Case No.: 51698 MA No. :                      SDG No.: MBHCY5  
Matrix: SOIL Lab Sample ID: P4497-10  
% Solids: 86.4 Date Received: 10/23/2024  
Analytical Method: CN  
Concentration Units ( $\mu\text{g/L}$ ,  $\text{mg/L}$ ,  $\text{mg/kg}$  dry weight,  $\mu\text{g}$ , or  $\mu\text{g/cm}^2$ ):                      mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
57-12-5	Cyanide	0.58	U	10/29/2024	1121

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

Comments:  

---

---

---

FORM 1 - IN  
INORGANIC ANALYSIS DATA SHEET

MBHDB6

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011  
Lab Code: ACE Case No.: 51698 MA No. :                      SDG No.: MBHCY5  
Matrix: SOIL Lab Sample ID: P4497-11  
% Solids: 84.7 Date Received: 10/23/2024  
Analytical Method: CN  
Concentration Units ( $\mu\text{g/L}$ ,  $\text{mg/L}$ ,  $\text{mg/kg}$  dry weight,  $\mu\text{g}$ , or  $\mu\text{g/cm}^2$ ):                      mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
57-12-5	Cyanide	0.37	J	10/29/2024	1121

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

Comments:  

---

---

---

FORM 1 - IN  
INORGANIC ANALYSIS DATA SHEET

MBHDB7

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011  
Lab Code: ACE Case No.: 51698 MA No. :                      SDG No.: MBHCY5  
Matrix: SOIL Lab Sample ID: P4497-12  
% Solids: 83.7 Date Received: 10/23/2024  
Analytical Method: CN  
Concentration Units ( $\mu\text{g/L}$ ,  $\text{mg/L}$ ,  $\text{mg/kg}$  dry weight,  $\mu\text{g}$ , or  $\mu\text{g/cm}^2$ ):                      mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
57-12-5	Cyanide	0.44	J	10/29/2024	1121

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

Comments:  

---

---

---

FORM 1 - IN  
INORGANIC ANALYSIS DATA SHEET

MBHDB8

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011  
Lab Code: ACE Case No.: 51698 MA No. :                      SDG No.: MBHCY5  
Matrix: SOIL Lab Sample ID: P4497-13  
% Solids: 90 Date Received: 10/23/2024  
Analytical Method: CN  
Concentration Units ( $\mu\text{g/L}$ ,  $\text{mg/L}$ ,  $\text{mg/kg}$  dry weight,  $\mu\text{g}$ , or  $\mu\text{g/cm}^2$ ): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
57-12-5	Cyanide	0.64		10/29/2024	1121

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

Comments:  

---

---

---

FORM 1 - IN  
INORGANIC ANALYSIS DATA SHEET

MBHDB9

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011  
Lab Code: ACE Case No.: 51698 MA No. :                      SDG No.: MBHCY5  
Matrix: SOIL Lab Sample ID: P4497-14  
% Solids: 87.9 Date Received: 10/23/2024  
Analytical Method: CN  
Concentration Units ( $\mu\text{g/L}$ ,  $\text{mg/L}$ ,  $\text{mg/kg}$  dry weight,  $\mu\text{g}$ , or  $\mu\text{g/cm}^2$ ):                      mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
57-12-5	Cyanide	0.54	J	10/29/2024	1121

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

Comments:  

---

---

---

FORM 1 - IN  
INORGANIC ANALYSIS DATA SHEET

MBHDC0

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011  
Lab Code: ACE Case No.: 51698 MA No. :                      SDG No.: MBHCY5  
Matrix: SOIL Lab Sample ID: P4497-15  
% Solids: 85.1 Date Received: 10/23/2024  
Analytical Method: CN  
Concentration Units ( $\mu\text{g/L}$ ,  $\text{mg/L}$ ,  $\text{mg/kg}$  dry weight,  $\mu\text{g}$ , or  $\mu\text{g/cm}^2$ ):                      mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
57-12-5	Cyanide	0.57	U	10/29/2024	1121

NOTE: Hardness (total) is reported in  $\text{mg/L}$ Comments:  

---

---

---

FORM 1 - IN  
INORGANIC ANALYSIS DATA SHEET

MBHDC1

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011  
Lab Code: ACE Case No.: 51698 MA No. :                      SDG No.: MBHCY5  
Matrix: SOIL Lab Sample ID: P4497-16  
% Solids: 82 Date Received: 10/23/2024  
Analytical Method: CN  
Concentration Units ( $\mu\text{g/L}$ ,  $\text{mg/L}$ ,  $\text{mg/kg}$  dry weight,  $\mu\text{g}$ , or  $\mu\text{g/cm}^2$ ): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
57-12-5	Cyanide	0.72		10/29/2024	1121

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

Comments:  

---

---

---



FORM 1 - IN  
INORGANIC ANALYSIS DATA SHEET

MBHDC2

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011  
Lab Code: ACE Case No.: 51698 MA No. :                      SDG No.: MBHCY5  
Matrix: SOIL Lab Sample ID: P4497-17  
% Solids: 84.9 Date Received: 10/23/2024  
Analytical Method: CN  
Concentration Units ( $\mu\text{g/L}$ ,  $\text{mg/L}$ ,  $\text{mg/kg}$  dry weight,  $\mu\text{g}$ , or  $\mu\text{g/cm}^2$ ):                      mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
57-12-5	Cyanide	0.41	J	10/29/2024	1121

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

Comments:  

---

---

---

FORM 1 - IN  
INORGANIC ANALYSIS DATA SHEET

MBHDC8

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011  
Lab Code: ACE Case No.: 51698 MA No. :                      SDG No.: MBHCY5  
Matrix: SOIL Lab Sample ID: P4497-18  
% Solids: 92.4 Date Received: 10/23/2024  
Analytical Method: CN  
Concentration Units ( $\mu\text{g/L}$ ,  $\text{mg/L}$ ,  $\text{mg/kg}$  dry weight,  $\mu\text{g}$ , or  $\mu\text{g/cm}^2$ ):                      mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
57-12-5	Cyanide	0.56		10/29/2024	1129

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

Comments:  

---

---

---

FORM 1 - IN  
INORGANIC ANALYSIS DATA SHEET

MBHDC9

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011  
Lab Code: ACE Case No.: 51698 MA No. :                      SDG No.: MBHCY5  
Matrix: SOIL Lab Sample ID: P4497-19  
% Solids: 90.9 Date Received: 10/23/2024  
Analytical Method: CN  
Concentration Units ( $\mu\text{g/L}$ ,  $\text{mg/L}$ ,  $\text{mg/kg}$  dry weight,  $\mu\text{g}$ , or  $\mu\text{g/cm}^2$ ):                      mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
57-12-5	Cyanide	0.52	U	10/29/2024	1129

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

Comments:  

---

---

---

FORM 1 - IN  
INORGANIC ANALYSIS DATA SHEET

MBHDD0

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011  
Lab Code: ACE Case No.: 51698 MA No. :                      SDG No.: MBHCY5  
Matrix: SOIL Lab Sample ID: P4497-20  
% Solids: 84.4 Date Received: 10/23/2024  
Analytical Method: CN  
Concentration Units ( $\mu\text{g/L}$ ,  $\text{mg/L}$ ,  $\text{mg/kg}$  dry weight,  $\mu\text{g}$ , or  $\mu\text{g/cm}^2$ ):                      mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
57-12-5	Cyanide	0.65		10/29/2024	1129

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

Comments:  

---

---

---

LB133

Test results

Aquakem 7.2AQ1

Page: 1

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

Reviewed by : NF Instrument ID : Konelab

10/29/2024 12:22

Test: CNEPA-NEW

Sample Id	Result	Dil. 1 +	Response	Errors
ICV001 ICV001	95.229	0.0	0.087	
ICB001 ICB001	-0.366	0.0	0.001	
CCV001 CCV001	244.325	0.0	0.220	
CCB001 CCB001	-0.645	0.0	0.001	
PB164480BL PBS480	-0.932	0.0	0.001	
P4502-01 MBHCY1	-0.630	0.0	0.001	
P4502-02 MBHCY2	5.653	0.0	0.006	
P4502-03 MBHCY3	-0.012	0.0	0.001	
P4502-04 MBHCY4	0.541	0.0	0.002	
P4502-05 MBHCY8	1.939	0.0	0.003	
P4502-06 MBHCY9	15.243	0.0	0.015	
P4502-07 MBHCZ0	9.350	0.0	0.010	
P4502-08 MBHCZ1	2.989	0.0	0.004	
P4502-09 MBHCZ2	2.363	0.0	0.003	
P4502-10 MBHCZ3	10.561	0.0	0.011	
P4502-11 MBHCX4	4.262	0.0	0.005	
P4502-12 MBHCX7	1.863	0.0	0.003	
P4502-14 MBHCX9	-0.675	0.0	0.001	
P4502-16 MBHDO1	1.081	0.0	0.002	
P4502-17 MBHDO2	0.871	0.0	0.002	
P4502-18 MBHDO3	0.586	0.0	0.002	
P4502-19 MBHDO4	3.034	0.0	0.004	
P4502-20 MBHZC9	1.692	0.0	0.003	
P4502-21 MBHZC9D	1.784	0.0	0.003	
P4502-22 MBHZC9S	100.614	0.0	0.092	
CCV002 CCV002	236.191	0.0	0.213	
CCB002 CCB002	-0.298	0.0	0.001	
PB164481BL PBS481	-0.348	0.0	0.001	
P4497-01 MBHCY5	6.761	0.0	0.007	
P4497-02 MBHCZ5	14.035	0.0	0.014	
P4497-03 MBHDA3	20.008	0.0	0.019	
P4497-04 MBHDA4	29.343	0.0	0.028	
P4497-05 MBHDA5	6.149	0.0	0.007	
P4497-06 MBHDA6	10.539	0.0	0.011	
P4497-07 MBHDA7	9.054	0.0	0.009	
P4497-08 MBHDB3	9.312	0.0	0.010	
P4497-09 MBHDB4	9.064	0.0	0.009	
P4497-10 MBHDB5	-0.295	0.0	0.001	
P4497-11 MBHDB6	6.379	0.0	0.007	
P4497-12 MBHDB7	7.649	0.0	0.008	
P4497-13 MBHDB8	12.139	0.0	0.012	
P4497-14 MBHDB9	9.897	0.0	0.010	
P4497-15 MBHDC0	2.739	0.0	0.004	
P4497-16 MBHDC1	12.039	0.0	0.012	
P4497-17 MBHDC2	7.346	0.0	0.008	
P4497-18 MBHDC8	10.808	0.0	0.011	
P4497-19 MBHDC9	0.587	0.0	0.002	
P4497-20 MBHDD0	11.378	0.0	0.012	
P4497-21 MBHDD0D	11.547	0.0	0.012	
P4497-22 MBHDD0S	116.286	0.0	0.106	
CCV003 CCV003	239.232	0.0	0.216	
CCB003 CCB003	-0.254	0.0	0.001	
PB164484BL PBS484	-0.916	0.0	0.001	
P4496-04 MBHDO5	2.263	0.0	0.003	
P4496-05 MBHDO6	-0.561	0.0	0.001	

NF  
10-29-2024

NF  
10-29-2024

NF  
10-29-2024

Test results

Aquakem 7.2AQ1

Page: 2

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

Reviewed by : NF Instrument ID : Konelab

10/29/2024 12:22

Test: CNEPA-NEW

Sample Id	Result	Dil. 1 +	Response	Errors
P4496-06 MBHZC7	0.762	0.0	0.002	
P4496-07 MBHZC8	3.820	0.0	0.005	
P4496-08 MBHZC8D	4.448	0.0	0.005	
P4496-09 MBHZC8S	96.827	0.0	0.088	
PB164485BL PBW485	-0.127	0.0	0.001	
P4496-01 MBHCX5	-0.377	0.0	0.001	
P4496-02 MBHCY6	-0.285	0.0	0.001	
P4496-03 MBHCY7	-0.531	0.0	0.001	
P4502-13 MBHCX8	3.554	0.0	0.005	
P4502-15 MBHDO0	0.268	0.0	0.002	
CCV004 CCV004	254.230	0.0	0.229	
CCB004 CCB004	-0.302	0.0	0.001	

N	67
Mean	24.792
SD	60.5113
CV%	244.07

NF  
10.29.2024

Aquakem v. 7.2AQ1

Results from time period:

Tue Oct 29 09:41:03 2024

Tue Oct 29 12:12:09 2024

Sample Id	Sam/Ci	Test short nam	Test type	Result	Result unit	Result date and time
S0.0	A	CNEPA-NEW	P	-0.8064	µg/l	10/29/2024 9:41:03
S5.0	A	CNEPA-NEW	P	4.167	µg/l	10/29/2024 9:41:04
S10.0	A	CNEPA-NEW	P	9.0076	µg/l	10/29/2024 9:41:05
S100.0	A	CNEPA-NEW	P	100.006	µg/l	10/29/2024 9:41:06
S250.0	A	CNEPA-NEW	P	255.1974	µg/l	10/29/2024 9:41:07
S500.0	A	CNEPA-NEW	P	497.4283	µg/l	10/29/2024 9:41:08
ICV001 ICV001	S	CNEPA-NEW	P	95.229	µg/l	10/29/2024 10:51:27
ICB001 ICB001	S	CNEPA-NEW	P	-0.3661	µg/l	10/29/2024 10:51:30
CCV001 CCV001	S	CNEPA-NEW	P	244.3249	µg/l	10/29/2024 10:51:32
CCB001 CCB001	S	CNEPA-NEW	P	-0.6447	µg/l	10/29/2024 10:51:33
PB164480BL PBS480	S	CNEPA-NEW	P	-0.9321	µg/l	10/29/2024 10:51:36
P4502-01 MBHCY1	S	CNEPA-NEW	P	-0.6298	µg/l	10/29/2024 10:51:37
P4502-02 MBHCY2	S	CNEPA-NEW	P	5.6534	µg/l	10/29/2024 10:59:02
P4502-03 MBHCY3	S	CNEPA-NEW	P	-0.0116	µg/l	10/29/2024 10:59:03
P4502-04 MBHCY4	S	CNEPA-NEW	P	0.5406	µg/l	10/29/2024 10:59:04
P4502-05 MBHCY8	S	CNEPA-NEW	P	1.9385	µg/l	10/29/2024 10:59:05
P4502-06 MBHCY9	S	CNEPA-NEW	P	15.2425	µg/l	10/29/2024 10:59:06
P4502-07 MBHCZ0	S	CNEPA-NEW	P	9.3495	µg/l	10/29/2024 10:59:07
P4502-08 MBHCZ1	S	CNEPA-NEW	P	2.9893	µg/l	10/29/2024 10:59:08
P4502-09 MBHCZ2	S	CNEPA-NEW	P	2.3628	µg/l	10/29/2024 10:59:09
P4502-10 MBHCZ3	S	CNEPA-NEW	P	10.5609	µg/l	10/29/2024 10:59:10
P4502-11 MBHCX4	S	CNEPA-NEW	P	4.2619	µg/l	10/29/2024 10:59:11
P4502-12 MBHCX7	S	CNEPA-NEW	P	1.8634	µg/l	10/29/2024 10:59:12
P4502-14 MBHCX9	S	CNEPA-NEW	P	-0.6747	µg/l	10/29/2024 11:06:38
P4502-16 MBHDO1	S	CNEPA-NEW	P	1.0813	µg/l	10/29/2024 11:06:40
P4502-17 MBHDO2	S	CNEPA-NEW	P	0.8709	µg/l	10/29/2024 11:06:41
P4502-18 MBHDO3	S	CNEPA-NEW	P	0.5864	µg/l	10/29/2024 11:06:42
P4502-19 MBHDO4	S	CNEPA-NEW	P	3.0343	µg/l	10/29/2024 11:06:43
P4502-20 MBHZC9	S	CNEPA-NEW	P	1.6922	µg/l	10/29/2024 11:06:44
P4502-21 MBHZC9D	S	CNEPA-NEW	P	1.7839	µg/l	10/29/2024 11:06:45
P4502-22 MBHZC9S	S	CNEPA-NEW	P	100.6141	µg/l	10/29/2024 11:06:46
CCV002 CCV002	S	CNEPA-NEW	P	236.1915	µg/l	10/29/2024 11:14:14
CCB002 CCB002	S	CNEPA-NEW	P	-0.2983	µg/l	10/29/2024 11:14:15
PB164481BL PBS481	S	CNEPA-NEW	P	-0.3478	µg/l	10/29/2024 11:14:16
P4497-01 MBHCY5	S	CNEPA-NEW	P	6.761	µg/l	10/29/2024 11:14:17
P4497-02 MBHCZ5	S	CNEPA-NEW	P	14.0346	µg/l	10/29/2024 11:14:18
P4497-03 MBHDA3	S	CNEPA-NEW	P	20.0076	µg/l	10/29/2024 11:14:19
P4497-04 MBHDA4	S	CNEPA-NEW	P	29.3434	µg/l	10/29/2024 11:14:20
P4497-05 MBHDA5	S	CNEPA-NEW	P	6.1489	µg/l	10/29/2024 11:14:21

P4497-06 MBHDA6	S	CNEPA-NEW	P	10.5386 µg/l	10/29/2024 11:14:22
P4497-07 MBHDA7	S	CNEPA-NEW	P	9.0545 µg/l	10/29/2024 11:21:47
P4497-08 MBHDB3	S	CNEPA-NEW	P	9.3123 µg/l	10/29/2024 11:21:48
P4497-09 MBHDB4	S	CNEPA-NEW	P	9.0639 µg/l	10/29/2024 11:21:49
P4497-10 MBHDB5	S	CNEPA-NEW	P	-0.2949 µg/l	10/29/2024 11:21:50
P4497-11 MBHDB6	S	CNEPA-NEW	P	6.3791 µg/l	10/29/2024 11:21:51
P4497-12 MBHDB7	S	CNEPA-NEW	P	7.6487 µg/l	10/29/2024 11:21:52
P4497-13 MBHDB8	S	CNEPA-NEW	P	12.1395 µg/l	10/29/2024 11:21:53
P4497-14 MBHDB9	S	CNEPA-NEW	P	9.8973 µg/l	10/29/2024 11:21:54
P4497-15 MBHDC0	S	CNEPA-NEW	P	2.7391 µg/l	10/29/2024 11:21:55
P4497-16 MBHDC1	S	CNEPA-NEW	P	12.0391 µg/l	10/29/2024 11:21:56
P4497-17 MBHDC2	S	CNEPA-NEW	P	7.3458 µg/l	10/29/2024 11:21:57
P4497-18 MBHDC8	S	CNEPA-NEW	P	10.8076 µg/l	10/29/2024 11:29:22
P4497-19 MBHDC9	S	CNEPA-NEW	P	0.5872 µg/l	10/29/2024 11:29:23
P4497-20 MBHDD0	S	CNEPA-NEW	P	11.3776 µg/l	10/29/2024 11:29:24
P4497-21 MBHDD0D	S	CNEPA-NEW	P	11.5474 µg/l	10/29/2024 11:29:25
P4497-22 MBHDD0S	S	CNEPA-NEW	P	116.286 µg/l	10/29/2024 11:29:26
CCV003 CCV003	S	CNEPA-NEW	P	239.2324 µg/l	10/29/2024 11:29:30
CCB003 CCB003	S	CNEPA-NEW	P	-0.2539 µg/l	10/29/2024 11:29:31
PB164484BL PBS484	S	CNEPA-NEW	P	-0.9162 µg/l	10/29/2024 11:29:32
P4496-04 MBHDO5	S	CNEPA-NEW	P	2.2634 µg/l	10/29/2024 11:36:54
P4496-05 MBHDO6	S	CNEPA-NEW	P	-0.561 µg/l	10/29/2024 11:36:55
P4496-06 MBHZC7	S	CNEPA-NEW	P	0.7624 µg/l	10/29/2024 11:36:56
P4496-07 MBHZC8	S	CNEPA-NEW	P	3.8196 µg/l	10/29/2024 11:36:57
P4496-08 MBHZC8D	S	CNEPA-NEW	P	4.4485 µg/l	10/29/2024 11:36:58
P4496-09 MBHZC8S	S	CNEPA-NEW	P	96.827 µg/l	10/29/2024 11:37:00
PB164485BL PBW485	S	CNEPA-NEW	P	-0.127 µg/l	10/29/2024 11:37:03
P4496-01 MBHCX5	S	CNEPA-NEW	P	-0.3772 µg/l	10/29/2024 11:37:04
P4496-02 MBHCY6	S	CNEPA-NEW	P	-0.2848 µg/l	10/29/2024 11:42:37
P4496-03 MBHCY7	S	CNEPA-NEW	P	-0.5314 µg/l	10/29/2024 11:42:38
P4502-13 MBHCX8	S	CNEPA-NEW	P	3.5539 µg/l	10/29/2024 12:08:47
P4502-15 MBHDO0	S	CNEPA-NEW	P	0.2681 µg/l	10/29/2024 12:08:48
CCV004 CCV004	S	CNEPA-NEW	P	254.2298 µg/l	10/29/2024 12:12:08
CCB004 CCB004	S	CNEPA-NEW	P	-0.3023 µg/l	10/29/2024 12:12:09



Calibration results

Aquakem 7.2AQ1

Page: 1

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

Reviewed by : NF Instrument ID : Konelab

10/29/2024 9:41

Test CNEPA-NEW

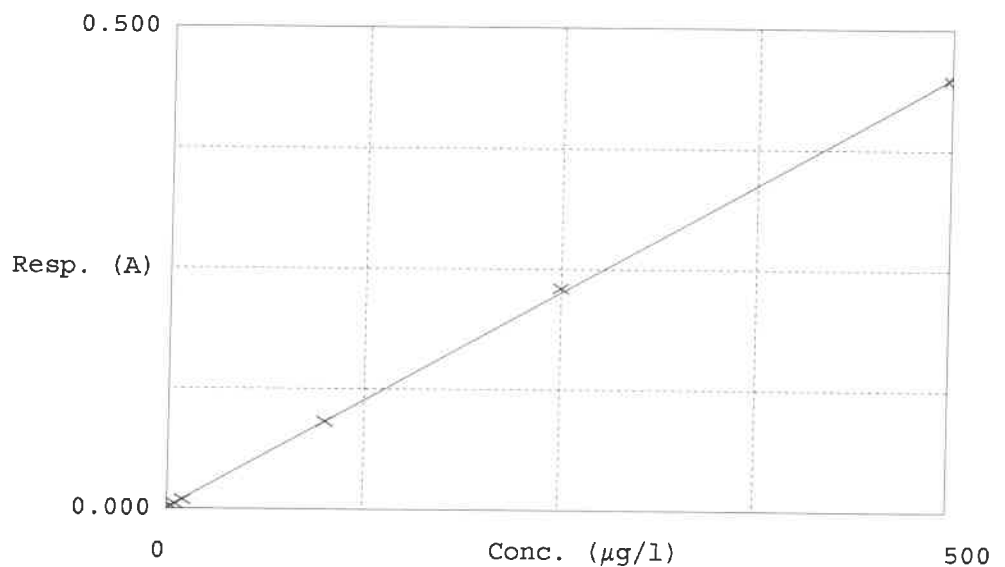
Accepted 10/29/2024 9:41

~~Factor~~ Slope ~~1116~~ 0.000896  
~~Bias~~ Intercept 0.001

NF  
10.30.2024

Coeff. of det. 0.999818

Errors



	Calibrator	Response	Calc. con.	Conc.	Re Errors
1	0.0PPBCN <u>50.0</u>	0.001	-0.8064	0.0000	
2	5.0PPBCN <u>55.0</u>	0.005	4.1670	5.0000	-16.7
3	10PPBCN <u>510.0</u>	0.009	9.0076	10.0000	-9.9
4	100PPBCN <u>5100.0</u>	0.091	100.0060	100.0000	0.0
5	250PPBCN <u>5250.0</u>	0.230	255.1974	250.0000	2.1
6	500PPBCN <u>5500.0</u>	0.447	497.4283	500.0000	-0.5

NF  
10.29.2024

## Prep Standard - Chemical Standard Summary

**Order ID :** P4497

**Test :** Cyanide

**Prepbatch ID :** PB164481,

**Sequence ID/Qc Batch ID:** LB133191,

**Standard ID :**

WP108640,WP108688,WP109089,WP110035,WP110103,WP110390,WP110391,WP110457,WP110458,WP110459,W  
P110460,WP110461,WP110462,WP110463,WP110464,WP110465,WP110474,

**Chemical ID :**

E3657,M5673,M5951,W2668,W2882,W3001,W3011,W3019,W3112,W3113,W3139,W3142,



<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
11	Sodium hydroxide absorbing solution 0.25 N	<a href="#">WP108640</a>	07/05/2024	01/05/2025	Rubina Mughal	WETCHEM_S CALE_4 (WC SC-4)	None	Iwona Zarych  07/08/2024
<b><u>FROM</u></b> 21.00000L of W3112 + 210.00000gram of E3657 = Final Quantity: 21.000 L								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1581	Sodium hydroxide solution, 1.25N	<a href="#">WP108688</a>	07/11/2024	01/11/2025	Niha Farheen Shaik	WETCHEM_S CALE_5 (WC SC-5)	None	Iwona Zarych  07/11/2024
<b><u>FROM</u></b> 50.00000gram of W3113 + 950.00000ml 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>
2816	CN-EPA Pyridine-Burbituric Acid solution	<a href="#">WP109089</a>	08/07/2024	12/27/2024	Rubina Mughal	WETCHEM_SCALE_5 (WC SC-5)	None	Iwona Zarych 08/07/2024
<b><u>FROM</u></b> 15.00000gram of W2882 + 15.00000ml of M5951 + 75.00000ml of W3019 + 895.00000ml 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>
3850	Cyanide MS-MSD spiking solution, 5PPM	<a href="#">WP110035</a>	10/03/2024	11/30/2024	Rubina Mughal	None	WETCHEM_FIPETTE_3 (WC)	Iwona Zarych 10/04/2024
<b><u>FROM</u></b> 1.00000ml of W3142 + 199.00000ml of WP108640 = Final Quantity: 200.000 ml								



<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
539	CN BUFFER	<a href="#">WP110103</a>	10/08/2024	04/08/2025	Rubina Mughal	WETCHEM_SCALE_5 (WC SC-5)	None	Iwona Zarych 10/08/2024
<b><u>FROM</u></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>
3214	Magnesium Chloride For Cyanide 2.5M(51%W/V)	<a href="#">WP110390</a>	10/24/2024	04/24/2025	Niha Farheen Shaik	WETCHEM_S CALE_5 (WC SC-5)	None	Iwona Zarych  10/24/2024
<b><u>FROM</u></b> 500.00000ml of W3112 + 510.00000gram of W3001 = Final Quantity: 1000.000 ml								

## Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1714	Sulfuric Acid, 50% (v/v)	<a href="#">WP110391</a>	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

<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>
1585	Cyanide Intermediate standard solution, 10PPM	<a href="#">WP110457</a>	10/28/2024	10/29/2024	Niha Farheen Shaik	None	None	Iwona Zarych
								10/30/2024

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

## Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1586	Cyanide Cal Std, 500 PPB	<a href="#">WP110458</a>	10/28/2024	10/29/2024	Niha Farheen Shaik	None	None	Iwona Zarych
								10/30/2024

**FROM** 5.00000ml of WP110457 + 95.00000ml of WP108640 = Final Quantity: 0.100 L

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1587	Cyanide Cal Std, 250 PPB	<a href="#">WP110459</a>	10/28/2024	10/29/2024	Niha Farheen Shaik	None	None	Iwona Zarych
								10/30/2024

**FROM** 2.50000ml of WP110457 + 97.50000ml of WP108640 = Final Quantity: 0.100 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>
1588	Cyanide Cal Std, 100 PPB	<a href="#">WP110460</a>	10/28/2024	10/29/2024	Niha Farheen Shaik	None	None	Iwona Zarych
								10/30/2024

**FROM** 1.00000ml of WP110457 + 99.00000ml of WP108640 = Final Quantity: 0.100 L

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1589	Cyanide Cal Std, 10 PPB	<a href="#">WP110461</a>	10/28/2024	10/29/2024	Niha Farheen Shaik	None	None	Iwona Zarych
								10/30/2024

**FROM** 4.00000ml of WP110459 + 96.00000ml of WP108640 = Final Quantity: 0.100 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>
1590	Cyanide Cal Std, 5 PPB	<a href="#">WP110462</a>	10/28/2024	10/29/2024	Niha Farheen Shaik	None	None	Iwona Zarych
								10/30/2024

**FROM** 2.00000ml of WP110459 + 98.00000ml of WP108640 = Final Quantity: 0.100 L

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1591	Cyanide blank std, 0 PPB	<a href="#">WP110463</a>	10/28/2024	10/29/2024	Niha Farheen Shaik	None	None	Iwona Zarych
								10/30/2024

**FROM** 100.00000ml of WP108640 = Final Quantity: 0.100 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>
1592	Cyanide CCV Std, 250 PPB	<a href="#">WP110464</a>	10/28/2024	10/29/2024	Niha Farheen Shaik	None	None	Iwona Zarych
								10/30/2024

**FROM** 2.50000ml of WP110457 + 97.50000ml of WP108640 = Final Quantity: 0.100 L

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1763	Cyanide ICV Std	<a href="#">WP110465</a>	10/28/2024	10/29/2024	Niha Farheen Shaik	None	WETCHEM_FIPETTE_3	Iwona Zarych
							(WC)	10/30/2024

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



<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1582	Chloramine T solution, 0.014M	<a href="#">WP110474</a>	10/29/2024	10/30/2024	Niha Farheen Shaik	WETCHEM_SCALE_5 (WCS-5)	None	Iwona Zarych 10/30/2024
<u>FROM</u>	0.08000gram of W3139 + 20.00000ml of W3112 = Final Quantity: 20.000 ml							

## CHEMICAL RECEIPT LOG BOOK

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

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L)	22G2862015	12/27/2024	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, CRYST, ACS, 2.5 KG	0000225799	12/03/2025	04/05/2021 / Alexander	02/10/2020 / apatel	W2668

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

## 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 / lwona	02/20/2020 / lwona	W3011

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

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

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
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.	RC2543-4 / CYANIDE STD 1000PPM 4OZ	1405J81	11/30/2024	09/25/2024 / lwona	09/25/2024 / lwona	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

<b>Catalogue Number</b>	01237
<b>Product</b>	<b>Magnesium chloride hexahydrate</b>
<b>Lot Number</b>	002251-03319 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>	Colorless crystals, very deliquescent
<b>Heavy Metals</b>	< 5 ppm
<b>Anion</b>	Nitrate : < 0.001% Phosphate : < 5 ppm Sulfate : < 0.002%
<b>Cation</b>	Ammonium : < 0.002% Barium : < 0.005% Calcium : 0.0006% Iron : < 5 ppm Manganese : 1.8 ppm Potassium : 0.0006% Sodium : 0.0008% Strontium : 0.0015%
<b>Insoluble material</b>	0.0025%
<b>Assay by titration</b>	100.29%
<b>Grade</b>	ACS reagent
<b>Storage</b>	Store at RT
<b>Country of Origin</b>	India

## ***Certificate of Analysis***

**Catalog Number: 01237**

**Lot Number: 002251-03319**

---

**Remarks**

See material safety data sheet for additional information

For laboratory use only

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



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

W3019  
Rec 4/3/23

3050 Spruce Street, Saint Louis, MO 63103, USA

Website: [www.sigmaaldrich.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.







# Certificate of Analysis

## Sodium Hydroxide (Pellets)

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

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

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

Storage: Room Temperature

Pellets

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

Internal ID #: 710

### Signature

We certify that this batch conforms to the specifications listed.

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

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

### Additional Information

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

Product meets analytical specifications of the grades listed.





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)  $K_2Cr_2O_7$  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 <sup>-</sup>	99

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

 **avantor**™



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

## Certificate of Analysis

Test	Specification	Result
ACS – Assay (H <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



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

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

For Laboratory, Research, or Manufacturing Use

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

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

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



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 <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

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





# Certificate of Analysis

1.00132.0000 Barbituric acid for analysis EMSURE®  
Batch N020065932

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

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

Ioannis Chartomatsidis  
Responsible laboratory manager quality control

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

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

(sodium dihydrogen phosphate, monohydrate)



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

## Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

Test	Specification	Result
Assay ( $\text{NaH}_2\text{PO}_4 \cdot \text{H}_2\text{O}$ )	98.0 – 102.0 %	99.5
pH of 5% Solution at 25°C	4.1 – 4.5	4.3
Insoluble Matter	$\leq 0.01$ %	$< 0.01$
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  
Molecular Weight: 40  
CAS #: 1310-73-2  
Appearance:

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

Storage: Room Temperature

Pellets

Spec Set: 0583ACS

Internal ID #: 710

### Signature

We certify that this batch conforms to the specifications listed.

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.

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](https://thermofisher.com/chemicals)

**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.

# Certificate of Analysis

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

**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 <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
2543-4	120 mL amber poly	6 months

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



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

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

SOP ID : MSFAM01.1-Cyanide-2

SDG No : MBHCY5

Matrix : SOLID

Pipette ID : WC

Balance ID : WC SC-4

Hood ID : HOOD#1

Block ID : MC-1, MC-2

Weigh By : JP

Start Digest Date: 10/28/2024 Time : 08:00 Temp : 123 °C

End Digest Date: 10/28/2024 Time : 09:30 Temp : 127 °C

II batch 10/28/2024 12:00 123  
10/28/2024 13:30 127  
III batch 10/28/2024 14:00 123  
10/28/2024 15:30 126

Digestion tube ID : M5595

Block Thermometer ID : WC CYANIDE

Filter paper ID : N/A

Prep Technician Signature:

pH Meter ID : N/A

Supervisor Signature:

Standard 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
N/A	N/A	N/A

LAB SAMPLE ID	CLIENT SAMPLE ID	Wt(g)/Vol(ml)	Comment
S0	S0	50ML	WP110463 I batch
S5.0	S5.0	50ML	WP110462 "
S10.0	S10.0	50ML	WP110461 "
S100.0	S100.0	50ML	WP110460 "
S250.0	S250.0	50ML	WP110459 "
S500.0	S500.0	50ML	WP110458 "
ICV	ICV	50ML	WP110465 "
ICB	ICB	50ML	WP108640 "
CCV	CCV	50ML	WP110464 "
CCB	CCB	50ML	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-DISTILLATION\_SOIL; I-ST BATCH MC-2 START TEMP:123 C; MC-2 END TEMP: 126 C; II-ND BATCH MC-2 START TEMP:123 C; MC-2 END TEMP: 127 C; Block Therm.ID: WC-CYANIDE-2

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
10-28-2024, 15:45	JP (WC)	NF(WC)
	Preparation Group	Analysis Group



Lab Sample ID	Client Sample ID	Initial Weight (g)	Final Vol (ml)	pH	Sulfide	Oxidizing	Nitrate/Nitrite	Comment	Prep Pos
P4497-01	MBHCY5	1.02	50	N/A	N/A	N/A	N/A	N/A <i>II batch</i>	N/A
P4497-02	MBHCZ5	1.04	50	N/A	N/A	N/A	N/A	N/A "	N/A
P4497-03	MBHDA3	1.02	50	N/A	N/A	N/A	N/A	N/A "	N/A
P4497-04	MBHDA4	1.01	50	N/A	N/A	N/A	N/A	N/A "	N/A
P4497-05	MBHDA5	1.05	50	N/A	N/A	N/A	N/A	N/A "	N/A
P4497-06	MBHDA6	1.01	50	N/A	N/A	N/A	N/A	N/A "	N/A
P4497-07	MBHDA7	1.03	50	N/A	N/A	N/A	N/A	N/A "	N/A
P4497-08	MBHDB3	1.02	50	N/A	N/A	N/A	N/A	N/A "	N/A
P4497-09	MBHDB4	1.04	50	N/A	N/A	N/A	N/A	N/A "	N/A
P4497-10	MBHDB5	1.00	50	N/A	N/A	N/A	N/A	N/A "	N/A
P4497-11	MBHDB6	1.02	50	N/A	N/A	N/A	N/A	N/A "	N/A
P4497-12	MBHDB7	1.05	50	N/A	N/A	N/A	N/A	N/A "	N/A
P4497-13	MBHDB8	1.06	50	N/A	N/A	N/A	N/A	N/A "	N/A
P4497-14	MBHDB9	1.04	50	N/A	N/A	N/A	N/A	N/A "	N/A
P4497-15	MBHDC0	1.03	50	N/A	N/A	N/A	N/A	N/A "	N/A
P4497-16	MBHDC1	1.02	50	N/A	N/A	N/A	N/A	N/A "	N/A
P4497-17	MBHDC2	1.05	50	N/A	N/A	N/A	N/A	N/A "	N/A
P4497-18	MBHDC8	1.04	50	N/A	N/A	N/A	N/A	N/A <i>III batch</i>	N/A
P4497-19	MBHDC9	1.06	50	N/A	N/A	N/A	N/A	N/A "	N/A
P4497-20	MBHDD0	1.04	50	N/A	N/A	N/A	N/A	N/A "	N/A
P4497-21	MBHDD0D	1.05	50	N/A	N/A	N/A	N/A	N/A "	N/A
P4497-22	MBHDD0S	1.04	50	N/A	N/A	N/A	N/A	N/A "	N/A
PB164481BL	PBS481	1.00	50	N/A	N/A	N/A	N/A	N/A <i>II batch</i>	N/A

**Instrument ID:** KONELAB

**Daily Analysis Runlog For Sequence/QC Batch ID # LB133191**

Review By	Niha Farheen Shaik	Review On	10/30/2024 9:35:43 AM
Supervise By	Iwona Zarych	Supervise On	10/30/2024 1:27:39 PM
<b>STD. NAME</b>	<b>STD REF.#</b>		
ICAL Standard	WP110463,WP110462,WP110461,WP110460,WP110459,WP110458		
ICV Standard	WP110465		
CCV Standard	WP110464		
ICSA Standard			
CRI Standard			
LCS Standard			
Chk Standard	WP110103,WP109089,WP110474		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0.0	S0	CAL1	10/29/24 09:41		Niha	OK
2	S5.0	S01	CAL2	10/29/24 09:41		Niha	OK
3	S10.0	S02	CAL3	10/29/24 09:41		Niha	OK
4	S100.0	S03	CAL4	10/29/24 09:41		Niha	OK
5	S250.0	S04	CAL5	10/29/24 09:41		Niha	OK
6	S500.0	S05	CAL6	10/29/24 09:41		Niha	OK
7	ICV001	ICV001	ICV	10/29/24 10:51		Niha	OK
8	ICB001	ICB001	ICB	10/29/24 10:51		Niha	OK
9	CCV001	CCV001	CCV	10/29/24 10:51		Niha	OK
10	CCB001	CCB001	CCB	10/29/24 10:51		Niha	OK
11	PB164480BL	PBS480	MB	10/29/24 10:51		Niha	OK
12	P4502-01	MBHCY1	SAM	10/29/24 10:51		Niha	OK
13	P4502-02	MBHCY2	SAM	10/29/24 10:59		Niha	OK
14	P4502-03	MBHCY3	SAM	10/29/24 10:59		Niha	OK
15	P4502-04	MBHCY4	SAM	10/29/24 10:59		Niha	OK
16	P4502-05	MBHCY8	SAM	10/29/24 10:59		Niha	OK
17	P4502-06	MBHCY9	SAM	10/29/24 10:59		Niha	OK
18	P4502-07	MBHCZ0	SAM	10/29/24 10:59		Niha	OK

Instrument ID: KONELAB

**Daily Analysis Runlog For Sequence/QC Batch ID # LB133191**

Review By	Niha Farheen Shaik	Review On	10/30/2024 9:35:43 AM
Supervise By	Iwona Zarych	Supervise On	10/30/2024 1:27:39 PM
<b>STD. NAME</b>	<b>STD REF.#</b>		
ICAL Standard	WP110463,WP110462,WP110461,WP110460,WP110459,WP110458		
ICV Standard	WP110465		
CCV Standard	WP110464		
ICSA Standard			
CRI Standard			
LCS Standard			
Chk Standard	WP110103,WP109089,WP110474		

19	P4502-08	MBHCZ1	SAM	10/29/24 10:59		Niha	OK
20	P4502-09	MBHCZ2	SAM	10/29/24 10:59		Niha	OK
21	P4502-10	MBHCZ3	SAM	10/29/24 10:59		Niha	OK
22	P4502-11	MBHCX4	SAM	10/29/24 10:59		Niha	OK
23	P4502-12	MBHCX7	SAM	10/29/24 10:59		Niha	OK
24	P4502-14	MBHCX9	SAM	10/29/24 11:06		Niha	OK
25	P4502-16	MBHDO1	SAM	10/29/24 11:06		Niha	OK
26	P4502-17	MBHDO2	SAM	10/29/24 11:06		Niha	OK
27	P4502-18	MBHDO3	SAM	10/29/24 11:06		Niha	OK
28	P4502-19	MBHDO4	SAM	10/29/24 11:06		Niha	OK
29	P4502-20	MBHZC9	SAM	10/29/24 11:06		Niha	OK
30	P4502-21	MBHZC9D	DUP	10/29/24 11:06		Niha	OK
31	P4502-22	MBHZC9S	MS	10/29/24 11:06		Niha	OK
32	CCV002	CCV002	CCV	10/29/24 11:14		Niha	OK
33	CCB002	CCB002	CCB	10/29/24 11:14		Niha	OK
34	PB164481BL	PBS481	MB	10/29/24 11:14		Niha	OK
35	P4497-01	MBHCY5	SAM	10/29/24 11:14		Niha	OK
36	P4497-02	MBHCZ5	SAM	10/29/24 11:14		Niha	OK
37	P4497-03	MBHDA3	SAM	10/29/24 11:14		Niha	OK
38	P4497-04	MBHDA4	SAM	10/29/24 11:14		Niha	OK

Instrument ID: KONELAB

**Daily Analysis Runlog For Sequence/QC Batch ID # LB133191**

Review By	Niha Farheen Shaik	Review On	10/30/2024 9:35:43 AM
Supervise By	Iwona Zarych	Supervise On	10/30/2024 1:27:39 PM
<b>STD. NAME</b>	<b>STD REF.#</b>		
ICAL Standard	WP110463,WP110462,WP110461,WP110460,WP110459,WP110458		
ICV Standard	WP110465		
CCV Standard	WP110464		
ICSA Standard			
CRI Standard			
LCS Standard			
Chk Standard	WP110103,WP109089,WP110474		

39	P4497-05	MBHDA5	SAM	10/29/24 11:14		Niha	OK
40	P4497-06	MBHDA6	SAM	10/29/24 11:14		Niha	OK
41	P4497-07	MBHDA7	SAM	10/29/24 11:21		Niha	OK
42	P4497-08	MBHDB3	SAM	10/29/24 11:21		Niha	OK
43	P4497-09	MBHDB4	SAM	10/29/24 11:21		Niha	OK
44	P4497-10	MBHDB5	SAM	10/29/24 11:21		Niha	OK
45	P4497-11	MBHDB6	SAM	10/29/24 11:21		Niha	OK
46	P4497-12	MBHDB7	SAM	10/29/24 11:21		Niha	OK
47	P4497-13	MBHDB8	SAM	10/29/24 11:21		Niha	OK
48	P4497-14	MBHDB9	SAM	10/29/24 11:21		Niha	OK
49	P4497-15	MBHDC0	SAM	10/29/24 11:21		Niha	OK
50	P4497-16	MBHDC1	SAM	10/29/24 11:21		Niha	OK
51	P4497-17	MBHDC2	SAM	10/29/24 11:21		Niha	OK
52	P4497-18	MBHDC8	SAM	10/29/24 11:29		Niha	OK
53	P4497-19	MBHDC9	SAM	10/29/24 11:29		Niha	OK
54	P4497-20	MBHDD0	SAM	10/29/24 11:29		Niha	OK
55	P4497-21	MBHDD0D	DUP	10/29/24 11:29		Niha	OK
56	P4497-22	MBHDD0S	MS	10/29/24 11:29		Niha	OK
57	CCV003	CCV003	CCV	10/29/24 11:29		Niha	OK
58	CCB003	CCB003	CCB	10/29/24 11:29		Niha	OK

Instrument ID: KONELAB

**Daily Analysis Runlog For Sequence/QC Batch ID # LB133191**

Review By	Niha Farheen Shaik	Review On	10/30/2024 9:35:43 AM
Supervise By	Iwona Zarych	Supervise On	10/30/2024 1:27:39 PM

STD. NAME	STD REF.#
ICAL Standard	WP110463,WP110462,WP110461,WP110460,WP110459,WP110458
ICV Standard	WP110465
CCV Standard	WP110464
ICSA Standard	
CRI Standard	
LCS Standard	
Chk Standard	WP110103,WP109089,WP110474

59	PB164484BL	PBS484	MB	10/29/24 11:29		Niha	OK
60	P4496-04	MBHDO5	SAM	10/29/24 11:36		Niha	OK
61	P4496-05	MBHDO6	SAM	10/29/24 11:36		Niha	OK
62	P4496-06	MBHDC7	SAM	10/29/24 11:36		Niha	OK
63	P4496-07	MBHDC8	SAM	10/29/24 11:36		Niha	OK
64	P4496-08	MBHDC8D	DUP	10/29/24 11:36		Niha	OK
65	P4496-09	MBHDC8S	MS	10/29/24 11:37		Niha	OK
66	PB164485BL	PBW485	MB	10/29/24 11:37		Niha	OK
67	P4496-01	MBHCX5	SAM	10/29/24 11:37		Niha	OK
68	P4496-02	MBHCY6	SAM	10/29/24 11:42		Niha	OK
69	P4496-03	MBHCY7	SAM	10/29/24 11:42		Niha	OK
70	P4502-13	MBHCX8	SAM	10/29/24 12:08		Niha	OK
71	P4502-15	MBHDO0	SAM	10/29/24 12:08		Niha	OK
72	CCV004	CCV004	CCV	10/29/24 12:12		Niha	OK
73	CCB004	CCB004	CCB	10/29/24 12:12		Niha	OK