

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

MYE450

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

Lab Code: ACE Case No.: 51817 MA No. : 3226.1 SDG No.: MYE450

Matrix: SOIL Lab Sample ID: P4477-01

% Solids: 91.8 Date Received: 10/22/2024

Analytical Method: ICP_AES

Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7429-90-5	Aluminum	17000	D	10/26/2024	2017
7440-36-0	Antimony	1.6	JD	10/26/2024	2017
7440-38-2	Arsenic	39	D*	10/26/2024	2017
7440-39-3	Barium	180	D	10/26/2024	2017
7440-41-7	Beryllium	0.86	D	10/26/2024	2017
7440-43-9	Cadmium	0.87	D	10/26/2024	2017
7440-70-2	Calcium	13000	D	10/26/2024	2017
7440-47-3	Chromium	40	D	10/26/2024	2017
7440-48-4	Cobalt	21	D	10/26/2024	2017
7440-50-8	Copper	130	D	10/26/2024	2017
7439-89-6	Iron	38000	D	10/26/2024	2017
7439-92-1	Lead	40	D	10/26/2024	2017
7439-95-4	Magnesium	7900	D	10/26/2024	2017
7439-96-5	Manganese	950	D*	10/26/2024	2017
7440-02-0	Nickel	37	D	10/26/2024	2017
7440-09-7	Potassium	5400	D	10/26/2024	2017
7782-49-2	Selenium	5.9	UD	10/26/2024	2017
7440-22-4	Silver	1.7	UD	10/26/2024	2017
7440-23-5	Sodium	180	JD	10/26/2024	2017
7440-28-0	Thallium	4.2	UD	10/26/2024	2017
7440-62-2	Vanadium	72	D	10/26/2024	2017
7440-66-6	Zinc	110	D	10/26/2024	2017

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

Comments:

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MYE451

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

Lab Code: ACE Case No.: 51817 MA No. : 3226.1 SDG No.: MYE450

Matrix: SOIL Lab Sample ID: P4477-02

% Solids: 97.7 Date Received: 10/22/2024

Analytical Method: ICP_AES

Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7429-90-5	Aluminum	14000	D	10/26/2024	2021
7440-36-0	Antimony	1.2	JD	10/26/2024	2021
7440-38-2	Arsenic	29	D*	10/26/2024	2021
7440-39-3	Barium	150	D	10/26/2024	2021
7440-41-7	Beryllium	0.75	D	10/26/2024	2021
7440-43-9	Cadmium	0.65	JD	10/26/2024	2021
7440-70-2	Calcium	3900	D	10/26/2024	2021
7440-47-3	Chromium	32	D	10/26/2024	2021
7440-48-4	Cobalt	17	D	10/26/2024	2021
7440-50-8	Copper	93	D	10/26/2024	2021
7439-89-6	Iron	32000	D	10/26/2024	2021
7439-92-1	Lead	32	D	10/26/2024	2021
7439-95-4	Magnesium	6200	D	10/26/2024	2021
7439-96-5	Manganese	760	D*	10/26/2024	2021
7440-02-0	Nickel	31	D	10/26/2024	2021
7440-09-7	Potassium	4400	D	10/26/2024	2021
7782-49-2	Selenium	5.2	UD	10/26/2024	2021
7440-22-4	Silver	1.5	UD	10/26/2024	2021
7440-23-5	Sodium	150	JD	10/26/2024	2021
7440-28-0	Thallium	3.7	UD	10/26/2024	2021
7440-62-2	Vanadium	61	D	10/26/2024	2021
7440-66-6	Zinc	92	D	10/26/2024	2021

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

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MYE452

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

Lab Code: ACE Case No.: 51817 MA No. : 3226.1 SDG No.: MYE450

Matrix: SOIL Lab Sample ID: P4477-03

% Solids: 92.6 Date Received: 10/22/2024

Analytical Method: ICP_AES

Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7429-90-5	Aluminum	19000	D	10/26/2024	2025
7440-36-0	Antimony	1.3	JD	10/26/2024	2025
7440-38-2	Arsenic	45	D*	10/26/2024	2025
7440-39-3	Barium	230	D	10/26/2024	2025
7440-41-7	Beryllium	0.97	D	10/26/2024	2025
7440-43-9	Cadmium	0.68	JD	10/26/2024	2025
7440-70-2	Calcium	9800	D	10/26/2024	2025
7440-47-3	Chromium	41	D	10/26/2024	2025
7440-48-4	Cobalt	22	D	10/26/2024	2025
7440-50-8	Copper	130	D	10/26/2024	2025
7439-89-6	Iron	40000	D	10/26/2024	2025
7439-92-1	Lead	41	D	10/26/2024	2025
7439-95-4	Magnesium	9200	D	10/26/2024	2025
7439-96-5	Manganese	1300	D*	10/26/2024	2025
7440-02-0	Nickel	42	D	10/26/2024	2025
7440-09-7	Potassium	4700	D	10/26/2024	2025
7782-49-2	Selenium	6.4	UD	10/26/2024	2025
7440-22-4	Silver	1.8	UD	10/26/2024	2025
7440-23-5	Sodium	230	JD	10/26/2024	2025
7440-28-0	Thallium	4.6	UD	10/26/2024	2025
7440-62-2	Vanadium	76	D	10/26/2024	2025
7440-66-6	Zinc	100	D	10/26/2024	2025

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

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MYE453

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

Lab Code: ACE Case No.: 51817 MA No. : 3226.1 SDG No.: MYE450

Matrix: SOIL Lab Sample ID: P4477-04

% Solids: 97.2 Date Received: 10/22/2024

Analytical Method: ICP_AES

Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7429-90-5	Aluminum	14000	D	10/26/2024	2030
7440-36-0	Antimony	2.1	JD	10/26/2024	2030
7440-38-2	Arsenic	77	D*	10/26/2024	2030
7440-39-3	Barium	200	D	10/26/2024	2030
7440-41-7	Beryllium	0.82	D	10/26/2024	2030
7440-43-9	Cadmium	0.78	D	10/26/2024	2030
7440-70-2	Calcium	4400	D	10/26/2024	2030
7440-47-3	Chromium	31	D	10/26/2024	2030
7440-48-4	Cobalt	20	D	10/26/2024	2030
7440-50-8	Copper	120	D	10/26/2024	2030
7439-89-6	Iron	34000	D	10/26/2024	2030
7439-92-1	Lead	42	D	10/26/2024	2030
7439-95-4	Magnesium	6500	D	10/26/2024	2030
7439-96-5	Manganese	1200	D*	10/26/2024	2030
7440-02-0	Nickel	32	D	10/26/2024	2030
7440-09-7	Potassium	4500	D	10/26/2024	2030
7782-49-2	Selenium	5.1	UD	10/26/2024	2030
7440-22-4	Silver	1.5	UD	10/26/2024	2030
7440-23-5	Sodium	180	JD	10/26/2024	2030
7440-28-0	Thallium	3.6	UD	10/26/2024	2030
7440-62-2	Vanadium	62	D	10/26/2024	2030
7440-66-6	Zinc	100	D	10/26/2024	2030

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

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MYE454

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

Lab Code: ACE Case No.: 51817 MA No. : 3226.1 SDG No.: MYE450

Matrix: SOIL Lab Sample ID: P4477-07

% Solids: 92.3 Date Received: 10/22/2024

Analytical Method: ICP_AES

Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7429-90-5	Aluminum	14000	D	10/26/2024	2056
7440-36-0	Antimony	1.2	JD	10/26/2024	2056
7440-38-2	Arsenic	26	D*	10/26/2024	2056
7440-39-3	Barium	150	D	10/26/2024	2056
7440-41-7	Beryllium	0.74	JD	10/26/2024	2056
7440-43-9	Cadmium	0.61	JD	10/26/2024	2056
7440-70-2	Calcium	5500	D	10/26/2024	2056
7440-47-3	Chromium	34	D	10/26/2024	2056
7440-48-4	Cobalt	18	D	10/26/2024	2056
7440-50-8	Copper	87	D	10/26/2024	2056
7439-89-6	Iron	33000	D	10/26/2024	2056
7439-92-1	Lead	28	D	10/26/2024	2056
7439-95-4	Magnesium	6500	D	10/26/2024	2056
7439-96-5	Manganese	780	D*	10/26/2024	2056
7440-02-0	Nickel	30	D	10/26/2024	2056
7440-09-7	Potassium	5000	D	10/26/2024	2056
7782-49-2	Selenium	5.9	UD	10/26/2024	2056
7440-22-4	Silver	1.7	UD	10/26/2024	2056
7440-23-5	Sodium	840	UD	10/26/2024	2056
7440-28-0	Thallium	4.2	UD	10/26/2024	2056
7440-62-2	Vanadium	63	D	10/26/2024	2056
7440-66-6	Zinc	96	D	10/26/2024	2056

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

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MYE455

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

Lab Code: ACE Case No.: 51817 MA No. : 3226.1 SDG No.: MYE450

Matrix: SOIL Lab Sample ID: P4477-08

% Solids: 92 Date Received: 10/22/2024

Analytical Method: ICP_AES

Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7429-90-5	Aluminum	15000	D	10/26/2024	2101
7440-36-0	Antimony	0.92	JD	10/26/2024	2101
7440-38-2	Arsenic	26	D*	10/26/2024	2101
7440-39-3	Barium	160	D	10/26/2024	2101
7440-41-7	Beryllium	0.76	JD	10/26/2024	2101
7440-43-9	Cadmium	0.59	JD	10/26/2024	2101
7440-70-2	Calcium	11000	D	10/26/2024	2101
7440-47-3	Chromium	33	D	10/26/2024	2101
7440-48-4	Cobalt	18	D	10/26/2024	2101
7440-50-8	Copper	88	D	10/26/2024	2101
7439-89-6	Iron	32000	D	10/26/2024	2101
7439-92-1	Lead	29	D	10/26/2024	2101
7439-95-4	Magnesium	7700	D	10/26/2024	2101
7439-96-5	Manganese	790	D*	10/26/2024	2101
7440-02-0	Nickel	32	D	10/26/2024	2101
7440-09-7	Potassium	5500	D	10/26/2024	2101
7782-49-2	Selenium	6.1	UD	10/26/2024	2101
7440-22-4	Silver	1.8	UD	10/26/2024	2101
7440-23-5	Sodium	590	JD	10/26/2024	2101
7440-28-0	Thallium	4.4	UD	10/26/2024	2101
7440-62-2	Vanadium	63	D	10/26/2024	2101
7440-66-6	Zinc	97	D	10/26/2024	2101

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

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MYE456

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

Lab Code: ACE Case No.: 51817 MA No. : 3226.1 SDG No.: MYE450

Matrix: SOIL Lab Sample ID: P4477-09

% Solids: 97.2 Date Received: 10/22/2024

Analytical Method: ICP_AES

Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7429-90-5	Aluminum	17000	D	10/26/2024	2105
7440-36-0	Antimony	2.0	JD	10/26/2024	2105
7440-38-2	Arsenic	24	D*	10/26/2024	2105
7440-39-3	Barium	120	D	10/26/2024	2105
7440-41-7	Beryllium	0.79	JD	10/26/2024	2105
7440-43-9	Cadmium	0.30	JD	10/26/2024	2105
7440-70-2	Calcium	12000	D	10/26/2024	2105
7440-47-3	Chromium	46	D	10/26/2024	2105
7440-48-4	Cobalt	24	D	10/26/2024	2105
7440-50-8	Copper	88	D	10/26/2024	2105
7439-89-6	Iron	43000	D	10/26/2024	2105
7439-92-1	Lead	27	D	10/26/2024	2105
7439-95-4	Magnesium	11000	D	10/26/2024	2105
7439-96-5	Manganese	810	D*	10/26/2024	2105
7440-02-0	Nickel	46	D	10/26/2024	2105
7440-09-7	Potassium	4600	D	10/26/2024	2105
7782-49-2	Selenium	6.7	UD	10/26/2024	2105
7440-22-4	Silver	1.9	UD	10/26/2024	2105
7440-23-5	Sodium	300	JD	10/26/2024	2105
7440-28-0	Thallium	4.8	UD	10/26/2024	2105
7440-62-2	Vanadium	97	D	10/26/2024	2105
7440-66-6	Zinc	78	D	10/26/2024	2105

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

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MYE457

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

Lab Code: ACE Case No.: 51817 MA No. : 3226.1 SDG No.: MYE450

Matrix: SOIL Lab Sample ID: P4477-10

% Solids: 97.6 Date Received: 10/22/2024

Analytical Method: ICP_AES

Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7429-90-5	Aluminum	15000	D	10/26/2024	2109
7440-36-0	Antimony	1.3	JD	10/26/2024	2109
7440-38-2	Arsenic	41	D*	10/26/2024	2109
7440-39-3	Barium	170	D	10/26/2024	2109
7440-41-7	Beryllium	0.89	D	10/26/2024	2109
7440-43-9	Cadmium	0.79	D	10/26/2024	2109
7440-70-2	Calcium	2800	D	10/26/2024	2109
7440-47-3	Chromium	34	D	10/26/2024	2109
7440-48-4	Cobalt	21	D	10/26/2024	2109
7440-50-8	Copper	120	D	10/26/2024	2109
7439-89-6	Iron	37000	D	10/26/2024	2109
7439-92-1	Lead	38	D	10/26/2024	2109
7439-95-4	Magnesium	6800	D	10/26/2024	2109
7439-96-5	Manganese	910	D*	10/26/2024	2109
7440-02-0	Nickel	38	D	10/26/2024	2109
7440-09-7	Potassium	4600	D	10/26/2024	2109
7782-49-2	Selenium	5.1	UD	10/26/2024	2109
7440-22-4	Silver	1.4	UD	10/26/2024	2109
7440-23-5	Sodium	720	UD	10/26/2024	2109
7440-28-0	Thallium	3.6	UD	10/26/2024	2109
7440-62-2	Vanadium	68	D	10/26/2024	2109
7440-66-6	Zinc	96	D	10/26/2024	2109

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

Comments:

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MYE458

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

Lab Code: ACE Case No.: 51817 MA No. : 3226.1 SDG No.: MYE450

Matrix: SOIL Lab Sample ID: P4477-11

% Solids: 97.3 Date Received: 10/22/2024

Analytical Method: ICP_AES

Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7429-90-5	Aluminum	13000	D	10/26/2024	2114
7440-36-0	Antimony	1.2	JD	10/26/2024	2114
7440-38-2	Arsenic	28	D*	10/26/2024	2114
7440-39-3	Barium	150	D	10/26/2024	2114
7440-41-7	Beryllium	0.69	JD	10/26/2024	2114
7440-43-9	Cadmium	0.70	JD	10/26/2024	2114
7440-70-2	Calcium	7800	D	10/26/2024	2114
7440-47-3	Chromium	30	D	10/26/2024	2114
7440-48-4	Cobalt	19	D	10/26/2024	2114
7440-50-8	Copper	97	D	10/26/2024	2114
7439-89-6	Iron	31000	D	10/26/2024	2114
7439-92-1	Lead	33	D	10/26/2024	2114
7439-95-4	Magnesium	6300	D	10/26/2024	2114
7439-96-5	Manganese	830	D*	10/26/2024	2114
7440-02-0	Nickel	29	D	10/26/2024	2114
7440-09-7	Potassium	4600	D	10/26/2024	2114
7782-49-2	Selenium	5.4	UD	10/26/2024	2114
7440-22-4	Silver	1.5	UD	10/26/2024	2114
7440-23-5	Sodium	160	JD	10/26/2024	2114
7440-28-0	Thallium	3.8	UD	10/26/2024	2114
7440-62-2	Vanadium	59	D	10/26/2024	2114
7440-66-6	Zinc	100	D	10/26/2024	2114

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

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MYE459

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

Lab Code: ACE Case No.: 51817 MA No. : 3226.1 SDG No.: MYE450

Matrix: SOIL Lab Sample ID: P4477-12

% Solids: 96.8 Date Received: 10/22/2024

Analytical Method: ICP_AES

Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7429-90-5	Aluminum	13000	D	10/26/2024	2118
7440-36-0	Antimony	1.7	JD	10/26/2024	2118
7440-38-2	Arsenic	36	D*	10/26/2024	2118
7440-39-3	Barium	160	D	10/26/2024	2118
7440-41-7	Beryllium	0.77	D	10/26/2024	2118
7440-43-9	Cadmium	0.93	D	10/26/2024	2118
7440-70-2	Calcium	6400	D	10/26/2024	2118
7440-47-3	Chromium	32	D	10/26/2024	2118
7440-48-4	Cobalt	19	D	10/26/2024	2118
7440-50-8	Copper	120	D	10/26/2024	2118
7439-89-6	Iron	33000	D	10/26/2024	2118
7439-92-1	Lead	37	D	10/26/2024	2118
7439-95-4	Magnesium	6300	D	10/26/2024	2118
7439-96-5	Manganese	860	D*	10/26/2024	2118
7440-02-0	Nickel	34	D	10/26/2024	2118
7440-09-7	Potassium	4900	D	10/26/2024	2118
7782-49-2	Selenium	5.1	UD	10/26/2024	2118
7440-22-4	Silver	1.5	UD	10/26/2024	2118
7440-23-5	Sodium	230	JD	10/26/2024	2118
7440-28-0	Thallium	3.6	UD	10/26/2024	2118
7440-62-2	Vanadium	63	D	10/26/2024	2118
7440-66-6	Zinc	100	D	10/26/2024	2118

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

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MYE460

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

Lab Code: ACE Case No.: 51817 MA No. : 3226.1 SDG No.: MYE450

Matrix: SOIL Lab Sample ID: P4477-13

% Solids: 97.1 Date Received: 10/22/2024

Analytical Method: ICP_AES

Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7429-90-5	Aluminum	14000	D	10/26/2024	2123
7440-36-0	Antimony	1.1	JD	10/26/2024	2123
7440-38-2	Arsenic	26	D*	10/26/2024	2123
7440-39-3	Barium	160	D	10/26/2024	2123
7440-41-7	Beryllium	0.76	JD	10/26/2024	2123
7440-43-9	Cadmium	0.81	JD	10/26/2024	2123
7440-70-2	Calcium	9400	D	10/26/2024	2123
7440-47-3	Chromium	31	D	10/26/2024	2123
7440-48-4	Cobalt	17	D	10/26/2024	2123
7440-50-8	Copper	120	D	10/26/2024	2123
7439-89-6	Iron	31000	D	10/26/2024	2123
7439-92-1	Lead	35	D	10/26/2024	2123
7439-95-4	Magnesium	6900	D	10/26/2024	2123
7439-96-5	Manganese	830	D*	10/26/2024	2123
7440-02-0	Nickel	31	D	10/26/2024	2123
7440-09-7	Potassium	5200	D	10/26/2024	2123
7782-49-2	Selenium	6.1	UD	10/26/2024	2123
7440-22-4	Silver	1.7	UD	10/26/2024	2123
7440-23-5	Sodium	230	JD	10/26/2024	2123
7440-28-0	Thallium	4.3	UD	10/26/2024	2123
7440-62-2	Vanadium	57	D	10/26/2024	2123
7440-66-6	Zinc	110	D	10/26/2024	2123

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

Comments:

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

MYE461

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

Lab Code: ACE Case No.: 51817 MA No. : 3226.1 SDG No.: MYE450

Matrix: SOIL Lab Sample ID: P4477-14

% Solids: 98.9 Date Received: 10/22/2024

Analytical Method: ICP_AES

Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7429-90-5	Aluminum	14000	D	10/26/2024	2127
7440-36-0	Antimony	1.8	JD	10/26/2024	2127
7440-38-2	Arsenic	30	D*	10/26/2024	2127
7440-39-3	Barium	150	D	10/26/2024	2127
7440-41-7	Beryllium	0.84	JD	10/26/2024	2127
7440-43-9	Cadmium	0.63	JD	10/26/2024	2127
7440-70-2	Calcium	4600	D	10/26/2024	2127
7440-47-3	Chromium	32	D	10/26/2024	2127
7440-48-4	Cobalt	17	D	10/26/2024	2127
7440-50-8	Copper	97	D	10/26/2024	2127
7439-89-6	Iron	35000	D	10/26/2024	2127
7439-92-1	Lead	35	D	10/26/2024	2127
7439-95-4	Magnesium	6500	D	10/26/2024	2127
7439-96-5	Manganese	830	D*	10/26/2024	2127
7440-02-0	Nickel	30	D	10/26/2024	2127
7440-09-7	Potassium	4300	D	10/26/2024	2127
7782-49-2	Selenium	6.4	UD	10/26/2024	2127
7440-22-4	Silver	1.8	UD	10/26/2024	2127
7440-23-5	Sodium	910	UD	10/26/2024	2127
7440-28-0	Thallium	4.6	UD	10/26/2024	2127
7440-62-2	Vanadium	65	D	10/26/2024	2127
7440-66-6	Zinc	100	D	10/26/2024	2127

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

Comments:

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

MYE462

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

Lab Code: ACE Case No.: 51817 MA No. : 3226.1 SDG No.: MYE450

Matrix: SOIL Lab Sample ID: P4477-15

% Solids: 94.5 Date Received: 10/22/2024

Analytical Method: ICP_AES

Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7429-90-5	Aluminum	16000	D	10/26/2024	2131
7440-36-0	Antimony	1.1	JD	10/26/2024	2131
7440-38-2	Arsenic	26	D*	10/26/2024	2131
7440-39-3	Barium	130	D	10/26/2024	2131
7440-41-7	Beryllium	0.91	D	10/26/2024	2131
7440-43-9	Cadmium	0.31	JD	10/26/2024	2131
7440-70-2	Calcium	10000	D	10/26/2024	2131
7440-47-3	Chromium	30	D	10/26/2024	2131
7440-48-4	Cobalt	20	D	10/26/2024	2131
7440-50-8	Copper	64	D	10/26/2024	2131
7439-89-6	Iron	35000	D	10/26/2024	2131
7439-92-1	Lead	24	D	10/26/2024	2131
7439-95-4	Magnesium	9100	D	10/26/2024	2131
7439-96-5	Manganese	690	D*	10/26/2024	2131
7440-02-0	Nickel	47	D	10/26/2024	2131
7440-09-7	Potassium	2600	D	10/26/2024	2131
7782-49-2	Selenium	5.0	UD	10/26/2024	2131
7440-22-4	Silver	1.4	UD	10/26/2024	2131
7440-23-5	Sodium	670	JD	10/26/2024	2131
7440-28-0	Thallium	3.6	UD	10/26/2024	2131
7440-62-2	Vanadium	73	D	10/26/2024	2131
7440-66-6	Zinc	68	D	10/26/2024	2131

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

Comments:

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

MYE463

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

Lab Code: ACE Case No.: 51817 MA No. : 3226.1 SDG No.: MYE450

Matrix: SOIL Lab Sample ID: P4477-16

% Solids: 91.3 Date Received: 10/22/2024

Analytical Method: ICP_AES

Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7429-90-5	Aluminum	20000	D	10/26/2024	2136
7440-36-0	Antimony	1.2	JD	10/26/2024	2136
7440-38-2	Arsenic	27	D*	10/26/2024	2136
7440-39-3	Barium	100	D	10/26/2024	2136
7440-41-7	Beryllium	0.72	JD	10/26/2024	2136
7440-43-9	Cadmium	0.32	JD	10/26/2024	2136
7440-70-2	Calcium	8100	D	10/26/2024	2136
7440-47-3	Chromium	61	D	10/26/2024	2136
7440-48-4	Cobalt	28	D	10/26/2024	2136
7440-50-8	Copper	100	D	10/26/2024	2136
7439-89-6	Iron	44000	D	10/26/2024	2136
7439-92-1	Lead	21	D	10/26/2024	2136
7439-95-4	Magnesium	13000	D	10/26/2024	2136
7439-96-5	Manganese	850	D*	10/26/2024	2136
7440-02-0	Nickel	56	D	10/26/2024	2136
7440-09-7	Potassium	3400	D	10/26/2024	2136
7782-49-2	Selenium	6.3	UD	10/26/2024	2136
7440-22-4	Silver	1.8	UD	10/26/2024	2136
7440-23-5	Sodium	300	JD	10/26/2024	2136
7440-28-0	Thallium	4.5	UD	10/26/2024	2136
7440-62-2	Vanadium	94	D	10/26/2024	2136
7440-66-6	Zinc	71	D	10/26/2024	2136

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

Comments:

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

MYE464

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

Lab Code: ACE Case No.: 51817 MA No. : 3226.1 SDG No.: MYE450

Matrix: SOIL Lab Sample ID: P4477-17

% Solids: 91.8 Date Received: 10/22/2024

Analytical Method: ICP_AES

Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7429-90-5	Aluminum	18000	D	10/26/2024	2140
7440-36-0	Antimony	1.7	JD	10/26/2024	2140
7440-38-2	Arsenic	47	D*	10/26/2024	2140
7440-39-3	Barium	210	D	10/26/2024	2140
7440-41-7	Beryllium	1.0	D	10/26/2024	2140
7440-43-9	Cadmium	0.68	JD	10/26/2024	2140
7440-70-2	Calcium	11000	D	10/26/2024	2140
7440-47-3	Chromium	40	D	10/26/2024	2140
7440-48-4	Cobalt	21	D	10/26/2024	2140
7440-50-8	Copper	100	D	10/26/2024	2140
7439-89-6	Iron	43000	D	10/26/2024	2140
7439-92-1	Lead	36	D	10/26/2024	2140
7439-95-4	Magnesium	9200	D	10/26/2024	2140
7439-96-5	Manganese	1200	D*	10/26/2024	2140
7440-02-0	Nickel	42	D	10/26/2024	2140
7440-09-7	Potassium	5200	D	10/26/2024	2140
7782-49-2	Selenium	6.5	UD	10/26/2024	2140
7440-22-4	Silver	1.9	UD	10/26/2024	2140
7440-23-5	Sodium	740	JD	10/26/2024	2140
7440-28-0	Thallium	4.7	UD	10/26/2024	2140
7440-62-2	Vanadium	83	D	10/26/2024	2140
7440-66-6	Zinc	110	D	10/26/2024	2140

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

Comments:

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

MYE465

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

Lab Code: ACE Case No.: 51817 MA No. : 3226.1 SDG No.: MYE450

Matrix: SOIL Lab Sample ID: P4477-18

% Solids: 94.9 Date Received: 10/22/2024

Analytical Method: ICP_AES

Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7429-90-5	Aluminum	21000	D	10/26/2024	2145
7440-36-0	Antimony	1.2	JD	10/26/2024	2145
7440-38-2	Arsenic	38	D*	10/26/2024	2145
7440-39-3	Barium	220	D	10/26/2024	2145
7440-41-7	Beryllium	1.0	D	10/26/2024	2145
7440-43-9	Cadmium	0.63	JD	10/26/2024	2145
7440-70-2	Calcium	12000	D	10/26/2024	2145
7440-47-3	Chromium	40	D	10/26/2024	2145
7440-48-4	Cobalt	25	D	10/26/2024	2145
7440-50-8	Copper	110	D	10/26/2024	2145
7439-89-6	Iron	42000	D	10/26/2024	2145
7439-92-1	Lead	36	D	10/26/2024	2145
7439-95-4	Magnesium	9900	D	10/26/2024	2145
7439-96-5	Manganese	1200	D*	10/26/2024	2145
7440-02-0	Nickel	52	D	10/26/2024	2145
7440-09-7	Potassium	4700	D	10/26/2024	2145
7782-49-2	Selenium	6.1	UD	10/26/2024	2145
7440-22-4	Silver	1.7	UD	10/26/2024	2145
7440-23-5	Sodium	230	JD	10/26/2024	2145
7440-28-0	Thallium	4.4	UD	10/26/2024	2145
7440-62-2	Vanadium	80	D	10/26/2024	2145
7440-66-6	Zinc	97	D	10/26/2024	2145

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

Comments:

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

MYE466

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

Lab Code: ACE Case No.: 51817 MA No. : 3226.1 SDG No.: MYE450

Matrix: SOIL Lab Sample ID: P4477-19

% Solids: 97.1 Date Received: 10/22/2024

Analytical Method: ICP_AES

Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7429-90-5	Aluminum	15000	D	10/26/2024	2149
7440-36-0	Antimony	1.8	JD	10/26/2024	2149
7440-38-2	Arsenic	34	D*	10/26/2024	2149
7440-39-3	Barium	160	D	10/26/2024	2149
7440-41-7	Beryllium	0.87	D	10/26/2024	2149
7440-43-9	Cadmium	0.81	JD	10/26/2024	2149
7440-70-2	Calcium	6300	D	10/26/2024	2149
7440-47-3	Chromium	33	D	10/26/2024	2149
7440-48-4	Cobalt	19	D	10/26/2024	2149
7440-50-8	Copper	130	D	10/26/2024	2149
7439-89-6	Iron	36000	D	10/26/2024	2149
7439-92-1	Lead	38	D	10/26/2024	2149
7439-95-4	Magnesium	7000	D	10/26/2024	2149
7439-96-5	Manganese	820	D*	10/26/2024	2149
7440-02-0	Nickel	35	D	10/26/2024	2149
7440-09-7	Potassium	4600	D	10/26/2024	2149
7782-49-2	Selenium	5.8	UD	10/26/2024	2149
7440-22-4	Silver	1.7	UD	10/26/2024	2149
7440-23-5	Sodium	220	JD	10/26/2024	2149
7440-28-0	Thallium	4.1	UD	10/26/2024	2149
7440-62-2	Vanadium	69	D	10/26/2024	2149
7440-66-6	Zinc	100	D	10/26/2024	2149

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

Comments:

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

MYE467

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

Lab Code: ACE Case No.: 51817 MA No. : 3226.1 SDG No.: MYE450

Matrix: SOIL Lab Sample ID: P4477-20

% Solids: 97.4 Date Received: 10/22/2024

Analytical Method: ICP_AES

Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7429-90-5	Aluminum	18000	D	10/26/2024	2202
7440-36-0	Antimony	1.4	JD	10/26/2024	2202
7440-38-2	Arsenic	36	D*	10/26/2024	2202
7440-39-3	Barium	210	D	10/26/2024	2202
7440-41-7	Beryllium	0.90	JD	10/26/2024	2202
7440-43-9	Cadmium	0.50	JD	10/26/2024	2202
7440-70-2	Calcium	9200	D	10/26/2024	2202
7440-47-3	Chromium	36	D	10/26/2024	2202
7440-48-4	Cobalt	20	D	10/26/2024	2202
7440-50-8	Copper	85	D	10/26/2024	2202
7439-89-6	Iron	38000	D	10/26/2024	2202
7439-92-1	Lead	31	D	10/26/2024	2202
7439-95-4	Magnesium	7800	D	10/26/2024	2202
7439-96-5	Manganese	1000	D*	10/26/2024	2202
7440-02-0	Nickel	38	D	10/26/2024	2202
7440-09-7	Potassium	4300	D	10/26/2024	2202
7782-49-2	Selenium	6.4	UD	10/26/2024	2202
7440-22-4	Silver	1.8	UD	10/26/2024	2202
7440-23-5	Sodium	920	UD	10/26/2024	2202
7440-28-0	Thallium	4.6	UD	10/26/2024	2202
7440-62-2	Vanadium	72	D	10/26/2024	2202
7440-66-6	Zinc	84	D	10/26/2024	2202

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

Comments:

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

MYE468

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

Lab Code: ACE Case No.: 51817 MA No. : 3226.1 SDG No.: MYE450

Matrix: SOIL Lab Sample ID: P4477-21

% Solids: 94.6 Date Received: 10/22/2024

Analytical Method: ICP_AES

Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

CAS No.	Analyte	Concentration	Q	Date Analyzed	Time Analyzed
7429-90-5	Aluminum	16000	D	10/26/2024	2207
7440-36-0	Antimony	0.88	JD	10/26/2024	2207
7440-38-2	Arsenic	27	D*	10/26/2024	2207
7440-39-3	Barium	180	D	10/26/2024	2207
7440-41-7	Beryllium	0.85	D	10/26/2024	2207
7440-43-9	Cadmium	0.31	JD	10/26/2024	2207
7440-70-2	Calcium	5500	D	10/26/2024	2207
7440-47-3	Chromium	34	D	10/26/2024	2207
7440-48-4	Cobalt	20	D	10/26/2024	2207
7440-50-8	Copper	70	D	10/26/2024	2207
7439-89-6	Iron	34000	D	10/26/2024	2207
7439-92-1	Lead	23	D	10/26/2024	2207
7439-95-4	Magnesium	7100	D	10/26/2024	2207
7439-96-5	Manganese	880	D*	10/26/2024	2207
7440-02-0	Nickel	34	D	10/26/2024	2207
7440-09-7	Potassium	4500	D	10/26/2024	2207
7782-49-2	Selenium	5.3	UD	10/26/2024	2207
7440-22-4	Silver	1.5	UD	10/26/2024	2207
7440-23-5	Sodium	160	JD	10/26/2024	2207
7440-28-0	Thallium	3.8	UD	10/26/2024	2207
7440-62-2	Vanadium	62	D	10/26/2024	2207
7440-66-6	Zinc	74	D	10/26/2024	2207

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

Comments:

FORM 1 - IN
INORGANIC ANALYSIS DATA SHEET

MYE469

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

Lab Code: ACE Case No.: 51817 MA No. : 3226.1 SDG No.: MYE450

Matrix: SOIL Lab Sample ID: P4477-22

% Solids: 94.7 Date Received: 10/22/2024

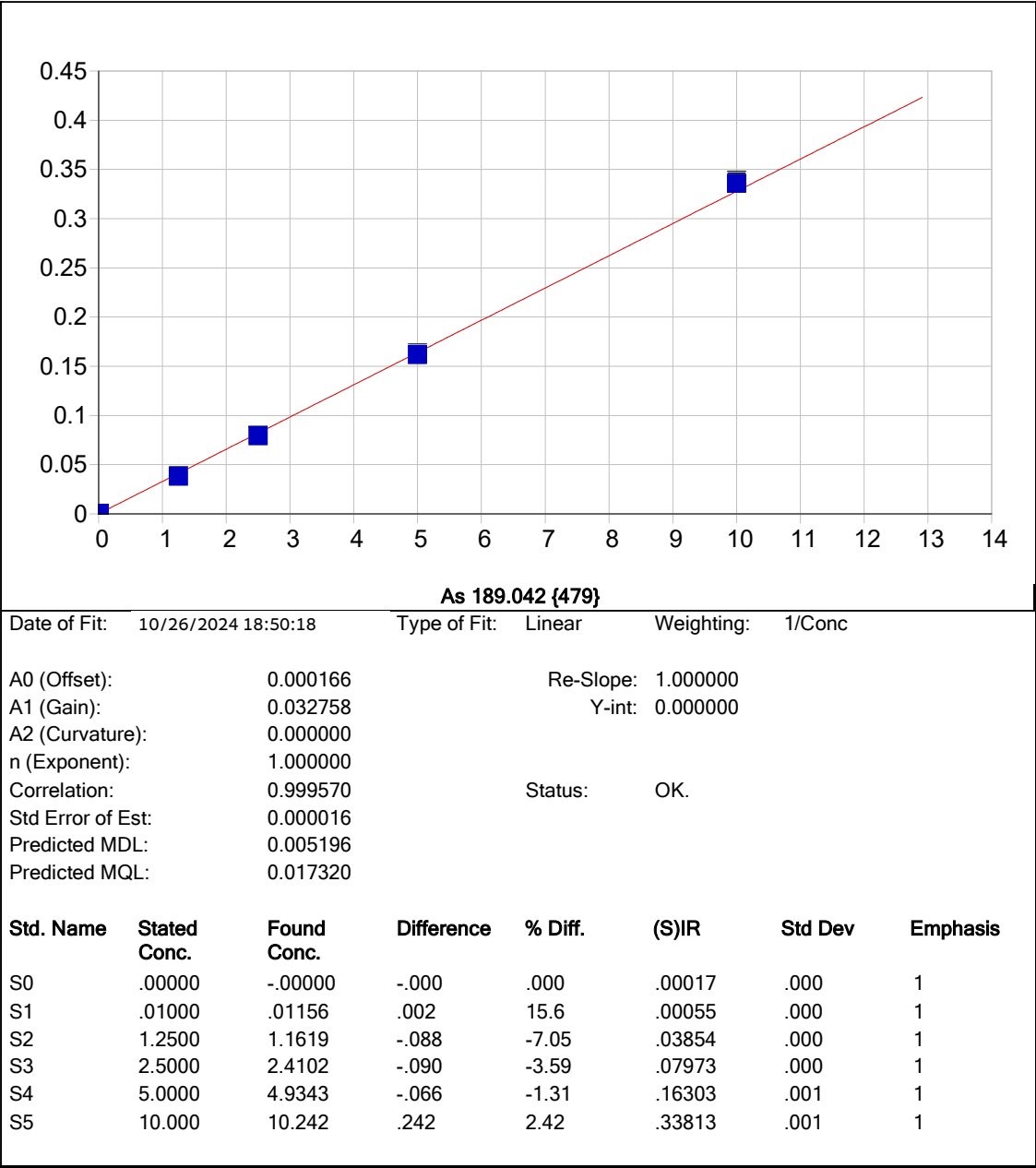
Analytical Method: ICP_AES

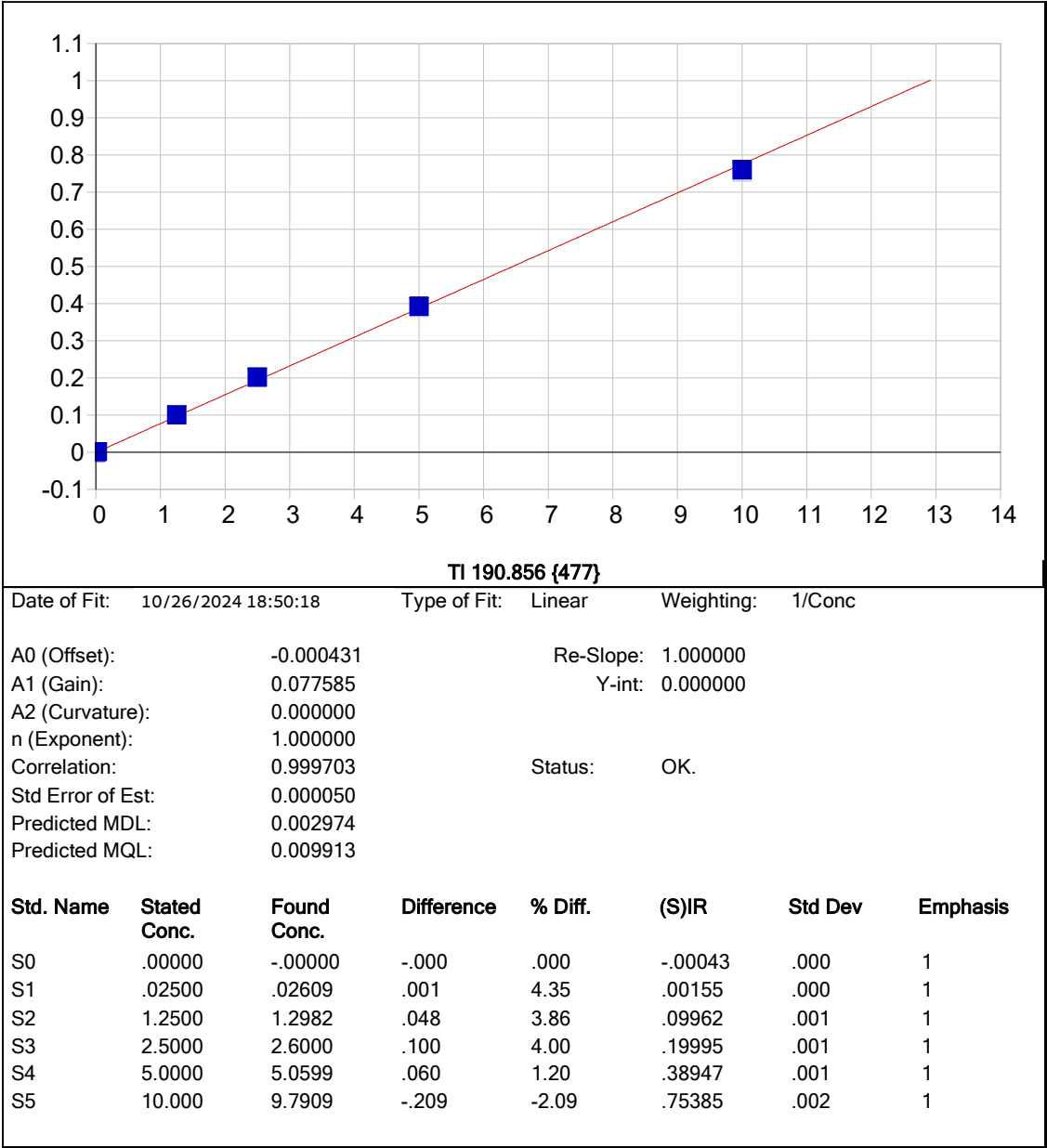
Concentration Units ($\mu\text{g/L}$, mg/L , mg/kg dry weight, μg , or $\mu\text{g/cm}^2$): mg/kg

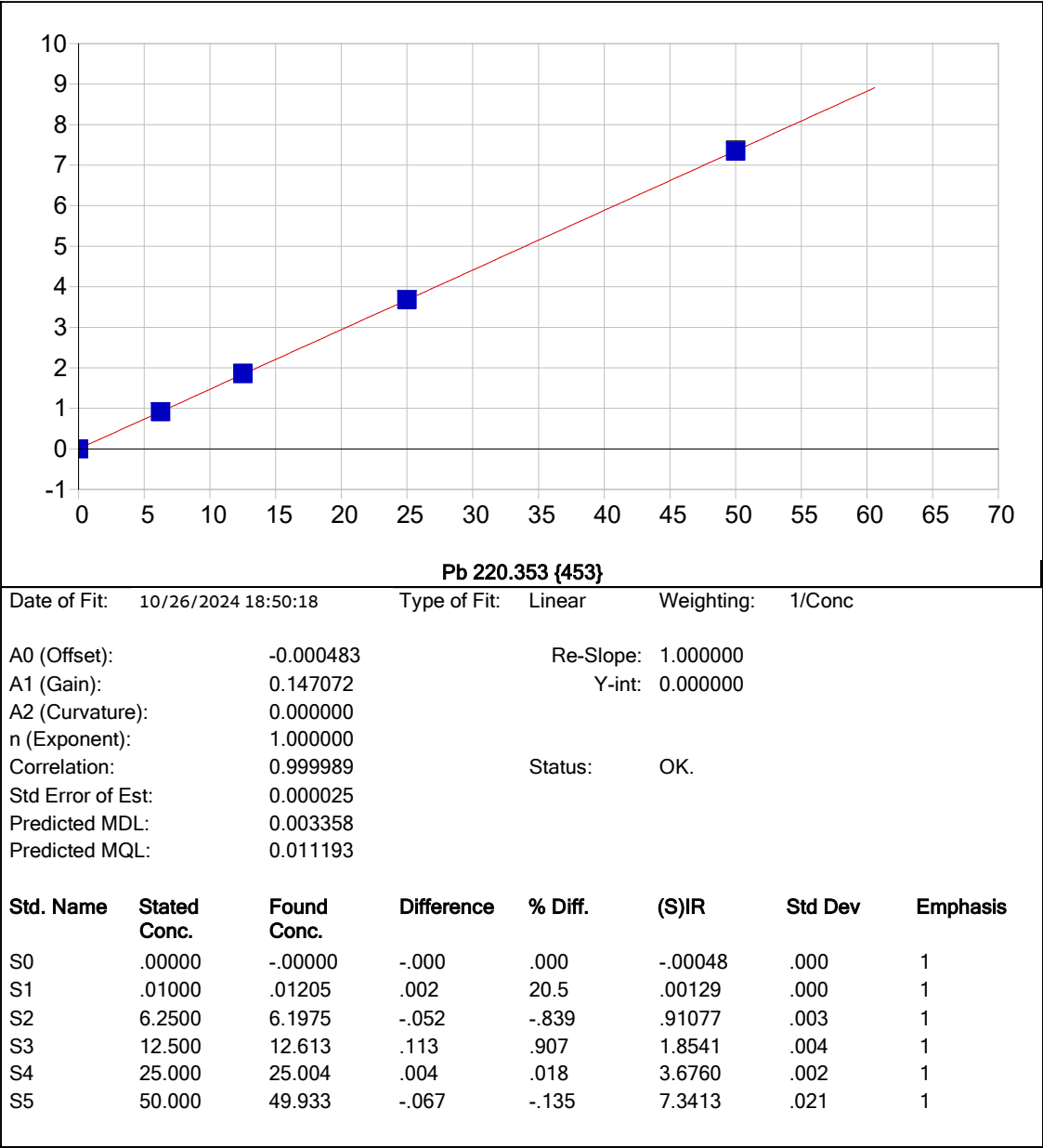
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7429-90-5	Aluminum	23000	D	10/26/2024	2211
7440-36-0	Antimony	1.2	JD	10/26/2024	2211
7440-38-2	Arsenic	44	D*	10/26/2024	2211
7440-39-3	Barium	290	D	10/26/2024	2211
7440-41-7	Beryllium	1.2	D	10/26/2024	2211
7440-43-9	Cadmium	0.60	JD	10/26/2024	2211
7440-70-2	Calcium	10000	D	10/26/2024	2211
7440-47-3	Chromium	43	D	10/26/2024	2211
7440-48-4	Cobalt	24	D	10/26/2024	2211
7440-50-8	Copper	96	D	10/26/2024	2211
7439-89-6	Iron	44000	D	10/26/2024	2211
7439-92-1	Lead	35	D	10/26/2024	2211
7439-95-4	Magnesium	10000	D	10/26/2024	2211
7439-96-5	Manganese	1700	D*	10/26/2024	2211
7440-02-0	Nickel	43	D	10/26/2024	2211
7440-09-7	Potassium	5200	D	10/26/2024	2211
7782-49-2	Selenium	5.6	UD	10/26/2024	2211
7440-22-4	Silver	1.6	UD	10/26/2024	2211
7440-23-5	Sodium	200	JD	10/26/2024	2211
7440-28-0	Thallium	4.0	UD	10/26/2024	2211
7440-62-2	Vanadium	78	D	10/26/2024	2211
7440-66-6	Zinc	100	D	10/26/2024	2211

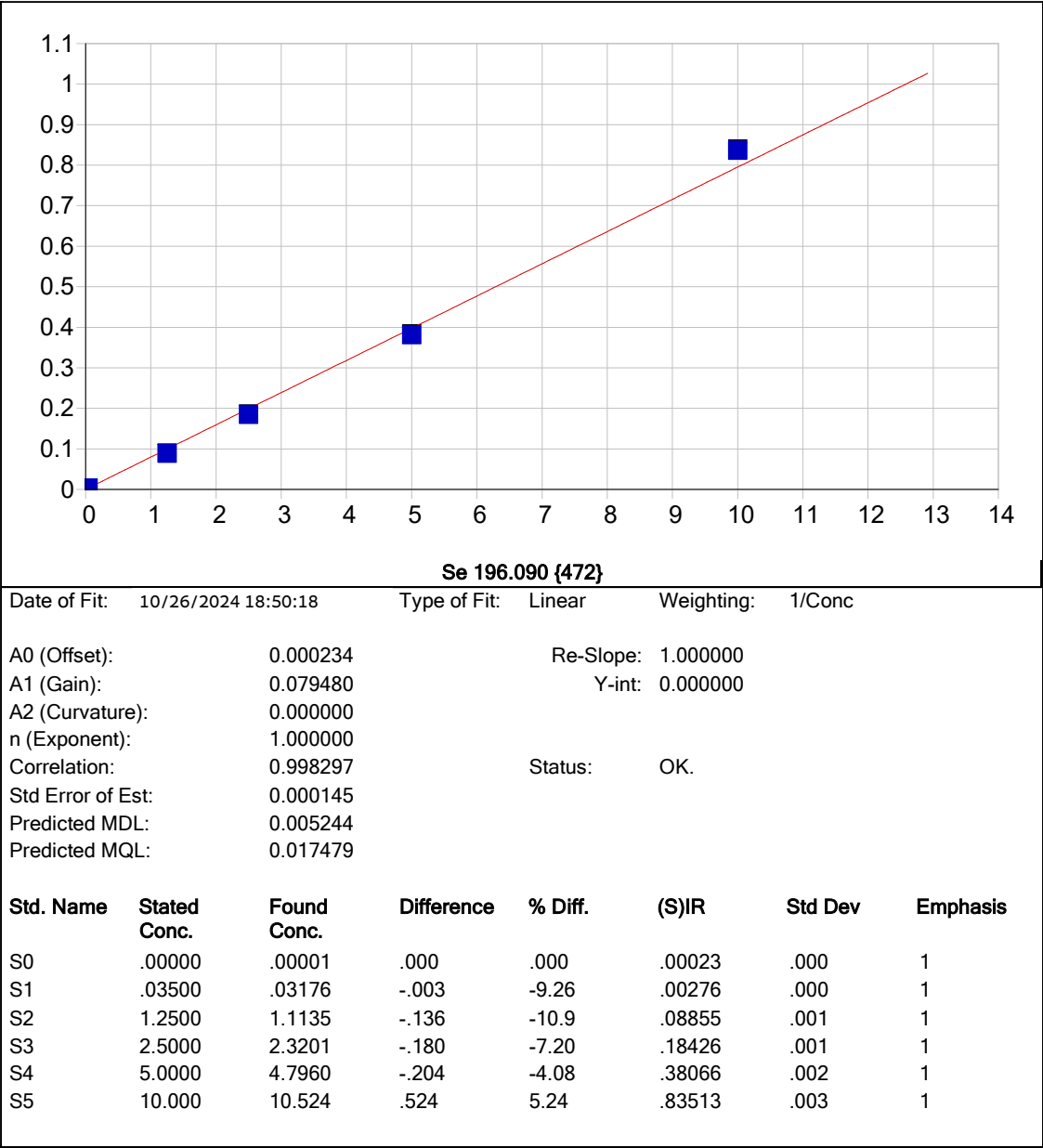
NOTE: Hardness (total) is reported in mg/L

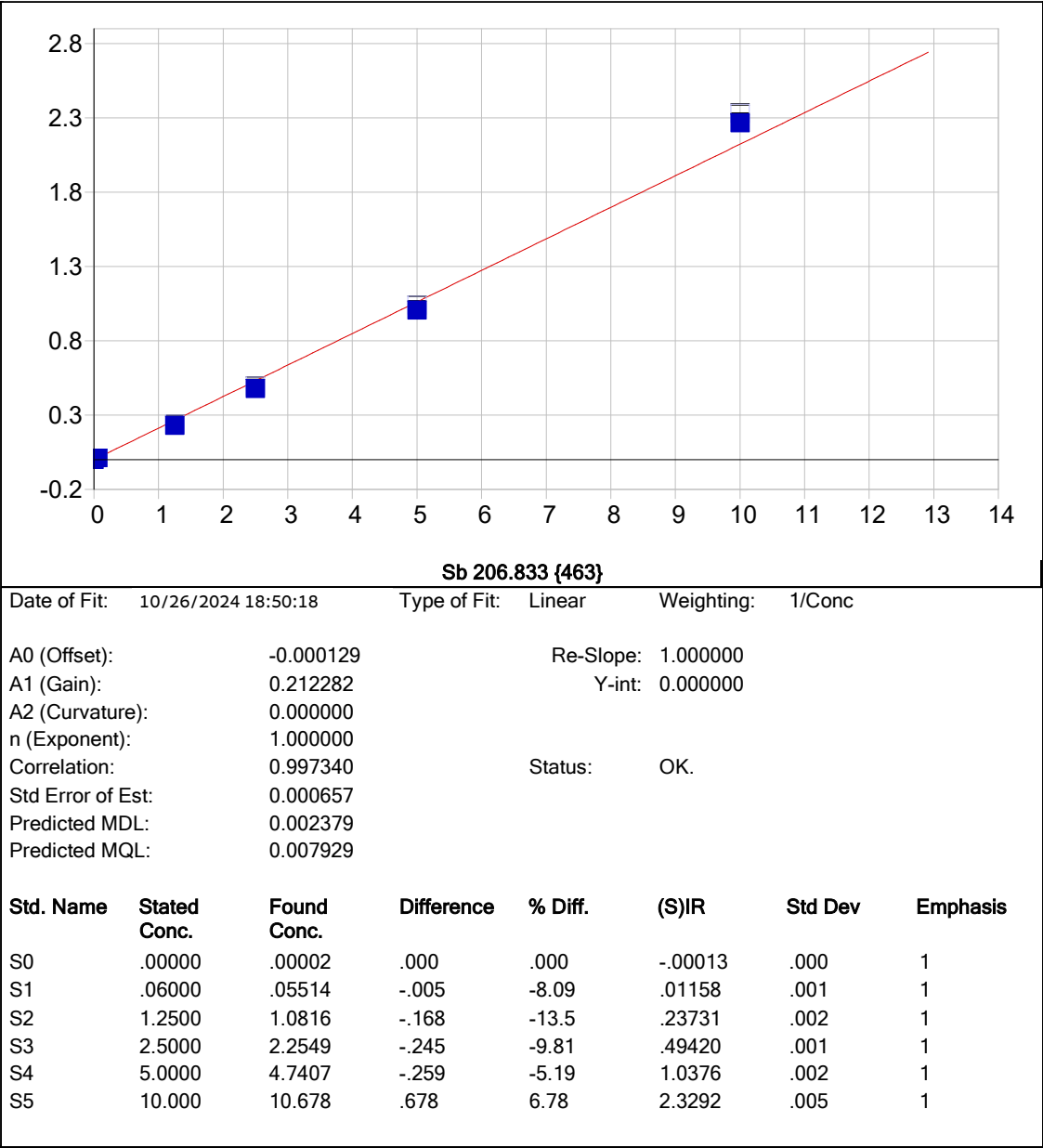
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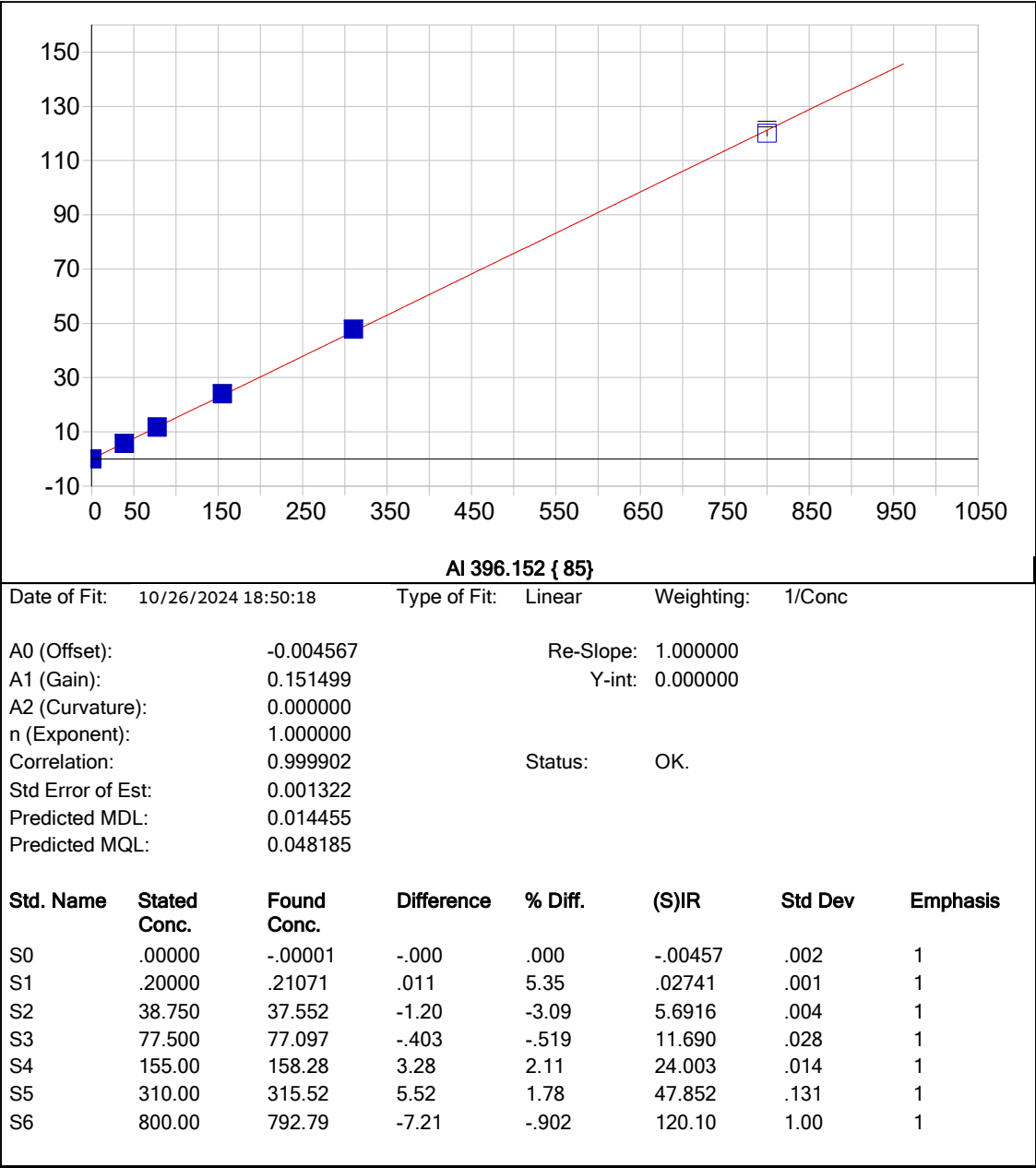


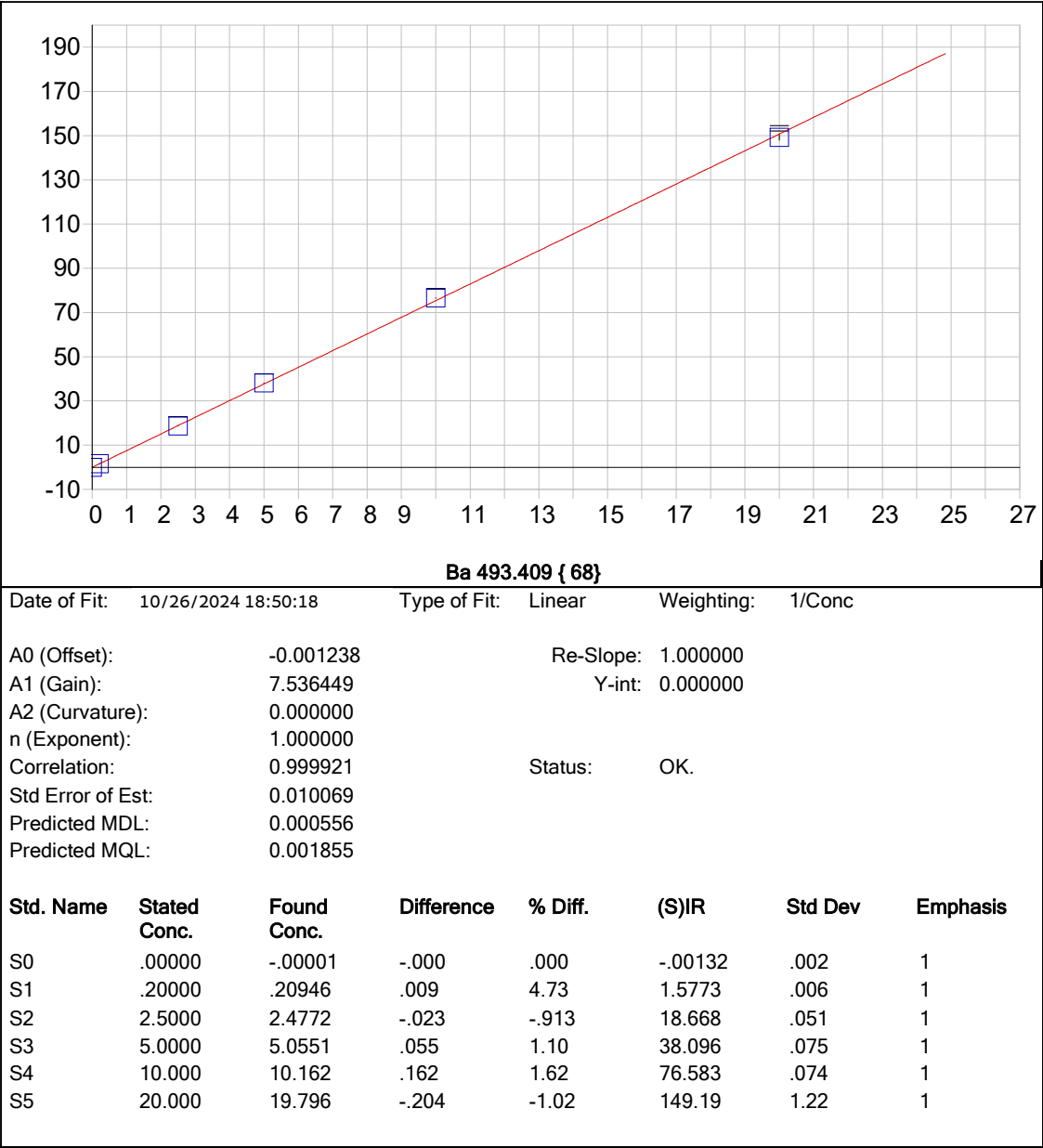


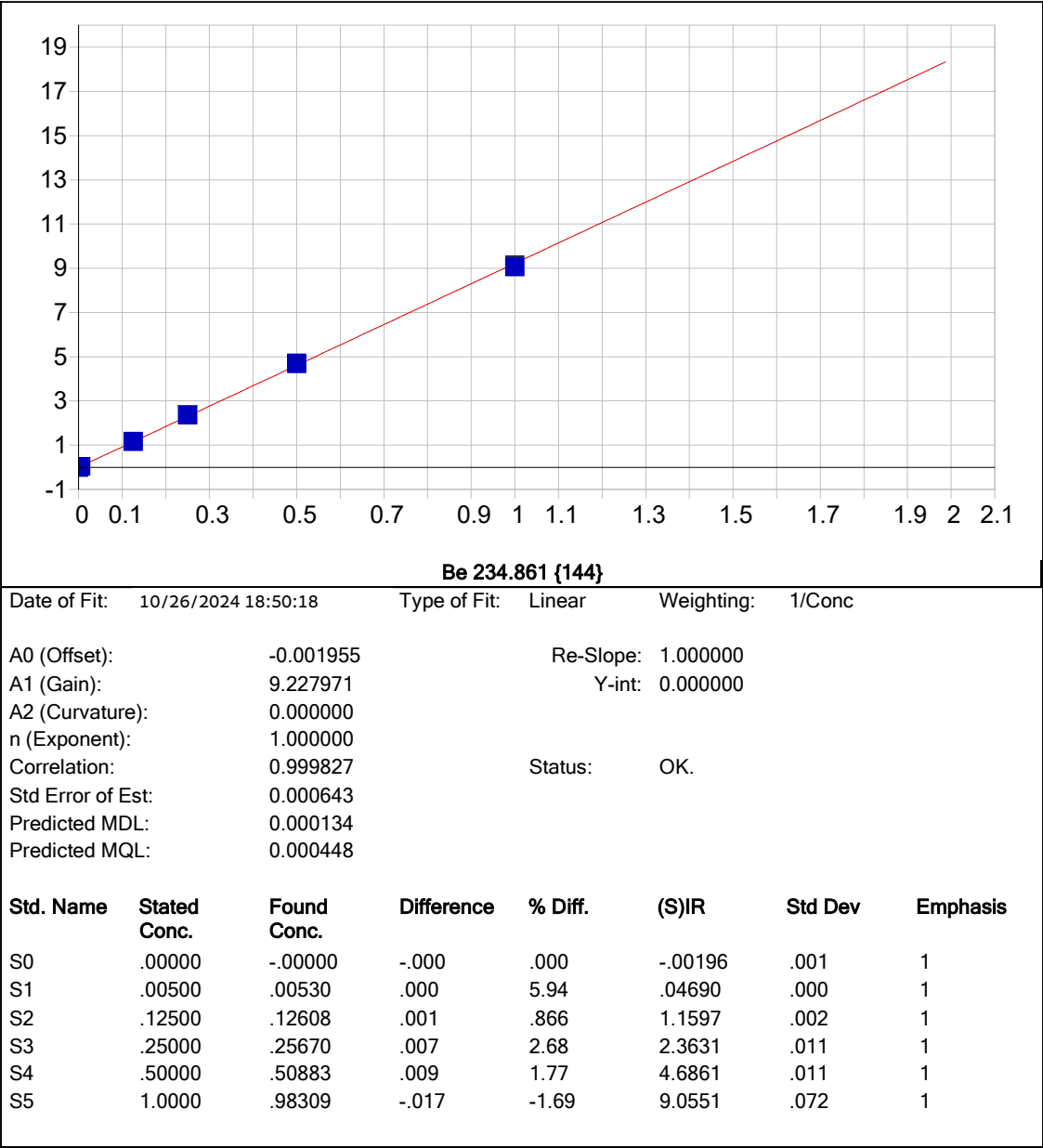


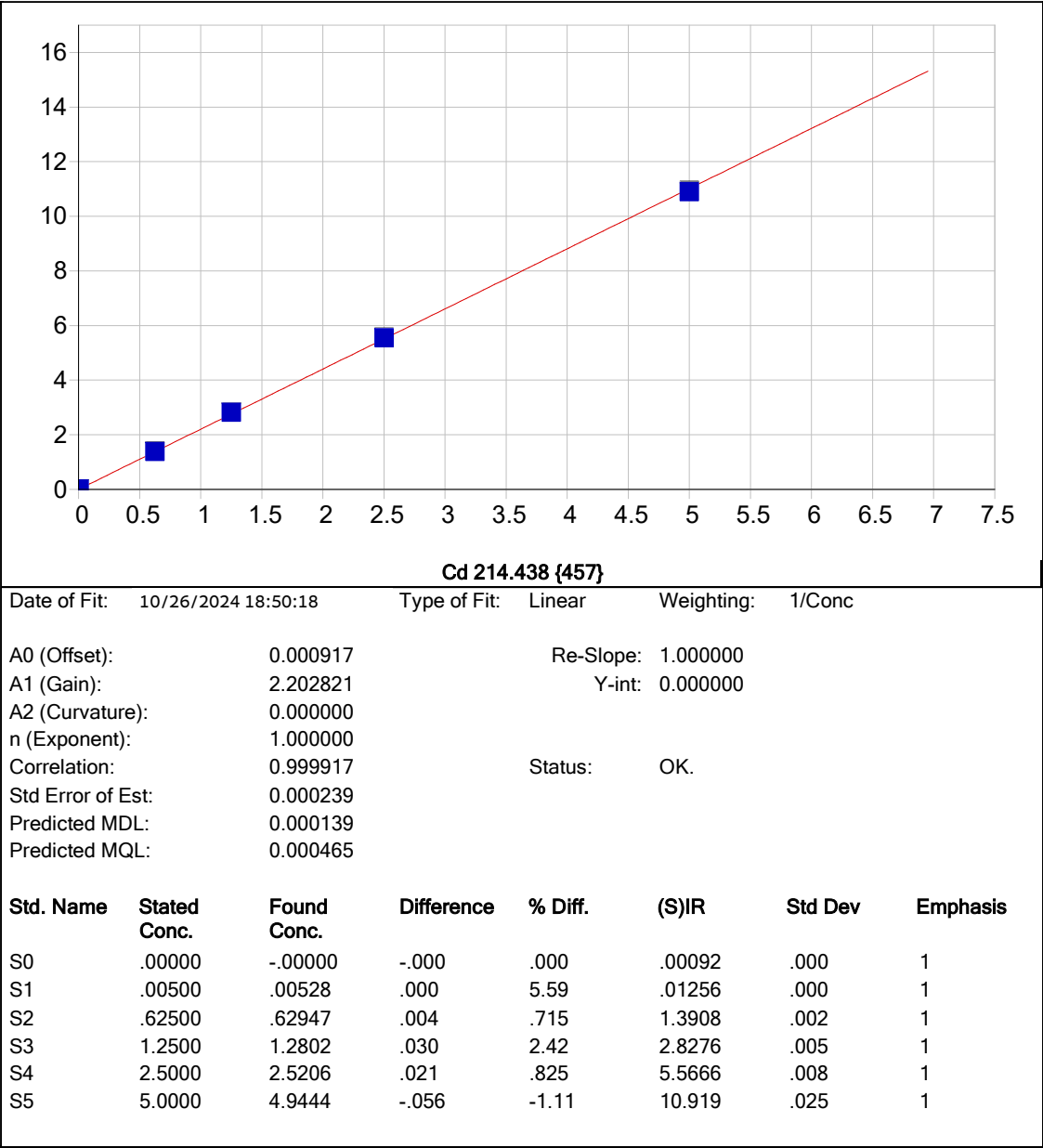


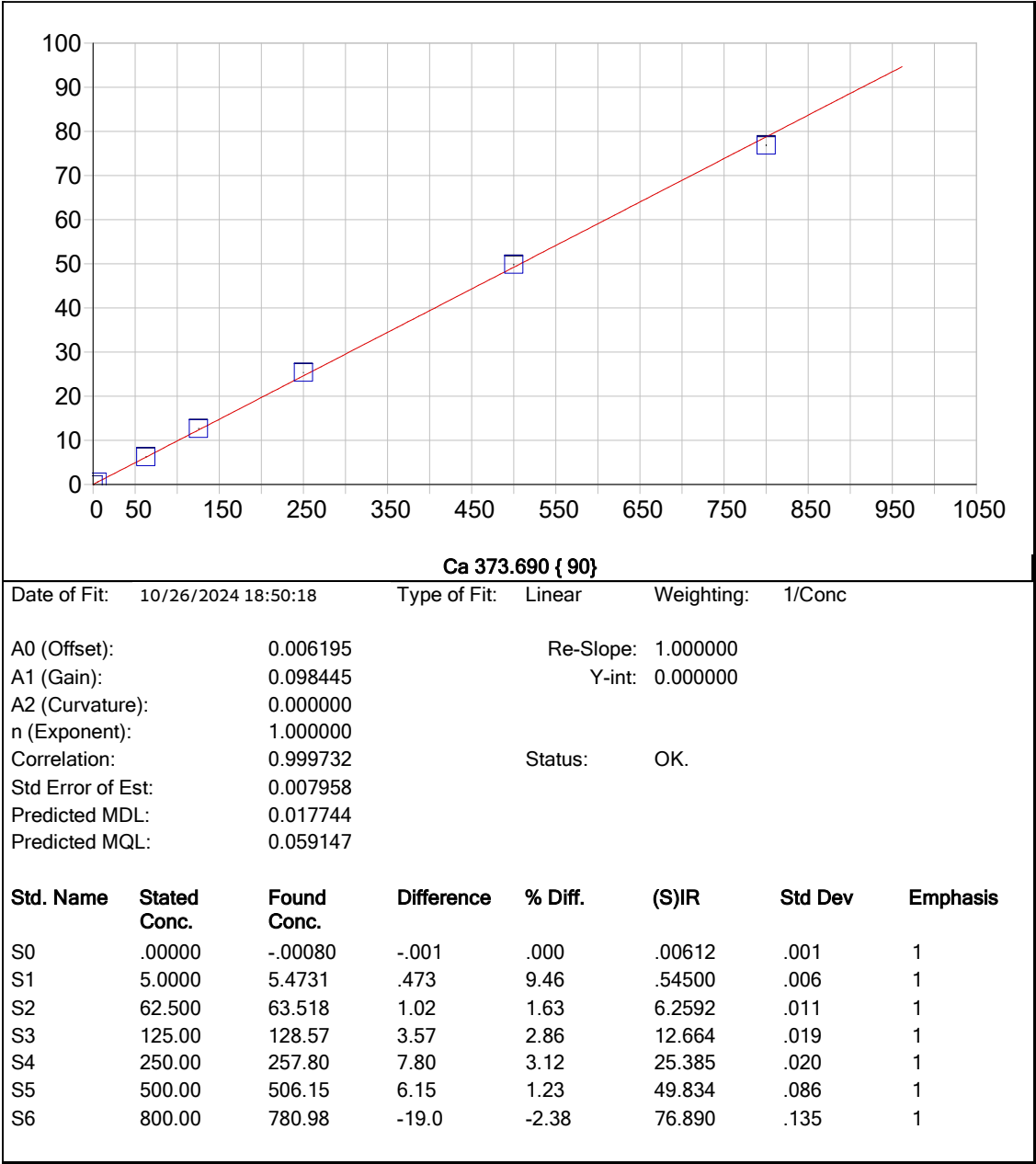


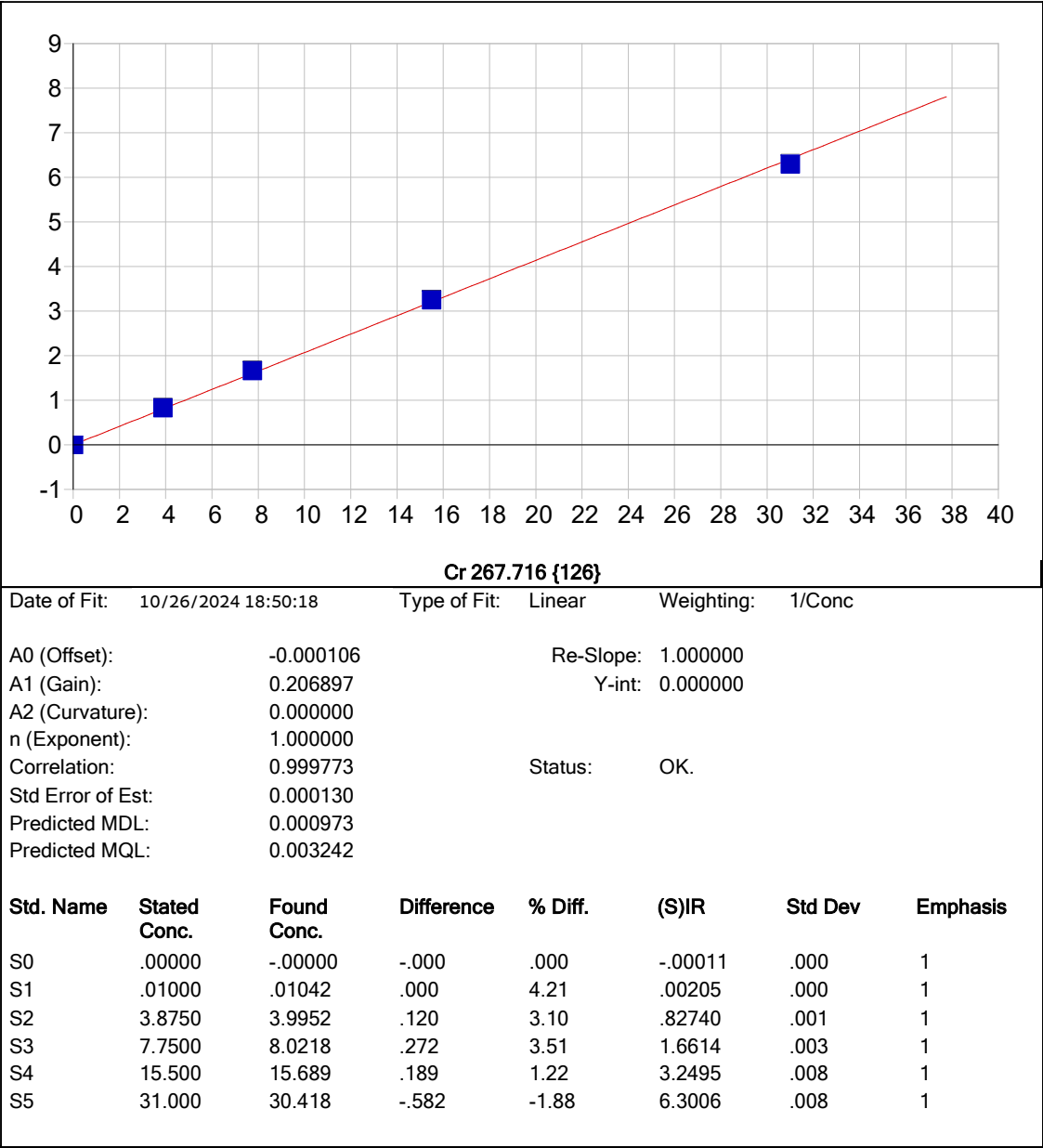


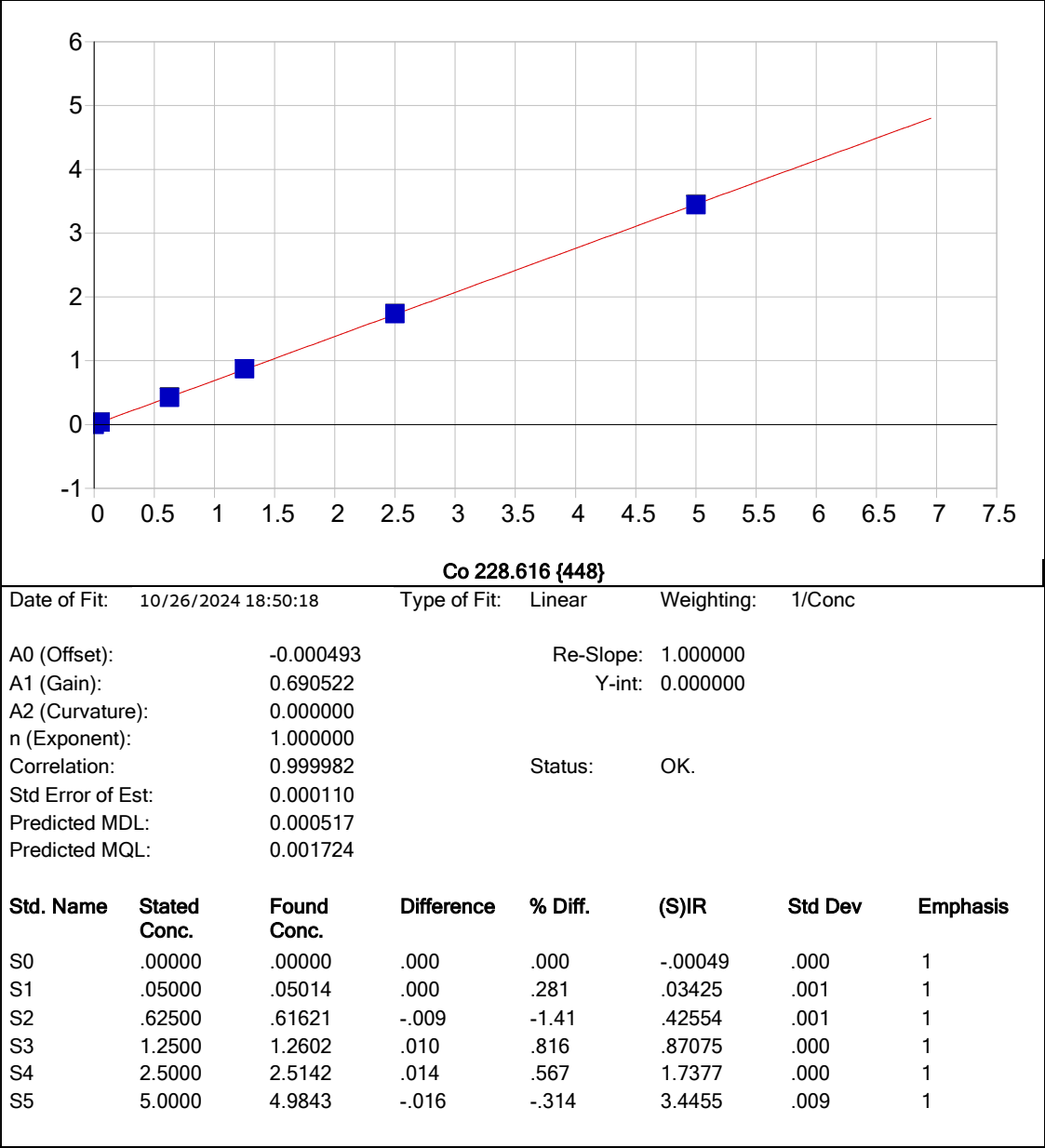


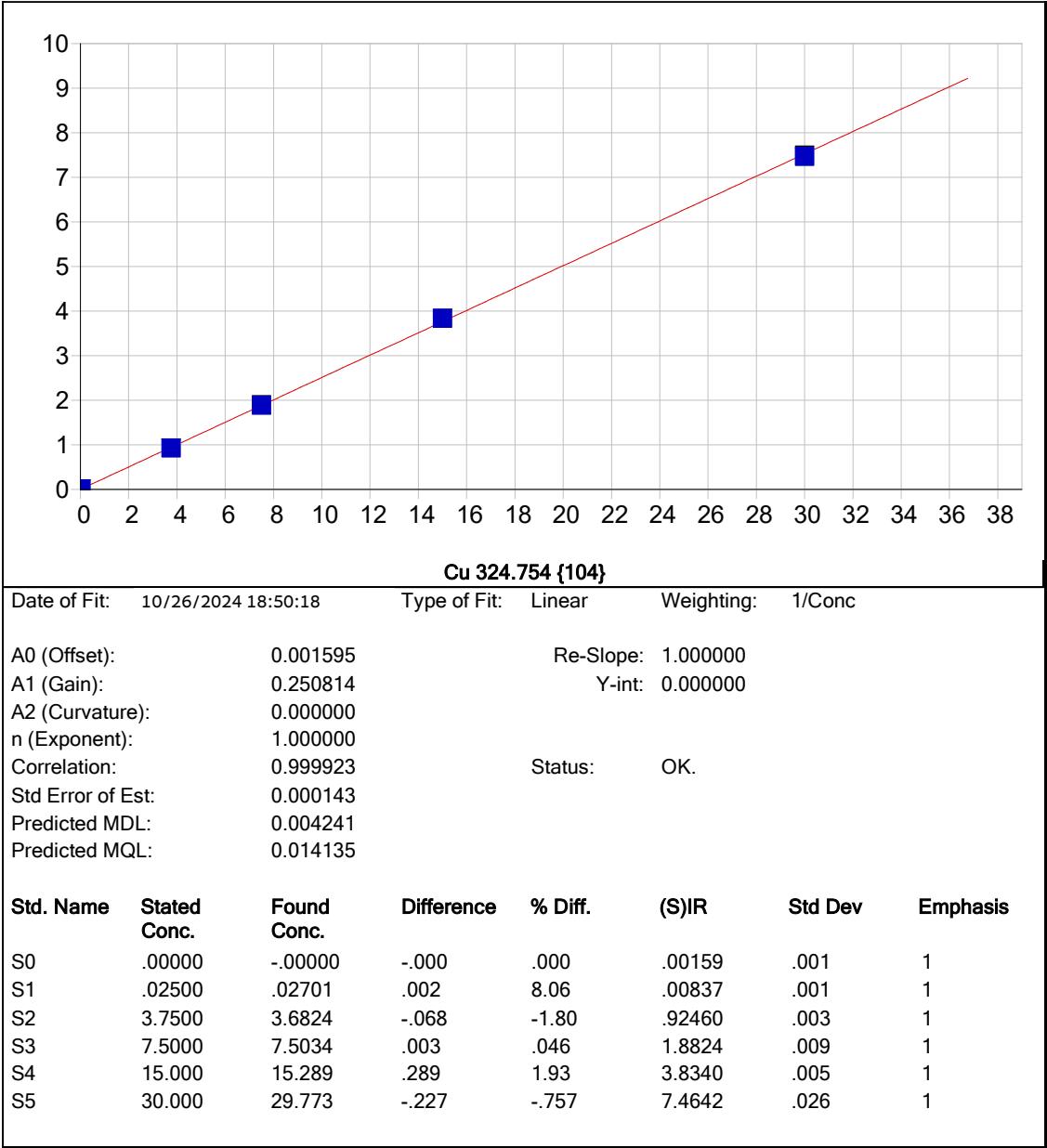


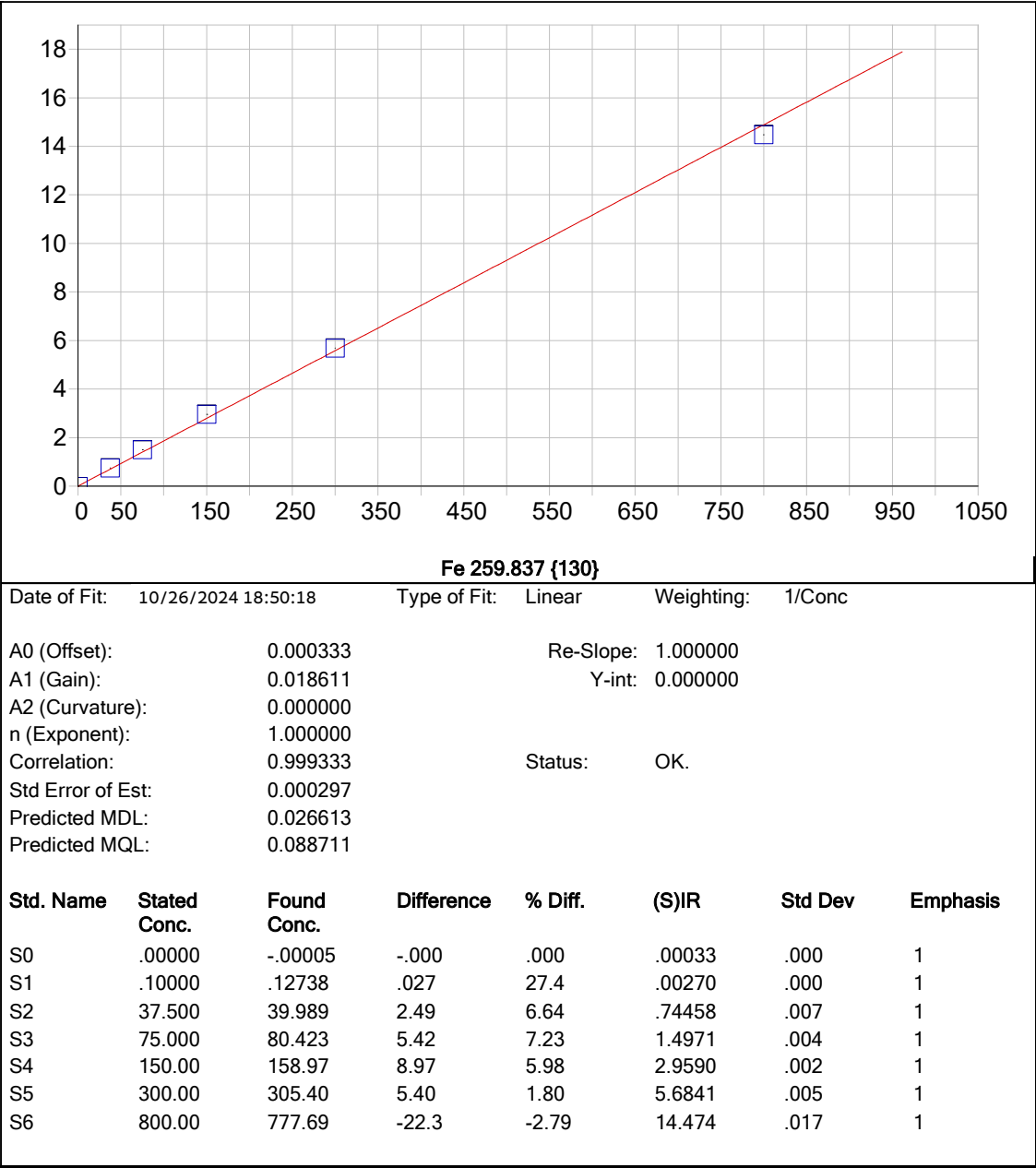


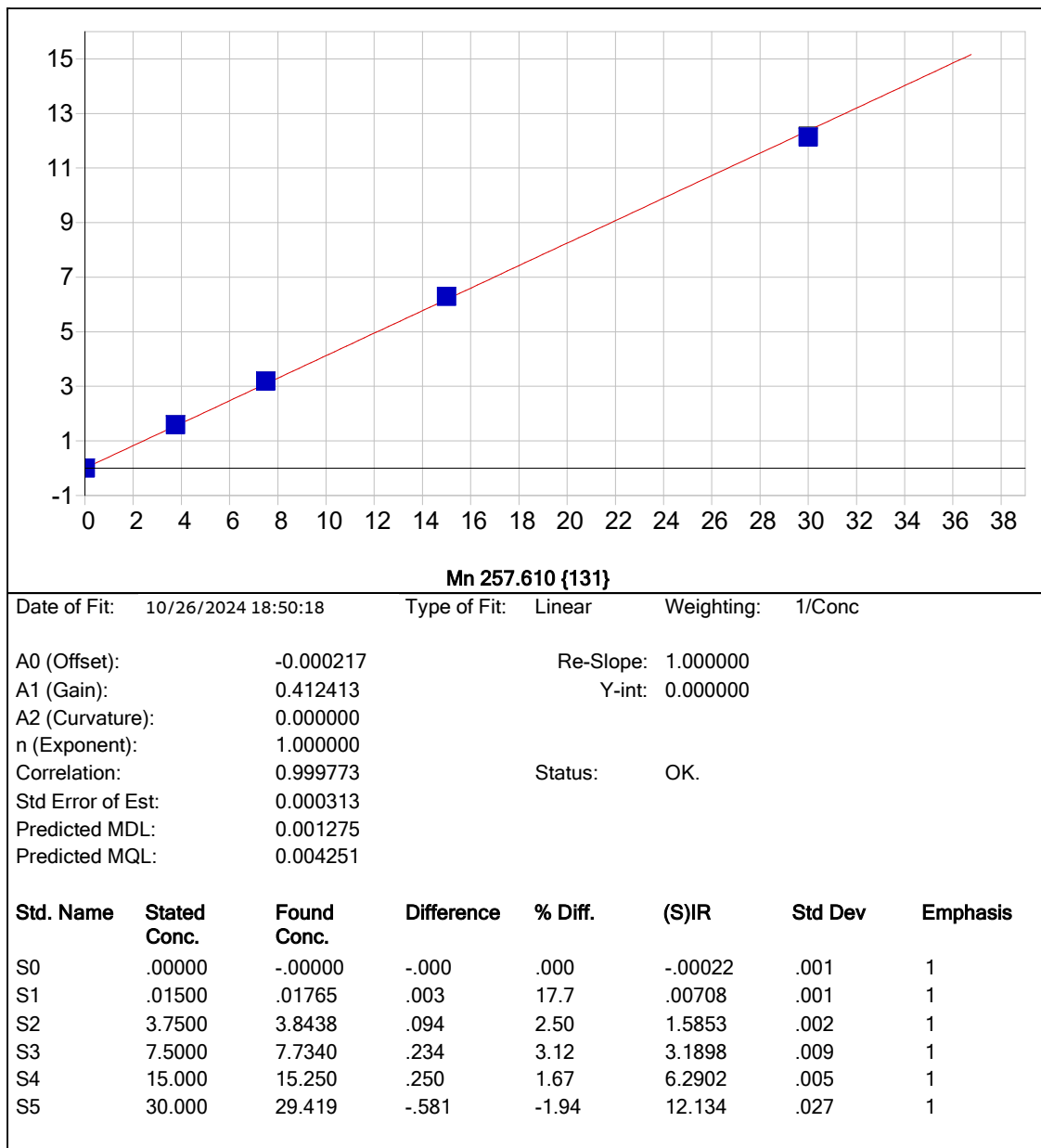


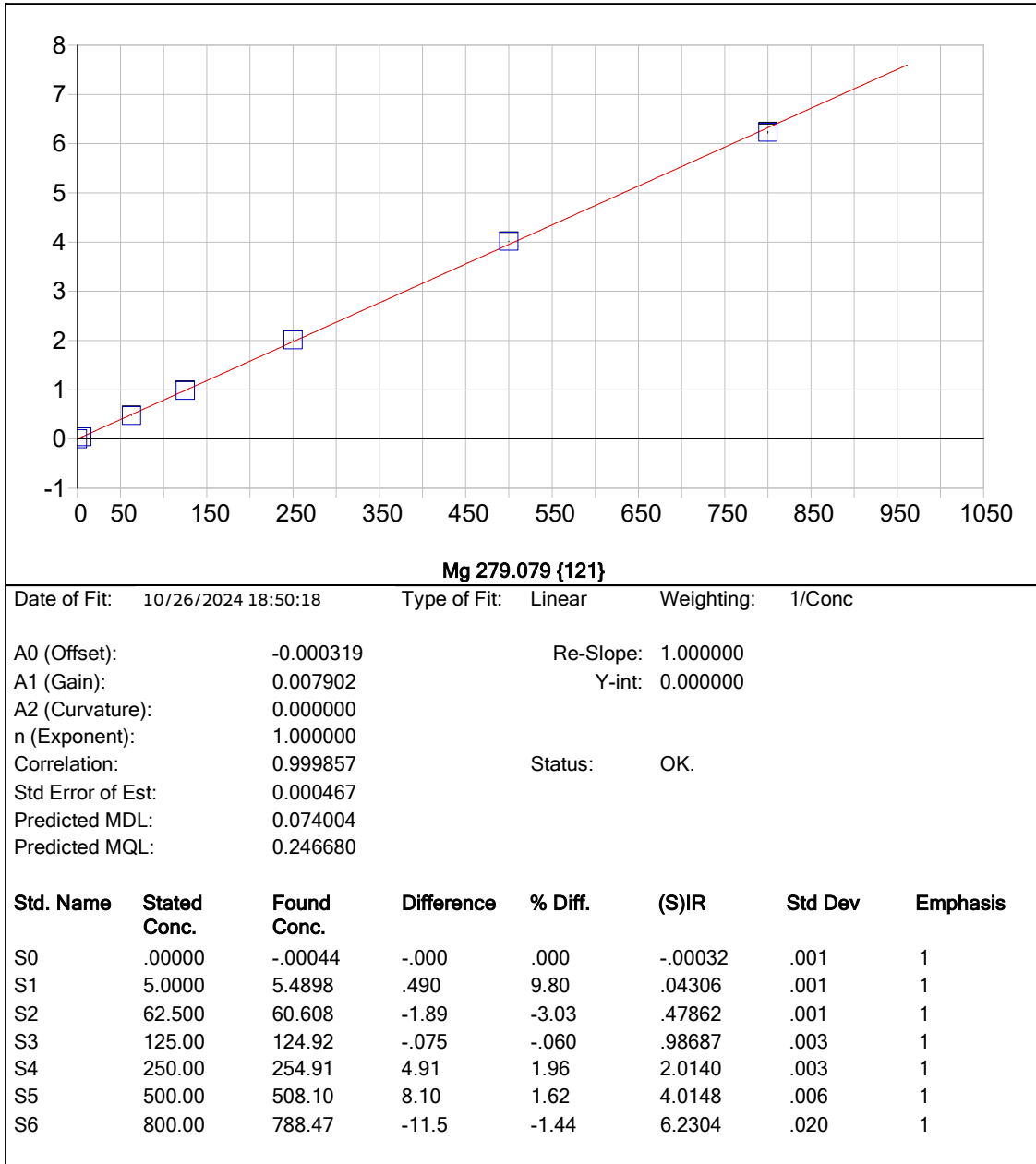


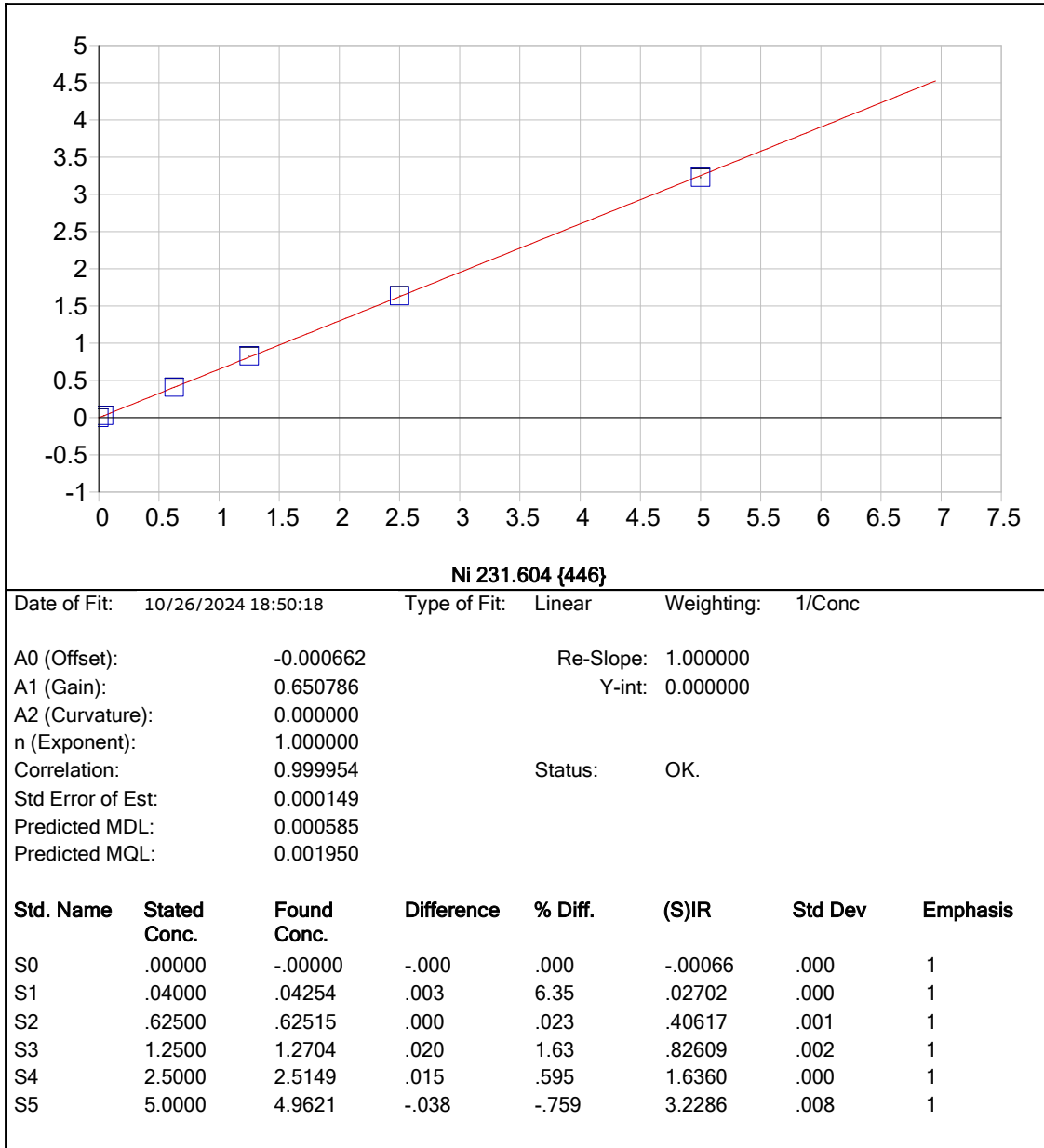


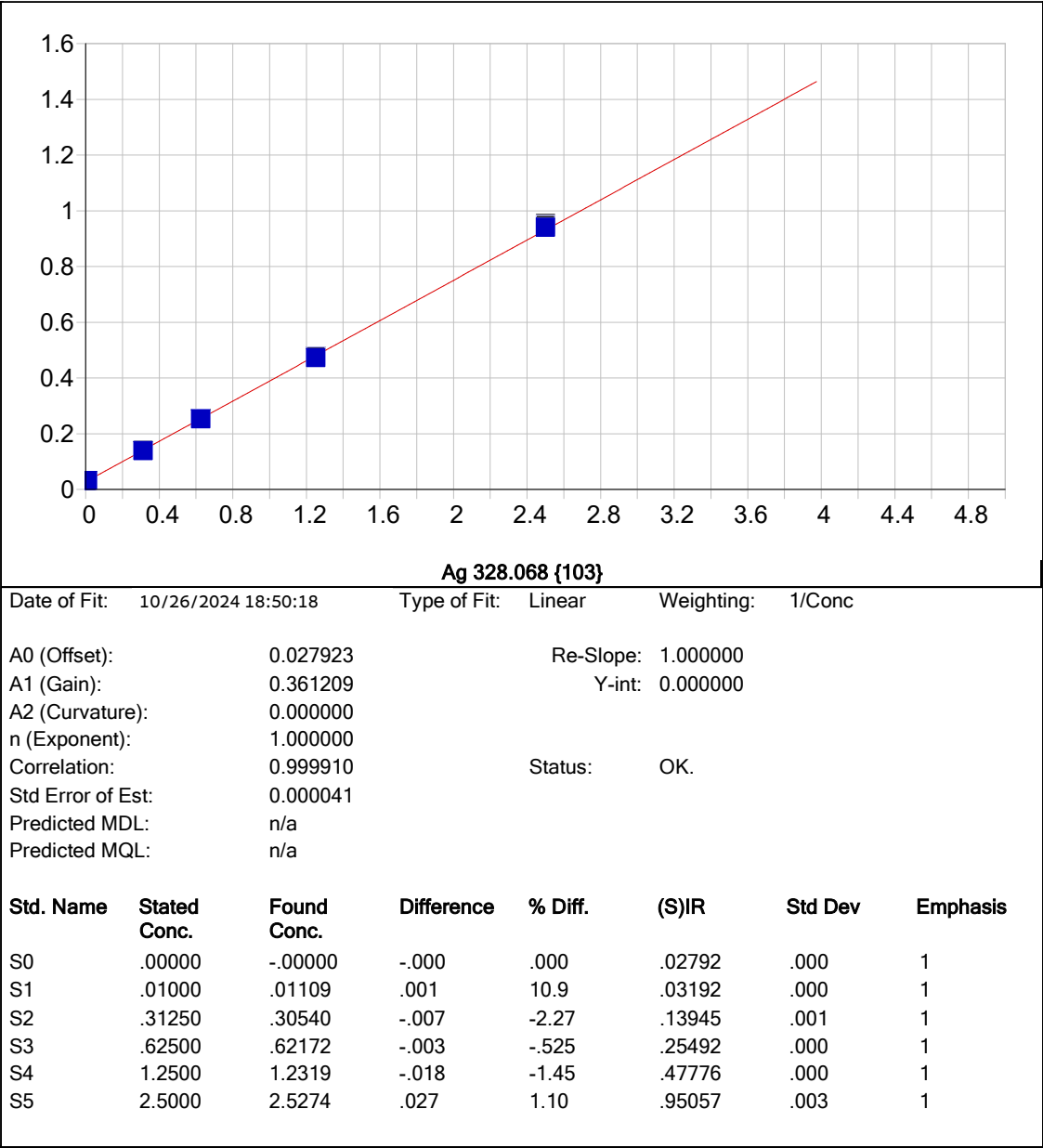


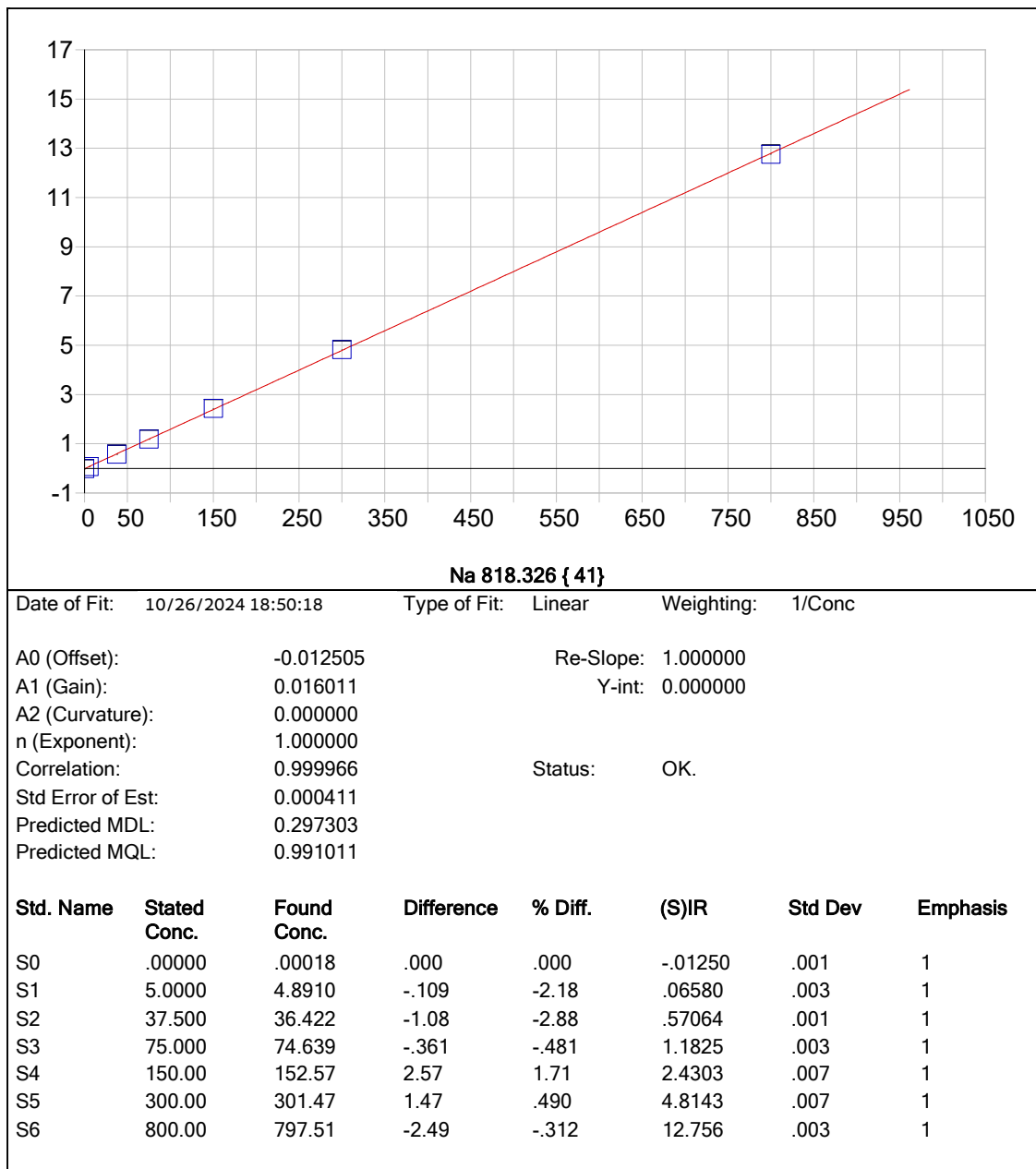


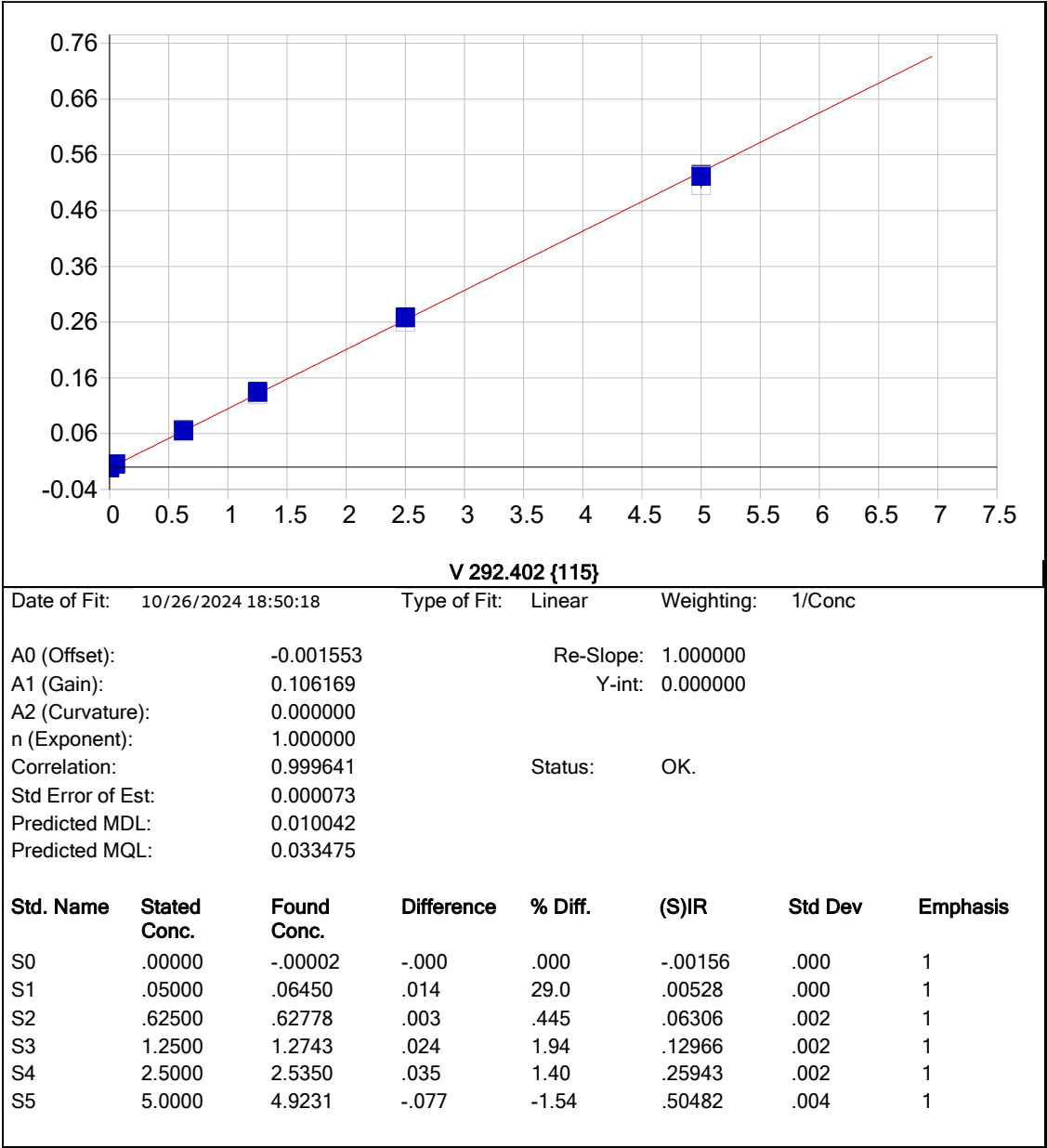


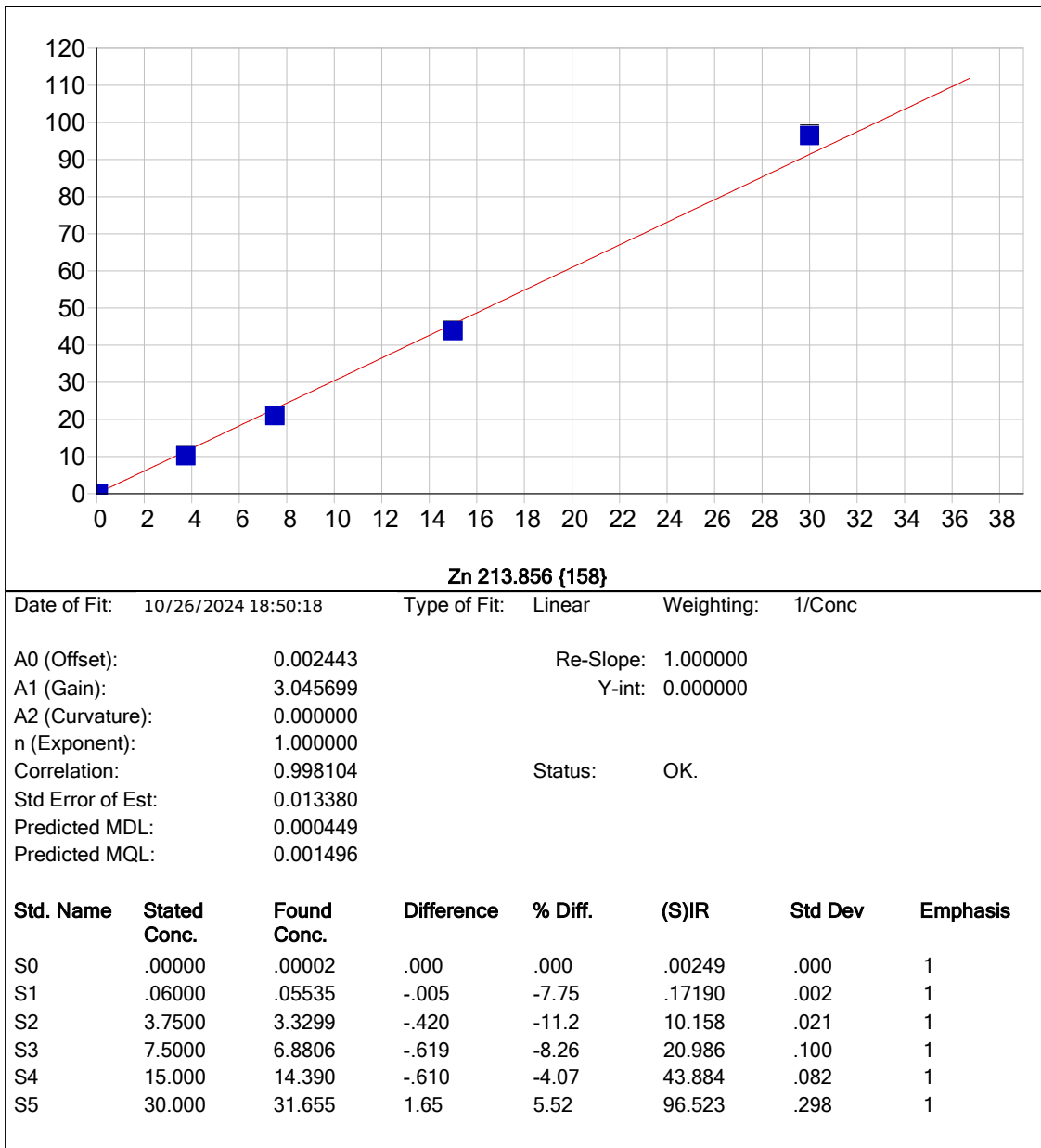


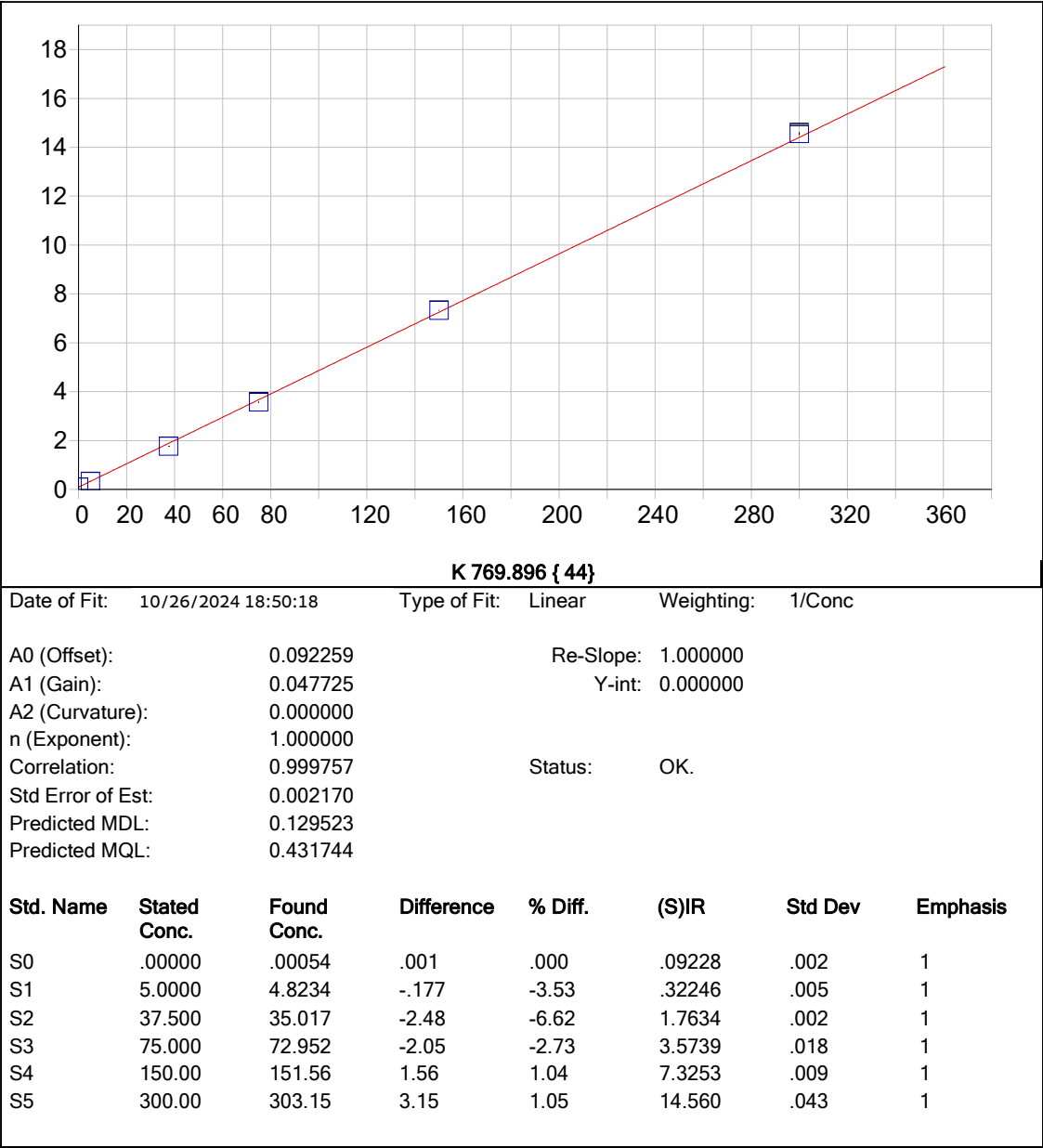


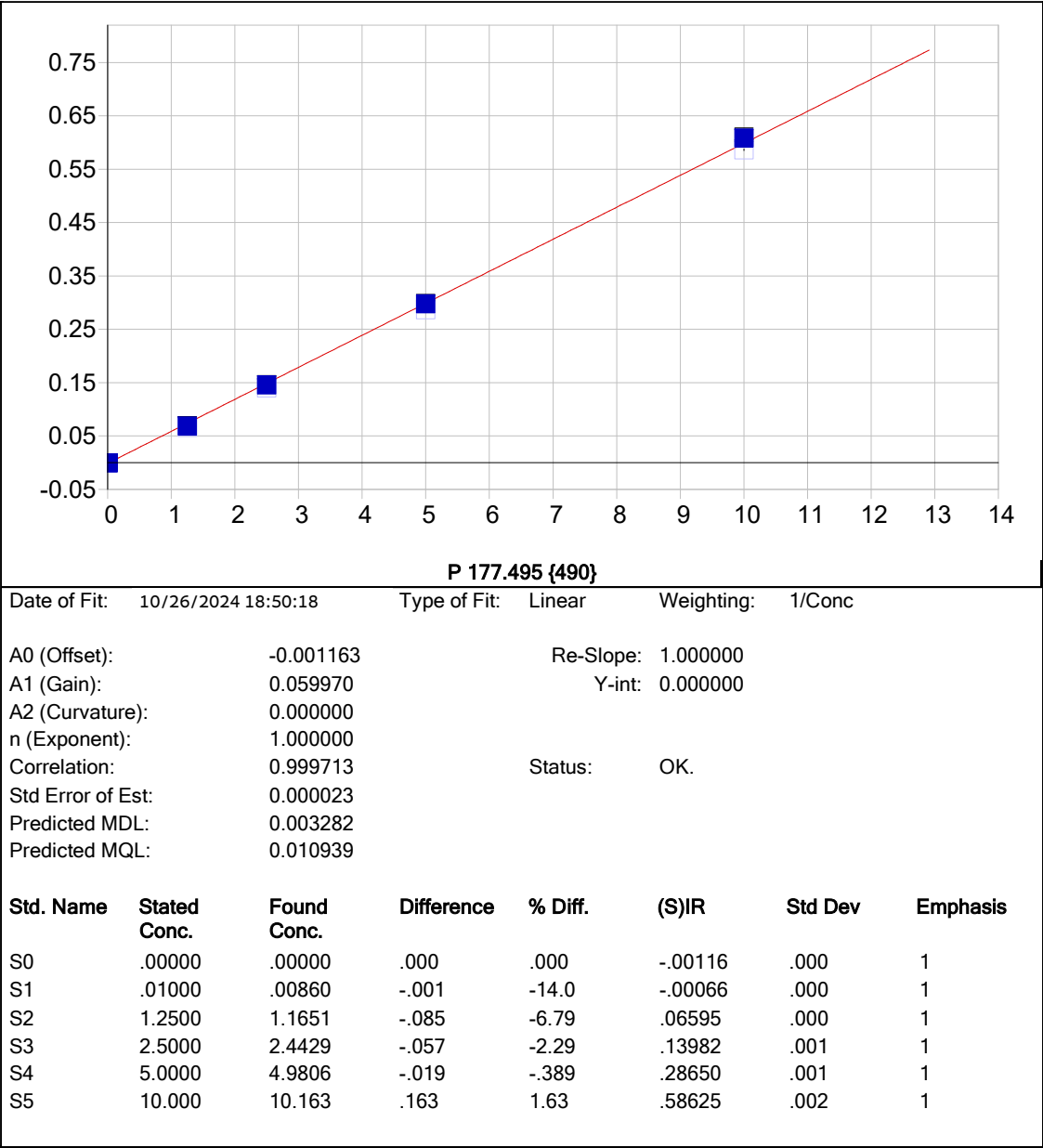


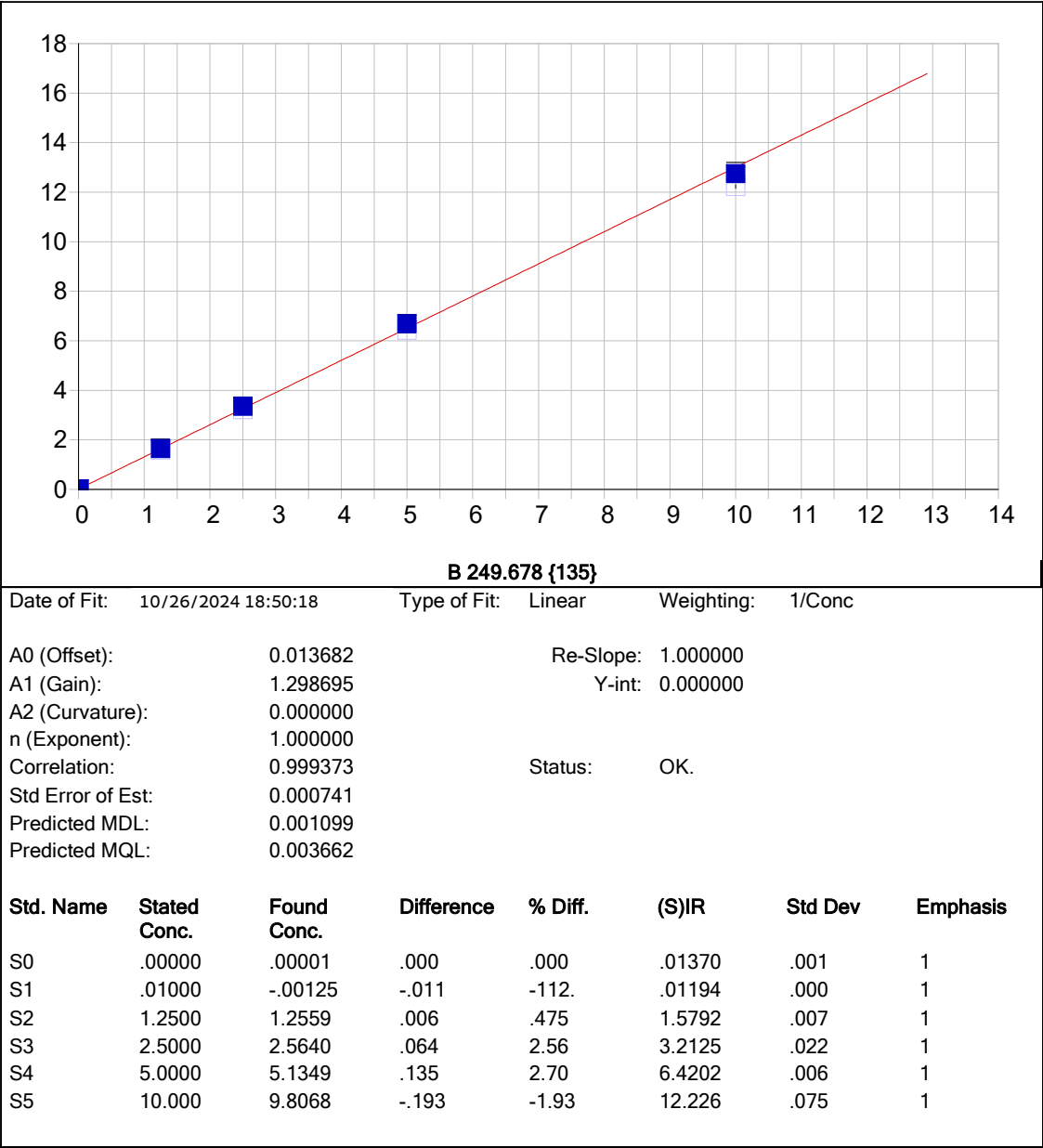


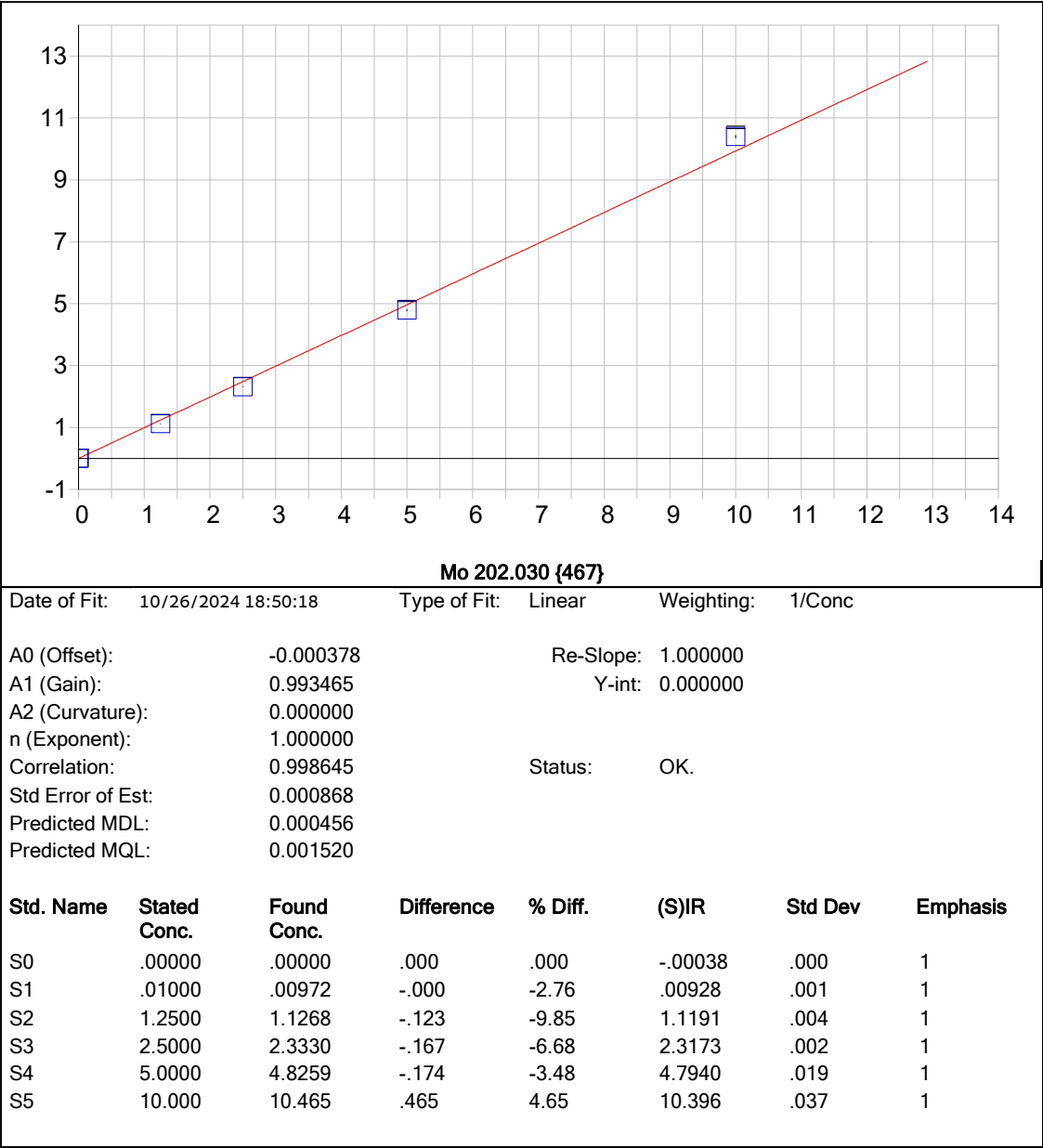


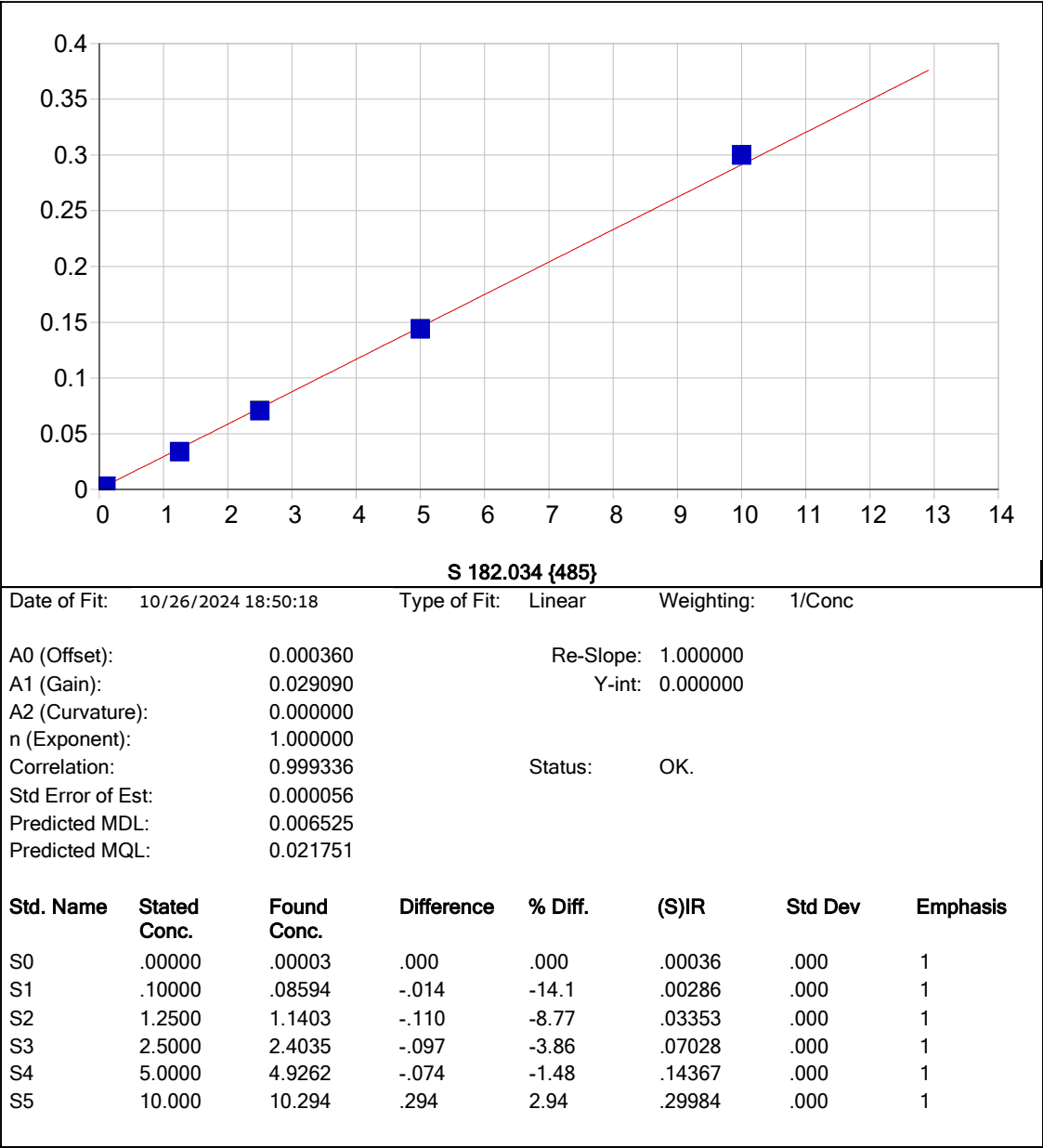


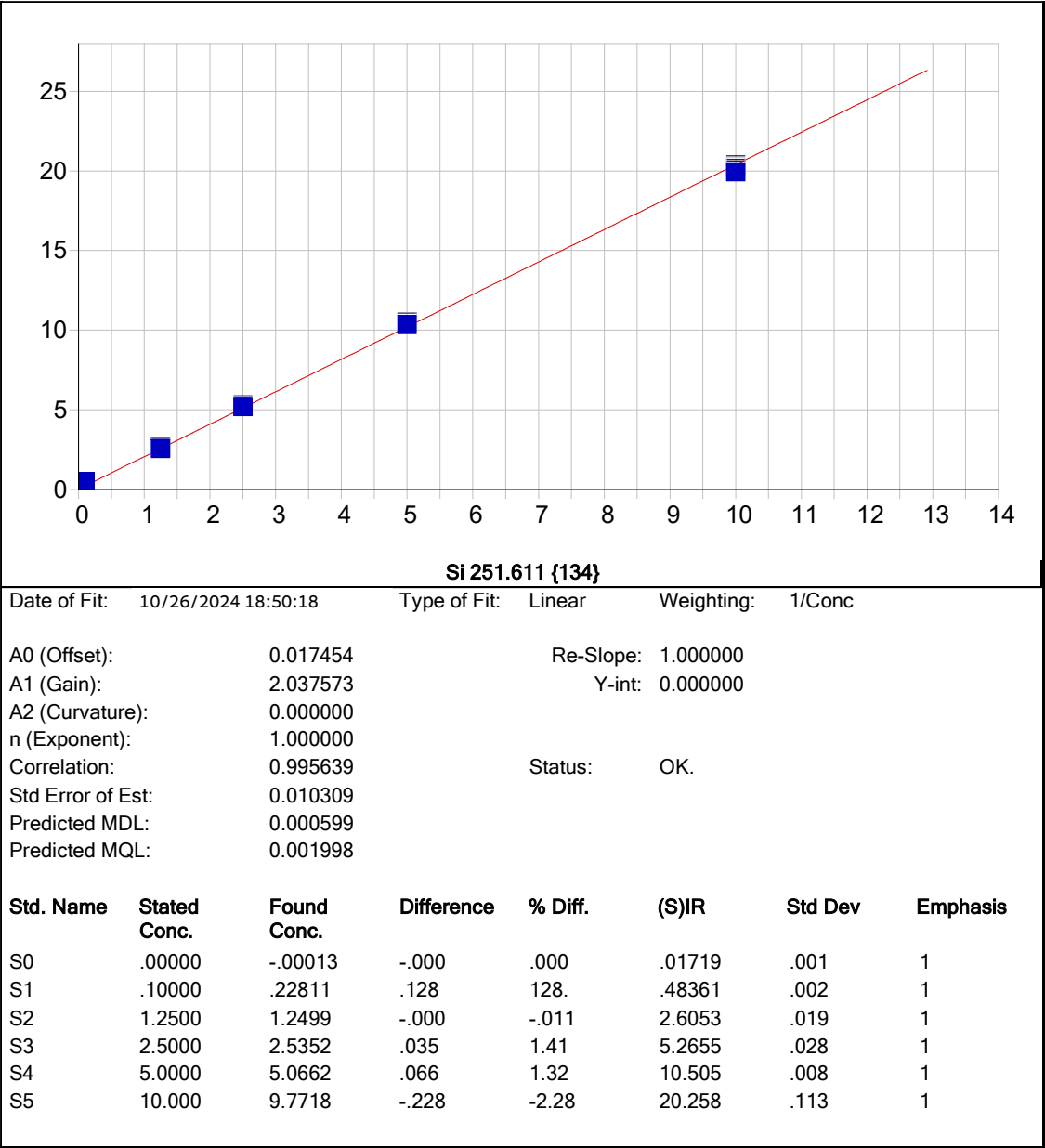


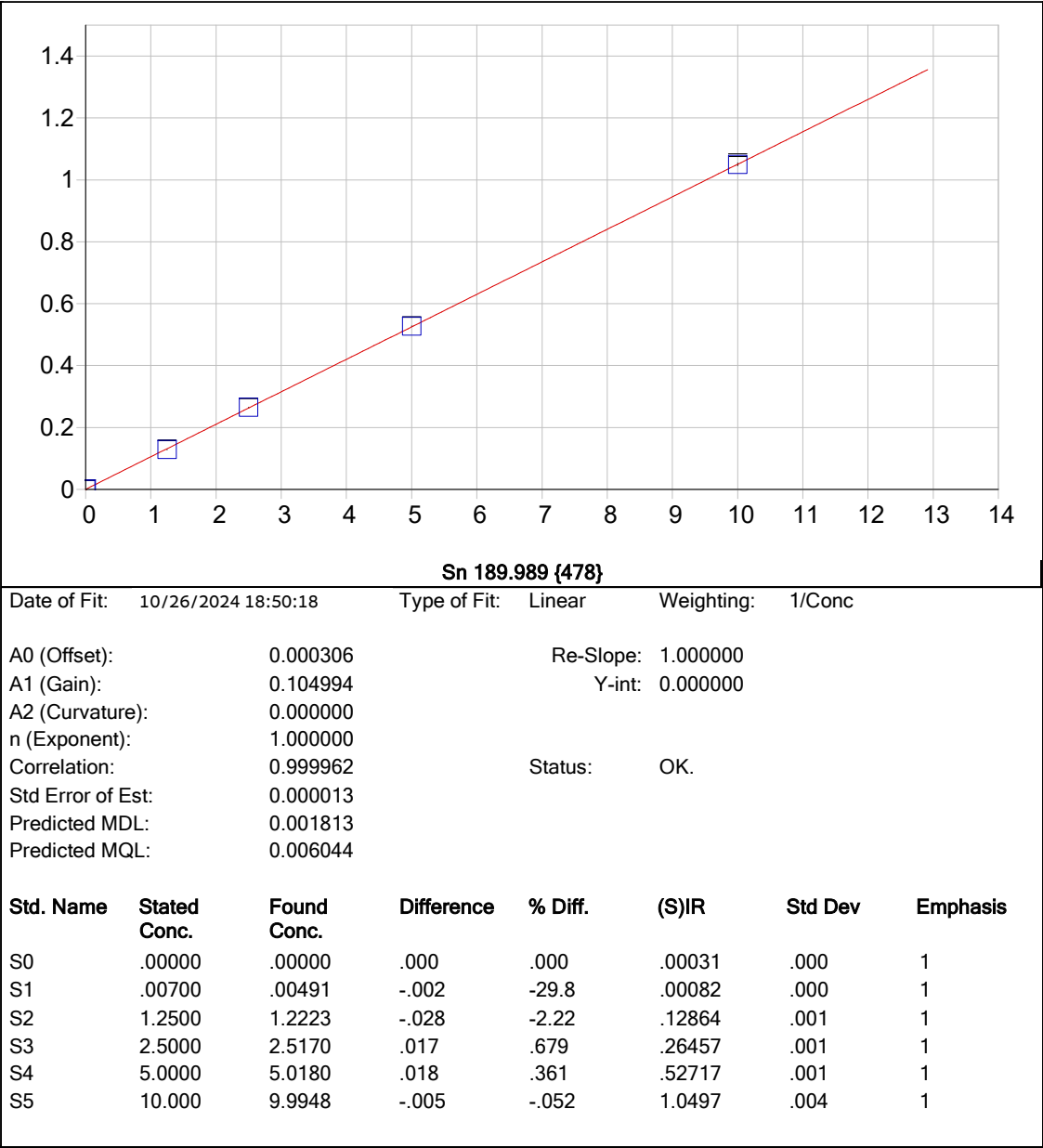


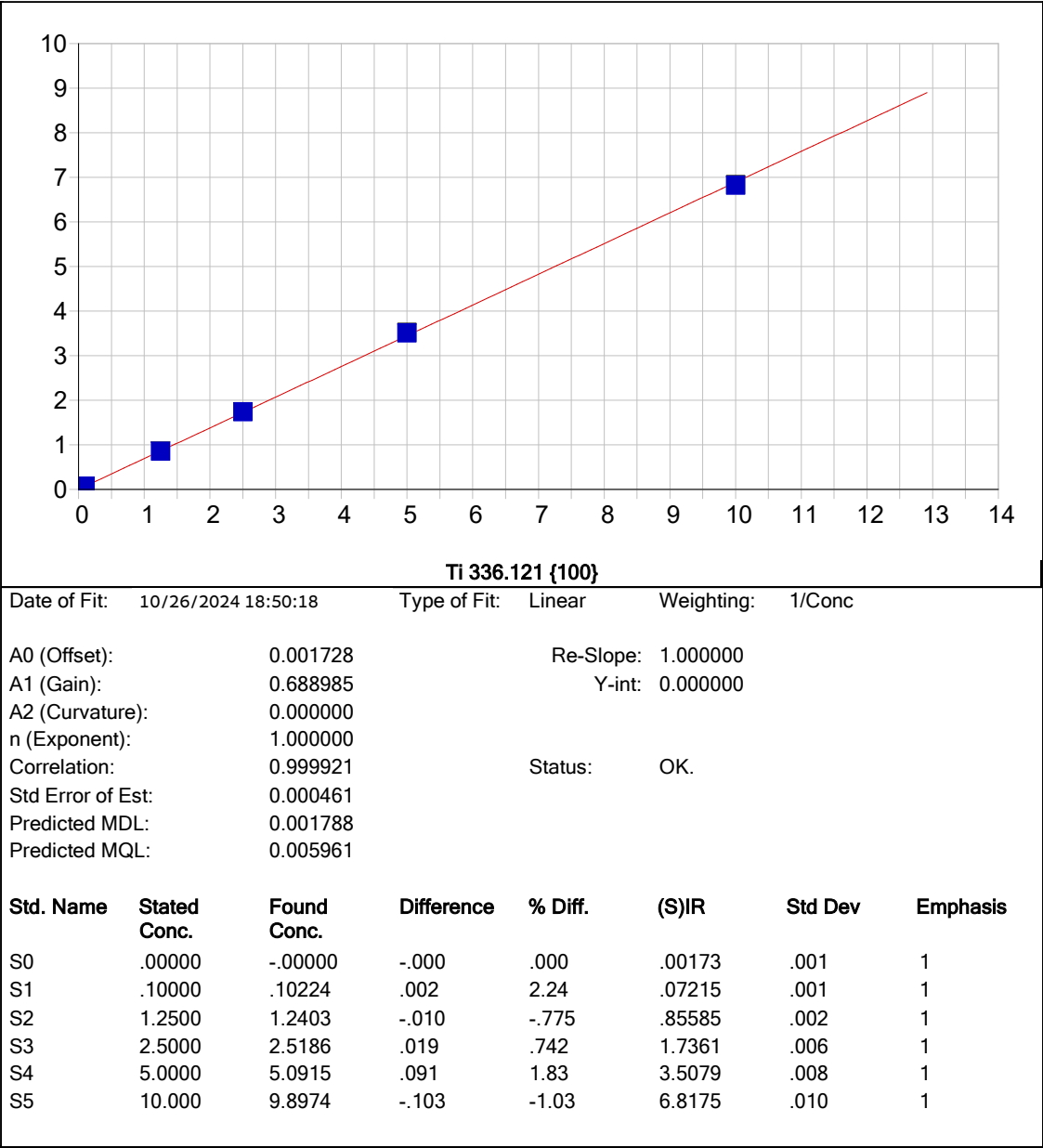


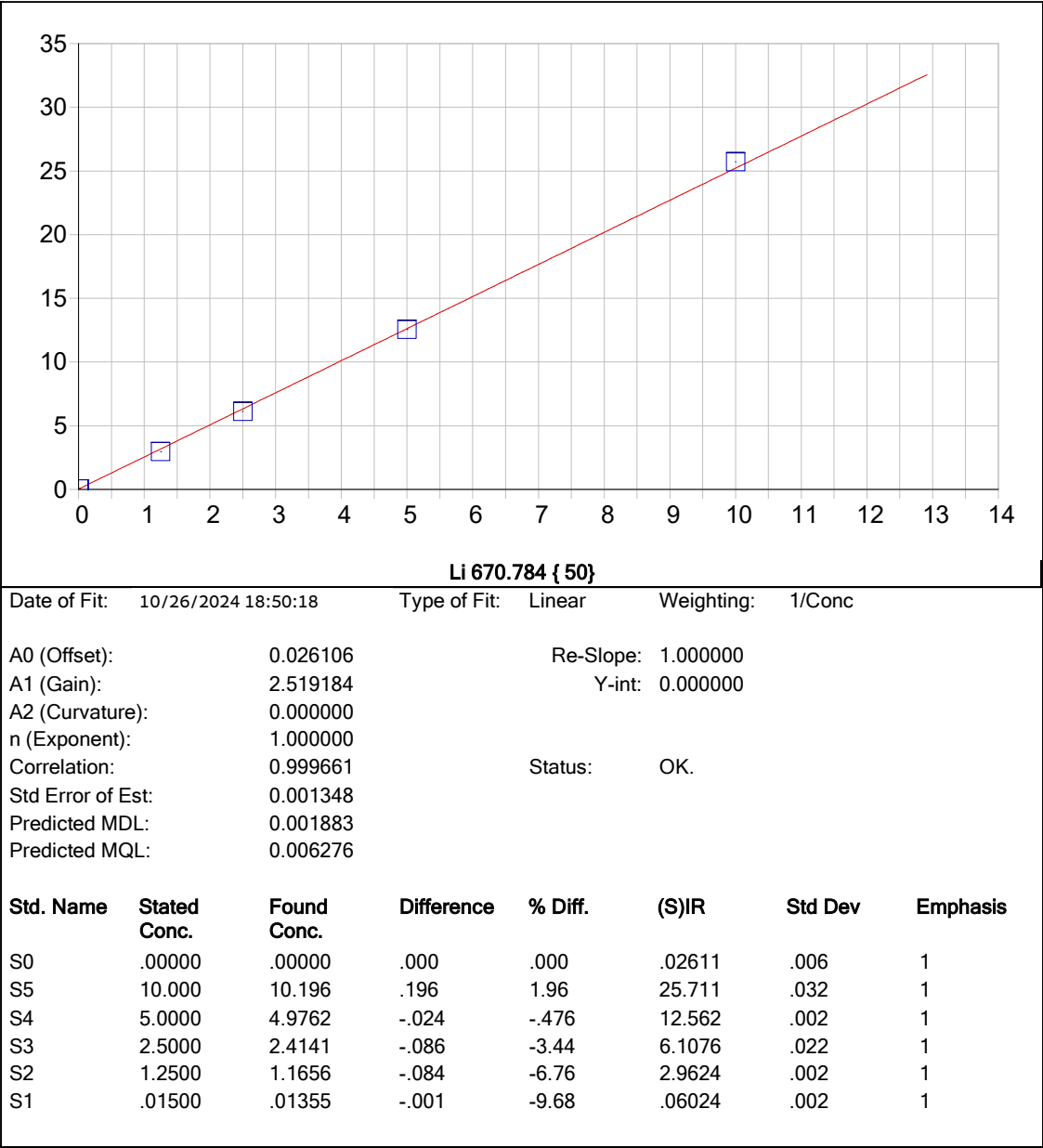


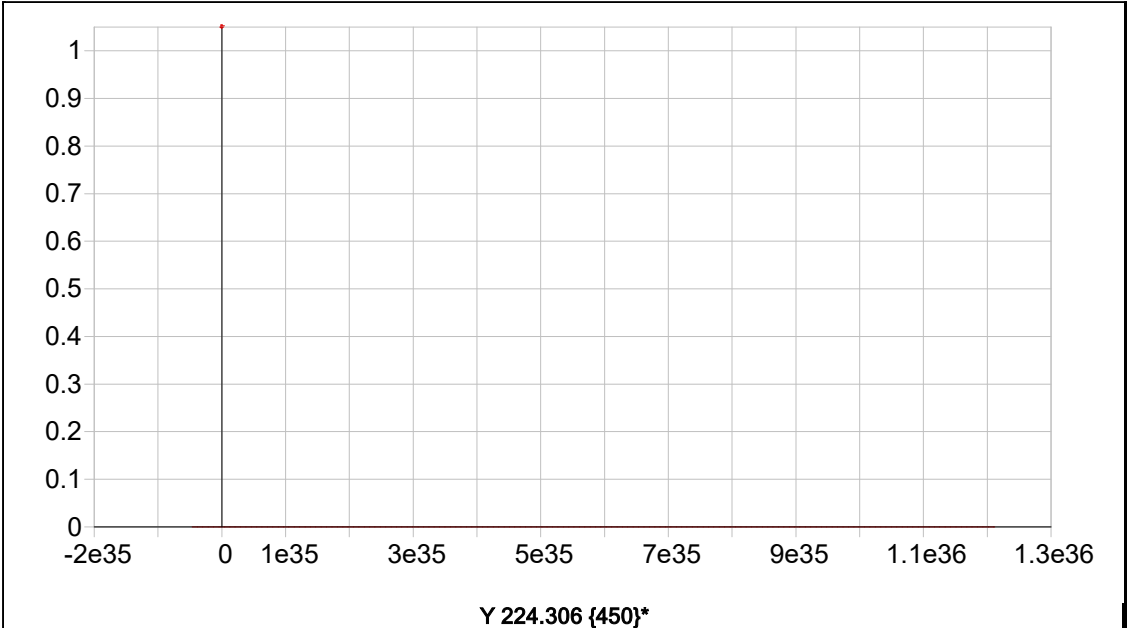






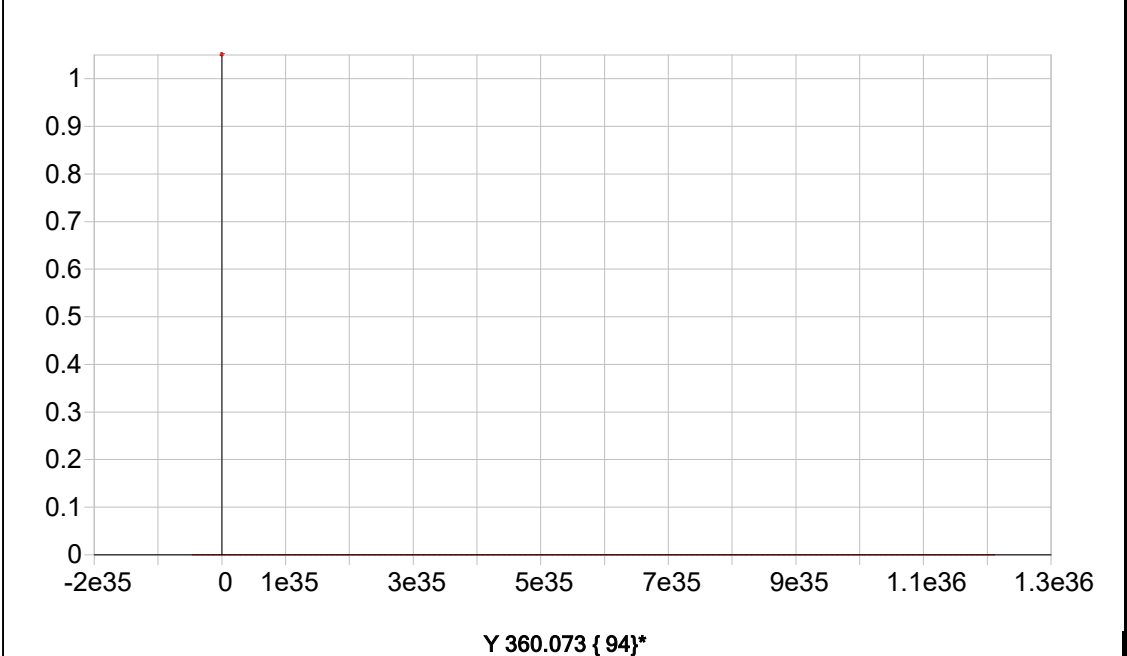




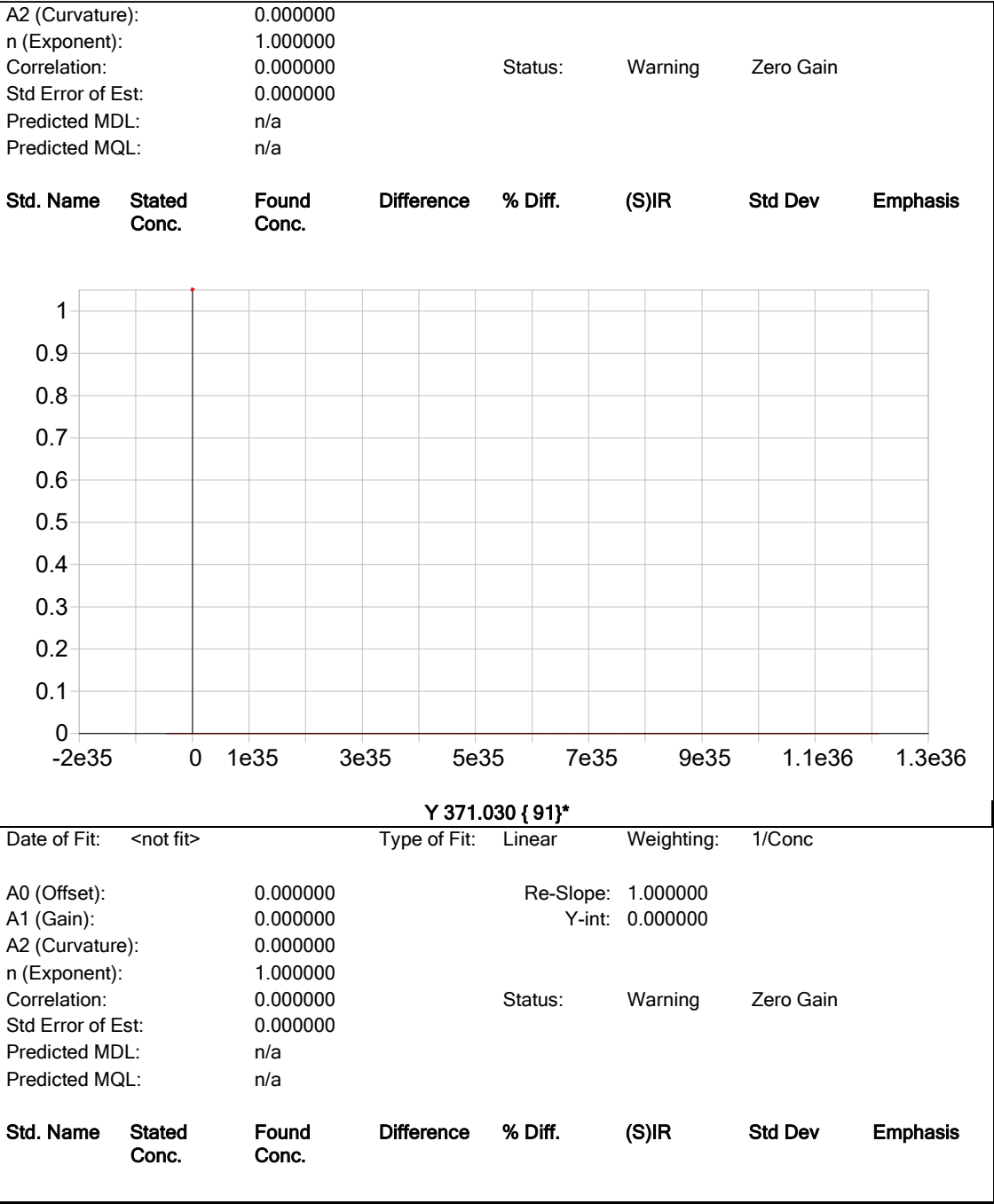


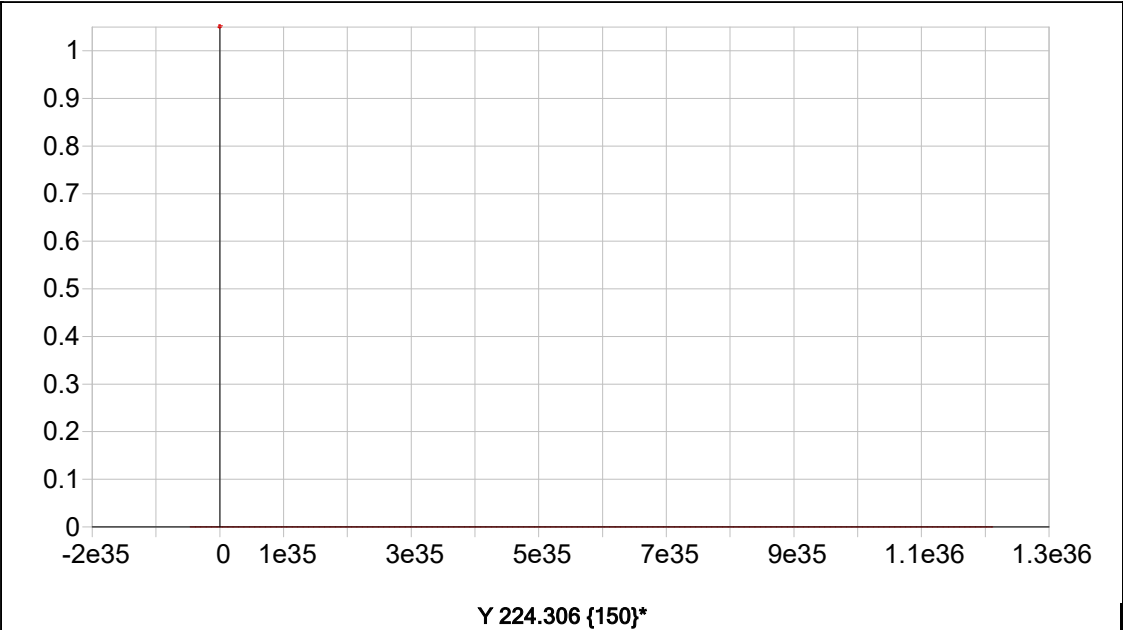
Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000		Re-Slope:	1.000000	
A1 (Gain):	0.000000		Y-int:	0.000000	
A2 (Curvature):	0.000000				
n (Exponent):	1.000000				
Correlation:	0.000000		Status:	Warning	Zero Gain
Std Error of Est:	0.000000				
Predicted MDL:	n/a				
Predicted MQL:	n/a				

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
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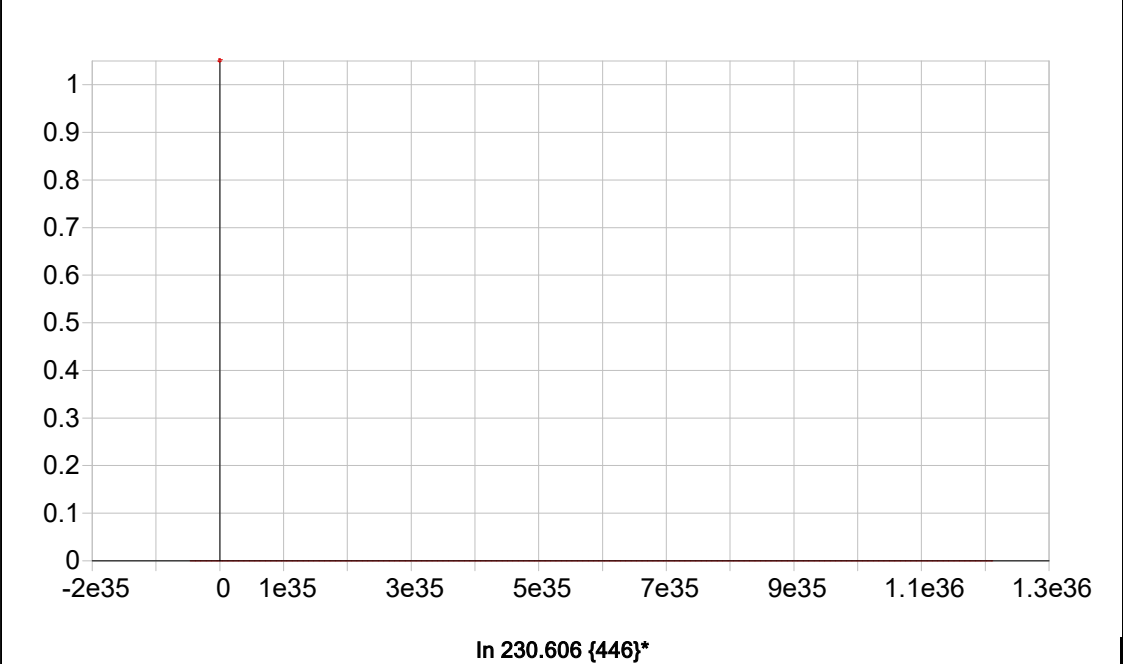
Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000	Re-Slope:	1.000000		
A1 (Gain):	0.000000	Y-int:	0.000000		



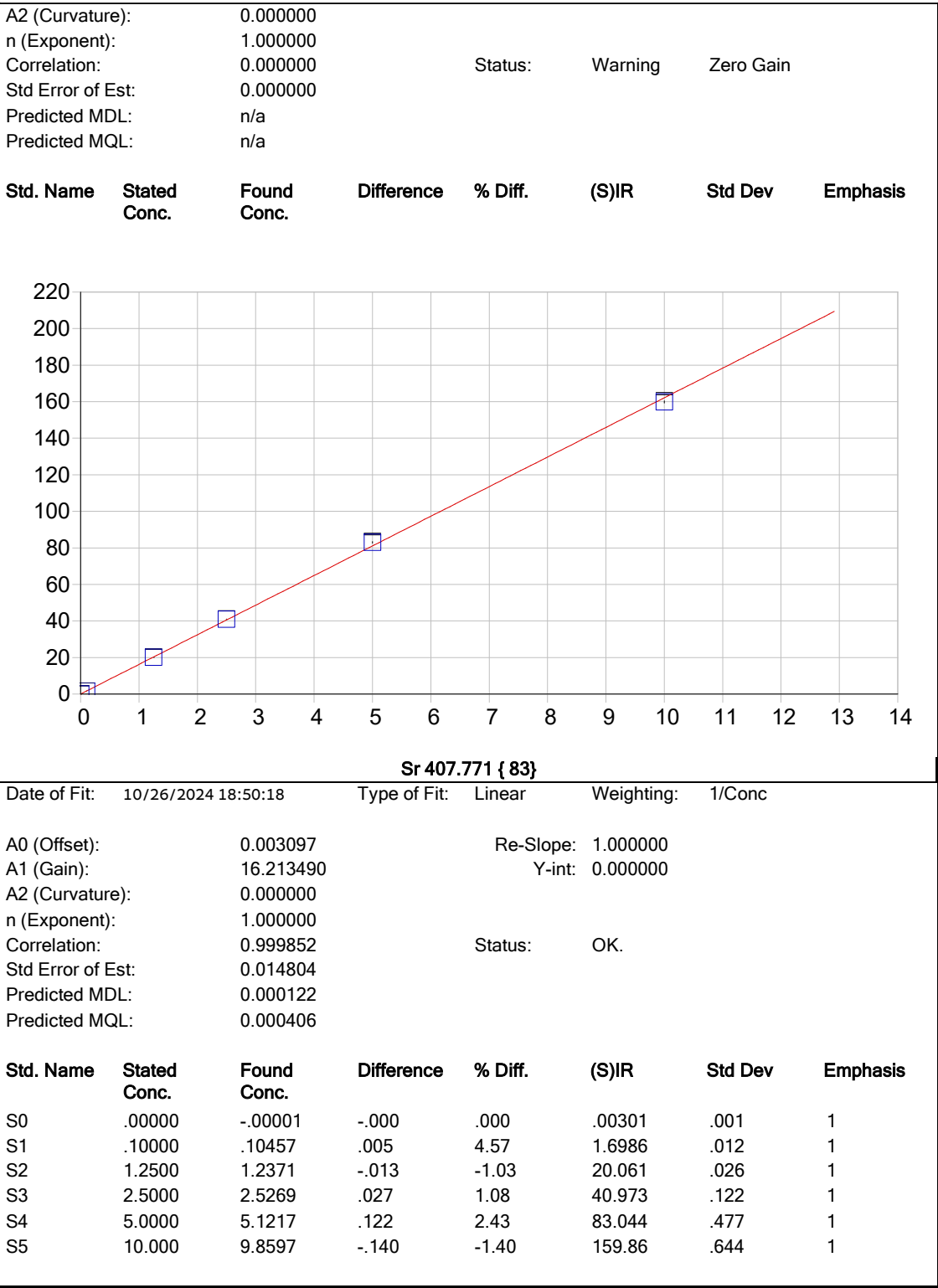


Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000		Re-Slope:	1.000000	
A1 (Gain):	0.000000		Y-int:	0.000000	
A2 (Curvature):	0.000000				
n (Exponent):	1.000000				
Correlation:	0.000000		Status:	Warning	Zero Gain
Std Error of Est:	0.000000				
Predicted MDL:	n/a				
Predicted MQL:	n/a				

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
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Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000	Re-Slope:	1.000000		
A1 (Gain):	0.000000	Y-int:	0.000000		



Sample Name: S0 Acquired: 10/26/2024 18:18:36 Type: Cal
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S0 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00017	-.00043	-.00048	.00023	-.00013	-.00457	-.00132	-.00196
Stddev	.00001	.00001	.00020	.00003	.00015	.00182	.00223	.00063
%RSD	8.4681	3.0789	42.388	12.161	115.66	39.904	168.65	32.302

#1	.00017	-.00045	-.00034	.00021	-.00010	-.00379	.00115	-.00269
#2	.00018	-.00042	-.00040	.00026	.00001	-.00326	-.00317	-.00157
#3	.00015	-.00043	-.00072	.00024	-.00028	-.00665	-.00195	-.00162

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00092	.00612	-.00011	-.00049	.00159	.00033	-.00022	-.00032
Stddev	.00043	.00114	.00013	.00009	.00053	.00017	.00056	.00059
%RSD	47.072	18.674	126.02	19.120	33.420	49.995	257.27	181.38

#1	.00129	.00484	-.00025	-.00060	.00210	.00037	-.00043	.00002
#2	.00101	.00705	-.00009	-.00045	.00104	.00048	.00042	.00001
#3	.00045	.00646	.00002	-.00043	.00164	.00015	-.00064	-.00100

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00066	.02792	-.01250	-.00156	.00249	.09228	-.00116	.01370
Stddev	.00011	.00015	.00127	.00019	.00036	.00159	.00013	.00107
%RSD	16.321	.52783	10.183	12.048	14.376	1.7281	10.961	7.8265

#1	-.00057	.02775	-.01202	-.00159	.00268	.09364	-.00130	.01416
#2	-.00064	.02802	-.01154	-.00173	.00271	.09268	-.00106	.01445
#3	-.00078	.02799	-.01395	-.00135	.00208	.09053	-.00113	.01247

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	-.00038	.00036	.01719	.00031	.00173	.02611	.00301	
Stddev	.00031	.00020	.00064	.00006	.00117	.00560	.00134	
%RSD	83.128	54.604	3.7427	21.007	67.890	21.463	44.573	

#1	-.00056	.00028	.01793	.00026	.00286	.02885	.00429	
#2	-.00002	.00058	.01678	.00028	.00052	.01967	.00310	
#3	-.00056	.00021	.01687	.00038	.00180	.02982	.00162	

Sample Name: S0 Acquired: 10/26/2024 18:18:36 Type: Cal
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S0 Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	966.15	21704.	1987.1	794.89	1784.5
Stddev	.60	20.	12.2	2.88	2.0
%RSD	.06218	.09022	.61497	.36249	.11206
#1	965.47	21701.	1987.1	797.38	1782.4
#2	966.37	21725.	1999.2	791.73	1786.4
#3	966.60	21686.	1974.8	795.56	1784.7

Sample Name: S1 Acquired: 10/26/2024 18:23:16 Type: Cal
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00055	.00155	.00129	.00276	.01158	.02741	1.5773	.04690
Stddev	.00007	.00014	.00042	.00038	.00058	.00088	.0058	.00040
%RSD	12.197	8.8893	32.772	13.935	4.9793	3.2063	.36977	.85606

#1	.00053	.00170	.00157	.00307	.01188	.02663	1.5833	.04655
#2	.00062	.00150	.00080	.00233	.01091	.02723	1.5716	.04734
#3	.00049	.00144	.00151	.00287	.01194	.02837	1.5771	.04680

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.01256	.54500	.00205	.03425	.00837	.00270	.00708	.04306
Stddev	.00020	.00586	.00007	.00055	.00095	.00047	.00055	.00078
%RSD	1.5629	1.0754	3.3989	1.5991	11.367	17.205	7.7711	1.8017

#1	.01268	.55117	.00197	.03373	.00850	.00324	.00672	.04364
#2	.01265	.54432	.00210	.03420	.00736	.00240	.00680	.04218
#3	.01233	.53950	.00209	.03482	.00925	.00247	.00771	.04337

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02702	.03192	.06580	.00528	.17190	.32246	-.00066	.01194
Stddev	.00044	.00018	.00257	.00026	.00157	.00470	.00008	.00048
%RSD	1.6451	.57845	3.9014	4.9900	.91390	1.4573	12.384	4.0028

#1	.02693	.03213	.06309	.00553	.17365	.31911	-.00074	.01165
#2	.02663	.03183	.06613	.00531	.17060	.32042	-.00058	.01168
#3	.02751	.03180	.06820	.00501	.17146	.32783	-.00067	.01249

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	.00928	.00286	.48361	.00082	.07215	.06024	1.6986	
Stddev	.00060	.00006	.00164	.00020	.00114	.00179	.0122	
%RSD	6.4404	2.0558	.33961	24.807	1.5773	2.9796	.71886	

#1	.00996	.00284	.48506	.00099	.07249	.05854	1.7112	
#2	.00881	.00292	.48182	.00088	.07307	.06006	1.6868	
#3	.00908	.00281	.48394	.00059	.07088	.06212	1.6977	

Sample Name: S1 Acquired: 10/26/2024 18:23:16 Type: Cal
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S01 Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	966.93	21755.	2049.3	800.35	1763.9
Stddev	2.42	23.	10.9	1.56	1.7
%RSD	.24983	.10351	.52982	.19477	.09559
#1	965.06	21777.	2037.5	799.50	1765.2
#2	969.66	21732.	2058.8	802.15	1764.5
#3	966.07	21756.	2051.7	799.41	1762.0

Sample Name: S2 Acquired: 10/26/2024 18:27:52 Type: Cal
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S02 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03854	.09962	.91077	.08855	.23731	5.6916	18.668	1.1597
Stddev	.00023	.00087	.00263	.00051	.00166	.0040	.051	.0020
%RSD	.59142	.87741	.28914	.57481	.69842	.06961	.27397	.17608

#1	.03828	.09882	.90954	.08796	.23678	5.6937	18.676	1.1574
#2	.03873	.10055	.90898	.08876	.23917	5.6871	18.613	1.1601
#3	.03860	.09950	.91379	.08891	.23599	5.6941	18.715	1.1614

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.3908	6.2592	.82740	.42554	.92460	.74458	1.5853	.47862
Stddev	.0018	.0111	.00146	.00136	.00305	.00713	.0019	.00120
%RSD	.13002	.17727	.17661	.31865	.32975	.95788	.12250	.25084

#1	1.3893	6.2585	.82906	.42398	.92564	.73857	1.5847	.47751
#2	1.3904	6.2486	.82681	.42645	.92699	.74271	1.5837	.47846
#3	1.3928	6.2707	.82632	.42618	.92116	.75247	1.5874	.47989

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.40617	.13945	.57064	.06306	10.158	1.7634	.06595	1.5792
Stddev	.00084	.00055	.00082	.00152	.021	.0017	.00031	.0073
%RSD	.20797	.39764	.14439	2.4039	.20236	.09400	.47413	.46175

#1	.40522	.13984	.57151	.06213	10.136	1.7645	.06562	1.5734
#2	.40647	.13970	.56988	.06481	10.177	1.7615	.06624	1.5769
#3	.40683	.13882	.57053	.06224	10.161	1.7643	.06600	1.5874

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.1191	.03353	2.6053	.12864	.85585	2.9624	20.061
Stddev	.0038	.00026	.0189	.00094	.00167	.0021	.026
%RSD	.33674	.76314	.72429	.73270	.19478	.07024	.12770

#1	1.1157	.03358	2.5935	.12792	.85595	2.9611	20.047
#2	1.1184	.03326	2.5954	.12829	.85414	2.9612	20.045
#3	1.1232	.03377	2.6271	.12971	.85747	2.9648	20.090

Sample Name: S2 Acquired: 10/26/2024 18:27:52 Type: Cal
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S02 Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	916.52	21410.	2054.7	753.76	1603.0
Stddev	.80	84.	1.1	1.71	1.2
%RSD	.08681	.39316	.05499	.22677	.07620
#1	916.79	21321.	2054.9	752.42	1602.4
#2	917.16	21422.	2055.6	753.17	1604.4
#3	915.63	21488.	2053.4	755.69	1602.2

Sample Name: S3 Acquired: 10/26/2024 18:32:11 Type: Cal
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S03 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07973	.19995	1.8541	.18426	.49420	11.690	38.096	2.3631
Stddev	.00026	.00074	.0039	.00098	.00064	.028	.075	.0106
%RSD	.33064	.37029	.21024	.53129	.12857	.23662	.19565	.44739
#1	.07944	.20005	1.8507	.18313	.49396	11.689	38.129	2.3677
#2	.07996	.20063	1.8533	.18474	.49492	11.718	38.149	2.3706
#3	.07980	.19916	1.8584	.18490	.49372	11.662	38.011	2.3510

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2.8276	12.664	1.6614	.87075	1.8824	1.4971	3.1898	.98687
Stddev	.0047	.019	.0030	.00035	.0094	.0040	.0092	.00268
%RSD	.16774	.15008	.18087	.04004	.49821	.26581	.28864	.27119
#1	2.8247	12.654	1.6648	.87084	1.8825	1.5010	3.1991	.98734
#2	2.8251	12.686	1.6592	.87037	1.8917	1.4972	3.1897	.98928
#3	2.8331	12.651	1.6601	.87105	1.8729	1.4931	3.1807	.98399

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.82609	.25492	1.1825	.12966	20.986	3.5739	.13982	3.2125
Stddev	.00180	.00035	.0028	.00184	.100	.0175	.00051	.0218
%RSD	.21796	.13621	.24042	1.4212	.47839	.48979	.36329	.67760
#1	.82516	.25516	1.1793	.12846	21.102	3.5815	.13931	3.2157
#2	.82494	.25509	1.1847	.13178	20.936	3.5863	.13984	3.2325
#3	.82816	.25453	1.1836	.12873	20.921	3.5539	.14032	3.1893

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	2.3173	.07028	5.2655	.26457	1.7361	6.1076	40.973	
Stddev	.0017	.00046	.0284	.00059	.0056	.0217	.122	
%RSD	.07154	.65814	.53976	.22459	.32264	.35501	.29888	
#1	2.3191	.07077	5.2728	.26423	1.7317	6.1251	41.005	
#2	2.3158	.06984	5.2896	.26422	1.7424	6.1143	41.077	
#3	2.3172	.07024	5.2342	.26526	1.7342	6.0834	40.838	

Sample Name: S3 Acquired: 10/26/2024 18:32:11 Type: Cal
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S03 Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	869.11	20962.	2015.5	709.43	1518.4
Stddev	1.26	38.	4.1	3.26	1.6
%RSD	.14481	.17959	.20177	.46003	.10615
#1	867.69	20941.	2014.8	705.67	1517.9
#2	869.57	21005.	2011.9	711.53	1520.3
#3	870.08	20939.	2019.9	711.08	1517.2

Sample Name: S4 Acquired: 10/26/2024 18:36:27 Type: Cal
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S04 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.16303	.38947	3.6760	.38066	1.0376	24.003	76.583	4.6861
Stddev	.00056	.00062	.0021	.00182	.0024	.014	.074	.0105
%RSD	.34429	.15796	.05651	.47783	.22613	.05688	.09652	.22476

#1	.16239	.38974	3.6761	.38093	1.0385	23.996	76.664	4.6798
#2	.16328	.38876	3.6739	.37872	1.0349	23.993	76.519	4.6983
#3	.16343	.38989	3.6781	.38233	1.0393	24.018	76.568	4.6803

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5.5666	25.385	3.2495	1.7377	3.8340	2.9590	6.2902	2.0140
Stddev	.0081	.020	.0076	.0003	.0049	.0024	.0054	.0032
%RSD	.14556	.07838	.23349	.01716	.12838	.08248	.08641	.15722

#1	5.5753	25.408	3.2513	1.7380	3.8360	2.9593	6.2961	2.0159
#2	5.5592	25.378	3.2412	1.7376	3.8283	2.9613	6.2890	2.0104
#3	5.5654	25.370	3.2561	1.7374	3.8375	2.9565	6.2854	2.0159

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.6360	.47776	2.4303	.25943	43.884	7.3253	.28650	6.4202
Stddev	.0002	.00025	.0067	.00175	.082	.0086	.00086	.0059
%RSD	.01308	.05159	.27510	.67507	.18644	.11728	.30098	.09154

#1	1.6358	.47775	2.4374	.26142	43.793	7.3167	.28554	6.4202
#2	1.6362	.47801	2.4242	.25870	43.908	7.3339	.28673	6.4144
#3	1.6359	.47752	2.4292	.25815	43.952	7.3253	.28721	6.4261

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	4.7940	.14367	10.505	.52717	3.5079	12.562	83.044	
Stddev	.0186	.00024	.008	.00054	.0076	.002	.477	
%RSD	.38728	.16471	.07925	.10192	.21624	.01764	.57429	

#1	4.7949	.14382	10.497	.52691	3.5018	12.561	83.180	
#2	4.7749	.14380	10.504	.52681	3.5164	12.561	82.514	
#3	4.8120	.14340	10.514	.52778	3.5057	12.565	83.438	

Sample Name: S4 Acquired: 10/26/2024 18:36:27 Type: Cal
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S04 Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	798.55	20412.	1946.7	628.27	1428.8
Stddev	1.68	65.	4.1	.69	1.4
%RSD	.20994	.32032	.21244	.10964	.09649
#1	797.81	20343.	1942.4	627.54	1427.6
#2	800.48	20473.	1950.6	628.91	1428.6
#3	797.38	20419.	1947.0	628.37	1430.3

Sample Name: S5 Acquired: 10/26/2024 18:40:44 Type: Cal
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S05 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934	Be2348
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.33813	.75385	7.3413	.83513	2.3292	47.852	149.19	9.0551
Stddev	.00079	.00168	.0213	.00286	.0054	.131	1.22	.0722
%RSD	.23476	.22282	.28992	.34264	.23165	.27392	.81810	.79700

#1	.33799	.75379	7.3342	.83350	2.3300	47.982	150.56	9.0725
#2	.33742	.75220	7.3246	.83844	2.3341	47.856	148.81	9.1170
#3	.33898	.75556	7.3653	.83346	2.3234	47.719	148.21	8.9758

Elem	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	10.919	49.834	6.3006	3.4455	7.4642	5.6841	12.134	4.0148
Stddev	.025	.086	.0080	.0089	.0263	.0051	.027	.0059
%RSD	.22951	.17185	.12645	.25740	.35281	.09017	.22128	.14579

#1	10.906	49.925	6.2915	3.4432	7.4845	5.6898	12.158	4.0199
#2	10.903	49.822	6.3036	3.4380	7.4738	5.6828	12.140	4.0160
#3	10.948	49.755	6.3066	3.4553	7.4345	5.6798	12.105	4.0084

Elem	Ni2316	Ag3280	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3.2286	.95057	4.8143	.50482	96.523	14.560	.58625	12.226
Stddev	.0080	.00324	.0070	.00356	.298	.043	.00152	.075
%RSD	.24856	.34103	.14618	.70535	.30853	.29515	.25978	.61205

#1	3.2258	.95155	4.8198	.50850	96.765	14.599	.58495	12.287
#2	3.2223	.95322	4.8167	.50139	96.614	14.567	.58588	12.247
#3	3.2376	.94696	4.8064	.50456	96.191	14.514	.58793	12.142

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707	Sr4077	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	10.396	.29984	20.258	1.0497	6.8175	25.711	159.86	
Stddev	.037	.00047	.113	.0043	.0101	.032	.64	
%RSD	.35610	.15549	.55586	.40961	.14816	.12306	.40309	

#1	10.397	.29971	20.343	1.0483	6.8206	25.728	159.21	
#2	10.432	.29945	20.300	1.0463	6.8256	25.730	159.87	
#3	10.358	.30036	20.130	1.0545	6.8062	25.674	160.50	

Sample Name: S5 Acquired: 10/26/2024 18:40:44 Type: Cal
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S05 Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	687.58	19701.	1953.5	501.72	1324.5
Stddev	2.49	5.	8.4	1.52	3.6
%RSD	.36214	.02340	.42901	.30388	.27338
#1	688.65	19702.	1945.6	500.10	1328.0
#2	684.73	19696.	1952.6	501.94	1324.8
#3	689.35	19706.	1962.3	503.13	1320.8

Sample Name: S6 Acquired: 10/26/2024 18:45:13 Type: Cal
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: IR Corr. Factor: 1.000000
User: Kareem Custom ID1: S06 Custom ID2: Custom ID3:
Comment:

Elem	Al3961	Ca3736	Fe2598	Mg2790	Na8183
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	120.10	76.890	14.474	6.2304	12.756
Stddev	1.00	.135	.017	.0203	.003
%RSD	.83269	.17561	.11966	.32510	.02641

#1	118.95	76.772	14.456	6.2089	12.753
#2	120.57	76.860	14.476	6.2492	12.757
#3	120.78	77.037	14.490	6.2331	12.759

Int. Std.	Y_3710
Units	Cts/S
Avg	1939.8
Stddev	4.5
%RSD	.23281

#1	1945.0
#2	1936.6
#3	1937.9

Sample Name: ICV002 Acquired: 10/26/2024 19:13:25 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICV002 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.093074	1.043402	.9759432	1.067101	1.038746	2.380942
Stddev	.009939	.010168	.0017683	.007788	.001074	.022187
%RSD	.9093140	.9745137	.1811942	.7298707	.1033565	.9318742

#1	1.082717	1.039020	.9743846	1.063815	1.039744	2.382736
#2	1.102535	1.036159	.9755802	1.075994	1.037610	2.357912
#3	1.093971	1.055026	.9778649	1.061495	1.038885	2.402178

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5066314	.5282168	.4976522	10.05755	.5563626	.4938807
Stddev	.0065784	.0024192	.0008761	.13528	.0008534	.0009322
%RSD	1.298448	.4579995	.1760413	1.345089	.1533849	.1887557

#1	.5096952	.5291243	.4986608	10.12662	.5569412	.4948374
#2	.4990801	.5254751	.4970799	9.90168	.5553825	.4938298
#3	.5111191	.5300511	.4972160	10.14436	.5567640	.4929750

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4918290	10.82150	.5276314	5.773014	.5040119	.2398333
Stddev	.0099449	.07531	.0072638	.119532	.0006989	.0011374
%RSD	2.022017	.6958972	1.376686	2.070527	.1386690	.4742516

#1	.4898534	10.84914	.5270279	5.681409	.5044585	.2385635
#2	.4830203	10.73628	.5206882	5.729406	.5043707	.2401774
#3	.5026135	10.87908	.5351782	5.908227	.5032065	.2407589

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.386458	.5369256	1.042202	9.125805	F .0051519	F .0067337
Stddev	.333024	.0116349	.007563	.117595	.0010964	.0007890
%RSD	3.547924	2.166952	.7257063	1.288596	21.28114	11.71667

#1	9.126789	.5495505	1.043366	9.104404	.0041091	.0069425
#2	9.761923	.5345917	1.049116	9.020381	.0062950	.0073973
#3	9.270662	.5266345	1.034125	9.252631	.0050516	.0058613

Sample Name: ICV002 Acquired: 10/26/2024 19:13:25 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICV002 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0001646	F -.000461	F -.001582	F .0013001	F -.003224	F -.005192
Stddev	.0003510	.000935	.000578	.0010765	.000621	.000277
%RSD	213.2458	202.8814	36.55968	82.80816	19.27546	5.337916
#1	-.000225	.000043	-.001826	.0023639	-.003539	-.004900
#2	.000456	-.001539	-.000922	.0013250	-.003624	-.005452
#3	.000263	.000114	-.001999	.0002112	-.002508	-.005224
Elem	Sr4077					
Units	ppm					
Avg	F .0012684					
Stddev	.0000842					
%RSD	6.638539					
#1	.0013604					
#2	.0011952					
#3	.0012496					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	959.3705	21752.40	2023.222	796.4716	1736.334	
Stddev	3.0588	66.30	14.423	4.6267	3.918	
%RSD	.3188311	.3047797	.7128714	.5808980	.2256462	
#1	956.6391	21691.25	2014.331	795.0599	1732.941	
#2	958.7969	21822.86	2039.863	792.7152	1735.439	
#3	962.6754	21743.09	2015.471	801.6397	1740.622	

Sample Name: ICB002 Acquired: 10/26/2024 19:19:10 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICB002 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000645	.0031240	-.003269	-.002736	.0006231	-.007186	-.000176
Stddev	.002476	.0030704	.002894	.002909	.0010248	.003390	.000115
%RSD	384.1088	98.28621	88.54156	106.3109	164.4797	47.16759	65.33065
#1	-.002033	.0034866	-.003380	-.006092	.0017459	-.008825	-.000219
#2	-.002115	-.000112	-.006106	-.001182	-.000262	-.003289	-.000046
#3	.002214	.005997	-.000321	-.000935	.000385	-.009445	-.000264
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000100	-.000024	-.004575	-.000654	-.000135	.0028615	.0029208
Stddev	.000139	.000032	.007594	.000722	.000170	.0026833	.0179285
%RSD	138.5013	132.6435	165.9858	110.4078	126.1423	93.77383	613.8328
#1	-.000213	-.000018	-.006703	-.001437	-.000045	-.000024	.0214668
#2	-.000144	-.000059	.003856	-.000013	-.000331	.005281	-.014319
#3	.000055	.000004	-.010878	-.000513	-.000028	.003327	.001614
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001671	.0194944	.0002731	-.000244	-.343509	.0086834	-.000318
Stddev	.000941	.0597441	.0001940	.000868	.231024	.0111869	.000190
%RSD	56.27776	306.4678	71.03274	355.1731	67.25419	128.8308	59.84239
#1	-.002757	-.009800	.0000907	.000758	-.477925	.0045368	-.000104
#2	-.001124	.088232	.0002516	-.000712	-.076748	.0001618	-.000380
#3	-.001132	-.019949	.0004769	-.000779	-.475854	.0213516	-.000469
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.239331	-.000145	-.003731	.0002187	-.000073	-.002721	.0021391
Stddev	.075386	.000322	.000439	.0003715	.002864	.000408	.0008855
%RSD	31.49867	221.7208	11.76929	169.8711	3932.803	15.00171	41.39872
#1	-.228792	-.000173	-.004176	-.000101	.001977	-.002529	.0016499
#2	-.319432	-.000453	-.003718	.000626	.001150	-.002445	.0016060
#3	-.169769	.000190	-.003298	.000131	-.003345	-.003190	.0031613

Sample Name: ICB002 Acquired: 10/26/2024 19:19:10 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICB002 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.000367	-.005683	-.000022
Stddev	.000908	.001077	.000053
%RSD	247.7813	18.94641	241.4077
#1	-.000414	-.006925	-.000051
#2	.000565	-.005021	-.000055
#3	-.001250	-.005102	.000039

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	961.9019	21709.99	2056.873	798.3908	1766.515
Stddev	2.9860	110.20	9.458	.5535	3.159
%RSD	.3104286	.5076029	.4598188	.0693318	.1788416
#1	965.1794	21595.11	2053.421	798.3017	1769.586
#2	961.1904	21720.04	2049.625	798.9835	1766.686
#3	959.3359	21814.82	2067.571	797.8872	1763.274

Sample Name: ICSA002 Acquired: 10/26/2024 19:23:42 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSA002 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0009798	-.017245	.0016132	.0063353	.0012140	244.0370
Stddev	.0057265	.002927	.0048184	.0071306	.0022907	1.0144
%RSD	584.4556	16.97519	298.6971	112.5539	188.6838	.4156883
#1	.0021658	-.016295	-.003785	.0096876	.0036817	244.0429
#2	.0060205	-.014910	.003145	.0111719	-.000845	243.0196
#3	-.005247	-.020529	.005479	-.001854	.000805	245.0484
Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0058851	.0009399	-.000199	254.4392	.0500765	.0020729
Stddev	.0004148	.0002237	.000135	.9033	.0009969	.0005681
%RSD	7.048316	23.79794	67.58604	.3549998	1.990671	27.40494
#1	.0062832	.0009182	-.000319	254.6847	.0489256	.0016654
#2	.0054554	.0007278	-.000226	253.4385	.0506696	.0027218
#3	.0059166	.0011736	-.000053	255.1942	.0506343	.0018314
Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011156	106.5314	.0127993	260.9808	.0051797	.0032009
Stddev	.0018552	.4350	.0019349	.8496	.0006281	.0007044
%RSD	166.2998	.4083645	15.11709	.3255341	12.12666	22.00652
#1	.0032554	106.7771	.0148611	261.7537	.0046502	.0037533
#2	.0001342	106.0291	.0110231	260.0711	.0058737	.0034416
#3	-.000043	106.7881	.0125136	261.1175	.0050152	.0024077
Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2000973	.0087609	.0125227	-.339900	.0036268	F .0972092
Stddev	.1220469	.0068579	.0008529	.125201	.0033998	.0010127
%RSD	60.99378	78.27880	6.810997	36.83472	93.74102	1.041817
#1	.1816596	.0008563	.0118362	-.234970	.0074759	.0983171
#2	.3303141	.0131250	.0122543	-.478491	.0010335	.0963310
#3	.0883183	.0123013	.0134775	-.306240	.0023711	.0969796

Sample Name: ICSA002 Acquired: 10/26/2024 19:23:42 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSA002 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000480	.0039400	-.002501	-.003676	-.003161	-.004639
Stddev	.000576	.0089143	.000438	.001668	.001061	.001183
%RSD	120.1350	226.2529	17.53218	45.38974	33.58086	25.49966
#1	.000134	.0069622	-.003007	-.003047	-.004020	-.005972
#2	-.001009	-.006093	-.002224	-.005567	-.003488	-.003714
#3	-.000564	.010950	-.002272	-.002413	-.001974	-.004231
Elem	Sr4077					
Units	ppm					
Avg	F .1019837					
Stddev	.0006825					
%RSD	.6692177					
#1	.1018054					
#2	.1014081					
#3	.1027377					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	892.4386	20606.52	2024.192	751.6297	1469.883	
Stddev	1.4571	44.00	13.375	1.5506	2.957	
%RSD	.1632674	.2135033	.6607529	.2062989	.2011997	
#1	893.3904	20559.88	2013.584	749.9003	1472.104	
#2	893.1642	20612.40	2039.217	752.8959	1471.020	
#3	890.7612	20647.28	2019.775	752.0929	1466.526	

Sample Name: ICSAB002 Acquired: 10/26/2024 19:37:57 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSAB002 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0902124	.0948903	.0533979	.0525147	.5562428	252.0250
Stddev	.0118776	.0027289	.0012834	.0073295	.0018520	.7854
%RSD	13.16631	2.875878	2.403534	13.95705	.3329444	.3116510

#1	.0802142	.0922583	.0540509	.0604731	.5567198	252.8474
#2	.1033420	.0977068	.0542236	.0460416	.5578096	251.2827
#3	.0870810	.0947057	.0519193	.0510293	.5541990	251.9448

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5433920	.5546291	1.068776	261.6324	.6156734	.5317541
Stddev	.0010174	.0014576	.001846	.6935	.0018356	.0007328
%RSD	.1872309	.2628108	.1726898	.2650838	.2981462	.1378161

#1	.5442113	.5540721	1.068874	262.2176	.6177640	.5325707
#2	.5422532	.5535321	1.066884	260.8663	.6143259	.5315380
#3	.5437114	.5562831	1.070572	261.8134	.6149302	.5311537

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4973511	109.1789	.5491389	268.3548	1.068999	.1992347
Stddev	.0063876	.3553	.0029985	1.1058	.000286	.0011800
%RSD	1.284333	.3254455	.5460441	.4120669	.0267895	.5922757

#1	.4993132	109.5624	.5474541	269.6251	1.068808	.1986907
#2	.5025276	108.8610	.5473617	267.8317	1.069329	.1984248
#3	.4902126	109.1132	.5526009	267.6076	1.068862	.2005886

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3990347	.5145992	.9354135	-.429140	F .0111448	F .0990308
Stddev	.0904567	.0544213	.0063443	.074121	.0055127	.0006964
%RSD	22.66887	10.57547	.6782343	17.27207	49.46440	.7032092

#1	.4885644	.5541134	.9417509	-.421052	.0172706	.0983521
#2	.4008611	.5371582	.9354272	-.359395	.0065834	.0997437
#3	.3076787	.4525261	.9290623	-.506974	.0095803	.0989965

Sample Name: ICSAB002 Acquired: 10/26/2024 19:37:57 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: ICSAB002 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000176	.0106440	-.001827	F -.008208	-.005277	-.007544
Stddev	.000212	.0065268	.000227	.002231	.000406	.002082
%RSD	120.4326	61.31873	12.45270	27.17889	7.685380	27.59192
#1	-.000421	.0031677	-.001629	-.010020	-.005523	-.008731
#2	-.000044	.0152049	-.001776	-.005716	-.005499	-.008761
#3	-.000063	.0135595	-.002075	-.008887	-.004809	-.005141

Elem	Sr4077
Units	ppm
Avg	F .1054981
Stddev	.0001609
%RSD	.1524918
#1	.1054973
#2	.1053376
#3	.1056593

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	885.8034	20436.55	2006.197	739.7436	1464.012
Stddev	1.0701	18.63	3.226	4.8464	1.366
%RSD	.1208024	.0911794	.1607873	.6551506	.0933354
#1	886.3704	20417.60	2004.019	735.1868	1462.895
#2	886.4706	20437.18	2009.903	739.2086	1465.536
#3	884.5691	20454.86	2004.670	744.8353	1463.604

Sample Name: CCV005 Acquired: 10/26/2024 20:07:59 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV005 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.993616	4.751182	24.53714	4.707209	4.746349	413.7477	10.11156
Stddev	.017438	.008855	.05874	.002721	.008396	1.9378	.04464
%RSD	.3491990	.1863825	.2393876	.0578098	.1769029	.4683636	.4414312
#1	5.001002	4.761382	24.57207	4.709130	4.755465	414.4040	10.09053
#2	4.973701	4.746703	24.46933	4.708401	4.738932	411.5669	10.08132
#3	5.006145	4.745460	24.57004	4.704095	4.744651	415.2721	10.16282
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5215243	2.474803	409.7535	15.17820	2.487021	14.98072	416.6286
Stddev	.0032740	.005321	2.3179	.01788	.004670	.10645	2.1229
%RSD	.6277801	.2150049	.5656727	.1177709	.1877611	.7106037	.5095390
#1	.5210349	2.480335	409.5148	15.17718	2.489081	15.05017	416.4422
#2	.5185225	2.469723	407.5642	15.16086	2.481675	14.85816	414.6051
#3	.5250155	2.474350	412.1814	15.19657	2.490306	15.03382	418.8386
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.79672	407.1710	2.471759	1.260804	410.1928	2.481571	14.25718
Stddev	.06727	1.5148	.006019	.005796	2.0678	.005750	.07477
%RSD	.4546298	.3720220	.2435248	.4596938	.5041057	.2317237	.5244683
#1	14.77322	407.0832	2.471828	1.267420	410.3067	2.483614	14.22478
#2	14.74436	405.7020	2.465705	1.258365	408.0704	2.486020	14.34269
#3	14.87259	408.7277	2.477743	1.256626	412.2013	2.475078	14.20407
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	154.5891	4.950844	5.121871	4.712460	4.999358	4.986182	4.941473
Stddev	1.0045	.005624	.031742	.010589	.009490	.022906	.016415
%RSD	.6497835	.1136048	.6197438	.2247080	.1898257	.4593904	.3321843
#1	154.9179	4.951031	5.133653	4.702052	4.999986	4.988534	4.944022
#2	153.4613	4.945129	5.085922	4.712106	5.008518	4.962191	4.923933
#3	155.3879	4.956373	5.146037	4.723222	4.989570	5.007821	4.956464

Sample Name: CCV005 Acquired: 10/26/2024 20:07:59 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV005 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.966096	5.054028	5.048927
Stddev	.032497	.027432	.030244
%RSD	.6543706	.5427676	.5990271
#1	4.980058	5.040586	5.070981
#2	4.928951	5.035911	5.014450
#3	4.989278	5.085588	5.061351

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	763.9958	19682.65	1913.502	605.6579	1338.616
Stddev	1.0259	38.67	11.285	2.5183	2.415
%RSD	.1342802	.1964879	.5897425	.4157985	.1804387
#1	764.5693	19646.53	1913.544	606.1938	1337.120
#2	764.6067	19723.45	1924.765	602.9148	1341.403
#3	762.8114	19677.98	1902.196	607.8651	1337.326

Sample Name: CCB005 Acquired: 10/26/2024 20:12:32 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB005 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010907	.0008544	-.000097	.0007674	-.000434	.0221299	-.000474
Stddev	.0014319	.0006140	.001074	.0039673	.001272	.0033126	.000606
%RSD	131.2885	71.86848	1104.843	516.9782	293.3160	14.96882	127.8847
#1	.0000995	.0004376	-.000850	.0023197	.000861	.0190092	-.001110
#2	.0027324	.0005660	.001133	-.003741	-.000481	.0217747	.000097
#3	.0004402	.0015595	-.000574	.003724	-.001681	.0256057	-.000408
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000123	.0000047	.0197146	-.001455	-.000022	.0024066	.0073019
Stddev	.000141	.0001259	.0198487	.000833	.000261	.0026643	.0318161
%RSD	114.0517	2696.246	100.6806	57.26137	1159.251	110.7062	435.7245
#1	-.000252	-.000103	.0423338	-.001544	-.000322	.0044654	.0244298
#2	.000027	-.000026	.0052031	-.000581	.000105	.0033570	.0268847
#3	-.000145	.000143	.0116069	-.002239	.000150	-.000603	-.029409
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002716	.0266951	.0008467	.0000971	-.114006	.0062644	-.000017
Stddev	.0007553	.0128477	.0003823	.0003855	.158018	.0020073	.000505
%RSD	278.1396	48.12745	45.14571	396.8572	138.6049	32.04335	3049.231
#1	-.000378	.0410585	.0004086	.0002091	-.011527	.0039466	-.000464
#2	.001100	.0162990	.0010191	.0004142	-.034505	.0074112	.000530
#3	.000092	.0227278	.0011125	-.000332	-.295986	.0074354	-.000116
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.011738	-.000135	.0026078	.0003439	-.007022	-.002232	.0017176
Stddev	.202062	.001931	.0007892	.0003037	.002291	.000237	.0005710
%RSD	1721.376	1432.847	30.26209	88.32321	32.62390	10.60851	33.24152
#1	.030136	.001265	.0020635	.0006929	-.004633	-.002451	.0018850
#2	-.231457	-.002337	.0035129	.0001397	-.007234	-.002264	.0021862
#3	.166105	.000668	.0022471	.0001990	-.009200	-.001981	.0010817

Sample Name: CCB005 Acquired: 10/26/2024 20:12:32 Type: Unk

Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000

User: Kareem Custom ID1: CCB005 Custom ID2: Custom ID3:

Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.001802	-.001150	.0000007
Stddev	.001357	.001751	.0000792
%RSD	75.32618	152.2906	12064.90
#1	-.002900	.000565	-.000091
#2	-.002222	-.001079	.000040
#3	-.000284	-.002935	.000053

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	956.9475	21660.79	1996.956	798.0349	1757.889
Stddev	1.2724	50.03	7.823	2.2544	3.064
%RSD	.1329673	.2309855	.3917401	.2824907	.1742789
#1	958.3017	21603.33	2004.864	796.2861	1761.011
#2	956.7639	21694.66	1989.221	797.2394	1757.769
#3	955.7768	21684.39	1996.782	800.5792	1754.887

Sample Name: P4477-01DLX2 Acquired: 10/26/2024 20:17:04 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE450 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2328983	-.033343	.2400306	-.001874	.0098097	98.57927	1.078555
Stddev	.0027204	.001140	.0011658	.002654	.0012865	.48637	.004673
%RSD	1.168066	3.419327	.4856706	141.6127	13.11499	.4933842	.4332897
#1	.2316873	-.032276	.2391970	.001017	.0100532	98.12597	1.073545
#2	.2360139	-.034544	.2395319	-.002441	.0109571	98.51877	1.079323
#3	.2309936	-.033211	.2413627	-.004199	.0084188	99.09306	1.082797
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0051465	.0052029	74.50160	.2402039	.1273545	.7705781	225.7470
Stddev	.0000822	.0002475	.43225	.0013035	.0001951	.0048410	1.1433
%RSD	1.596283	4.756738	.5801864	.5426667	.1531654	.6282308	.5064476
#1	.0050772	.0051877	74.17581	.2412214	.1275510	.7756668	224.6225
#2	.0052372	.0049634	74.33703	.2406557	.1273516	.7700372	225.7103
#3	.0051250	.0054576	74.99196	.2387346	.1271609	.7660302	226.9082
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.661904	46.97475	.2193342	-.016355	1.071942	.4283360	.6417882
Stddev	.034740	.19858	.0007706	.000365	.285169	.0056640	.0044953
%RSD	.6135824	.4227375	.3513416	2.230998	26.60300	1.322320	.7004354
#1	5.637944	46.93573	.2190430	-.016182	1.365941	.4303538	.6440560
#2	5.646022	46.79857	.2187516	-.016108	1.053373	.4327147	.6446978
#3	5.701747	47.18994	.2202080	-.016774	.796511	.4219394	.6366107
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	31.98869	7.622905	.2607409	.0032738	1.189599	2.981717	.0032668
Stddev	.15944	.025334	.0004391	.0000979	.017324	.030676	.0023724
%RSD	.4984108	.3323448	.1684130	2.990313	1.456252	1.028790	72.62135
#1	31.88493	7.639954	.2610039	.0033167	1.186548	2.957492	.0055942
#2	31.90887	7.593793	.2602339	.0033429	1.174004	2.971449	.0008518
#3	32.17227	7.634966	.2609847	.0031618	1.208246	3.016209	.0033543

Sample Name: P4477-01DLX2 Acquired: 10/26/2024 20:17:04 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE450 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.962766	.0708357	.3654261
Stddev	.016658	.0014454	.0013289
%RSD	.5622481	2.040528	.3636691
#1	2.953722	.0693386	.3644120
#2	2.952587	.0709454	.3649358
#3	2.981990	.0722232	.3669305

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1009.957	23235.46	2239.095	844.8704	1602.958
Stddev	.449	47.22	19.328	6.4115	2.061
%RSD	.0444713	.2032256	.8632045	.7588679	.1285927
#1	1010.134	23209.87	2251.407	842.0777	1602.991
#2	1010.290	23206.57	2249.060	840.3290	1605.003
#3	1009.446	23289.96	2216.818	852.2046	1600.881

Sample Name: P4477-02DLX2 Acquired: 10/26/2024 20:21:27 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE451 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1926078	-.029923	.2138714	-.000387	.0079085	91.16828	.9778900
Stddev	.0052302	.002347	.0030177	.004632	.0027275	.19978	.0019752
%RSD	2.715439	7.844781	1.411000	1198.013	34.48873	.2191343	.2019864

#1	.1867031	-.030854	.2160280	-.005735	.0054010	91.30514	.9794029
#2	.1944622	-.031662	.2104228	.002354	.0075118	90.93903	.9756555
#3	.1966580	-.027253	.2151634	.002220	.0108127	91.26067	.9786116

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0050254	.0044112	26.23007	.2170309	.1144650	.6244477	218.5256
Stddev	.0001466	.0003724	.12648	.0011768	.0005237	.0042067	.4100
%RSD	2.916867	8.441111	.4822012	.5422229	.4575056	.6736700	.1876110

#1	.0051641	.0039815	26.31690	.2167379	.1141271	.6284184	218.0898
#2	.0048721	.0046136	26.08496	.2183265	.1150682	.6248855	218.5835
#3	.0050402	.0046385	26.28836	.2160283	.1141996	.6200392	218.9036

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.090276	41.56206	.2059277	-.018056	1.007907	.4099222	.6196930
Stddev	.013305	.06116	.0009682	.000485	.177980	.0047895	.0055871
%RSD	.2613893	.1471587	.4701739	2.686308	17.65842	1.168399	.9015998

#1	5.094253	41.50707	.2051994	-.017727	.827905	.4062934	.6147514
#2	5.075435	41.62793	.2070264	-.017829	1.183794	.4153509	.6257557
#3	5.101139	41.55116	.2055572	-.018613	1.012022	.4081223	.6185719

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	29.42615	7.397342	.2374911	.0031152	1.281718	3.460082	.0055577
Stddev	.11142	.031947	.0008343	.0003423	.018280	.016985	.0026676
%RSD	.3786409	.4318694	.3513157	10.98743	1.426212	.4908867	47.99747

#1	29.55468	7.431823	.2367257	.0031579	1.297113	3.463870	.0083773
#2	29.36692	7.368748	.2373671	.0034341	1.286527	3.441523	.0052220
#3	29.35685	7.391454	.2383805	.0027535	1.261514	3.474854	.0030739

Sample Name: P4477-02DLX2 Acquired: 10/26/2024 20:21:27 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE451 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.570386	.0643552	.2394820
Stddev	.004806	.0013013	.0001609
%RSD	.1869614	2.022087	.0671688
#1	2.568041	.0649070	.2396677
#2	2.567204	.0628689	.2393915
#3	2.575914	.0652896	.2393867

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1020.750	23448.81	2263.583	853.4110	1632.498
Stddev	1.250	90.30	4.778	7.8212	1.321
%RSD	.1225060	.3851127	.2110613	.9164603	.0809410
#1	1022.120	23497.37	2259.739	858.5094	1633.065
#2	1019.670	23344.62	2268.932	844.4061	1630.988
#3	1020.459	23504.45	2262.080	857.3174	1633.442

Sample Name: P4477-03DLX2 Acquired: 10/26/2024 20:25:52 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE452 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2430590	-.027037	.2220392	.0001651	.0068891	106.1149	1.280760
Stddev	.0037143	.004916	.0019160	.0015159	.0018309	.3731	.003439
%RSD	1.528152	18.18125	.8629290	918.1863	26.57638	.3516205	.2684986
#1	.2470190	-.024700	.2198286	.0003239	.0049702	106.3449	1.283313
#2	.2396526	-.023726	.2230663	.0015954	.0086170	105.6843	1.276850
#3	.2425052	-.032685	.2232228	-.001424	.0070801	106.3153	1.282117
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0053164	.0036921	53.75413	.2223824	.1205180	.7038544	220.2750
Stddev	.0001697	.0002019	.06618	.0013691	.0001232	.0021284	.5458
%RSD	3.192014	5.467719	.1231084	.6156695	.1022245	.3023974	.2477765
#1	.0051575	.0036364	53.76511	.2229657	.1206487	.7061442	220.0566
#2	.0052967	.0039160	53.68315	.2233633	.1204041	.7019363	219.8722
#3	.0054951	.0035240	53.81412	.2208182	.1205012	.7034828	220.8962
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.898828	50.38160	.2276995	-.016577	1.259737	.4152942	.5558349
Stddev	.015831	.14465	.0012362	.000318	.275862	.0043810	.0018910
%RSD	.2294799	.2871099	.5429126	1.920025	21.89835	1.054915	.3402055
#1	6.912857	50.54528	.2288341	-.016812	1.073428	.4105551	.5578107
#2	6.881663	50.27095	.2278822	-.016704	1.129137	.4161311	.5556522
#3	6.901962	50.32856	.2263821	-.016215	1.576647	.4191964	.5540420
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.68274	5.232832	.2533690	.0015068	.9810579	3.167466	.0022445
Stddev	.09197	.005559	.0018921	.0007558	.0050305	.005621	.0008819
%RSD	.3581018	.1062402	.7467722	50.16197	.5127669	.1774703	39.29227
#1	25.76755	5.239202	.2518730	.0010928	.9863347	3.162348	.0014505
#2	25.58498	5.230338	.2527381	.0010483	.9763165	3.166567	.0020893
#3	25.69569	5.228956	.2554960	.0023791	.9805226	3.173482	.0031937

Sample Name: P4477-03DLX2 Acquired: 10/26/2024 20:25:52 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE452 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.494519	.0722401	.2807550
Stddev	.009109	.0016273	.0010494
%RSD	.3651555	2.252553	.3737682
#1	2.500544	.0741190	.2813412
#2	2.484040	.0712845	.2795435
#3	2.498972	.0713167	.2813803

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1018.900	23354.10	2186.537	850.6844	1617.341
Stddev	2.064	32.85	4.659	5.2505	2.949
%RSD	.2026107	.1406490	.2130577	.6172139	.1823105
#1	1019.553	23321.84	2187.914	844.6350	1617.600
#2	1020.559	23387.51	2190.351	854.0585	1620.152
#3	1016.588	23352.95	2181.345	853.3596	1614.272

Sample Name: P4477-04DLX2 Acquired: 10/26/2024 20:30:17 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE453 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5278318	-.028056	.2890803	-.003566	.0144464	98.13228	1.403492
Stddev	.0026512	.003804	.0043781	.009219	.0022334	.18809	.004763
%RSD	.5022884	13.55825	1.514504	258.4936	15.45982	.1916676	.3393929
#1	.5307487	-.025027	.2906875	.006294	.0142883	98.12668	1.403236
#2	.5271779	-.032325	.2924278	-.005024	.0122962	97.94705	1.398863
#3	.5255686	-.026816	.2841257	-.011970	.0167546	98.32310	1.408379
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0056696	.0053763	30.43563	.2122183	.1350092	.8123225	236.9937
Stddev	.0000726	.0000785	.08234	.0004757	.0013593	.0031045	.5603
%RSD	1.281165	1.460085	.2705452	.2241611	1.006844	.3821806	.2364226
#1	.0055902	.0054667	30.35873	.2122973	.1346761	.8156705	236.6833
#2	.0057328	.0053254	30.42566	.2126495	.1338474	.8095390	236.6574
#3	.0056857	.0053368	30.52251	.2117080	.1365041	.8117579	237.6405
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.228338	44.91888	.2229386	-.019048	1.222719	.4304943	.7003301
Stddev	.030216	.19953	.0006697	.000406	.265648	.0088052	.0062294
%RSD	.3672198	.4442002	.3003933	2.133722	21.72598	2.045362	.8894956
#1	8.214269	44.73897	.2228958	-.018751	1.135050	.4220951	.6971893
#2	8.207722	45.13348	.2236286	-.018882	1.011987	.4396559	.7075047
#3	8.263024	44.88417	.2222912	-.019511	1.521121	.4297320	.6962963
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	30.97998	7.788704	.2588415	.0017383	1.393960	3.058959	.0057826
Stddev	.07686	.025956	.0003487	.0002736	.010564	.017328	.0015883
%RSD	.2480947	.3332581	.1347059	15.73848	.7578130	.5664558	27.46618
#1	31.06181	7.766103	.2584547	.0020227	1.396323	3.045869	.0064620
#2	30.90931	7.782957	.2591316	.0014770	1.382414	3.052398	.0069182
#3	30.96881	7.817053	.2589383	.0017153	1.403141	3.078609	.0039677

Sample Name: P4477-04DLX2 Acquired: 10/26/2024 20:30:17 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE453 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.421456	.0712027	.2774669
Stddev	.002180	.0005432	.0004575
%RSD	.0900434	.7629498	.1648875
#1	2.422354	.0714592	.2775794
#2	2.418970	.0715701	.2769637
#3	2.423044	.0705787	.2778577

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1021.312	23386.33	2186.688	851.7110	1630.151
Stddev	1.999	72.75	7.683	4.7693	3.688
%RSD	.1957502	.3110949	.3513529	.5599674	.2262302
#1	1022.422	23389.40	2190.804	853.6020	1631.326
#2	1022.509	23312.08	2191.437	846.2861	1633.108
#3	1019.004	23457.49	2177.824	855.2448	1626.019

Sample Name: CCV006 Acquired: 10/26/2024 20:34:41 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV006 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.072025	4.794693	24.90396	4.743424	4.797671	409.5519	10.14422
Stddev	.013573	.016753	.09134	.017871	.009236	2.2794	.03453
%RSD	.2676071	.3494120	.3667853	.3767459	.1925007	.5565715	.3404184
#1	5.056579	4.776374	24.79913	4.728680	4.788147	411.5168	10.16785
#2	5.077451	4.809236	24.94626	4.738293	4.798277	410.0859	10.16022
#3	5.082047	4.798469	24.96648	4.763299	4.806588	407.0528	10.10459
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5287245	2.512370	409.2478	15.16746	2.519972	14.83587	412.4368
Stddev	.0041203	.005792	1.3166	.03023	.007237	.08822	1.7646
%RSD	.7792955	.2305420	.3217230	.1993014	.2871871	.5946720	.4278494
#1	.5332561	2.507042	410.2367	15.16607	2.511736	14.91951	413.9374
#2	.5277140	2.511532	409.7534	15.13795	2.522868	14.84441	412.8802
#3	.5252034	2.518535	407.7533	15.19836	2.525313	14.74368	410.4928
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.84151	416.0712	2.501189	1.281776	405.8990	2.463279	14.34500
Stddev	.05108	1.4781	.008027	.002783	1.8371	.021335	.05530
%RSD	.3441593	.3552597	.3209162	.2171230	.4525918	.8661235	.3855196
#1	14.88506	417.5553	2.491952	1.280532	406.4332	2.443624	14.33793
#2	14.85418	416.0592	2.505144	1.279832	407.4097	2.485969	14.29358
#3	14.78529	414.5991	2.506471	1.284964	403.8540	2.460244	14.40350
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	154.0471	4.956598	5.079659	4.743909	5.058387	4.971910	5.008770
Stddev	1.0386	.012172	.034316	.015350	.004839	.042692	.009370
%RSD	.6742317	.2455785	.6755596	.3235800	.0956706	.8586573	.1870724
#1	154.9218	4.946312	5.117624	4.734199	5.053455	5.019172	5.000774
#2	154.3203	4.970037	5.070506	4.735921	5.058579	4.960415	5.006456
#3	152.8992	4.953445	5.050848	4.761606	5.063128	4.936142	5.019080

Sample Name: CCV006 Acquired: 10/26/2024 20:34:41 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV006 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.953810	5.073116	5.017662
Stddev	.027128	.012865	.034899
%RSD	.5476169	.2535890	.6955309

#1	4.979622	5.076665	5.047312
#2	4.956275	5.083833	5.026473
#3	4.925534	5.058849	4.979202

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	764.0247	19731.71	1933.446	605.6417	1332.335
Stddev	1.6402	42.85	15.834	2.7176	1.324
%RSD	.2146812	.2171664	.8189576	.4487119	.0993450

#1	765.0746	19743.49	1915.721	605.8750	1333.768
#2	764.8650	19767.45	1938.424	608.2351	1331.159
#3	762.1346	19684.21	1946.193	602.8149	1332.078

Sample Name: CCB006 Acquired: 10/26/2024 20:38:53 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB006 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003680	.0029220	.0008209	.0021938	.0004449	.0162710	.0003442
Stddev	.0018172	.0010876	.0011721	.0082635	.0018068	.0060506	.0003825
%RSD	493.8288	37.22130	142.7867	376.6818	406.0766	37.18621	111.1296
#1	.0004155	.0040574	.0002231	.0066125	-.000899	.0157910	.0003177
#2	-.001473	.0018895	.0021713	-.007340	-.000265	.0104748	-.000024
#3	.002161	.0028192	.0000682	.007308	.002499	.0225473	.000739
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000044	.0000020	.0145669	.0000692	-.000215	.0027288	.0180315
Stddev	.000076	.0000904	.0100631	.0013946	.000087	.0014169	.0224511
%RSD	171.6341	4589.724	69.08177	2015.470	40.70729	51.92381	124.5100
#1	-.000127	-.000042	.0031498	.0008694	-.000134	.0028479	.0436817
#2	.000021	-.000058	.0184041	.0008794	-.000307	.0040823	.0084623
#3	-.000026	.000106	.0221469	-.001541	-.000203	.0012561	.0019505
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000812	-.040650	.0006119	.0002992	-.294814	.0063811	-.000227
Stddev	.001280	.061545	.0001773	.0001438	.368809	.0034463	.000512
%RSD	157.5157	151.4026	28.98072	48.06399	125.0986	54.00824	225.3646
#1	-.000808	.015817	.0007906	.0001619	-.505651	.0060654	-.000336
#2	-.002094	-.031514	.0004360	.0004488	.131042	.0031035	.000331
#3	.000465	-.106253	.0006089	.0002870	-.509834	.0099744	-.000676
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.257636	-.000861	.0031918	.0005147	.0028789	-.002409	.0011772
Stddev	.126571	.001858	.0002815	.0002875	.0072193	.000271	.0012908
%RSD	49.12788	215.8575	8.819370	55.85504	250.7616	11.25410	109.6532
#1	-.240532	-.002659	.0028882	.0002460	-.000227	-.002722	.0026417
#2	-.140486	-.000975	.0034442	.0004802	.011131	-.002252	.0006851
#3	-.391888	.001052	.0032430	.0008179	-.002267	-.002252	.0002048

Sample Name: CCB006 Acquired: 10/26/2024 20:38:53 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB006 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.001442	-.003163	.0000829
Stddev	.000215	.000898	.0000577
%RSD	14.93998	28.39851	69.52846
#1	-.001296	-.004187	.0001041
#2	-.001341	-.002794	.0001271
#3	-.001690	-.002508	.0000177

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	957.9923	21741.62	2064.535	802.5571	1749.633
Stddev	.5901	56.02	5.815	.8409	1.385
%RSD	.0616014	.2576466	.2816761	.1047731	.0791343
#1	957.6614	21702.58	2060.546	803.5215	1750.781
#2	958.6736	21716.48	2061.850	802.1726	1750.023
#3	957.6418	21805.80	2071.207	801.9772	1748.095

Sample Name: P4477-05DLX2 Acquired: 10/26/2024 20:43:25 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE453D Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3213635	-.033575	.2876124	-.001158	.0150017	111.9559	1.194648
Stddev	.0069625	.003450	.0060627	.006721	.0014701	.0985	.002003
%RSD	2.166539	10.27537	2.107944	580.2854	9.799294	.0879431	.1676234
#1	.3283423	-.029702	.2871209	-.002801	.0165290	111.8564	1.195181
#2	.3213307	-.034706	.2939059	.006232	.0148797	112.0533	1.192432
#3	.3144175	-.036318	.2818104	-.006906	.0135965	111.9580	1.196329
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0064200	.0057827	33.71160	.2623277	.1392266	.8906560	264.7056
Stddev	.0001639	.0002369	.08356	.0016444	.0003485	.0040328	.6230
%RSD	2.552877	4.095827	.2478711	.6268407	.2503105	.4527936	.2353738
#1	.0064220	.0056265	33.78907	.2639053	.1390407	.8889799	264.2404
#2	.0065829	.0056665	33.62306	.2624539	.1396287	.8877315	264.4630
#3	.0062552	.0060552	33.72269	.2606239	.1390106	.8952566	265.4135
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.111128	51.62085	.2529330	-.020812	1.286734	.4939848	.7574734
Stddev	.013281	.07440	.0012070	.000464	.162545	.0011930	.0011695
%RSD	.2173237	.1441282	.4772033	2.231647	12.63233	.2415004	.1543921
#1	6.106944	51.60142	.2543132	-.021284	1.146472	.4932120	.7587770
#2	6.100443	51.55810	.2524109	-.020796	1.248858	.4933837	.7565163
#3	6.125998	51.70304	.2520750	-.020356	1.464873	.4953588	.7571271
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	34.60893	8.570337	.2880850	.0020711	1.658650	2.164556	.0071985
Stddev	.05881	.019312	.0006474	.0005198	.009451	.005655	.0011200
%RSD	.1699358	.2253376	.2247247	25.09796	.5697737	.2612383	15.55911
#1	34.54521	8.554706	.2874807	.0025336	1.657840	2.169171	.0065182
#2	34.62045	8.591926	.2887683	.0015086	1.668479	2.158249	.0084912
#3	34.66113	8.564380	.2880059	.0021711	1.649630	2.166250	.0065861

Sample Name: P4477-05DLX2 Acquired: 10/26/2024 20:43:25 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE453D Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.681569	.0845682	.2872026
Stddev	.002348	.0014859	.0002928
%RSD	.0875506	1.757039	.1019639
#1	2.679756	.0829900	.2868765
#2	2.680729	.0859402	.2874432
#3	2.684221	.0847743	.2872879

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1026.328	23574.02	2239.857	860.6120	1621.857
Stddev	2.427	63.09	4.830	3.3840	1.662
%RSD	.2365003	.2676288	.2156276	.3932083	.1024610
#1	1028.514	23642.46	2234.624	864.3135	1622.890
#2	1026.755	23518.18	2244.143	859.8455	1619.940
#3	1023.716	23561.42	2240.804	857.6770	1622.741

Sample Name: P4477-06DLX2 Acquired: 10/26/2024 20:47:49 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE453S Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5850853	.0685042	.3239449	.1546790	.1717111	100.7878	5.240701
Stddev	.0046110	.0023639	.0038281	.0104411	.0063063	.2814	.006980
%RSD	.7880912	3.450738	1.181703	6.750142	3.672604	.2791572	.1331962
#1	.5859246	.0665197	.3195277	.1454671	.1651063	100.7345	5.234528
#2	.5892190	.0711195	.3262967	.1525491	.1776689	100.5369	5.239299
#3	.5801123	.0678733	.3260104	.1660208	.1723581	101.0920	5.248276
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1038436	.1056538	30.28632	.6205854	1.136500	1.253134	237.0421
Stddev	.0010409	.0005952	.05265	.0015131	.002553	.006336	.9958
%RSD	1.002413	.5633258	.1738420	.2438158	.2246295	.5055816	.4200784
#1	.1041989	.1052804	30.25438	.6216261	1.134060	1.247348	236.9364
#2	.1026715	.1063401	30.25748	.6188497	1.139153	1.252151	236.1034
#3	.1046604	.1053407	30.34709	.6212806	1.136287	1.259904	238.0865
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.140136	44.86976	1.230814	.0728344	1.064410	1.416505	1.482050
Stddev	.033971	.24274	.002923	.0005488	.103098	.017986	.003091
%RSD	.3716634	.5409949	.2374911	.7534330	9.685892	1.269747	.2085636
#1	9.118030	44.86702	1.229969	.0722798	1.118484	1.427152	1.481896
#2	9.123127	44.62840	1.234067	.0733771	1.129221	1.395739	1.485215
#3	9.179251	45.11386	1.228407	.0728462	.945524	1.426624	1.479039
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	30.83617	7.682984	.2579776	.0016852	1.348838	2.853387	.0049464
Stddev	.11132	.024678	.0017981	.0003763	.003996	.009333	.0027789
%RSD	.3609894	.3212096	.6969828	22.32992	.2962412	.3270811	56.17905
#1	30.82495	7.679653	.2572387	.0013131	1.350213	2.855797	.0050790
#2	30.73089	7.709159	.2566668	.0020655	1.351965	2.843086	.0021037
#3	30.95267	7.660140	.2600274	.0016769	1.344336	2.861279	.0076567

Sample Name: P4477-06DLX2 Acquired: 10/26/2024 20:47:49 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE453S Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.385896	.0716370	.2752955
Stddev	.011664	.0013426	.0011282
%RSD	.4888803	1.874174	.4098207

#1	2.386045	.0712894	.2754394
#2	2.374158	.0731192	.2741023
#3	2.397485	.0705024	.2763449

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1020.335	23386.08	2187.197	852.6862	1635.127
Stddev	2.957	38.77	9.719	1.5615	5.580
%RSD	.2897955	.1657900	.4443702	.1831228	.3412749

#1	1022.035	23430.85	2184.445	853.9550	1637.477
#2	1016.921	23364.41	2197.995	850.9424	1628.756
#3	1022.049	23363.00	2179.150	853.1612	1639.147

Sample Name: P4477-04LDLX10 Acquired: 10/26/2024 20:52:08 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE453L Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1092332	-.003377	.0590509	-.000118	.0045213	20.83166	.3024299
Stddev	.0031021	.003830	.0048515	.000844	.0005314	.06273	.0007984
%RSD	2.839881	113.4351	8.215862	713.7804	11.75338	.3011289	.2639842
#1	.1128062	.001044	.0563904	-.001071	.0049283	20.76048	.3026082
#2	.1072263	-.005459	.0561115	.000535	.0047155	20.85561	.3015575
#3	.1076673	-.005715	.0646506	.000182	.0039201	20.87889	.3031241
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010768	.0008515	6.640784	.0463190	.0265956	.1734372	51.77576
Stddev	.0001532	.0000763	.017279	.0014075	.0009303	.0035955	.11407
%RSD	14.22407	8.966650	.2602011	3.038764	3.498010	2.073115	.2203232
#1	.0011969	.0007870	6.627598	.0457799	.0258551	.1775561	51.75264
#2	.0011293	.0008318	6.634409	.0452608	.0262919	.1718288	51.89963
#3	.0009043	.0009358	6.660345	.0479164	.0276398	.1709266	51.67502
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.799120	9.609897	.0452421	-.003818	-.161866	.0957081	.1508557
Stddev	.005470	.079003	.0009765	.000341	.213192	.0010922	.0009931
%RSD	.3040333	.8221012	2.158342	8.930749	131.7088	1.141179	.6582752
#1	1.804745	9.698792	.0451583	-.004135	-.291680	.0962506	.1505647
#2	1.798796	9.583189	.0443103	-.003457	-.278100	.0964229	.1500406
#3	1.793819	9.547710	.0462578	-.003863	.084182	.0944509	.1519617
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.364590	1.544442	.0528322	.0002954	.2746775	.6058284	.0002441
Stddev	.033524	.026083	.0017247	.0001846	.0022517	.0063542	.0002744
%RSD	.5267202	1.688820	3.264386	62.49179	.8197716	1.048837	112.3882
#1	6.396344	1.547374	.0525062	.0005085	.2750602	.6019562	.0003522
#2	6.367885	1.517017	.0546966	.0001924	.2722589	.6023674	-.000068
#3	6.329540	1.568935	.0512939	.0001853	.2767133	.6131617	.000448

Sample Name: P4477-04LDLX10 Acquired: 10/26/2024 20:52:08 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE453L Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.5137773	.0113408	.0591993
Stddev	.0032573	.0021039	.0002949
%RSD	.6339913	18.55156	.4980852
#1	.5141665	.0131825	.0588839
#2	.5168226	.0090479	.0592457
#3	.5103429	.0117919	.0594682

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	977.7806	22159.06	2060.791	815.2681	1713.984
Stddev	14.9479	23.09	12.342	1.3094	31.418
%RSD	1.528755	.1041895	.5988921	.1606048	1.833041
#1	975.6561	22135.97	2071.268	816.7617	1713.617
#2	993.6770	22159.06	2063.918	814.3177	1745.584
#3	964.0086	22182.15	2047.186	814.7250	1682.751

Sample Name: P4477-07DLX2 Acquired: 10/26/2024 20:56:36 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE454 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1515224	-.025146	.1674120	-.005976	.0073894	85.17189	.8695869
Stddev	.0045504	.004978	.0006666	.007603	.0047542	.15876	.0040448
%RSD	3.003146	19.79791	.3981930	127.2318	64.33774	.1864020	.4651379
#1	.1563399	-.023526	.1668394	-.008612	.0083233	84.99427	.8684196
#2	.1509303	-.030732	.1672527	.002594	.0022376	85.30000	.8740870
#3	.1472970	-.021179	.1681438	-.011910	.0116074	85.22139	.8662542
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0043782	.0036435	32.52036	.2000959	.1044773	.5175811	195.2345
Stddev	.0000218	.0001658	.11274	.0014762	.0005430	.0071635	1.0176
%RSD	.4977656	4.551883	.3466825	.7377248	.5197644	1.384031	.5212379
#1	.0044030	.0034974	32.50802	.1990037	.1042119	.5117709	194.5813
#2	.0043699	.0036094	32.63877	.2017753	.1041181	.5255849	196.4070
#3	.0043618	.0038238	32.41430	.1995087	.1051020	.5153876	194.7152
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.625274	38.75906	.1756423	-.016653	.8878988	.3751895	.5728206
Stddev	.023664	.03768	.0007367	.000403	.1048324	.0062921	.0029257
%RSD	.5116179	.0972192	.4194061	2.420043	11.80679	1.677044	.5107475
#1	4.616880	38.72621	.1755744	-.017092	.8149085	.3758753	.5698306
#2	4.651991	38.75078	.1749420	-.016301	1.008025	.3685825	.5729537
#3	4.606952	38.80019	.1764106	-.016566	.840763	.3811105	.5756775
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	29.46822	6.932019	.2221861	.0031231	1.731814	2.577382	.0038646
Stddev	.02632	.010629	.0007740	.0004189	.006739	.009635	.0023911
%RSD	.0893153	.1533385	.3483765	13.41222	.3891191	.3738315	61.87331
#1	29.46384	6.919972	.2219140	.0035752	1.728130	2.566258	.0065561
#2	29.49646	6.936009	.2230594	.0030459	1.727721	2.582746	.0019856
#3	29.44437	6.940077	.2215848	.0027482	1.739592	2.583140	.0030519

Sample Name: P4477-07DLX2 Acquired: 10/26/2024 20:56:36 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE454 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.370124	.0556346	.2280342
Stddev	.002084	.0018025	.0004229
%RSD	.0879443	3.239949	.1854685
#1	2.368937	.0543843	.2275914
#2	2.372530	.0548186	.2280772
#3	2.368903	.0577008	.2284340

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1018.693	23386.91	2251.216	854.2783	1639.509
Stddev	1.610	121.10	5.508	2.8738	2.868
%RSD	.1580197	.5178275	.2446698	.3363963	.1749438
#1	1018.230	23464.74	2257.570	857.5489	1640.018
#2	1020.483	23247.38	2248.283	853.1287	1642.089
#3	1017.365	23448.61	2247.794	852.1572	1636.420

Sample Name: P4477-08DLX2 Acquired: 10/26/2024 21:01:00 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE455 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1469893	-.021479	.1667102	.0017713	.0052637	83.38770	.9345539
Stddev	.0025159	.003019	.0022972	.0053983	.0028324	.19127	.0031326
%RSD	1.711638	14.05455	1.377934	304.7733	53.80893	.2293770	.3352027
#1	.1459831	-.018920	.1687529	-.000486	.0084156	83.29149	.9313309
#2	.1498526	-.020708	.1671542	.007932	.0029318	83.60798	.9375876
#3	.1451321	-.024808	.1642234	-.002132	.0044438	83.26364	.9347432
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0043251	.0033733	62.97666	.1868447	.1001349	.5002490	184.6740
Stddev	.0003400	.0000653	.28842	.0011389	.0003876	.0028702	.7981
%RSD	7.861516	1.935809	.4579846	.6095703	.3870689	.5737594	.4321676
#1	.0046553	.0033883	62.76288	.1867722	.1000332	.4991516	184.0991
#2	.0043439	.0033018	63.30471	.1857438	.0998083	.4980894	185.5853
#3	.0039761	.0034298	62.86238	.1880182	.1005632	.5035060	184.3378
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.493919	43.96652	.1841570	-.013351	3.345100	.3562185	.5538279
Stddev	.019080	.26175	.0011471	.000358	.249724	.0118152	.0022206
%RSD	.4245758	.5953331	.6229138	2.682945	7.465373	3.316845	.4009552
#1	4.473548	43.75109	.1828696	-.012949	3.494831	.3678363	.5546617
#2	4.511373	44.25782	.1845305	-.013466	3.483653	.3566038	.5513110
#3	4.496835	43.89064	.1850707	-.013638	3.056815	.3442153	.5555108
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	31.35987	7.141416	.2843178	.0021465	2.469956	2.939106	.0018443
Stddev	.07748	.028420	.0020270	.0005654	.005204	.016678	.0009151
%RSD	.2470523	.3979585	.7129160	26.34242	.2106872	.5674509	49.61541
#1	31.29034	7.111055	.2827265	.0022242	2.473361	2.925469	.0028275
#2	31.44339	7.167383	.2865998	.0015463	2.463965	2.957701	.0016877
#3	31.34588	7.145811	.2836270	.0026691	2.472540	2.934149	.0010176

Sample Name: P4477-08DLX2 Acquired: 10/26/2024 21:01:00 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE455 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.404793	.0567979	.4191221
Stddev	.009616	.0001199	.0017539
%RSD	.3998826	.2111459	.4184609
#1	2.408470	.0567585	.4182827
#2	2.412029	.0569326	.4211379
#3	2.393881	.0567026	.4179457

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1005.538	23139.74	2223.729	844.8814	1615.883
Stddev	1.970	27.38	9.821	1.7767	3.307
%RSD	.1959358	.1183167	.4416539	.2102870	.2046348
#1	1004.611	23108.72	2230.309	843.6627	1619.291
#2	1007.801	23160.53	2212.440	846.9199	1615.671
#3	1004.202	23149.96	2228.438	844.0614	1612.688

Sample Name: P4477-09DLX2 Acquired: 10/26/2024 21:05:26 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE456 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1267475	-.028292	.1414502	.0041458	.0101667	88.85365	.6165931
Stddev	.0024362	.001368	.0035441	.0049067	.0013973	.31898	.0029595
%RSD	1.922088	4.836274	2.505519	118.3532	13.74426	.3589938	.4799834
#1	.1240385	-.028344	.1402940	.0071612	.0106091	88.59875	.6149257
#2	.1287584	-.026899	.1386287	.0067921	.0112892	89.21136	.6200101
#3	.1274458	-.029634	.1454280	-.001516	.0086017	88.75085	.6148434
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0041115	.0015544	61.91244	.2368703	.1255516	.4559341	224.9915
Stddev	.0001124	.0001507	.19876	.0007251	.0007526	.0040280	.4798
%RSD	2.733347	9.693394	.3210275	.3061296	.5994593	.8834700	.2132394
#1	.0042412	.0016338	61.87040	.2375772	.1257130	.4535850	224.4893
#2	.0040439	.0016488	62.12885	.2361283	.1262105	.4605852	225.0400
#3	.0040492	.0013807	61.73807	.2369053	.1247314	.4536321	225.4451
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.213039	58.76236	.2371974	-.015385	1.545345	.5053339	.4040895
Stddev	.006268	.28841	.0005174	.000760	.103410	.0054867	.0022191
%RSD	.1487788	.4908030	.2181246	4.942314	6.691700	1.085756	.5491529
#1	4.213666	58.51632	.2369711	-.014511	1.604515	.5036450	.4042411
#2	4.218970	59.07974	.2377893	-.015757	1.605581	.5008902	.4017985
#3	4.206481	58.69102	.2368316	-.015888	1.425939	.5114665	.4062289
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	23.85976	4.832308	.2450426	.0002213	1.345145	2.136842	.0042495
Stddev	.09994	.017384	.0028743	.0003156	.005842	.004639	.0012371
%RSD	.4188594	.3597469	1.172978	142.6240	.4342728	.2170979	29.11160
#1	23.74490	4.816702	.2444684	-.000092	1.348793	2.132809	.0029771
#2	23.90758	4.851045	.2424987	.000217	1.348235	2.141912	.0054480
#3	23.92681	4.829176	.2481606	.000539	1.338408	2.135805	.0043233

Sample Name: P4477-09DLX2 Acquired: 10/26/2024 21:05:26 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE456 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.451982	.0506917	.2487136
Stddev	.014122	.0016416	.0008894
%RSD	.5759606	3.238461	.3575865
#1	2.446496	.0500928	.2480693
#2	2.468025	.0494335	.2497283
#3	2.441427	.0525486	.2483433

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	992.8681	22859.88	2117.400	831.3629	1619.830
Stddev	.8979	61.35	2.261	4.9321	2.899
%RSD	.0904307	.2683900	.1067897	.5932558	.1789774
#1	991.8901	22791.16	2119.292	827.5724	1619.228
#2	993.0590	22879.32	2118.012	836.9392	1617.279
#3	993.6551	22909.16	2114.896	829.5772	1622.983

Sample Name: P4477-10DLX2 Acquired: 10/26/2024 21:09:53 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE457 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2870725	-.036055	.2659031	-.001171	.0089588	103.0845	1.153150
Stddev	.0043885	.004460	.0074891	.000710	.0030168	.3376	.002979
%RSD	1.528704	12.37010	2.816475	60.59760	33.67470	.3274519	.2583368
#1	.2820051	-.030922	.2616120	-.001680	.0118201	102.7429	1.150218
#2	.2896099	-.038978	.2615467	-.001473	.0092488	103.4178	1.156174
#3	.2896024	-.038266	.2745507	-.000360	.0058074	103.0927	1.153060
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0061482	.0054534	19.40554	.2353245	.1452925	.8551745	254.2763
Stddev	.0000706	.0001189	.10542	.0011212	.0008945	.0063908	.5282
%RSD	1.148046	2.180936	.5432505	.4764362	.6156252	.7473059	.2077085
#1	.0061135	.0054694	19.28662	.2356969	.1459463	.8593678	253.8330
#2	.0061016	.0055635	19.48755	.2362121	.1442732	.8583366	254.8607
#3	.0062294	.0053272	19.44243	.2340645	.1456581	.8478192	254.1351
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.291025	47.31305	.2656435	-.020656	.9282084	.4677080	.6677048
Stddev	.012106	.40115	.0007022	.000596	.1739048	.0058041	.0021628
%RSD	.1924333	.8478637	.2643329	2.885732	18.73554	1.240970	.3239153
#1	6.301244	47.32411	.2651024	-.021312	1.035525	.4633281	.6664999
#2	6.277655	47.70856	.2653911	-.020506	1.021537	.4742911	.6664128
#3	6.294176	46.90649	.2664370	-.020149	.727563	.4655048	.6702017
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	31.69616	5.610694	.2663351	.0025293	.6986068	2.210895	.0075126
Stddev	.06169	.029241	.0008917	.0001467	.0050575	.010554	.0029095
%RSD	.1946227	.5211619	.3348239	5.799013	.7239352	.4773441	38.72761
#1	31.63329	5.578981	.2660378	.0023788	.7013049	2.205309	.0089036
#2	31.69862	5.616513	.2673375	.0025374	.6927725	2.223067	.0041688
#3	31.75659	5.636588	.2656300	.0026718	.7017431	2.204308	.0094655

Sample Name: P4477-10DLX2 Acquired: 10/26/2024 21:09:53 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE457 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.363782	.0798501	.2186914
Stddev	.002616	.0015628	.0009548
%RSD	.1106860	1.957140	.4366139
#1	2.360976	.0787387	.2176308
#2	2.364215	.0816370	.2194825
#3	2.366154	.0791745	.2189609

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1027.434	23599.71	2220.113	866.3472	1634.572
Stddev	1.634	34.54	7.819	3.3921	2.277
%RSD	.1590056	.1463531	.3521721	.3915359	.1392914
#1	1025.718	23633.77	2227.494	866.1891	1631.970
#2	1027.614	23600.64	2211.920	869.8156	1636.199
#3	1028.970	23564.71	2220.925	863.0370	1635.547

Sample Name: P4477-11DLX2 Acquired: 10/26/2024 21:14:18 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE458 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1828222	-.023733	.2131844	-.003137	.0078879	81.99422
Stddev	.0035982	.002782	.0039057	.005473	.0017891	.18320
%RSD	1.968124	11.72191	1.832089	174.4560	22.68142	.2234267

#1	.1868903	-.021650	.2103346	-.007758	.0093314	81.79491
#2	.1815198	-.026893	.2176364	-.004562	.0058863	82.03251
#3	.1800567	-.022657	.2115822	.002907	.0084460	82.15525

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9997071	.0044793	.0045593	50.53452	.1941868	.1242556
Stddev	.0033216	.0000583	.0001318	.10628	.0010472	.0011381
%RSD	.3322589	1.301895	2.889611	.2103077	.5392705	.9159370

#1	1.002156	.0044132	.0045445	50.65268	.1953215	.1254557
#2	.995926	.0045012	.0044357	50.50414	.1932576	.1231918
#3	1.001038	.0045234	.0046979	50.44674	.1939815	.1241192

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6330411	200.3835	5.405671	41.17419	.1919128	-.014502
Stddev	.0019056	.2064	.015249	.23430	.0008348	.000428
%RSD	.3010243	.1029963	.2820963	.5690565	.4349899	2.954681

#1	.6308751	200.3842	5.402269	41.42298	.1911438	-.014890
#2	.6344599	200.5896	5.392410	41.14189	.1928007	-.014573
#3	.6337883	200.1768	5.422334	40.95772	.1917940	-.014042

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.064479	.3810773	.6566460	29.74733	F 10.57215	.2506197
Stddev	.175888	.0067443	.0014326	.06527	.02054	.0024262
%RSD	16.52334	1.769785	.2181692	.2194109	.1942820	.9680608

#1	1.124649	.3845241	.6582992	29.67629	10.58319	.2511259
#2	.866403	.3733062	.6557685	29.80465	10.54845	.2527529
#3	1.202386	.3854016	.6558703	29.76104	10.58482	.2479804

Sample Name: P4477-11DLX2 Acquired: 10/26/2024 21:14:18 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE458 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0018912	1.843104	2.236870	.0026721	1.984513	.0644518
Stddev	.0003799	.007189	.004140	.0022775	.008685	.0017377
%RSD	20.08996	.3900482	.1850876	85.23018	.4376361	2.696132
#1	.0015956	1.849113	2.236741	.0034925	1.976101	.0647176
#2	.0017581	1.835140	2.241074	.0000982	1.983991	.0625965
#3	.0023197	1.845061	2.232796	.0044258	1.993448	.0660413

Elem	Sr4077
Units	ppm
Avg	.4579608
Stddev	.0015189
%RSD	.3316752
#1	.4562275
#2	.4585949
#3	.4590598

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1010.491	23197.29	2236.142	848.5930	1623.710
Stddev	1.724	25.46	2.697	2.2737	3.222
%RSD	.1706186	.1097731	.1206074	.2679351	.1984245
#1	1011.542	23224.16	2239.047	846.6703	1622.995
#2	1011.429	23194.20	2233.718	848.0060	1627.229
#3	1008.501	23173.52	2235.661	851.1026	1620.905

Sample Name: P4477-12DLX2 Acquired: 10/26/2024 21:18:41 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE459 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2441205	-.029192	.2551444	-.005321	.0119509	91.54115	1.118449
Stddev	.0094342	.002459	.0030563	.000829	.0018582	.61654	.006034
%RSD	3.864589	8.423981	1.197884	15.58417	15.54840	.6735090	.5395135
#1	.2457401	-.031797	.2554978	-.005206	.0106455	90.85748	1.112035
#2	.2526401	-.028868	.2519267	-.006202	.0140783	91.71101	1.119296
#3	.2339813	-.026911	.2580087	-.004555	.0111290	92.05494	1.124014
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0052971	.0063580	43.61139	.2200885	.1287958	.8298562	229.3130
Stddev	.0001059	.0001869	.22277	.0005597	.0006942	.0085669	1.4466
%RSD	2.000059	2.940266	.5108087	.2542911	.5389604	1.032333	.6308381
#1	.0051747	.0065079	43.36756	.2197840	.1294579	.8208099	227.6740
#2	.0053559	.0061485	43.66232	.2207344	.1288561	.8309133	229.8535
#3	.0053605	.0064175	43.80428	.2197471	.1280735	.8378455	230.4115
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.892547	43.45860	.2350776	-.018297	1.584309	.4307985	.6934518
Stddev	.029650	.44749	.0010893	.000325	.319678	.0074521	.0016909
%RSD	.5031839	1.029694	.4633744	1.778891	20.17775	1.729822	.2438330
#1	5.867089	43.08937	.2348927	-.017969	1.254846	.4394031	.6949021
#2	5.885449	43.33017	.2340927	-.018303	1.604872	.4264447	.6915946
#3	5.925102	43.95626	.2362476	-.018620	1.893209	.4265475	.6938587
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	33.64920	9.098756	.2543765	.0016568	1.657577	2.346392	.0050372
Stddev	.42012	.010681	.0018299	.0001617	.011369	.011590	.0020868
%RSD	1.248540	.1173909	.7193878	9.761602	.6858595	.4939485	41.42867
#1	33.22273	9.109269	.2531291	.0017598	1.669806	2.333067	.0033164
#2	33.66220	9.099085	.2535231	.0017402	1.647329	2.351986	.0044367
#3	34.06268	9.087915	.2564772	.0014704	1.655595	2.354124	.0073584

Sample Name: P4477-12DLX2 Acquired: 10/26/2024 21:18:41 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE459 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.107042	.0675862	.2967013
Stddev	.007370	.0020783	.0020387
%RSD	.3497900	3.075072	.6871083
#1	2.098645	.0671509	.2943816
#2	2.110037	.0698477	.2975146
#3	2.112442	.0657600	.2982079

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1015.147	23487.39	2264.543	860.3637	1615.153
Stddev	3.340	48.24	17.565	.6838	4.346
%RSD	.3290381	.2053825	.7756672	.0794798	.2690918
#1	1018.996	23456.25	2283.346	859.5805	1618.390
#2	1013.010	23462.95	2261.729	860.6680	1616.855
#3	1013.434	23542.95	2248.555	860.8425	1610.213

Sample Name: P4477-13DLX2 Acquired: 10/26/2024 21:23:06 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE460 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1482987	-.025429	.2026551	.0007430	.0065479	82.93415	.9493111
Stddev	.0020717	.001805	.0018966	.0028097	.0017051	.34214	.0043819
%RSD	1.396981	7.098710	.9358703	378.1276	26.03976	.4125473	.4615894
#1	.1473147	-.026829	.2041064	.0032806	.0074353	83.00057	.9509585
#2	.1469024	-.026065	.2033498	.0012249	.0076261	82.56368	.9443442
#3	.1506790	-.023391	.2005092	-.002276	.0045821	83.23822	.9526305
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0044068	.0046652	54.12239	.1795692	.0975913	.6810753	180.0356
Stddev	.0001683	.0001912	.08041	.0010566	.0003925	.0042977	.5653
%RSD	3.818987	4.097410	.1485786	.5884130	.4021986	.6310208	.3140062
#1	.0045984	.0044547	54.13615	.1798264	.0979199	.6795480	179.8802
#2	.0043391	.0047130	54.03599	.1804735	.0971567	.6777498	179.5643
#3	.0042828	.0048279	54.19504	.1784077	.0976974	.6859281	180.6624
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.802382	39.95379	.1774436	-.013006	1.326772	.3280312	.6363406
Stddev	.020474	.12547	.0007175	.000887	.049268	.0033611	.0008199
%RSD	.4263256	.3140271	.4043637	6.816322	3.713345	1.024635	.1288516
#1	4.795941	39.81701	.1768354	-.012328	1.378645	.3254360	.6353963
#2	4.785903	39.98083	.1772605	-.012680	1.321063	.3318280	.6367529
#3	4.825302	40.06353	.1782349	-.014009	1.280607	.3268297	.6368726
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	30.07935	9.238606	.2295667	.0023606	2.479616	2.518095	.0034479
Stddev	.14320	.013609	.0021567	.0008000	.009134	.002636	.0007618
%RSD	.4760615	.1473058	.9394700	33.89087	.3683653	.1046971	22.09432
#1	30.15858	9.223362	.2299164	.0017174	2.470661	2.516498	.0041897
#2	29.91405	9.249533	.2272564	.0021079	2.488919	2.516649	.0026676
#3	30.16542	9.242923	.2315271	.0032564	2.479269	2.521138	.0034864

Sample Name: P4477-13DLX2 Acquired: 10/26/2024 21:23:06 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE460 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.143630	.0581865	.4208479
Stddev	.010730	.0018973	.0017377
%RSD	.5005492	3.260675	.4129033
#1	2.143334	.0590283	.4214769
#2	2.133051	.0560140	.4188833
#3	2.154504	.0595173	.4221835

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1004.266	23106.80	2167.637	842.2420	1621.897
Stddev	1.016	87.05	7.036	1.0241	1.480
%RSD	.1011198	.3767503	.3245959	.1215901	.0912304
#1	1005.427	23008.39	2167.856	842.6157	1622.862
#2	1003.829	23173.77	2174.560	843.0267	1620.193
#3	1003.542	23138.23	2160.493	841.0835	1622.635

Sample Name: P4477-14DLX2 Acquired: 10/26/2024 21:27:30 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE461 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1641467	-.021751	.1907699	-.003698	.0098972	75.65309	.8097365
Stddev	.0067831	.005371	.0008434	.003211	.0019912	.41754	.0025021
%RSD	4.132358	24.69556	.4421111	86.83012	20.11827	.5519123	.3090052
#1	.1566274	-.015660	.1916660	-.006893	.0093098	76.08927	.8124391
#2	.1698053	-.025810	.1906520	-.003728	.0121160	75.25709	.8075005
#3	.1660075	-.023782	.1899916	-.000472	.0082659	75.61292	.8092699
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0045911	.0034725	25.34343	.1729284	.0954658	.5303117	192.0743
Stddev	.0002036	.0000688	.07326	.0004554	.0001371	.0067526	.9997
%RSD	4.435547	1.981036	.2890609	.2633676	.1435591	1.273323	.5204676
#1	.0048250	.0035430	25.36849	.1733851	.0956230	.5346643	193.0535
#2	.0044525	.0034055	25.26093	.1729259	.0953718	.5337380	191.0553
#3	.0044960	.0034691	25.40086	.1724743	.0954024	.5225329	192.1140
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.534614	35.70449	.1660730	-.015618	.7751363	.3538355	.5600045
Stddev	.025109	.09187	.0004393	.000378	.1320634	.0016204	.0053543
%RSD	.5537119	.2573104	.2645348	2.420528	17.03744	.4579579	.9561204
#1	4.555752	35.79792	.1656691	-.015207	.9188597	.3548075	.5588689
#2	4.506860	35.61426	.1665407	-.015950	.7474157	.3519648	.5553091
#3	4.541229	35.70128	.1660090	-.015699	.6591336	.3547341	.5658355
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	23.62506	7.514322	.2093209	.0023131	1.284452	2.593782	.0039474
Stddev	.19738	.028834	.0001838	.0002927	.010635	.017402	.0027402
%RSD	.8354498	.3837150	.0877881	12.65265	.8280102	.6709179	69.41755
#1	23.84047	7.498925	.2095248	.0022536	1.293225	2.607420	.0016340
#2	23.58182	7.496456	.2092696	.0020548	1.272623	2.574183	.0032346
#3	23.45289	7.547586	.2091682	.0026310	1.287506	2.599745	.0069735

Sample Name: P4477-14DLX2 Acquired: 10/26/2024 21:27:30 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE461 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.950859	.0507158	.2389620
Stddev	.004815	.0006184	.0018213
%RSD	.2467929	1.219404	.7621534
#1	1.955727	.0500457	.2410628
#2	1.946099	.0512646	.2378289
#3	1.950751	.0508372	.2379942

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1005.169	23164.14	2127.785	848.4975	1650.373
Stddev	.380	39.21	14.455	8.9229	1.647
%RSD	.0378397	.1692916	.6793280	1.051613	.0997700
#1	1005.232	23157.72	2113.871	851.7401	1652.062
#2	1005.514	23206.17	2142.726	855.3458	1648.773
#3	1004.761	23128.53	2126.758	838.4067	1650.284

Sample Name: P4477-15DLX2 Acquired: 10/26/2024 21:31:55 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE462 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1835271	-.034259	.1670364	-.003998	.0079124	114.4634	.9095463
Stddev	.0077854	.001628	.0018529	.009419	.0003906	.1654	.0015534
%RSD	4.242118	4.750732	1.109285	235.5869	4.935985	.1445139	.1707850
#1	.1786217	-.036137	.1677346	-.006508	.0074650	114.3047	.9103522
#2	.1794556	-.033257	.1684387	-.011908	.0080871	114.6348	.9105310
#3	.1925041	-.033383	.1649358	.006421	.0081852	114.4505	.9077556
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0063429	.0021383	72.19076	.2068798	.1420626	.4439027	247.8413
Stddev	.0000672	.0002062	.05675	.0010230	.0003370	.0012633	.1136
%RSD	1.059525	9.643584	.0786089	.4944821	.2372115	.2845905	.0458316
#1	.0064092	.0021009	72.13340	.2062569	.1417677	.4449828	247.8351
#2	.0063446	.0019533	72.19200	.2063221	.1419901	.4442118	247.9578
#3	.0062749	.0023606	72.24687	.2080605	.1424299	.4425136	247.7309
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.827235	63.48635	.3254911	-.017878	4.665839	.5083058	.4718135
Stddev	.009003	.38814	.0007435	.000771	.140425	.0062642	.0013479
%RSD	.1865101	.6113789	.2284210	4.313786	3.009641	1.232365	.2856944
#1	4.820728	63.07296	.3248053	-.018757	4.827861	.5072418	.4728732
#2	4.837510	63.84299	.3253868	-.017315	4.579277	.5150339	.4702963
#3	4.823466	63.54311	.3262812	-.017561	4.590378	.5026418	.4722709
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	18.42185	8.056770	.2555650	.0021011	.9033436	1.683097	.0034334
Stddev	.07636	.012128	.0014813	.0001415	.0051294	.003679	.0025463
%RSD	.4145202	.1505339	.5796065	6.734910	.5678284	.2186014	74.16404
#1	18.42225	8.053136	.2560337	.0022644	.8985939	1.680436	.0012205
#2	18.34529	8.046875	.2539061	.0020219	.9026540	1.687295	.0062165
#3	18.49801	8.070300	.2567553	.0020168	.9087830	1.681558	.0028632

Sample Name: P4477-15DLX2 Acquired: 10/26/2024 21:31:55 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE462 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.376616	.0563661	1.267609
Stddev	.009885	.0002227	.000518
%RSD	.2258605	.3951269	.0408989
#1	4.365273	.0561580	1.267903
#2	4.383394	.0566010	1.267914
#3	4.381181	.0563394	1.267011

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1013.026	23434.73	2217.562	855.3849	1591.908
Stddev	2.326	62.34	7.715	.5668	3.337
%RSD	.2296329	.2660261	.3478827	.0662665	.2096538
#1	1015.041	23506.66	2226.031	854.7372	1594.970
#2	1013.556	23396.31	2210.936	855.6271	1592.402
#3	1010.480	23401.22	2215.720	855.7903	1588.350

Sample Name: P4477-16DLX2 Acquired: 10/26/2024 21:36:19 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE463 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1511096	-.034274	.1179937	-.001993	.0068722	108.9918	.5696836
Stddev	.0015894	.003765	.0022145	.006889	.0009696	.0842	.0014252
%RSD	1.051800	10.98570	1.876764	345.6971	14.10848	.0772289	.2501765
#1	.1514505	-.031517	.1183673	-.000627	.0064033	109.0831	.5708945
#2	.1525009	-.038564	.1156162	-.009462	.0079871	108.9173	.5681130
#3	.1493774	-.032741	.1199976	.004111	.0062262	108.9749	.5700434
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0040003	.0017987	45.27804	.3387428	.1580066	.5785649	242.2927
Stddev	.0001379	.0000230	.09484	.0002282	.0011027	.0040809	.8085
%RSD	3.447937	1.279631	.2094604	.0673794	.6978897	.7053475	.3336677
#1	.0040551	.0018032	45.38347	.3388919	.1580521	.5832643	242.8259
#2	.0041024	.0018192	45.25097	.3388564	.1568818	.5765160	242.6896
#3	.0038434	.0017738	45.19968	.3384800	.1590859	.5759145	241.3625
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.724161	73.33536	.3130252	-.017688	1.658778	.5257051	.3977305
Stddev	.017624	.31376	.0011087	.000177	.179938	.0150904	.0019861
%RSD	.3730691	.4278410	.3541851	1.001907	10.84759	2.870514	.4993466
#1	4.743570	73.66819	.3117473	-.017892	1.550352	.5404602	.3991927
#2	4.719755	73.29287	.3137296	-.017604	1.866485	.5103003	.3954694
#3	4.709158	73.04501	.3135989	-.017569	1.559498	.5263549	.3985293
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	19.00110	3.930856	.2461528	-.000712	.8713012	1.974945	.0018446
Stddev	.09367	.012654	.0015264	.000496	.0177803	.012067	.0021628
%RSD	.4929478	.3219191	.6200828	69.67572	2.040661	.6109990	117.2494
#1	19.03847	3.926158	.2444430	-.000376	.8540153	1.983807	.0019361
#2	18.89452	3.921223	.2473781	-.000478	.8895377	1.979826	-.000362
#3	19.07031	3.945187	.2466373	-.001281	.8703506	1.961203	.003960

Sample Name: P4477-16DLX2 Acquired: 10/26/2024 21:36:19 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE463 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.307119	.0587090	.1812049
Stddev	.006795	.0019197	.0001207
%RSD	.2945435	3.269803	.0666044
#1	2.314856	.0567240	.1812085
#2	2.302120	.0605559	.1813238
#3	2.304380	.0588472	.1810825

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	993.0260	22913.65	2193.496	832.0031	1607.479
Stddev	.6638	59.42	12.506	3.4117	3.152
%RSD	.0668479	.2593024	.5701519	.4100526	.1960898
#1	993.7242	22857.65	2182.655	831.5608	1610.229
#2	992.9509	22975.98	2190.655	835.6144	1608.169
#3	992.4029	22907.31	2207.179	828.8342	1604.039

Sample Name: P4477-17DLX2 Acquired: 10/26/2024 21:40:45 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE464 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2522607	-.031857	.1927756	-.001004	.0091247	97.54053	1.133687
Stddev	.0064712	.001989	.0022595	.001467	.0028589	.24582	.003295
%RSD	2.565302	6.243731	1.172099	146.0363	31.33124	.2520141	.2906587
#1	.2591805	-.033704	.1902437	.000082	.0058555	97.65485	1.136686
#2	.2512429	-.029751	.1945872	-.000422	.0103621	97.25838	1.130159
#3	.2463586	-.032115	.1934959	-.002673	.0111564	97.70837	1.134215
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0053523	.0036518	58.70250	.2166961	.1133405	.5492576	231.0158
Stddev	.0000479	.0001814	.16995	.0022888	.0007838	.0028119	.4435
%RSD	.8948644	4.966753	.2895070	1.056237	.6915696	.5119501	.1919991
#1	.0053192	.0034444	58.80782	.2185368	.1139852	.5513952	230.9613
#2	.0053305	.0037806	58.50644	.2174181	.1124680	.5460722	230.6019
#3	.0054072	.0037305	58.79324	.2141333	.1135682	.5503054	231.4840
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.200528	49.42138	.2242063	-.018305	3.960229	.4442453	.5652026
Stddev	.004218	.25667	.0016221	.000596	.295607	.0030687	.0009602
%RSD	.0680331	.5193556	.7234656	3.255756	7.464399	.6907549	.1698837
#1	6.205393	49.40056	.2250033	-.018138	4.210521	.4453969	.5653161
#2	6.197893	49.17575	.2223399	-.017810	3.634088	.4465715	.5661010
#3	6.198298	49.68782	.2252756	-.018966	4.036080	.4407674	.5641907
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	27.95138	6.440172	.3482737	.0026881	2.216557	2.379653	.0064015
Stddev	.05189	.035223	.0016993	.0003304	.026303	.010001	.0020837
%RSD	.1856484	.5469295	.4879241	12.29302	1.186650	.4202852	32.54933
#1	28.00008	6.474510	.3493092	.0029335	2.239663	2.390704	.0040260
#2	27.95727	6.404126	.3491994	.0023124	2.187933	2.377034	.0072590
#3	27.89680	6.441881	.3463125	.0028186	2.222075	2.371222	.0079197

Sample Name: P4477-17DLX2 Acquired: 10/26/2024 21:40:45 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE464 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.232905	.0739760	.4125313
Stddev	.007698	.0005950	.0008029
%RSD	.3447464	.8043197	.1946401
#1	2.227977	.0744262	.4129436
#2	2.228962	.0733014	.4116060
#3	2.241775	.0742004	.4130444

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1015.713	23379.82	2240.045	854.6931	1605.997
Stddev	4.321	43.79	5.454	2.7390	5.528
%RSD	.4254275	.1872872	.2434763	.3204642	.3442244
#1	1015.862	23395.07	2234.939	857.6139	1601.897
#2	1019.957	23330.45	2245.791	852.1821	1612.284
#3	1011.319	23413.95	2239.407	854.2831	1603.810

Sample Name: P4477-18DLX2 Acquired: 10/26/2024 21:45:09 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE465 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2174314	-.030190	.2040453	.0030755	.0069902	118.5249	1.270125
Stddev	.0043314	.003247	.0054624	.0078606	.0020748	.7935	.006187
%RSD	1.992086	10.75512	2.677064	255.5919	29.68067	.6694857	.4871478
#1	.2219417	-.033003	.1989581	.0094462	.0051431	119.4354	1.277008
#2	.2170482	-.030929	.2033596	.0054890	.0092350	117.9806	1.265025
#3	.2133043	-.026637	.2098182	-.005709	.0065926	118.1588	1.268342
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0059167	.0036082	70.07511	.2294117	.1411514	.6368562	239.8566
Stddev	.0003095	.0001384	.36489	.0006956	.0004830	.0047523	1.1568
%RSD	5.230073	3.834379	.5207110	.3032159	.3421687	.7462157	.4822938
#1	.0060920	.0036462	70.49562	.2288911	.1411921	.6387738	241.0615
#2	.0060986	.0037236	69.88774	.2302017	.1416127	.6314447	239.7535
#3	.0055594	.0034548	69.84198	.2291422	.1406494	.6403502	238.7547
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.589995	56.82088	.2962358	-.017491	1.315972	.4602742	.5592559
Stddev	.038434	.22434	.0001496	.000517	.127547	.0021457	.0014976
%RSD	.5832185	.3948276	.0505034	2.956121	9.692227	.4661833	.2677754
#1	6.634003	57.06465	.2961168	-.017290	1.346831	.4584267	.5586322
#2	6.563025	56.77494	.2964038	-.018078	1.175826	.4626277	.5609645
#3	6.572957	56.62307	.2961870	-.017104	1.425258	.4597682	.5581710
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	27.05616	9.591057	.2564650	.0011717	1.163663	3.735979	.0030962
Stddev	.32824	.015951	.0027269	.0011280	.006930	.009687	.0023613
%RSD	1.213189	.1663098	1.063252	96.26862	.5955417	.2592855	76.26551
#1	27.43359	9.602956	.2594738	.0005715	1.168119	3.746892	.0051683
#2	26.83734	9.597283	.2557645	.0024728	1.167192	3.732646	.0005253
#3	26.89757	9.572933	.2541568	.0004707	1.155679	3.728398	.0035951

Sample Name: P4477-18DLX2 Acquired: 10/26/2024 21:45:09 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE465 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	3.006551	.0711974	.8760980
Stddev	.014487	.0023153	.0071463
%RSD	.4818323	3.251977	.8157007
#1	3.023179	.0731742	.8843291
#2	2.996655	.0686502	.8714764
#3	2.999820	.0717678	.8724884

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1016.617	23372.63	2183.434	852.4748	1599.443
Stddev	1.032	37.94	11.355	2.4991	3.403
%RSD	.1014791	.1623341	.5200538	.2931578	.2127753
#1	1015.807	23330.98	2170.409	851.2914	1596.190
#2	1017.779	23405.23	2188.640	850.7872	1599.160
#3	1016.265	23381.68	2191.252	855.3458	1602.978

Sample Name: P4477-19DLX2 Acquired: 10/26/2024 21:49:34 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE466 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2034084	-.031623	.2279162	.0034228	.0106911	91.25342	.9780175
Stddev	.0076050	.004556	.0014412	.0029125	.0022384	.08701	.0023342
%RSD	3.738777	14.40715	.6323194	85.09013	20.93757	.0953468	.2386681
#1	.1955785	-.026769	.2295061	.0005606	.0083789	91.21025	.9760749
#2	.2107665	-.032292	.2266957	.0033248	.0128477	91.35357	.9806069
#3	.2038803	-.035807	.2275467	.0063831	.0108467	91.19644	.9773706
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0053053	.0049238	38.17030	.2016791	.1129352	.7756220	217.6421
Stddev	.0001667	.0001437	.10579	.0006965	.0005921	.0060079	.6010
%RSD	3.141741	2.917511	.2771561	.3453437	.5242572	.7745854	.2761494
#1	.0053676	.0048202	38.05042	.2012656	.1136149	.7825536	217.3004
#2	.0054318	.0048633	38.25058	.2024832	.1126588	.7723977	218.3360
#3	.0051164	.0050878	38.20989	.2012885	.1125319	.7719145	217.2897
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.001711	42.67764	.2110071	-.016939	1.313930	.4180521	.6305437
Stddev	.028594	.07251	.0007750	.000508	.184522	.0086815	.0030124
%RSD	.5716791	.1699051	.3672667	3.000369	14.04353	2.076664	.4777394
#1	4.987319	42.61165	.2107395	-.016733	1.386416	.4080344	.6335929
#2	5.034641	42.75527	.2104013	-.017518	1.104171	.4233817	.6275696
#3	4.983173	42.66602	.2118804	-.016567	1.451203	.4227403	.6304688
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	27.98690	7.184569	.2376644	.0011765	1.816785	3.518848	.0030281
Stddev	.09898	.007888	.0023531	.0002193	.008252	.016726	.0006987
%RSD	.3536740	.1097960	.9901072	18.63812	.4542334	.4753209	23.07524
#1	28.09247	7.176395	.2364490	.0014217	1.807348	3.510261	.0037974
#2	27.97205	7.185174	.2403767	.0009991	1.822648	3.538124	.0024330
#3	27.89618	7.192137	.2361674	.0011088	1.820359	3.508160	.0028538

Sample Name: P4477-19DLX2 Acquired: 10/26/2024 21:49:34 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE466 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.462641	.0609201	.2827888
Stddev	.004738	.0009583	.0004815
%RSD	.1923934	1.573126	.1702572
#1	2.462932	.0619246	.2830498
#2	2.467227	.0608197	.2830835
#3	2.457764	.0600158	.2822332

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1012.545	23383.82	2179.937	856.7927	1625.945
Stddev	.675	45.53	6.856	4.5957	1.578
%RSD	.0666507	.1947039	.3145102	.5363858	.0970747
#1	1011.766	23333.04	2178.671	852.4611	1627.629
#2	1012.915	23421.02	2173.802	861.6134	1625.706
#3	1012.954	23397.39	2187.338	856.3037	1624.500

Sample Name: CCV007 Acquired: 10/26/2024 21:53:59 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV007 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.128537	4.757570	25.08782	4.714276	4.803557	408.9051	10.17849
Stddev	.019874	.017849	.09951	.011916	.006875	.4790	.01539
%RSD	.3875129	.3751790	.3966463	.2527738	.1431245	.1171304	.1512135
#1	5.109322	4.737139	24.97840	4.710030	4.802519	409.4580	10.19514
#2	5.127279	4.770136	25.11215	4.727734	4.810893	408.6411	10.17555
#3	5.149009	4.765435	25.17290	4.705064	4.797261	408.6163	10.16478
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5386976	2.534465	410.3476	15.14300	2.534470	14.70938	412.8337
Stddev	.0045507	.011655	.9250	.01325	.007340	.01062	.7266
%RSD	.8447590	.4598525	.2254158	.0874761	.2895978	.0721655	.1759939
#1	.5435495	2.522353	411.4145	15.13142	2.526923	14.71344	413.6531
#2	.5345243	2.535440	409.7707	15.14013	2.534903	14.69733	412.2682
#3	.5380192	2.545601	409.8577	15.15744	2.541583	14.71736	412.5796
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.85494	415.8379	2.516205	1.298238	405.7001	2.469632	14.44685
Stddev	.04119	.6541	.007684	.002998	.5997	.005026	.12877
%RSD	.2772833	.1572999	.3053657	.2309085	.1478069	.2035029	.8913153
#1	14.90163	416.5447	2.508601	1.301601	406.3925	2.465122	14.46158
#2	14.82375	415.2538	2.516048	1.295848	405.3543	2.468725	14.56762
#3	14.83944	415.7153	2.523966	1.297264	405.3534	2.475050	14.31135
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	154.3426	4.939061	5.026807	4.746615	5.059848	4.985327	5.042079
Stddev	.3302	.009994	.025181	.012333	.030925	.032258	.022981
%RSD	.2139694	.2023548	.5009336	.2598287	.6111922	.6470616	.4557838
#1	154.6581	4.931547	5.030406	4.733055	5.039488	5.001012	5.021299
#2	154.3703	4.935232	5.000020	4.749626	5.044621	4.948225	5.038178
#3	153.9993	4.950404	5.049994	4.757164	5.095434	5.006742	5.066761

Sample Name: CCV007 Acquired: 10/26/2024 21:53:59 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV007 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.924882	5.092811	4.993150
Stddev	.013640	.005648	.006784
%RSD	.2769658	.1109007	.1358632
#1	4.940507	5.097905	5.000979
#2	4.915355	5.093791	4.989484
#3	4.918782	5.086737	4.988989

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	762.6415	19763.21	1937.719	603.7582	1325.941
Stddev	1.4166	29.46	6.118	5.8780	4.366
%RSD	.1857472	.1490846	.3157491	.9735643	.3292520
#1	764.2648	19763.46	1933.707	602.9910	1330.427
#2	761.6557	19733.61	1944.761	598.3015	1325.691
#3	762.0038	19792.54	1934.688	609.9821	1321.706

Sample Name: CCB007 Acquired: 10/26/2024 21:58:11 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB007 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001506	.0013813	.0025678	.0001908	-.000631	.0306395	.0006382
Stddev	.001802	.0016388	.0013843	.0014544	.001500	.0195061	.0002655
%RSD	119.6191	118.6447	53.91045	762.3795	237.8807	63.66319	41.59825

#1	-.002954	.0016917	.0020496	.0002317	-.002169	.0484269	.0003382
#2	.000511	.0028427	.0015173	-.001284	.000829	.0097794	.0008427
#3	-.002076	-.000391	.0041364	.001624	-.000552	.0337122	.0007337

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000133	.0000388	.0245398	.0002936	.0004450	-.001422	.0248695
Stddev	.000049	.0000654	.0226939	.0005420	.0005112	.001247	.0387354
%RSD	37.05629	168.4703	92.47816	184.6283	114.8787	87.66617	155.7544

#1	-.000183	.0001023	.0487522	.0005253	-.000143	-.002751	.0684223
#2	-.000132	.0000426	.0211130	-.000326	.000784	-.000279	.0119134
#3	-.000085	-.000028	.0037541	.000681	.000694	-.001237	-.005727

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0008509	-.061773	.0005123	.0005314	-.287417	.0061360	.0003650
Stddev	.0004794	.072184	.0002479	.0004024	.117849	.0038691	.0007186
%RSD	56.33483	116.8524	48.38432	75.71612	41.00293	63.05570	196.8814

#1	.0014040	.020212	.0004875	.0001760	-.405617	.0041294	-.000289
#2	.0005548	-.089758	.0002778	.0004500	-.169921	.0036825	.001134
#3	.0005941	-.115775	.0007716	.0009683	-.286713	.0105962	.000250

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.235005	.0005503	.0006498	.0007120	.0019554	-.001768	.0003805
Stddev	.183262	.0040998	.0009448	.0001576	.0072461	.000179	.0009158
%RSD	77.98222	744.9870	145.3910	22.13646	370.5646	10.12397	240.6964

#1	-.408443	.0050202	.0009080	.0005638	-.004442	-.001719	-.000663
#2	-.043288	-.000335	.0014387	.0006946	.009824	-.001966	.000753
#3	-.253285	-.003035	-.000397	.0008775	.000485	-.001618	.001052

Sample Name: CCB007 Acquired: 10/26/2024 21:58:11 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB007 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.003154	-.005771	.0001321
Stddev	.000584	.001426	.0000774
%RSD	18.51897	24.70748	58.59794
#1	-.003826	-.005329	.0001974
#2	-.002876	-.007366	.0000466
#3	-.002761	-.004619	.0001523

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	959.4611	21719.97	2039.533	803.1927	1744.899
Stddev	1.1226	61.50	2.281	1.8030	2.607
%RSD	.1170079	.2831457	.1118174	.2244849	.1493969
#1	960.6814	21771.72	2039.068	801.7448	1744.966
#2	959.2297	21736.21	2042.011	805.2123	1747.471
#3	958.4722	21651.98	2037.521	802.6211	1742.259

Sample Name: P4477-20DLX2 Acquired: 10/26/2024 22:02:44 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE467 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1987684	-.026177	.1694379	-.005939	.0073661	96.16127	1.147240
Stddev	.0068879	.003496	.0045357	.006287	.0025116	.11329	.003376
%RSD	3.465271	13.35543	2.676930	105.8606	34.09709	.1178103	.2942998
#1	.1908330	-.029475	.1698465	-.005831	.0060328	96.03192	1.144536
#2	.2022726	-.022512	.1737555	-.012278	.0058023	96.24282	1.146159
#3	.2031997	-.026546	.1647116	.000293	.0102633	96.20907	1.151024
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0048863	.0027515	50.11494	.1981814	.1111005	.4610053	205.7239
Stddev	.0000840	.0001687	.15916	.0005741	.0003584	.0010482	.4075
%RSD	1.719635	6.131553	.3175854	.2897034	.3225470	.2273718	.1980836
#1	.0049349	.0026534	50.05306	.1988246	.1114673	.4611878	205.8647
#2	.0047893	.0029463	49.99601	.1977208	.1110827	.4619503	205.2647
#3	.0049348	.0026548	50.29574	.1979989	.1107513	.4598779	206.0424
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.599904	42.75937	.2070803	-.016258	.8507512	.3930705	.4564850
Stddev	.029812	.21976	.0006500	.000186	.1928835	.0019297	.0029016
%RSD	.5323668	.5139419	.3139019	1.144217	22.67214	.4909401	.6356297
#1	5.581328	42.92281	.2070950	-.016409	.7562731	.3908425	.4580886
#2	5.584093	42.50954	.2064230	-.016051	.7233208	.3942143	.4531356
#3	5.634291	42.84575	.2077228	-.016315	1.072660	.3941547	.4582308
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	23.39545	5.228540	.2271623	.0016667	.8808301	3.213256	.0039439
Stddev	.12430	.003262	.0011219	.0004008	.0048667	.007675	.0006593
%RSD	.5312794	.0623958	.4938866	24.04813	.5525163	.2388418	16.71709
#1	23.49013	5.229725	.2275153	.0021243	.8837210	3.211735	.0044395
#2	23.25470	5.224850	.2259063	.0014981	.8835580	3.206456	.0031956
#3	23.44152	5.231044	.2280652	.0013778	.8752113	3.221577	.0041966

Sample Name: P4477-20DLX2 Acquired: 10/26/2024 22:02:44 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE467 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.526581	.0621556	.2707739
Stddev	.005611	.0014702	.0004594
%RSD	.2220896	2.365292	.1696472

#1	2.526420	.0604640	.2703900
#2	2.521052	.0631248	.2712829
#3	2.532271	.0628780	.2706490

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1017.245	23470.44	2217.208	860.1885	1612.765
Stddev	2.245	32.85	6.996	1.4931	2.326
%RSD	.2207241	.1399774	.3155253	.1735788	.1442276

#1	1018.565	23505.53	2219.728	858.8452	1615.421
#2	1014.652	23440.42	2222.596	861.7961	1611.783
#3	1018.518	23465.37	2209.302	859.9241	1611.091

Sample Name: P4477-21DLX2 Acquired: 10/26/2024 22:07:09 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE468 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1777447	-.028653	.1493977	-.008936	.0057518	103.0890	1.171505
Stddev	.0029841	.001727	.0015680	.008708	.0047893	.3980	.005272
%RSD	1.678867	6.027075	1.049572	97.44739	83.26624	.3860616	.4499913
#1	.1790977	-.030274	.1480130	.000189	.0071006	102.9733	1.171490
#2	.1798126	-.026837	.1511003	-.017158	.0004327	103.5320	1.176784
#3	.1743238	-.028848	.1490799	-.009840	.0097221	102.7617	1.166240
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0055766	.0020306	35.90967	.2262108	.1286720	.4588870	219.9531
Stddev	.0002346	.0002155	.19259	.0025164	.0001680	.0039265	.3958
%RSD	4.207062	10.61243	.5363289	1.112393	.1305830	.8556556	.1799482
#1	.0057689	.0022626	35.91395	.2244861	.1284923	.4587709	219.9722
#2	.0053152	.0018367	36.10008	.2250479	.1288252	.4628702	220.3390
#3	.0056458	.0019926	35.71497	.2290982	.1286985	.4550198	219.5481
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.758076	46.80478	.2217201	-.018602	1.077361	.4101285	.4837040
Stddev	.024586	.22557	.0013643	.000328	.446818	.0073598	.0034964
%RSD	.4269822	.4819314	.6153304	1.765404	41.47339	1.794505	.7228406
#1	5.763662	46.94352	.2229657	-.018526	.695013	.4092845	.4825442
#2	5.779387	46.92631	.2202620	-.018962	.968529	.4032272	.4809348
#3	5.731177	46.54451	.2219326	-.018318	1.568542	.4178739	.4876329
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	29.46965	5.686858	.2352492	.0020601	.9527459	3.558602	.0049898
Stddev	.24392	.022892	.0008903	.0002075	.0099885	.018151	.0007282
%RSD	.8276930	.4025353	.3784592	10.07297	1.048389	.5100583	14.59365
#1	29.64894	5.692012	.2353121	.0022683	.9623712	3.549975	.0050969
#2	29.56812	5.661828	.2361064	.0018533	.9424301	3.579458	.0042140
#3	29.19189	5.706732	.2343291	.0020585	.9534363	3.546374	.0056585

Sample Name: P4477-21DLX2 Acquired: 10/26/2024 22:07:09 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE468 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.193097	.0664747	.2383671
Stddev	.004555	.0007207	.0005402
%RSD	.2076985	1.084227	.2266166
#1	2.189427	.0672362	.2386934
#2	2.198195	.0658031	.2386643
#3	2.191670	.0663850	.2377436

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1030.900	23560.05	2175.763	859.4582	1621.924
Stddev	2.065	24.78	8.991	2.1971	5.986
%RSD	.2002665	.1051963	.4132333	.2556401	.3690637
#1	1028.519	23572.02	2179.295	861.1111	1615.702
#2	1031.982	23576.58	2165.543	860.2985	1622.426
#3	1032.199	23531.56	2182.452	856.9649	1627.643

Sample Name: P4477-22DLX2 Acquired: 10/26/2024 22:11:33 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE469 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2748987	-.037458	.2224724	-.006087	.0076898	147.0651	1.802284
Stddev	.0022316	.000657	.0070600	.006732	.0026385	.5261	.005486
%RSD	.8117995	1.755282	3.173414	110.5949	34.31204	.3577424	.3043713
#1	.2772369	-.037272	.2143822	-.006466	.0050726	147.0727	1.805050
#2	.2727917	-.038188	.2256488	-.012621	.0076477	146.5353	1.795966
#3	.2746675	-.036913	.2273863	.000827	.0103492	147.5874	1.805836
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0072756	.0037845	63.36074	.2721367	.1506175	.6072712	273.8396
Stddev	.0000342	.0002300	.09386	.0008053	.0002188	.0053641	.7808
%RSD	.4702154	6.076273	.1481367	.2959271	.1452867	.8833138	.2851259
#1	.0072623	.0035644	63.43624	.2721571	.1506545	.6042692	273.7925
#2	.0072501	.0040231	63.25565	.2729317	.1503825	.6040803	273.0834
#3	.0073145	.0037660	63.39033	.2713214	.1508155	.6134642	274.6429
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.36699	64.65884	.2703855	-.021994	1.258637	.4930448	.6484436
Stddev	.03734	.15731	.0012485	.000418	.111972	.0045101	.0041142
%RSD	.3601570	.2432882	.4617324	1.898902	8.896311	.9147504	.6344756
#1	10.40232	64.60388	.2706482	-.021538	1.345766	.4919341	.6458428
#2	10.32793	64.53639	.2690265	-.022086	1.297801	.4980065	.6531869
#3	10.37072	64.83626	.2714816	-.022358	1.132343	.4891938	.6463011
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	32.89853	6.535985	.2958842	.0013089	1.622393	4.222338	.0053527
Stddev	.15794	.021379	.0006696	.0006162	.005747	.022195	.0033922
%RSD	.4800801	.3270919	.2263004	47.07927	.3542593	.5256481	63.37246
#1	32.88763	6.538480	.2966287	.0007284	1.622405	4.197750	.0053385
#2	32.74632	6.513468	.2956928	.0019554	1.616640	4.228372	.0087520
#3	33.06164	6.556006	.2953312	.0012428	1.628135	4.240892	.0019677

Sample Name: P4477-22DLX2 Acquired: 10/26/2024 22:11:33 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE469 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.546894	.1113638	.2954464
Stddev	.014535	.0027752	.0008514
%RSD	.5707030	2.492005	.2881715
#1	2.549771	.1104432	.2952822
#2	2.531135	.1091658	.2946891
#3	2.559775	.1144823	.2963679

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1032.472	23751.75	2243.146	868.5350	1582.167
Stddev	.820	65.28	4.790	6.5921	2.137
%RSD	.0794338	.2748442	.2135292	.7589899	.1350672
#1	1033.418	23697.36	2248.560	870.8898	1582.305
#2	1032.024	23733.75	2241.419	861.0889	1584.232
#3	1031.973	23824.14	2239.460	873.6264	1579.964

Sample Name: PB164346BL Acquired: 10/26/2024 22:15:56 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: PBS346 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0016486	.0018171	-.000147	-.006618	.0010376	.0183162	-.000266
Stddev	.0002129	.0029935	.002314	.003069	.0018339	.0068268	.000243
%RSD	12.91158	164.7413	1575.694	46.37025	176.7405	37.27194	91.37805
#1	.0018907	-.000312	.002053	-.005500	.0022968	.0129471	.000005
#2	.0014907	.000523	-.002561	-.004265	.0018825	.0259993	-.000337
#3	.0015644	.005240	.000068	-.010089	-.001066	.0160023	-.000465
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000287	-.000181	.0160648	.0001468	.0004556	-.000279	-.005230
Stddev	.000066	.000126	.0088706	.0002832	.0001618	.002524	.028340
%RSD	23.15314	69.70003	55.21757	192.9193	35.52072	906.2656	541.8848
#1	-.000304	-.000035	.0259803	.0000684	.0003040	.002587	.027086
#2	-.000214	-.000254	.0088824	-.000089	.0004367	-.001248	-.016925
#3	-.000344	-.000253	.0133316	.000461	.0006260	-.002174	-.025851
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005404	-.106701	-.000150	.0007979	-.202709	.0074230	-.000630
Stddev	.0008992	.045037	.000378	.0004341	.119670	.0061292	.000261
%RSD	166.3894	42.20898	252.7831	54.40593	59.03544	82.57031	41.40617
#1	.0011475	-.136558	-.000518	.0009197	-.325046	.0054998	-.000405
#2	-.000493	-.054897	-.000169	.0011580	-.197186	.0024861	-.000570
#3	.000966	-.128647	.000238	.0003159	-.085896	.0142833	-.000916
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.228003	.0000821	-.004680	.0002243	-.003970	.0003323	-.000949
Stddev	.104426	.0032312	.001000	.0002852	.004263	.0006425	.000467
%RSD	45.80042	3937.802	21.37643	127.1343	107.3668	193.3470	49.18617
#1	-.208824	.0025528	-.005660	.0005169	-.006160	.0009689	-.001350
#2	-.134496	-.003574	-.003661	.0002089	-.006694	.0003439	-.000437
#3	-.340690	.001268	-.004718	-.000053	.000942	-.000316	-.001060

Sample Name: PB164346BL Acquired: 10/26/2024 22:15:56 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: PBS346 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.000709	-.008198	-.000013
Stddev	.001441	.001441	.000114
%RSD	203.3372	17.58079	903.3045
#1	.000858	-.009167	.000108
#2	-.001006	-.008886	-.000117
#3	-.001977	-.006542	-.000029

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	955.8797	21653.22	2015.850	800.6674	1743.877
Stddev	1.6245	65.65	5.597	2.6993	2.190
%RSD	.1699514	.3031853	.2776594	.3371305	.1255806
#1	957.7504	21594.33	2010.200	797.8066	1746.209
#2	955.0646	21641.33	2015.957	801.0265	1741.864
#3	954.8241	21724.01	2021.393	803.1692	1743.558

Sample Name: PB164346BS Acquired: 10/26/2024 22:20:28 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LCS346 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0187619	.0538648	.0233368	.0610547	.1102478	.4365769
Stddev	.0029653	.0019691	.0015470	.0061754	.0013803	.0072976
%RSD	15.80496	3.655712	6.628885	10.11451	1.251976	1.671540

#1	.0172515	.0520473	.0226471	.0677004	.1093850	.4353914
#2	.0168558	.0535904	.0251086	.0554932	.1118397	.4443946
#3	.0221783	.0559568	.0222546	.0599704	.1095186	.4299446

Elem	Ba4934	Be2348	Cd2144	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4309508	.0118190	.0109999	11.16628	.0224866	.1046648
Stddev	.0003385	.0001058	.0000566	.05821	.0001600	.0006378
%RSD	.0785553	.8949990	.5145128	.5213254	.7114542	.6093518

#1	.4311297	.0117086	.0110317	11.15402	.0225465	.1047160
#2	.4311624	.0119195	.0110334	11.22964	.0223053	.1052754
#3	.4305604	.0118289	.0109345	11.11517	.0226079	.1040029

Elem	Cu3247	Fe2598	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0506746	.2205437	.0337521	11.17412	.0878396	.0241744
Stddev	.0019886	.0269650	.0002826	.06214	.0004092	.0002418
%RSD	3.924272	12.22659	.8371959	.5560669	.4658685	1.000270

#1	.0500301	.1921985	.0336388	11.18331	.0883117	.0238993
#2	.0490882	.2235573	.0335437	11.23114	.0876198	.0242706
#3	.0529055	.2458752	.0340737	11.10789	.0875872	.0243533

Elem	Na8183	V_2924	Zn2138	K_7698	P_1774	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.31139	.1128030	.1137610	9.996122	.0175524	F -.003537
Stddev	.20993	.0147850	.0006046	.182804	.0001438	.001994
%RSD	2.035861	13.10689	.5314867	1.828751	.8194860	56.36659

#1	10.08687	.1289265	.1135654	10.06289	.0173971	-.001811
#2	10.50279	.1096011	.1144393	10.13615	.0176810	-.005720
#3	10.34449	.0998813	.1132785	9.78932	.0175790	-.003081

Sample Name: PB164346BS Acquired: 10/26/2024 22:20:28 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LCS346 Custom ID2: Custom ID3:
Comment:

Elem	Mo2020	S_1820	Si2516	Sn1899	Ti3361	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0193717	.1796128	F .4667864	.0137586	.2063963	.0231605
Stddev	.0003471	.0019244	.0049610	.0002979	.0009605	.0012666
%RSD	1.791880	1.071440	1.062804	2.164893	.4653808	5.468676
#1	.0191221	.1798436	.4670798	.0137918	.2072293	.0236517
#2	.0192249	.1814114	.4715943	.0134455	.2066139	.0217219
#3	.0197681	.1775833	.4616853	.0140384	.2053456	.0241079
Elem	Sr4077					
Units	ppm					
Avg	.2116688					
Stddev	.0004302					
%RSD	.2032294					
#1	.2117980					
#2	.2120196					
#3	.2111889					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	952.0324	21702.89	2037.723	805.4402	1701.132	
Stddev	1.8146	14.07	15.325	.9226	2.899	
%RSD	.1906036	.0648340	.7520724	.1145456	.1703880	
#1	952.1778	21703.15	2038.533	804.4032	1699.164	
#2	953.7700	21716.83	2022.009	806.1703	1704.461	
#3	950.1495	21688.69	2052.627	805.7469	1699.772	

Sample Name: PB164346BSD Acquired: 10/26/2024 22:24:58 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LCSD346 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0086829	.0279495	.0149268	.0260360	.0554986	.2761050	.2085577
Stddev	.0026768	.0020994	.0011804	.0022576	.0011703	.0094235	.0014636
%RSD	30.82792	7.511359	7.907923	8.671008	2.108741	3.413029	.7017854
#1	.0058058	.0258154	.0162153	.0283694	.0548582	.2815138	.2094327
#2	.0091435	.0280208	.0146676	.0238627	.0568494	.2815775	.2093725
#3	.0110995	.0300123	.0138976	.0258760	.0547882	.2652237	.2068681
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0056310	.0053082	5.451010	.0110820	.0498724	.0254276	.1265785
Stddev	.0001638	.0001057	.031666	.0009439	.0006889	.0033748	.0256333
%RSD	2.908521	1.990224	.5809143	8.517582	1.381389	13.27209	20.25096
#1	.0054590	.0052094	5.440426	.0107700	.0504074	.0238946	.1391914
#2	.0057851	.0054196	5.486612	.0121425	.0501149	.0292968	.0970825
#3	.0056488	.0052956	5.425993	.0103336	.0490951	.0230914	.1434615
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0159361	5.422888	.0423561	.0118304	4.876647	.0585697	.0557900
Stddev	.0018885	.110357	.0006052	.0004553	.318395	.0043932	.0005079
%RSD	11.85068	2.035024	1.428732	3.848377	6.528976	7.500732	.9104001
#1	.0157088	5.299254	.0428972	.0113563	5.196732	.0536868	.0563762
#2	.0141715	5.511437	.0417027	.0122642	4.873238	.0598204	.0555124
#3	.0179280	5.457975	.0424686	.0118706	4.559970	.0622019	.0554814
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.695538	.0084934	-.004279	.0098619	.0886587	.2291529	.0051076
Stddev	.108285	.0033496	.000880	.0004534	.0029570	.0022878	.0010916
%RSD	2.306123	39.43726	20.56461	4.597542	3.335290	.9983922	21.37256
#1	4.589915	.0086716	-.003618	.0098622	.0864430	.2270251	.0063138
#2	4.806302	.0117502	-.003941	.0103151	.0875167	.2315728	.0048214
#3	4.690399	.0050583	-.005278	.0094083	.0920164	.2288608	.0041876

Sample Name: PB164346BSD Acquired: 10/26/2024 22:24:58 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: LCSD346 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.1002320	.0056363	.1036853
Stddev	.0013457	.0022932	.0009824
%RSD	1.342629	40.68600	.9474923

#1	.1012793	.0066990	.1033505
#2	.0987142	.0030046	.1047914
#3	.1007027	.0072054	.1029141

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	954.5607	21709.23	1993.367	800.7741	1727.866
Stddev	.4611	14.69	16.202	4.3083	3.371
%RSD	.0483015	.0676590	.8127711	.5380223	.1950718

#1	954.2037	21692.28	2001.214	797.9770	1724.379
#2	955.0812	21718.06	1974.736	805.7355	1731.107
#3	954.3970	21717.36	2004.150	798.6097	1728.113

Sample Name: P4479-01DLX2 Acquired: 10/26/2024 22:29:29 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE470 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2565427	-.033329	.2204470	.0039906	.0098683	110.5597	1.139891
Stddev	.0059462	.003937	.0050970	.0123564	.0047829	.3044	.002335
%RSD	2.317834	11.81222	2.312141	309.6404	48.46719	.2752918	.2048751
#1	.2556677	-.037864	.2261746	.0153607	.0061359	110.8952	1.142361
#2	.2510825	-.030788	.2164103	-.009159	.0152598	110.3012	1.137719
#3	.2628780	-.031336	.2187562	.005770	.0082092	110.4829	1.139594
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0060785	.0039693	68.77349	.2354305	.1385050	.6517684	262.5157
Stddev	.0002569	.0003052	.23283	.0012606	.0001498	.0028219	.5631
%RSD	4.225834	7.690101	.3385412	.5354502	.1081632	.4329620	.2144843
#1	.0058405	.0036929	68.79984	.2368760	.1383885	.6486567	263.1254
#2	.0063508	.0042969	68.52860	.2348571	.1386740	.6541617	262.0152
#3	.0060444	.0039181	68.99201	.2345586	.1384525	.6524866	262.4066
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.332489	52.96703	.2504833	-.019300	1.324593	.4795347	.5729505
Stddev	.015853	.09969	.0017898	.000319	.227211	.0090379	.0032623
%RSD	.2503507	.1882147	.7145196	1.652929	17.15327	1.884721	.5693860
#1	6.337069	53.04910	.2498501	-.019518	1.444107	.4713810	.5762236
#2	6.314850	52.99590	.2490963	-.019449	1.467103	.4892526	.5729289
#3	6.345548	52.85609	.2525036	-.018934	1.062568	.4779705	.5696991
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	23.89499	5.879001	.2761210	-.000185	1.266739	1.877656	.0046772
Stddev	.15759	.018877	.0029924	.000546	.015210	.001147	.0022300
%RSD	.6595140	.3210978	1.083741	295.5865	1.200689	.0610892	47.67889
#1	24.07465	5.857442	.2795016	.000309	1.275432	1.876431	.0040884
#2	23.83017	5.886992	.2750499	-.000771	1.249177	1.878705	.0071425
#3	23.78015	5.892568	.2738116	-.000093	1.275608	1.877833	.0028006

Sample Name: P4479-01DLX2 Acquired: 10/26/2024 22:29:29 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE470 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.356645	.0758746	.3108064
Stddev	.005517	.0006305	.0013490
%RSD	.2341186	.8309459	.4340295
#1	2.360614	.0764296	.3123633
#2	2.350344	.0751891	.3100698
#3	2.358976	.0760050	.3099860

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1010.898	23334.74	2158.767	853.8182	1602.601
Stddev	1.257	32.83	3.459	5.1890	4.010
%RSD	.1242969	.1406838	.1602272	.6077355	.2502197
#1	1009.638	23309.20	2154.864	848.4712	1603.155
#2	1012.151	23371.77	2161.453	854.1501	1606.304
#3	1010.906	23323.26	2159.985	858.8332	1598.342

Sample Name: P4479-02DLX2 Acquired: 10/26/2024 22:33:54 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE471 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1677882	-.035677	.1430788	-.007510	.0066833	127.7911	1.414062
Stddev	.0053825	.003798	.0073108	.002213	.0029239	.2556	.003154
%RSD	3.207939	10.64490	5.109629	29.46106	43.74922	.1999878	.2230416

#1	.1737151	-.034305	.1481954	-.009297	.0034566	127.9903	1.413937
#2	.1632043	-.039971	.1347056	-.005035	.0074361	127.8801	1.417277
#3	.1664452	-.032757	.1463353	-.008199	.0091572	127.5029	1.410973

Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0063352	.0026851	46.40269	.2477384	.1381697	.4072114	246.9768
Stddev	.0002321	.0003081	.04387	.0007809	.0001821	.0007214	.6575
%RSD	3.663972	11.47401	.0945510	.3152154	.1318163	.1771479	.2662196

#1	.0061690	.0025630	46.44535	.2480879	.1381263	.4080258	247.6745
#2	.0062362	.0030355	46.35770	.2468438	.1380133	.4069556	246.8870
#3	.0066004	.0024568	46.40501	.2482836	.1383697	.4066527	246.3688

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.785188	53.36497	.2440029	-.020487	1.157239	.4485965	.5103191
Stddev	.012593	.17139	.0001099	.000247	.154312	.0119363	.0014245
%RSD	.1855910	.3211709	.0450220	1.207948	13.33445	2.660815	.2791411

#1	6.799520	53.44977	.2439841	-.020208	1.324383	.4348527	.5107764
#2	6.775897	53.47743	.2439036	-.020574	1.127139	.4545699	.5087220
#3	6.780147	53.16771	.2441209	-.020679	1.020195	.4563669	.5114587

Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	29.78284	6.139050	.2593613	.0015119	.8745025	3.743214	.0035584
Stddev	.15382	.013346	.0026027	.0005800	.0049510	.003248	.0019948
%RSD	.5164564	.2173929	1.003517	38.36414	.5661461	.0867626	56.06047

#1	29.95903	6.133497	.2576301	.0008703	.8705561	3.742780	.0023548
#2	29.71412	6.129378	.2623544	.0016661	.8728937	3.740204	.0058610
#3	29.67536	6.154276	.2580993	.0019992	.8800578	3.746656	.0024593

Sample Name: P4479-02DLX2 Acquired: 10/26/2024 22:33:54 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE471 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.686582	.0812008	.2506110
Stddev	.011439	.0023029	.0012490
%RSD	.4257977	2.836097	.4983615
#1	2.698801	.0807888	.2513269
#2	2.684816	.0836820	.2513372
#3	2.676128	.0791318	.2491688

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1038.942	23873.47	2265.494	872.9650	1600.310
Stddev	3.170	69.53	4.836	1.7271	5.638
%RSD	.3051545	.2912608	.2134694	.1978478	.3523039
#1	1040.441	23801.85	2260.083	872.6566	1605.064
#2	1041.085	23940.72	2269.397	874.8256	1601.785
#3	1035.300	23877.86	2267.000	871.4129	1594.081

Sample Name: P4479-03DLX2 Acquired: 10/26/2024 22:38:18 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE472 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3465433	-.038392	.1456500	-.000238	.0103593	143.8601	2.509141
Stddev	.0054949	.002982	.0084328	.008622	.0019330	.6601	.008144
%RSD	1.585631	7.767154	5.789796	3624.499	18.65948	.4588536	.3245759
#1	.3401984	-.040897	.1446645	.009137	.0081705	144.5596	2.518192
#2	.3497438	-.035093	.1545323	-.007828	.0110750	143.7724	2.506825
#3	.3496878	-.039186	.1377532	-.002023	.0118323	143.2482	2.502406
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0069462	.0024508	99.29071	.2553969	.1404344	.3817890	273.0113
Stddev	.0002379	.0000470	.31512	.0015461	.0001981	.0057107	.8742
%RSD	3.425288	1.917523	.3173674	.6053762	.1410526	1.495778	.3201912
#1	.0069700	.0024749	99.64631	.2541596	.1406526	.3883565	273.9367
#2	.0066973	.0023967	99.17967	.2571301	.1402659	.3790178	272.8979
#3	.0071713	.0024809	99.04614	.2549011	.1403846	.3779926	272.1994
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.590240	67.28072	.3361319	-.020656	1.295344	.5275436	.4541742
Stddev	.022173	.32646	.0011311	.000539	.117286	.0114095	.0002528
%RSD	.3364478	.4852185	.3365165	2.608306	9.054441	2.162765	.0556576
#1	6.606265	67.60989	.3365744	-.021252	1.165768	.5406473	.4544243
#2	6.599520	67.27522	.3369749	-.020204	1.394243	.5198094	.4539189
#3	6.564935	66.95705	.3348464	-.020512	1.326021	.5221742	.4541793
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.10813	7.576771	.2854518	-.001105	.7235552	4.211061	.0008684
Stddev	.11078	.013426	.0021443	.000805	.0048728	.011085	.0032957
%RSD	.4412206	.1771935	.7511928	72.82576	.6734450	.2632303	379.5191
#1	25.23605	7.561840	.2878366	-.000378	.7290759	4.223861	.0010935
#2	25.04308	7.580626	.2848360	-.001970	.7217353	4.204667	-.002534
#3	25.04528	7.587847	.2836828	-.000967	.7198543	4.204656	.004046

Sample Name: P4479-03DLX2 Acquired: 10/26/2024 22:38:18 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE472 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.704057	.1100894	.7732286
Stddev	.012161	.0008615	.0039246
%RSD	.4497157	.7825503	.5075644

#1	2.718055	.1093790	.7776695
#2	2.696107	.1098415	.7717899
#3	2.698007	.1110476	.7702263

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1024.715	23757.75	2276.199	867.7609	1567.538
Stddev	1.108	89.64	8.037	1.8765	1.790
%RSD	.1081629	.3772963	.3530723	.2162416	.1141847

#1	1023.545	23837.43	2268.793	869.7542	1567.042
#2	1025.748	23660.70	2275.061	867.5000	1569.523
#3	1024.852	23775.11	2284.745	866.0286	1566.048

Sample Name: P4479-04DLX2 Acquired: 10/26/2024 22:42:42 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE473 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2418252	-.030615	.2541865	-.004664	.0078959	111.6920	1.164983
Stddev	.0050438	.001836	.0032628	.005846	.0022571	.1903	.002019
%RSD	2.085706	5.997234	1.283613	125.3403	28.58543	.1703853	.1733168
#1	.2400595	-.028499	.2575037	-.003406	.0079552	111.5279	1.167113
#2	.2475144	-.031789	.2540748	-.011037	.0101228	111.9006	1.163097
#3	.2379017	-.031557	.2509811	.000450	.0056098	111.6475	1.164739
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0057237	.0058407	61.72475	.2284614	.1270176	.7955803	229.7057
Stddev	.0002388	.0001334	.10048	.0002652	.0006272	.0030213	.1673
%RSD	4.171775	2.284367	.1627807	.1160983	.4937511	.3797649	.0728363
#1	.0059341	.0057271	61.82197	.2281846	.1270231	.7920963	229.8389
#2	.0057729	.0059876	61.73097	.2287134	.1263877	.7971647	229.5179
#3	.0054642	.0058073	61.62131	.2284862	.1276419	.7974799	229.7603
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.556748	49.72771	.2356308	-.017666	1.151912	.4356662	.6322390
Stddev	.006867	.16233	.0013418	.000740	.039275	.0111444	.0034180
%RSD	.1235739	.3264427	.5694690	4.185892	3.409523	2.558024	.5406208
#1	5.552573	49.68330	.2365590	-.017318	1.180413	.4264443	.6317578
#2	5.564673	49.90762	.2340923	-.018516	1.168211	.4480499	.6290872
#3	5.552997	49.59220	.2362411	-.017166	1.107112	.4325043	.6358722
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	30.64017	5.994483	.2440361	.0002665	1.224457	3.637512	.0016170
Stddev	.12860	.004453	.0006272	.0007642	.007400	.007840	.0013559
%RSD	.4197103	.0742859	.2570062	286.7947	.6043526	.2155376	83.85191
#1	30.49230	5.996285	.2434225	-.000609	1.221997	3.629526	.0030965
#2	30.72591	5.997753	.2446761	.000802	1.232774	3.637814	.0004336
#3	30.70229	5.989411	.2440098	.000606	1.218601	3.645197	.0013210

Sample Name: P4479-04DLX2 Acquired: 10/26/2024 22:42:42 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE473 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.459930	.0760189	.2776351
Stddev	.003869	.0006683	.0001506
%RSD	.1572702	.8791463	.0542387

#1	2.457712	.0767881	.2777627
#2	2.464397	.0756886	.2776735
#3	2.457681	.0755801	.2774690

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1020.772	23598.90	2262.144	862.7002	1594.922
Stddev	1.240	67.20	2.901	4.5962	2.931
%RSD	.1214438	.2847766	.1282279	.5327641	.1837927

#1	1022.204	23541.24	2262.607	860.9362	1598.132
#2	1020.036	23672.71	2264.785	867.9170	1592.386
#3	1020.078	23582.76	2259.039	859.2473	1594.249

Sample Name: P4479-05DLX2 Acquired: 10/26/2024 22:47:06 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE474 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2081421	-.032343	.1953223	.0032660	.0078444	112.6604	1.151281
Stddev	.0086016	.004335	.0052964	.0071979	.0015295	.2365	.000430
%RSD	4.132580	13.40283	2.711618	220.3864	19.49853	.2099545	.0373642
#1	.2145483	-.037058	.2013364	-.003224	.0061219	112.6513	1.150928
#2	.2115123	-.031439	.1913535	.002015	.0090438	112.9014	1.151760
#3	.1983657	-.028531	.1932771	.011008	.0083674	112.4286	1.151155
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0056577	.0037794	42.58318	.2255119	.1196411	.5915464	231.5790
Stddev	.0002500	.0001289	.15470	.0015382	.0003040	.0029303	.2741
%RSD	4.419528	3.411386	.3632918	.6820976	.2541013	.4953622	.1183415
#1	.0053902	.0036468	42.67781	.2249015	.1197278	.5928705	231.3354
#2	.0058855	.0037873	42.66707	.2272617	.1198924	.5935809	231.8758
#3	.0056973	.0039043	42.40465	.2243726	.1193032	.5881877	231.5259
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.934926	50.62285	.2254147	-.017810	1.065882	.4269482	.5343543
Stddev	.020119	.19580	.0007816	.000688	.279511	.0049621	.0022004
%RSD	.3389938	.3867741	.3467365	3.862441	26.22340	1.162214	.4117806
#1	5.940919	50.72788	.2257977	-.018546	.865189	.4313403	.5368248
#2	5.951367	50.74371	.2259309	-.017183	1.385130	.4215656	.5336329
#3	5.912491	50.39695	.2245155	-.017700	.947327	.4279387	.5326052
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.52148	4.990913	.2423364	.0003129	.8610052	1.724442	.0057695
Stddev	.09907	.013531	.0006725	.0005259	.0080232	.010527	.0019331
%RSD	.3881781	.2711058	.2774939	168.0773	.9318462	.6104658	33.50485
#1	25.53110	4.985045	.2416362	.0007227	.8552046	1.732946	.0079611
#2	25.61539	5.006388	.2429772	.0004960	.8701615	1.727710	.0050407
#3	25.41795	4.981307	.2423957	-.000280	.8576496	1.712668	.0043068

Sample Name: P4479-05DLX2 Acquired: 10/26/2024 22:47:06 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE474 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.344319	.0753269	.2364799
Stddev	.009283	.0023802	.0006553
%RSD	.3959923	3.159874	.2771000
#1	2.353378	.0770248	.2360683
#2	2.334827	.0763497	.2372355
#3	2.344752	.0726062	.2361358

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1020.669	23447.68	2181.541	860.7348	1610.276
Stddev	.603	47.26	7.780	2.4219	1.393
%RSD	.0590829	.2015579	.3566397	.2813780	.0865022
#1	1020.676	23474.49	2176.020	857.9443	1608.830
#2	1021.269	23393.11	2178.164	861.9693	1610.388
#3	1020.063	23475.44	2190.439	862.2907	1611.609

Sample Name: P4479-06DLX2 Acquired: 10/26/2024 22:51:31 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE475 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1721020	-.028173	.1479380	-.002950	.0067931	116.4001	1.207855
Stddev	.0040227	.004890	.0050657	.008338	.0032632	.0804	.000972
%RSD	2.337373	17.35678	3.424238	282.6061	48.03722	.0690541	.0805140
#1	.1693780	-.026281	.1532159	.006550	.0048132	116.4927	1.207397
#2	.1767223	-.024512	.1474830	-.009051	.0050067	116.3486	1.207196
#3	.1702057	-.033726	.1431152	-.006349	.0105595	116.3589	1.208972
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0056732	.0020266	43.37540	.2219392	.1182779	.4210380	211.0200
Stddev	.0001500	.0003140	.04962	.0003531	.0001402	.0061202	.4736
%RSD	2.644608	15.49567	.1143938	.1590826	.1185666	1.453595	.2244417
#1	.0057812	.0021246	43.34584	.2217681	.1183440	.4260814	211.2437
#2	.0055019	.0022800	43.43269	.2217042	.1183730	.4142291	210.4759
#3	.0057366	.0016753	43.34768	.2223452	.1181169	.4228035	211.3403
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.546637	47.07596	.2154871	-.016949	.8318765	.3824420	.4623693
Stddev	.004435	.14438	.0009933	.000308	.0848750	.0086285	.0003786
%RSD	.0677436	.3066963	.4609438	1.815523	10.20283	2.256153	.0818845
#1	6.551543	46.96968	.2143646	-.017243	.7417801	.3812433	.4624401
#2	6.545454	47.01786	.2162522	-.016976	.8435221	.3916072	.4627075
#3	6.542913	47.24034	.2158446	-.016629	.9103274	.3744756	.4619603
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.70098	5.013800	.2282534	.0016288	1.020269	2.890527	.0033224
Stddev	.09274	.013780	.0024096	.0006017	.004390	.005698	.0018697
%RSD	.3473111	.2748437	1.055668	36.94446	.4302466	.1971253	56.27672
#1	26.76218	5.010571	.2289948	.0013279	1.015525	2.895386	.0024865
#2	26.59429	5.028907	.2255602	.0012369	1.021095	2.891938	.0054642
#3	26.74648	5.001920	.2302052	.0023216	1.024187	2.884256	.0020164

Sample Name: P4479-06DLX2 Acquired: 10/26/2024 22:51:31 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE475 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.508362	.0728566	.2237310
Stddev	.004218	.0003155	.0001820
%RSD	.1681379	.4330255	.0813496
#1	2.511250	.0729946	.2238963
#2	2.503522	.0724956	.2235360
#3	2.510313	.0730796	.2237607

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1024.459	23536.02	2195.968	862.3902	1613.923
Stddev	3.661	51.73	6.778	3.4262	4.832
%RSD	.3573479	.2197951	.3086341	.3972877	.2993865
#1	1027.635	23591.89	2191.785	865.3271	1616.301
#2	1020.455	23489.77	2192.332	858.6262	1608.363
#3	1025.287	23526.40	2203.788	863.2174	1617.104

Sample Name: P4479-07DLX2 Acquired: 10/26/2024 22:55:57 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE476 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2161344	-.036400	.1932370	-.004583	.0079025	139.9287	1.443205
Stddev	.0067233	.006055	.0049308	.003893	.0022424	.3430	.003548
%RSD	3.110698	16.63422	2.551706	84.93459	28.37548	.2450981	.2458353
#1	.2092643	-.040453	.1913798	-.008546	.0072614	140.1285	1.447128
#2	.2164383	-.029440	.1988268	-.004440	.0103957	140.1249	1.442264
#3	.2227006	-.039306	.1895046	-.000764	.0060506	139.5327	1.440222
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0068494	.0041697	56.16030	.2641610	.1474491	.5857820	264.7200
Stddev	.0001063	.0001854	.11227	.0011359	.0005415	.0040324	.6746
%RSD	1.552338	4.445559	.1999014	.4300220	.3672172	.6883796	.2548408
#1	.0067635	.0040958	56.11536	.2642162	.1474038	.5892237	265.3168
#2	.0069683	.0040326	56.28807	.2629984	.1469317	.5867770	264.8552
#3	.0068163	.0043806	56.07747	.2652683	.1480118	.5813452	263.9880
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.161010	57.91964	.2644791	-.022048	1.406077	.4789615	.6010117
Stddev	.022347	.21125	.0006982	.000300	.188708	.0097779	.0021796
%RSD	.3120655	.3647250	.2639762	1.362505	13.42091	2.041480	.3626503
#1	7.153242	58.13634	.2648739	-.022270	1.210377	.4684108	.6033952
#2	7.186204	57.90828	.2636730	-.022166	1.420939	.4877183	.5991202
#3	7.143584	57.71430	.2648905	-.021706	1.586915	.4807552	.6005197
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	32.74183	6.784777	.2794030	.0016931	1.206584	1.738660	.0023323
Stddev	.08552	.007240	.0014758	.0010996	.008336	.002161	.0013851
%RSD	.2611950	.1067064	.5282081	64.94378	.6908489	.1242959	59.38566
#1	32.75052	6.792359	.2804562	.0026498	1.211836	1.739890	.0032139
#2	32.65230	6.784035	.2800367	.0019378	1.196973	1.739926	.0030471
#3	32.82268	6.777936	.2777162	.0004918	1.210943	1.736165	.0007359

Sample Name: P4479-07DLX2 Acquired: 10/26/2024 22:55:57 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE476 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.682230	.0916959	.2865561
Stddev	.004493	.0008021	.0010062
%RSD	.1675158	.8747602	.3511203
#1	2.684729	.0925806	.2876598
#2	2.684917	.0910161	.2863183
#3	2.677042	.0914910	.2856901

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1042.382	23988.69	2291.708	877.4525	1582.772
Stddev	.939	31.73	9.600	1.8373	.733
%RSD	.0901143	.1322714	.4189045	.2093920	.0463155
#1	1043.445	23959.46	2295.253	875.5485	1583.293
#2	1041.664	23984.17	2280.839	877.5943	1581.934
#3	1042.036	24022.44	2299.030	879.2149	1583.089

Sample Name: P4479-08DLX2 Acquired: 10/26/2024 23:00:21 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE477 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2642715	-.028738	.2978409	-.000480	.0073165	110.2057	1.194205
Stddev	.0056140	.003493	.0045772	.001926	.0015692	.1109	.002509
%RSD	2.124314	12.15355	1.536811	401.0710	21.44791	.1006289	.2101250
#1	.2680414	-.026456	.3011240	-.002705	.0076641	110.1491	1.197079
#2	.2669536	-.026999	.2926123	.000634	.0056027	110.1345	1.193091
#3	.2578196	-.032759	.2997865	.000630	.0086829	110.3335	1.192446
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0057322	.0073866	68.54881	.2245509	.1224858	.9643083	223.0752
Stddev	.0001736	.0003701	.07942	.0009688	.0004527	.0073625	.2966
%RSD	3.028596	5.010401	.1158536	.4314241	.3696137	.7634955	.1329503
#1	.0056493	.0078134	68.45828	.2236088	.1230085	.9558708	222.9944
#2	.0059318	.0071911	68.60674	.2255443	.1222335	.9676259	223.4039
#3	.0056157	.0071552	68.58141	.2244995	.1222155	.9694282	222.8275
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.749409	48.21282	.2405119	-.014924	.8361746	.4077890	.7080239
Stddev	.006062	.15877	.0004736	.000330	.1012341	.0067848	.0038919
%RSD	.1054410	.3293168	.1969022	2.213434	12.10682	1.663796	.5496889
#1	5.744489	48.15970	.2409815	-.014785	.7248278	.4065878	.7113496
#2	5.747556	48.08743	.2405197	-.014685	.8610295	.4016851	.7089788
#3	5.756181	48.39135	.2400344	-.015301	.9226664	.4150942	.7037434
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	30.42190	6.179288	.2381314	.0002541	1.233860	3.088831	.0047512
Stddev	.21000	.019532	.0009076	.0005435	.007068	.012592	.0029108
%RSD	.6902779	.3160802	.3811327	213.9234	.5728576	.4076729	61.26470
#1	30.24056	6.189136	.2382827	.0001395	1.230415	3.077802	.0081008
#2	30.37315	6.156793	.2389539	.0008457	1.241990	3.086139	.0028361
#3	30.65198	6.191935	.2371577	-.000223	1.229174	3.102551	.0033166

Sample Name: P4479-08DLX2 Acquired: 10/26/2024 23:00:21 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE477 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.554225	.0765773	.2407798
Stddev	.003345	.0013288	.0002769
%RSD	.1309458	1.735204	.1150052
#1	2.557516	.0767759	.2406008
#2	2.554329	.0777956	.2406398
#3	2.550829	.0751604	.2410987

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1019.831	23560.56	2258.601	861.4726	1587.032
Stddev	.374	72.62	5.739	5.5082	1.585
%RSD	.0367040	.3082416	.2540861	.6393939	.0998793
#1	1019.406	23491.04	2263.234	856.7158	1587.310
#2	1019.970	23554.72	2260.386	860.1944	1588.460
#3	1020.115	23635.93	2252.181	867.5075	1585.326

Sample Name: P4479-09DLX2 Acquired: 10/26/2024 23:04:45 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE478 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2976032	-.031594	.3170341	-.002661	.0079804	120.4554	1.390135
Stddev	.0049343	.007476	.0083459	.003066	.0013036	.3915	.004815
%RSD	1.658014	23.66312	2.632504	115.2536	16.33469	.3249806	.3463510
#1	.2930868	-.038712	.3218222	-.004639	.0088638	120.0869	1.386341
#2	.3028696	-.023805	.3218831	.000872	.0085942	120.8664	1.395551
#3	.2968534	-.032267	.3073971	-.004214	.0064832	120.4129	1.388511
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0060545	.0076808	107.7192	.2325012	.1389995	1.021104	240.1088
Stddev	.0001358	.0002989	.3286	.0014907	.0007362	.008160	.9739
%RSD	2.242308	3.892131	.3050656	.6411400	.5296503	.7991126	.4056120
#1	.0060855	.0073357	107.4269	.2324562	.1394043	1.014271	239.0303
#2	.0061721	.0078475	108.0749	.2340139	.1381497	1.030139	240.9240
#3	.0059059	.0078593	107.6558	.2310336	.1394444	1.018903	240.3719
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.066250	54.66563	.2754208	-.016110	1.171981	.4416618	.7537646
Stddev	.015787	.16089	.0006773	.000275	.168608	.0081973	.0004329
%RSD	.2234104	.2943198	.2459313	1.707845	14.38654	1.856006	.0574324
#1	7.057683	54.60759	.2761792	-.015994	1.274241	.4326299	.7533222
#2	7.084468	54.84749	.2752072	-.016425	1.264328	.4486302	.7537843
#3	7.056599	54.54182	.2748760	-.015913	.977374	.4437253	.7541873
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	32.36398	6.825808	.2552544	.0006497	1.249973	3.707045	.0025565
Stddev	.15957	.021871	.0036492	.0000486	.008811	.015328	.0030903
%RSD	.4930474	.3204114	1.429626	7.487210	.7049326	.4134891	120.8816
#1	32.39076	6.844540	.2519235	.0005940	1.257955	3.692688	-.000045
#2	32.50846	6.831109	.2546847	.0006838	1.251446	3.723188	.005972
#3	32.19271	6.801774	.2591549	.0006712	1.240517	3.705258	.001743

Sample Name: P4479-09DLX2 Acquired: 10/26/2024 23:04:45 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE478 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.727194	.0925812	.2712292
Stddev	.011971	.0016797	.0016815
%RSD	.4389321	1.814269	.6199644
#1	2.717868	.0907568	.2707536
#2	2.740692	.0940635	.2730973
#3	2.723023	.0929232	.2698367

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1016.844	23543.80	2229.382	859.0279	1562.675
Stddev	2.365	82.55	10.689	3.3912	.611
%RSD	.2325584	.3506438	.4794510	.3947698	.0390862
#1	1019.368	23552.30	2241.721	862.0208	1563.162
#2	1016.483	23621.78	2222.972	859.7183	1561.990
#3	1014.680	23457.33	2223.453	855.3447	1562.874

Sample Name: P4479-10DLX2 Acquired: 10/26/2024 23:09:09 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE479 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1768454	-.028415	.1062534	-.000893	.0064055	103.2042	1.355557
Stddev	.0083534	.004820	.0031706	.004398	.0021629	.1343	.003353
%RSD	4.723563	16.96385	2.983975	492.4190	33.76632	.1301385	.2473304
#1	.1788447	-.033969	.1081889	-.000363	.0077800	103.3239	1.358769
#2	.1840177	-.025328	.1025944	-.005533	.0039124	103.0589	1.352080
#3	.1676737	-.025947	.1079770	.003216	.0075242	103.2297	1.355822
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0048708	.0009540	122.1870	.2030297	.1124082	.2968302	214.7135
Stddev	.0002006	.0000301	.2828	.0014493	.0009244	.0030496	.4577
%RSD	4.119058	3.158782	.2314831	.7138532	.8223302	1.027392	.2131764
#1	.0046391	.0009299	122.3784	.2044465	.1114736	.2997196	215.1927
#2	.0049890	.0009878	121.8621	.2030928	.1124290	.2936424	214.2807
#3	.0049842	.0009443	122.3204	.2015499	.1133220	.2971286	214.6672
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.478764	61.21526	.2404291	-.013242	2.569186	.4407659	.3642468
Stddev	.004895	.43745	.0005596	.000278	.230328	.0092655	.0015556
%RSD	.1093034	.7146112	.2327399	2.096263	8.965005	2.102148	.4270770
#1	4.481573	61.56139	.2405107	-.012927	2.306646	.4478317	.3624542
#2	4.473111	60.72359	.2398332	-.013450	2.737272	.4302756	.3650433
#3	4.481606	61.36080	.2409433	-.013349	2.663639	.4441906	.3652429
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.47035	4.872904	.2170753	-.000845	.5169295	3.243924	.0014311
Stddev	.11283	.012914	.0019796	.000498	.0073800	.010565	.0026468
%RSD	.7797304	.2650134	.9119349	58.95297	1.427658	.3256960	184.9486
#1	14.59855	4.864522	.2159022	-.001213	.5125869	3.240983	-.000654
#2	14.38616	4.866413	.2159629	-.000278	.5254506	3.235141	.004409
#3	14.42632	4.887775	.2193609	-.001044	.5127509	3.255649	.000538

Sample Name: P4479-10DLX2 Acquired: 10/26/2024 23:09:09 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE479 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.558396	.0651951	.4577649
Stddev	.007729	.0019354	.0012115
%RSD	.3021149	2.968674	.2646524
#1	2.553644	.0671878	.4588635
#2	2.554230	.0633225	.4564656
#3	2.567315	.0650750	.4579657

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	990.4078	22866.86	2126.416	834.4387	1577.167
Stddev	2.1109	66.90	5.653	4.3764	.361
%RSD	.2131387	.2925727	.2658265	.5244762	.0229150
#1	988.0435	22790.46	2124.722	838.0869	1577.465
#2	992.1034	22914.99	2132.722	835.6431	1576.765
#3	991.0764	22895.12	2121.804	829.5862	1577.271

Sample Name: P4479-11DLX2 Acquired: 10/26/2024 23:13:36 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE480 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1873667	-.026988	.1515296	-.002922	.0088639	111.5960	1.226317
Stddev	.0027287	.002359	.0034886	.005545	.0049433	.1661	.003610
%RSD	1.456366	8.741390	2.302268	189.7624	55.76938	.1488417	.2943981
#1	.1904726	-.028561	.1513928	-.006073	.0136602	111.6615	1.226091
#2	.1853544	-.028129	.1481114	-.006174	.0091458	111.7193	1.230036
#3	.1862731	-.024276	.1550846	.003481	.0037856	111.4071	1.222826
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0055610	.0017764	49.89825	.2146172	.1150523	.3873016	213.0130
Stddev	.0001010	.0001028	.12533	.0003392	.0007436	.0051473	.5047
%RSD	1.815709	5.784396	.2511701	.1580279	.6463448	1.329009	.2369241
#1	.0054886	.0016690	49.82987	.2149860	.1145926	.3923313	213.2085
#2	.0056764	.0018737	50.04290	.2145469	.1146541	.3875292	213.3906
#3	.0055181	.0017866	49.82198	.2143187	.1159102	.3820443	212.4398
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.508742	46.90836	.2230304	-.016705	.9781625	.3899202	.4385978
Stddev	.007871	.14674	.0002004	.000444	.2331601	.0010890	.0021297
%RSD	.1209321	.3128166	.0898718	2.660437	23.83655	.2792899	.4855706
#1	6.509745	47.06345	.2232339	-.016974	1.234064	.3891000	.4396277
#2	6.516063	46.88990	.2228331	-.016192	.777758	.3911557	.4361489
#3	6.500417	46.77173	.2230242	-.016949	.922665	.3895047	.4400167
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	22.45566	4.882740	.2247646	.0012205	.9260996	3.551893	.0071565
Stddev	.20783	.007003	.0007534	.0001343	.0063101	.021527	.0014070
%RSD	.9255091	.1434135	.3351773	11.00532	.6813620	.6060706	19.66035
#1	22.58101	4.877923	.2256156	.0013749	.9240667	3.576395	.0071689
#2	22.21576	4.879524	.2241830	.0011300	.9331756	3.536015	.0085572
#3	22.57020	4.890773	.2244952	.0011567	.9210566	3.543269	.0057433

Sample Name: P4479-11DLX2 Acquired: 10/26/2024 23:13:36 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE480 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.324193	.0710353	.2204385
Stddev	.005015	.0014766	.0006770
%RSD	.2157707	2.078730	.3071314
#1	2.324420	.0720345	.2210722
#2	2.329092	.0693392	.2205182
#3	2.319069	.0717322	.2197252

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1023.811	23504.73	2198.084	860.9302	1612.045
Stddev	1.580	65.89	10.690	.5064	3.415
%RSD	.1543582	.2803431	.4863246	.0588217	.2118258
#1	1024.070	23518.65	2186.398	860.7649	1614.701
#2	1025.245	23432.99	2200.483	861.4986	1613.242
#3	1022.117	23562.56	2207.370	860.5271	1608.194

Sample Name: P4479-12DLX2 Acquired: 10/26/2024 23:18:02 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE481 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2923854	-.035416	.2516029	.0026101	.0100491	122.3016	1.424399
Stddev	.0042745	.005775	.0020168	.0091969	.0033863	.0245	.000291
%RSD	1.461935	16.30611	.8015982	352.3590	33.69751	.0200062	.0204401
#1	.2932381	-.042055	.2539149	-.005613	.0122128	122.3247	1.424216
#2	.2961693	-.032629	.2506891	.012541	.0061467	122.3041	1.424245
#3	.2877489	-.031563	.2502047	.000902	.0117879	122.2759	1.424734
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0059755	.0051999	56.15493	.2562494	.1435267	.7154071	242.1624
Stddev	.0001262	.0003105	.10910	.0006109	.0005138	.0064690	.2892
%RSD	2.111275	5.972282	.1942802	.2383867	.3579928	.9042457	.1194251
#1	.0058400	.0053539	56.04400	.2560790	.1431655	.7184947	242.2236
#2	.0060895	.0048424	56.26210	.2557418	.1441149	.7197537	242.4160
#3	.0059969	.0054033	56.15869	.2569273	.1432997	.7079727	241.8474
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.138380	53.76429	.2685007	-.017925	.9641814	.4548291	.5803045
Stddev	.005232	.21212	.0010393	.000582	.0650777	.0087063	.0044869
%RSD	.0642885	.3945384	.3870790	3.245115	6.749530	1.914187	.7732048
#1	8.132423	53.97918	.2690100	-.018392	.8900961	.4645046	.5812810
#2	8.142230	53.75862	.2691872	-.018109	.9903315	.4476276	.5842227
#3	8.140487	53.55506	.2673050	-.017274	1.012116	.4523550	.5754097
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.40686	5.121560	.2526962	.0001002	.7765219	3.653080	.0055479
Stddev	.09619	.012706	.0007658	.0000429	.0113700	.015789	.0014824
%RSD	.3785862	.2480958	.3030454	42.76646	1.464218	.4321994	26.72043
#1	25.37986	5.136046	.2530389	.0001402	.7829190	3.656998	.0042673
#2	25.51367	5.112298	.2518189	.0001055	.7832522	3.666541	.0052045
#3	25.32707	5.116337	.2532308	.0000550	.7633944	3.635701	.0071718

Sample Name: P4479-12DLX2 Acquired: 10/26/2024 23:18:02 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE481 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.590417	.0832559	.2483122
Stddev	.004959	.0008745	.0000965
%RSD	.1914537	1.050437	.0388438
#1	2.591091	.0832283	.2482013
#2	2.585155	.0823955	.2483766
#3	2.595005	.0841440	.2483586

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1027.671	23656.55	2251.634	869.7472	1595.193
Stddev	2.845	37.12	8.618	4.4349	1.340
%RSD	.2768421	.1569027	.3827499	.5099094	.0840134
#1	1024.928	23682.92	2249.444	870.4287	1595.220
#2	1030.608	23672.62	2244.323	865.0110	1596.520
#3	1027.478	23614.10	2261.136	873.8019	1593.840

Sample Name: P4479-13DLX2 Acquired: 10/26/2024 23:22:27 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE481D Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3379672	-.033949	.2826354	-.002489	.0110624	133.3241	1.452516
Stddev	.0032459	.003442	.0018008	.006537	.0028159	.3410	.003550
%RSD	.9604164	10.13735	.6371607	262.6144	25.45446	.2557534	.2443738
#1	.3408642	-.034882	.2836444	.000499	.0125669	132.9306	1.449116
#2	.3385780	-.030138	.2805562	-.009987	.0078139	133.5327	1.452232
#3	.3344592	-.036829	.2837054	.002020	.0128066	133.5089	1.456198
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0067659	.0063875	64.65609	.2750507	.1577858	.7874375	263.3626
Stddev	.0000977	.0004613	.24184	.0015559	.0005886	.0066374	1.0922
%RSD	1.443361	7.222171	.3740441	.5656808	.3730439	.8429110	.4147140
#1	.0067131	.0058610	64.51897	.2736939	.1577863	.7871975	262.1187
#2	.0067060	.0065807	64.51397	.2747092	.1571969	.7941916	263.8041
#3	.0068786	.0067208	64.93533	.2767490	.1583741	.7809233	264.1648
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.893186	59.31142	.3000806	-.020660	1.047705	.4941954	.6442188
Stddev	.027824	.11227	.0012106	.000469	.125753	.0142637	.0016060
%RSD	.3525083	.1892903	.4034185	2.269982	12.00275	2.886247	.2492942
#1	7.864482	59.20187	.3006439	-.020121	.926438	.4792133	.6438584
#2	7.895037	59.30615	.3009068	-.020885	1.177509	.5076115	.6428236
#3	7.920038	59.42623	.2986910	-.020975	1.039167	.4957615	.6459743
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	28.71125	6.045017	.2743474	.0002692	.8781775	2.019081	.0034591
Stddev	.15516	.019948	.0026090	.0007317	.0026075	.013917	.0041126
%RSD	.5404293	.3299911	.9509969	271.7931	.2969175	.6892809	118.8924
#1	28.53599	6.032315	.2715272	.0002873	.8794945	2.003352	.0062175
#2	28.76668	6.034727	.2748397	-.000471	.8798637	2.024094	-.001268
#3	28.83109	6.068008	.2766751	.000992	.8751742	2.029798	.005427

Sample Name: P4479-13DLX2 Acquired: 10/26/2024 23:22:27 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE481D Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.616329	.0942418	.2679850
Stddev	.006037	.0004904	.0004738
%RSD	.2307583	.5203192	.1768113

#1	2.610544	.0943691	.2674565
#2	2.622590	.0937003	.2683719
#3	2.615852	.0946559	.2681266

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1033.402	23938.95	2302.886	876.1722	1578.499
Stddev	2.552	62.20	5.923	4.4908	3.020
%RSD	.2469616	.2598318	.2571820	.5125521	.1913079

#1	1031.431	23867.61	2309.200	873.9752	1578.314
#2	1036.285	23981.80	2302.004	881.3386	1581.608
#3	1032.491	23967.45	2297.454	873.2029	1575.577

Sample Name: P4479-14DLX2 Acquired: 10/26/2024 23:26:51 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE481S Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3583596	.0640917	.2932796	.1532999	.1664819	124.1590	5.214242
Stddev	.0019686	.0027517	.0030686	.0039136	.0036588	.4805	.006922
%RSD	.5493245	4.293447	1.046289	2.552898	2.197702	.3870085	.1327526
#1	.3567716	.0620430	.2901054	.1577575	.1624190	123.6982	5.208178
#2	.3605621	.0672194	.2935032	.1517144	.1695166	124.1218	5.212764
#3	.3577450	.0630126	.2962302	.1504279	.1675099	124.6571	5.221783
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1071765	.1073899	55.27816	.6541551	1.161476	1.139722	239.6499
Stddev	.0006214	.0002325	.15304	.0005362	.004034	.009709	.7429
%RSD	.5798348	.2164986	.2768561	.0819718	.3473325	.8519144	.3099786
#1	.1064755	.1076164	55.16511	.6546669	1.164083	1.130555	238.8803
#2	.1073942	.1071518	55.21706	.6542010	1.156829	1.149896	239.7066
#3	.1076598	.1074016	55.45231	.6535974	1.163516	1.138716	240.3628
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.934478	52.88026	1.288160	.0771396	1.197518	1.406810	1.361476
Stddev	.024741	.29584	.001547	.0007418	.326398	.003240	.006735
%RSD	.2769211	.5594575	.1201020	.9616755	27.25620	.2303314	.4946487
#1	8.905990	52.61701	1.287786	.0778738	1.542807	1.405177	1.355850
#2	8.950580	53.20043	1.286834	.0763903	1.155705	1.410542	1.368938
#3	8.946865	52.82336	1.289859	.0771547	.894041	1.404712	1.359641
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.06415	5.034389	.2509814	.0003533	.7409420	3.725348	.0070146
Stddev	.11204	.015722	.0013493	.0003980	.0099976	.029281	.0007916
%RSD	.4470321	.3122881	.5376250	112.6593	1.349308	.7859932	11.28561
#1	25.01035	5.031306	.2495204	-.000096	.7498450	3.693393	.0074693
#2	24.98915	5.020437	.2521808	.000494	.7301262	3.731758	.0074741
#3	25.19295	5.051424	.2512431	.000662	.7428548	3.750893	.0061005

Sample Name: P4479-14DLX2 Acquired: 10/26/2024 23:26:51 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: MYE481S Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.581617	.0828344	.2452240
Stddev	.013304	.0020113	.0013188
%RSD	.5153481	2.428050	.5377786

#1	2.572954	.0806361	.2437593
#2	2.574962	.0845821	.2455954
#3	2.596936	.0832851	.2463172

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1021.765	23530.87	2222.776	859.1454	1596.208
Stddev	1.755	12.03	15.645	3.2089	4.660
%RSD	.1717845	.0511137	.7038402	.3734987	.2919536

#1	1021.319	23520.63	2238.088	860.0568	1593.604
#2	1023.701	23544.11	2223.421	855.5794	1601.588
#3	1020.276	23527.86	2206.819	861.8000	1593.431

Sample Name: CCV008 Acquired: 10/26/2024 23:31:11 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV008 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.087968	4.773889	25.01370	4.676854	4.780256	415.0935	10.21608
Stddev	.036422	.023116	.01230	.013617	.016514	.6159	.01776
%RSD	.7158520	.4842118	.0491666	.2911493	.3454713	.1483811	.1738117
#1	5.045963	4.783868	25.02282	4.662766	4.763328	414.5739	10.20921
#2	5.107157	4.747460	25.01857	4.677850	4.781117	415.7738	10.23624
#3	5.110783	4.790339	24.99972	4.689945	4.796323	414.9328	10.20279
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5471063	2.529253	413.0749	15.19892	2.529136	14.97623	415.1725
Stddev	.0021885	.001066	.2736	.03758	.002384	.02360	.2100
%RSD	.4000042	.0421276	.0662294	.2472709	.0942462	.1575690	.0505741
#1	.5446377	2.530369	412.9189	15.22660	2.531697	14.98385	415.0681
#2	.5478728	2.529143	413.3908	15.21404	2.528731	14.99508	415.4142
#3	.5488084	2.528247	412.9150	15.15614	2.526981	14.94977	415.0352
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.89557	419.3774	2.510199	1.281849	411.5992	2.483477	14.47821
Stddev	.01108	.8750	.003172	.001376	.3966	.009348	.05579
%RSD	.0743529	.2086410	.1263532	.1073478	.0963606	.3764183	.3853614
#1	14.90023	418.3970	2.510262	1.282450	411.6203	2.483830	14.41747
#2	14.90355	419.6562	2.506996	1.282822	411.1925	2.473957	14.49001
#3	14.88292	420.0790	2.513338	1.280275	411.9849	2.492644	14.52717
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	157.0472	4.950156	5.134276	4.753613	5.042742	5.092746	5.036766
Stddev	.1333	.005323	.017554	.015464	.007162	.011554	.016893
%RSD	.0848707	.1075335	.3418998	.3253099	.1420282	.2268666	.3353887
#1	157.1673	4.949880	5.120789	4.738423	5.041033	5.079554	5.033480
#2	156.9038	4.944976	5.154123	4.753079	5.050604	5.101065	5.021757
#3	157.0706	4.955612	5.127915	4.769337	5.036589	5.097618	5.055060

Sample Name: CCV008 Acquired: 10/26/2024 23:31:11 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCV008 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.987881	5.118084	5.081266
Stddev	.001158	.010793	.005976
%RSD	.0232246	.2108759	.1176050
#1	4.987373	5.120718	5.077683
#2	4.987064	5.127317	5.088165
#3	4.989207	5.106219	5.077952

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	761.9527	19734.10	1883.539	602.8192	1324.972
Stddev	2.0268	54.98	1.289	2.0574	.062
%RSD	.2660050	.2786185	.0684424	.3412966	.0046909
#1	764.2410	19677.36	1884.616	604.8564	1324.963
#2	761.2337	19737.81	1882.111	602.8591	1324.915
#3	760.3833	19787.14	1883.891	600.7422	1325.038

Sample Name: CCB008 Acquired: 10/26/2024 23:35:23 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB008 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003488	.0020038	.0014509	-.002581	.0012934	.0415653	.0004292
Stddev	.0024323	.0011772	.0022639	.003634	.0009384	.0126593	.0001376
%RSD	697.2872	58.75070	156.0293	140.7872	72.55158	30.45642	32.05599
#1	.0025383	.0031484	-.000790	-.004232	.0023493	.0380496	.0002715
#2	-.002269	.0007964	.003737	-.005097	.0009763	.0556108	.0004914
#3	.000778	.0020664	.001405	.001585	.0005547	.0310354	.0005248
Elem	Be2348	Cd2144	Ca3736	Cr2677	Co2286	Cu3247	Fe2598
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000166	.0000573	.0167262	-.000095	.0003078	.0003315	.0367517
Stddev	.000109	.0000309	.0111573	.000225	.0001917	.0054194	.0130249
%RSD	65.81407	53.87209	66.70570	235.8685	62.28918	1634.825	35.44027
#1	-.000043	.0000929	.0096689	.000067	.0003386	-.005760	.0252449
#2	-.000252	.0000421	.0109204	-.000000	.0001025	.004618	.0508922
#3	-.000204	.0000370	.0295893	-.000353	.0004822	.002137	.0341179
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na8183	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001064	-.025086	.0004694	.0017599	-.274184	.0015825	.0002076
Stddev	.0003418	.045401	.0003811	.0003615	.243585	.0053354	.0000689
%RSD	321.2627	180.9820	81.19033	20.54227	88.83981	337.1583	33.20953
#1	.0004682	-.063438	.0008946	.0021604	-.463281	-.003987	.0002276
#2	-.000211	.025043	.0001587	.0014577	.000684	.006648	.0002644
#3	.000062	-.036863	.0003548	.0016616	-.359955	.002087	.0001309
Elem	K_7698	P_1774	B_2496	Mo2020	S_1820	Si2516	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.227795	.0017531	.0006069	.0004152	.0000779	-.001734	.0007795
Stddev	.080970	.0015680	.0009333	.0004258	.0043903	.000683	.0015796
%RSD	35.54502	89.44073	153.7861	102.5535	5633.222	39.39493	202.6364
#1	-.290677	.0032263	.0004205	.0000464	-.002340	-.001534	.0008913
#2	-.136433	.0001051	.0016194	.0008812	.005146	-.002495	.0023002
#3	-.256274	.0019278	-.000219	.0003180	-.002572	-.001173	-.000853

Sample Name: CCB008 Acquired: 10/26/2024 23:35:23 Type: Unk
Method: SFAM01.1 INSTRUMENT P5 WITH 6 POINT ICAL(v711) Mode: CONC Corr. Factor: 1.000000
User: Kareem Custom ID1: CCB008 Custom ID2: Custom ID3:
Comment:

Elem	Ti3361	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.001637	-.008213	.0001943
Stddev	.001807	.001219	.0001137
%RSD	110.4290	14.84023	58.49992
#1	-.000635	-.008615	.0003240
#2	-.000552	-.009181	.0001120
#3	-.003723	-.006844	.0001469

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	954.8865	21600.20	1996.988	803.2870	1739.325
Stddev	3.1020	70.70	7.195	3.1625	7.020
%RSD	.3248542	.3273160	.3602917	.3936896	.4036074
#1	951.6212	21530.63	1998.114	803.9211	1731.425
#2	957.7942	21598.01	2003.554	799.8555	1744.846
#3	955.2441	21671.98	1989.296	806.0843	1741.705

Prep Standard - Chemical Standard Summary

Order ID : P4477

Test : Metals CLP Full

Prepbatch ID : PB164346,

Sequence ID/Qc Batch ID: LB133149,

Standard ID :

MP81119,MP82127,MP82441,MP82442,MP82443,MP82444,MP82445,MP82446,MP82450,MP82451,MP82452,MP82453,MP82455,MP82456,MP82631,MP82632,MP82711,MP82731,

Chemical ID :

M4960,M5130,M5192,M5218,M5223,M5288,M5289,M5295,M5296,M5390,M5394,M5429,M5467,M5473,M5498,M5513,M5515,M5519,M5634,M5658,M5697,M5698,M5747,M5748,M5769,M5798,M5799,M5800,M5801,M5802,M5806,M5814,M5815,M5816,M5817,M5818,M5819,M5820,M5875,M5935,M5961,M5962,M5970,M5976,M5978,M5982,M5984,M5990,M5999,M6021,M6023,M6025,M6028,M6030,M6033,M6037,M6040,M6096,W2606,W3112,



<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>
169	1:1HNO3	MP81119	06/21/2024	04/24/2025	Al-Terek Isaac	METALS_SCALE_2 (M SC-2)	METALS_PIPETTE_1 (ICP)	Sarabjit Jaswal
FROM 1250.00000ml of M5935 + 1250.00000ml of W2606 = Final Quantity: 2500.000 ml A)								

<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>
170	1:1HCL	MP82127	09/03/2024	02/08/2025	Janvi Patel	None	None	Sarabjit Jaswal 09/03/2024
<u>FROM</u> 1250.00000ml of M6040 + 1250.00000ml of W3112 = Final Quantity: 2500.000 ml								

Metals 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>
902	ICP AES CAL BLK (SO/ICB/CCB)	MP82441	09/23/2024	10/30/2024	Kareem Khairalla	None	None	Sarabjit Jaswal
								09/24/2024

FROM 125.00000ml of M6040 + 2350.00000ml of W3112 + 25.00000ml of M6037 = Final Quantity: 2500.000 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>
2480	ICP AES STD 6 ISM01.3	MP82442	09/23/2024	10/30/2024	Kareem Khairalla	None	None	Sarabjit Jaswal
								09/24/2024

FROM 4.00000ml of M5289 + 4.00000ml of M5498 + 4.00000ml of M5515 + 4.00000ml of M5769 + 4.00000ml of M5806 + 30.00000ml of MP82441 = Final Quantity: 50.000 ml

Metals 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>
1004	ICPAES ISM01.2 (S5)	MP82443	09/23/2024	10/30/2024	Kareem Khairalla	None	None	Sarabjit Jaswal
								09/24/2024

FROM 0.25000ml of M5798 + 0.50000ml of M5429 + 0.50000ml of M5473 + 0.50000ml of M5815 + 0.50000ml of M5817 + 12.50000ml of M5519 + 12.50000ml of M5698 + 12.50000ml of M5806 + 12.50000ml of M5819 + 13.75000ml of M5697 + 14.50000ml of M5515 + 14.50000ml of M5658 + 14.50000ml of M6033 + 2.00000ml of M5513 + 22.50000ml of M5498 + 22.50000ml of M5769 + 5.00000ml of M5296 + 5.00000ml of M5394 + 5.00000ml of M5802 + 5.00000ml of M5818 + 5.00000ml of M5875 + 303.50000ml of MP82441 = Final Quantity: 500.000 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>
1005	ICPAES ISM01.2(S4)	MP82444	09/23/2024	10/30/2024	Kareem Khairalla	None	None	Sarabjit Jaswal
								09/24/2024

FROM 250.00000ml of MP82441 + 250.00000ml of MP82443 = Final Quantity: 500.000 ml

Metals 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>
1007	ICPAES ISM01.2(S3)	MP82445	09/23/2024	10/30/2024	Kareem Khairalla	None	None	Sarabjit Jaswal
								09/24/2024

FROM 25.00000ml of MP82443 + 75.00000ml of MP82441 = Final Quantity: 100.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1008	ICPAES ISM01.2(S2)	MP82446	09/23/2024	10/30/2024	Kareem Khairalla	None	None	Sarabjit Jaswal
								09/24/2024

FROM 12.50000ml of MP82443 + 87.50000ml of MP82441 = Final Quantity: 100.000 ml



Metals 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>
2054	ICV-ICPAES	MP82450	09/23/2024	10/30/2024	Kareem Khairalla	None	None	Sarabjit Jaswal 09/24/2024
<u>FROM</u>	0.50000ml of M5218 + 0.50000ml of M5816 + 0.50000ml of M5820 + 0.50000ml of M5970 + 0.50000ml of M5982 + 10.00000ml of M5295 + 87.50000ml of MP82441 = Final Quantity: 100.000 ml							

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
904	ICP AES ICSA SOLN	MP82451	09/23/2024	10/30/2024	Kareem Khairalla	None	None	Sarabjit Jaswal 09/24/2024
<u>FROM</u> 25.00000ml of M5130 + 225.00000ml of MP82441 = Final Quantity: 250.000 ml								

Metals 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>
905	ICP AES ICSAB SOLN	MP82452	09/23/2024	10/30/2024	Kareem Khairalla	None	None	Sarabjit Jaswal 09/24/2024

FROM 25.00000ml of M5130 + 25.00000ml of M5223 + 200.00000ml of MP82441 = Final Quantity: 250.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1119	ICPAES ISM01.2(CCV)	MP82453	09/23/2024	10/30/2024	Kareem Khairalla	None	None	Sarabjit Jaswal 09/24/2024

FROM 0.75000ml of M5498 + 0.75000ml of M5769 + 1.22500ml of M6033 + 1.25000ml of M5515 + 1.25000ml of M5806 + 19.77500ml of MP82441 + 25.00000ml of MP82443 = Final Quantity: 50.000 ml

Metals 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>
919	ICP AES INTERNAL STD	MP82455	09/23/2024	10/30/2024	Kareem Khairalla	None	None	Sarabjit Jaswal
								09/24/2024

FROM 1.00000ml of M5984 + 10.00000ml of M4960 + 1969.00000ml of W3112 + 20.00000ml of M6037 = 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>
903	ICP AES RINSE SOLN	MP82456	09/23/2024	10/30/2024	Kareem Khairalla	None	None	Sarabjit Jaswal
								09/24/2024

FROM 200.00000ml of M6037 + 9800.00000ml of W3112 = Final Quantity: 10000.000 ml

Metals 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>
994	ICPAES ISM01.2 S1 (CONC.)	MP82631	10/02/2024	10/23/2024	Kareem Khairalla	None	None	Sarabjit Jaswal 10/02/2024

FROM 0.02000ml of M5815 + 0.03000ml of M5429 + 0.10000ml of M5798 + 0.10000ml of M6028 + 0.14000ml of M5799 + 0.20000ml of M5473 + 0.20000ml of M5515 + 0.20000ml of M5658 + 0.20000ml of M5801 + 0.20000ml of M5817 + 0.20000ml of M5976 + 0.20000ml of M6025 + 0.20000ml of M6030 + 0.30000ml of M5698 + 0.40000ml of M6033 + 0.50000ml of M5697 + 0.50000ml of M6023 + 0.70000ml of M5962 + 0.80000ml of M5961 + 1.00000ml of M5800 + 1.00000ml of M6021 + 1.20000ml of M5802 + 1.20000ml of M5819 + 10.00000ml of M5498 + 10.00000ml of M5519 + 10.00000ml of M5769 + 10.00000ml of M5806 + 10.00000ml of M5818 + 2.00000ml of M5978 + 4.00000ml of M5390 + 34.24000ml of MP82441 = Final Quantity: 100.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1003	ICPAES ISM01.2 S1	MP82632	10/02/2024	10/30/2024	Kareem Khairalla	None	None	Sarabjit Jaswal 10/02/2024

FROM 0.50000ml of MP82631 + 87.50000ml of MP82441 = Final Quantity: 100.000 ml

Metals 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>
2950	ICP AES S1/CRI STOCK STD	MP82711	10/07/2024	10/31/2024	Kareem Khairalla	None	None	Sarabjit Jaswal
								10/07/2024

FROM 0.00300ml of M6028 + 0.03000ml of M5798 + 0.05000ml of M5515 + 0.05000ml of M5658 + 0.05000ml of M6030 + 0.05000ml of M6033 + 0.06000ml of M5747 + 0.10000ml of M5697 + 0.10000ml of M5698 + 0.10000ml of M5801 + 0.10000ml of M5820 + 0.10000ml of M5962 + 0.10000ml of M5970 + 0.10000ml of M5982 + 0.15000ml of M5800 + 0.20000ml of M5748 + 0.20000ml of M5799 + 0.20000ml of M5819 + 0.20000ml of M6021 + 0.20000ml of M6023 + 0.25000ml of M5467 + 0.25000ml of M5802 + 0.50000ml of M5390 + 0.50000ml of M5814 + 1.00000ml of M5192 + 1.00000ml of M5288 + 1.00000ml of M5498 + 1.00000ml of M5769 + 1.00000ml of M5806 + 1.00000ml of M5978 + 2.00000ml of M5816 + 2.00000ml of M5818 + 77.68000ml of MP82441 = Final Quantity: 100.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
921	ICPAES SPIKE SOL#6	MP82731	10/04/2024	10/31/2024	Sarabjit Jaswal	METALS_SCALE_2 (M SC-2)	METALS_PIPETTE_3 (A)	Mohan Bera
								10/08/2024

FROM 2.50000ml of M5962 + 50.00000ml of M5990 + 50.00000ml of M5999 + 147.50000ml of MP82441 = Final Quantity: 250.000 ml

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGIN10-5 / INDIUM 1 x 500 ml	100721	10/07/2024	10/09/2021 / jaswal	10/08/2021 / jaswal	M4960

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	PART A / ICSA (ICP) STOCK SOLN	ICSA-1211	11/19/2024	05/20/2024 / jaswal	04/20/2021 / bin	M5130

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57042 / Mo, 1000 PPM, 125 ml	051722	05/17/2025	07/01/2022 / bin	06/17/2022 / jaswal	M5192

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CHEM-QC-4 / CHEM-QC-4, Second Source, 1000 ug/ml, B, Mo, Si, Sn, Ti	S2-MEB711674	11/02/2026	07/01/2022 / bin	09/10/2021 / bin	M5218

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	PART B / ICSAB (ICP) STOCK SOLN	ICSB-0710	11/19/2024	05/20/2024 / jaswal	04/20/2021 / bin	M5223

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58119 / K, 10000 PPM, 500 ml	071122	07/11/2025	09/01/2022 / jaswal	07/21/2022 / jaswal	M5288

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58113 / Aluminum (Al) 10,000PPM	070622	07/06/2025	09/02/2022 / jaswal	07/12/2022 / jaswal	M5289

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	ICV-1 / ICV (ICP/ICPMS) STOCK SOLN	ICV-1014	02/05/2025	08/07/2024 / jaswal	02/20/2020 / bin	M5295

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	Z9651Q / CHEM-CLP-4/.25L	S2-MEB711673	11/02/2026	09/19/2022 / jaswal	08/20/2022 / jaswal	M5296

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57056 / Ba, 1000 PPM, 125 ml	072122	07/21/2025	08/07/2024 / jaswal	09/18/2022 / bin	M5390

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CLPP-CAL-3 / CLP CAL SOLUTION #3, 125mL	T2-MEB714159	01/13/2027	11/28/2022 / bin	09/19/2022 / bin	M5394

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57103 / Li, 10000 PPM, 125 ml	070622	07/06/2025	01/30/2023 / bin	01/26/2023 / bin	M5429

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57058 / Cerium, 1000PPM, 100ML	020623	02/06/2026	03/06/2023 / bin	03/01/2023 / bin	M5467

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57138 / Sr, 10000 PPM, 125 ml	082922	08/29/2025	03/16/2023 / jaswal	03/16/2023 / jaswal	M5473

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58120 / Ca, 10000 PPM, 500 ml	031523	03/15/2026	08/15/2023 / jaswal	03/17/2023 / bin	M5498

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57182 / Pb, 10000 PPM, 125 ml	061522	06/15/2025	03/19/2023 / bin	03/17/2023 / bin	M5513

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58126 / Fe, 10000 PPM, 500 ml	092122	09/21/2025	08/01/2024 / Jaswal	03/17/2023 / bin	M5515

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57119 / Potassium (K) 10,000PPM	120822	12/08/2025	01/08/2024 / bin	03/17/2023 / bin	M5519

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	1403 / Hydrogen Peroxide, 30% 1 gal	820803	02/03/2025	04/18/2024 / jaswal	08/03/2022 / Al-Terek	M5634

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58024 / Chromium, Cr, 500 ml, 1000 PPM	060523	06/05/2026	08/28/2023 / jaswal	08/25/2023 / jaswal	M5658

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58029 / Cu, 1000 PPM, 500 ml	102523	10/25/2026	04/03/2024 / jaswal	10/27/2023 / jaswal	M5697

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58025 / Mn, 1000 PPM, 500 ml	102623	10/26/2026	04/18/2024 / jaswal	10/27/2023 / jaswal	M5698

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	/ Lead (Pb) 1000PPM	100923	10/09/2026	05/20/2024 / Jaswal	12/20/2023 / jaswal	M5747

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	/ Nickel (Ni) 1000PPM	091223	09/12/2026	01/02/2024 / bin	12/20/2023 / jaswal	M5748

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58112 / Mg, 10000 PPM, 500 ml	091823	09/18/2026	05/24/2024 / Jaswal	01/03/2024 / bin	M5769

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57004 / Be, 1000 PPM, 125 ml	102523	10/25/2026	02/09/2024 / bin	02/09/2024 / bin	M5798

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57050 / Sn, 1000 PPM, 125 ml	071123	07/11/2026	02/09/2024 / bin	02/09/2024 / bin	M5799

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57027 / CO, 1000 PPM, 125 ml	091923	09/19/2026	05/31/2024 / bin	02/09/2024 / bin	M5800

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57033 / As, 1000 PPM, 125 ml	111323	11/13/2026	02/09/2024 / bin	02/09/2024 / bin	M5801

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57051 / Sb, 1000 PPM, 125 ml	120523	12/05/2026	08/07/2024 / jaswal	01/03/2024 / jaswal	M5802

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58111 / Na, 10000 PPM, 500 ml	122223	12/22/2026	08/01/2024 / Jaswal	01/03/2024 / jaswal	M5806

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57005 / B, 1000 PPM, 125 ml	071123	07/11/2026	03/26/2024 / Sohil	01/03/2024 / jaswal	M5814

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57115 / P, 10000 PPM, 125 ml	041723	04/17/2026	05/21/2024 / Jaswal	02/09/2024 / jaswal	M5815

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57016 / S, 1000 PPM, 125 ml	122923	12/29/2026	05/20/2024 / Jaswal	02/09/2024 / jaswal	M5816

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57116 / S, 10000 PPM, 125 ml	071123	07/11/2026	03/01/2024 / jaswal	02/09/2024 / jaswal	M5817

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57014 / Si, 1000 PPM, 125 ml	122023	12/20/2026	03/06/2024 / jaswal	02/09/2024 / jaswal	M5818

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58030 / Zinc, Zn, 500 ml, 1000 PPM	111623	11/16/2026	03/20/2024 / jaswal	02/09/2024 / jaswal	M5819

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57015 / P, 1000 PPM, 125 ml	091123	09/11/2026	05/01/2024 / jaswal	02/09/2024 / jaswal	M5820

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CLPP-CAL-1 / CLP CAL SOLUTION #1, 125mL	T2-MEB714417	01/27/2027	04/19/2024 / jaswal	02/22/2024 / jaswal	M5875

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L)	24D1062002	12/08/2024	06/21/2024 / Al-Terek	06/07/2024 / Al-Terek	M5935

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57028 / Ni, 1000 PPM, 125 ml	041124	04/11/2027	07/02/2024 / Jaswal	06/11/2024 / Jaswal	M5961

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57034 / Se, 1000 PPM, 125 ml	060624	06/06/2027	07/02/2024 / Jaswal	06/14/2024 / Jaswal	M5962

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57003 / Li, 1000 PPM, 125 ml	061224	06/21/2027	07/01/2024 / Jaswal	07/01/2024 / Jaswal	M5970

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGMO1-1 / MOLYBDENUM 125mL 1000ug/mL	T2-MO720876	07/17/2027	08/07/2024 / jaswal	02/22/2024 / Jaswal	M5976

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGTI1-1 / TITANIUM 125mL 1000ug/mL	T2-TI719972	06/17/2027	08/07/2024 / jaswal	02/22/2024 / Jaswal	M5978

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57038 / Sr, 1000 PPM, 125 ml	031524	03/15/2027	07/01/2024 / Jaswal	06/11/2024 / Jaswal	M5982

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGY10-1 / YTTRIUM 125mL 10,000ug/mL	V2-Y740548	02/20/2029	08/05/2024 / kareem	06/14/2024 / Jaswal	M5984

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CLPP-SPK-5 / CLP Spike Standard 5	V2-MEB742037	03/12/2029	10/04/2024 / Jaswal	02/22/2024 / Jaswal	M5990

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CLPP-SPK-1 / SOIL/WATER SPIKE SOLN 1, 125mL	T2-MEB721963	07/27/2027	09/04/2024 / Jaswal	02/22/2024 / kareem	M5999

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57023 / V, 1000 PPM, 125 ml	062424	06/24/2027	09/28/2024 / jaswal	08/05/2024 / Jaswal	M6021

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57081 / TI, 1000 PPM, 125 ml	0624724	06/27/2027	08/05/2024 / kareem	08/05/2024 / Jaswal	M6023

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57082 / Pb, 1000 PPM, 125 ml	061224	06/12/2027	08/05/2024 / Jaswal	08/05/2024 / Jaswal	M6025

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57048 / Cd, 1000 PPM, 125 ml	070124	07/01/2027	08/05/2024 / kareem	01/25/2019 / Jaswal	M6028

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57047 / Ag, 1000 PPM, 125 ml	122823	12/28/2026	08/05/2024 / kareem	08/05/2024 / Jaswal	M6030

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58113 / Al, 10000 PPM, 500 ml	011623	01/16/2026	08/07/2024 / Jaswal	01/03/2024 / Jaswal	M6033

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L)	24D1062002	02/02/2025	08/24/2024 / Janvi	08/01/2024 / Janvi	M6037

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)	24D1562005	02/08/2025	08/09/2024 / jaswal	08/01/2024 / Janvi	M6040

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L)	24D1062002	03/25/2029	10/22/2024 / Janvi	09/21/2024 / Janvi	M6096

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	DIW / DI Water	Daily Lab-Certified	10/24/2024	10/24/2019 / apatel	10/24/2019 / apatel	W2606

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

Certificate of Analysis

R: 02/22/24 M5986, M5987, M5988, M5989, M5990

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 Christiansburg, VA 24073 USA
 inorganicventures.com

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F: 540-585-3012

info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution
 Catalog Number: CLPP-SPK-5
 Lot Number: V2-MEB742037
 Matrix: 5% (v/v) HNO₃
 Value / Analyte(s):
 100 µg/mL ea:
 Antimony,
 50 µg/mL ea:
 Selenium, Thallium,
 Cadmium,
 40 µg/mL ea:
 Arsenic,
 20 µg/mL ea:
 Lead

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	100.0 ± 0.7 µg/mL	Arsenic, As	40.00 ± 0.26 µg/mL
Cadmium, Cd	49.99 ± 0.22 µg/mL	Lead, Pb	19.99 ± 0.09 µg/mL
Selenium, Se	50.00 ± 0.23 µg/mL	Thallium, Tl	50.00 ± 0.22 µg/mL

Density: 1.025 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
As	ICP Assay	3103a	100818
Cd	ICP Assay	3108	130116
Cd	EDTA	928	928
Cd	Calculated		See Sec. 4.2
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Pb	Calculated		See Sec. 4.2
Sb	ICP Assay	3102a	140911
Se	ICP Assay	3149	100901
Se	Calculated		See Sec. 4.2
Tl	ICP Assay	3158	151215
Tl	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char\ i})^2 / (\sum(1/(u_{char\ i})^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (k) = U_{CRM/RM} = k(u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char} = (\sum((w_i)^2(u_{char\ i})^2))^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a)(u_{char\ a})$$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (k) = U_{CRM/RM} = k(u_{char\ a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

6.1 This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

6.2 For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ In the Inorganic Ventures Terms and Conditions of Sale, <https://www.inorganicventures.com/terms-and-conditions-sale>. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 12, 2024

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **March 12, 2029**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Joseph Burns
Custom VS Manager



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57048
070124
Cadmium (Cd)

Solvent: 24002546 Nitric Acid

R: 815/24

Lot #

2% 40.0 Nitric Acid (mL)

Expiration Date: 070127

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 1000

NIST Test Number: 6UTB

SE-05 Balance Uncertainty

Weight shown below was diluted to (mL): 2000.07 0.100 Flask Uncertainty

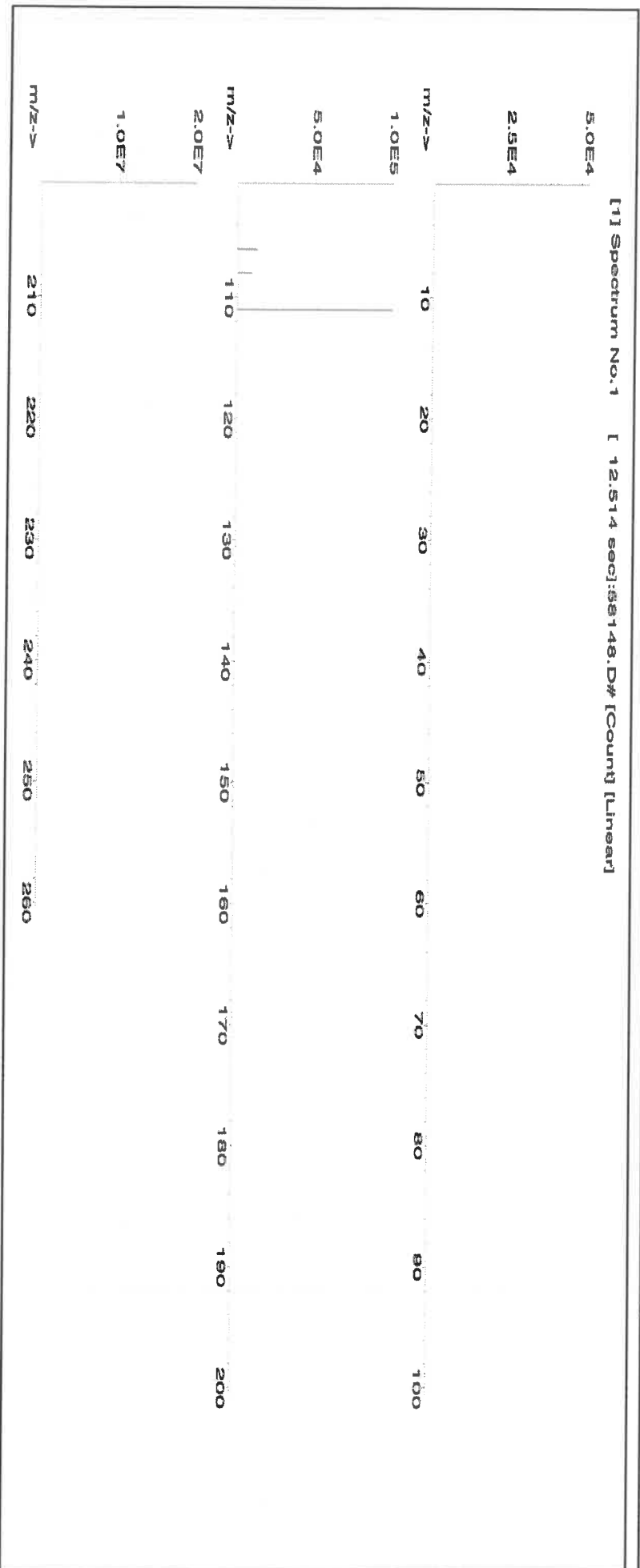
<i>Aleah O'Brady</i>	
Formulated By:	Aleah O'Brady
	070124
<i>Pedro L. Rentas</i>	
Reviewed By:	Pedro L. Rentas
	070124

Compound

Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Cadmium nitrate tetrahydrate (Cd) IN024 CDM09221A1 1000 99.999 0.10 36.5 5.4797 5.4804 1000.1 2.0 10022-68-1 0.01 mg/m3 or-rat 60.2mg/kg 3108

[1] Spectrum No.1 [12.514 sec]:\$8148.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.2	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Ba	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Cd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pr	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



Refine your results. Redefine your industry.

Certificate of Analysis

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution
Catalog Number: CHEM-CLP-4
Lot Number: S2-MEB711673
Matrix: 3% (v/v) HNO₃
3% (v/v) HF
Value / Analyte(s): 1 000 µg/mL ea:
Boron, Molybdenum,
Silicon, Tin,
Titanium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Boron, B	1 000 ± 6 µg/mL	Molybdenum, Mo	1 000 ± 6 µg/mL
Silicon, Si	1 000 ± 7 µg/mL	Tin, Sn	1 000 ± 6 µg/mL
Titanium, Ti	1 000 ± 7 µg/mL		

Density: 1.030 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
B	ICP Assay	3107	110830
Mo	ICP Assay	3134	130418
Si	ICP Assay	3150	130912
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	3162a	130925

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{\text{CRM/RM}}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{\text{CRM/RM}} = \sum(w_i)(X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{\text{char } i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{\text{char } i}^2) / (\sum(1/u_{\text{char } i}^2))$$

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k(u_{\text{char}}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char}} = [\sum(w_i)^2(u_{\text{char } i}^2)]^{1/2}$ where $u_{\text{char } i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{\text{CRM/RM}}$, where one method of characterization is used is the mean of individual results:

$$X_{\text{CRM/RM}} = (X_a)(u_{\text{char } a})$$

X_a = mean of Assay Method A with

$u_{\text{char } a}$ = the standard uncertainty of characterization Method A

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k(u_{\text{char } a}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char } a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

HF Note: This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

November 02, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **November 02, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution	
Catalog Number:	CLPP-CAL-1	
Lot Number:	T2-MEB714417	
Matrix:	5% (v/v) HNO ₃	
Value / Analyte(s):	5 000 µg/mL ea:	Potassium, Sodium,
	Calcium, Magnesium,	
	2 000 µg/mL ea:	Barium,
	Aluminum,	
	1 000 µg/mL ea:	
	Iron,	
	500 µg/mL ea:	Vanadium, Cobalt,
	Nickel,	
	Zinc,	
	Manganese,	
	250 µg/mL ea:	Copper,
	Silver,	
	200 µg/mL ea:	
	Chromium,	
	50 µg/mL ea:	
	Beryllium	

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	2 000 ± 7 µg/mL	Barium, Ba	2 000 ± 9 µg/mL
Beryllium, Be	50.00 ± 0.26 µg/mL	Calcium, Ca	5 000 ± 22 µg/mL
Chromium, Cr	200.0 ± 1.0 µg/mL	Cobalt, Co	500.0 ± 2.4 µg/mL
Copper, Cu	250.0 ± 1.0 µg/mL	Iron, Fe	1 000 ± 4 µg/mL
Magnesium, Mg	5 000 ± 20 µg/mL	Manganese, Mn	500.0 ± 2.0 µg/mL
Nickel, Ni	500.0 ± 2.2 µg/mL	Potassium, K	5 000 ± 19 µg/mL
Silver, Ag	250.0 ± 1.1 µg/mL	Sodium, Na	5 000 ± 18 µg/mL
Vanadium, V	499.7 ± 2.2 µg/mL	Zinc, Zn	500.0 ± 2.2 µg/mL

Density: 1.118 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
Ba	ICP Assay	3104a	140909
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Be	Calculated		See Sec. 4.2
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Cr	ICP Assay	3112a	170630
Cr	Calculated		See Sec. 4.2
Cu	ICP Assay	3114	121207
Cu	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
V	IC Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{\text{CRM/RM}}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{\text{CRM/RM}} = \sum(w_i)(X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{\text{char } i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{\text{char } i}^2) / (\sum(1/u_{\text{char } i}^2))$$

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k (u_{\text{char}}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char}} = [\sum(w_i)^2 (u_{\text{char } i})^2]^{1/2}$ where $u_{\text{char } i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{\text{CRM/RM}}$, where one method of characterization is used is the mean of individual results:

$$X_{\text{CRM/RM}} = (X_a)(u_{\text{char } a})$$

X_a = mean of Assay Method A with

$u_{\text{char } a}$ = the standard uncertainty of characterization Method A

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k (u_{\text{char } a}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char } a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Note: This solution contains Silver (Ag), please refer to our Sample Preparation Guide for more information.

<https://www.inorganicventures.com/sample-preparation-guide/samples-containing-silver>

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 27, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- January 27, 2027

- The date after which this CRM/RM should not be used.
- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





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2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution
Catalog Number: CLPP-CAL-3
Lot Number: T2-MEB714159
Matrix: 7% (v/v) HNO₃
Value / Analyte(s):
1 000 µg/mL ea:
Arsenic, Lead,
Selenium, Thallium,
500 µg/mL ea:
Cadmium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Arsenic, As	1 000 ± 8 µg/mL	Cadmium, Cd	500.0 ± 2.1 µg/mL
Lead, Pb	1 000 ± 5 µg/mL	Selenium, Se	1 000 ± 8 µg/mL
Thallium, Tl	1 000 ± 7 µg/mL		

Density: 1.043 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
As	ICP Assay	3103a	100818
Cd	ICP Assay	3108	130116
Cd	EDTA	928	928
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	ICP Assay	3149	100901
Tl	ICP Assay	3158	151215

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{\text{CRM/RM}}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{\text{CRM/RM}} = \sum(w_i)(X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{\text{char } i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{\text{char } i}^2) / (\sum(1/u_{\text{char } i}^2))$$

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k(u_{\text{char}}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char}} = [\sum(w_i)^2(u_{\text{char } i}^2)]^{1/2}$ where $u_{\text{char } i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{\text{CRM/RM}}$, where one method of characterization is used is the mean of individual results:

$$X_{\text{CRM/RM}} = (X_a)(u_{\text{char } a})$$

X_a = mean of Assay Method A with

$u_{\text{char } a}$ = the standard uncertainty of characterization Method A

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k(u_{\text{char } a}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char } a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 13, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **January 13, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





CERTIFIED WEIGHT REPORT:

Part Number: 57182
Lot Number: 110923
Description: Lead (Pb)
Solvent: 24002546 Nitric Acid
Lot #

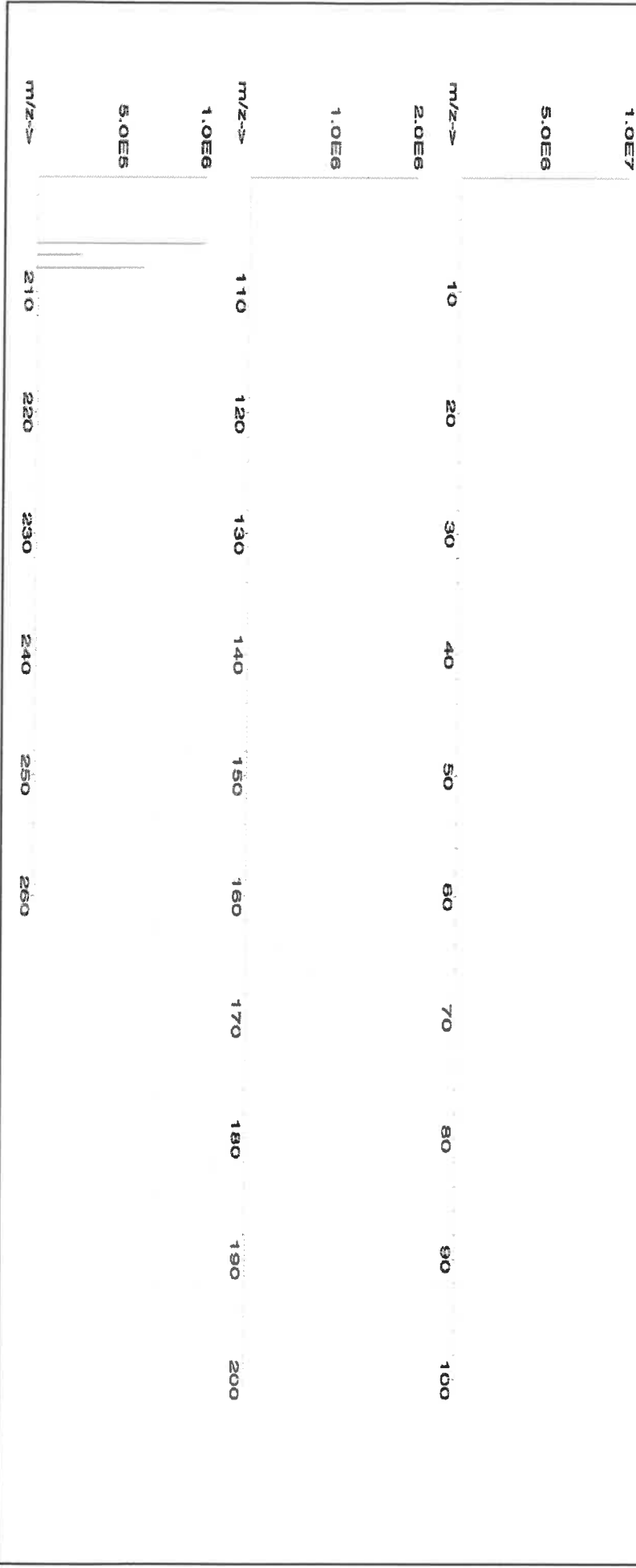
Expiration Date: 110926
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.02
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Formulated By:	Lawrence Barry
Reviewed By:	Pedro L. Rentas
110923	

Compound	SDS Information									
	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)

1. Lead(II) nitrate (Pb) IN029 PED12016A1 10000 99.999 0.10 62.5 32.0006 32.0040 10001.1 20.0 10099-74-8 0.05 mg/m3 Inverse rat 83 mg/kg 3128

[1] Spectrum No.1 [17.284 sec]:58182.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	T	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

Physical Characterization:

(T)= Target analyte

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



MC960 R: 10/08/21
Certified Reference Material CRM



CERTIFIED WEIGHT REPORT:

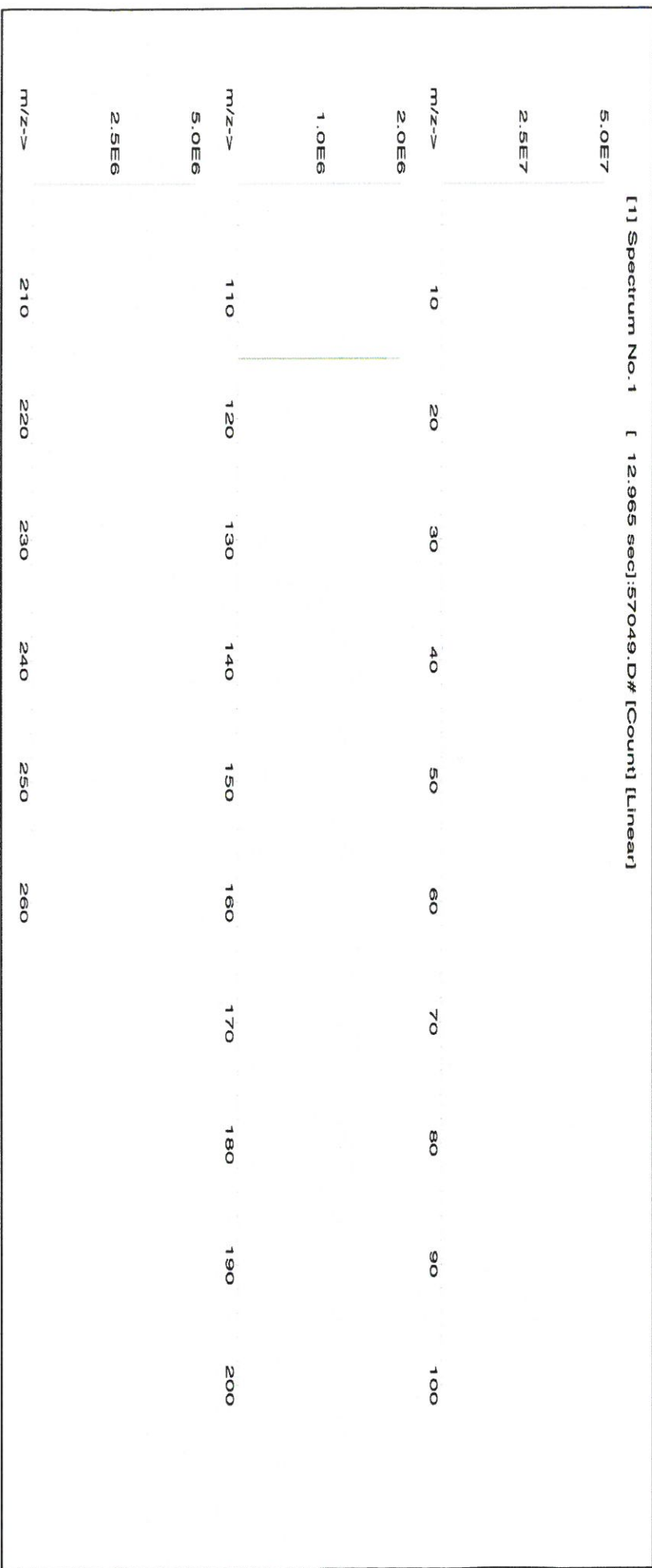
Part Number: 58149
Lot Number: 100721
Description: Indium (In)
Solvent: 20370011 Nitric Acid
Lot #

Expiration Date: 100724
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 500.06
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

<i>Giovanni Caporaso</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	<i>Pedro L. Rentas</i>
	100721

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty		CAS#	SDS Information		NIST SRM
										+/- (µg/mL)	(µg/mL)		(Solvent Safety Info. On Attached pg.)	LD50	

1. Indium Oxide (In) IN086 W1096A 10000 99.999 0.10 82.6 6.05408 6.05441 10000.6 20.1 1312-43-2 NA NA 3124a





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	T	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
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- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
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- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
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Instructions for QATS Reference Material: ICP-AES ICS

**QATS LABORATORY INORGANIC REFERENCE MATERIAL
INTERFERENCE CHECK SAMPLE SET FOR ICP-AES (ICSA WITH ICSB)**

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 Heavy Metals
HAZARDOUS MATERIAL

Safety Data Sheets
Available Upon Request

(A) SAMPLE DESCRIPTION

Enclosed is a set of one (1) or more bottles of Aqueous Reference Material, each composed of metals at various concentrations and prepared with nitrate salts and oxy-acids of the respective elements in a 5% nitric acid matrix. **For the reference material source in reporting ICSA and ICSAB mixture use "USEPA". For the reference material lot number for the ICSA use "ICSA-1211" and for the ICSAB mixture use "ICSA-1211+ICSB-0710".**

CAUTION: The bottle(s) should be protected from light during storage to ensure the stability of silver which is contained in the ICSB solution. The bottle(s) should be stored at room temperature. **Do not allow the solution(s) to freeze.**

(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 interference check sample set is to be used to verify inter-element and background correction factors of inductively-coupled plasma (ICP) spectrometers. This reference material set consists of two (2) concentrated solutions. The ICSA solution contains the four (4) interferent elements: Al, Ca, Fe, and Mg. The ICSB solution contains the analytes: Ag, As, Sb, Ba, Be,





Instructions for QATS Reference Material: ICP-AES ICS

Cd, Co, Cr, Cu, Mn, Ni, Pb, Tl, Se, V, and Zn. This instruction sheet provides the nominal values for ICP-AES Part A and Part B target analytes when diluted as directed.

Using Class "A" glassware, preparation and analysis must be performed according to the following instructions:

ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO₃. Analyze this ICSA solution by ICP-AES.

ICSB-0710, Analytes, mixed with ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution and 10 mL of the ICSB solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO₃. Analyze this ICSAB solution by ICP-AES.

(D) "CERTIFIED VALUE" CONCENTRATIONS OF QATS ICP-AES ICS SOLUTION(S)

The "Certified Value" concentrations of the elements, listed in Table 1 below, were derived from statistically pooled analysis results from the following sources, if available: QATS Laboratory, CLP laboratories, Quarterly Blind (QB)/Proficiency Testing (PT) events, CLP pre-award events, and external referee laboratories.

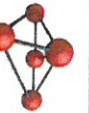
Table 1. "CERTIFIED VALUES" FOR INTERFERENCE CHECK SAMPLE ICP-AES ICSA-1211, AND ICSA-1211 MIXED WITH ICSB-0710

Element	CRQL	Part A (µg/L)	Low Limit (µg/L)	High Limit (µg/L)	Part A +Part B (µg/L)	Low Limit (µg/L)	High Limit (µg/L)
Al	200	255000	216000	294000	247000	209000	285000
Sb	60	(0.0)	-60.0	60.0	618	525	711
As	10	(0.0)	-10.0	10.0	104	88.4	120
Ba	200	(6.0)	-194	206	(537)	337	737
Be	5.0	(0.0)	-5.0	5.0	495	420	570
Cd	5.0	(1.0)	-4.0	6.0	972	826	1120
Ca	5000	245000	208000	282000	235000	199000	271000
Cr	10	(52.0)	42.0	62.0	542	460	624
Co	50	(0.0)	-50.0	50.0	476	404	548
Cu	25	(2.0)	-23.0	27.0	511	434	588
Fe	100	101000	85600	116500	99300	84400	114500
Pb	10	(0.0)	-10.0	10.0	(49.0)	39.0	59.0
Mg	5000	255000	216000	294000	248000	210000	286000
Mn	15	(7.0)	-8.0	22.0	507	430	584
Ni	40	(2.0)	-38.0	42.0	954	810	1100
Se	35	(0.0)	-35.0	35.0	(46.0)	11.0	81.0
Ag	10	(0.0)	-10.0	10.0	201	170	232
Tl	25	(0.0)	-25.0	25.0	(108)	83.0	133
V	50	(0.0)	-50.0	50.0	491	417	565
Zn	60	(0.0)	-60.0	60.0	952	809	1095

The acceptance ranges for all analytes in parentheses in the above table were determined using the listed certified value ± 1 times the associated CLP SOW CRQL. The acceptance ranges for all other analytes were determined using the certified value ± 15 percent of the listed certified value.

ICSA
M5126
M5127
M5128
M5129
M5130

ICSB
M5219
M5220
M5221
M5222
M5223



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57042
051722
Molybdenum (Mo)

Lot # **Solvent:**
MKB08597V Ammonium hydroxide

0.5% **15.0** **Ammonium hydroxide**
(mL)

Expiration Date: 051725

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6UTB

Volume shown below was diluted to (mL): 3000.41

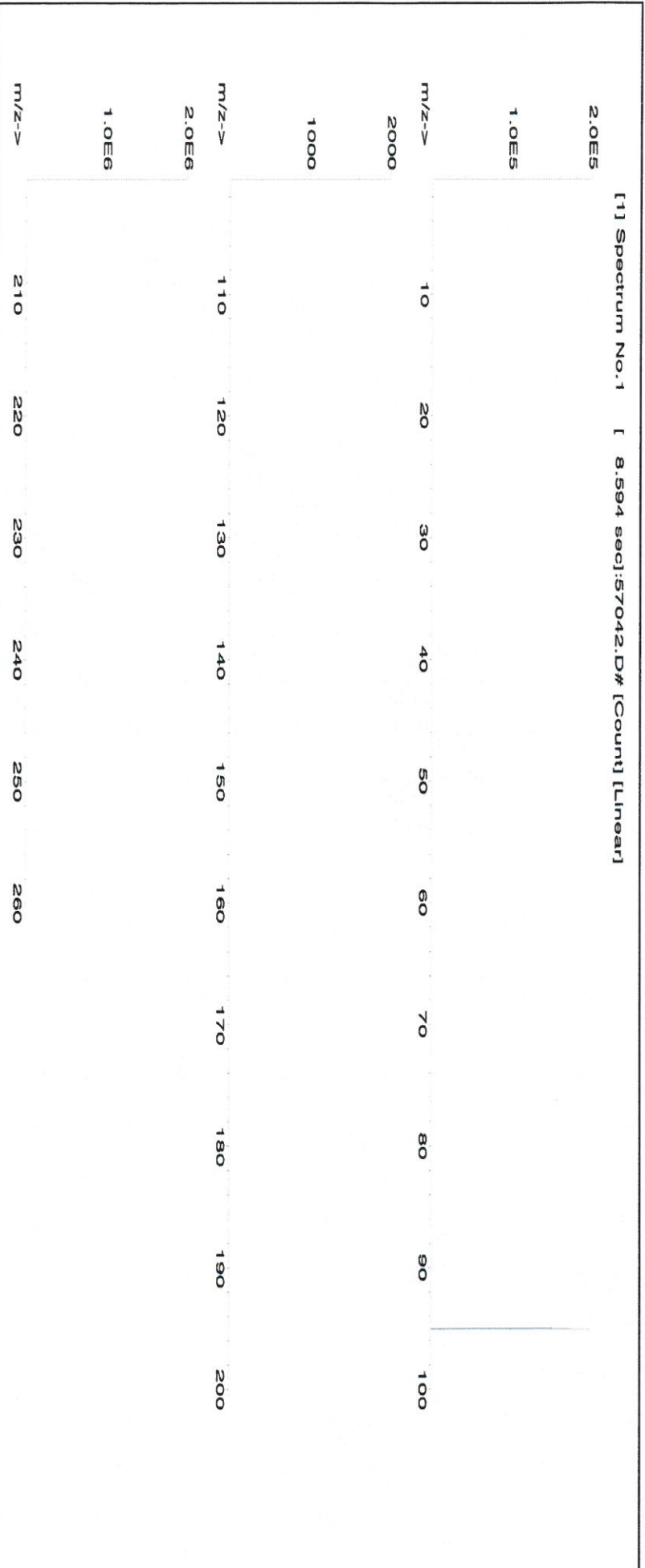
5E-05 **Balance Uncertainty**
0.058 **Flask Uncertainty**

Formulated By:	Lawrence Barry
	051722
Reviewed By:	Pedro L. Ruelas
	051722

SDS Information

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	(Solvent Safety Info. On Attached pg.)	NIST SRM
----------	-------------	------------	-----------------	-------------------	--------------------------	-----------------------	-----------------------	---------------------	----------------------------------	--	----------

1. Ammonium molybdate (Mo) 58142 022222 0.1000 300.0 0.084 1000 10001.0 1000.0 2.1 13106-76-8 5 mg(Mo)/m3 or-rat 333 mg/kg 3134





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	T	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

Certificate of Analysis

300 Technology Drive
 Christiansburg, VA 24073 USA
 inorganicventures.com

P: 800-669-6799/540-585-3030
 F: 540-585-3012
 info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution
 Catalog Number: CHEM-QC-4
 Lot Number: S2-MEB711674
 Matrix: 3% (v/v) HNO₃
 3% (v/v) HF
 Value / Analyte(s): 1 000 µg/mL ea:
 Boron, Molybdenum,
 Silicon, Tin,
 Titanium

Second Source: Whenever possible, this solution was manufactured from a second set of concentrates in our manufacturing facility.

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Boron, B	1 000 ± 7 µg/mL	Molybdenum, Mo	1 000 ± 5 µg/mL
Silicon, Si	1 000 ± 7 µg/mL	Tin, Sn	1 000 ± 5 µg/mL
Titanium, Ti	1 001 ± 6 µg/mL		

Density: 1.032 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
B	ICP Assay	3107	110830
Mo	ICP Assay	3134	130418
Si	ICP Assay	3150	130912
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	3162a	130925

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{\text{CRM/RM}}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{\text{CRM/RM}} = \sum(w_i)(X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{\text{char } i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{\text{char } i}^2) / (\sum(1/u_{\text{char } i}^2))$$

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k (u_{\text{char}}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char}} = [\sum(w_i)^2 (u_{\text{char } i}^2)]^{1/2}$ where $u_{\text{char } i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{\text{CRM/RM}}$, where one method of characterization is used is the mean of individual results:

$$X_{\text{CRM/RM}} = (X_a)(u_{\text{char } a})$$

X_a = mean of Assay Method A with

$u_{\text{char } a}$ = the standard uncertainty of characterization Method A

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k (u_{\text{char } a}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char } a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

HF Note: This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

November 02, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **November 02, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





Instructions for QATS Reference Material: ICP-AES ICS

**QATS LABORATORY INORGANIC REFERENCE MATERIAL
INTERFERENCE CHECK SAMPLE SET FOR ICP-AES (ICSA WITH ICSB)**

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 Heavy Metals
HAZARDOUS MATERIAL

Safety Data Sheets
Available Upon Request

(A) SAMPLE DESCRIPTION

Enclosed is a set of one (1) or more bottles of Aqueous Reference Material, each composed of metals at various concentrations and prepared with nitrate salts and oxy-acids of the respective elements in a 5% nitric acid matrix. **For the reference material source in reporting ICSA and ICSAB mixture use "USEPA". For the reference material lot number for the ICSA use "ICSA-1211" and for the ICSAB mixture use "ICSA-1211+ICSB-0710".**

CAUTION: The bottle(s) should be protected from light during storage to ensure the stability of silver which is contained in the ICSB solution. The bottle(s) should be stored at room temperature. **Do not allow the solution(s) to freeze.**

(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 interference check sample set is to be used to verify inter-element and background correction factors of inductively-coupled plasma (ICP) spectrometers. This reference material set consists of two (2) concentrated solutions. The ICSA solution contains the four (4) interferent elements: Al, Ca, Fe, and Mg. The ICSB solution contains the analytes: Ag, As, Sb, Ba, Be,





Instructions for QATS Reference Material: ICP-AES ICS

Cd, Co, Cr, Cu, Mn, Ni, Pb, Tl, Se, V, and Zn. This instruction sheet provides the nominal values for ICP-AES Part A and Part B target analytes when diluted as directed.

Using Class "A" glassware, preparation and analysis must be performed according to the following instructions:

ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO₃. Analyze this ICSA solution by ICP-AES.

ICSB-0710, Analytes, mixed with ICSA-1211, Interferents: Pipet 10 mL of the ICSA solution and 10 mL of the ICSB solution into a 100 mL volumetric flask and dilute to volume with 2% v/v HNO₃. Analyze this ICSAB solution by ICP-AES.

(D) "CERTIFIED VALUE" CONCENTRATIONS OF QATS ICP-AES ICS SOLUTION(S)

The "Certified Value" concentrations of the elements, listed in Table 1 below, were derived from statistically pooled analysis results from the following sources, if available: QATS Laboratory, CLP laboratories, Quarterly Blind (QB)/Proficiency Testing (PT) events, CLP pre-award events, and external referee laboratories.

Table 1. "CERTIFIED VALUES" FOR INTERFERENCE CHECK SAMPLE ICP-AES ICSA-1211, AND ICSA-1211 MIXED WITH ICSB-0710

Element	CRQL	Part A (µg/L)	Low Limit (µg/L)	High Limit (µg/L)	Part A +Part B (µg/L)	Low Limit (µg/L)	High Limit (µg/L)
Al	200	255000	216000	294000	247000	209000	285000
Sb	60	(0.0)	-60.0	60.0	618	525	711
As	10	(0.0)	-10.0	10.0	104	88.4	120
Ba	200	(6.0)	-194	206	(537)	337	737
Be	5.0	(0.0)	-5.0	5.0	495	420	570
Cd	5.0	(1.0)	-4.0	6.0	972	826	1120
Ca	5000	245000	208000	282000	235000	199000	271000
Cr	10	(52.0)	42.0	62.0	542	460	624
Co	50	(0.0)	-50.0	50.0	476	404	548
Cu	25	(2.0)	-23.0	27.0	511	434	588
Fe	100	101000	85600	116500	99300	84400	114500
Pb	10	(0.0)	-10.0	10.0	(49.0)	39.0	59.0
Mg	5000	255000	216000	294000	248000	210000	286000
Mn	15	(7.0)	-8.0	22.0	507	430	584
Ni	40	(2.0)	-38.0	42.0	954	810	1100
Se	35	(0.0)	-35.0	35.0	(46.0)	11.0	81.0
Ag	10	(0.0)	-10.0	10.0	201	170	232
Tl	25	(0.0)	-25.0	25.0	(108)	83.0	133
V	50	(0.0)	-50.0	50.0	491	417	565
Zn	60	(0.0)	-60.0	60.0	952	809	1095

The acceptance ranges for all analytes in parentheses in the above table were determined using the listed certified value ± 1 times the associated CLP SOW CRQL. The acceptance ranges for all other analytes were determined using the certified value ± 15 percent of the listed certified value.

ICSA
M5126
M5127
M5128
M5129
M5130

ICSB
M5219
M5220
M5221
M5222
M5223



CERTIFIED WEIGHT REPORT:

Part Number: **58119**
Lot Number: **071122**
Description: **Potassium (K)**

Solvent: 20510011 Nitric Acid

Expiration Date: 071125
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): **10000**
NIST Test Number: 6UTB

2% 40.0 (mL) Nitric Acid

Weight shown below was diluted to (mL): 2000.02
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Formulated By:	Lawrence Barry
	071122
Reviewed By:	Pedro L. Rentas
	071122

Compound

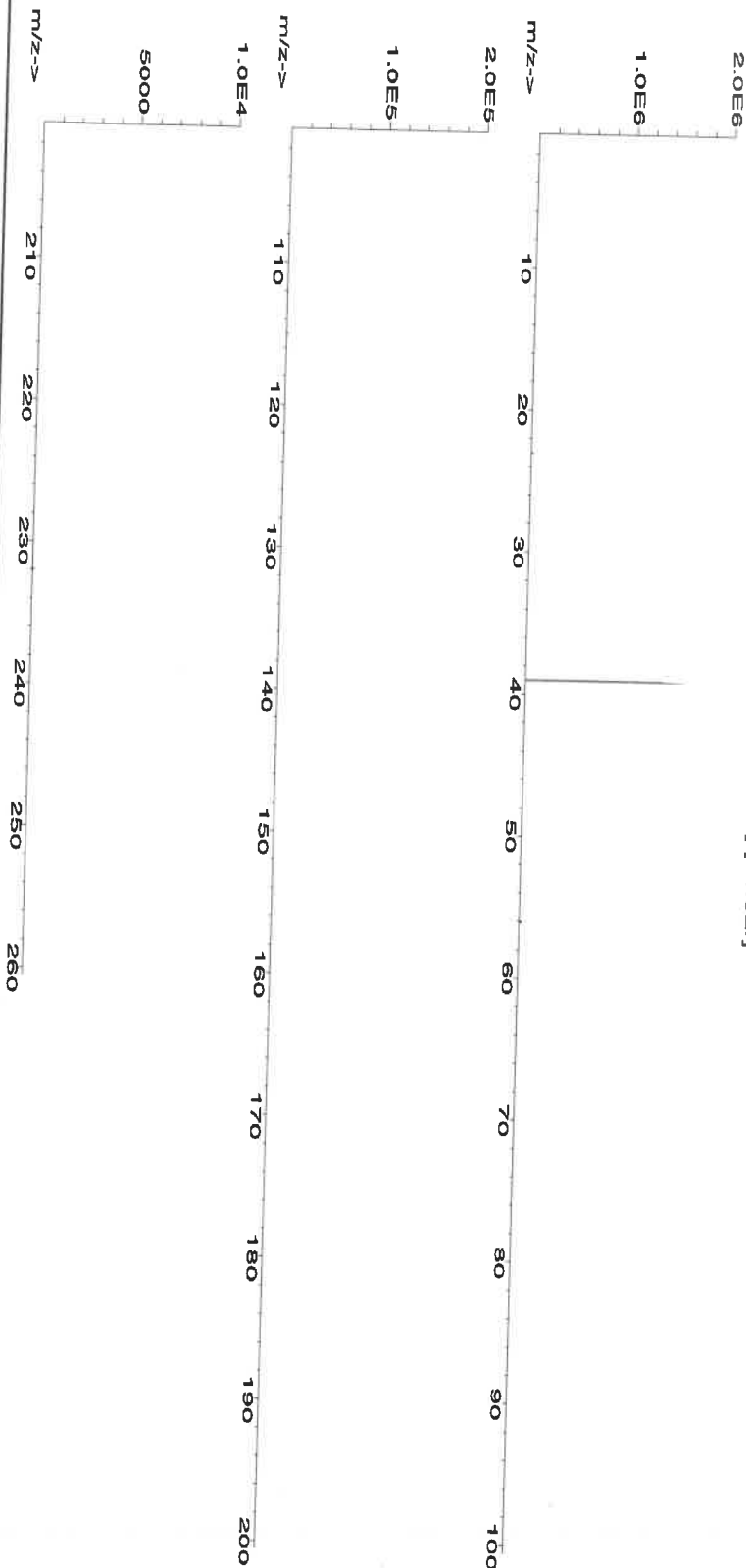
1. Potassium nitrate (K)

RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
IN034	KD022021A1	10000	99.999	0.10	37.6	53.1925	53.1934	10000.2	20.0	7757-79-1	5 mg/m3	or-rat 3015 mg/kg	3141a

SDS Information

(Solvent Safety Info. On Attached pg.)
NIST SRM

[1] Spectrum No. 1 [35.763 sec]:58119.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.02	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



M5289 R: 07/12/22
Certified Reference Material CRM

34



ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT:

Part Number: 58113
Lot Number: 070622
Description: Aluminum (Al)

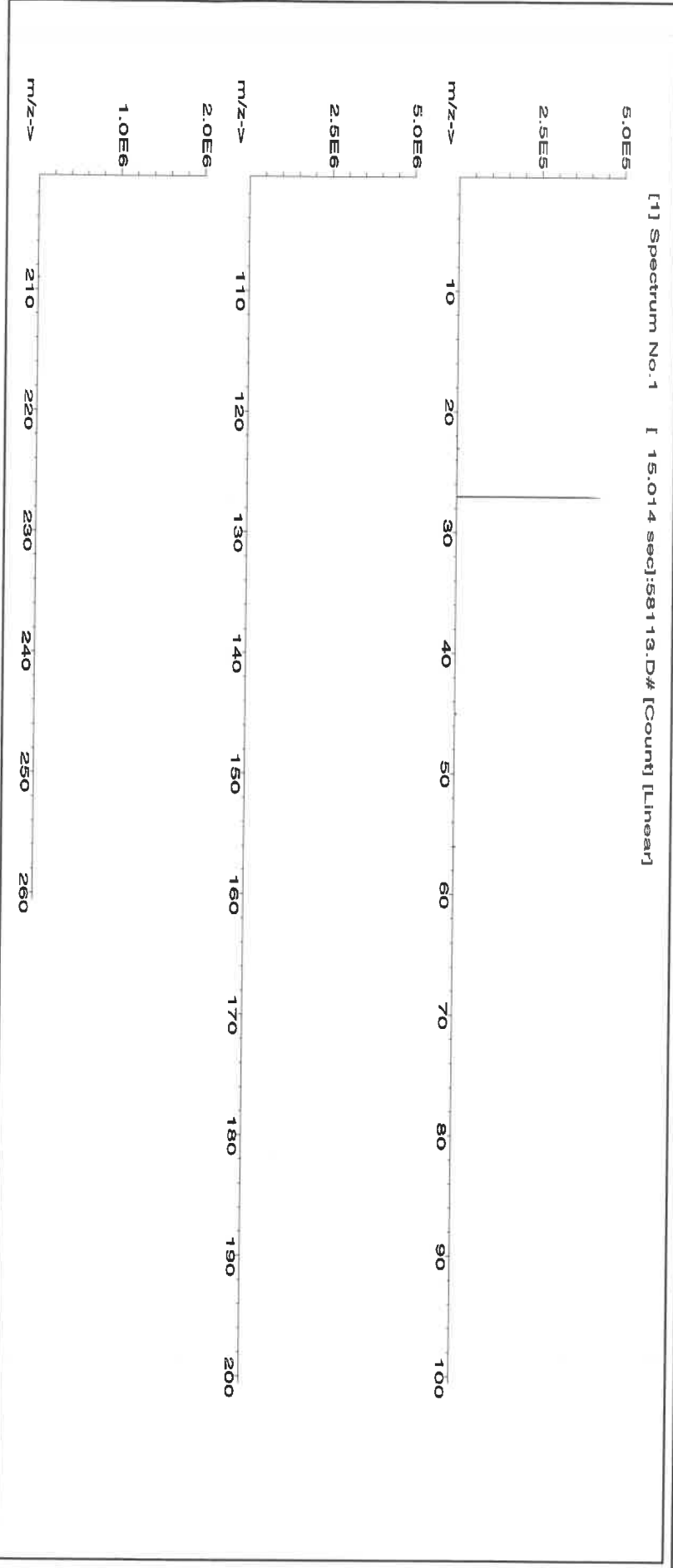
Lot #
Solvent: 20370011 Nitric Acid

Expiration Date: 070625
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.02
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Formulated By:	Lawrence Barry
070622	
Reviewed By:	Pedro L. Renteria
070622	

SDS Information													
Compound	Expanded												
	Lot		Nominal	Purity	Uncertainty	Assay	Target	Actual	Actual	Uncertainty	(Solvent Safety Info. On Attached pg.)		
	RM#	Number	Conc. (µg/mL)	(%)	Purity (%)	(%)	Weight (g)	Weight (g)	Conc. (µg/mL)	+/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50

1. Aluminum nitrate nonahydrate (Al) IN022 ALD012021A1 10000 99.999 0.10 7.10 281.6956 281.6977 10000.1 20.0 7784-27-2 2 mg/m3 or-tal 3671 mg/kg 3101a





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	T	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Ru	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Sr	<0.02	S	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	Ta	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



R: 4/20/21

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

M5291
M15292
M15293
M15294
M15295

(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.





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

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 ⁻	99



R-09/18/22 **(RTH)**

Certified Reference Material CRM

CERTIFIED WEIGHT REPORT:

Part Number: **57056**
Lot Number: **072122**
Description: **Barium (Ba)**

Solvent: **20510011 Nitric Acid**

Lot #

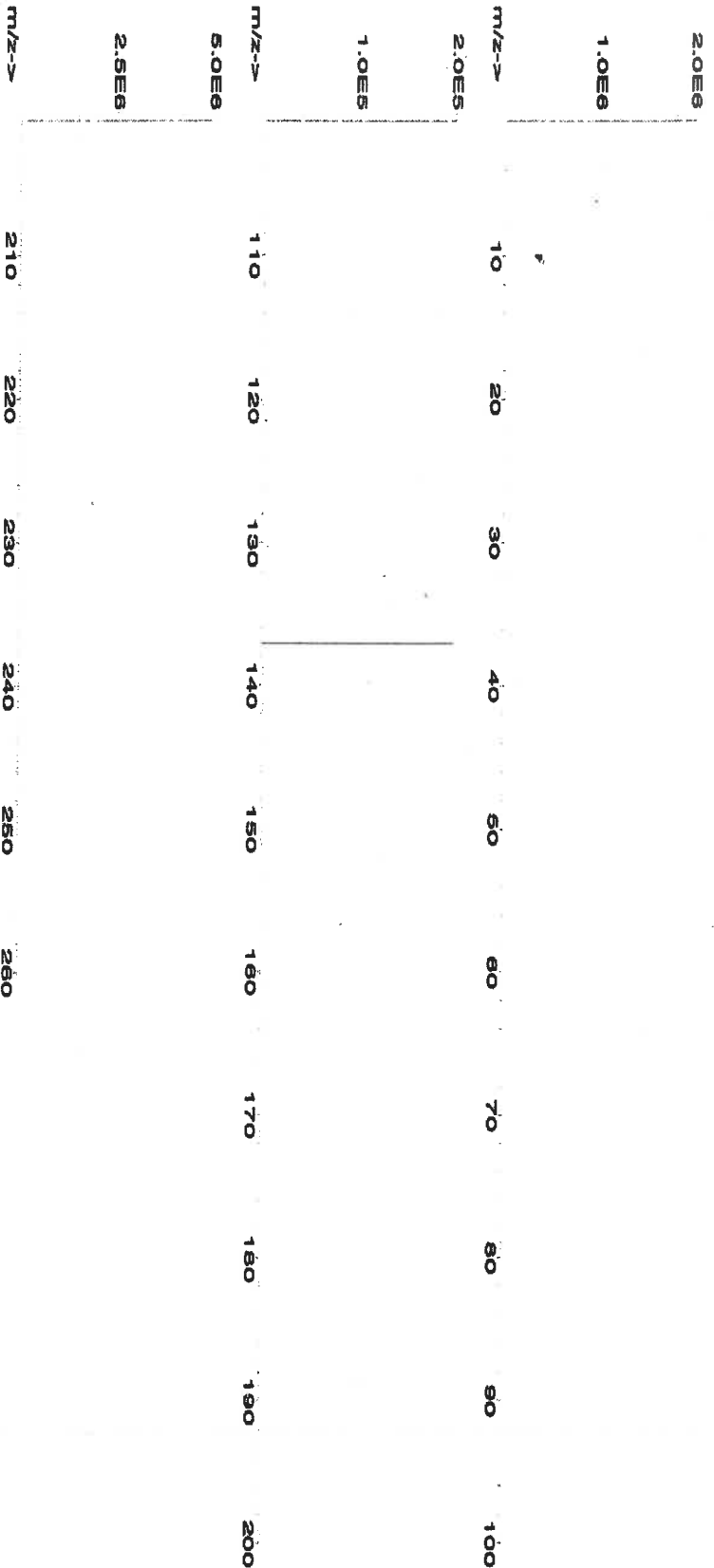
Expiration Date: **072125**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**
NIST Test Number: **6UTB**
Weight shown below was diluted to (mL): **2000.02**
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

2% **40.0** **Nitric Acid**
(mL)

<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	<i>Pedro L. Rentes</i>
	072122

SDS Information									
Compound	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	NIST SRM
1. Barium nitrate (Ba)	IN023 BA022019A1	1000	99.899	0.10	52.3	3.82417	3.82426	1000.0	2.0
									1002-31-8
									0.5 mg/m3
									or 1st 355 mg/kg
									31046

[1] Spectrum No. 1 [12.514 sec]:58156.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.02	Tb	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.02	Os	<0.01	Rh	<0.02	Ag	<0.02	Tl	<0.02
Ba	T	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.02	Th	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.02	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02
																W	<0.02
																U	<0.02
																V	<0.02
																Yb	<0.02
																Y	<0.02
																Zn	<0.02
																Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



Certified Reference Material CRM

M5429 R1 0126/23 (B)

CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57103
070622
Lithium (Li)

Solvent: 20510011 Nitric Acid

Expiration Date:
Recommended Storage:
Nominal Concentration (µg/mL):
NIST Test Number:

070625
Ambient (20 °C)
10000
6UTB

2% 20.0 (mL)

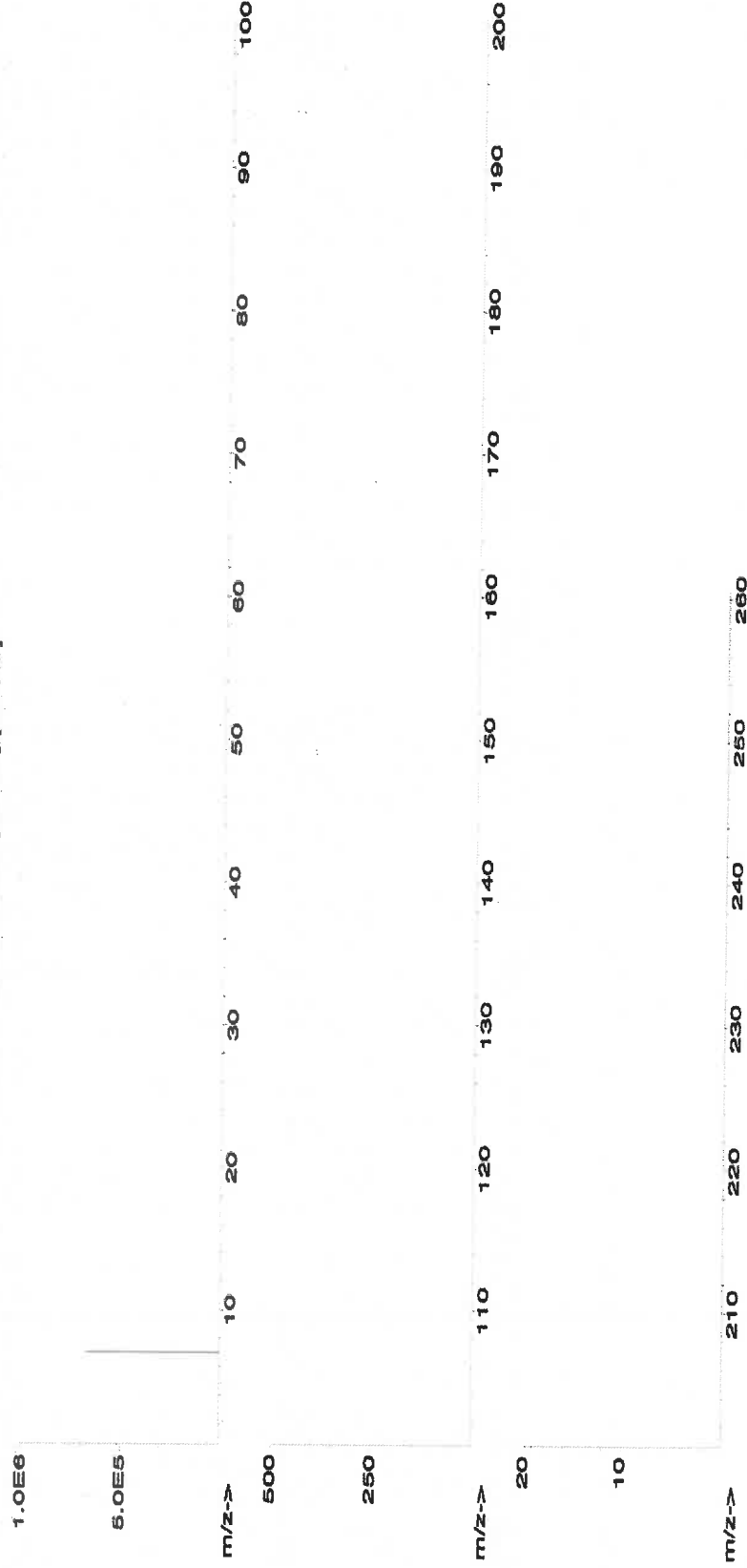
Weight shown below was diluted to (mL): 1000.12
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Lawrence Barry
Formulated By: Lawrence Barry 070622
Pedro L. Rentas
Reviewed By: Pedro L. Rentas 070622

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information		
											(Solvent Safety Info. On Attached pg.)	CAS#	NIST SRM

1. Lithium nitrate (Li)	IN019	L2042019A1	10000	99.999	0.10	10.0	100.0134	100.0173	10000.4	20.0	7790-69-4	5 mg/m3	of-rat 1426 mg/kg NA
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[1] Spectrum No.1 [9.619 sec]:58103.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.02	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.2	Ho	<0.02	La	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.02	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.02	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57058
020623
Cerium (Ce)

Expiration Date:
Recommended Storage:
Nominal Concentration (µg/mL):
NIST Test Number:

020626
Ambient (20 °C)
1000
6UTB

Weight shown below was diluted to (mL):

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Solvent: Nitric Acid

2% 20.0 (mL)

Lot #

21110221

Nitric Acid

Formulated By:

Lawrence Barry

020623

Reviewed By:

Pedro L. Rentas

020623

SDS Information

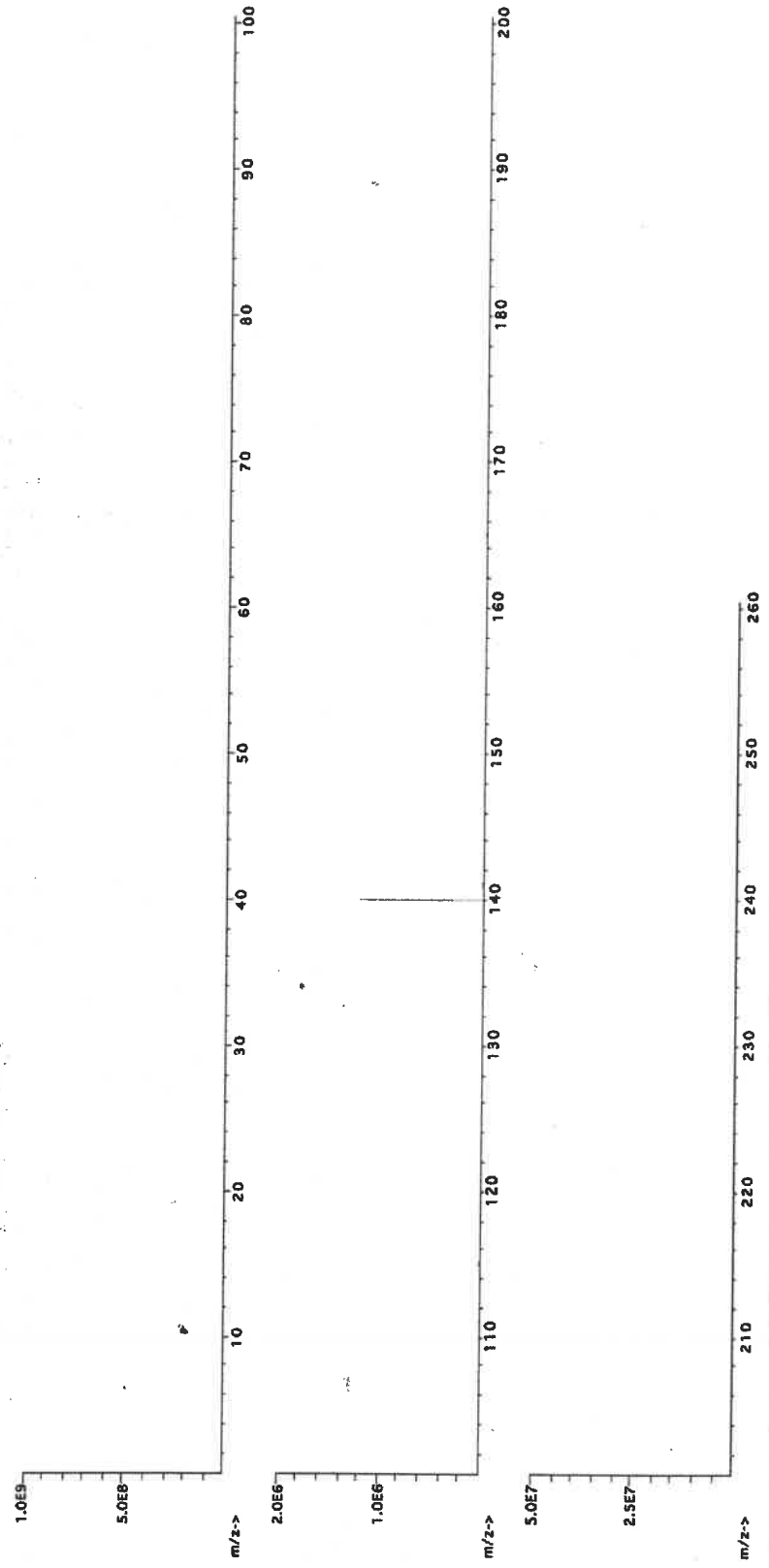
Expanded Uncertainty
Actual Conc. (µg/mL)
Actual Weight (g)
Target Weight (g)
Purity (%)
Nominal Conc. (µg/mL)
Lot Number
RM#

2.0
1000.0
3.04921
3.04919
32.8
0.10
99.999
1000
IN146 Z512CEB1

OSHA PEL (TWA)
CAS#
LD50
NA
NA
NA

1. Cerium nitrate hexahydrate (Ce)

[1] Spectrum No.1 [43.472 sec]58158.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	La	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Tc	<0.02	U	<0.02
As	<0.2	Ce	T	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.02	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

58120
031523
Calcium (Ca)

Solvent: 21110221 Nitric Acid

Expiration Date:
Recommended Storage:
Nominal Concentration (µg/mL):
NIST Test Number:

031526
Ambient (20 °C)
10000
6UTB
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

2% 60.0 Nitric Acid (mL)

Weight shown below was diluted to (mL): 3000.41

<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito 031523
<i>Pedro L. Rentas</i>	
Reviewed By:	Pedro L. Rentas 031523

SDS Information

(Solvent Safety Info. On Attached pg.)
LD50 OSHA PEL (TWA) CAS#

Expanded Uncertainty

Actual Conc. (µg/mL)

Actual Weight (g)

Target Weight (g)

Assay (%)

Purity (%)

Nominal Conc. (µg/mL)

Lot Number

RM#

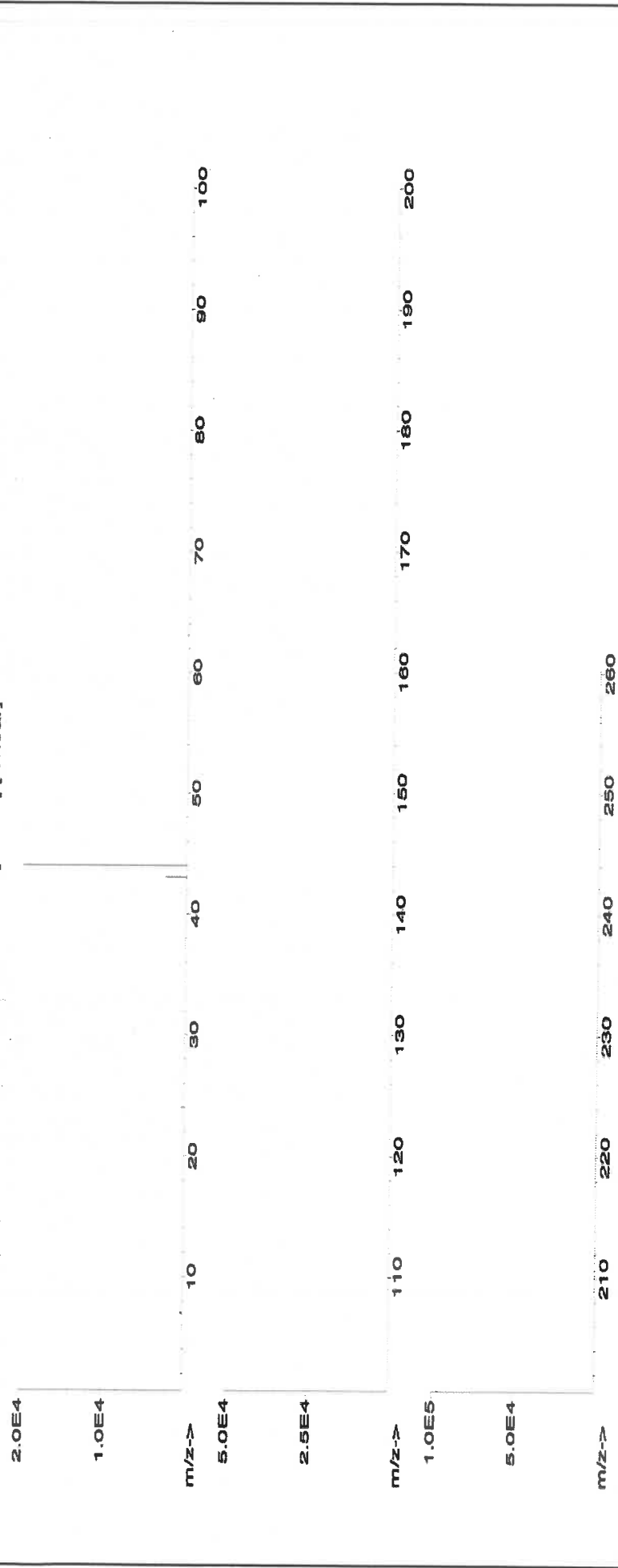
Compound

Expanded Uncertainty

NIST SRM

1. Calcium carbonate (Ca)	IN014 CAD072022A1	10000	99.999	0.10	39.9	75.1990	75.2093	10001.4	20.0	471-34-1	5 mg/m3	or-rat >2000mg/kg 3109a
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[1] Spectrum No.1 [12.514 sec]:58120.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.02	Er	T	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Ba	<0.02	In	<0.02	Mg	<0.02	Os	<0.01	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.02	Hg	<0.2	P	<0.2	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

Ben. P. Davis

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
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- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57182
061522
Lead (Pb)

Expiration Date:
Recommended Storage:
Nominal Concentration (µg/mL):
NIST Test Number:

061525
Ambient (20 °C)
10000
6UTB

Weight shown below was diluted to (mL):

2000.02

5E-05 Balance Uncertainty

0.058 Flask Uncertainty

Solvent: Nitric Acid

2% Nitric Acid
40.0 (mL)

Lot #

20510011

Nitric Acid

Formulated By:

Giovanni Esposito

Reviewed By:

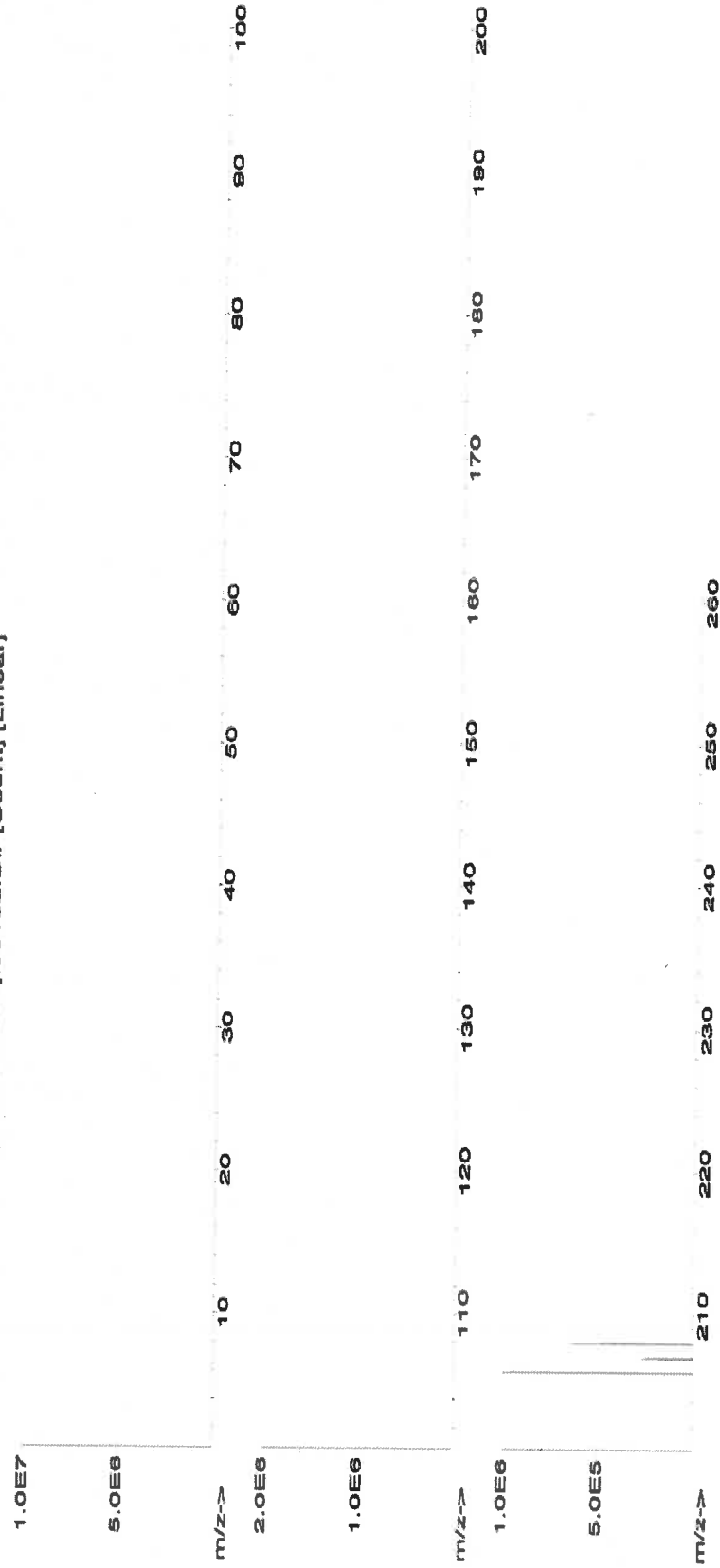
Pedro L. Rentas

061522

061522

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.)	NIST SRM
1. Lead(II) nitrate (Pb)	IN029	PBD12201641	10000	99.999	0.10	82.5	32.0006	32.0041	10001.1	20.0	10098-74-8 0.05 mg/m3 inh-via-rat 88 mg/kg	3128

[1] Spectrum No. 1 [17.284 sec]:58182.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.2	Fe	<0.02	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pr	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

58126
092122
Iron (Fe)

Expiration Date:
Recommended Storage:
Nominal Concentration (µg/mL):
NIST Test Number:

092125
Ambient (20 °C)
10000
6UTB

Weight shown below was diluted to (mL):

5000.1

Solvent: 20510011 Nitric Acid

7.0% 350.0 Nitric Acid (mL)

5E-05 Balance Uncertainty
0.12 Flask Uncertainty

<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito 092122
<i>Pedro L. Rentas</i>	
Reviewed By:	Pedro L. Rentas 092122

SDS Information

(Solvent Safety Info. On Attached pg.)
LD50 OSHA PEL (TWA)

NIST SRM

Expanded Uncertainty
+/- (µg/mL)

Actual Weight (g)
Actual Conc. (µg/mL)

Target Weight (g)

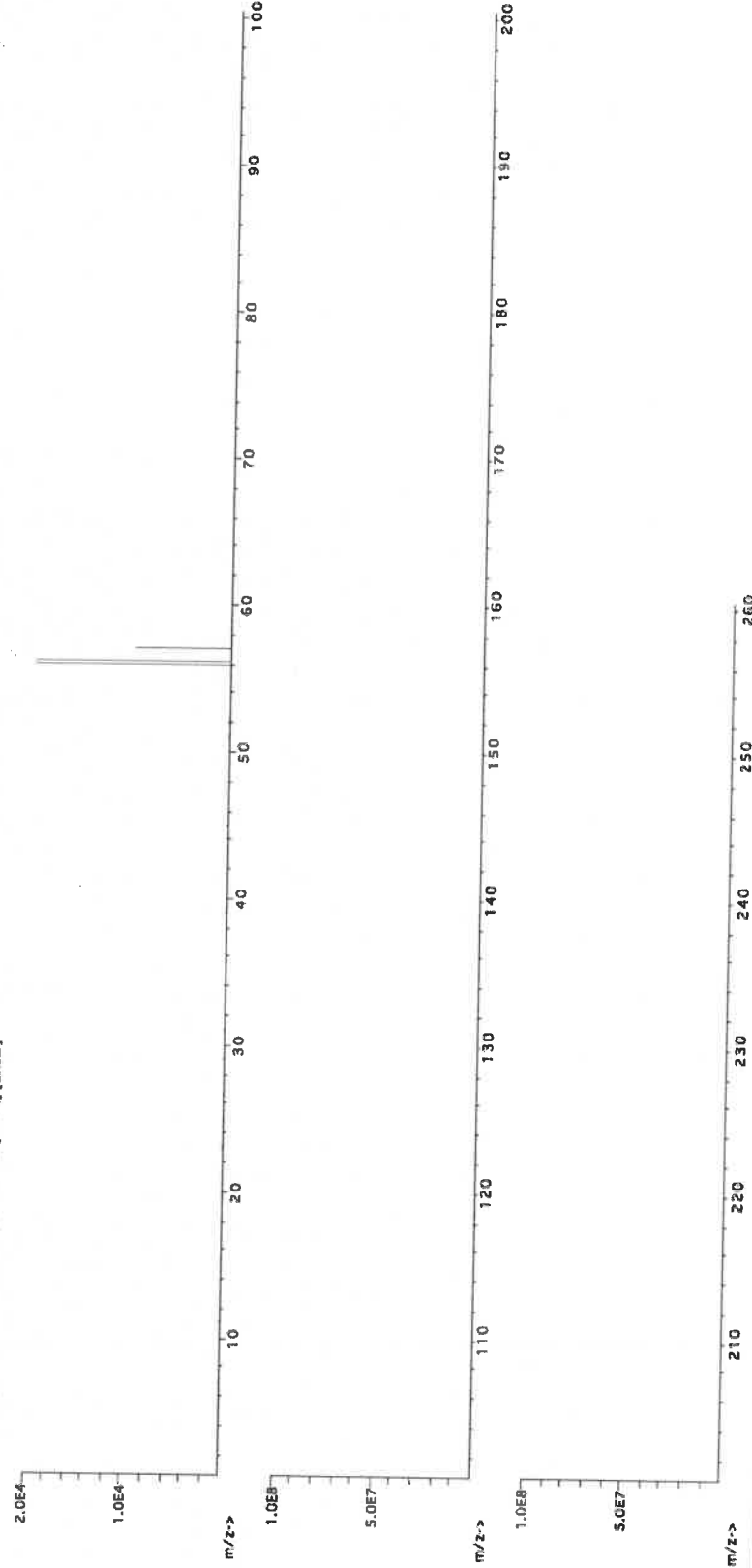
Assay Purity (%)
Purity (%)

Nominal Conc. (µg/mL)

Lot Number RM#

1. Iron (Fe)	IN346	2224912-500	10000	99.985	0.10	100.0	50.0034	50.0111	10001.5	20.0	7439-88-6	5 mg/m3	orl-rat 7500mg/kg 3126a
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[1] Spectrum No.1 [30.763 sec]:58126.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.10	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	La	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.02	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.05	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.10	Ge	<0.10	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.05
B	<0.02	Cu	<0.10	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

Ben P. Galt

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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Certified Reference Material CRM

CERTIFIED WEIGHT REPORT:

Part Number: **58119**
Lot Number: **120822**
Description: **Potassium (K)**

Solvent: 20510011 Nitric Acid

Lot #

Expiration Date: 120825
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB

2% 60.0 (mL) Nitric Acid

Weight shown below was diluted to (mL): 3000.4

5E-05 Balance Uncertainty
0.06 Flask Uncertainty

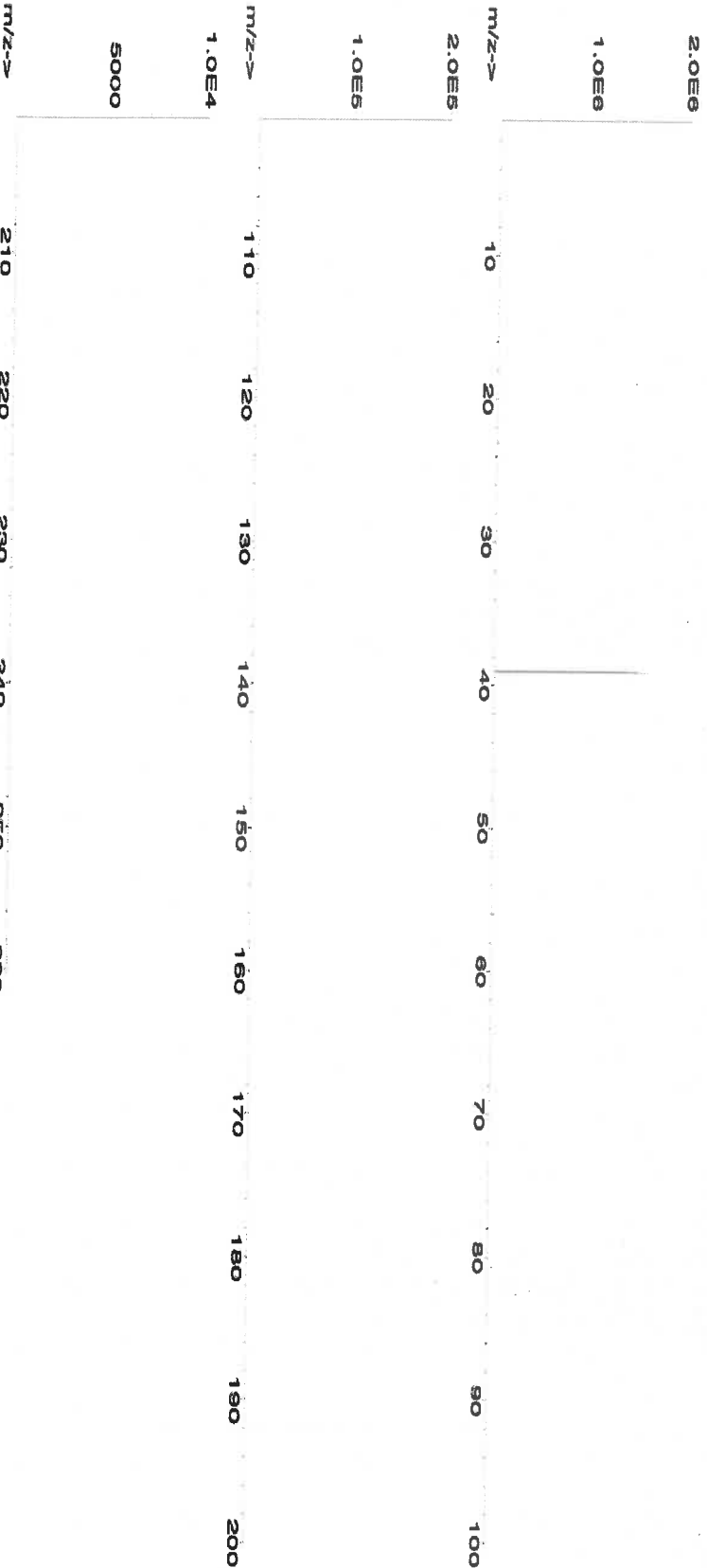
<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	<i>Pedro L. Renteria</i>
	120822

Compound

Lot	Nominal	Purity	Uncertainty	Assay	Target	Actual	Actual	Expanded	SDS Information	NIST
RM#	Number	Conc. (µg/mL)	(%)	Purity (%)	(%)	Weight (g)	Weight (g)	Conc. (µg/mL)	Uncertainty	(Solvent Safety Info. On Attached pg.)
								+/- (µg/mL)	CAS#	OSHA PEL (TWA)
										LD50

1. Potassium nitrate (K) IN034 KD022021A1 10000 99.989 0.10 37.6 79.7990 79.8075 10001.1 20.0 7757-79-1 5 mg/m3 crtat 3015 mg/kg 3141a

[1] Spectrum No.1 [35.763 sec]:58119.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.02	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

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- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

CORCO CHEMICAL CORPORATION

Manufacturers of ACS Reagents and Semiconductor Grade Chemicals

CERTIFICATE OF ANALYSIS

Date: 8/3/2022

MS631 MS632 MS633 MS634

Lot No 820803

Hydrogen Peroxide, ACS
Reagent Grade

<u>TEST</u>	<u>MAXIMUM LIMITS</u>	<u>RESULT</u>
Appearance	Colorless and free from suspended matter or sediment	Pass
Assay	29-32%	31.4%
Color (APHA)	10	5
Residue after Evaporation	0.002%	.0001%
Titrateable Acid	0.0006 meq/g	< .0006 meq/g
Chloride (Cl)	2 ppm	< 1 ppm
Nitrate (NO ₃)	2 ppm	< 1 ppm
Phosphate	2 ppm	< 1 ppm
Sulfate (SO ₄)	5 ppm	< .5 ppm
Ammonium (NH ₄)	5 ppm	< 1 ppm
Heavy Metals (as Pb)	1 ppm	< .1 ppm
Iron (Fe)	0.5 ppm	< .1 ppm
Sodium Stannate	200 – 300 ppb	Pass

***Our Hydrogen Peroxide is considered un-stabilized because it is very slightly stabilized with Sodium Stannate, 500 ppb maximum, just for safety purposes.

Date of MFG: 8/2022

Retest date: 8/2024

Gina M. Rambo
Office Manager



CERTIFIED WEIGHT REPORT:

Part Number: 58024
Lot Number: 060523
Description: Chromium (Cr)

Lot #
21110221
Solvent: Nitric Acid

Expiration Date: 060526
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Volume shown below was diluted to (mL): 2000.02
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

2.0% 40.0 (mL) Nitric Acid

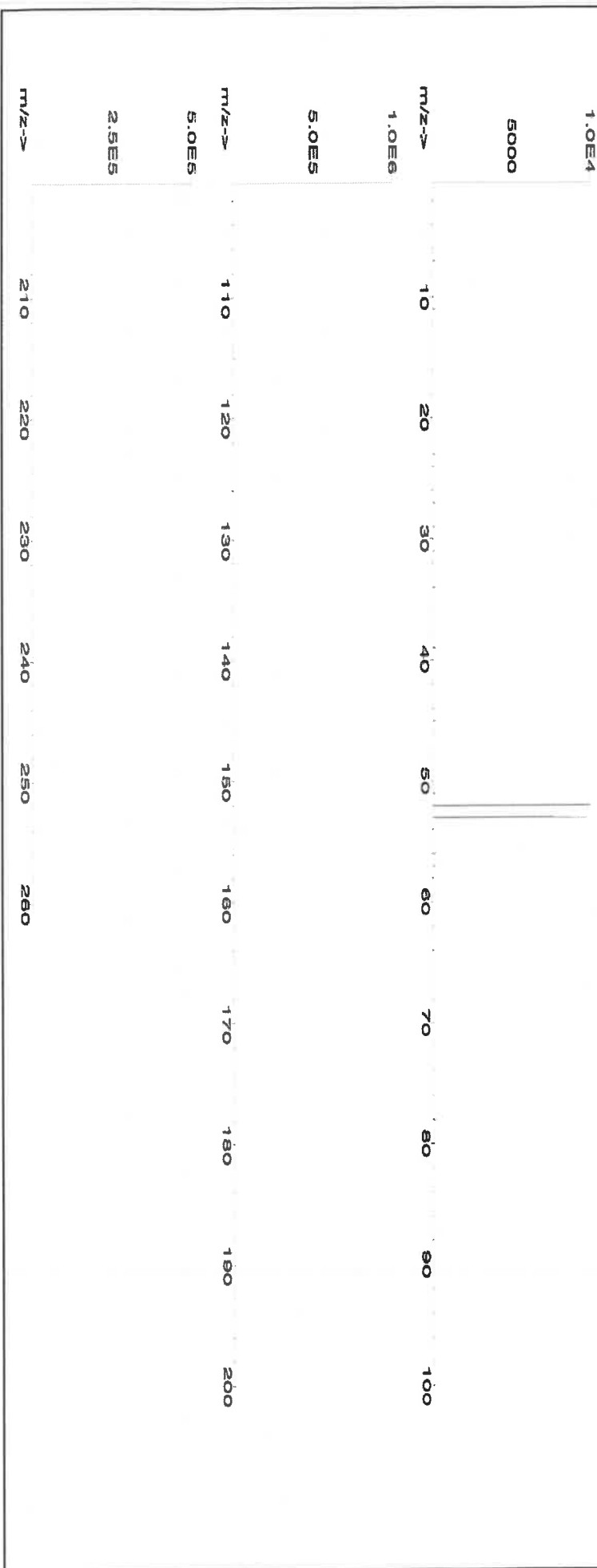
Formulated By:	Lawrence Barry
	060523
Reviewed By:	Pedro L. Renteria
	060523

SDS Information

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Chromium(III) nitrate nonahydrate (Cr) 58124 071122 0.1000 200.0 0.084 1000 10000.1 1000.0 2.2 7789-02-8 0.5 mg(Cr)/m3 or rat 3250 mg/kg 3112a

[1] Spectrum No.1 [31.393 sec]:57024.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	T	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: 58029
Lot Number: 102523
Description: Copper (Cu)

Lot # 24002546
Solvent: Nitric Acid

Expiration Date: 102526

2.0%

40.0 (mL)

Nitric Acid

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 1000

NIST Test Number: 6UTB

5E-05 Balance Uncertainty

Volume shown below was diluted to (mL): 2000.02

0.058 Flask Uncertainty

Formulated By: *[Signature]*
Benson Chan 102523

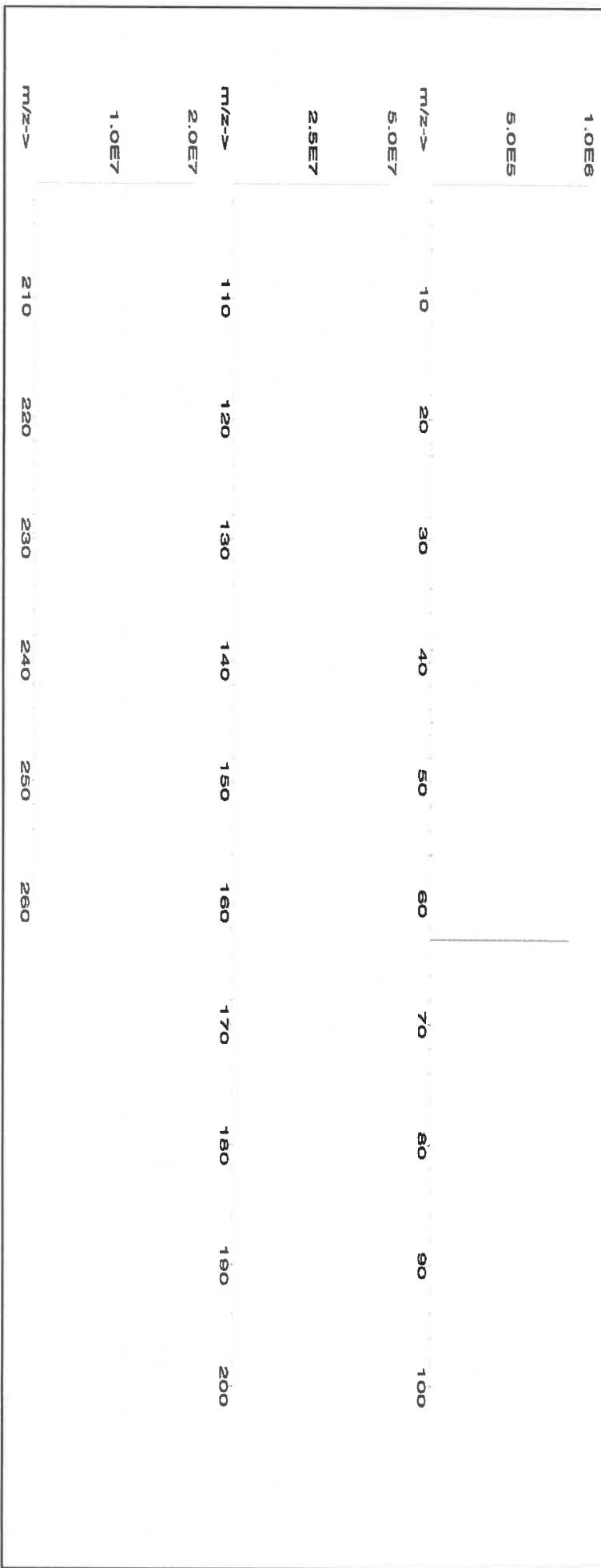
Reviewed By: *[Signature]*
Pedro L. Rentas 102523

SDS Information

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Copper(II) nitrate trihydrate (Cu) 58129 100223 0.1000 200.0 0.084 1000 10000.1 1000.0 2.2 10031-43-3 1 mg/m3 or-rat 794 mg/kg 3114

[1] Spectrum No. 1 [33.422 sec]:58029.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Bu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	T	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

58025
102623
Manganese (Mn)

Lot #
Solvent:

24002546
Nitric Acid

Expiration Date:

102626

Recommended Storage:
Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6UTB

Volume shown below was diluted to (mL):

3000.41

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

2.0%
60.0 (mL)
Nitric Acid

Formulated By:	Benson Chan	102623
Reviewed By:	Pedro L. Ruelas	102623

SDS Information

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
----------	-------------	------------	-----------------	-------------------	--------------------------	-----------------------	-----------------------	---------------------	----------------------------------	------	----------------	------	----------

1. Manganese(II) nitrate tetrahydrate (Mn) 58125 071123 0.1000 300.0 0.084 1000 10000.1 1000.0 2.1 20694-39-7 5 mg/m3 or-rel >300mg/kg 3132

[1] Spectrum No.1 [34.243 sec]:57025.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	T	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: 57082
Lot Number: 100923
Description: Lead (Pb)

Solvent: 24002546 Nitric Acid

Lot #

R: 12/20/23 MS747

Formulated By:	Lawrence Barry
	100923
Reviewed By:	Pedro L. Rentas
	100923

Expiration Date: 100926
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

2% 60.0 Nitric Acid
(mL)

Weight shown below was diluted to (mL): 3000.41 0.06 Flask Uncertainty

Compound

RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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SDS Information

1. Lead(II) nitrate (Pb) IN029 PB0122016A1 1000 99.999 0.10 62.5 4.80071 4.80077 1000.0 2.0 10099-74-8 0.05 mg/m3 Intyms-ret 89 mg/kg 3128

[1] Spectrum No. 1 [14.144 sec]:58082.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Ba	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

Physical Characterization:

(T) = Target analyte

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: **57028**
Lot Number: **091223**
Description: **Nickel (NI)**

Lot # **24002546**
Solvent: **Nitric Acid**

Expiration Date: **091226**

Recommended Storage: **Ambient (20 °C)**

Nominal Concentration (µg/mL): **1000**

NIST Test Number: **6U7B**

Volume shown below was diluted to (mL): **2000.02**

Balance Uncertainty: **5E-05**

Flask Uncertainty: **0.056**

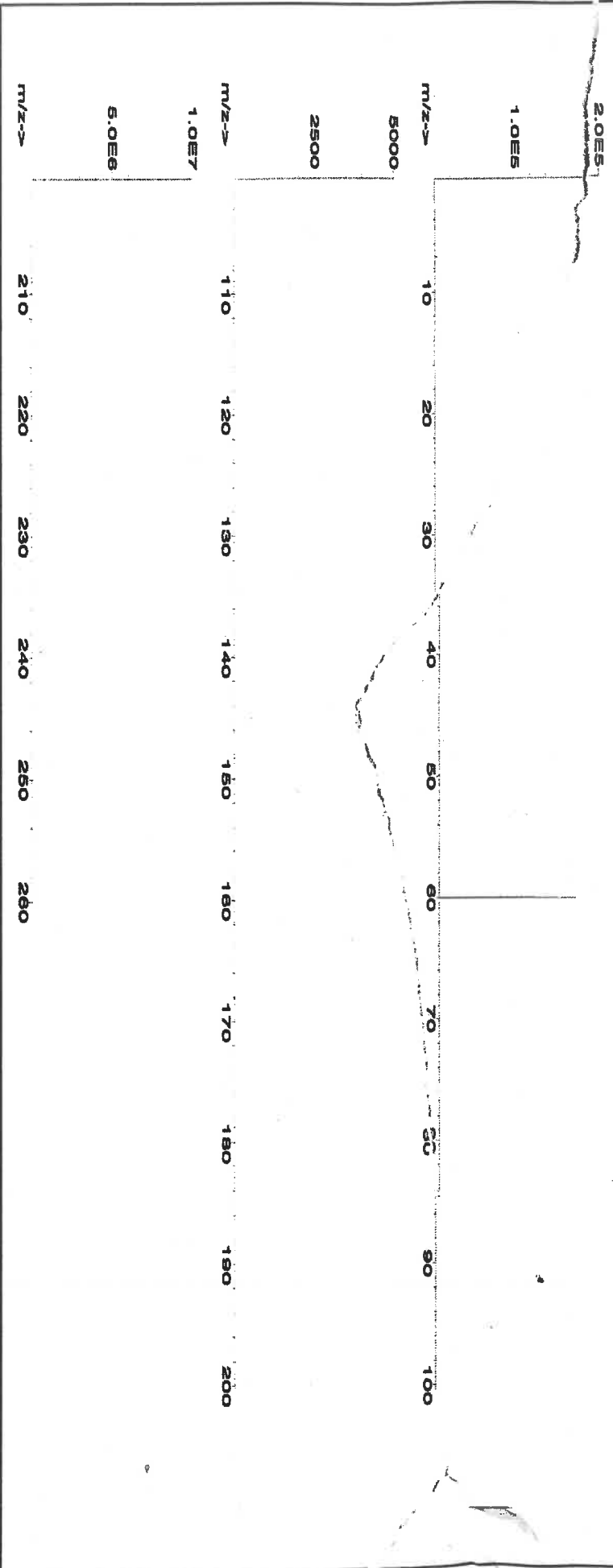
2.0% 40.0 (mL) Nitric Acid

Formulated By:	<i>Lawrence Barry</i>	091223
Reviewed By:	<i>Pedro L. Renteria</i>	091223

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Nickel(II) nitrate hexahydrate (NI) 58128 062023 0.1000 200.0 0.084 1000 10000.4 1000.0 2.2 13478-00-7 1 mg/m3 or-rel 1620 mg/kg 3136

[1] Spectrum No.1 [9.135 sec]:56028.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	T	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Tb	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



M5768 M5769
Certified Reference Material CRM
R: 1/13/24



CERTIFIED WEIGHT REPORT:

Part Number: 58112
Lot Number: 091823
Description: Magnesium (Mg)

Solvent: 24002546 Nitric Acid

Lot #

Expiration Date: 091826

2% 40.0 (mL) Nitric Acid

Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000

M5768 M5769

BP R: 1/13/24

NIST Test Number: 6UTB

5E-05 Balance Uncertainty

Weight shown below was diluted to (mL): 2000.02 0.058 Flask Uncertainty

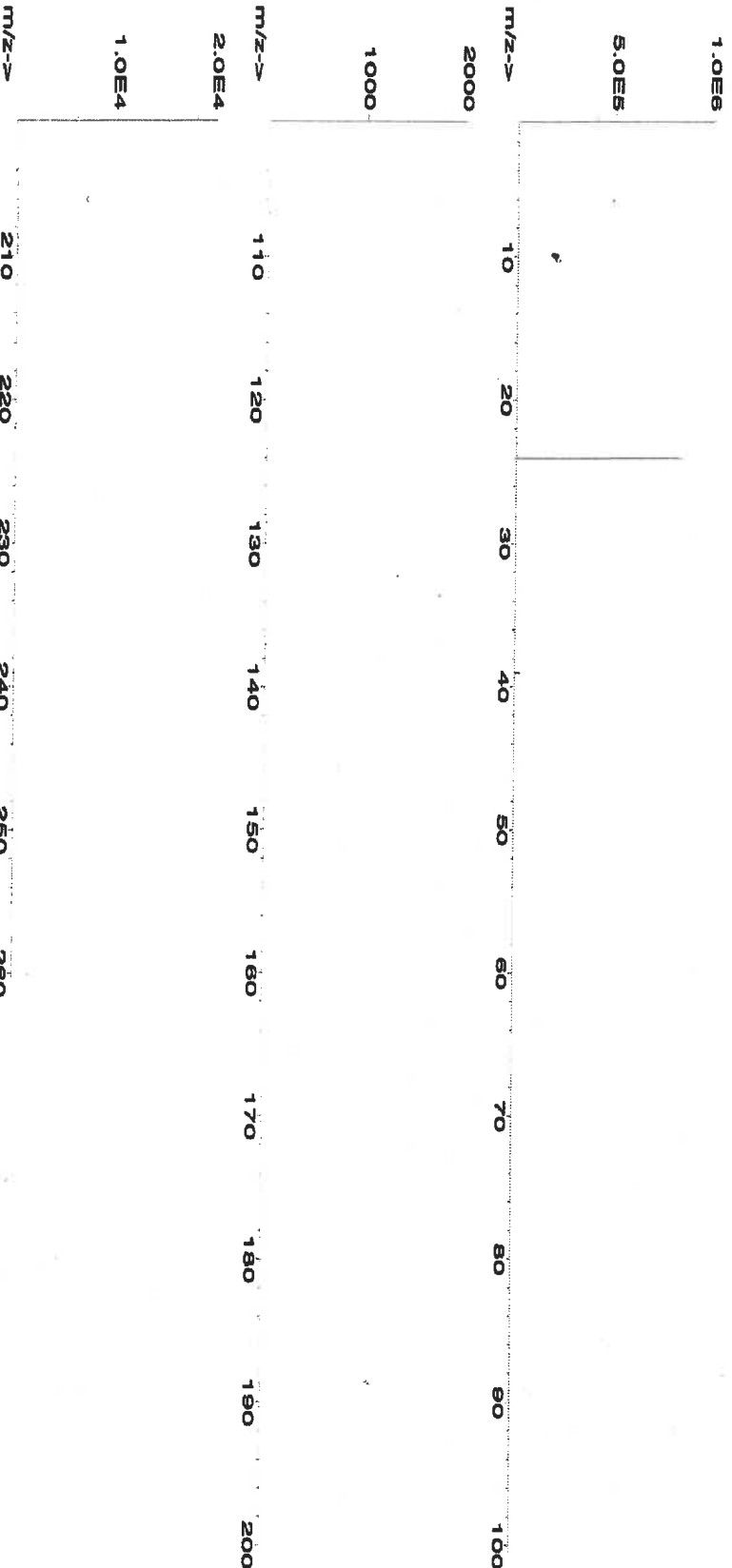
Formulated By: <i>Lawrence Barry</i>		091823
Reviewed By: <i>Pedro L. Rentas</i>		091823

Compound

Lot	Nominal	Purity	Uncertainty	Assay	Target	Actual	Actual	Expanded	SDS Information	NIST
RW#	Number	Conc. (µg/mL)	(%)	Purity (%)	Weight (g)	Weight (g)	Conc. (µg/mL)	+/- (µg/mL)	(Solvent Safety Info. On Attached pg.)	SRM

1. Magnesium nitrate hexahydrate (Mg) IN030 M500222A1 10000 99.999 0.10 8.51 234.9118 234.9126 10000.0 20.0 13446-18-9 NA or-rat 5440 mg/kg 3131a

[1] Spectrum No. 1 [19.923 sec]: 58112.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	T	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: 57004
Lot Number: 102523
Description: Beryllium (Be)

Lot # 24002546
Solvent: Nitric Acid

Expiration Date:

102526

2.0%

40.0 (mL)

Nitric Acid

Recommended Storage:

Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6UTB

Volume shown below was diluted to (mL): 2000.02

5E-05 Balance Uncertainty

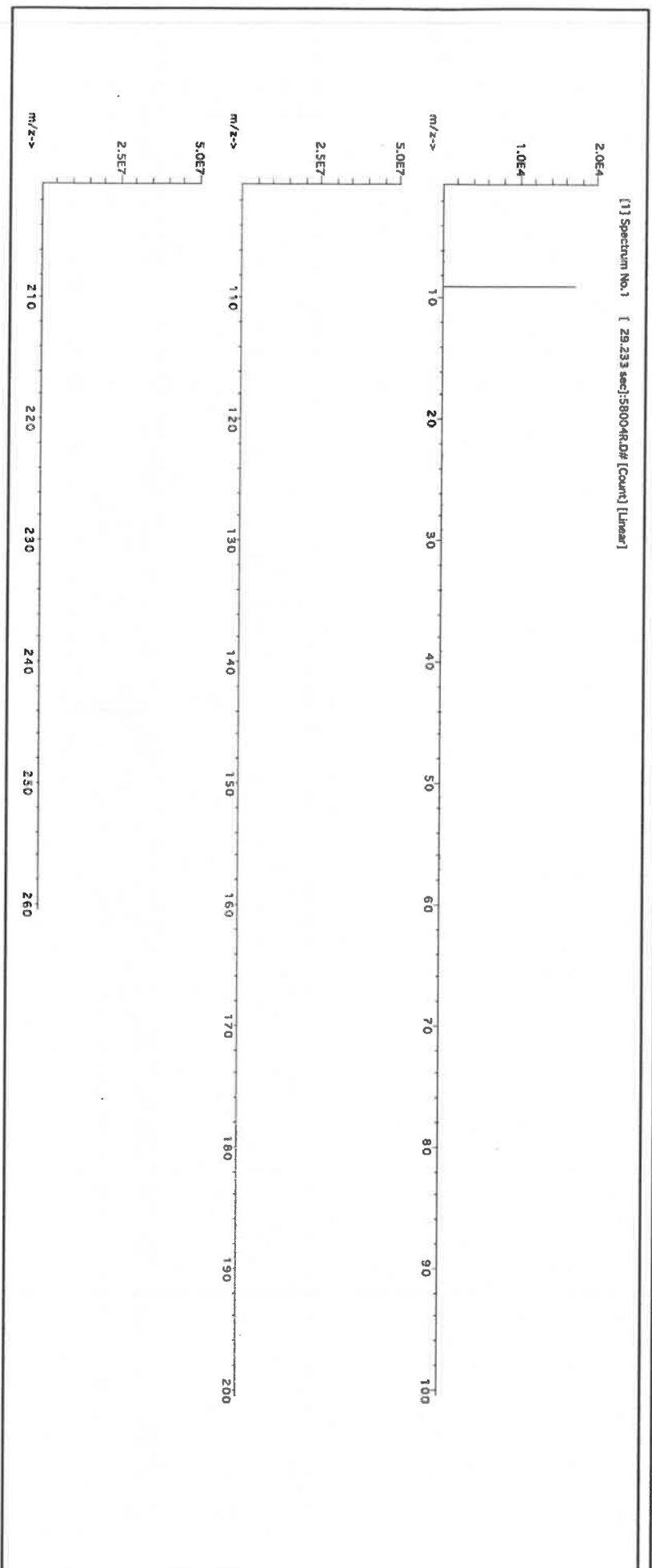
0.058 Flask Uncertainty

Formulated By:	Benson Chan	102523
Reviewed By:	Pedro L. Rentas	102523

SDS Information

Compound	Part Number	Lot	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Beryllium nitrate (Be)	58104	091423	0.1000	200.0	0.084	1000	10001.5	1000.0	2.2	13597-99-4	0.2µg/m3	intrinsc-rat 3.16mg/kg	NA
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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Tc	<0.02	U	<0.02
As	<0.02	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Ti	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	T	Cr	<0.02	Ga	<0.02	Fe	<0.02	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Ta	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.02	Sc	<0.02	Ta	<0.02	Tl	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

* The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
 * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.

* All standard containers are meticulously cleaned prior to use.

* Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).

* Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.

* All Standards should be stored with caps tight and under appropriate laboratory conditions.

* Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



Certified Reference Material CRM

CERTIFIED WEIGHT REPORT:

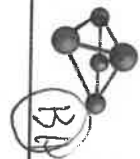
Part Number: 57050
Lot Number: 071123
Description: Tin (Sn)

Solvents: 21110221 Nitric Acid
22D0562008 Hydrochloric acid

Lot #

R-02509124

M599



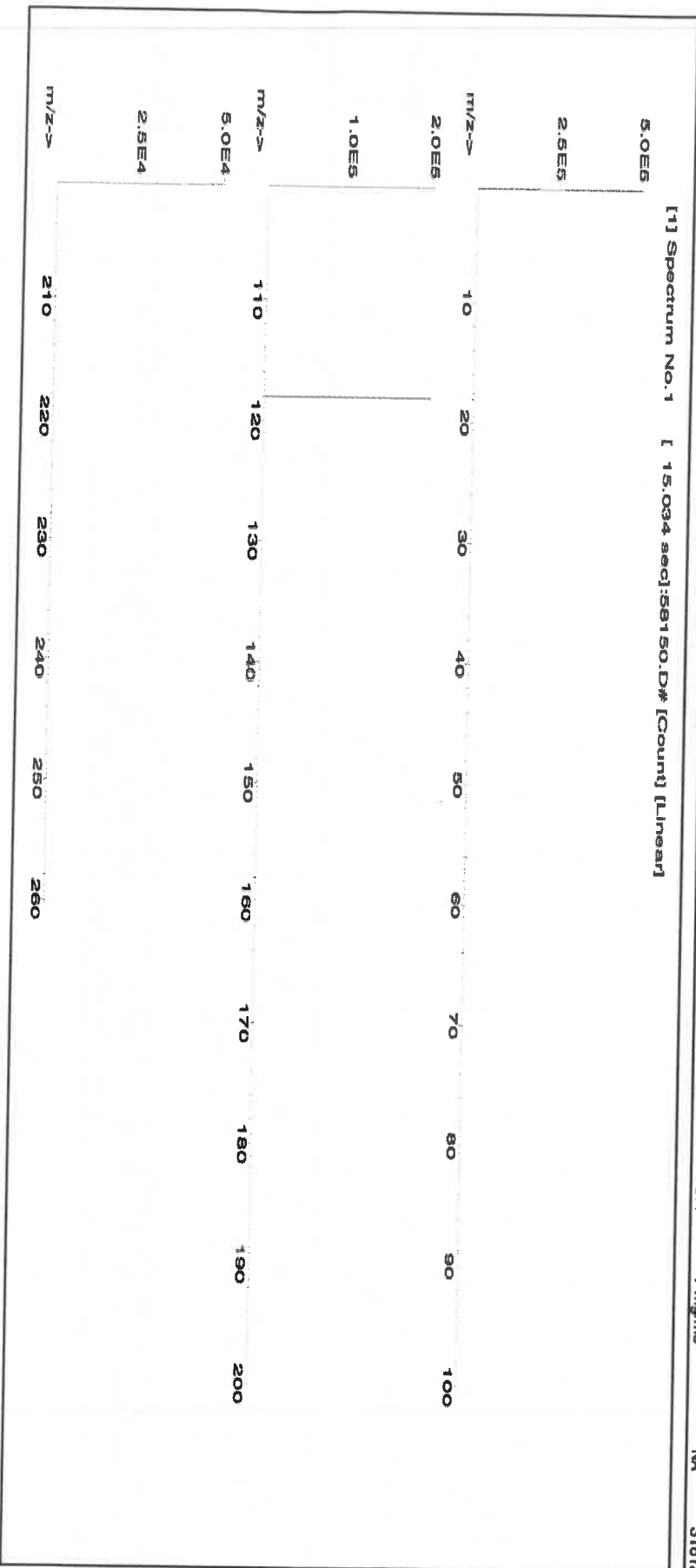
Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 499.93
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Formulated By: Benson Chan	
071123	
Reviewed By: Pedro L. Rientas	
071123	

SDS Information												
Compound	Lot	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty (%)	NIST		
										(Solvent Safety Info. On Attached pg.)		
RM#	Number											

1. Ammonium hexafluoroantimonate(V) (Sn) INO10 SMD042023A1 1000 99.999 0.10 44.2 1.13107 1.13286 1001.6 2.0 16919-24-7 7 mg/m3 NA 3161a

[1] Spectrum No. 1 [15.034 sec]:56150.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Ti	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<500	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Ta	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Tl	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



R: 02/09/24 115800 (54)

CERTIFIED WEIGHT REPORT:

Part Number: 57027
Lot Number: 091923
Description: Cobalt (Co)

Expiration Date: 091926
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

Volume shown below was diluted to (mL): 2000.02

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Lot # 24002546
Solvent: Nitric Acid

2.0% Nitric Acid
40.0 (mL)

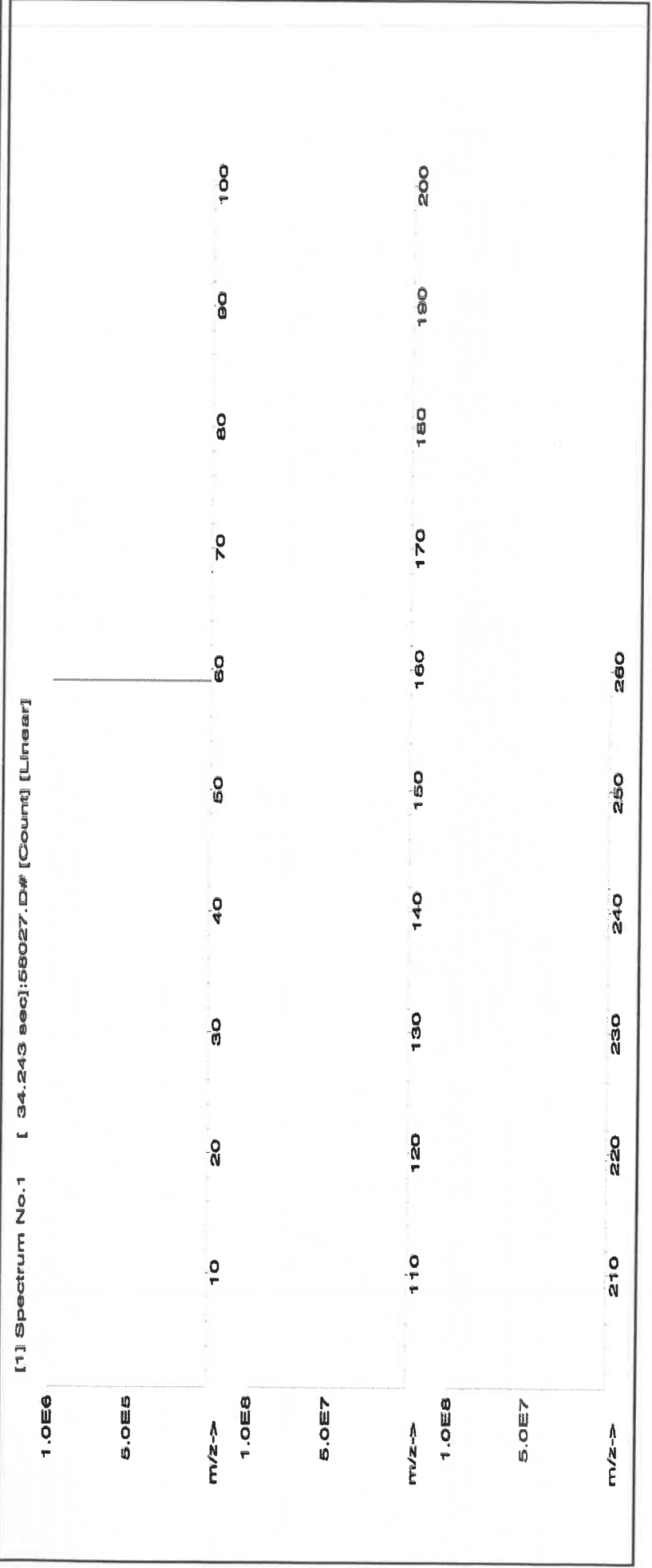
Formulated By:	Lawrence Barry
Reviewed By:	Pedro L. Rentas

SDS Information

Expanded Uncertainty +/- (µg/mL)
Final Conc. (µg/mL)
Initial Conc. (µg/mL)
Nominal Conc. (µg/mL)
Pipette (mL)
Initial Vol. (mL)
Dilution Factor
Part Number
Lot Number

(Solvent Safety Info. On Attached pg.)
CAS#
OSHA PEL (TWA)
LD50
NIST
SRM

1. Cobalt(II) nitrate hexahydrate (Co) 58127 050923 0.1000 200.0 0.084 1000 10000.0 1000.0 2.2 10026-22-9 0.02 mg/m3 orl-rat 691 mg/kg 3113





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.02	Os	<0.01	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.2	Na	<0.02	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	T	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57033
111323
Arsenic (As)

Lot #
Solvent:

24002546
Nitric Acid

Expiration Date:

111326

2.0%
80.0 (mL)

Nitric Acid

Recommended Storage:
Ambient (20 °C)

Nominal Concentration (µg/mL):
1000

NIST Test Number:
6UTB

Volume shown below was diluted to (mL):
4000.0

5E-05
Balance Uncertainty
0.06
Flask Uncertainty

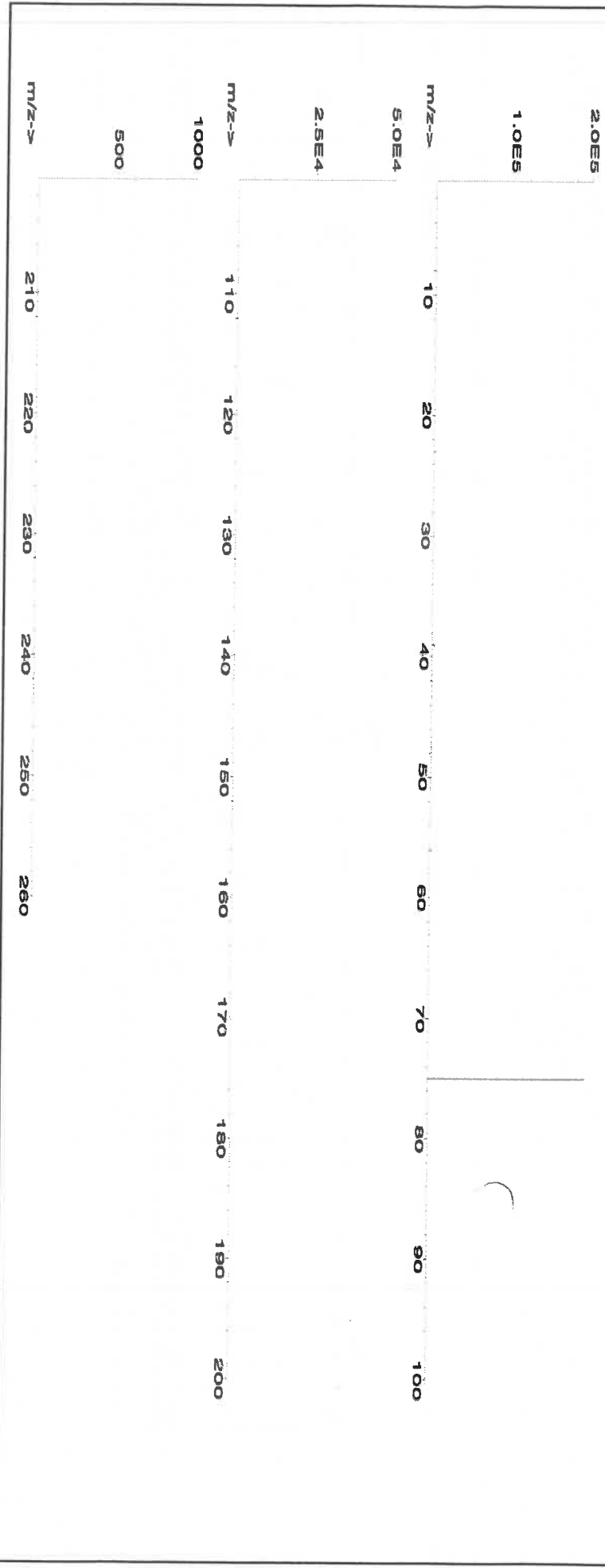
Formulated By:	Lawrence Barry
Reviewed By:	
	Pedro L. Rendas
	111323

Compound

Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
-------------	------------	-----------------	-------------------	--------------------------	-----------------------	-----------------------	---------------------	----------------------------------	------	----------------	------	----------

1. Arsenic (As)
58133
020522
0.1000
400.0
0.084
1000
10001.0
1000.0
2.0
7440-38-2
0.5 mg/m3
or rat 500 mg/kg
3103a

[1] Spectrum No.1 [34.433 sec]:57033.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	T	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Tl _h	<0.02	Yb	<0.02
Bc	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge [*]	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: **57005**
Lot Number: **071123**
Description: **Boron (B)**

Solvent: MKB8697V Ammonium hydroxide

Lot #

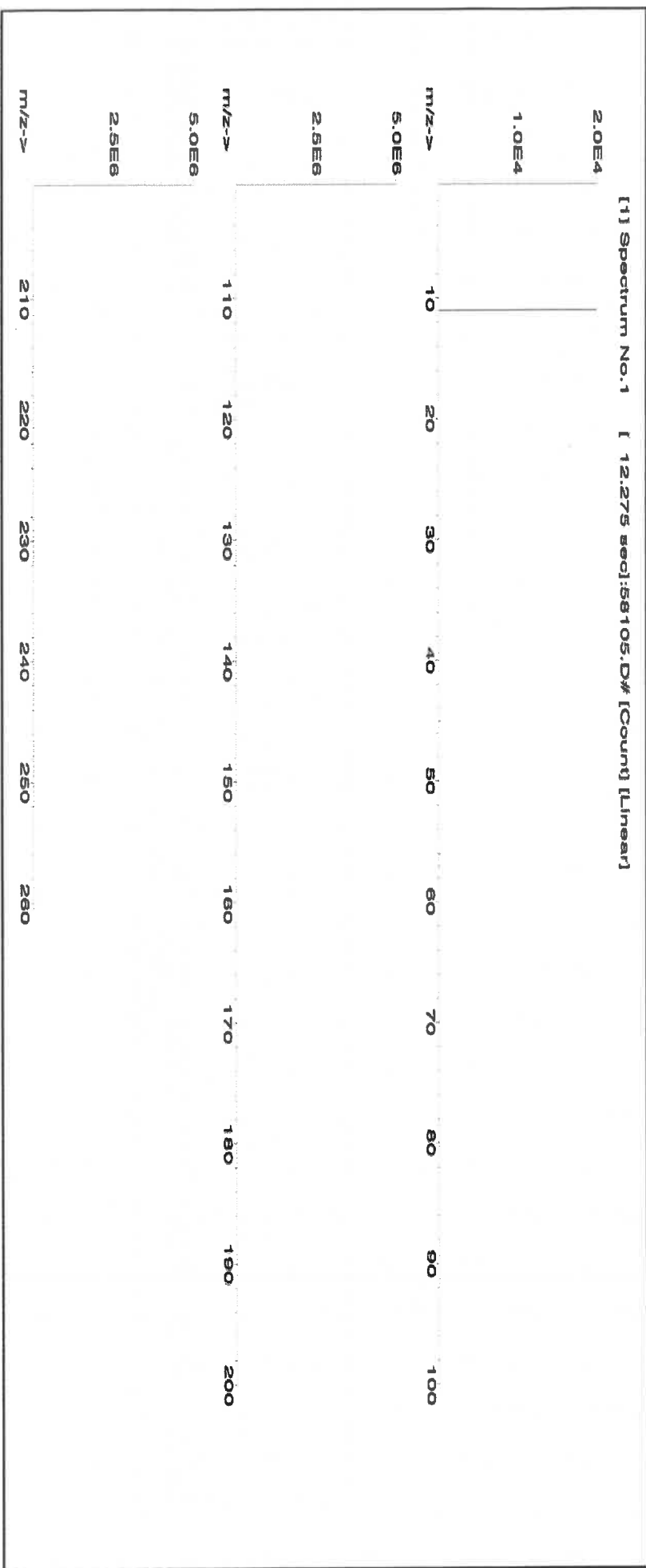
AI: 021009124 M5814

Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 1999.48 0.058 Balance Uncertainty
2.0% 40.0 Ammonium hydroxide (mL)

Formulated By:	Benson Chan
071123	
Reviewed By:	Pedro L. Rientas
071123	

SDS Information									
Compound	Lot	Nominal	Purity	Uncertainty	Assay	Target	Actual	Actual	Expanded
	Number	Conc. (µg/mL)	(%)	Purity (%)	(%)	Weight (g)	Weight (g)	Conc. (µg/mL)	+/- (µg/mL)
									(Solvent Safety Info. On Attached pg.)
									OSHA PEL (TWA)
									LD50
									NIST SRM

1. Boric acid (B) IN018 BV082018A1 1000 99.999 0.10 17.3 11.55772 11.56201 1000.4 2.0 10043-35-3 2 mg/m3 or-nat 2660 mg/kg 3107





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	T	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: 57115
Lot Number: 041723
Description: Phosphorous (P)

Solvent: 21110221 Nitric Acid

Lot #

R102109124 M5815

Expiration Date: 041726
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB

2% 40.0 (mL) Nitric Acid

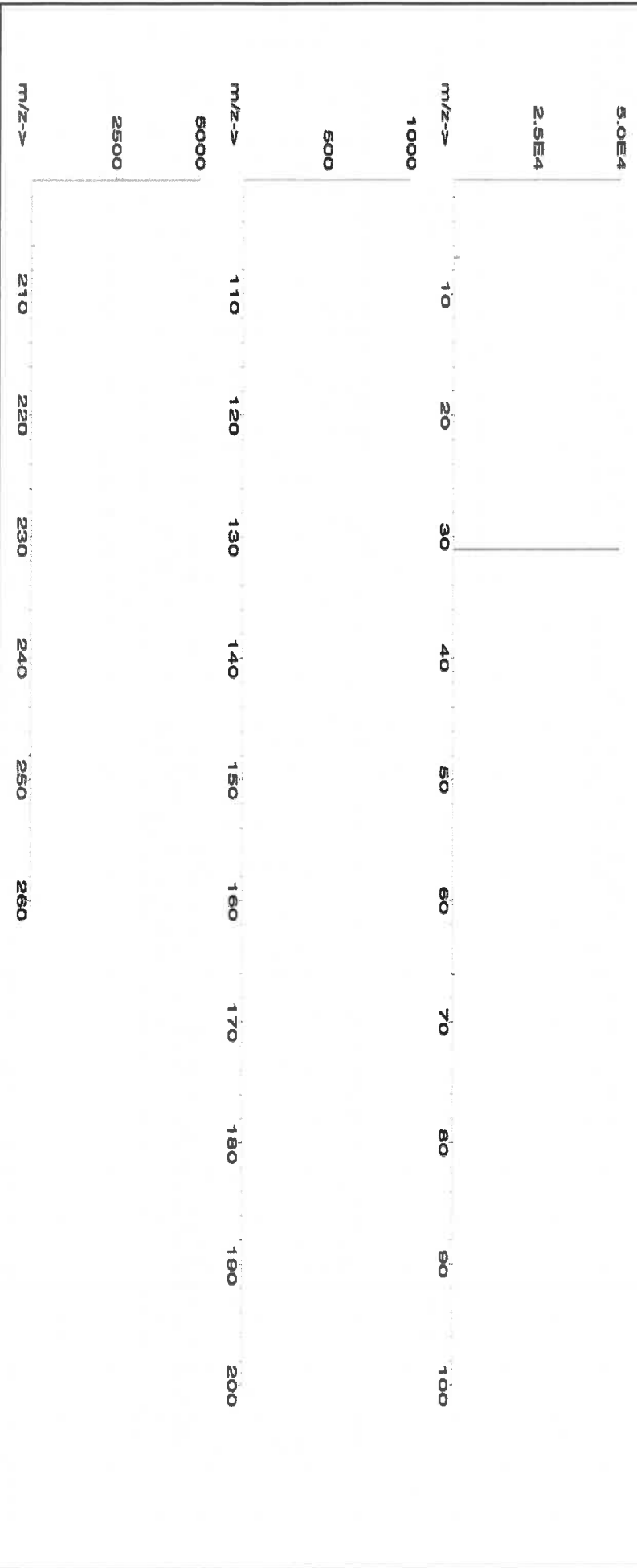
Weight shown below was diluted to (mL): 2000.02 0.058 Balance Uncertainty Flask Uncertainty

Formulated By: Lawrence Barry	041723
Reviewed By: Pedro L. Rentas	041723

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty		CAS#	OSHA PEL (TWA)	LD50	NIST SRM
										+/- (µg/mL)	(Solute Safety Info. On Attached pg.)				

1. Ammonium dihydrogen phosphate (P) IN008 P082019A1 10000 99.999 0.10 27.5 72.7287 72.7289 10000.0 20.0 7722-76-1 5 mg/m3 or-hal >2000mg/kg 3186

[1] Spectrum No.1 [12.074 sec]:58115.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	T	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: 57016
Lot Number: 122923
Description: Sulfur (S)

Lot #

Solvent: 122923

ASTM Type 1 Water

Expiration Date: 122926
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6L7B

Weight shown below was diluted to (mL): 4000.0

Formulated By:	Benson Chan	122923
Reviewed By:	Pedro L. Rentas	122923

SDS Information									
Compound	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)
Ammonium sulfate (S)	IN117 SLBR225V	1000	99.9	0.10	24.3	16.4979	16.4980	1000.0	2.0

1. Ammonium sulfate (S) IN117 SLBR225V 1000 99.9 0.10 24.3 16.4979 16.4980 1000.0 2.0 7783-20-2 NA 3181

[1] Spectrum No. 1 [33.603 sec]:57016.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Ba	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Ru	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	S	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	Ta	<0.02	Ti	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: **57116**
Lot Number: **071123**
Description: **Sulfur (S)**

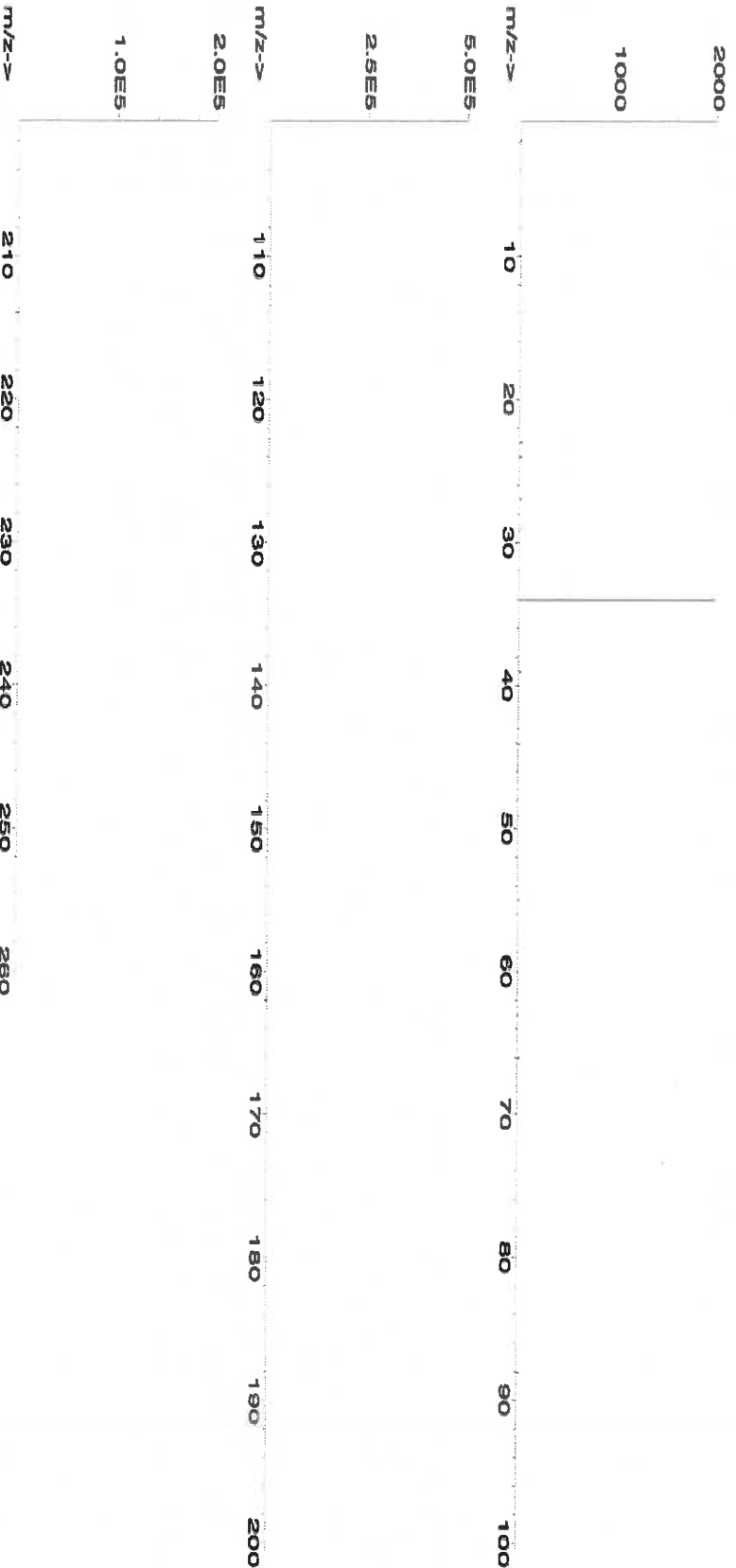
Lot #
Solvent: 071123
ASTM Type 1 Water

Formulated By:	Lawrence Barry
071123	
Reviewed By:	Pedro L. Rentas
071123	

Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 1999.48
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

SDS Information									
Compound	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)
Ammonium sulfate (S)	IN117 SLBR7225V	10000	99.9	0.10	24.3	82.4675	82.4692	10000.1	20.0
						7763-20-2	NA	oralal 4250mg/kg	3181

[1] Spectrum No. 1 [24.004 sec]:58116.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Ti	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	T	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

Physical Characterization:

(T)= Target analyte

Certified by:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: **57014**
Lot Number: **122023**
Description: **Silicon (Si)**

Solvent: **24002546 Nitric Acid**

Lot #

R: 02/09/24 M5818

Expiration Date: **122026**

2% 40.0 (mL) Nitric Acid

Recommended Storage: **Ambient (20 °C)**

Nominal Concentration (µg/mL): **1000**

NIST Test Number: **6UTB**

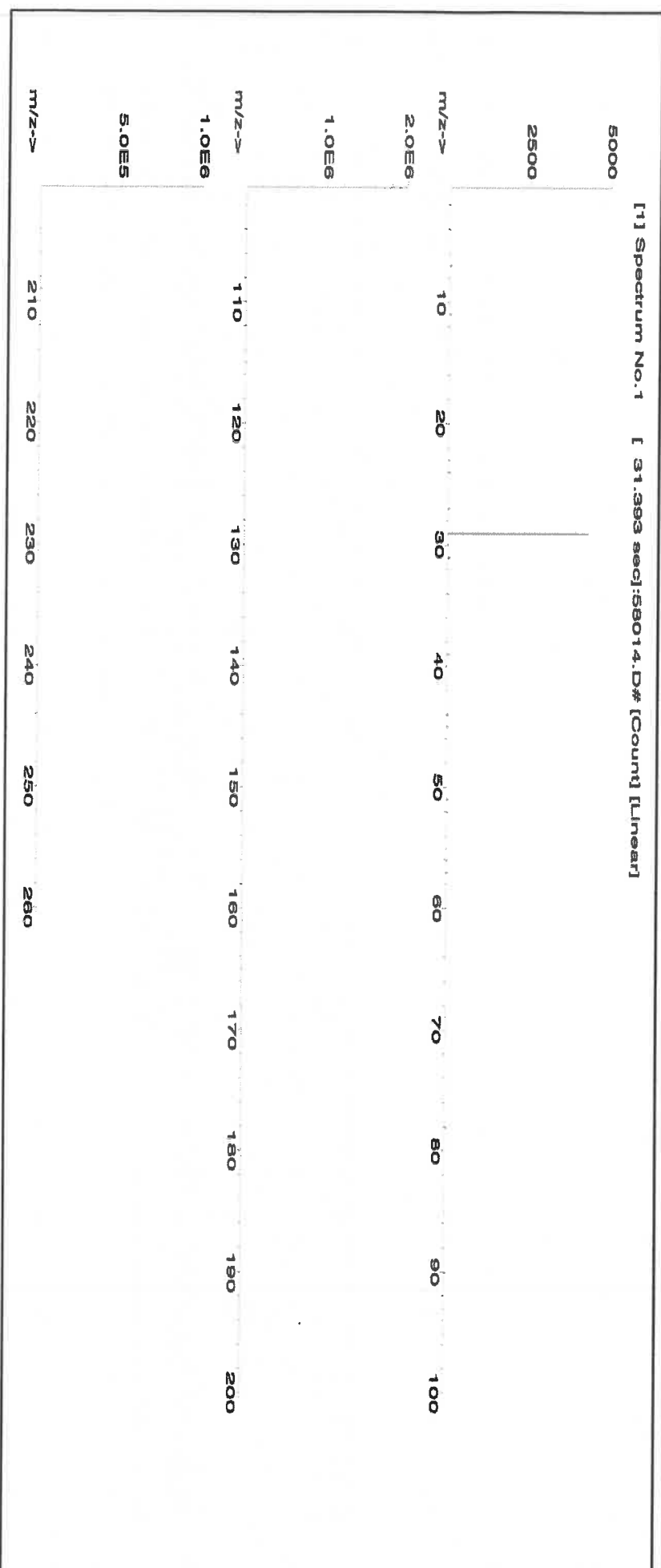
<i>Aleah O Brady</i>	
Formulated By:	Aleah O Brady
Reviewed By:	<i>Pedro L. Rentas</i>
	Pedro L. Rentas
	122023

Weight shown below was diluted to (mL): **1999.48** 0.058 Balance Uncertainty Flask Uncertainty

SDS Information

Compound	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium hexafluorosilicate (Si)	IN009 S1D08022A1	1000	99.999	0.10	14.4	13.8854	13.8855	1000.0	2.0	18919-19-0	2.5 mg/m3	off-mus 70 mg/kg	NA

[1] Spectrum No. 1 [31.393 sec; 158014.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	T	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Bu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Ru	<0.02	Ag	<0.02	Ti	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Tl	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: 58030
Lot Number: 111623
Description: Zinc (Zn)

Solvent: 24002546 Nitric Acid

Lot # R: 02109124 MS819

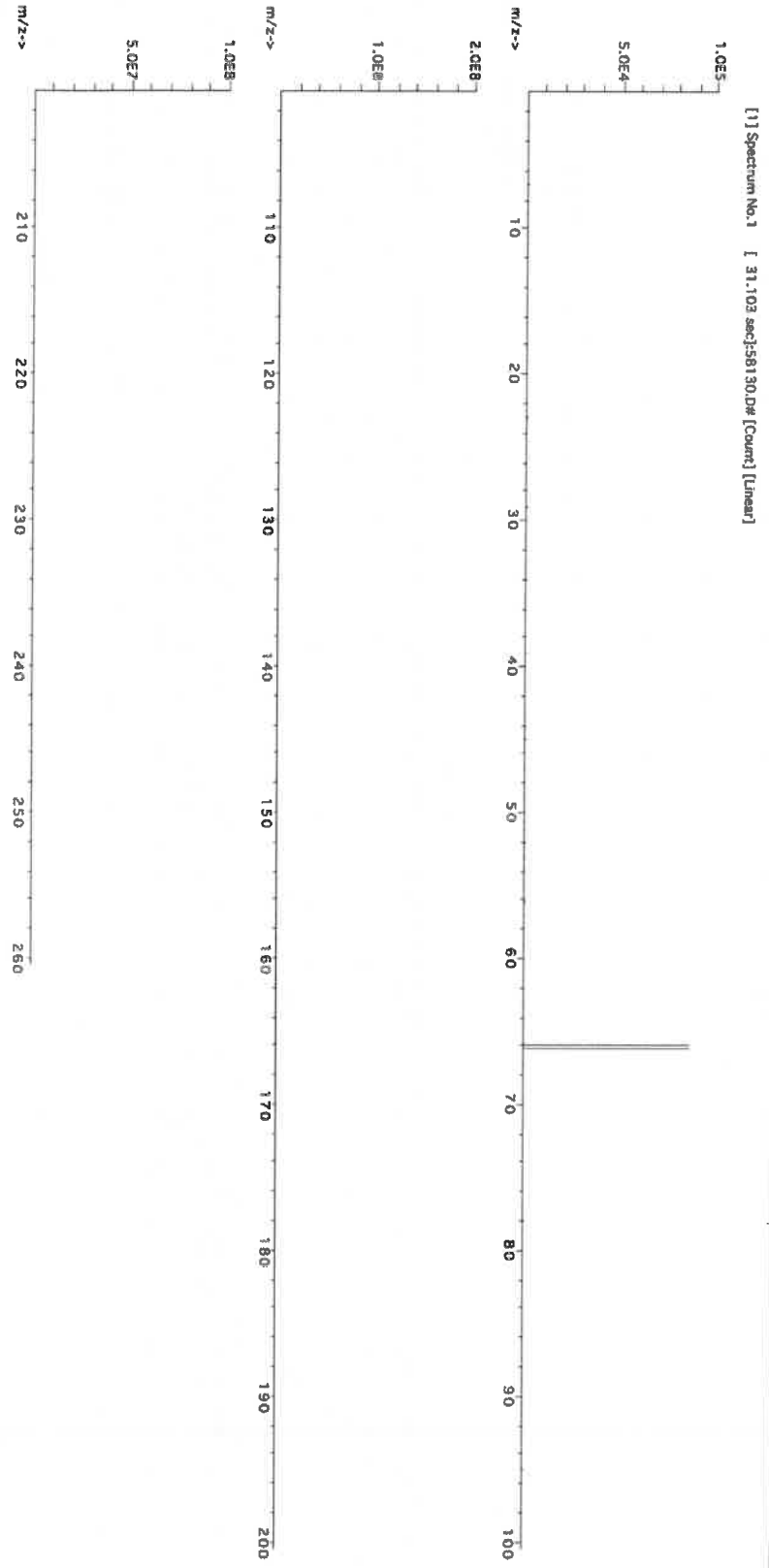
2% 60.0 (mL) Nitric Acid

Expiration Date: 111626
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

Formulated By:	Benson Chan
Reviewed By:	Pedro L. Rientas
111623	

Weight shown below was diluted to (mL): 3000.4 0.06 Balance Uncertainty Flask Uncertainty

SDS Information									
Expanded					(Solvent Safety Info. On Attached pg.)				
Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)
1. Zinc nitrate hexahydrate (Zn)	IN016	ZNE03021A1	1000	99.999	0.10	24.3	12.3475	12.3502	1000.2
									2.0
									10196-16-6
									1 mg/mL
									on-rat 1190mg/kg
									3168





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Bu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: **57015**
Lot Number: **091123**
Description: **Phosphorous (P)**

Solvent: **24002546 Nitric Acid**

Lot #

R: 02109124 M5820

Expiration Date: **091126**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**
NIST Test Number: **6LJB**

2% 40.0 (mL) Nitric Acid

Weight shown below was diluted to (mL): **2000.02** 5E-05 Balance Uncertainty
0.058 Flask Uncertainty

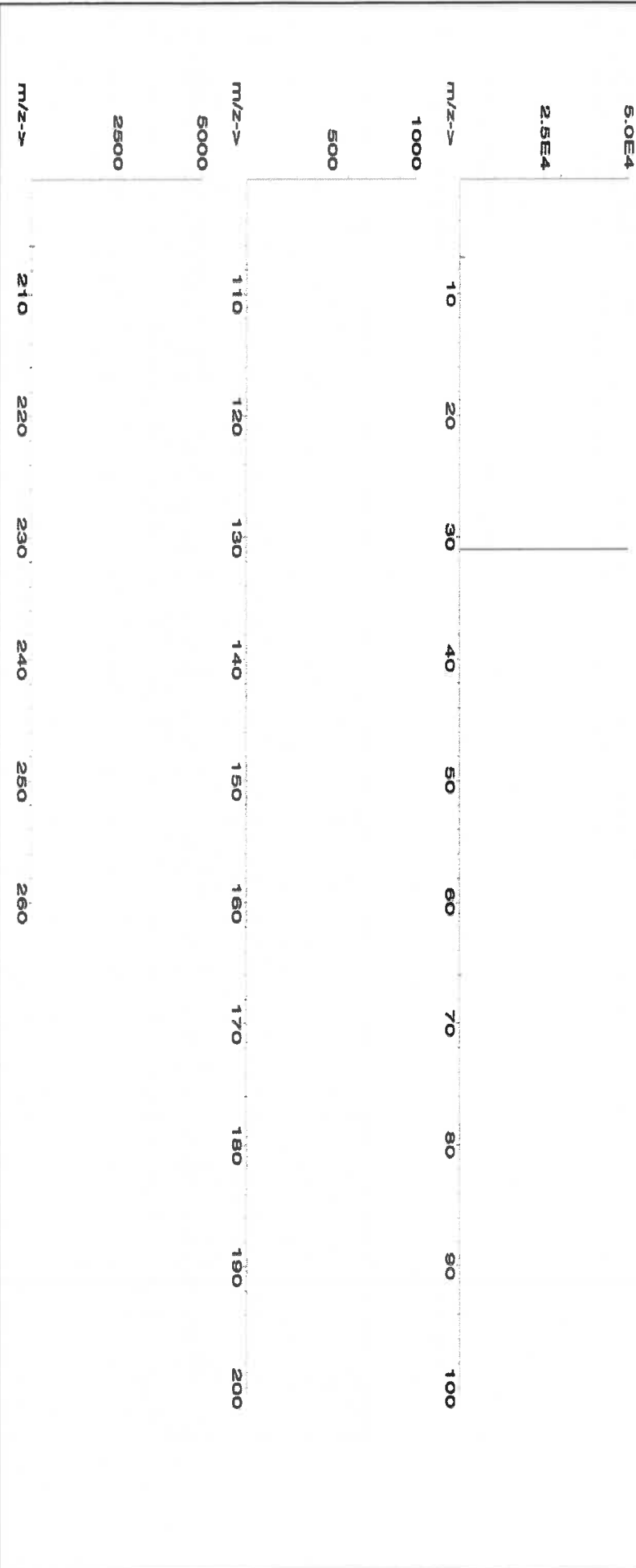
Formulated By:	Lawrence Barry
Reviewed By:	Pedro L. Rentas
091123	

Compound

RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Ammonium dihydrogen phosphate (P) IN008 PVO82019A1 1000 99.999 0.10 27.5 7.2729 7.2730 1000.0 2.0 7722-76-1 5 mg/m3 xH-rat >2000mg/kg 3186

[1] Spectrum No.1 [12.074 sec]:58115.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS ($\mu\text{g/mL}$)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Tc	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	T	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sa	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

MS961 R-1 6/11/24

Lot #

Part Number: **57028**

Lot Number: **041124**

Description: **Nickel (NI)**

Solvent: 24002546 Nitric Acid

2% 5.0 (mL) Nitric Acid

Expiration Date: 041127

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): **1000**

NIST Test Number: 6UTB

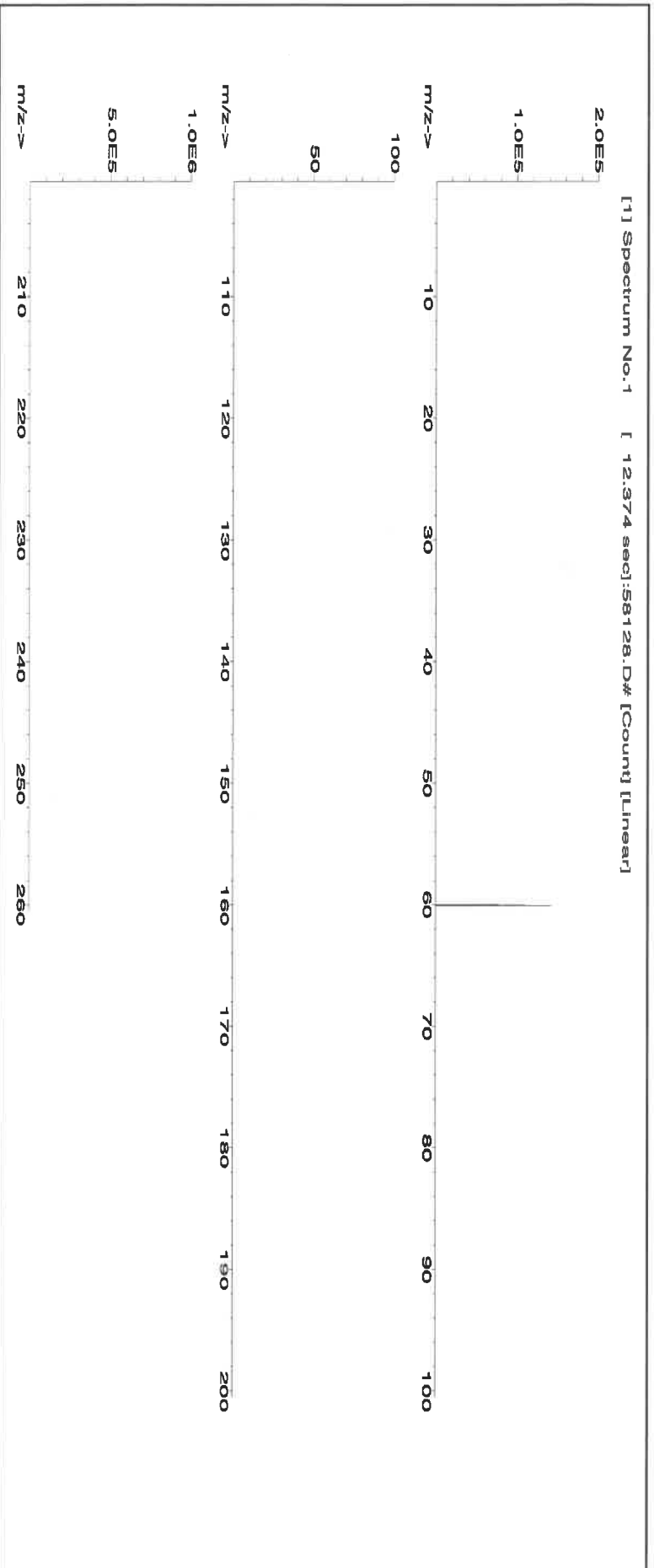
Weight shown below was diluted to (mL): 249.85 5E-05 Balance Uncertainty 0.002 Flask Uncertainty

Formulated By:	Brian Geddes	041124
Reviewed By:	Pedro L. Rentas	041124

SDS Information

Compound	Lot	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	SRM
1. Nickel(II) nitrate hexahydrate (NI)	IN033 NIM052023A1	1000	99.999	0.10	20.2	1.2369	1.2369	1000.0	2.0	13478-00-7	1 mg/m3	rat 1620 mg/kg	3136

[1] Spectrum No.1 [12.374 sec]:58128.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	T	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Ba	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Bc	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



Certified Reference Material CRM
M5962 **R10614124**



ANAB ISO 17034 Accredited
AR-1539 Certificate Number
<https://AbsoluteStandards.com>

CERTIFIED WEIGHT REPORT:

Part Number: 57034
Lot Number: 060624
Description: Selenium (Se)

Lot # 24002546
Solvent: Nitric Acid

2.0% 40.0 Nitric Acid (mL)

Expiration Date: 060627

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 1000

NIST Test Number: 6LUTB

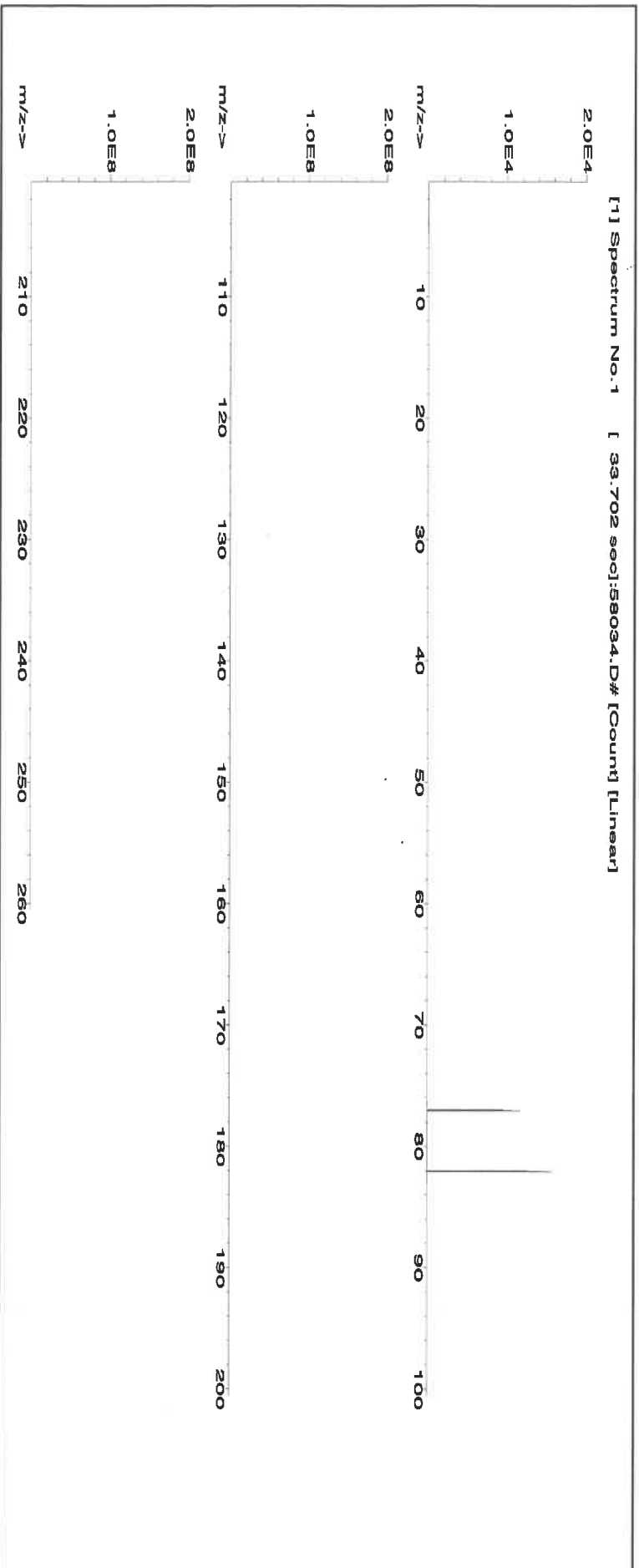
Volume shown below was diluted to (mL): 2000.07
SE-05 Balance Uncertainty 0.100
Flask Uncertainty

Formulated By:	Benson Chan
	060624
Reviewed By:	Pedro L. Rantas
	060624

SDS Information

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	(Solvent Safety Info. On Attached pg.)	CAS#	OSHA PEL (TWA)	LDSO	NIST SRM
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1. Selenium (Se)	58134	071223	0.1000	200.0	0.084	1000	10002.5	1000.0	2.2	7782-49-2	0.2 mg/m3	or-tral 6700 mg/kg	3149
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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.02	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Bu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Ru	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Sr	<0.02	S	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	Ta	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02			Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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Certified Reference Material CRM

M5970 M5971

R. J. 10/12/24

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT:

Part Number: **57003**
Lot Number: **062124**
Description: **Lithium (Li)**
Expiration Date: **06/127**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**
NIST Test Number: **6UTB**
Volume shown below was diluted to (mL): **250.11**
SE-05 Balance Uncertainty
0.016 Flask Uncertainty

Lot # **24002546**
Solvent: **Nitric Acid**

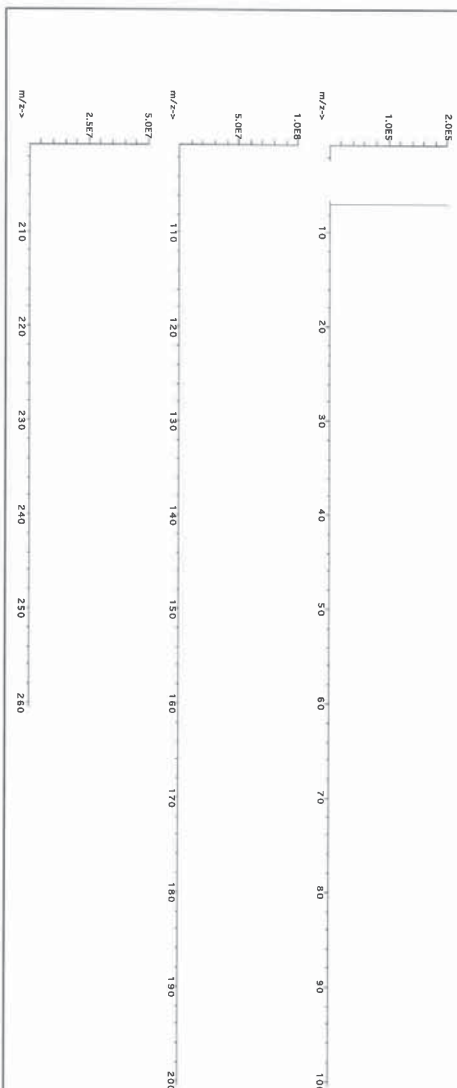
2.0% 5.0 (mL) Nitric Acid

Microvial Capable	
Formulated By:	Giovanni Esposito
	062124
Reviewed By:	Pedro L. Parias
	062124

Compound		Part		Lot		Dilution		Initial		Uncertainty		Nominal		Initial		Final		Expanded		SDS Information		NIST	
Number	Factor	Number	Factor	Number	Factor	Vol. (mL)	Pipette (mL)	Conc. (µg/mL)	Conc. (µg/mL)	Vol. (mL)	Pipette (mL)	Conc. (µg/mL)	Conc. (µg/mL)	Vol. (mL)	Pipette (mL)	Conc. (µg/mL)	Conc. (µg/mL)	Uncertainty	± (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	SM

1. Lithium nitrate (Li)	58103	070622	0.1000	25.0	0.004	1000	10000.4	1000.0	2.0	7790-68-4	5 mg/m3	Oral: 1428 mg/kg	NA
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[1] Spectrum No. 1 [32.093 sec; 15000.0Hz Count [Lines]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)															
Al	<0.02	Ca	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pb	<0.02	Se	<0.02
Sb	<0.02	Ce	<0.02	Er	<0.02	In	<0.02	Mg	<0.02	Nb	<0.02	Rb	<0.02	Si	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	Ir	<0.02	Mn	<0.02	Os	<0.02	Rh	<0.02	Ag	<0.02
Ba	<0.02	Cr	<0.02	Gd	<0.02	Te	<0.2	Hg	<0.2	Pd	<0.02	Ru	<0.02	Nd	<0.2
Be	<0.01	Cr	<0.02	Ga	<0.02	Ta	<0.02	K	<0.02	P	<0.02	Sn	<0.02	Sr	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	Tb	<0.02	Mo	<0.02	Fe	<0.2	Sb	<0.02	Sc	<0.02
B	<0.02	Co	<0.02	Au	<0.02	Ti	<0.02	Nd	<0.02	K	<0.2	Se	<0.02	Ta	<0.02
(T) = Target analyte															
Al	<0.02	Ca	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pb	<0.02	Se	<0.02
Sb	<0.02	Ce	<0.02	Er	<0.02	In	<0.02	Mg	<0.02	Nb	<0.02	Rb	<0.02	Si	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	Ir	<0.02	Mn	<0.02	Os	<0.02	Rh	<0.02	Ag	<0.02
Ba	<0.02	Cr	<0.02	Gd	<0.02	Te	<0.2	Hg	<0.2	Pd	<0.02	Ru	<0.02	Nd	<0.2
Be	<0.01	Cr	<0.02	Ga	<0.02	Ta	<0.02	K	<0.02	P	<0.02	Sn	<0.02	Sr	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	Tb	<0.02	Mo	<0.02	Fe	<0.2	Sb	<0.02	Sc	<0.02
B	<0.02	Co	<0.02	Au	<0.02	Ti	<0.02	Nd	<0.02	K	<0.2	Se	<0.02	Ta	<0.02
Al	<0.02	Ca	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pb	<0.02	Se	<0.02
Sb	<0.02	Ce	<0.02	Er	<0.02	In	<0.02	Mg	<0.02	Nb	<0.02	Rb	<0.02	Si	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	Ir	<0.02	Mn	<0.02	Os	<0.02	Rh	<0.02	Ag	<0.02
Ba	<0.02	Cr	<0.02	Gd	<0.02	Te	<0.2	Hg	<0.2	Pd	<0.02	Ru	<0.02	Nd	<0.2
Be	<0.01	Cr	<0.02	Ga	<0.02	Ta	<0.02	K	<0.02	P	<0.02	Sn	<0.02	Sr	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	Tb	<0.02	Mo	<0.02	Fe	<0.2	Sb	<0.02	Sc	<0.02
B	<0.02	Co	<0.02	Au	<0.02	Ti	<0.02	Nd	<0.02	K	<0.2	Se	<0.02	Ta	<0.02
Al	<0.02	Ca	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pb	<0.02	Se	<0.02
Sb	<0.02	Ce	<0.02	Er	<0.02	In	<0.02	Mg	<0.02	Nb	<0.02	Rb	<0.02	Si	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	Ir	<0.02	Mn	<0.02	Os	<0.02	Rh	<0.02	Ag	<0.02
Ba	<0.02	Cr	<0.02	Gd	<0.02	Te	<0.2	Hg	<0.2	Pd	<0.02	Ru	<0.02	Nd	<0.2
Be	<0.01	Cr	<0.02	Ga	<0.02	Ta	<0.02	K	<0.02	P	<0.02	Sn	<0.02	Sr	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	Tb	<0.02	Mo	<0.02	Fe	<0.2	Sb	<0.02	Sc	<0.02
B	<0.02	Co	<0.02	Au	<0.02	Ti	<0.02	Nd	<0.02	K	<0.2	Se	<0.02	Ta	<0.02
Al	<0.02	Ca	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pb	<0.02	Se	<0.02
Sb	<0.02	Ce	<0.02	Er	<0.02	In	<0.02	Mg	<0.02	Nb	<0.02	Rb	<0.02	Si	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	Ir	<0.02	Mn	<0.02	Os	<0.02	Rh	<0.02	Ag	<0.02
Ba	<0.02	Cr	<0.02	Gd	<0.02	Te	<0.2	Hg	<0.2	Pd	<0.02	Ru	<0.02	Nd	<0.2
Be	<0.01	Cr	<0.02	Ga	<0.02	Ta	<0.02	K	<0.02	P	<0.02	Sn	<0.02	Sr	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	Tb	<0.02	Mo	<0.02	Fe	<0.2	Sb	<0.02	Sc	<0.02
B	<0.02	Co	<0.02	Au	<0.02	Ti	<0.02	Nd	<0.02	K	<0.2	Se	<0.02	Ta	<0.02
Al	<0.02	Ca	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pb	<0.02	Se	<0.02
Sb	<0.02	Ce	<0.02	Er	<0.02	In	<0.02	Mg	<0.02	Nb	<0.02	Rb	<0.02	Si	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	Ir	<0.02	Mn	<0.02	Os	<0.02	Rh	<0.02	Ag	<0.02
Ba	<0.02	Cr	<0.02	Gd	<0.02	Te	<0.2	Hg	<0.2	Pd	<0.02	Ru	<0.02	Nd	<0.2
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Bi	<0.02	Co	<0.02	Ge	<0.02	Tb	<0.02	Mo	<0.02	Fe	<0.2	Sb	<0.02	Sc	<0.02
B	<0.02	Co	<0.02	Au	<0.02	Ti	<0.02	Nd	<0.02	K	<0.2	Se	<0.02	Ta	<0.02

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

[Signature]

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

Certificate of Analysis

M5976, M5977

R: 02/22/24

P: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
Catalog Number: CGMO1
Lot Number: T2-MO720876
Matrix: H2O
tr. NH4OH
Value / Analyte(s): 1 000 µg/mL ea:
Molybdenum
Starting Material: Ammonium Molybdate
Starting Material Lot#: 2361
Starting Material Purity: 99.9893%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 998 ± 7 µg/mL
Density: 1.000 g/mL (measured at 20 ± 4 °C)
Assay Information:

Assay Method #1 998 ± 4 µg/mL
ICP Assay NIST SRM 3134 Lot Number: 130418

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum (w_i) (X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{char i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance.

$$w_i = (1/u_{char i}^2) / (\sum (1/u_{char i}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char} = [\sum (w_i)^2 (u_{char i}^2)]^{1/2}$ where $u_{char i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char a})$$

X_a = mean of Assay Method A with

$u_{char a}$ = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000590	M	Eu	<	0.000300	M	Na		0.000879	M	Se	<	0.008000	M	Zn		0.000598
M	Al		0.000563	M	Fe	<	0.006500	M	Nb	<	0.029000	i	Si	<		M	Zr	<	0.001800
M	As	<	0.002100	M	Ga	<	0.000300	i	Nd	<		M	Sm	<	0.000300				
M	Au	<	0.000300	M	Gd	<	0.000300	M	Ni	<	0.008000	M	Sn	<	0.008900				
M	B	<	0.003300	M	Ge	<	0.000300	M	Os	<	0.000590	M	Sr		0.000175				
M	Ba		0.001689	M	Hf	<	0.001800	i	P	<		M	Ta	<	0.004200				
M	Be	<	0.000890	M	Hg	<	0.003300	M	Pb	<	0.000300	M	Tb	<	0.000300				
M	Bi	<	0.000890	M	Ho	<	0.000300	M	Pd	<	0.001800	M	Te	<	0.021000				
O	Ca		0.006334	M	In	<	0.032000	M	Pr	<	0.013000	M	Th	<	0.000300				
O	Cd	<	0.026000	M	Ir	<	0.000300	M	Pt	<	0.000300	O	Tl	<	0.032000				
M	Ce	<	0.008300	M	K		0.130213	M	Rb		0.004575	M	Tl		0.001266				
M	Co		0.000598	M	La	<	0.000300	M	Re	<	0.000300	M	Tm	<	0.000300				
M	Cr		0.000527	O	Li		0.000059	M	Rh	<	0.000300	M	U	<	0.005300				
M	Cs		0.000527	M	Lu	<	0.000300	M	Ru	<	0.079000	M	V	<	0.000890				
M	Cu		0.002252	M	Mg		0.000563	i	S	<		M	W		0.087982				
M	Dy	<	0.000300	M	Mn	<	0.005900	M	Sb		0.001513	M	Y	<	0.000300				
M	Er	<	0.000300	s	Mo	<		M	Sc	<	0.001200	M	Yb	<	0.000300				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 95.94 +6 6,7,8,9

[MoO4]-2(chemical form as received)

Chemical Compatibility -Mo is received in a NH4OH matrix giving the operator the option of using HCl or HF to stabilize acidic solutions. The [MoO4]-2 is soluble in concentrated HCl [MoOCl5]-2, dilute HF / HNO3 [MoOF5]-2 and basic media [MoO4]-2. Stable at ppm levels with some metals provided it is fluorinated. Do not mix with Alkaline or Rare Earths when HF is present. Stable with most inorganic anions provided it is in the [MoO4]-2 chemical form.

Stability - 2-100 ppb levels stable (alone or mixed with all other metals that are at comparable levels) as the [MoOF5]-2 for months in 1% HNO3 / LDPE container. 1-10,000 ppm single element solutions as the [MoO4]-2 chemically stable for years in 1% NH4OH in a LDPE container.

Mo Containing Samples (Preparation and Solution) -Metal (Soluble in HF / HNO3 or hot dilute HCl); Oxide (soluble in HF or NH4OH) ; Organic Matrices (Dry ash at 450EC in Pt0 and dissolve oxide with HF or HCl).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 95 amu	3 ppt	n/a	40Ar39K16O,79Br16O,190Os2+,190Pt2+
ICP-OES 202.030 nm	0.008 / 0.0002 µg/mL	1	Os, Hf
ICP-OES 203.844 nm	0.012 / 0.002 µg/mL	1	
ICP-OES 204.598 nm	0.012 / 0.001 µg/mL	1	Ir, Ta

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.569.6799; 540.585.3030, Fax: 540.585.3012; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 17, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- July 17, 2027

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Uyen Truong
Supervisor, Product Documentation



Certificate Approved By:

Michael Booth
Director, Technical



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Certificate of Analysis

MS978, MS979



Refine your results. Redefine your industry.

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Christiansburg, VA 24073 USA
inorganicventures.com

R: 2/22/24

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories".
Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution

Catalog Number: CGT1

Lot Number: T2-T1719972

Matrix: 2% (v/v) HNO₃

Value / Analyte(s): tr. HF

Starting Material: 1 000 µg/mL ea.

Starting Material: Titanium

Starting Material Lot#: T1 Metal

Starting Material Purity: 2094

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1002 ± 5 µg/mL

Density: 1.012 g/mL (measured at 20 ± 4 °C)

Assay Method #1

1002 ± 4 µg/mL

ICP Assay NIST SRM 3162a Lot Number: 130925

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods
Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = (X_p) / (U_{p,ave})$

X_p = mean of Assay Method A with

$U_{p,ave}$ = the standard uncertainty of characterization Method A

$U_{CRM/RM} = (U_{CRM/RM}^2) / (2 \times (U_{CRM/RM}^2))$

$U_{CRM/RM} = (U_{CRM/RM}^2) / (2 \times (U_{CRM/RM}^2))$

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4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an UHPA-filtered Clean Room. An UHPA-filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag	<	0.000536	M Eu	<	0.000268	O Na	<	0.032670	M Se	<	0.001204	O Zn	<	0.003267
M Al	<	0.000872	O Fe	<	0.003225	O Nb	<	0.043560	O Si	<	0.004735	O Zr	<	0.043560
M As	<	0.008586	M Ga	<	0.000268	M Nd	<	0.000268	M Sm	<	0.000268			
M Au	<	0.004577	M Gd	<	0.000268	O Ni	<	0.010890	M Sn	<	0.000986			
O B	<	0.008929	M Ge	<	0.002146	M Os	<	0.000269	O Sr	<	0.000986			
M Ba	<	0.002683	M Hf	<	0.002161	O P	<	0.054450	M Ta	<	0.010560			
M Be	<	0.005366	M Hg	<	0.003231	M Pb	<	0.001073	M Tb	<	0.000268			
M Bi	<	0.001609	M Ho	<	0.000268	M Pd	<	0.000268	M Th	<	0.001341			
O Ca	<	0.000676	M In	<	0.002683	M Pr	<	0.000268	M Tl	<	0.053663			
M Cd	<	0.000268	M Ir	<	0.000269	M Pt	<	0.000536	S Tl	<				
M Co	<	0.000268	M K	<	0.001172	M Rb	<	0.000268	M Ti	<	0.000268			
M Cr	<	0.000752	O Li	<	0.000268	M Re	<	0.000268	M Tm	<	0.000268			
M Cs	<	0.000268	M Lu	<	0.000268	M Rh	<	0.000268	M U	<	0.000268			
O Cu	<	0.010890	O Mg	<	0.005445	I S	<	0.006976	M Y	<	0.002146			
M Dy	<	0.000268	O Mn	<	0.003267	M Sb	<	0.004900	M Yb	<	0.000536			
M Er	<	0.000268	M Mo	<	0.000774	O Sc	<							

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 47.87 ± 4.6 Ti(F)₆-2 media. Unstable at ppm levels with metals that would pull F- away (i.e. Do not mix with Alkaline or Rare Earths or high levels of transition elements unless they are fluorinated). Stable with most inorganic anions with a tendency to hydrolyze forming the hydrated oxide in all dilute acids except HF.

Stability - 2-100 ppb levels stable (Alone or mixed with all other metals) as the Ti(F)₆-2 for months in 1% HNO₃ / LDPE container. 1-10,000 ppm single element solutions as the Ti(F)₆-2 chemically stable for years in 2-5% HNO₃ / trace HF in an LDPE container.

TI Containing Samples (Preparation and Solution) - Metal (Soluble in H₂O / HF caution - powder reacts violently). Oxide - low temperature history anatase or rutile (Dissolved by heating in 1:1:1 H₂O / HF / H₂SO₄); K₂SiO₇ - no KF if silica not present); Organic Matrices (Dry ash at 450EC in P10 and dissolve by heating with 1:1:1 H₂O / HF / H₂SO₄ or fuse ash with pyrosulfate if oxide is as plastic pigment and likely in brookite crystaline form).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	14 ppt
ICP-MS 48 amu	N/A	
ICP-OES 323.452 nm	0.0054 / 0.00092 µg/mL	
ICP-OES 334.941 nm	0.0038 / 0.00028 µg/mL	
ICP-OES 336.121 nm	0.0053 / 0.00034 µg/mL	
HF Note: This standard should not be prepared or stored in glass.		
		W, Mo, Co
		Nb, Ta, Cr, U
		Ce, Ar, Ni
		Ru
		(where X = Zr, Mo,
		14N17N2, 36Ar12C,
		48Ca, 196X=2
		14N16O18O,
		32S16O, 32S14N,
		N/A
		Order Interferences (underlined indicates severe)

8.0 HAZARDOUS INFORMATION

HF Note: This standard should not be prepared or stored in glass.

9.0 HOMOGENEITY

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous.

- Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, VA 24073, USA. Telephone: 800.868.6786; 540.565.3030; Fax: 540.565.3030; Email: info@inorganicventures.com; <http://www.inorganicventures.com>

11.0

CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 17, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- June 17, 2027

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date:

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0

NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozlikowski
Manager, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Paul Gaines

80978



Certified Reference Material CRM



45982

R: 6/11/24

CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57038
031524
Strontium (Sr)

Solvent: 24002546 Nitric Acid

Expiration Date:
Recommended Storage:
Nominal Concentration (µg/mL):
NIST Test Number:

031527
Ambient (20 °C)
1000
6UTB
5E-05 Balance Uncertainty
0.100 Flask Uncertainty

Weight shown below was diluted to (mL): 2000.07

Lot #

2% 40.0 Nitric Acid
(mL)

Formulated By:	Benson Chan	031524
Reviewed By:	Pedro L. Rentas	031524

SDS Information

Expanded

Uncertainty

(Solvent Safety Info. On Attached pg.)

+/- (µg/mL)

LD50

CAS#

OSHA PEL (TWA)

Actual

Conc. (µg/mL)

Actual

Weight (g)

Target

Weight (g)

Assay

Purity (%)

Purity (%)

Nominal

Conc. (µg/mL)

Lot

Number

RM#

IN017

SR2022018A1

1000

89.997

0.10

41.2

4.85470

4.85502

1000.1

2.0

10042-76-9

NA

orl-rat >2000mg/kg

3153a

1. Strontium nitrate (Sr)

[1] Spectrum No.1 [14.495 sec]:58136.D# [Count] [Linear]

5.0E6

2.5E6

m/z-->

1.0E6

5.0E5

m/z-->

5.0E6

2.5E6

m/z-->



Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.02	Os	<0.01	Rh	<0.02	Ag	<0.02	Ti	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.02	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	T	Tm	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02
																W	<0.02
																U	<0.02
																V	<0.02
																Yb	<0.02
																Y	<0.02
																Zn	<0.02
																Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

[Signature]

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

2024 JUN 7 3:58 PM

Certificate of Analysis

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F: 540-585-3012

info@inorganicventures.com

M5984
R: 6/14/24

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
Catalog Number: CGY10
Lot Number: V2-Y740548
Matrix: 2% (v/v) HNO₃
Value / Analyte(s): 10 000 µg/mL ea:
Yttrium
Starting Material: Yttrium Oxide
Starting Material Lot#: 2661 and 06230520YL
Starting Material Purity: 99.9984%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10000 ± 30 µg/mL
Density: 1.032 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	10011 ± 25 µg/mL EDTA NIST SRM 928 Lot Number: 928
Assay Method #2	9997 ± 50 µg/mL ICP Assay NIST SRM 3167a Lot Number: 190730
Assay Method #3	9984 ± 31 µg/mL Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i)(X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{char i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char i}^2) / (\sum(1/(u_{char i}^2)))$$

$$CRM/RM \text{ Expanded Uncertainty } (k) = U_{CRM/RM} = k(u_{char}^2 + u_{bb}^2 + u_{ts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char} = [\sum(w_i)^2(u_{char i}^2)]^{1/2}$ where $u_{char i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{ts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a)(u_{char a})$$

X_a = mean of Assay Method A with

$u_{char a}$ = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (k) = U_{CRM/RM} = k(u_{char a}^2 + u_{bb}^2 + u_{ts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{ts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.004600	M	Eu	0.009037	M	Na	0.086360	M	Se	<	0.005200	M	Zn	0.030125
M	Al	0.014862	O	Fe	0.002410	M	Nb	<	0.000570	O	Si	0.024100	O	Zr	<	0.002600
M	As	<	0.003500	M	Ga	<	0.000570	M	Nd	0.000923	M	Sm	0.000461			
M	Au	<	0.001700	M	Gd	<	0.003500	M	Ni	<	0.005700	M	Sn	<	0.002300	
O	B	0.002209	M	Ge	<	0.005200	M	Os	<	0.001200	M	Sr	<	0.004600		
O	Ba	<	0.002500	M	Hf	<	0.000570	n	P	<		M	Ta	<	0.000570	
O	Be	<	0.001400	M	Hg	<	0.000570	M	Pb	0.005020	M	Tb	0.001044			
M	Bi	<	0.003500	M	Ho	0.009037	M	Pd	<	0.005100	M	Te	<	0.002300		
O	Ca	0.009841	M	In	<	0.002300	M	Pr	<	0.002300	M	Th	<	0.000570		
M	Cd	<	0.000570	M	Ir	<	0.000570	M	Pt	<	0.000570	M	Ti	<	0.003500	
M	Ce	<	0.002300	O	K	0.018677	M	Rb	<	0.000570	M	Tl	<	0.000570		
M	Co	<	0.000570	M	La	0.000461	M	Re	<	0.000570	M	Tm	<	0.003500		
M	Cr	<	0.004000	O	Li	<	0.009300	M	Rh	<	0.008000	M	U	<	0.000570	
M	Cs	<	0.000570	M	Lu	0.000582	M	Ru	<	0.000570	M	V	0.001265			
M	Cu	0.002610	O	Mg	0.001486	n	S	<			M	W	<	0.002300		
M	Dy	0.003815	M	Mn	0.000582	M	Sb	0.005422	s	Y	<					
M	Er	0.003615	M	Mo	<	0.005700	M	Sc	<	0.001200	M	Yb	0.001827			

M - Checked by ICP-MS

O - Checked by ICP-OES

i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

6.1 This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

6.2 For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures Terms and Conditions of Sale, <https://www.inorganicventures.com/terms-and-conditions-sale>. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 88.91 +3 6 Y(OH)(H₂O)_{x+2}

Chemical Compatibility -Soluble in HCl, H₂SO₄ and HNO₃. Avoid HF, H₃PO₄ and neutral to basic media.

Stable with most metals and inorganic anions forming an insoluble carbonate, oxide, oxalate, and fluoride.

Avoid mixing with elements / solutions containing moderate amounts of fluoride.

Stability - 2-100 ppb levels stable for months in 1% HNO₃ / LDPE container. 1-10,000 ppm solutions

chemically stable for years in 2-5% HNO₃ / LDPE container.

Y Containing Samples (Preparation and Solution) - Metal (Soluble in acids); Oxide (Dissolve by heating in H₂O/ HNO₃); Ores (Carbonate fusion in PtO followed by HCl dissolution); Organic Matrices (Dry ash and dissolve in 1:1 H₂O / HCl or HNO₃).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 89 amu	0.8 ppt	N/A	<u>73Ge</u> <u>16O</u> , <u>178Hf</u> +2
ICP-OES 360.073 nm	0.005 / 0.000036 µg/mL	1	Ce, Th
ICP-OES 371.030 nm	0.004 / 0.00007 µg/mL	1	Ce
ICP-OES 377.433 nm	0.005 / 0.0009 µg/mL	1	Ta, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 20, 2024

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- February 20, 2029

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Uyen Truong
Custom Processing Supervisor



Certificate Approved By:

Muzzammil Khan
Stock Laboratory Supervisor



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Certificate of Analysis

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution
Catalog Number: CLPP-SPK-1
Lot Number: T2-MEB721963
Matrix: 7% (v/v) HNO₃
Value / Analyte(s):
2 000 µg/mL ea:
Aluminum, Barium,
1 000 µg/mL ea:
Iron,
500 µg/mL ea:
Manganese, Nickel,
Vanadium, Zinc,
Cobalt,
250 µg/mL ea:
Copper,
200 µg/mL ea:
Chromium,
50 µg/mL ea:
Beryllium, Silver

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	2 000 ± 7 µg/mL	Barium, Ba	2 000 ± 9 µg/mL
Beryllium, Be	50.00 ± 0.26 µg/mL	Chromium, Cr	200.0 ± 1.1 µg/mL
Cobalt, Co	500.0 ± 2.4 µg/mL	Copper, Cu	250.0 ± 1.0 µg/mL
Iron, Fe	1 000 ± 4 µg/mL	Manganese, Mn	500.0 ± 2.0 µg/mL
Nickel, Ni	500.0 ± 2.2 µg/mL	Silver, Ag	50.00 ± 0.22 µg/mL
Vanadium, V	500.0 ± 2.2 µg/mL	Zinc, Zn	500.0 ± 2.2 µg/mL

Density: 1.070 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Ag	Calculated		See Sec. 4.2
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
Ba	ICP Assay	3104a	140909
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Be	Calculated		See Sec. 4.2
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Cr	ICP Assay	3112a	170630
Cu	ICP Assay	3114	121207
Cu	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
V	IC Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{\text{CRM/RM}}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{\text{CRM/RM}} = \sum(w_i)(X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{\text{char } i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{\text{char } i}^2) / (\sum(1/u_{\text{char } i}^2))$$

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k(u_{\text{char}}^2 + u_{\text{bb}}^2 + u_{\text{tts}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char}} = [\sum(w_i)^2(u_{\text{char } i}^2)]^{1/2}$ where $u_{\text{char } i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{tts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{\text{CRM/RM}}$, where one method of characterization is used is the mean of individual results:

$$X_{\text{CRM/RM}} = (X_a)(u_{\text{char } a})$$

X_a = mean of Assay Method A with

$u_{\text{char } a}$ = the standard uncertainty of characterization Method A

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k(u_{\text{char } a}^2 + u_{\text{bb}}^2 + u_{\text{tts}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char } a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{tts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Note: This solution contains Silver (Ag), please refer to our Sample Preparation Guide for more information.

<https://www.inorganicventures.com/sample-preparation-guide/samples-containing-silver>

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 27, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- July 27, 2027

- The date after which this CRM/RM should not be used.
- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





Certified Reference Material CRM
R: 01/03/24 M6033



ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://AbsoluteStandards.com

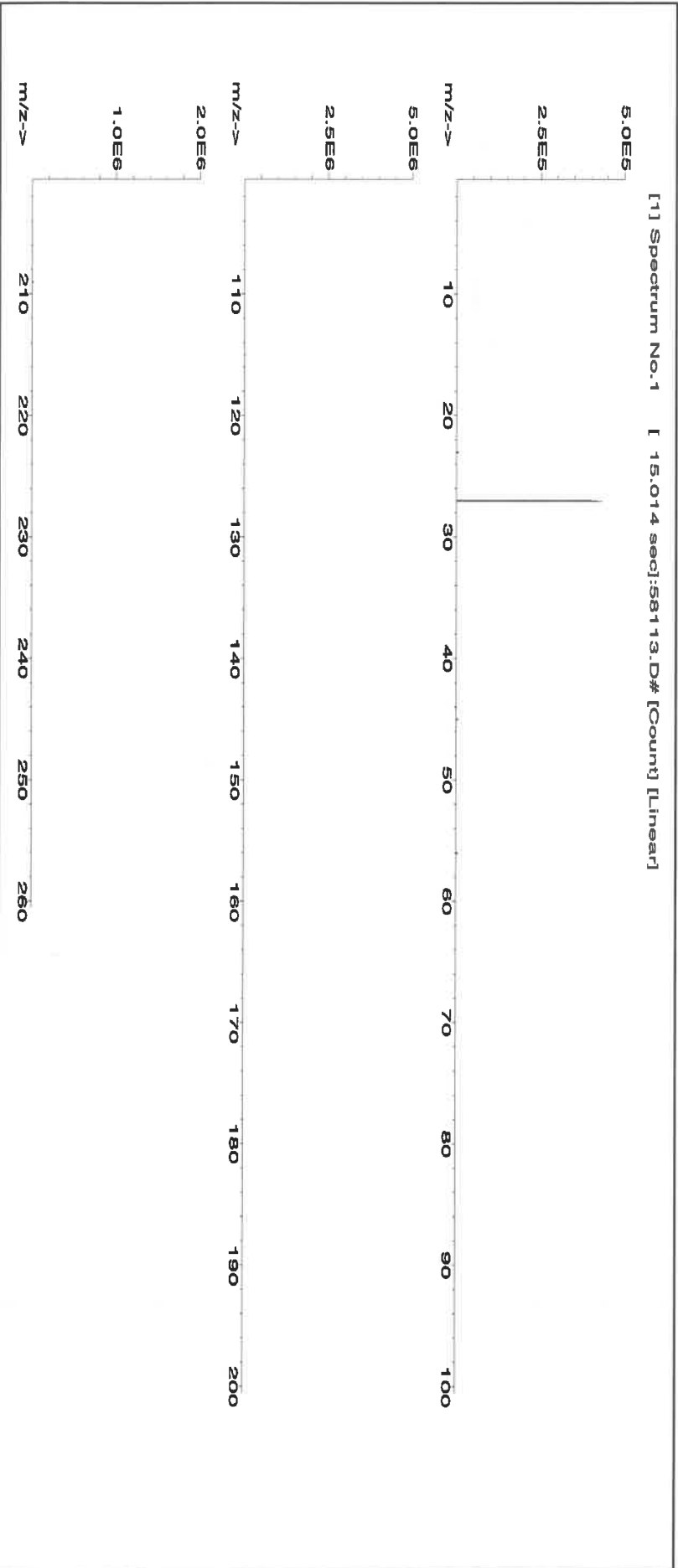
CERTIFIED WEIGHT REPORT:

Part Number: 58113
Lot Number: 011623
Description: Aluminum (Al)
Expiration Date: 011626
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6LUTB
Weight shown below was diluted to (mL): 2000.02
Solvent: 20510011 Nitric Acid
Lot #
2% 40.0 (mL) Nitric Acid
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	<i>Pedro L. Rentas</i>
	Pedro L. Rentas
	011623

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Aluminum nitrate nonahydrate (Al) IN022 ALUM12021A1 10000 99.999 0.10 7.30 273.9779 274.0078 10001.1 20.0 7784-27-2 2 mg/m3 or rat 3671 mg/kg 3101a



Nitric Acid 69%
CMOS

avantor™



Material No.: 9606-03
Batch No.: 24D1062002
Manufactured Date: 2024-03-26
Retest Date: 2029-03-25
Revision No.: 0

Draw
date: 1. - 08/01/2023

M6034, M6037
M6035, M6038,
M6036,

Certificate of Analysis

Test	Specification	Result
Assay (HNO ₃)	69.0 - 70.0 %	69.7 %
Appearance	Passes Test	Passes Test
Color (APHA)	≤ 10	5
Residue after Ignition	≤ 2 ppm	1 ppm
Chloride (Cl)	≤ 0.08 ppm	< 0.03 ppm
Phosphate (PO ₄)	≤ 0.10 ppm	< 0.03 ppm
Sulfate (SO ₄)	≤ 0.2 ppm	< 0.2 ppm
Trace Impurities - Aluminum (Al)	≤ 40.0 ppb	< 1.0 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities - Barium (Ba)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Beryllium (Be)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Bismuth (Bi)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities - Boron (B)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Cadmium (Cd)	≤ 50 ppb	< 1 ppb
Trace Impurities - Calcium (Ca)	≤ 50.0 ppb	2.3 ppb
Trace Impurities - Chromium (Cr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities - Cobalt (Co)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Copper (Cu)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Gallium (Ga)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Germanium (Ge)	≤ 20 ppb	< 10 ppb
Trace Impurities - Gold (Au)	≤ 20 ppb	< 5 ppb
Heavy Metals (as Pb)	≤ 100 ppb	100 ppb
Trace Impurities - Iron (Fe)	≤ 40.0 ppb	< 1.0 ppb
Trace Impurities - Lead (Pb)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities - Lithium (Li)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Magnesium (Mg)	≤ 20 ppb	< 1 ppb
Trace Impurities - Manganese (Mn)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Nickel (Ni)	≤ 20.0 ppb	< 5.0 ppb

>>> Continued on page 2 >>>

Nitric Acid 69%
CMOS

 **avantorsTM**



Material No.: 9606-03
Batch No.: 24D1062002

Test	Specification	Result
Trace Impurities – Niobium (Nb)	≤ 50.0 ppb	< 1.0 ppb
Trace Impurities – Potassium (K)	≤ 50 ppb	16 ppb
Trace Impurities – Silicon (Si)	≤ 50 ppb	< 10 ppb
Trace Impurities – Silver (Ag)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Sodium (Na)	≤ 150.0 ppb	< 5.0 ppb
Trace Impurities – Strontium (Sr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities – Tantalum (Ta)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Thallium (Tl)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Tin (Sn)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities – Titanium (Ti)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Vanadium (V)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Zinc (Zn)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Zirconium (Zr)	≤ 10.0 ppb	< 1.0 ppb
Particle Count – 0.5 µm and greater	≤ 60 par/ml	10 par/ml
Particle Count – 1.0 µm and greater	≤ 10 par/ml	3 par/ml

>>> Continued on page 3 >>>

Nitric Acid 69%
CMOS

 **avantor™**



Material No.: 9606-03
Batch No.: 24D1062002

Test	Specification	Result
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For Microelectronic Use

Country of Origin: USA

Packaging Site: Phillipsburg Mfg Ctr & DC



Jamie Croak
Director Quality Operations, Bioscience Production

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

 **avantor™**



Material No.: 9530-33
Batch No.: 24D1562005
Manufactured Date: 2024-03-18
Retest Date: 2029-03-17
Revision No.: 0

Received! — 08/01/2024
pater
m6039
m6040

Certificate of Analysis

Test	Specification	Result
ACS – Assay (as HCl) (by acid–base titrn)	36.5 – 38.0 %	37.6 %
ACS – Color (APHA)	≤ 10	5
ACS – Residue after Ignition	≤ 3 ppm	< 1 ppm
ACS – Specific Gravity at 60°/60°F	1.185 – 1.192	1.192
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	< 5.0 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 3.0 ppb
Trace Impurities – Barium (Ba)	≤ 1.0 ppb	< 1.0 ppb
Trace Impurities – Beryllium (Be)	≤ 1.0 ppb	< 1.0 ppb
Trace Impurities – Bismuth (Bi)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities – Boron (B)	≤ 20.0 ppb	2.2 ppb
Trace Impurities – Cadmium (Cd)	≤ 1.0 ppb	< 1.0 ppb
Trace Impurities – Calcium (Ca)	≤ 50.0 ppb	31.0 ppb
Trace Impurities – Chromium (Cr)	≤ 1.0 ppb	0.5 ppb
Trace Impurities – Cobalt (Co)	≤ 1.0 ppb	0.2 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	< 0.2 ppb
Heavy Metals (as Pb)	≤ 100 ppb	< 50 ppb
Trace Impurities – Iron (Fe)	≤ 15 ppb	3 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.: 24D1562005

Test	Specification	Result
Trace Impurities – Lead (Pb)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Lithium (Li)	≤ 1.0 ppb	< 0.1 ppb
Trace Impurities – Magnesium (Mg)	≤ 10.0 ppb	2.2 ppb
Trace Impurities – Manganese (Mn)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Mercury (Hg)	≤ 0.5 ppb	< 0.1 ppb
Trace Impurities – Molybdenum (Mo)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Nickel (Ni)	≤ 4.0 ppb	0.2 ppb
Trace Impurities – Niobium (Nb)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Potassium (K)	≤ 9.0 ppb	< 1.0 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	< 0.3 ppb
Trace Impurities – Sodium (Na)	≤ 100.0 ppb	2.0 ppb
Trace Impurities – Strontium (Sr)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Tantalum (Ta)	≤ 1.0 ppb	< 0.9 ppb
Trace Impurities – Thallium (Tl)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities – Tin (Sn)	≤ 5.0 ppb	< 0.4 ppb
Trace Impurities – Titanium (Ti)	≤ 1.0 ppb	0.2 ppb
Trace Impurities – Vanadium (V)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Zinc (Zn)	≤ 5.0 ppb	< 0.2 ppb
Trace Impurities – Zirconium (Zr)	≤ 1.0 ppb	< 0.1 ppb

>>> Continued on page 3 >>>

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

 **avantor™**



Material No.: 9530-33
Batch No.: 24D1562005

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

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



Jamie Croak
Director Quality Operations, Bioscience Production

Nitric Acid 69%
CMOS

avantor™



M6096
M6097
M6098
M6099
M6100

Mutdig
9/21/24

Material No.: 9606-03
Batch No.: 24D1062002
Manufactured Date: 2024-03-26
Retest Date: 2029-03-25
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (HNO ₃)	69.0 – 70.0 %	69.7 %
Appearance	Passes Test	Passes Test
Color (APHA)	≤ 10	5
Residue after Ignition	≤ 2 ppm	1 ppm
Chloride (Cl)	≤ 0.08 ppm	< 0.03 ppm
Phosphate (PO ₄)	≤ 0.10 ppm	< 0.03 ppm
Sulfate (SO ₄)	≤ 0.2 ppm	< 0.2 ppm
Trace Impurities – Aluminum (Al)	≤ 40.0 ppb	< 1.0 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities – Barium (Ba)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Beryllium (Be)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Bismuth (Bi)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities – Boron (B)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Cadmium (Cd)	≤ 50 ppb	< 1 ppb
Trace Impurities – Calcium (Ca)	≤ 50.0 ppb	2.3 ppb
Trace Impurities – Chromium (Cr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities – Cobalt (Co)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Copper (Cu)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Gallium (Ga)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Germanium (Ge)	≤ 20 ppb	< 10 ppb
Trace Impurities – Gold (Au)	≤ 20 ppb	< 5 ppb
Heavy Metals (as Pb)	≤ 100 ppb	100 ppb
Trace Impurities – Iron (Fe)	≤ 40.0 ppb	< 1.0 ppb
Trace Impurities – Lead (Pb)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities – Lithium (Li)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Magnesium (Mg)	≤ 20 ppb	< 1 ppb
Trace Impurities – Manganese (Mn)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Nickel (Ni)	≤ 20.0 ppb	< 5.0 ppb

>>> Continued on page 2 >>>

Nitric Acid 69%
CMOS



Material No.: 9606-03
Batch No.: 24D1062002

Test	Specification	Result
Trace Impurities – Niobium (Nb)	≤ 50.0 ppb	< 1.0 ppb
Trace Impurities – Potassium (K)	≤ 50 ppb	16 ppb
Trace Impurities – Silicon (Si)	≤ 50 ppb	< 10 ppb
Trace Impurities – Silver (Ag)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Sodium (Na)	≤ 150.0 ppb	< 5.0 ppb
Trace Impurities – Strontium (Sr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities – Tantalum (Ta)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Thallium (Tl)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Tin (Sn)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities – Titanium (Ti)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Vanadium (V)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Zinc (Zn)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Zirconium (Zr)	≤ 10.0 ppb	< 1.0 ppb
Particle Count – 0.5 µm and greater	≤ 60 par/ml	10 par/ml
Particle Count – 1.0 µm and greater	≤ 10 par/ml	3 par/ml

>>> Continued on page 3 >>>

Nitric Acid 69%
CMOS



Material No.: 9606-03
Batch No.: 24D1062002

Test	Specification	Result
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For Microelectronic Use
Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

A handwritten signature in cursive script that reads 'JCroak'.

Jamie Croak
Director Quality Operations, Bioscience Production



CERTIFIED WEIGHT REPORT:

Part Number: 58111
Lot Number: 122223
Description: Sodium (Na)

Solvent: 24002546 Nitric Acid

Lot #

Expiration Date: 122226

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 10000

NIST Test Number: 6UTB

Weight shown below was diluted to (mL): 3000.4 0.06 Flask Uncertainty

<i>Aleah O Brady</i>	
Formulated By:	Aleah O Brady
Reviewed By:	Pedro L. Rentas
	122223

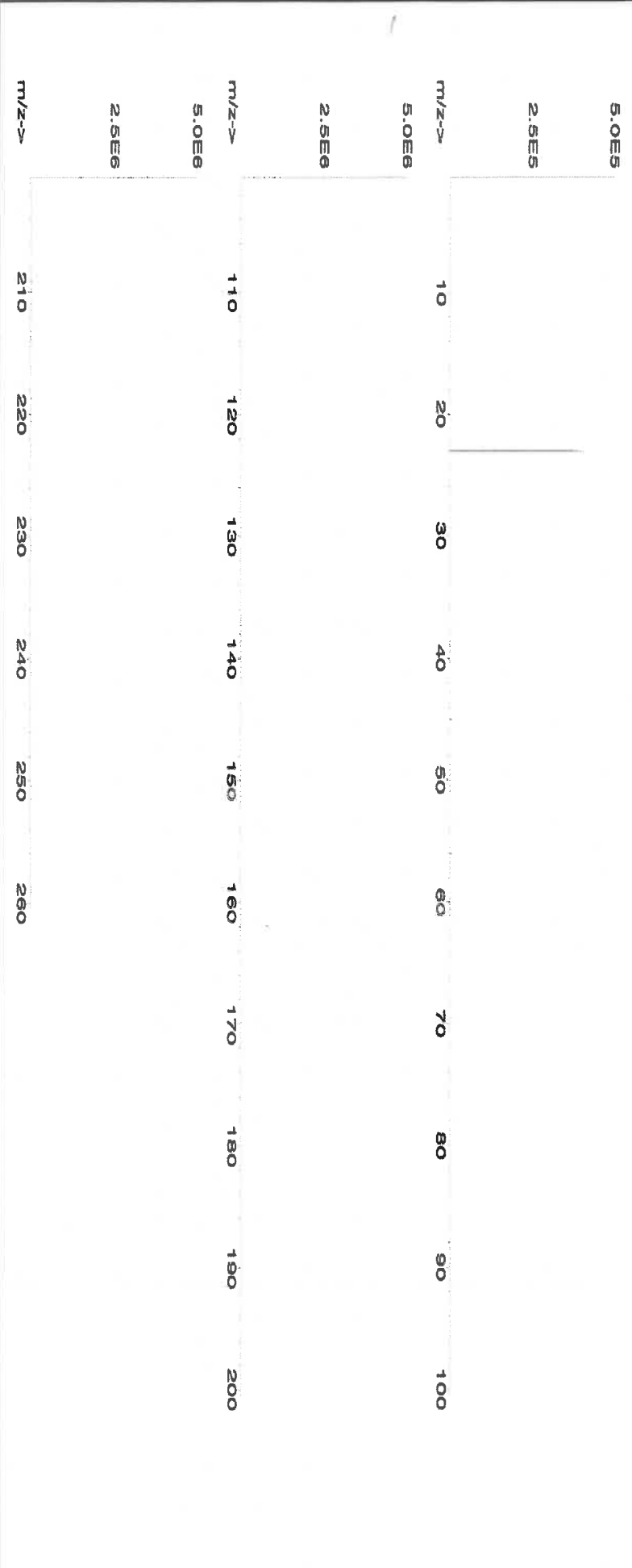
Expanded

SDS Information

Compound	Lot	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Sodium nitrate (Na) IN036 NAV01201511 10000 99.999 0.10 26.9 111.5406 111.5479 10000.7 20.0 7631-99-4 5 mg/m3 or-trat 3430 mg/kg 3152a

[1] Spectrum No.1 [8.935 sec]:58111.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.02	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57051
120523
Antimony (Sb)

Lot #
Solvent:

24002546
Nitric Acid

2.0% 60.0 Nitric Acid
(mL)

Expiration Date:

120526

Recommended Storage:

Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6U7B

Volume shown below was diluted to (mL):

3000.41

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Formulated By:	Lawrence Barry	120523
Reviewed By:	Pedro L. Renteria	120523

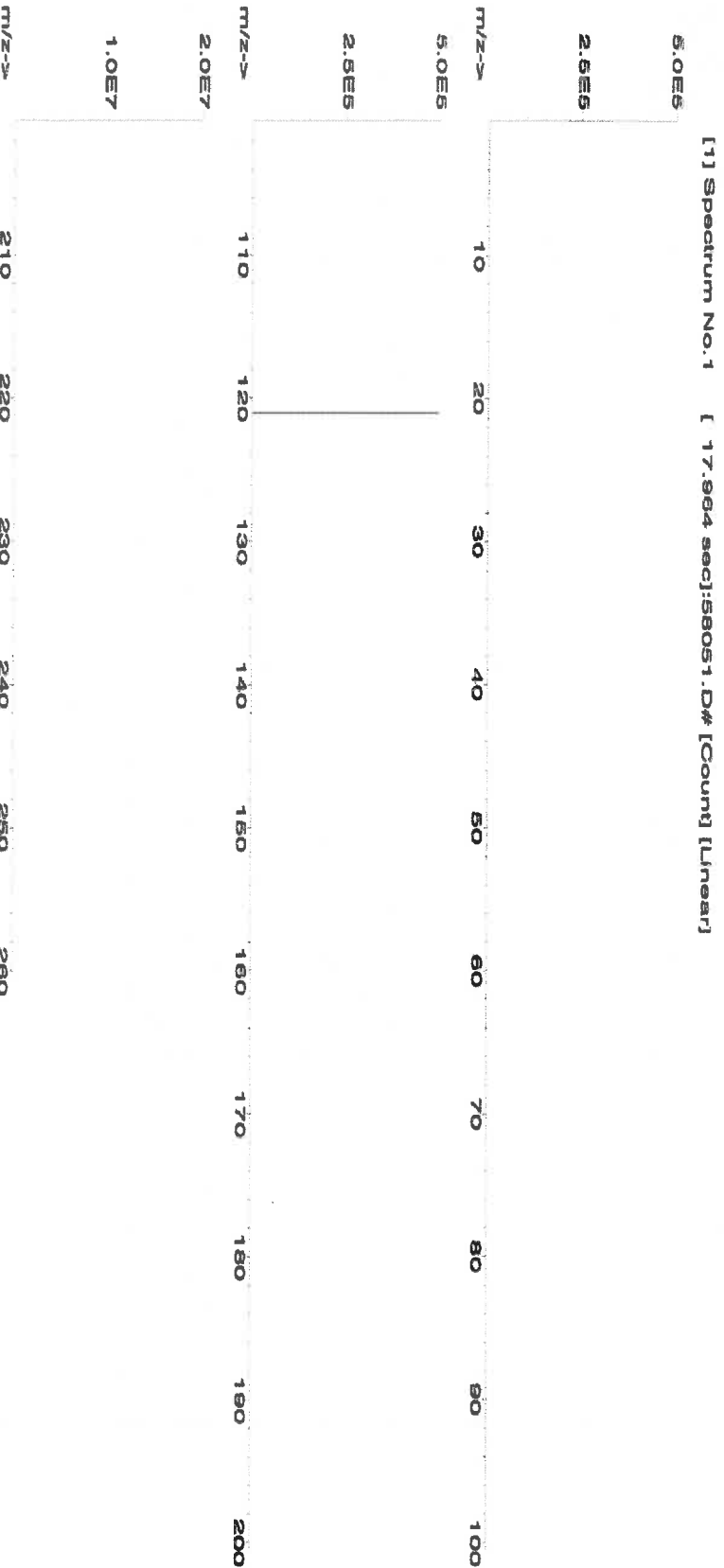
Compound

Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. Antimony (Sb) 58151 100923 0.1000 300.0 0.084 1000 10001.4 1000.0 2.1 7440-36-0 0.5 mg/m3 or-rel 7000 mg/kg 3102a

SDS Information

(Solvent Safety Info. On Attached pg.)





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	T	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



M6030



CERTIFIED WEIGHT REPORT:

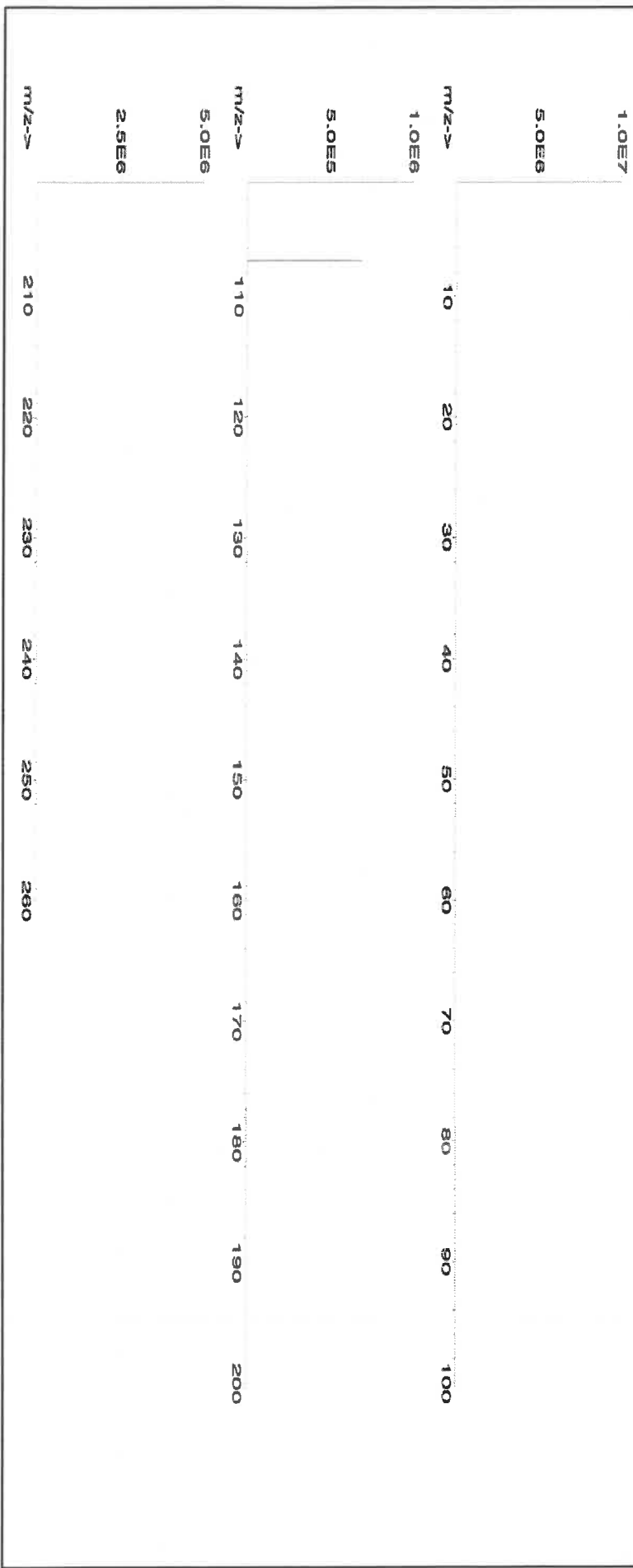
Part Number: **57047**
Lot Number: **122823**
Description: **Silver (Ag)**
Solvent: 24002546 Nitric Acid
Lot #

Expiration Date: 122826
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 4000.30
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Formulated By:	Benson Chan
Reviewed By:	Pedro L. Rentas
122823	

SDS Information									
Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)
1. Silver nitrate (Ag)	IN035	J0612AGA1	1000.0	99.9996	0.10	63.7	6.27992	6.27998	1000.0
							2.0	7761-88-8	10 µg/mL
									NA
									3151

[1] Spectrum No. 1 [14.044 sec]:58147.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	T	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 meghom deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

R: 03/16/23 MS473 MS474 MS475 MS476

Lot #

Part Number:

Solvent: 20510011 Nitric Acid

Lot Number:

Expiration Date: 082925

Description:

Strontium (Sr)

Recommended Storage:

Nominal Concentration (µg/mL):

NIST Test Number:

Weight shown below was diluted to (mL):

Expiration Date: 082925

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 10000

NIST Test Number: 6UTB

Weight shown below was diluted to (mL): 1000.12

5E-05 Balance Uncertainty

0.058 Flask Uncertainty

2% 20.0 (mL) Nitric Acid

5E-05 Balance Uncertainty

0.058 Flask Uncertainty

2% 20.0 (mL) Nitric Acid

5E-05 Balance Uncertainty

0.058 Flask Uncertainty

2% 20.0 (mL) Nitric Acid

5E-05 Balance Uncertainty

0.058 Flask Uncertainty

2% 20.0 (mL) Nitric Acid

5E-05 Balance Uncertainty

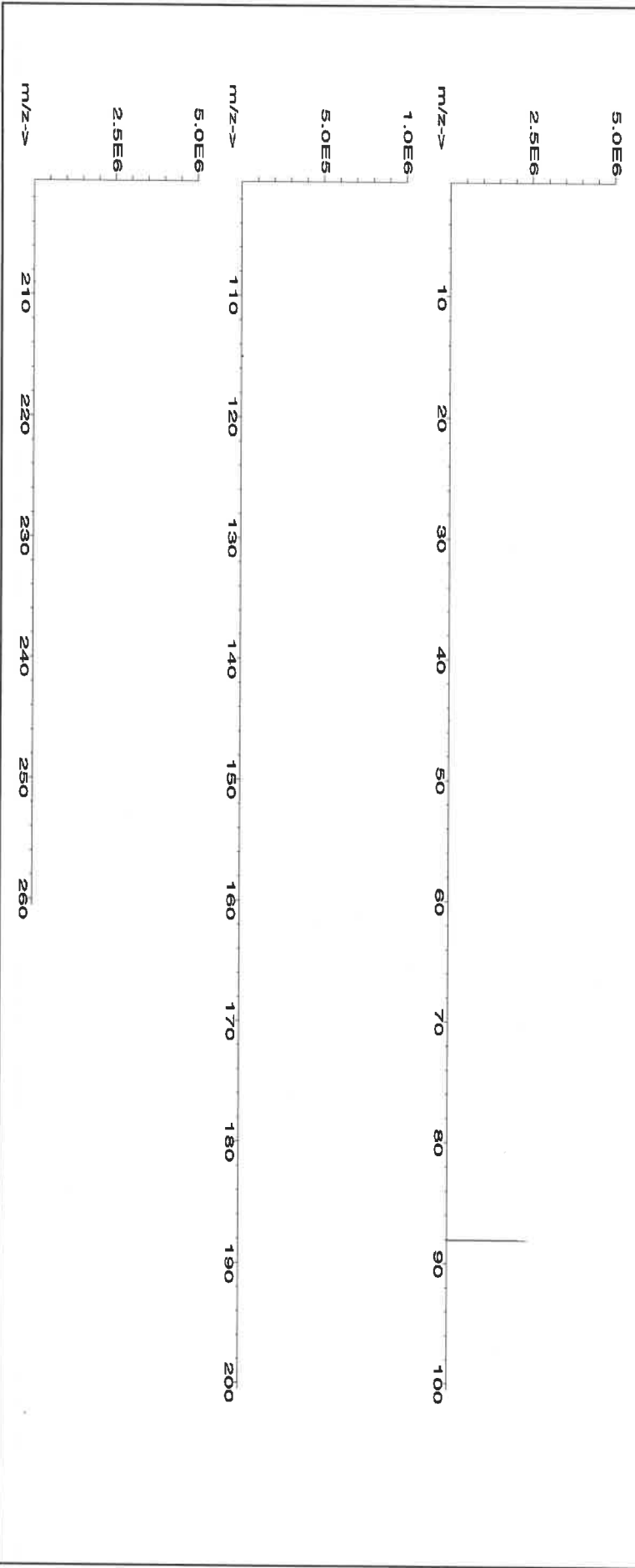
0.058 Flask Uncertainty

2% 20.0 (mL) Nitric Acid

1. Strontium nitrate (Sr)

IN017 SR2022018A1 10000 99.997 0.10 41.2 24.2756 24.2758 10000.1 20.0 10042-76-9 NA or-rat >2000mg/kg 3153a

[1] Spectrum No. 1 [14.495 sec]:58138.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	T	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: 57081
Lot Number: 062724
Description: Thallium (TI)

Lot #

Solvent: 24002546 Nitric Acid

2% 40.0 Nitric Acid (mL)

Expiration Date:

062727

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6UTB

Weight shown below was diluted to (mL): 2000.1

5E-05 Balance Uncertainty
0.10 Flask Uncertainty

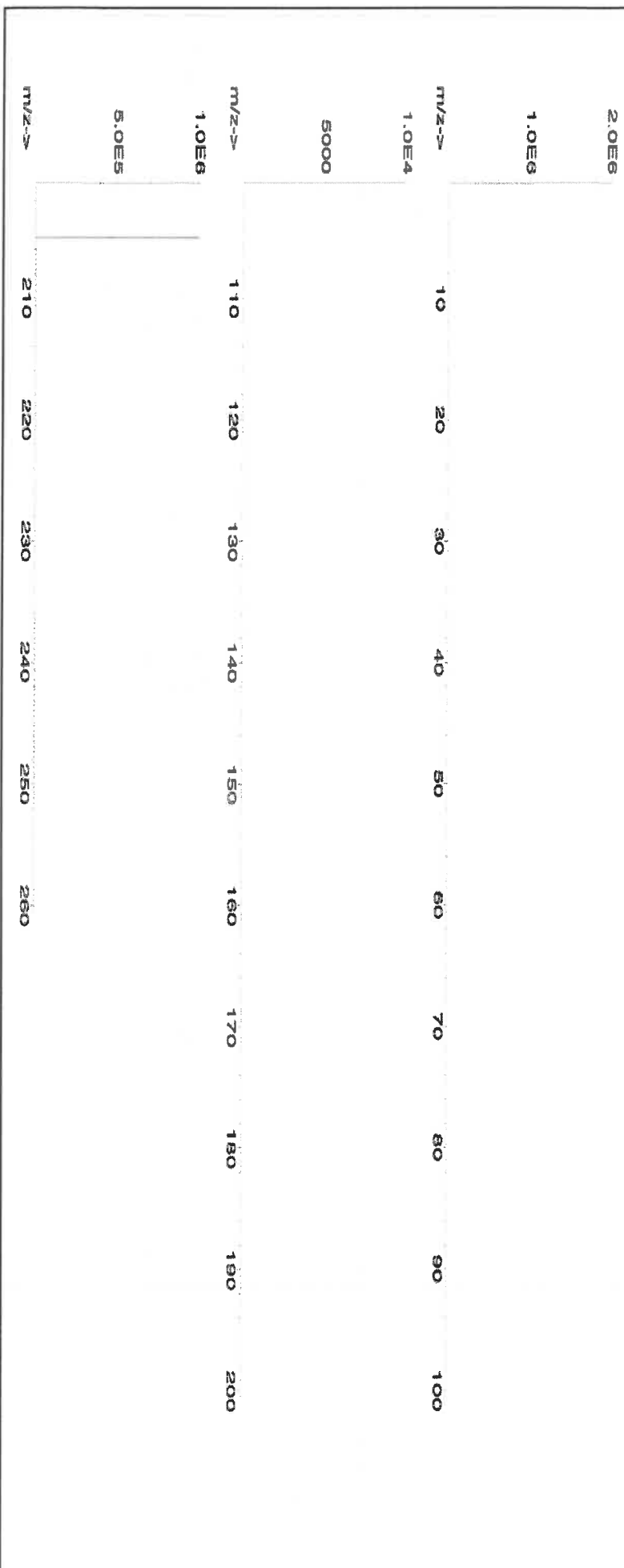
<i>Aleah O'Brady</i>	
Formulated By:	Aleah O'Brady
	062724
Reviewed By:	<i>Pedro L. Renias</i>
	Pedro L. Renias
	062724

SDS Information

Compound	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
----------	------------	-----------------------	------------	-----------------	-----------	-------------------	-------------------	----------------------	----------------------------------	------	----------------	------	----------

1. Thallium nitrate (TI) IN037 BCCF4399 1000 99.999 0.10 77.0 2.5975 2.5977 1000.1 2.0 10102-45-1 0.1 mg/m3 orl-mus 15mg/kg 3158

[1] Spectrum No.1 [14.044 sec]:57081.D# [Count] [Linear]





Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (µg/mL)

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Sc	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	T	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Tm	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Sn	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Ti	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Se	<0.02	Ta	<0.02			Zr	<0.02

(T) = Target analyte

Physical Characterization:

Homogeneity: No heterogeneity was observed in the preparation of this standard.

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
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- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



Certified Reference Material CRM

M6021



ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number: 57023
Lot Number: 062424
Description: Vanadium (V)

Lot # 24002546
Solvent: Nitric Acid

Aleah O'Brady	
Formulated By:	Aleah O'Brady
Reviewed By:	Pedro L. Rantas
	062424

Expiration Date: 062427
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

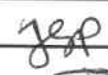
2.0% 40.0 (mL) Nitric Acid

Volume shown below was diluted to (mL): 2000.3 0.06 Balance Uncertainty Flask Uncertainty

Compound		Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium metavanadate (V)		58123	021224	0.1000	200.0	0.084	1000	10000.3	1000.0	2.2	7803-55-6	0.05 mg/m3	or-at 58.1mg/kg	3165

[1] Spectrum No.1 [34.243 sec]:58023.D# [Count] [Linear]

m/z-->	10	20	30	40	50	60	70	80	90	100
2.0E6										
1.0E6										
m/z-->	110	120	130	140	150	160	170	180	190	200
5.0E6										
1.0E7										
m/z-->	210	220	230	240	250	260				
2.5E6										

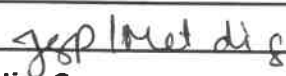
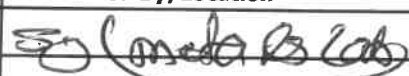
SOP ID : M3050B-Digestion-20, MSFAM01.1-Trace Metals-2
SDG No : MYE450 **Start Digest Date:** 10/23/2024 **Time :** 10:15 **Temp :** 97 °C
Matrix : SOIL **End Digest Date:** 10/23/2024 **Time :** 13:15 **Temp :** 97 °C
Pipette ID: ICP A **Digestion tube ID:** M6054
Balance ID : M SC-2 **Block thermometer ID:** MET-DIG. #3
Filter paper ID : N/A **Dig Technician Signature:** 
pH Strip ID : N/A **Supervisor Signature:** 
Hood ID : #3 **Temp :** 1. 95°C 2. N/A
Block ID: 1. HOT BLOCK #3 2. N/A

Standard Name	MLS USED	STD REF. # FROM LOG
LCSS	1.00	MP82711
LCSSD	0.50	MP82711
Spike Sol 6	2.00	MP82731
N/A	N/A	N/A
N/A	N/A	N/A

Chemical Used	ML/SAMPLE USED	Lot Number
1:1 HNO3	10.00	MP81119
1:1 HCL	5.00	MP82127
Conc. HNO3	5.00	M6096
30% H2O2	3.00	M5634
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

Extraction Conformance/Non-Conformance Comments:

HOT BLOCK #3 Cell #34 Temp.: 97 C

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
10/23/24 14:00	 Preparation Group	 Analysis Group

Lab Sample ID	Client Sample ID	pH	Initial Weight (g)	Final Vol (ml)	Color Before	Color After	Texture	Artifact	Comment	Prep Pos
P4477-01	MYE450	N/A	1.30	100	Brown	Yellow	Medium	N/A	N/A	1
P4477-02	MYE451	N/A	1.38	100	Brown	Yellow	Medium	N/A	N/A	2
P4477-03	MYE452	N/A	1.18	100	Brown	Yellow	Medium	N/A	N/A	3
P4477-04	MYE453	N/A	1.42	100	Brown	Yellow	Medium	N/A	N/A	4
P4477-05	MYE453D	N/A	1.47	100	Brown	Yellow	Medium	N/A	N/A	6
P4477-06	MYE453S	N/A	1.38	100	Brown	Yellow	Medium	N/A	MP82731	27
P4477-07	MYE454	N/A	1.29	100	Brown	Yellow	Medium	N/A	N/A	8
P4477-08	MYE455	N/A	1.24	100	Brown	Yellow	Medium	N/A	N/A	9
P4477-09	MYE456	N/A	1.07	100	Brown	Yellow	Medium	N/A	N/A	10
P4477-10	MYE457	N/A	1.42	100	Brown	Yellow	Medium	N/A	N/A	11
P4477-11	MYE458	N/A	1.34	100	Brown	Yellow	Medium	N/A	N/A	12
P4477-12	MYE459	N/A	1.42	100	Brown	Yellow	Medium	N/A	N/A	13
P4477-13	MYE460	N/A	1.19	100	Brown	Yellow	Medium	N/A	N/A	14
P4477-14	MYE461	N/A	1.11	100	Brown	Yellow	Medium	N/A	N/A	15
P4477-15	MYE462	N/A	1.48	100	Brown	Yellow	Medium	N/A	N/A	16
P4477-16	MYE463	N/A	1.22	100	Brown	Yellow	Medium	N/A	N/A	17
P4477-17	MYE464	N/A	1.17	100	Brown	Yellow	Medium	N/A	N/A	18
P4477-18	MYE465	N/A	1.21	100	Brown	Yellow	Medium	N/A	N/A	19
P4477-19	MYE466	N/A	1.25	100	Brown	Yellow	Medium	N/A	N/A	20
P4477-20	MYE467	N/A	1.12	100	Brown	Yellow	Medium	N/A	N/A	21
P4477-21	MYE468	N/A	1.39	100	Brown	Yellow	Medium	N/A	N/A	22
P4477-22	MYE469	N/A	1.33	100	Brown	Yellow	Medium	N/A	N/A	23
PB164346BL	PBS346	N/A	1.00	100	Colorless	Colorless	Fine	N/A	N/A	24
PB164346BS	LCS346	N/A	1.00	100	Colorless	Colorless	Fine	N/A	MP82711	28
PB164346BSD	LCSD346	N/A	1.00	100	Colorless	Colorless	Fine	N/A	MP82711	29

Instrument ID: P5

Daily Analysis Runlog For Sequence/QC Batch ID # LB133149

Review By	Sarabjit Jaswal	Review On	11/5/2024 7:52:29 AM
Supervise By	Mohan Bera	Supervise On	11/5/2024 7:53:12 AM
STD. NAME	STD REF.#		
ICAL Standard	MP82441,MP82632,MP82446,MP82445,MP82444,MP82443,MP82442		
ICV Standard	MP82450		
CCV Standard	MP82453		
ICSA Standard	MP82451,MP82452		
CRI Standard			
LCS Standard	MP82711		
Chk Standard	MP82455,MP82456		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	10/26/24 18:18		Kareem	OK
2	S1	S01	CAL2	10/26/24 18:23		Kareem	OK
3	S2	S02	CAL3	10/26/24 18:27		Kareem	OK
4	S3	S03	CAL4	10/26/24 18:32		Kareem	OK
5	S4	S04	CAL5	10/26/24 18:36		Kareem	OK
6	S5	S05	CAL6	10/26/24 18:40		Kareem	OK
7	S6	S06	CAL7	10/26/24 18:45		Kareem	OK
8	ICV002	ICV002	ICV	10/26/24 19:13	Inst. paused for calibration review	Kareem	OK
9	ICB002	ICB002	ICB	10/26/24 19:19	Inst. paused for review	Kareem	OK
10	ICSA002	ICSA002	ICSA	10/26/24 19:23		Kareem	OK
11	ICSAB002	ICSAB002	ICSAB	10/26/24 19:37	Inst. paused for review	Kareem	OK
12	CCV005	CCV005	CCV	10/26/24 20:07	Inst. paused for review	Kareem	OK
13	CCB005	CCB005	CCB	10/26/24 20:12		Kareem	OK
14	P4477-01DL	MYE450	SAM	10/26/24 20:17		Kareem	OK
15	P4477-02DL	MYE451	SAM	10/26/24 20:21		Kareem	OK
16	P4477-03DL	MYE452	SAM	10/26/24 20:25		Kareem	OK
17	P4477-04DL	MYE453	SAM	10/26/24 20:30		Kareem	OK
18	CCV006	CCV006	CCV	10/26/24 20:34		Kareem	OK

Instrument ID: P5

Daily Analysis Runlog For Sequence/QC Batch ID # LB133149

Review By	Sarabjit Jaswal	Review On	11/5/2024 7:52:29 AM
Supervise By	Mohan Bera	Supervise On	11/5/2024 7:53:12 AM
STD. NAME	STD REF.#		
ICAL Standard	MP82441,MP82632,MP82446,MP82445,MP82444,MP82443,MP82442		
ICV Standard	MP82450		
CCV Standard	MP82453		
ICSA Standard	MP82451,MP82452		
CRI Standard			
LCS Standard	MP82711		
Chk Standard	MP82455,MP82456		

19	CCB006	CCB006	CCB	10/26/24 20:38		Kareem	OK
20	P4477-05DL	MYE453D	DUP	10/26/24 20:43		Kareem	OK
21	P4477-06DL	MYE453S	MS	10/26/24 20:47		Kareem	OK
22	P4477-04LDL	MYE453L	SD	10/26/24 20:52		Kareem	OK
23	P4477-07DL	MYE454	SAM	10/26/24 20:56		Kareem	OK
24	P4477-08DL	MYE455	SAM	10/26/24 21:01		Kareem	OK
25	P4477-09DL	MYE456	SAM	10/26/24 21:05		Kareem	OK
26	P4477-10DL	MYE457	SAM	10/26/24 21:09		Kareem	OK
27	P4477-11DL	MYE458	SAM	10/26/24 21:14		Kareem	OK
28	P4477-12DL	MYE459	SAM	10/26/24 21:18		Kareem	OK
29	P4477-13DL	MYE460	SAM	10/26/24 21:23		Kareem	OK
30	P4477-14DL	MYE461	SAM	10/26/24 21:27		Kareem	OK
31	P4477-15DL	MYE462	SAM	10/26/24 21:31		Kareem	OK
32	P4477-16DL	MYE463	SAM	10/26/24 21:36		Kareem	OK
33	P4477-17DL	MYE464	SAM	10/26/24 21:40		Kareem	OK
34	P4477-18DL	MYE465	SAM	10/26/24 21:45		Kareem	OK
35	P4477-19DL	MYE466	SAM	10/26/24 21:49		Kareem	OK
36	CCV007	CCV007	CCV	10/26/24 21:53		Kareem	OK
37	CCB007	CCB007	CCB	10/26/24 21:58		Kareem	OK
38	P4477-20DL	MYE467	SAM	10/26/24 22:02		Kareem	OK

Instrument ID: P5

Daily Analysis Runlog For Sequence/QC Batch ID # LB133149

Review By	Sarabjit Jaswal	Review On	11/5/2024 7:52:29 AM
Supervise By	Mohan Bera	Supervise On	11/5/2024 7:53:12 AM
STD. NAME	STD REF.#		
ICAL Standard	MP82441,MP82632,MP82446,MP82445,MP82444,MP82443,MP82442		
ICV Standard	MP82450		
CCV Standard	MP82453		
ICSA Standard	MP82451,MP82452		
CRI Standard			
LCS Standard	MP82711		
Chk Standard	MP82455,MP82456		

39	P4477-21DL	MYE468	SAM	10/26/24 22:07		Kareem	OK
40	P4477-22DL	MYE469	SAM	10/26/24 22:11		Kareem	OK
41	PB164346BL	PBS346	MB	10/26/24 22:15		Kareem	OK
42	PB164346BS	LCS346	LCS	10/26/24 22:20		Kareem	OK
43	PB164346BSD	LCSD346	LCSD	10/26/24 22:24		Kareem	OK
44	P4479-01DL	MYE470	SAM	10/26/24 22:29		Kareem	OK
45	P4479-02DL	MYE471	SAM	10/26/24 22:33		Kareem	OK
46	P4479-03DL	MYE472	SAM	10/26/24 22:38		Kareem	OK
47	P4479-04DL	MYE473	SAM	10/26/24 22:42		Kareem	OK
48	P4479-05DL	MYE474	SAM	10/26/24 22:47		Kareem	OK
49	P4479-06DL	MYE475	SAM	10/26/24 22:51		Kareem	OK
50	P4479-07DL	MYE476	SAM	10/26/24 22:55		Kareem	OK
51	P4479-08DL	MYE477	SAM	10/26/24 23:00		Kareem	OK
52	P4479-09DL	MYE478	SAM	10/26/24 23:04		Kareem	OK
53	P4479-10DL	MYE479	SAM	10/26/24 23:09		Kareem	OK
54	P4479-11DL	MYE480	SAM	10/26/24 23:13		Kareem	OK
55	P4479-12DL	MYE481	SAM	10/26/24 23:18		Kareem	OK
56	P4479-13DL	MYE481D	DUP	10/26/24 23:22		Kareem	OK
57	P4479-14DL	MYE481S	MS	10/26/24 23:26		Kareem	OK
58	CCV008	CCV008	CCV	10/26/24 23:31		Kareem	OK

Instrument ID: P5

Daily Analysis Runlog For Sequence/QC Batch ID # LB133149

Review By	Sarabjit Jaswal	Review On	11/5/2024 7:52:29 AM
Supervise By	Mohan Bera	Supervise On	11/5/2024 7:53:12 AM
STD. NAME	STD REF.#		
ICAL Standard	MP82441,MP82632,MP82446,MP82445,MP82444,MP82443,MP82442		
ICV Standard	MP82450		
CCV Standard	MP82453		
ICSA Standard	MP82451,MP82452		
CRI Standard			
LCS Standard	MP82711		
Chk Standard	MP82455,MP82456		

59	CCB008	CCB008	CCB	10/26/24 23:35		Kareem	OK
60	P4479-12LDL	MYE481L	SD	10/26/24 23:39		Kareem	OK
61	P4479-15DL	MYE482	SAM	10/26/24 23:44		Kareem	OK
62	P4479-16DL	MYE483	SAM	10/26/24 23:48		Kareem	OK
63	P4479-17DL	MYE484	SAM	10/26/24 23:53		Kareem	OK
64	P4479-18DL	MYE485	SAM	10/26/24 23:57		Kareem	OK
65	P4479-19DL	MYE486	SAM	10/27/24 00:02		Kareem	OK
66	P4479-20DL	MYE487	SAM	10/27/24 00:06		Kareem	OK
67	P4479-21DL	MYE488	SAM	10/27/24 00:10		Kareem	OK
68	P4479-22DL	MYE489	SAM	10/27/24 00:15		Kareem	OK
69	PB164350BL	PBS350	MB	10/27/24 00:19		Kareem	OK
70	PB164350BS	LCS350	LCS	10/27/24 00:24		Kareem	OK
71	PB164350BSD	LCSD350	LCSD	10/27/24 00:28		Kareem	OK
72	CCV009	CCV009	CCV	10/27/24 00:39		Kareem	OK
73	CCB009	CCB009	CCB	10/27/24 00:43		Kareem	OK