EPA SAMPLE NO.

ME2904

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

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

Lab Code: ACE Case No.: 51847 MA No. : SDG No.: ME2904

Matrix: SOIL Lab Sample ID: P5335-01

% Solids: 85.8 Date Received: 12/18/2024

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	12/23/2024	1534

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

Comments:

EPA SAMPLE NO.

ME2905

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

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

Lab Code: ACE Case No.: 51847 MA No. : SDG No.: ME2904

Matrix: SOIL Lab Sample ID: P5335-02

% Solids: 84.7 Date Received: 12/18/2024

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	0.27	J	12/23/2024	1539

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

Comments:

EPA SAMPLE NO.

ME2906

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

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

Lab Code: ACE Case No.: 51847 MA No. : SDG No.: ME2904

Matrix: SOIL Lab Sample ID: P5335-03

% Solids: 74.7 Date Received: 12/18/2024

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	17		12/23/2024	1539

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

Comments:

EPA SAMPLE NO.

ME2907

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

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

Lab Code: ACE Case No.: 51847 MA No. : SDG No.: ME2904

Matrix: SOIL Lab Sample ID: P5335-04

% Solids: 77 Date Received: 12/18/2024

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	1.2		12/23/2024	1539

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

Comments:

EPA SAMPLE NO.

ME2908

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

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

Lab Code: ACE Case No.: 51847 MA No. : SDG No.: ME2904

Matrix: SOIL Lab Sample ID: P5335-05

% Solids: 80.4 Date Received: 12/18/2024

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	12/23/2024	1539

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

Comments:

EPA SAMPLE NO.

ME2909

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

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

Lab Code: ACE Case No.: 51847 MA No. : SDG No.: ME2904

Matrix: SOIL Lab Sample ID: P5335-06

% Solids: 70.1 Date Received: 12/18/2024

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	0.63	J	12/23/2024	1539

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

Comments:

EPA SAMPLE NO.

ME2910

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

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

Lab Code: ACE Case No.: 51847 MA No. : SDG No.: ME2904

Matrix: SOIL Lab Sample ID: P5335-07

% Solids: 87.1 Date Received: 12/18/2024

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	12/23/2024	1539

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

Comments:

EPA SAMPLE NO.

ME2911

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

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

Lab Code: ACE Case No.: 51847 MA No. : SDG No.: ME2904

Matrix: SOIL Lab Sample ID: P5335-08

% Solids: 80 Date Received: 12/18/2024

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	12/23/2024	1545

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

Comments:

EPA SAMPLE NO.

ME2912

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

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

Lab Code: ACE Case No.: 51847 MA No. : SDG No.: ME2904

Matrix: SOIL Lab Sample ID: P5335-09

% Solids: 76.2 Date Received: 12/18/2024

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	9.9		12/23/2024	1545

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

Comments:

EPA SAMPLE NO.

ME2913

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

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

Lab Code: ACE Case No.: 51847 MA No. : SDG No.: ME2904

Matrix: SOIL Lab Sample ID: P5335-10

% Solids: 80.9 Date Received: 12/19/2024

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	3.2		12/23/2024	1545

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

Comments:

EPA SAMPLE NO.

ME2914

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

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

Lab Code: ACE Case No.: 51847 MA No. : SDG No.: ME2904

Matrix: SOIL Lab Sample ID: P5335-11

% Solids: 77.8 Date Received: 12/19/2024

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	14		12/23/2024	1545

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

Comments:

EPA SAMPLE NO.

ME2915

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

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

Lab Code: ACE Case No.: 51847 MA No. : SDG No.: ME2904

Matrix: SOIL Lab Sample ID: P5335-12

% Solids: 75.4 Date Received: 12/19/2024

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	19		12/23/2024	1545

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

Comments:

EPA SAMPLE NO.

ME2916

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

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

Lab Code: ACE Case No.: 51847 MA No. : SDG No.: ME2904

Matrix: SOIL Lab Sample ID: P5335-13

% Solids: 84.6 Date Received: 12/19/2024

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	2.5		12/23/2024	1550

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

Comments:

EPA SAMPLE NO.

ME2917

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

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

Lab Code: ACE Case No.: 51847 MA No. : SDG No.: ME2904

Matrix: SOIL Lab Sample ID: P5335-14

% Solids: 76.8 Date Received: 12/19/2024

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	1.9		12/23/2024	1550

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

Comments:

EPA SAMPLE NO.

ME2918

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

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

Lab Code: ACE Case No.: 51847 MA No. : SDG No.: ME2904

Matrix: SOIL Lab Sample ID: P5335-15

% Solids: 76.1 Date Received: 12/19/2024

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	2.7		12/23/2024	1550

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

Comments:

EPA SAMPLE NO.

ME2919

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

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

Lab Code: ACE Case No.: 51847 MA No. : SDG No.: ME2904

Matrix: SOIL Lab Sample ID: P5335-16

% Solids: 77.8 Date Received: 12/19/2024

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	2.4		12/23/2024	1550

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

Comments:

EPA SAMPLE NO.

ME2920

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

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

Lab Code: ACE Case No.: 51847 MA No. : SDG No.: ME2904

Matrix: SOIL Lab Sample ID: P5335-17

% Solids: 74.6 Date Received: 12/19/2024

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	4.3		12/23/2024	1550

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

Comments:

EPA SAMPLE NO.

ME2921

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

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

Lab Code: ACE Case No.: 51847 MA No. : SDG No.: ME2904

Matrix: SOIL Lab Sample ID: P5335-18

% Solids: 79 Date Received: 12/19/2024

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	12/23/2024	1558

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

Comments:

EPA SAMPLE NO.

ME2923

FORM 1 - IN

INORGANIC ANALYSIS DATA SHEET

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

Lab Code: ACE Case No.: 51847 MA No. : SDG No.: ME2904

Matrix: SOIL Lab Sample ID: P5335-19

% Solids: 81.5 Date Received: 12/19/2024

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	0.23	J	12/23/2024	1558

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

Comments:

Lb134067

Test results | Aquakem 7.2AQ1 | Page: 1

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

12/23/2024 16:43

Reviewed by : RM | Instrument ID : Konelab

Test: CNEPA-NEW

Sample Id	Result	Dil. 1 +	Response	Errors
ICV001 ICV001	96.675	0.0	0.089	
ICB001 ICB001	-1.139	0.0	0.001	
CCV001 CCV001	244.581	0.0	0.222	
CCB001 CCB001	-1.242	0.0	0.001	
PB165827BL PBS827	-1.290	0.0	0.001	
P5335-01 ME2904	0.357	0.0	0.002	
P5335-02 ME2905	4.752	0.0	0.006	
P5335-03 ME2906	250.878	0.0	0.227	
P5335-04 ME2907	19.626	0.0	0.019	
P5335-05 ME2908	0.929	0.0	0.003	
P5335-06 ME2909	9.090	0.0	0.010	
P5335-07 ME2910	-0.876	0.0	0.001	
P5335-08 ME2911	3.856	0.0	0.005	
P5335-09 ME2912	153.481	0.0	0.140	
P5335-10 ME2913	53.336	0.0	0.050	
P5335-11 ME2914	226.067	0.0	0.205	
P5335-12 ME2915	287.480	0.0	0.260	
P5335-13 ME2916	42.763	0.0	0.040	
P5335-14 ME2917	29.790	0.0	0.029	
P5335-15 ME2918	41.917	0.0	0.040	
P5335-16 ME2919	37.939	0.0	0.036	
P5335-17 ME2920	66.779	0.0	0.062	
P5335-18 ME2921	0.512	0.0	0.002	
P5335-19 ME2923	3.826	0.0	0.005	
P5335-20 ME2923D	4.029	0.0	0.005	
P5335-21 ME2923S	102.544	0.0	0.094	
CCV002 CCV002	252.033	0.0	0.228	
CCB002 CCB002	-0.890	0.0	0.001	

12/23/2024 RM

N	28
Mean	68.850
SD	95.1566
CV%	138.21

Calibration results Aquakem 7.2AQ1 Page: 1

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

Reviewed by : RM Instrument ID : Konelab

12/23/2024 14:57

Test CNEPA-NEW

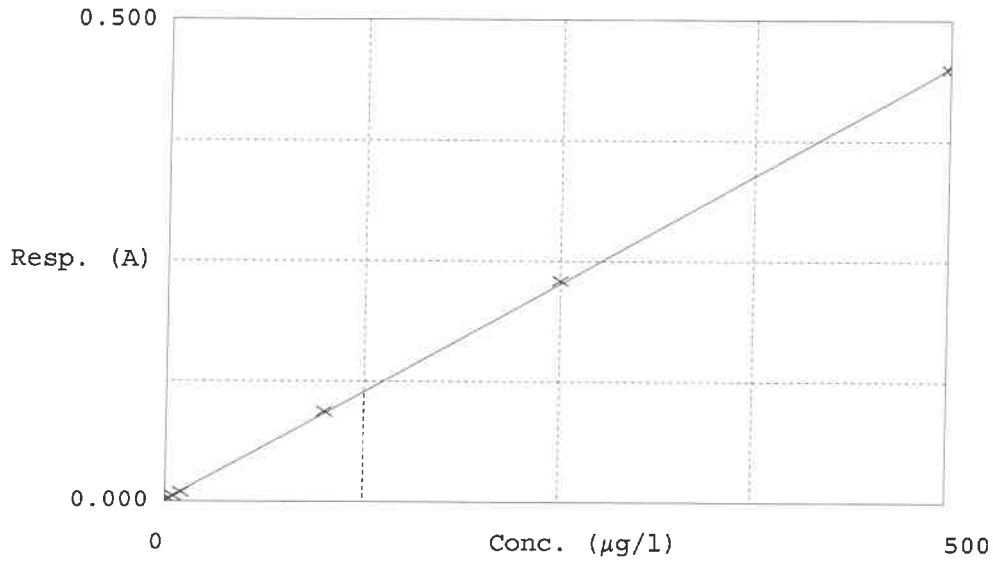
Accepted 12/23/2024 14:57

~~Factor~~ Slope ~~1113~~ 0.000898
~~Bias~~ Intercept 0.002

12/27/2024 RM

Coeff. of det. 0.999872

Errors



	Calibrator	Response	Calc. con.	Conc.	Errors
1	0.0PPBCN S0.0	0.001	-1.3780	0.0000	-
2	5.0PPBCN S5.0	0.006	4.2459	5.0000	-15.1
3	10PPBCN S10.0	0.010	8.6742	10.0000	-13.3
4	100PPBCN S100.0	0.094	102.0992	100.0000	2.1
5	250PPBCN S250.0	0.230	253.4889	250.0000	1.4
6	500PPBCN S500.0	0.449	497.8698	500.0000	-0.4

12/23/2024
RM

Aquakem v. 7.2AQ1
Results from time period:
Mon Dec 23 14:06:30 2024
Mon Dec 23 16:32:06 2024

Sample Id	Sam/Ctr/cA	Test short nan	Test type	Result	Result unit	Result date and time
S0.0	A	CNEPA-NEW	P	-1.378	µg/l	12/23/2024 14:49:54
S5.0	A	CNEPA-NEW	P	4.2459	µg/l	12/23/2024 14:49:55
S10.0	A	CNEPA-NEW	P	8.6742	µg/l	12/23/2024 14:49:56
S100.0	A	CNEPA-NEW	P	102.0992	µg/l	12/23/2024 14:49:57
S250.0	A	CNEPA-NEW	P	253.4889	µg/l	12/23/2024 14:49:58
S500.0	A	CNEPA-NEW	P	497.8698	µg/l	12/23/2024 14:49:59
ICV001 ICV001	S	CNEPA-NEW	P	96.6753	µg/l	12/23/2024 15:34:37
ICB001 ICB001	S	CNEPA-NEW	P	-1.1386	µg/l	12/23/2024 15:34:39
CCV001 CCV001	S	CNEPA-NEW	P	244.5805	µg/l	12/23/2024 15:34:40
CCB001 CCB001	S	CNEPA-NEW	P	-1.2416	µg/l	12/23/2024 15:34:42
PB165827BL PBS827	S	CNEPA-NEW	P	-1.2895	µg/l	12/23/2024 15:34:45
P5335-01 ME2904	S	CNEPA-NEW	P	0.3572	µg/l	12/23/2024 15:34:46
P5335-02 ME2905	S	CNEPA-NEW	P	4.7515	µg/l	12/23/2024 15:39:51
P5335-03 ME2906	S	CNEPA-NEW	P	250.8776	µg/l	12/23/2024 15:39:52
P5335-04 ME2907	S	CNEPA-NEW	P	19.6262	µg/l	12/23/2024 15:39:53
P5335-05 ME2908	S	CNEPA-NEW	P	0.9291	µg/l	12/23/2024 15:39:54
P5335-06 ME2909	S	CNEPA-NEW	P	9.0899	µg/l	12/23/2024 15:39:55
P5335-07 ME2910	S	CNEPA-NEW	P	-0.8764	µg/l	12/23/2024 15:39:56
P5335-08 ME2911	S	CNEPA-NEW	P	3.8561	µg/l	12/23/2024 15:45:27
P5335-09 ME2912	S	CNEPA-NEW	P	153.4812	µg/l	12/23/2024 15:45:28
P5335-10 ME2913	S	CNEPA-NEW	P	53.3357	µg/l	12/23/2024 15:45:29
P5335-11 ME2914	S	CNEPA-NEW	P	226.0668	µg/l	12/23/2024 15:45:30
P5335-12 ME2915	S	CNEPA-NEW	P	287.4799	µg/l	12/23/2024 15:45:31
P5335-13 ME2916	S	CNEPA-NEW	P	42.7627	µg/l	12/23/2024 15:50:45
P5335-14 ME2917	S	CNEPA-NEW	P	29.7902	µg/l	12/23/2024 15:50:46
P5335-15 ME2918	S	CNEPA-NEW	P	41.9167	µg/l	12/23/2024 15:50:47
P5335-16 ME2919	S	CNEPA-NEW	P	37.9386	µg/l	12/23/2024 15:50:48
P5335-17 ME2920	S	CNEPA-NEW	P	66.7788	µg/l	12/23/2024 15:50:49
P5335-18 ME2921	S	CNEPA-NEW	P	0.5119	µg/l	12/23/2024 15:58:18
P5335-19 ME2923	S	CNEPA-NEW	P	3.8257	µg/l	12/23/2024 15:58:20
P5335-20 ME2923D	S	CNEPA-NEW	P	4.0292	µg/l	12/23/2024 15:58:21
P5335-21 ME2923S	S	CNEPA-NEW	P	102.5444	µg/l	12/23/2024 15:58:23
CCV002 CCV002	S	CNEPA-NEW	P	252.0325	µg/l	12/23/2024 16:02:37
CCB002 CCB002	S	CNEPA-NEW	P	-0.8903	µg/l	12/23/2024 16:02:39

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

Prep Standard - Chemical Standard Summary

Order ID : P5335

Test : Cyanide

Prepbatch ID : PB165827,

Sequence ID/Qc Batch ID: LB134067,

Standard ID :
WP108640,WP108688,WP109089,WP110103,WP110390,WP110391,WP110899,WP111186,WP111187,WP111188,WP111189,WP111190,WP111191,WP111192,WP111193,WP111194,WP111195,

Chemical ID :
E3657,M5673,M5951,W2668,W2882,W3001,W3011,W3019,W3112,W3113,W3139,W3154,

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

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
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
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

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
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

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
3850	Cyanide MS-MSD spiking solution, 5PPM	WP110899	12/02/2024	01/05/2025	Iwona Zarych	None	WETCHEM_PIPETTE_3 (WC)	Jignesh Parikh 12/03/2024

FROM 1.00000ml of W3154 + 199.00000ml of WP108640 = Final Quantity: 200.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1582	Chloramine T solution, 0.014M	WP111186	12/23/2024	12/24/2024	Rubina Mughal	WETCHEM_SCALE_5 (WCSC-5)	Glass Pipette-A	Iwona Zarych 01/02/2025

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

Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1585	Cyanide Intermediate standard solution, 10PPM	WP111187	12/23/2024	12/24/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 01/02/2025

FROM 1.00000ml of W3154 + 79.00000ml of W3112 + 20.00000ml of WP108688 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1586	Cyanide Cal Std, 500 PPB	WP111188	12/23/2024	12/24/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 01/02/2025

FROM 5.00000ml of WP111187 + 95.00000ml of WP108640 = Final Quantity: 0.100 L

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
1587	Cyanide Cal Std, 250 PPB	WP111189	12/23/2024	12/24/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 01/02/2025

FROM 2.50000ml of WP111187 + 97.50000ml of WP108640 = Final Quantity: 0.100 L

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1588	Cyanide Cal Std, 100 PPB	WP111190	12/23/2024	12/24/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 01/02/2025

FROM 1.00000ml of WP111187 + 99.00000ml of WP108640 = Final Quantity: 0.100 L

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
1589	Cyanide Cal Std, 10 PPB	WP111191	12/23/2024	12/24/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 01/02/2025

FROM 4.00000ml of WP111189 + 96.00000ml of WP108640 = Final Quantity: 0.100 L

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1590	Cyanide Cal Std, 5 PPB	WP111192	12/23/2024	12/24/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 01/02/2025

FROM 2.00000ml of WP111189 + 98.00000ml of WP108640 = Final Quantity: 0.100 L

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
1591	Cyanide blank std, 0 PPB	WP111193	12/23/2024	12/24/2024	Rubina Mughal	None	None	Iwona Zarych 01/02/2025

FROM 100.00000ml of WP108640 = Final Quantity: 0.100 L

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1763	Cyanide ICV Std	WP111194	12/23/2024	12/24/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 01/02/2025

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

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
1592	Cyanide CCV Std, 250 PPB	WP111195	12/23/2024	12/24/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 01/02/2025

FROM 2.50000ml of WP111187 + 97.50000ml of WP108640 = Final Quantity: 0.100 L

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	1411J58	05/31/2025	12/02/2024 / Iwona	12/02/2024 / Iwona	W3154

~~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% Phosphate : < 5 ppm Sulfate : < 0.002%
Cation	Ammonium : < 0.002% Barium : < 0.005% Calcium : 0.0006% Iron : < 5 ppm Manganese : 1.8 ppm Potassium : 0.0006% Sodium : 0.0008% Strontium : 0.0015%
Insoluble material	0.0025%
Assay by titration	100.29%
Grade	ACS reagent
Storage	Store at RT
Country of Origin	India

Certificate of Analysis

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

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

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

Bala Kumar
Quality Control Manager

Sigma-Aldrich.

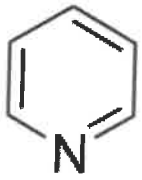
W3019
Rec 4/3/23

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**

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

RICCA CHEMICAL COMPANY®
W3154 Rec. on 12/2/24 by IZ

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: 1411J58 **Product Number:** 2543

Manufacture Date: NOV 22, 2024
Expiration Date: MAY 2025

This standard is prepared using accurate volumetric techniques from material that has been assayed against Silver Nitrate solution certifiec 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
2543-32	1 L amber poly	6 months
2543-4	120 mL amber poly	6 months

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

Luis Briceno (11/22/2024)
Operations Supervisor

Alliance TECHNICAL GROUP

Soil/Sludge Cyanide Preparation Sheet

PB165827

SOP ID : MSFAM01.1-Cyanide-2

SDG No : ME2904

Matrix : SOIL

Pippete ID : WC

Balance ID : WC SC-7

Hood ID : HOOD#1

Block ID : MC-1, MC-2

Weigh By : JP

Start Digest Date: 12/23/2024 **Time :** 11:00 **Temp :** 123 °C

End Digest Date: 12/23/2024 **Time :** 12:30 **Temp :** 126 °C

1I batch 12/23/2024 12:50 123C JP

12/23/2024 14:20 127C

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	WP110899
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	50.0ML	WP111193 I batch
S5.0	S5.0	50.0ML	WP111192 "
S10.0	S10.0	50.0ML	WP111191 "
S100.0	S100.0	50.0ML	WP111190 "
S250.0	S250.0	50.0ML	WP111189 "
S500.0	S500.0	50.0ML	WP111188 "
ICV	ICV	50.0ML	WP111194 "
ICB	ICB	50.0ML	WP108640 "
CCV	CCV	50.0ML	WP111195 "
CCB	CCB	50.0ML	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: 126C; 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
12/23/2024 14.40	JP / WC	RM (WC)
	Preparation Group	Analysis Group

Alliance TECHNICAL GROUP

Soil/Sludge Cyanide Preparation Sheet

PB165827

Lab Sample ID	Client Sample ID	Initial Weight (g)	Final Vol (ml)	pH	Sulfide	Oxidizing	Nitrate/ Nitrite	Comment	Prep Pos
P5335-01	ME2904	1.03	50	N/A	N/A	N/A	N/A	N/A I batch	N/A
P5335-02	ME2905	1.03	50	N/A	N/A	N/A	N/A	N/A "	N/A
P5335-03	ME2906	1.01	50	N/A	N/A	N/A	N/A	N/A "	N/A
P5335-04	ME2907	1.03	50	N/A	N/A	N/A	N/A	N/A "	N/A
P5335-05	ME2908	1.02	50	N/A	N/A	N/A	N/A	N/A "	N/A
P5335-06	ME2909	1.03	50	N/A	N/A	N/A	N/A	N/A "	N/A
P5335-07	ME2910	1.02	50	N/A	N/A	N/A	N/A	N/A "	N/A
P5335-08	ME2911	1.01	50	N/A	N/A	N/A	N/A	N/A II batch	N/A
P5335-09	ME2912	1.02	50	N/A	N/A	N/A	N/A	N/A "	N/A
P5335-10	ME2913	1.03	50	N/A	N/A	N/A	N/A	N/A "	N/A
P5335-11	ME2914	1.02	50	N/A	N/A	N/A	N/A	N/A "	N/A
P5335-12	ME2915	1.02	50	N/A	N/A	N/A	N/A	N/A "	N/A
P5335-13	ME2916	1.03	50	N/A	N/A	N/A	N/A	N/A "	N/A
P5335-14	ME2917	1.04	50	N/A	N/A	N/A	N/A	N/A "	N/A
P5335-15	ME2918	1.01	50	N/A	N/A	N/A	N/A	N/A "	N/A
P5335-16	ME2919	1.03	50	N/A	N/A	N/A	N/A	N/A "	N/A
P5335-17	ME2920	1.04	50	N/A	N/A	N/A	N/A	N/A "	N/A
P5335-18	ME2921	1.02	50	N/A	N/A	N/A	N/A	N/A "	N/A
P5335-19	ME2923	1.02	50	N/A	N/A	N/A	N/A	N/A "	N/A
P5335-20	ME2923D	1.02	50	N/A	N/A	N/A	N/A	N/A "	N/A
P5335-21	ME2923S	1.00	50	N/A	N/A	N/A	N/A	N/A "	N/A
PB165827BL	PBS827	1.00	50	N/A	N/A	N/A	N/A	N/A I batch	N/A

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

Instrument ID: KONELAB

Daily Analysis Runlog For Sequence/QCBatch ID # LB134067

Review By	Rubina Mughal	Review On	12/27/2024 1:13:15 PM
Supervise By	Iwona Zarych	Supervise On	12/27/2024 4:33:35 PM

STD. NAME	STD REF.#
ICAL Standard	WP111193,WP111192,WP111191,WP111190,WP111189,WP111188
ICV Standard	WP111194
CCV Standard	WP111195
ICSA Standard	
CRI Standard	
LCS Standard	
Chk Standard	WP109089,WP110103,WP111186

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0.0	S0	CAL1	12/23/24 14:49		rubina	OK
2	S5.0	S01	CAL2	12/23/24 14:49		rubina	OK
3	S10.0	S02	CAL3	12/23/24 14:49		rubina	OK
4	S100.0	S03	CAL4	12/23/24 14:49		rubina	OK
5	S250.0	S04	CAL5	12/23/24 14:49		rubina	OK
6	S500.0	S05	CAL6	12/23/24 14:49		rubina	OK
7	ICV001	ICV001	ICV	12/23/24 15:34		rubina	OK
8	ICB001	ICB001	ICB	12/23/24 15:34		rubina	OK
9	CCV001	CCV001	CCV	12/23/24 15:34		rubina	OK
10	CCB001	CCB001	CCB	12/23/24 15:34		rubina	OK
11	PB165827BL	PBS827	MB	12/23/24 15:34		rubina	OK
12	P5335-01	ME2904	SAM	12/23/24 15:34		rubina	OK
13	P5335-02	ME2905	SAM	12/23/24 15:39		rubina	OK
14	P5335-03	ME2906	SAM	12/23/24 15:39		rubina	OK
15	P5335-04	ME2907	SAM	12/23/24 15:39		rubina	OK
16	P5335-05	ME2908	SAM	12/23/24 15:39		rubina	OK
17	P5335-06	ME2909	SAM	12/23/24 15:39		rubina	OK
18	P5335-07	ME2910	SAM	12/23/24 15:39		rubina	OK

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STD. NAME	STD REF.#
ICAL Standard	WP111193,WP111192,WP111191,WP111190,WP111189,WP111188
ICV Standard	WP111194
CCV Standard	WP111195
ICSA Standard	
CRI Standard	
LCS Standard	
Chk Standard	WP109089,WP110103,WP111186

19	P5335-08	ME2911	SAM	12/23/24 15:45		rubina	OK
20	P5335-09	ME2912	SAM	12/23/24 15:45		rubina	OK
21	P5335-10	ME2913	SAM	12/23/24 15:45		rubina	OK
22	P5335-11	ME2914	SAM	12/23/24 15:45		rubina	OK
23	P5335-12	ME2915	SAM	12/23/24 15:45		rubina	OK
24	P5335-13	ME2916	SAM	12/23/24 15:50		rubina	OK
25	P5335-14	ME2917	SAM	12/23/24 15:50		rubina	OK
26	P5335-15	ME2918	SAM	12/23/24 15:50		rubina	OK
27	P5335-16	ME2919	SAM	12/23/24 15:50		rubina	OK
28	P5335-17	ME2920	SAM	12/23/24 15:50		rubina	OK
29	P5335-18	ME2921	SAM	12/23/24 15:58		rubina	OK
30	P5335-19	ME2923	SAM	12/23/24 15:58		rubina	OK
31	P5335-20	ME2923D	DUP	12/23/24 15:58		rubina	OK
32	P5335-21	ME2923S	MS	12/23/24 15:58		rubina	OK
33	CCV002	CCV002	CCV	12/23/24 16:02		rubina	OK
34	CCB002	CCB002	CCB	12/23/24 16:02		rubina	OK