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

Cover Page

Order ID : Q2758

Project ID : 92 Clifford Street, Newark

Client : Sciacca General Contractors, LLC

Lab Sample Number	Client Sample Number
Q2758-01	WASTE
Q2758-02	WASTE

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

Signature : _____

Date: 8/11/2025

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

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

CASE NARRATIVE

Sciacca General Contractors, LLC
Project Name: 92 Clifford Street, Newark
Project # N/A
Order ID # Q2758
Test Name: TCLP ICP Metals,TCLP Mercury

A. Number of Samples and Date of Receipt:
1 Solid sample was received on 08/01/2025.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Ignitability, Mercury, Metals ICP-TAL, METALS-TAL, PCB, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-PAH, TCLP Extraction, TCLP ICP Metals, TCLP Mercury, TCLP METALS, TPH GC and VOC-TCLVOA-10. This data package contains results for TCLP ICP Metals,TCLP Mercury.

C. Analytical Techniques:
The analysis of TCLP ICP Metals was based on method 6010D, digestion based on method 3010 (waters). The analysis and digestion of TCLP Mercury was based on method 7470A and TCLP extraction method was 1311.

D. QA/ QC Samples:

The Holding Times were met for all analysis.
The Blank Spike met requirements for all compounds.
The Duplicate (TP-1DUP) analysis met criteria for all compounds except for Barium due to sample matrix interference.
The Matrix Spike (TP-1MS) analysis met criteria for all compounds except for Barium due to Chemical Interference during Digestion process.
The Matrix Spike Duplicate analysis met criteria for all compounds.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.
The Serial Dilution met the acceptable requirements.

E. Additional Comments: As per special requirement for this project form-1 and Hit summary are reported in mg/L.
The Date and time of sampling was not listed in the COC.

The Post Digest Spike (TP-1A) analysis met criteria for all compounds except for Barium due to unknown chemical interference of matrix with the addition of spike amount after digestion and before analysis; matrix has suppression effect during addition of spike.

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

Signature_____

Alliance TECHNICAL GROUP

284 Sheffield Street, Mountainside NJ 07092
Tel. 908-789-8900 Fax: 908-789-8922

DATA REPORTING QUALIFIERS- INORGANIC

For reporting results, the following " Results Qualifiers" are used:

J	Indicates the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL), but greater than or equal to the Instrument Detection Limit (IDL).
U	Indicates the analyte was analyzed for, but not detected.
ND	Indicates the analyte was analyzed for, but not detected
E	Indicates the reported value is estimated because of the presence of interference
M	Indicates Duplicate injection precision not met.
N	Indicates the spiked sample recovery is not within control limits.
S	Indicates the reported value was determined by the Method of Standard Addition (MSA).
*	Indicates that the duplicate analysis is not within control limits.
+	Indicates the correlation coefficient for the MSA is less than 0.995.
D	Indicates the reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.
M	Method qualifiers **"P"** for ICP instrument **"PM"** for ICP when Microwave Digestion is used **"CV"** for Manual Cold Vapor AA **"AV"** for automated Cold Vapor AA **"CA"** for MIDI-Distillation Spectrophotometric **"AS"** for Semi –Automated Spectrophotometric **"C"** for Manual Spectrophotometric **"T"** for Titrimetric **"NR"** for analyte not required to be analyzed
OR	Indicates the analyte's concentration exceeds the calibrated range of the instrument for that specific analysis.
Q	Indicates the LCS did not meet the control limits requirements
H	Sample Analysis Out Of Hold Time

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

APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: **Q2758**

	Completed
For thorough review, the report must have the following:	
GENERAL:	
Are all original paperwork present (chain of custody, record of communication,airbill, sample management lab chronicle, login page)	✓
Check chain-of-custody for proper relinquish/return of samples	✓
Is the chain of custody signed and complete	✓
Check internal chain-of-custody for proper relinquish/return of samples /sample extracts	✓
Collect information for each project id from server. Were all requirements followed	✓
COVER PAGE:	
Do numbers of samples correspond to the number of samples in the Chain of Custody on login page	✓
Do lab numbers and client Ids on cover page agree with the Chain of Custody	✓
CHAIN OF CUSTODY:	
Do requested analyses on Chain of Custody agree with form I results	✓
Do requested analyses on Chain of Custody agree with the log-in page	✓
Were the correct method log-in for analysis according to the Analytical Request and Chain of Castody	✓
Were the samples received within hold time	✓
Were any problems found with the samples at arrival recorded in the Sample Management Laboratory Chronicle	✓
ANALYTICAL:	
Was method requirement followed?	✓
Was client requirement followed?	✓
Does the case narrative summarize all QC failure?	✓
All runlogs and manual integration are reviewed for requirements	✓
All manual calculations and /or hand notations verified	✓

QA Review Signature: **SOHIL JODHANI** **Date:** **08/11/2025**

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

LAB CHRONICLE

OrderID:	Q2758	**OrderDate:**	8/1/2025 4:14:00 PM
Client:	Sciacca General Contractors, LLC	**Project:**	92 Clifford Street, Newark
Contact:	Rosanne Scirica	**Location:**	D21,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
Q2758-01	**WASTE**	**SOIL**			**08/01/25**			**08/01/25**
			Mercury	7471B		08/04/25	08/04/25	
			Metals ICP-TAL	6010D		08/04/25	08/04/25	
Q2758-02	**WASTE**	**TCLP**			**08/01/25**			**08/01/25**
			TCLP ICP Metals	6010D		08/06/25	08/07/25	
			TCLP Mercury	7470A		08/07/25	08/07/25	

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

Hit Summary Sheet
SW-846

SDG No.: Q2758 **Order ID:** Q2758

Client: Sciacca General Contractors, LLC **Project ID:** 92 Clifford Street, Newark

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID : WASTE								
Q2758-02	WASTE	TCLP	Barium	0.98		0.073	0.50	mg/L
Q2758-02	WASTE	TCLP	Cadmium	0.052		0.0025	0.030	mg/L
Q2758-02	WASTE	TCLP	Lead	0.83		0.012	0.060	mg/L



SAMPLE DATA

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

Report of Analysis

Client:	Sciacca General Contractors, LLC	Date Collected:	08/01/25
Project:	92 Clifford Street, Newark	Date Received:	08/01/25
Client Sample ID:	WASTE	SDG No.:	Q2758
Lab Sample ID:	Q2758-02	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7440-38-2	Arsenic	0.026	U	1	0.026	0.10	mg/L	08/06/25 12:30	08/07/25 16:10	6010D	SW3050
7440-39-3	Barium	0.98	N*	1	0.073	0.50	mg/L	08/06/25 12:30	08/07/25 16:10	6010D	SW3050
7440-43-9	Cadmium	0.052		1	0.0025	0.030	mg/L	08/06/25 12:30	08/07/25 16:10	6010D	SW3050
7440-47-3	Chromium	0.011	U	1	0.011	0.050	mg/L	08/06/25 12:30	08/07/25 16:10	6010D	SW3050
7439-92-1	Lead	0.83		1	0.012	0.060	mg/L	08/06/25 12:30	08/07/25 16:10	6010D	SW3050
7439-97-6	Mercury	0.00076	U	1	0.00076	0.0020	mg/L	08/07/25 12:32	08/07/25 14:54	7470A	
7782-49-2	Selenium	0.048	U	1	0.048	0.10	mg/L	08/06/25 12:30	08/07/25 16:10	6010D	SW3050
7440-22-4	Silver	0.0081	U	1	0.0081	0.050	mg/L	08/06/25 12:30	08/07/25 16:10	6010D	SW3050

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

METAL CALIBRATION DATA

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

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Sciacca General Contractors, LLC **SDG No.:** Q2758

Contract: SCIA01 **Lab Code:** ACE

Initial Calibration Source: EPA

Continuing Calibration Source: PLASMA-PURE

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV03	Mercury	4.00	4.0	100	90 - 110	CV	08/07/2025	14:29	LB136741

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

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Sciacca General Contractors, LLC **SDG No.:** Q2758

Contract: SCIA01 **Lab Code:** ACE

Initial Calibration Source: EPA

Continuing Calibration Source: PLASMA-PURE

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV05	Mercury	4.93	5.0	98	90 - 110	CV	08/07/2025	14:36	LB136741
CCV06	Mercury	4.93	5.0	99	90 - 110	CV	08/07/2025	15:06	LB136741
CCV07	Mercury	5.02	5.0	100	90 - 110	CV	08/07/2025	15:34	LB136741

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

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Sciacca General Contractors, LLC **SDG No.:** Q2758

Contract: SCIA01 **Lab Code:** ACE

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV01	Arsenic	3890	4000	97	90 - 110	P	08/07/2025	13:11	LB136746
	Barium	7860	8000	98	90 - 110	P	08/07/2025	13:11	LB136746
	Cadmium	1930	2000	97	90 - 110	P	08/07/2025	13:11	LB136746
	Chromium	786	800	98	90 - 110	P	08/07/2025	13:11	LB136746
	Lead	3810	4000	95	90 - 110	P	08/07/2025	13:11	LB136746
	Selenium	3950	4000	99	90 - 110	P	08/07/2025	13:11	LB136746
	Silver	961	1000	96	90 - 110	P	08/07/2025	13:11	LB136746

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

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Sciacca General Contractors, LLC **SDG No.:** Q2758

Contract: SCIA01 **Lab Code:** ACE

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLICV01	Arsenic	20.6	20.0	103	80 - 120	P	08/07/2025	13:21	LB136746
	Barium	105	100	105	80 - 120	P	08/07/2025	13:21	LB136746
	Cadmium	5.92	6.0	99	80 - 120	P	08/07/2025	13:21	LB136746
	Chromium	10.1	10.0	101	80 - 120	P	08/07/2025	13:21	LB136746
	Lead	12.4	12.0	104	80 - 120	P	08/07/2025	13:21	LB136746
	Selenium	21.4	20.0	107	80 - 120	P	08/07/2025	13:21	LB136746
	Silver	10.2	10.0	102	80 - 120	P	08/07/2025	13:21	LB136746

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

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Sciacca General Contractors, LLC **SDG No.:** Q2758

Contract: SCIA01 **Lab Code:** ACE

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV01	Arsenic	4880	5000	98	90 - 110	P	08/07/2025	13:58	LB136746
	Barium	9670	10000	97	90 - 110	P	08/07/2025	13:58	LB136746
	Cadmium	2410	2500	96	90 - 110	P	08/07/2025	13:58	LB136746
	Chromium	962	1000	96	90 - 110	P	08/07/2025	13:58	LB136746
	Lead	4800	5000	96	90 - 110	P	08/07/2025	13:58	LB136746
	Selenium	4900	5000	98	90 - 110	P	08/07/2025	13:58	LB136746
	Silver	1220	1250	98	90 - 110	P	08/07/2025	13:58	LB136746
CCV02	Arsenic	4920	5000	98	90 - 110	P	08/07/2025	14:48	LB136746
	Barium	9580	10000	96	90 - 110	P	08/07/2025	14:48	LB136746
	Cadmium	2430	2500	97	90 - 110	P	08/07/2025	14:48	LB136746
	Chromium	956	1000	96	90 - 110	P	08/07/2025	14:48	LB136746
	Lead	4820	5000	96	90 - 110	P	08/07/2025	14:48	LB136746
	Selenium	4940	5000	99	90 - 110	P	08/07/2025	14:48	LB136746
	Silver	1210	1250	97	90 - 110	P	08/07/2025	14:48	LB136746
CCV03	Arsenic	4990	5000	100	90 - 110	P	08/07/2025	15:45	LB136746
	Barium	9730	10000	97	90 - 110	P	08/07/2025	15:45	LB136746
	Cadmium	2430	2500	97	90 - 110	P	08/07/2025	15:45	LB136746
	Chromium	975	1000	98	90 - 110	P	08/07/2025	15:45	LB136746
	Lead	4810	5000	96	90 - 110	P	08/07/2025	15:45	LB136746
	Selenium	5010	5000	100	90 - 110	P	08/07/2025	15:45	LB136746
	Silver	1220	1250	98	90 - 110	P	08/07/2025	15:45	LB136746
CCV04	Arsenic	4770	5000	95	90 - 110	P	08/07/2025	16:56	LB136746
	Barium	9630	10000	96	90 - 110	P	08/07/2025	16:56	LB136746
	Cadmium	2300	2500	92	90 - 110	P	08/07/2025	16:56	LB136746
	Chromium	933	1000	93	90 - 110	P	08/07/2025	16:56	LB136746
	Lead	4580	5000	92	90 - 110	P	08/07/2025	16:56	LB136746
	Selenium	4800	5000	96	90 - 110	P	08/07/2025	16:56	LB136746
	Silver	1190	1250	95	90 - 110	P	08/07/2025	16:56	LB136746
CCV05	Arsenic	4840	5000	97	90 - 110	P	08/07/2025	17:38	LB136746
	Barium	9490	10000	95	90 - 110	P	08/07/2025	17:38	LB136746
	Cadmium	2350	2500	94	90 - 110	P	08/07/2025	17:38	LB136746
	Chromium	924	1000	92	90 - 110	P	08/07/2025	17:38	LB136746
	Lead	4670	5000	93	90 - 110	P	08/07/2025	17:38	LB136746
	Selenium	4920	5000	98	90 - 110	P	08/07/2025	17:38	LB136746

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

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Sciacca General Contractors, LLC **SDG No.:** Q2758

Contract: SCIA01 **Lab Code:** ACE

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV05	Silver	1180	1250	95	90 - 110	P	08/07/2025	17:38	LB136746

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

Metals

- 2b -
CRDL STANDARD FOR AA & ICP

Client: Sciacca General Contractors, LLC **SDG No.:** Q2758

Contract: SCIA01 **Lab Code:** ACE

Initial Calibration Source:

Continuing Calibration Source:

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CRI01	Arsenic	18.9	20.0	94	65 - 135	P	08/07/2025	13:29	LB136746
	Barium	107	100	107	65 - 135	P	08/07/2025	13:29	LB136746
	Cadmium	6.46	6.0	108	65 - 135	P	08/07/2025	13:29	LB136746
	Chromium	10.5	10.0	105	65 - 135	P	08/07/2025	13:29	LB136746
	Lead	13.6	12.0	113	65 - 135	P	08/07/2025	13:29	LB136746
	Selenium	23.4	20.0	117	65 - 135	P	08/07/2025	13:29	LB136746
	Silver	10.1	10.0	101	65 - 135	P	08/07/2025	13:29	LB136746
CRA	Mercury	0.17	0.2	84	70 - 130	CV	08/07/2025	14:43	LB136741

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

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Sciacca General Contractors, LLC **SDG No.:** Q2758

Contract: SCIA01 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB03	Mercury	0.076	+/-0.2	U	0.20	CV	08/07/2025	14:34	LB136741

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

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Sciacca General Contractors, LLC **SDG No.:** Q2758

Contract: SCIA01 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB05	Mercury	0.076	+/-0.2	U	0.20	CV	08/07/2025	14:41	LB136741
CCB06	Mercury	0.076	+/-0.2	U	0.20	CV	08/07/2025	15:11	LB136741
CCB07	Mercury	0.076	+/-0.2	U	0.20	CV	08/07/2025	15:36	LB136741

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

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Sciacca General Contractors, LLC **SDG No.:** Q2758

Contract: SCIA01 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Arsenic	5.12	+/-10	U	20.0	P	08/07/2025	13:25	LB136746
	Barium	14.6	+/-50	U	100	P	08/07/2025	13:25	LB136746
	Cadmium	0.50	+/-3	U	6.00	P	08/07/2025	13:25	LB136746
	Chromium	2.12	+/-5	U	10.0	P	08/07/2025	13:25	LB136746
	Lead	2.30	+/-6	U	12.0	P	08/07/2025	13:25	LB136746
	Selenium	9.64	+/-10	U	20.0	P	08/07/2025	13:25	LB136746
	Silver	1.62	+/-5	U	10.0	P	08/07/2025	13:25	LB136746

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

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Sciacca General Contractors, LLC **SDG No.:** Q2758

Contract: SCIA01 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Arsenic	5.12	+/-10	U	20.0	P	08/07/2025	14:02	LB136746
	Barium	14.6	+/-50	U	100	P	08/07/2025	14:02	LB136746
	Cadmium	0.81	+/-3	J	6.00	P	08/07/2025	14:02	LB136746
	Chromium	2.12	+/-5	U	10.0	P	08/07/2025	14:02	LB136746
	Lead	2.30	+/-6	U	12.0	P	08/07/2025	14:02	LB136746
	Selenium	9.64	+/-10	U	20.0	P	08/07/2025	14:02	LB136746
	Silver	1.62	+/-5	U	10.0	P	08/07/2025	14:02	LB136746
CCB02	Arsenic	5.12	+/-10	U	20.0	P	08/07/2025	14:52	LB136746
	Barium	14.6	+/-50	U	100	P	08/07/2025	14:52	LB136746
	Cadmium	1.03	+/-3	J	6.00	P	08/07/2025	14:52	LB136746
	Chromium	2.12	+/-5	U	10.0	P	08/07/2025	14:52	LB136746
	Lead	2.64	+/-6	J	12.0	P	08/07/2025	14:52	LB136746
	Selenium	9.64	+/-10	U	20.0	P	08/07/2025	14:52	LB136746
	Silver	1.62	+/-5	U	10.0	P	08/07/2025	14:52	LB136746
CCB03	Arsenic	5.12	+/-10	U	20.0	P	08/07/2025	15:49	LB136746
	Barium	14.6	+/-50	U	100	P	08/07/2025	15:49	LB136746
	Cadmium	0.50	+/-3	U	6.00	P	08/07/2025	15:49	LB136746
	Chromium	2.12	+/-5	U	10.0	P	08/07/2025	15:49	LB136746
	Lead	2.30	+/-6	U	12.0	P	08/07/2025	15:49	LB136746
	Selenium	9.64	+/-10	U	20.0	P	08/07/2025	15:49	LB136746
	Silver	1.62	+/-5	U	10.0	P	08/07/2025	15:49	LB136746
CCB04	Arsenic	5.12	+/-10	U	20.0	P	08/07/2025	17:00	LB136746
	Barium	14.6	+/-50	U	100	P	08/07/2025	17:00	LB136746
	Cadmium	0.50	+/-3	U	6.00	P	08/07/2025	17:00	LB136746
	Chromium	2.12	+/-5	U	10.0	P	08/07/2025	17:00	LB136746
	Lead	2.30	+/-6	U	12.0	P	08/07/2025	17:00	LB136746
	Selenium	9.64	+/-10	U	20.0	P	08/07/2025	17:00	LB136746
	Silver	1.62	+/-5	U	10.0	P	08/07/2025	17:00	LB136746
CCB05	Arsenic	5.12	+/-10	U	20.0	P	08/07/2025	17:42	LB136746
	Barium	14.6	+/-50	U	100	P	08/07/2025	17:42	LB136746
	Cadmium	0.50	+/-3	U	6.00	P	08/07/2025	17:42	LB136746
	Chromium	2.12	+/-5	U	10.0	P	08/07/2025	17:42	LB136746
	Lead	2.30	+/-6	U	12.0	P	08/07/2025	17:42	LB136746
	Selenium	9.64	+/-10	U	20.0	P	08/07/2025	17:42	LB136746
	Silver	1.62	+/-5	U	10.0	P	08/07/2025	17:42	LB136746

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

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: Sciacca General Contractors, LLC **SDG No.:** Q2758

Instrument: CV1

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB169122TB		**WATER**		**Batch Number:**	**PB169163**		**Prep Date:**	**08/07/2025**	
	Mercury	0.76	<2	U	2.00	CV	08/07/2025	15:31	LB136741
Sample ID	**Analyte**	**Result (ug/L)**	**Acceptance Limit**	**Conc Qual**	**CRQL ug/L**	**M**	**Analysis Date**	**Analysis Time**	**Run**
PB169163BL		**WATER**		**Batch Number:**	**PB169163**		**Prep Date:**	**08/07/2025**	
	Mercury	0.076	<0.2	U	0.20	CV	08/07/2025	14:50	LB136741

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

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: Sciacca General Contractors, LLC **SDG No.:** Q2758

Instrument: P4

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB169122TB		**WATER**		**Batch Number:**	**PB169142**		**Prep Date:**	**08/06/2025**	
	Arsenic	25.6	<50	U	100	P	08/07/2025	16:06	LB136746
	Barium	72.8	<250	U	500	P	08/07/2025	16:06	LB136746
	Cadmium	2.50	<15	U	30.0	P	08/07/2025	16:06	LB136746
	Chromium	10.6	<25	U	50.0	P	08/07/2025	16:06	LB136746
	Lead	11.5	<30	U	60.0	P	08/07/2025	16:06	LB136746
	Selenium	48.2	<50	U	100	P	08/07/2025	16:06	LB136746
	Silver	8.10	<25	U	50.0	P	08/07/2025	16:06	LB136746

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB169142BL		**WATER**		**Batch Number:**	**PB169142**		**Prep Date:**	**08/06/2025**	
	Arsenic	25.6	<50	U	100	P	08/07/2025	15:57	LB136746
	Barium	72.8	<250	U	500	P	08/07/2025	15:57	LB136746
	Cadmium	2.50	<15	U	30.0	P	08/07/2025	15:57	LB136746
	Chromium	10.6	<25	U	50.0	P	08/07/2025	15:57	LB136746
	Lead	11.5	<30	U	60.0	P	08/07/2025	15:57	LB136746
	Selenium	48.2	<50	U	100	P	08/07/2025	15:57	LB136746
	Silver	8.10	<25	U	50.0	P	08/07/2025	15:57	LB136746

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

Metals
- 4 -
INTERFERENCE CHECK SAMPLE

Client: Sciacca General Contractors, LLC **SDG No.:** Q2758

Contract: SCIA01 **Lab Code:** ACE

ICS Source: EPA **Instrument ID:** P4

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Low Limit (ug/L)	High Limit (ug/L)	Analysis Date	Analysis Time	Run Number
ICSA01	Arsenic	5.29			-20	20	08/07/2025	13:34	LB136746
	Barium	5.52	6.0	92	-94	106	08/07/2025	13:34	LB136746
	Cadmium	-0.26	1.0	26	-5	7	08/07/2025	13:34	LB136746
	Chromium	59.1	52.0	114	42	62	08/07/2025	13:34	LB136746
	Lead	-8.67			-12	12	08/07/2025	13:34	LB136746
	Selenium	-8.28			-20	20	08/07/2025	13:34	LB136746
	Silver	2.72			-10	10	08/07/2025	13:34	LB136746
ICSAB01	Arsenic	103	104	99	88.4	120	08/07/2025	13:39	LB136746
	Barium	502	537	94	437	637	08/07/2025	13:39	LB136746
	Cadmium	969	972	100	826	1120	08/07/2025	13:39	LB136746
	Chromium	547	542	101	460	624	08/07/2025	13:39	LB136746
	Lead	37.4	49.0	76	37	61	08/07/2025	13:39	LB136746
	Selenium	46.5	46.0	101	26	66	08/07/2025	13:39	LB136746
	Silver	216	201	108	170	232	08/07/2025	13:39	LB136746

METAL
QC
DATA

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

metals
- 5a -
MATRIX SPIKE SUMMARY

client: Sciacca General Contractors, LLC **level:** low **sdg no.:** Q2758

contract: SCIA01 **lab code:** ACE

matrix: Water **sample id:** Q2780-08 **client id:** TP-1MS

Percent Solids for Sample: NA **Spiked ID:** Q2780-08MS **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Arsenic	ug/L	75 - 125	4320		100	U	4000	108		P
Barium	ug/L	75 - 125	2770		1430		1000	134	N	P
Cadmium	ug/L	75 - 125	1010		30.0	U	1000	101		P
Chromium	ug/L	75 - 125	2010		50.0	U	2000	100		P
Lead	ug/L	75 - 125	4800		60.0	U	5000	96		P
Mercury	ug/L	75 - 125	39.6		2.00	U	40.0	99		CV
Selenium	ug/L	75 - 125	11000		100	U	10000	110		P
Silver	ug/L	75 - 125	393		50.0	U	380	103		P

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

metals
- 5a -
MATRIX SPIKE DUPLICATE SUMMARY

client: Sciacca General Contractors, LLC **level:** low **sdg no.:** Q2758

contract: SCIA01 **lab code:** ACE

matrix: Water **sample id:** Q2780-08 **client id:** TP-1MSD

Percent Solids for Sample: NA **Spiked ID:** Q2780-08MSD **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Arsenic	ug/L	75 - 125	3970		100	U	4000	99		P
Barium	ug/L	75 - 125	2310		1430		1000	88		P
Cadmium	ug/L	75 - 125	928		30.0	U	1000	93		P
Chromium	ug/L	75 - 125	1840		50.0	U	2000	92		P
Lead	ug/L	75 - 125	4430		60.0	U	5000	89		P
Mercury	ug/L	75 - 125	44.3		2.00	U	40.0	111		CV
Selenium	ug/L	75 - 125	10100		100	U	10000	101		P
Silver	ug/L	75 - 125	355		50.0	U	380	93		P

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

Metals
- 5b -
POST DIGEST SPIKE SUMMARY

Client: Sciacca General Contractors, LLC **SDG No.:** Q2758

Contract: SCIA01 **Lab Code:** ACE

Matrix: Water **Level:** LOW **Client ID:** TP-1A

Sample ID: Q2780-08 **Spiked ID:** Q2780-08A

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Barium	ug/L	75 - 125	1550		1430		1000	12	N	P

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

Metals

- 6 -
DUPLICATE SAMPLE SUMMARY

Client: Sciacca General Contractors, LLC **Level:** LOW **SDG No.:** Q2758

Contract: SCIA01 **Lab Code:** ACE

Matrix: Water **Sample ID:** Q2780-08 **Client ID:** TP-1DUP

Percent Solids for Sample: NA **Duplicate ID** Q2780-08DUP **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Arsenic	ug/L	20	100	U	100	U			P
Barium	ug/L	20	1430		1770		21	*	P
Cadmium	ug/L	20	30.0	U	30.0	U			P
Chromium	ug/L	20	50.0	U	50.0	U			P
Lead	ug/L	20	60.0	U	16.1	J	200.0		P
Mercury	ug/L	20	2.00	U	2.00	U			CV
Selenium	ug/L	20	100	U	100	U			P
Silver	ug/L	20	50.0	U	50.0	U			P

"A control limit of ±20% RPD for each matrix applies for sample values greater than 10 times Detection Limit"

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

Metals

- 6 -

DUPLICATE SAMPLE SUMMARY

Client: Sciacca General Contractors, LLC **Level:** LOW **SDG No.:** Q2758

Contract: SCIA01 **Lab Code:** ACE

Matrix: Water **Sample ID:** Q2780-08MS **Client ID:** TP-1MSD

Percent Solids for Sample: NA **Duplicate ID** Q2780-08MSD **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Arsenic	ug/L	20	4320		3970		8		P
Barium	ug/L	20	2770		2310		18		P
Cadmium	ug/L	20	1010		928		8		P
Chromium	ug/L	20	2010		1840		9		P
Lead	ug/L	20	4800		4430		8		P
Mercury	ug/L	20	39.6		44.3		11		CV
Selenium	ug/L	20	11000		10100		9		P
Silver	ug/L	20	393		355		10		P

"A control limit of ±20% RPD for each matrix applies for sample values greater than 10 times Detection Limit"

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

LABORATORY CONTROL SAMPLE SUMMARY

Client: Sciacca General Contractors, LLC **SDG No.:** Q2758

Contract: SCIA01 **Lab Code:** ACE

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB169142BS							
Arsenic	ug/L	4000	3840		96	80 - 120	P
Barium	ug/L	1000	991		99	80 - 120	P
Cadmium	ug/L	1000	941		94	80 - 120	P
Chromium	ug/L	2000	1950		98	80 - 120	P
Lead	ug/L	5000	4720		94	80 - 120	P
Selenium	ug/L	10000	9770		98	80 - 120	P
Silver	ug/L	380	370		97	80 - 120	P

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

LABORATORY CONTROL SAMPLE SUMMARY

Client: Sciacca General Contractors, LLC **SDG No.:** Q2758

Contract: SCIA01 **Lab Code:** ACE

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB169163BS							
Mercury	ug/L	4.0	3.71		93	80 - 120	CV

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

Metals

-9 -

ICP SERIAL DILUTIONS

SAMPLE NO.

TP-1L

Lab Name: Alliance **Contract:** SCIA01

Lab Code: ACE **Lb No.:** lb136746 **Lab Sample ID :** Q2780-08L **SDG No.:** Q2758

Matrix (soil/water): Water **Level (low/med):** LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Arsenic	100	U	500	U			P
Barium	1430		1440	J	1		P
Cadmium	30.0	U	150	U			P
Chromium	50.0	U	250	U			P
Lead	60.0	U	300	U			P
Mercury	2.00	U	10.0	U			CV
Selenium	100	U	500	U			P
Silver	50.0	U	250	U			P

METAL PREPARATION & INSTRUMENT DATA

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

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Sciacca General Contractors, LLC **SDG No.:** Q2758

Contract: SCIA01 **Lab Code:** ACE

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Al	Ca	Fe	Mg	Ag
Arsenic	193.759	0.0000000	0.0000000	-0.0000440	0.0000000	0.0000000
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000000	0.0000930	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	-0.0000920	0.0000000	0.0000380	0.0000000	0.0000000
Selenium	196.090	0.0000000	0.0000000	-0.0001440	0.0000000	0.0000000
Silver	328.068	0.0000000	0.0000000	-0.0001490	0.0000000	0.0000000

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

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Sciacca General Contractors, LLC **SDG No.:** Q2758

Contract: SCIA01 **Lab Code:** ACE

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: As	Ba	Be	Cd	Co
Arsenic	193.759	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000000	0.0000000	0.0000000	0.0002870
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	0.0000000	0.0003170	0.0000000	0.0000000	0.0000000
Selenium	196.090	0.0000000	0.0000000	0.0000000	0.0000000	-0.0003570
Silver	328.068	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

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

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Sciacca General Contractors, LLC **SDG No.:** Q2758

Contract: SCIA01 **Lab Code:** ACE

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Cr	Cu	K	Mn	Mo
Arsenic	193.759	-0.0029000	0.0000000	0.0000000	0.0000000	0.0004900
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000070	0.0002200	0.0000000
Lead	220.353	0.0000000	0.0000000	0.0000000	0.0001400	-0.0008600
Selenium	196.090	0.0000000	0.0000000	0.0000000	0.0007460	0.0000000
Silver	328.068	0.0000000	0.0000000	0.0000000	0.0000000	-0.0000120

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

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Sciacca General Contractors, LLC **SDG No.:** Q2758

Contract: SCIA01 **Lab Code:** ACE

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Na	Ni	Pb	Sb	Se
Arsenic	193.759	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	0.0000000	0.0006580	0.0000000	0.0000000	0.0001290
Selenium	196.090	0.0000000	0.0000000	0.0003330	0.0000000	0.0000000
Silver	328.068	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

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

Metals
- 11 -
ICP INTERELEMENT CORRECTION FACTORS

Client: Sciacca General Contractors, LLC **SDG No.:** Q2758

Contract: SCIA01 **Lab Code:** ACE

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Sn	Ti	Tl	V	Zn
Arsenic	193.759	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Barium	493.409	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	226.502	0.0000000	0.0000630	0.0001280	0.0000000	0.0000000
Chromium	267.716	0.0000000	0.0000000	0.0000000	0.0001110	0.0000000
Lead	220.353	0.0000000	-0.0003610	0.0000000	0.0000000	0.0000000
Selenium	196.090	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.068	0.0000000	-0.0007420	0.0000000	0.0000000	0.0000000

METAL PREPARATION & ANALYICAL SUMMARY

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

Metals
- 13 -
SAMPLE PREPARATION SUMMARY

Client: Sciacca General Contractors, LLC **SDG No.:** Q2758

Contract: SCIA01 **Lab Code:** ACE **Method:**

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(mL)	Final Sample Volume (mL)	Percent Solids
Batch Number:	**PB169142**						
PB169122TB	PB169122TB	MB	WATER	08/06/2025	5.0	25.0	
PB169142BL	PB169142BL	MB	WATER	08/06/2025	5.0	25.0	
PB169142BS	PB169142BS	LCS	WATER	08/06/2025	5.0	25.0	
Q2758-02	WASTE	SAM	WATER	08/06/2025	5.0	25.0	
Q2780-08DUP	TP-1DUP	DUP	WATER	08/06/2025	5.0	25.0	
Q2780-08MS	TP-1MS	MS	WATER	08/06/2025	5.0	25.0	
Q2780-08MSD	TP-1MSD	MSD	WATER	08/06/2025	5.0	25.0	

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

Metals
- 13 -
SAMPLE PREPARATION SUMMARY

Client: Sciacca General Contractors, LLC **SDG No.:** Q2758

Contract: SCIA01 **Lab Code:** ACE **Method:**

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(mL)	Final Sample Volume (mL)	Percent Solids
Batch Number:	**PB169163**						
PB169122TB	PB169122TB	MB	WATER	08/07/2025	3.0	30.0	
PB169163BL	PB169163BL	MB	WATER	08/07/2025	30.0	30.0	
PB169163BS	PB169163BS	LCS	WATER	08/07/2025	30.0	30.0	
Q2758-02	WASTE	SAM	WATER	08/07/2025	3.0	30.0	
Q2780-08DUP	TP-1DUP	DUP	WATER	08/07/2025	3.0	30.0	
Q2780-08MS	TP-1MS	MS	WATER	08/07/2025	3.0	30.0	
Q2780-08MSD	TP-1MSD	MSD	WATER	08/07/2025	3.0	30.0	

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

metals
- 14 -
ANALYSIS RUN LOG

Client: Sciacca General Contractors, LLC **Contract:** SCIA01

Lab code: ACE **Sdg no.:** Q2758

Instrument id number: **Method:** **Run number:** LB136741

Start date: 08/07/2025 **End date:** 08/07/2025

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1412	HG
S0.2	S0.2	1	1417	HG
S2.5	S2.5	1	1419	HG
S5	S5	1	1421	HG
S7.5	S7.5	1	1424	HG
S10	S10	1	1426	HG
ICV03	ICV03	1	1429	HG
ICB03	ICB03	1	1434	HG
CCV05	CCV05	1	1436	HG
CCB05	CCB05	1	1441	HG
CRA	CRA	1	1443	HG
PB169163BL	PB169163BL	1	1450	HG
PB169163BS	PB169163BS	1	1452	HG
Q2758-02	WASTE	1	1454	HG
CCV06	CCV06	1	1506	HG
CCB06	CCB06	1	1511	HG
Q2780-08DUP	TP-1DUP	1	1520	HG
Q2780-08MS	TP-1MS	1	1522	HG
Q2780-08MSD	TP-1MSD	1	1524	HG
Q2780-08L	TP-1L	5	1527	HG
PB169122TB	PB169122TB	1	1531	HG
CCV07	CCV07	1	1534	HG
CCB07	CCB07	1	1536	HG

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

metals
- 14 -
ANALYSIS RUN LOG

Client: Sciacca General Contractors, LLC **Contract:** SCIA01

Lab code: ACE **Sdg no.:** Q2758

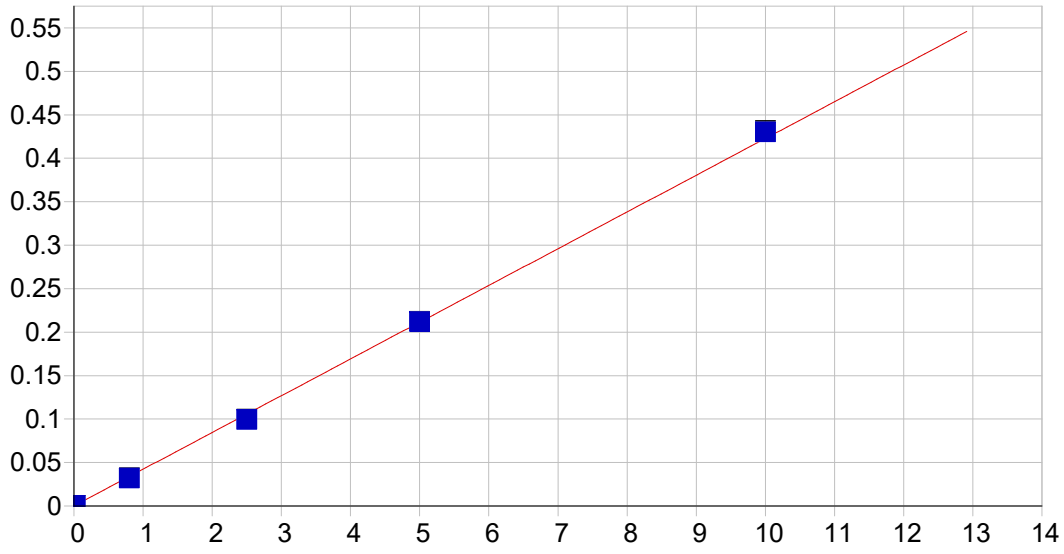
Instrument id number: **Method:** **Run number:** LB136746

Start date: 08/07/2025 **End date:** 08/07/2025

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1246	Ag,As,Ba,Cd,Cr,Pb,Se
S1	S1	1	1251	Ag,As,Ba,Cd,Cr,Pb,Se
S2	S2	1	1255	Ag,As,Ba,Cd,Cr,Pb,Se
S3	S3	1	1259	Ag,As,Ba,Cd,Cr,Pb,Se
S4	S4	1	1303	Ag,As,Ba,Cd,Cr,Pb,Se
S5	S5	1	1307	Ag,As,Ba,Cd,Cr,Pb,Se
ICV01	ICV01	1	1311	Ag,As,Ba,Cd,Cr,Pb,Se
LLICV01	LLICV01	1	1321	Ag,As,Ba,Cd,Cr,Pb,Se
ICB01	ICB01	1	1325	Ag,As,Ba,Cd,Cr,Pb,Se
CRI01	CRI01	1	1329	Ag,As,Ba,Cd,Cr,Pb,Se
ICSA01	ICSA01	1	1334	Ag,As,Ba,Cd,Cr,Pb,Se
ICSAB01	ICSAB01	1	1339	Ag,As,Ba,Cd,Cr,Pb,Se
CCV01	CCV01	1	1358	Ag,As,Ba,Cd,Cr,Pb,Se
CCB01	CCB01	1	1402	Ag,As,Ba,Cd,Cr,Pb,Se
CCV02	CCV02	1	1448	Ag,As,Ba,Cd,Cr,Pb,Se
CCB02	CCB02	1	1452	Ag,As,Ba,Cd,Cr,Pb,Se
CCV03	CCV03	1	1545	Ag,As,Ba,Cd,Cr,Pb,Se
CCB03	CCB03	1	1549	Ag,As,Ba,Cd,Cr,Pb,Se
PB169142BL	PB169142BL	1	1557	Ag,As,Ba,Cd,Cr,Pb,Se
PB169142BS	PB169142BS	1	1602	Ag,As,Ba,Cd,Cr,Pb,Se
PB169122TB	PB169122TB	1	1606	Ag,As,Ba,Cd,Cr,Pb,Se
Q2758-02	WASTE	1	1610	Ag,As,Ba,Cd,Cr,Pb,Se
CCV04	CCV04	1	1656	Ag,As,Ba,Cd,Cr,Pb,Se
CCB04	CCB04	1	1700	Ag,As,Ba,Cd,Cr,Pb,Se
Q2780-08DUP	TP-1DUP	1	1709	Ag,As,Ba,Cd,Cr,Pb,Se
Q2780-08L	TP-1L	5	1713	Ag,As,Ba,Cd,Cr,Pb,Se
Q2780-08MS	TP-1MS	1	1717	Ag,As,Ba,Cd,Cr,Pb,Se
Q2780-08MSD	TP-1MSD	1	1721	Ag,As,Ba,Cd,Cr,Pb,Se
Q2780-08A	TP-1A	1	1725	Ba
CCV05	CCV05	1	1738	Ag,As,Ba,Cd,Cr,Pb,Se
CCB05	CCB05	1	1742	Ag,As,Ba,Cd,Cr,Pb,Se

METAL
RAW DATA

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



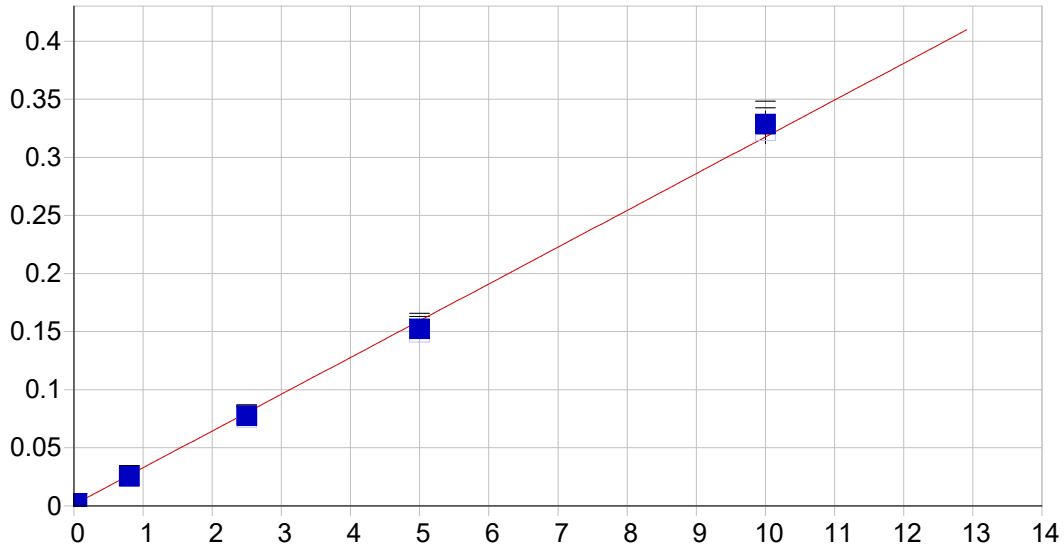
As 189.042 {479}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000061	Re-Slope:	1.000000
A1 (Gain):	0.042270	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999600	Status:	OK.
Std Error of Est:	0.000028		
Predicted MDL:	0.002613		
Predicted MQL:	0.008711		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00006	.000	1
S1	.02000	.01842	-.002	-7.90	.00084	.000	1
S3	2.5000	2.3521	-.148	-5.91	.09937	.000	1
S4	5.0000	5.0147	.015	.294	.21180	.000	1
S5	10.000	10.180	.180	1.80	.42989	.001	1
S2	.80000	.75524	-.045	-5.60	.03195	.000	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



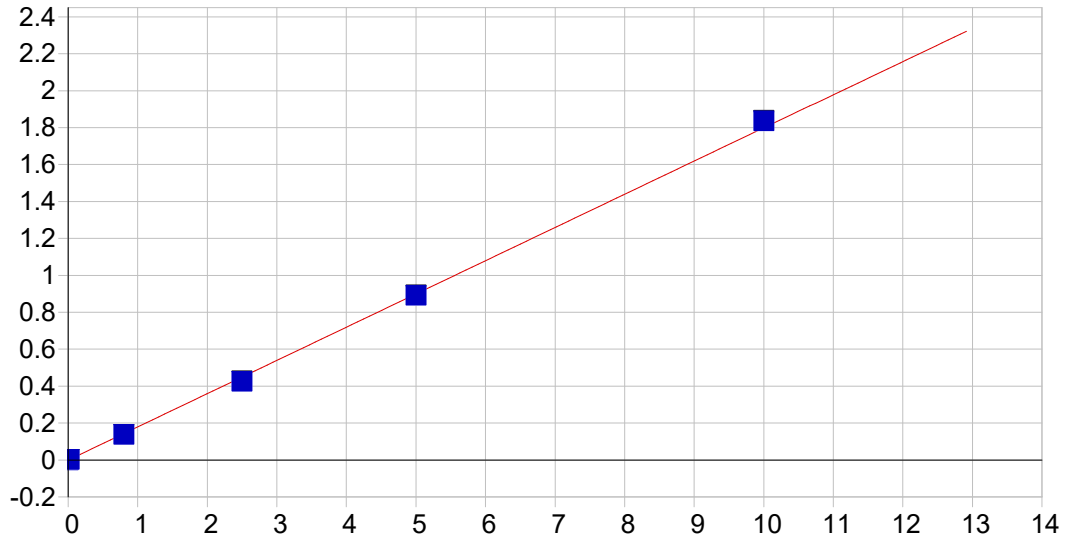
Tl 190.856 {477}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001197	Re-Slope:	1.000000
A1 (Gain):	0.031645	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999233	Status:	OK.
Std Error of Est:	0.000040		
Predicted MDL:	0.003719		
Predicted MQL:	0.012395		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00120	.000	1
S1	.04000	.03701	-.003	-7.47	.00229	.000	1
S3	2.5000	2.4131	-.087	-3.47	.07612	.001	1
S4	5.0000	4.7735	-.226	-4.53	.14937	.005	1
S5	10.000	10.350	.350	3.50	.32295	.011	1
S2	.80000	.76634	-.034	-4.21	.02499	.001	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



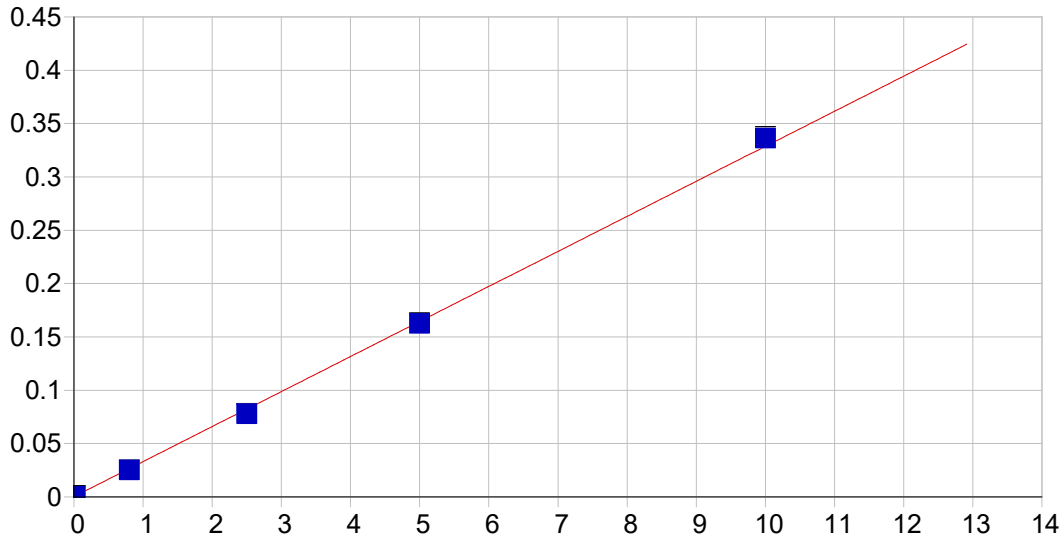
Pb 220.353 {453}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000138	Re-Slope:	1.000000
A1 (Gain):	0.179824	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999632	Status:	OK.
Std Error of Est:	0.000088		
Predicted MDL:	0.001533		
Predicted MQL:	0.005110		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00014	.000	1
S1	.01200	.01277	.001	6.43	.00239	.000	1
S3	2.5000	2.3672	-.133	-5.31	.42535	.002	1
S4	5.0000	4.9547	-.045	-.906	.89019	.002	1
S5	10.000	10.211	.211	2.11	1.8346	.004	1
S2	.80000	.76587	-.034	-4.27	.13771	.001	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



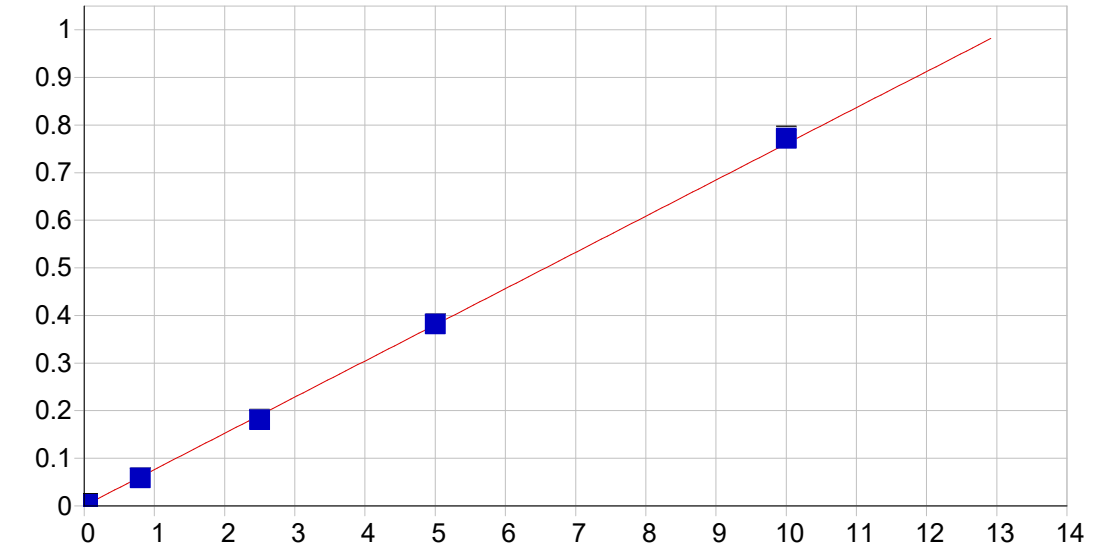
Se 196.090 {472}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000254	Re-Slope:	1.000000
A1 (Gain):	0.032844	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999564	Status:	OK.
Std Error of Est:	0.000023		
Predicted MDL:	0.004059		
Predicted MQL:	0.013531		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00025	.000	1
S1	.02000	.02077	.001	3.84	.00094	.000	1
S3	2.5000	2.3627	-.137	-5.49	.07783	.000	1
S4	5.0000	4.9457	-.054	-1.09	.16264	.000	1
S5	10.000	10.234	.234	2.34	.33629	.002	1
S2	.80000	.75661	-.043	-5.42	.02510	.000	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



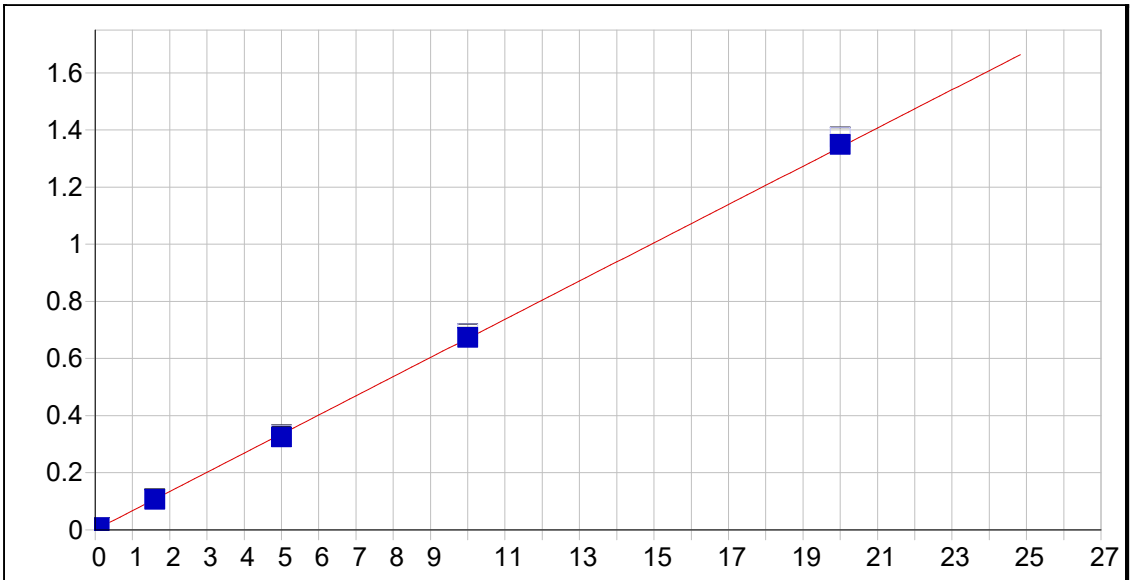
Sb 206.833 {463}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000474	Re-Slope:	1.000000
A1 (Gain):	0.076000	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999720	Status:	OK.
Std Error of Est:	0.000067		
Predicted MDL:	0.002351		
Predicted MQL:	0.007837		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00047	.000	1
S1	.05000	.05106	.001	2.13	.00436	.000	1
S3	2.5000	2.3705	-.130	-5.18	.18115	.001	1
S4	5.0000	5.0153	.015	.305	.38267	.001	1
S5	10.000	10.147	.147	1.47	.77368	.003	1
S2	.80000	.76660	-.033	-4.17	.05890	.000	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



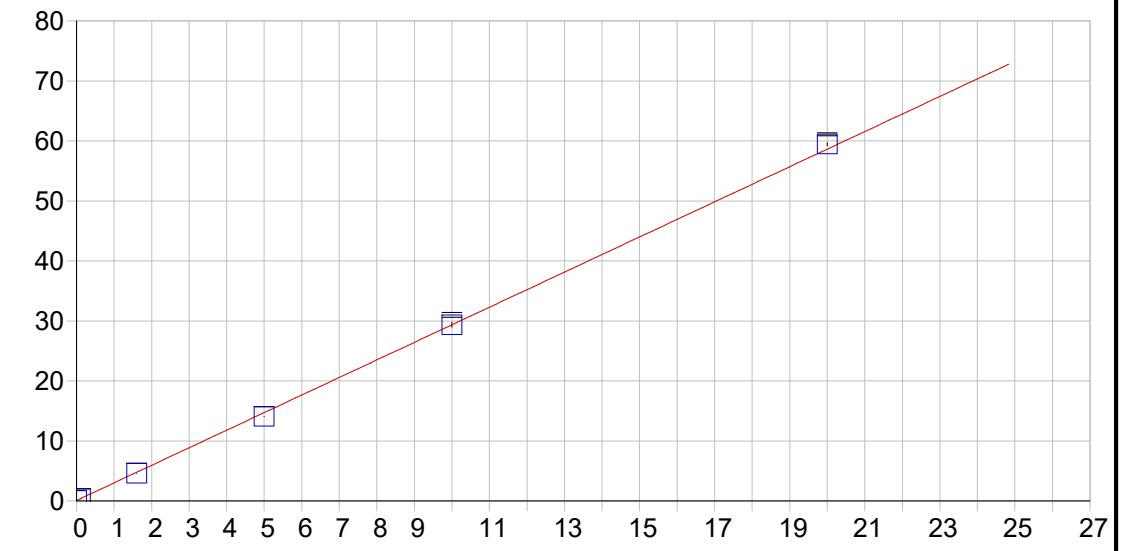
Al 396.152 { 85}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000672	Re-Slope:	1.000000
A1 (Gain):	0.066974	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999907	Status:	OK.
Std Error of Est:	0.000069		
Predicted MDL:	0.014963		
Predicted MQL:	0.049877		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00067	.000	1
S1	.10000	.10626	.006	6.26	.00831	.000	1
S3	5.0000	4.8398	-.160	-3.20	.33131	.002	1
S4	10.000	10.048	.048	.485	.68666	.001	1
S5	20.000	20.133	.133	.664	1.3750	.001	1
S2	1.6000	1.5724	-.028	-1.73	.10806	.001	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



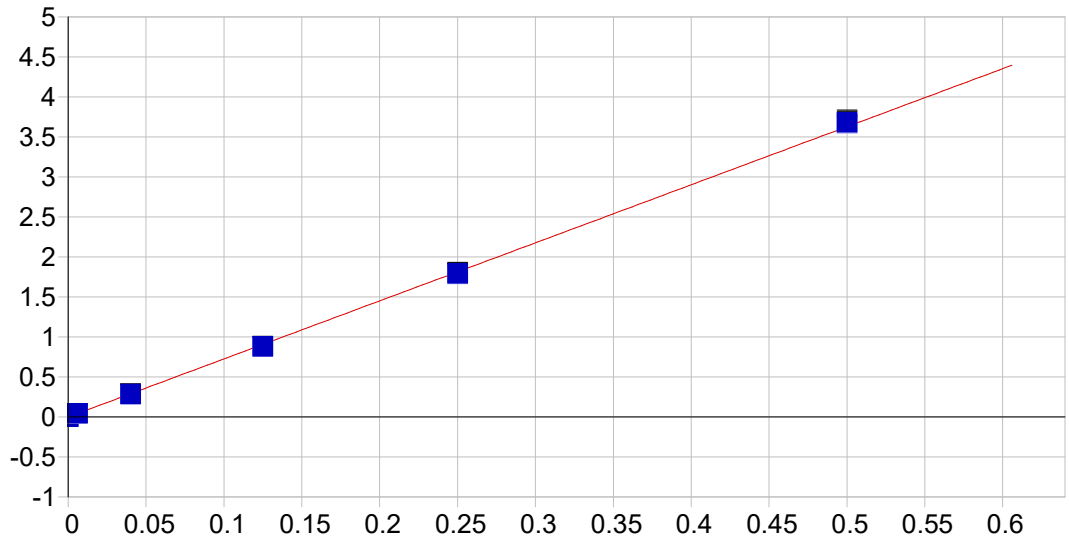
Ba 493.409 { 68}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.079743	Re-Slope:	1.000000
A1 (Gain):	2.927367	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999786	Status:	OK.
Std Error of Est:	0.004491		
Predicted MDL:	0.000873		
Predicted MQL:	0.002909		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.07976	.002	1
S1	.10000	.10136	.001	1.36	.37645	.001	1
S3	5.0000	4.7765	-.224	-4.47	14.062	.039	1
S4	10.000	9.9986	-.001	-.014	29.349	.397	1
S5	20.000	20.278	.278	1.39	59.440	.252	1
S2	1.6000	1.5458	-.054	-3.39	4.6049	.014	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



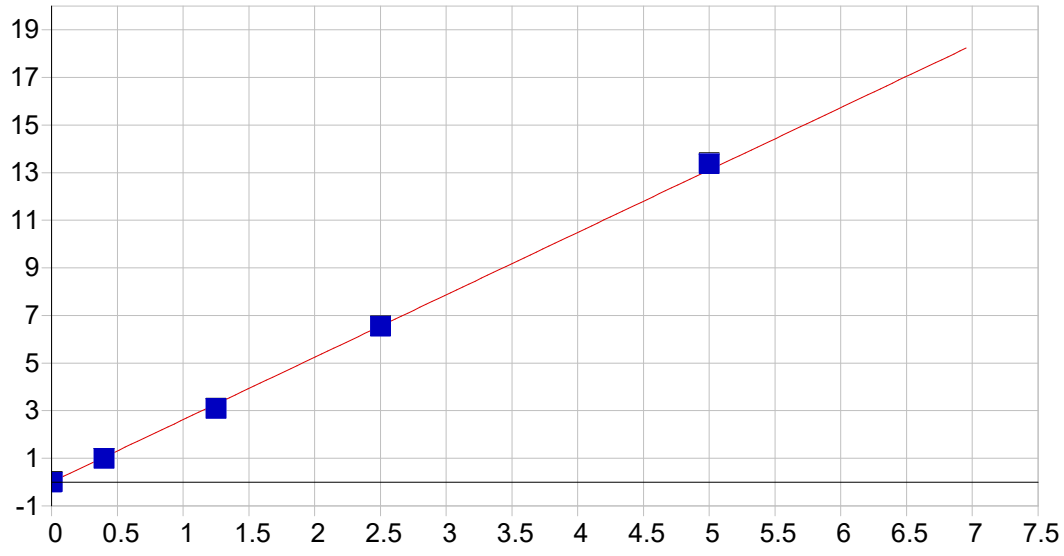
Be 234.861 {144}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000825	Re-Slope:	1.000000
A1 (Gain):	7.256200	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999852	Status:	OK.
Std Error of Est:	0.000358		
Predicted MDL:	0.000081		
Predicted MQL:	0.000271		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00082	.000	1
S1	.00600	.00594	-.000	-1.05	.04193	.001	1
S3	.12500	.12116	-.004	-3.07	.87427	.006	1
S4	.25000	.24698	-.003	-1.21	1.7832	.015	1
S5	.50000	.50741	.007	1.48	3.6648	.032	1
S2	.04000	.03951	-.000	-1.21	.28460	.002	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



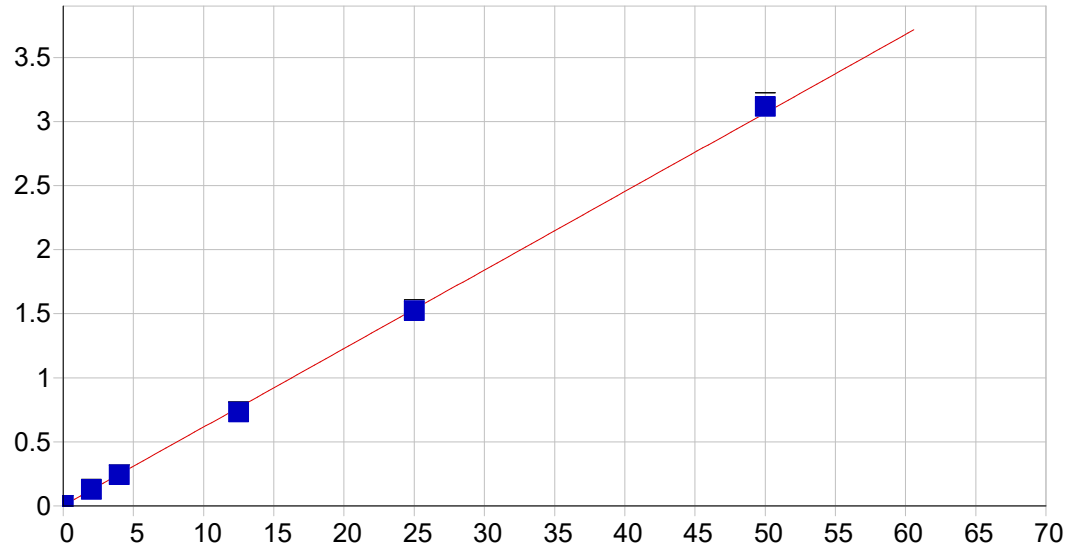
Cd 226.502 {449}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000272	Re-Slope:	1.000000
A1 (Gain):	2.622351	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999590	Status:	OK.
Std Error of Est:	0.000682		
Predicted MDL:	0.000088		
Predicted MQL:	0.000294		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00027	.000	1
S1	.00600	.00580	-.000	-3.36	.01499	.000	1
S3	1.2500	1.1784	-.072	-5.73	3.0921	.012	1
S4	2.5000	2.4966	-.003	-.136	6.5510	.016	1
S5	5.0000	5.0993	.099	1.99	13.380	.032	1
S2	.40000	.37592	-.024	-6.02	.98621	.001	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



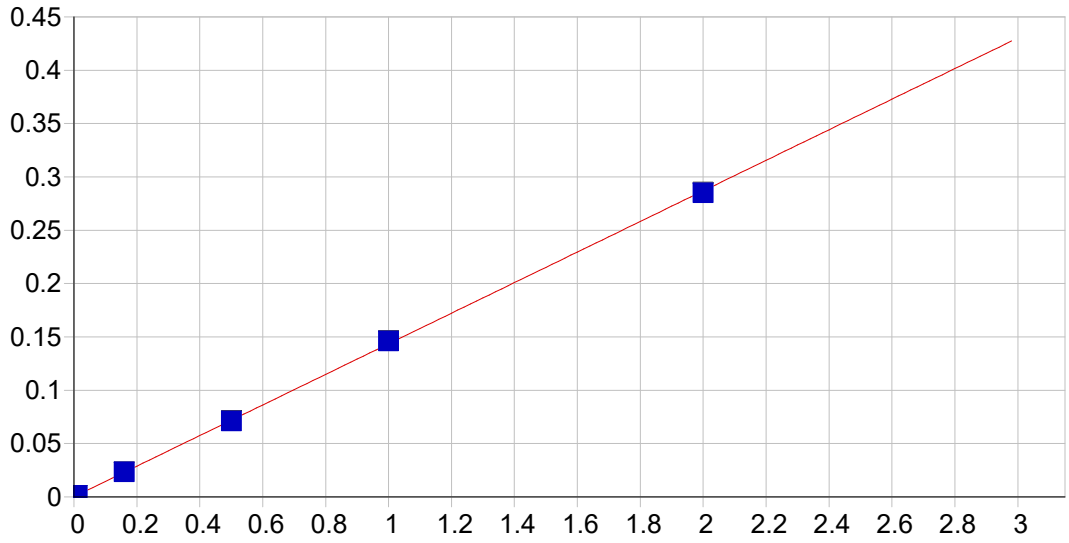
Ca 373.690 { 90}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002723	Re-Slope:	1.000000
A1 (Gain):	0.061282	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999756	Status:	OK.
Std Error of Est:	0.000716		
Predicted MDL:	0.013569		
Predicted MQL:	0.045230		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00008	.000	.000	.00273	.000	1
S2	4.0000	3.9035	-.097	-2.41	.24193	.003	1
S3	12.500	11.913	-.587	-4.69	.73279	.004	1
S4	25.000	24.819	-.181	-.722	1.5237	.008	1
S5	50.000	50.817	.817	1.63	3.1169	.030	1
S1	2.0000	2.0466	.047	2.33	.12814	.002	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



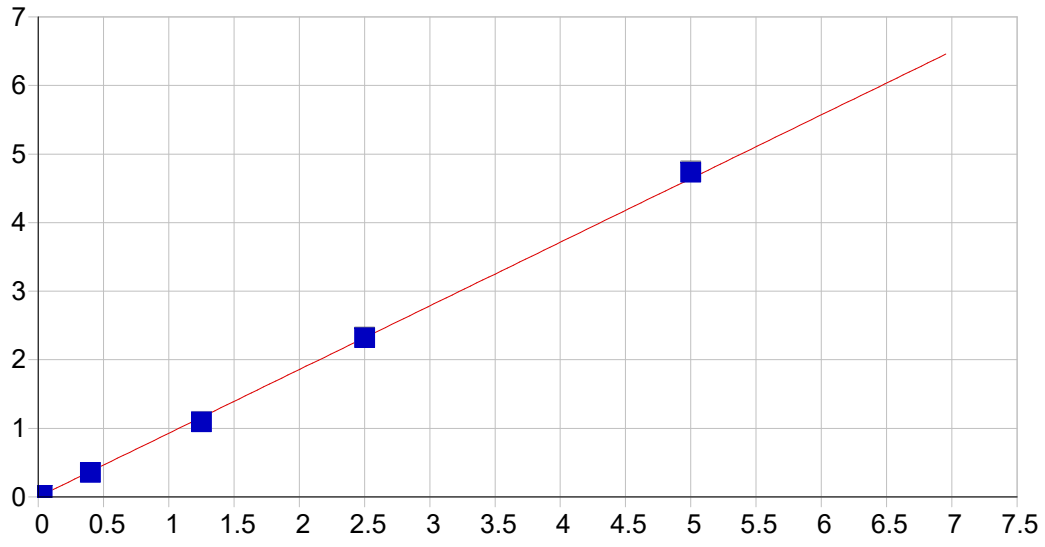
Cr 267.716 {126}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000181	Re-Slope:	1.000000
A1 (Gain):	0.143353	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999941	Status:	OK.
Std Error of Est:	0.000012		
Predicted MDL:	0.000447		
Predicted MQL:	0.001489		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00018	.000	1
S1	.01000	.01003	.000	.347	.00162	.000	1
S3	.50000	.49518	-.005	-.964	.07120	.000	1
S4	1.0000	1.0172	.017	1.72	.14605	.000	1
S5	2.0000	1.9867	-.013	-.666	.28509	.001	1
S2	.16000	.16094	.001	.586	.02326	.000	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



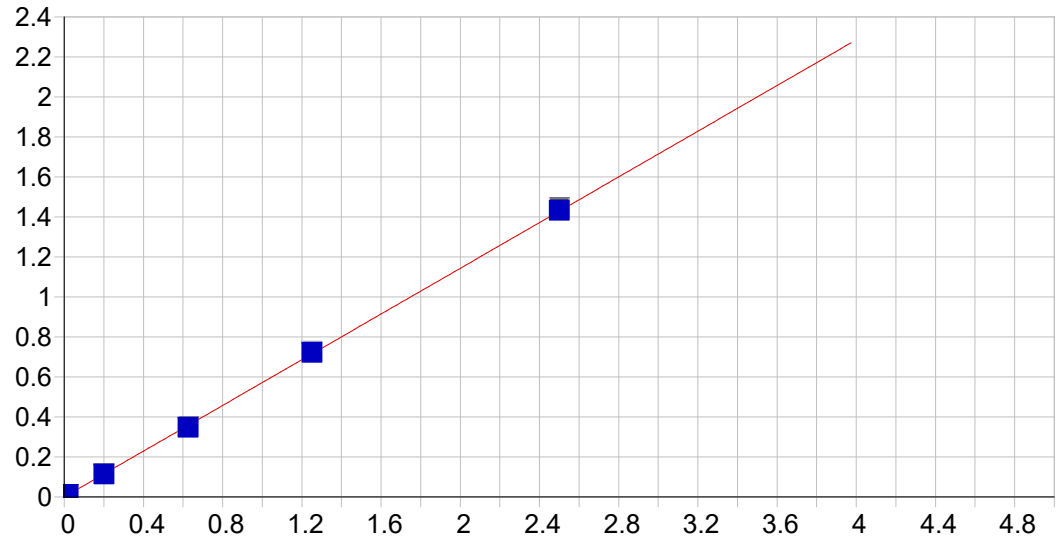
Co 228.616 {448}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000229	Re-Slope:	1.000000
A1 (Gain):	0.928586	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999609	Status:	OK.
Std Error of Est:	0.000528		
Predicted MDL:	0.000226		
Predicted MQL:	0.000754		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00023	.000	1
S1	.03000	.02989	-.000	-.357	.02787	.000	1
S3	1.2500	1.1774	-.073	-5.81	1.0955	.004	1
S4	2.5000	2.4957	-.004	-.173	2.3216	.005	1
S5	5.0000	5.0977	.098	1.95	4.7417	.011	1
S2	.40000	.37933	-.021	-5.17	.35310	.001	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



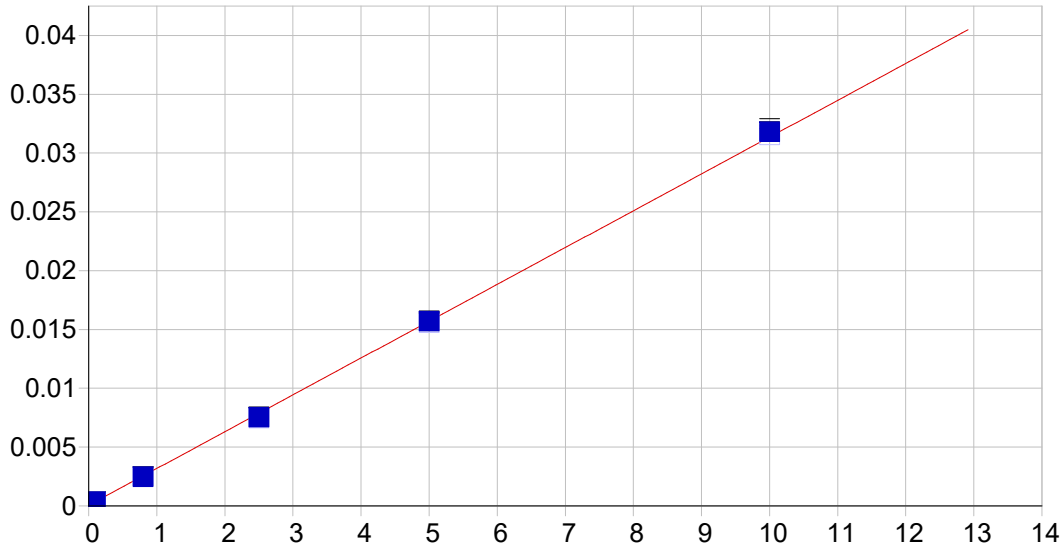
Cu 224.700 {450}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000471	Re-Slope:	1.000000
A1 (Gain):	0.571312	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999912	Status:	OK.
Std Error of Est:	0.000090		
Predicted MDL:	0.000481		
Predicted MQL:	0.001604		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00047	.000	1
S1	.02000	.02171	.002	8.54	.01300	.000	1
S3	.62500	.60646	-.019	-2.97	.34992	.001	1
S4	1.2500	1.2613	.011	.903	.72701	.001	1
S5	2.5000	2.5065	.007	.260	1.4444	.003	1
S2	.20000	.19904	-.001	-.479	.11514	.001	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



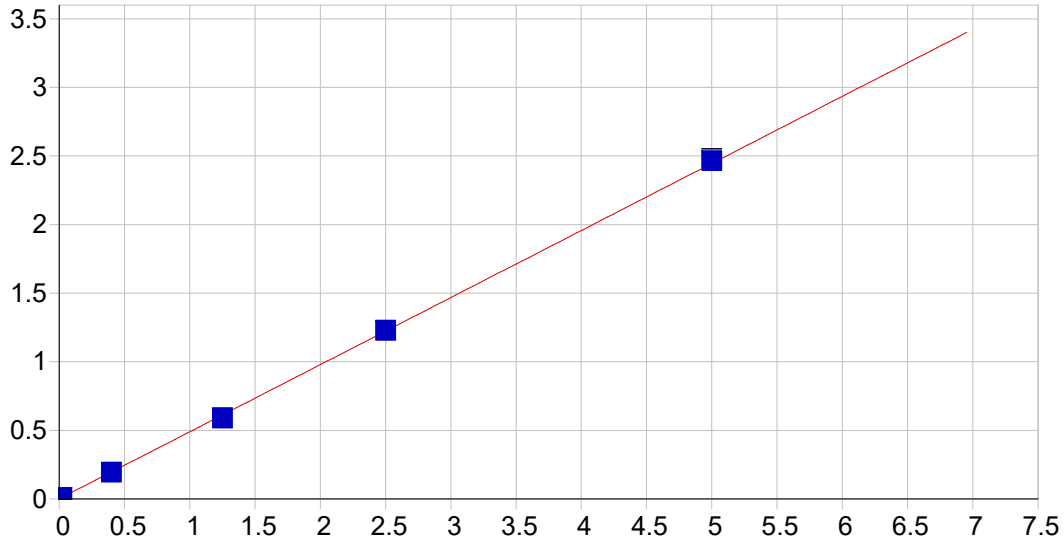
Fe 240.488 {140}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000051	Re-Slope:	1.000000
A1 (Gain):	0.003131	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999789	Status:	OK.
Std Error of Est:	0.000003		
Predicted MDL:	0.007339		
Predicted MQL:	0.024465		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00005	.000	1
S1	.10000	.10027	.000	.271	.00036	.000	1
S3	2.5000	2.3906	-.109	-4.38	.00747	.000	1
S4	5.0000	4.9951	-.005	-.099	.01555	.000	1
S5	10.000	10.140	.140	1.40	.03153	.000	1
S2	.80000	.77369	-.026	-3.29	.00245	.000	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



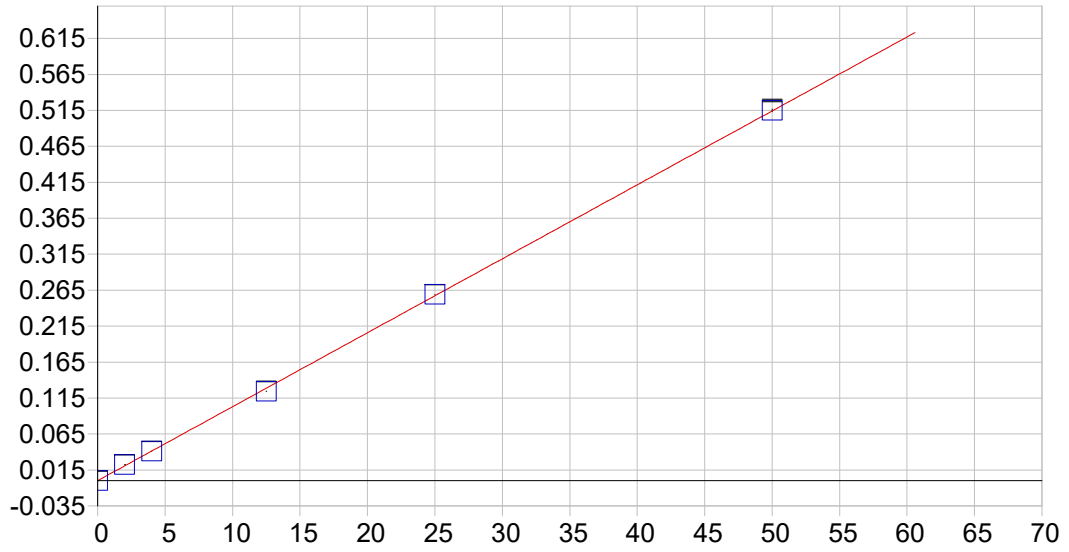
Mn 257.610 {131}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000459	Re-Slope:	1.000000
A1 (Gain):	0.489083	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999837	Status:	OK.
Std Error of Est:	0.000147		
Predicted MDL:	0.000635		
Predicted MQL:	0.002118		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00046	.000	1
S1	.02000	.02401	.004	20.0	.01220	.000	1
S3	1.2500	1.2033	-.047	-3.74	.58908	.002	1
S4	2.5000	2.5061	.006	.242	1.2264	.004	1
S5	5.0000	5.0421	.042	.843	2.4670	.013	1
S2	.40000	.39452	-.005	-1.37	.19345	.001	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



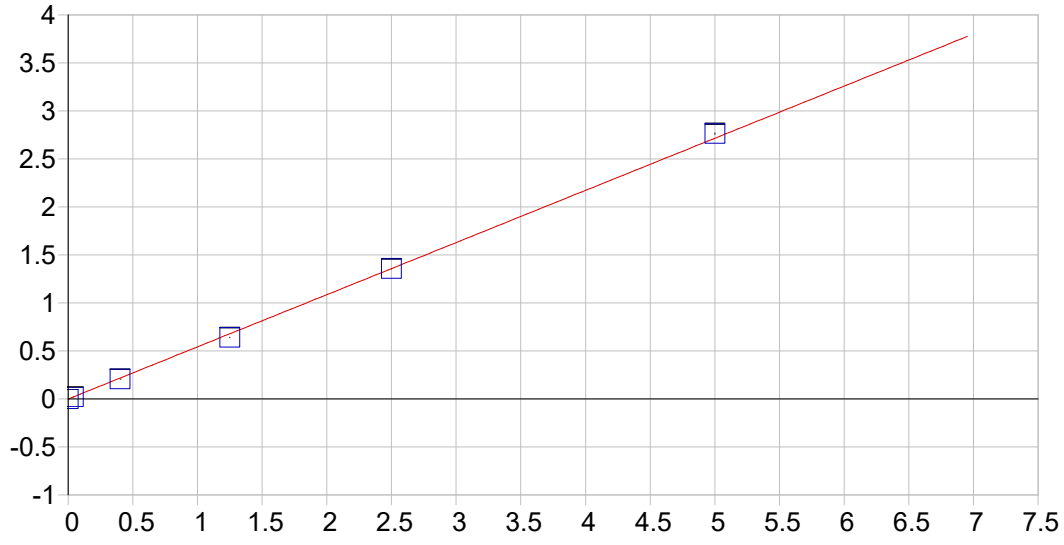
Mg 279.079 {121}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000088	Re-Slope:	1.000000
A1 (Gain):	0.010283	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999827	Status:	OK.
Std Error of Est:	0.000101		
Predicted MDL:	0.034410		
Predicted MQL:	0.114700		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00012	-.000	.000	.00009	.000	1
S2	4.0000	3.9689	-.031	-.778	.04090	.000	1
S3	12.500	12.088	-.412	-3.29	.12440	.000	1
S4	25.000	25.184	.184	.735	.25906	.000	1
S5	50.000	50.075	.075	.149	.51502	.002	1
S1	2.0000	2.1844	.184	9.22	.02255	.000	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



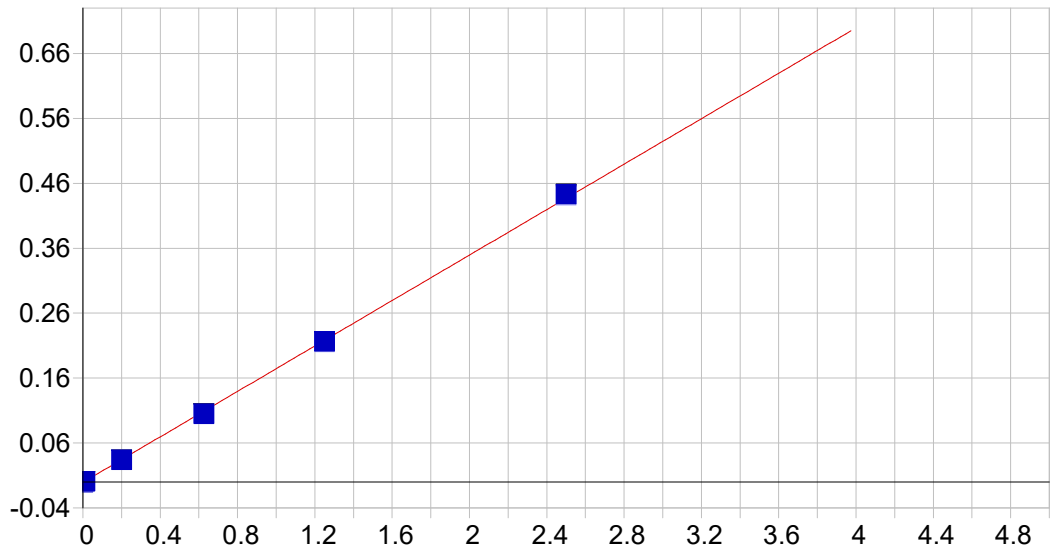
Ni 231.604 {446}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000629	Re-Slope:	1.000000
A1 (Gain):	0.543154	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999660	Status:	OK.
Std Error of Est:	0.000332		
Predicted MDL:	0.000411		
Predicted MQL:	0.001371		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00063	.000	1
S1	.04000	.04068	.001	1.70	.02147	.000	1
S3	1.2500	1.1803	-.070	-5.57	.64047	.003	1
S4	2.5000	2.4986	-.001	-.058	1.3565	.003	1
S5	5.0000	5.0883	.088	1.77	2.7631	.007	1
S2	.40000	.38217	-.018	-4.46	.20695	.000	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



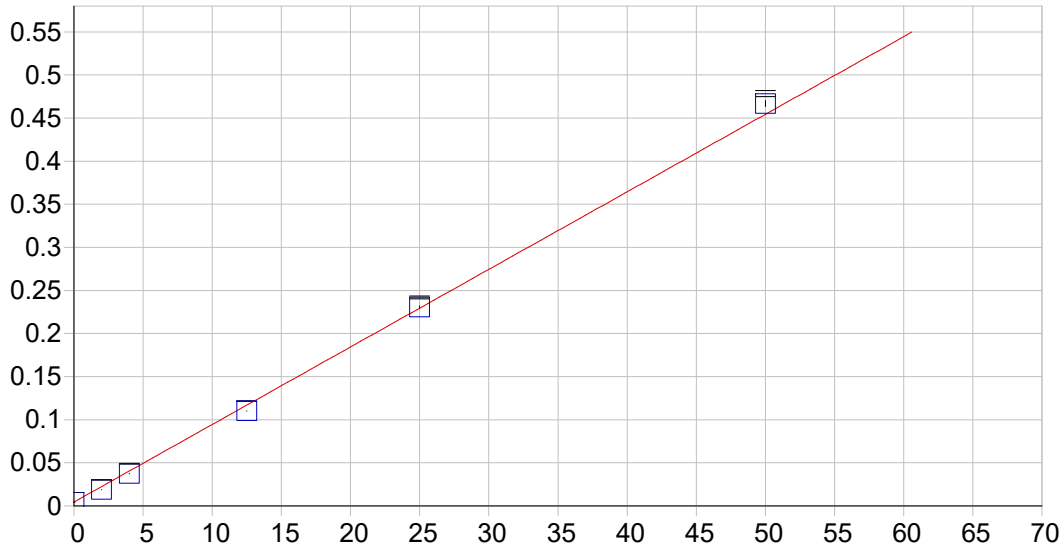
Ag 328.068 {103}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000579	Re-Slope:	1.000000
A1 (Gain):	0.175045	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999843	Status:	OK.
Std Error of Est:	0.000026		
Predicted MDL:	0.000629		
Predicted MQL:	0.002096		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00058	.000	1
S1	.01000	.00957	-.000	-4.27	.00108	.000	1
S3	.62500	.60338	-.022	-3.46	.10451	.000	1
S4	1.2500	1.2392	-.011	-.864	.21528	.000	1
S5	2.5000	2.5360	.036	1.44	.44122	.000	1
S2	.20000	.19683	-.003	-1.58	.03371	.000	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



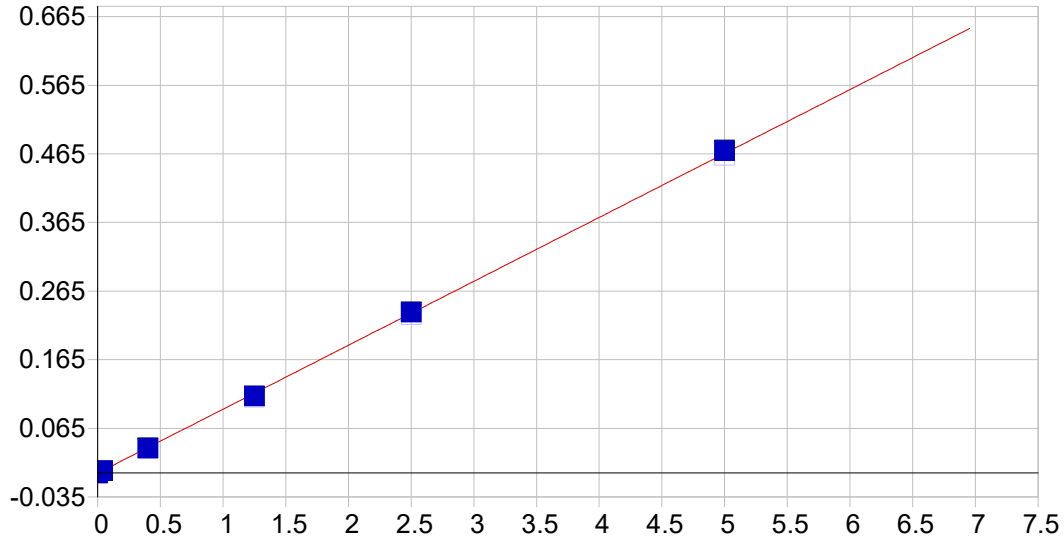
Na 589.592 { 57}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.004473	Re-Slope:	1.000000
A1 (Gain):	0.008999	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998965	Status:	OK.
Std Error of Est:	0.000217		
Predicted MDL:	0.016396		
Predicted MQL:	0.054652		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00063	.001	.000	.00448	.000	1
S2	4.0000	3.6796	-.320	-8.01	.03759	.000	1
S3	12.500	11.738	-.762	-6.10	.11010	.000	1
S4	25.000	25.119	.119	.476	.23052	.002	1
S5	50.000	51.372	1.37	2.74	.46677	.004	1
S1	2.0000	1.5920	-.408	-20.4	.01880	.000	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



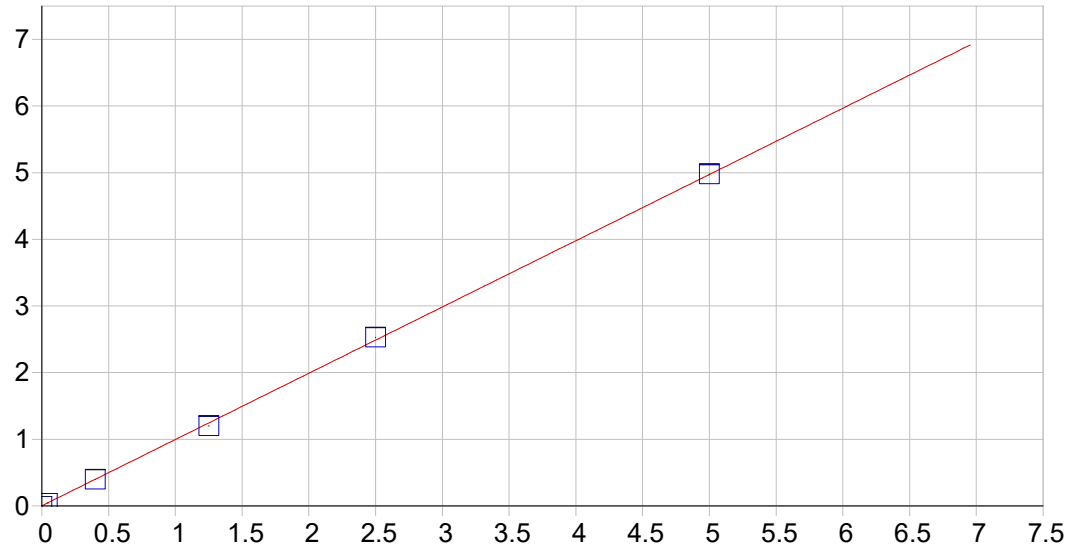
V 292.402 {115}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000341	Re-Slope:	1.000000
A1 (Gain):	0.093197	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999864	Status:	OK.
Std Error of Est:	0.000036		
Predicted MDL:	0.004173		
Predicted MQL:	0.013911		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	-.00034	.000	1
S1	.04000	.04022	.000	.547	.00327	.000	1
S3	1.2500	1.2035	-.046	-3.72	.11013	.000	1
S4	2.5000	2.5143	.014	.571	.23058	.000	1
S5	5.0000	5.0422	.042	.845	.46278	.001	1
S2	.40000	.38971	-.010	-2.57	.03543	.000	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



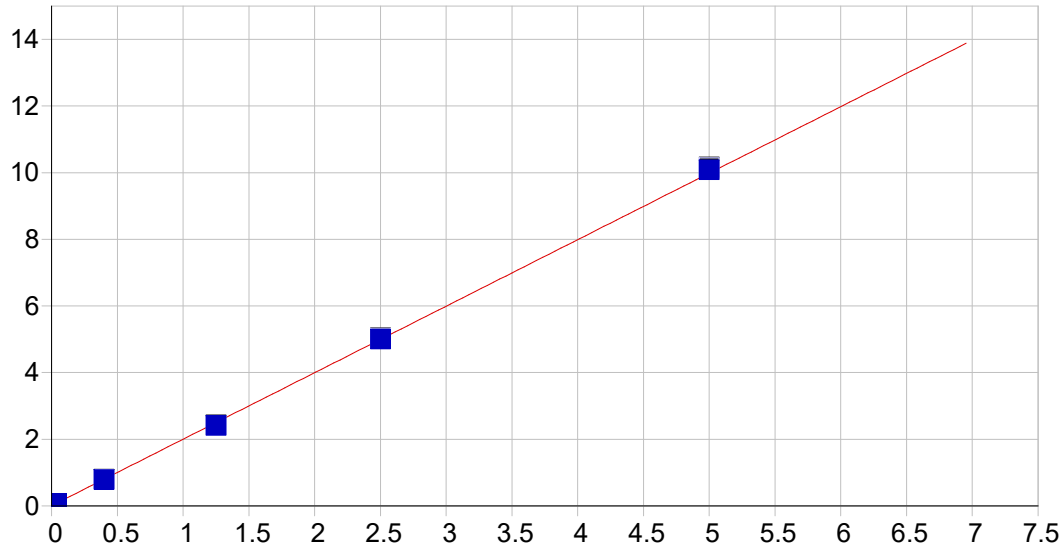
Zn 206.200 {464}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.002131	Re-Slope:	1.000000
A1 (Gain):	0.994262	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999860	Status:	OK.
Std Error of Est:	0.000390		
Predicted MDL:	0.000163		
Predicted MQL:	0.000543		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00213	.000	1
S1	.04000	.04273	.003	6.83	.04462	.000	1
S3	1.2500	1.2044	-.046	-3.64	1.1997	.006	1
S4	2.5000	2.5415	.042	1.66	2.5291	.003	1
S5	5.0000	5.0049	.005	.097	4.9783	.008	1
S2	.40000	.39644	-.004	-.889	.39630	.001	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



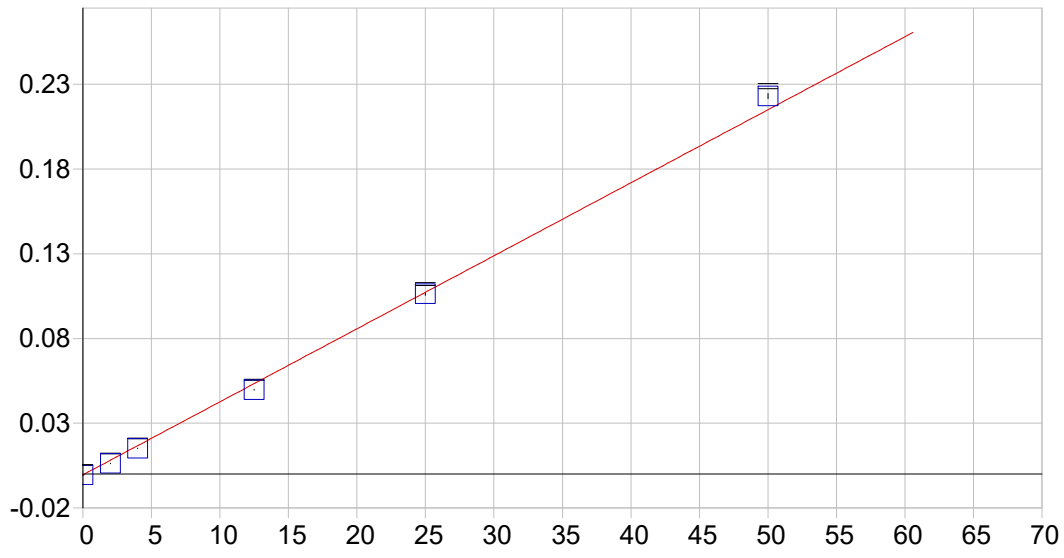
Zn 213.856 {158}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.005628	Re-Slope:	1.000000
A1 (Gain):	1.996005	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999872	Status:	OK.
Std Error of Est:	0.000753		
Predicted MDL:	0.000267		
Predicted MQL:	0.000890		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00563	.000	1
S1	.04000	.04129	.001	3.23	.08861	.000	1
S3	1.2500	1.2032	-.047	-3.75	2.4245	.003	1
S4	2.5000	2.5025	.003	.101	5.0354	.007	1
S5	5.0000	5.0492	.049	.983	10.153	.013	1
S2	.40000	.39386	-.006	-1.54	.79732	.002	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



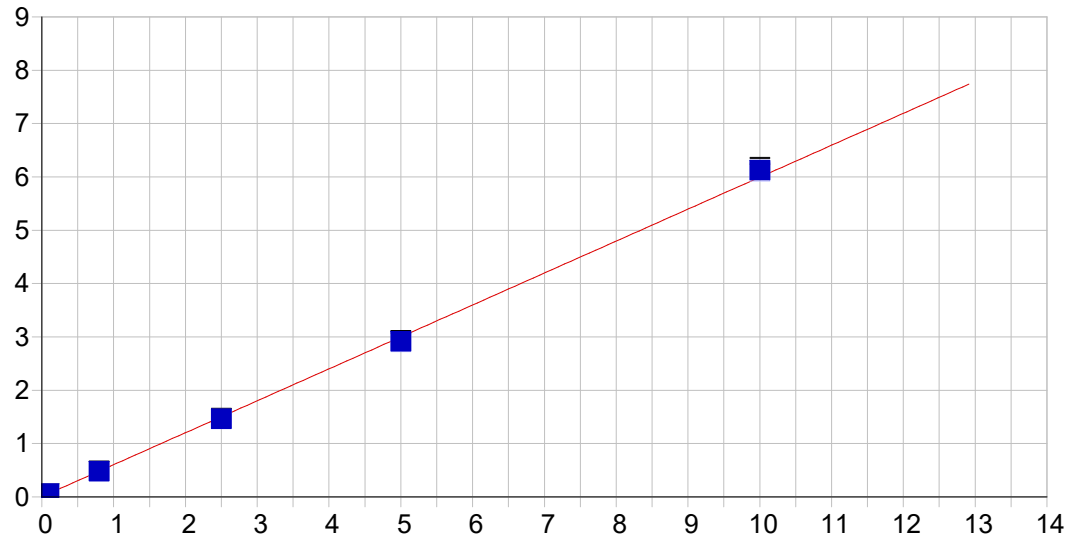
K 766.490 { 44}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000487	Re-Slope:	1.000000
A1 (Gain):	0.004310	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998643	Status:	OK.
Std Error of Est:	0.000119		
Predicted MDL:	0.044580		
Predicted MQL:	0.148598		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00069	.001	.000	-.00048	.000	1
S2	4.0000	3.6330	-.367	-9.18	.01517	.000	1
S3	12.500	11.654	-.846	-6.77	.04974	.000	1
S4	25.000	24.786	-.214	-.855	.10634	.001	1
S5	50.000	51.856	1.86	3.71	.22300	.002	1
S1	2.0000	1.5705	-.429	-21.5	.00628	.000	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



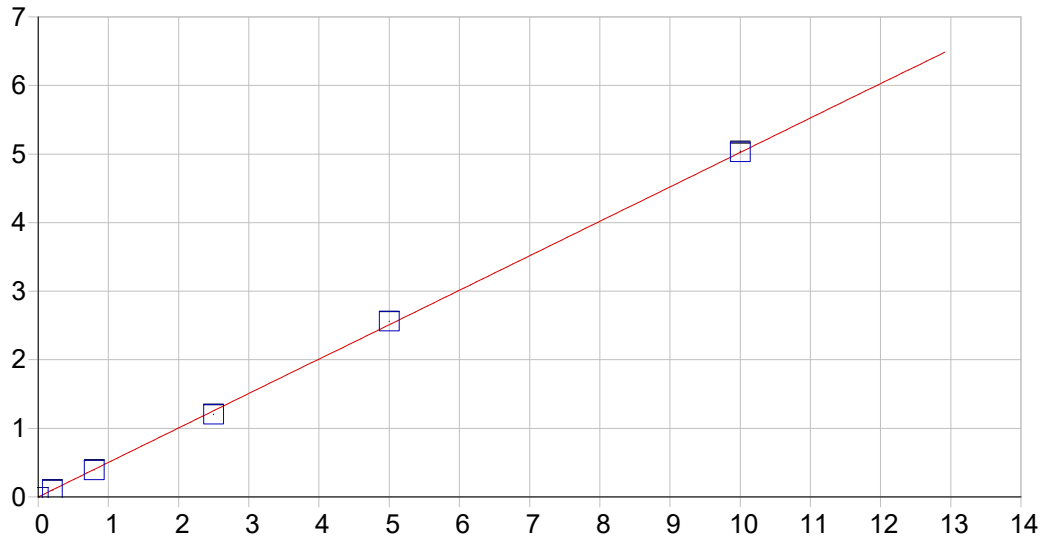
B 249.678 {135}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.005101	Re-Slope:	1.000000
A1 (Gain):	0.598946	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999703	Status:	OK.
Std Error of Est:	0.000764		
Predicted MDL:	0.001045		
Predicted MQL:	0.003484		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00511	.000	1
S1	.10000	.09401	-.006	-5.99	.06105	.001	1
S3	2.5000	2.4376	-.062	-2.50	1.4597	.010	1
S4	5.0000	4.8568	-.143	-2.86	2.9032	.019	1
S5	10.000	10.218	.218	2.18	6.1038	.056	1
S2	.80000	.79325	-.007	-.843	.47849	.003	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



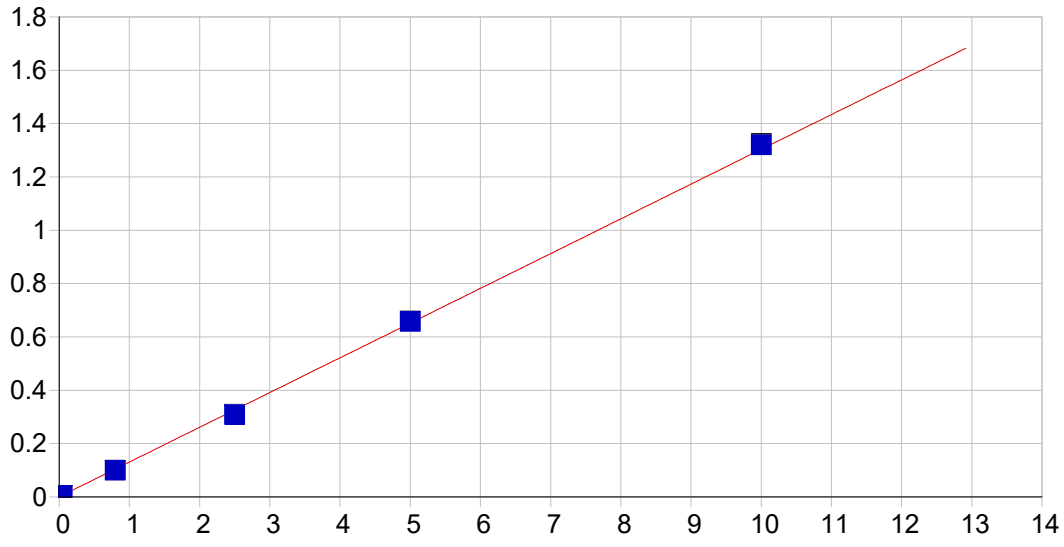
Mo 202.030 {467}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000743	Re-Slope:	1.000000
A1 (Gain):	0.502195	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999819	Status:	OK.
Std Error of Est:	0.000712		
Predicted MDL:	0.000326		
Predicted MQL:	0.001085		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00074	.000	1
S1	.20000	.20547	.005	2.74	.10393	.000	1
S3	2.5000	2.3965	-.104	-4.14	1.2042	.005	1
S4	5.0000	5.0967	.097	1.93	2.5603	.003	1
S5	10.000	10.018	.018	.183	5.0319	.013	1
S2	.80000	.78302	-.017	-2.12	.39397	.001	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



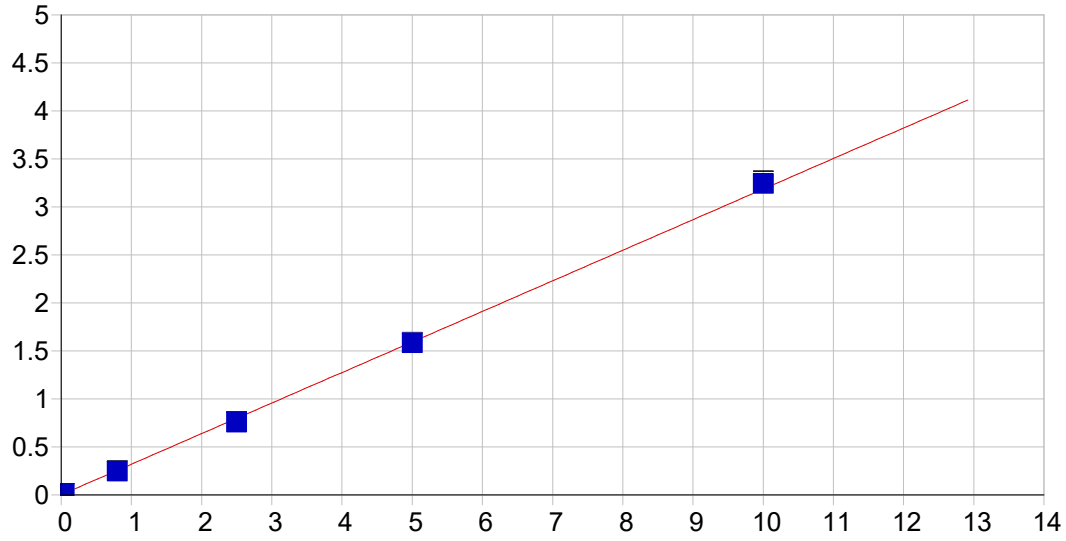
Sn 189.989 {478}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000412	Re-Slope:	1.000000
A1 (Gain):	0.130275	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999683	Status:	OK.
Std Error of Est:	0.000109		
Predicted MDL:	0.000743		
Predicted MQL:	0.002476		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.00041	.000	1
S1	.04000	.03734	-.003	-6.64	.00527	.000	1
S3	2.5000	2.3674	-.133	-5.30	.30849	.001	1
S4	5.0000	5.0441	.044	.881	.65686	.002	1
S5	10.000	10.133	.133	1.33	1.3192	.004	1
S2	.80000	.75774	-.042	-5.28	.09902	.000	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



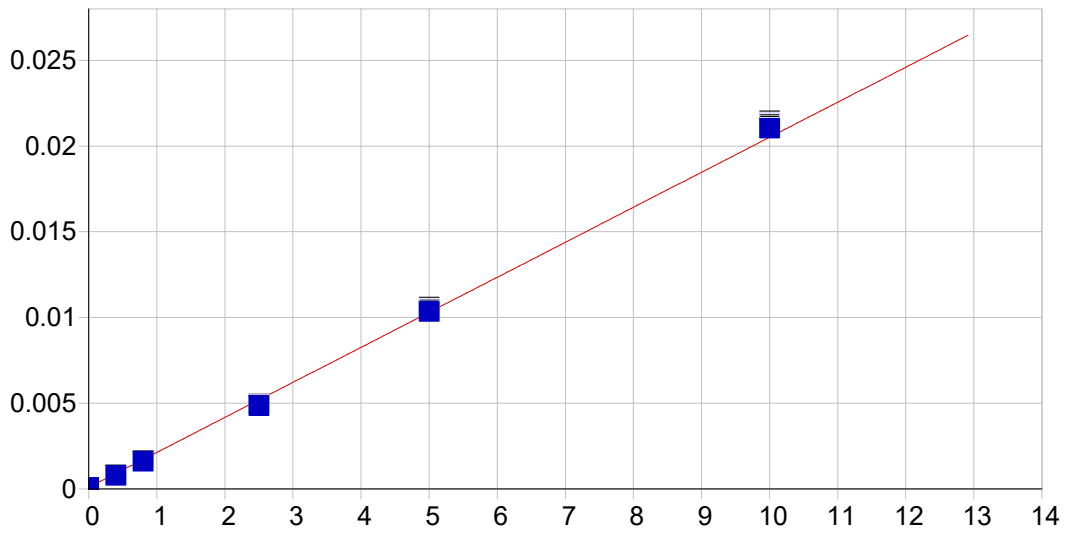
Ti 336.121 {100}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.001451	Re-Slope:	1.000000
A1 (Gain):	0.318373	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999702	Status:	OK.
Std Error of Est:	0.000258		
Predicted MDL:	0.001890		
Predicted MQL:	0.006300		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00145	.000	1
S1	.04000	.03797	-.002	-5.07	.01353	.000	1
S3	2.5000	2.3754	-.125	-4.98	.75743	.004	1
S4	5.0000	4.9688	-.031	-.623	1.5828	.005	1
S5	10.000	10.186	.186	1.86	3.2432	.027	1
S2	.80000	.77194	-.028	-3.51	.24712	.002	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



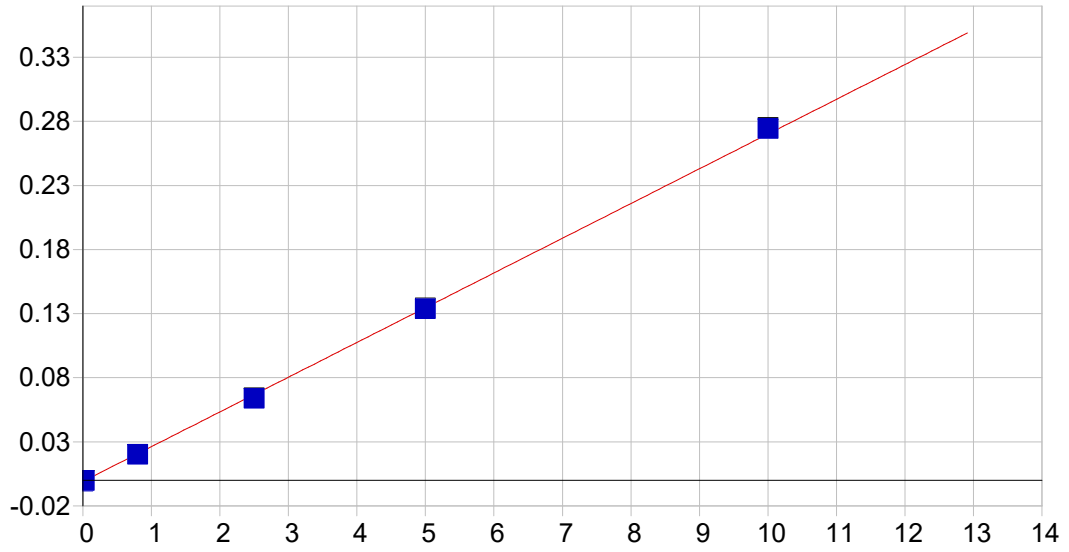
Si 288.158 {117}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000086	Re-Slope:	1.000000
A1 (Gain):	0.002043	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999211	Status:	OK.
Std Error of Est:	0.000009		
Predicted MDL:	0.017586		
Predicted MQL:	0.058619		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00010	.000	.000	.00009	.000	1
S1	.40000	.34090	-.059	-14.8	.00078	.000	1
S3	2.5000	2.3336	-.166	-6.66	.00493	.000	1
S4	5.0000	5.0185	.018	.369	.01049	.000	1
S5	10.000	10.261	.261	2.61	.02135	.000	1
S2	.80000	.74543	-.055	-6.82	.00163	.000	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



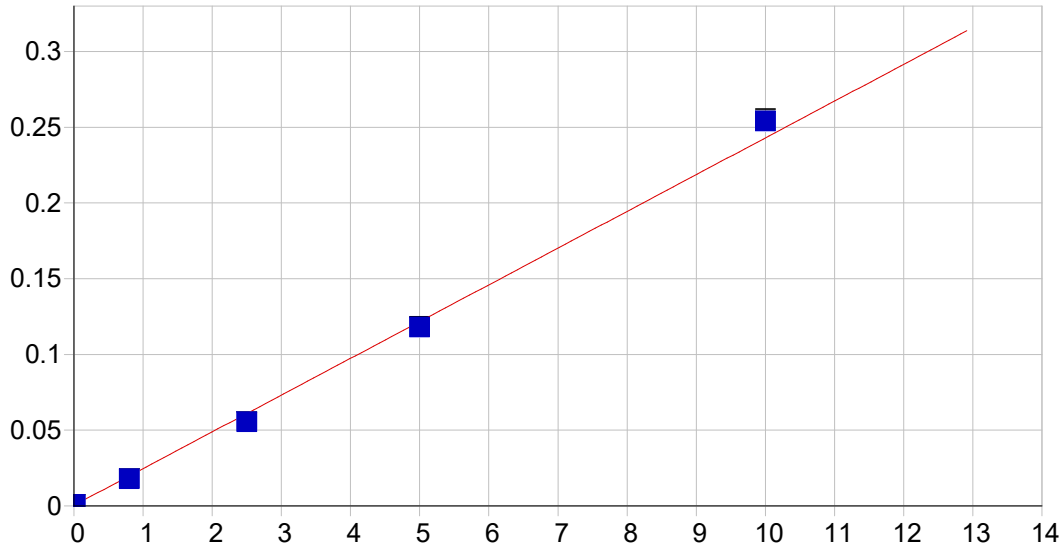
P 177.495 {490}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	-0.000868	Re-Slope:	1.000000
A1 (Gain):	0.027101	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999772	Status:	OK.
Std Error of Est:	0.000014		
Predicted MDL:	0.002821		
Predicted MQL:	0.009404		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	-.00087	.000	1
S1	.02000	.02164	.002	8.21	-.00028	.000	1
S3	2.5000	2.3912	-.109	-4.35	.06392	.000	1
S4	5.0000	4.9737	-.026	-.526	.13390	.000	1
S5	10.000	10.159	.159	1.59	.27441	.001	1
S2	.80000	.77427	-.026	-3.22	.02011	.000	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



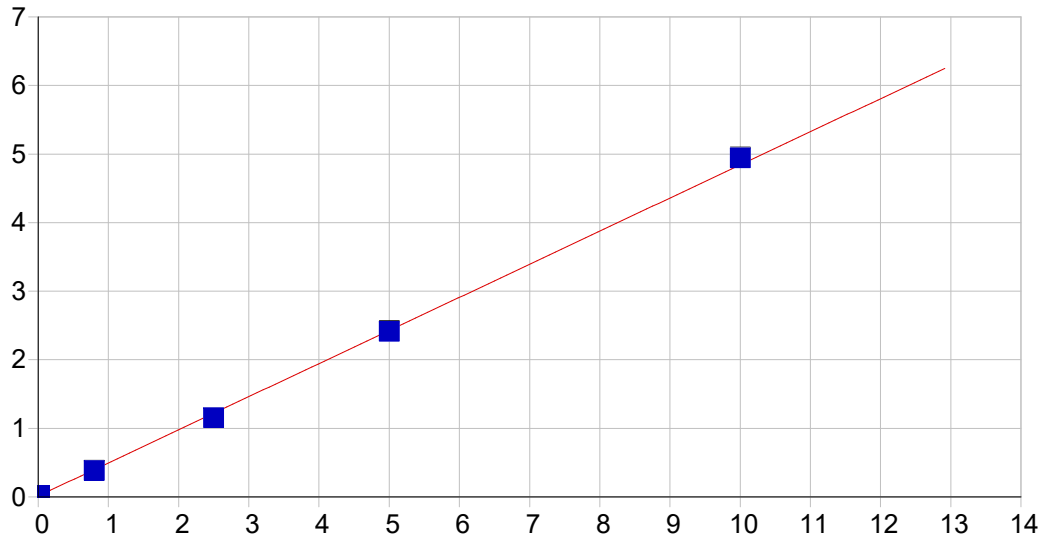
S 182.034 {485}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000363	Re-Slope:	1.000000
A1 (Gain):	0.024261	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.998521	Status:	OK.
Std Error of Est:	0.000031		
Predicted MDL:	0.003601		
Predicted MQL:	0.012003		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00036	.000	1
S1	.02000	.01859	-.001	-7.03	.00079	.000	1
S3	2.5000	2.2717	-.228	-9.13	.05532	.000	1
S4	5.0000	4.8506	-.149	-2.99	.11773	.000	1
S5	10.000	10.457	.457	4.57	.25344	.001	1
S2	.80000	.72158	-.078	-9.80	.01782	.000	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



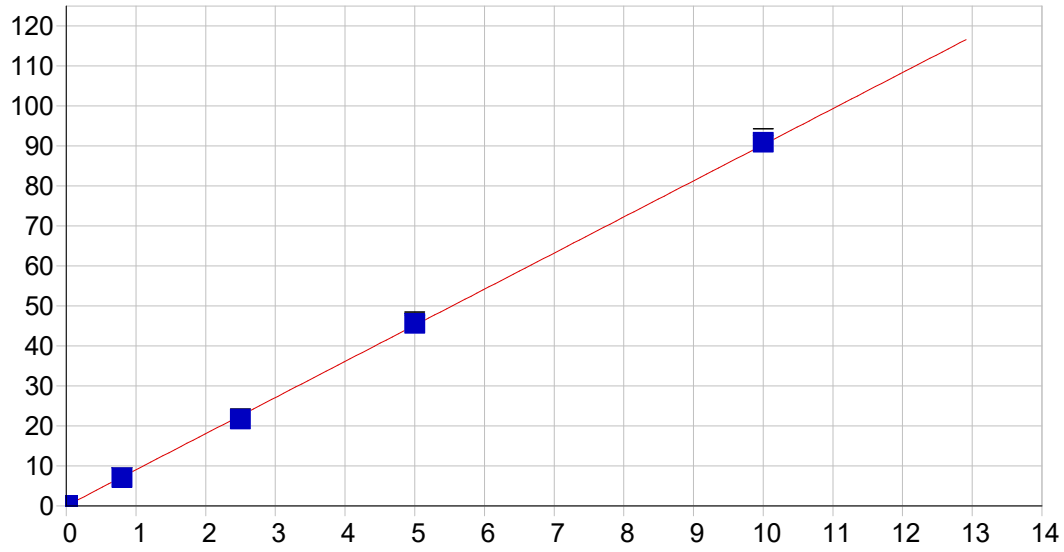
Li 670.784 { 50}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.012443	Re-Slope:	1.000000
A1 (Gain):	0.482940	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999465	Status:	OK.
Std Error of Est:	0.000370		
Predicted MDL:	0.004306		
Predicted MQL:	0.014352		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00001	.000	.000	.01245	.002	1
S5	10.000	10.208	.208	2.08	4.9464	.009	1
S4	5.0000	4.9694	-.031	-.612	2.4143	.006	1
S3	2.5000	2.3656	-.134	-5.38	1.1558	.000	1
S1	.02000	.00850	-.011	-57.5	.01672	.003	1
S2	.80000	.76831	-.032	-3.96	.38380	.003	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



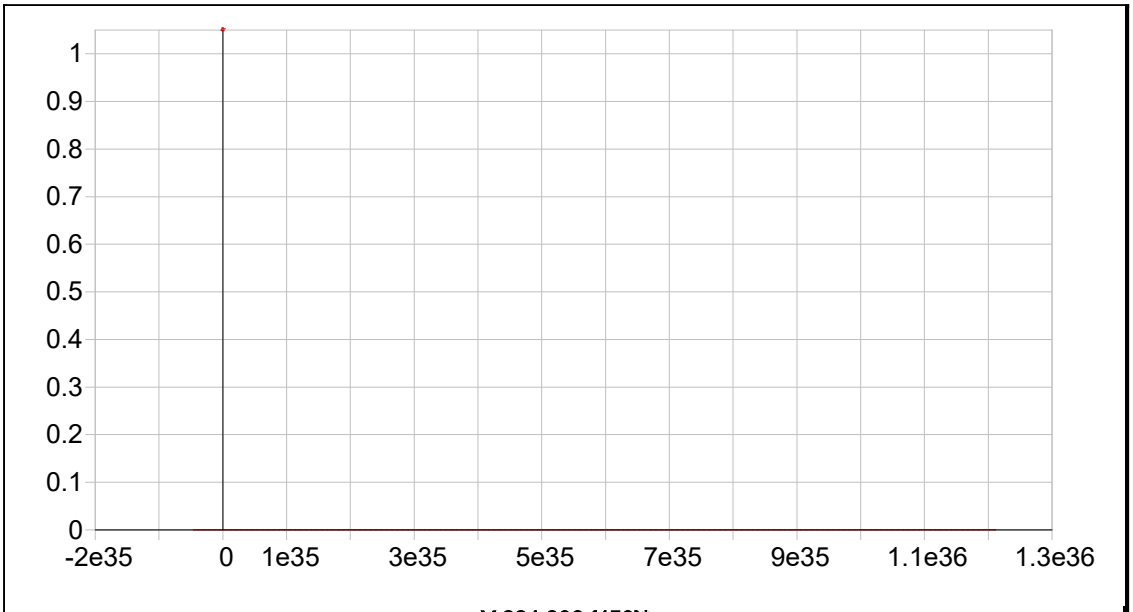
Sr 407.771 { 83}

Date of Fit:	8/7/2025 16:51:42	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.003162	Re-Slope:	1.000000
A1 (Gain):	9.031241	Y-int:	0.000000
A2 (Curvature):	0.000000		
n (Exponent):	1.000000		
Correlation:	0.999856	Status:	OK.
Std Error of Est:	0.003599		
Predicted MDL:	0.000118		
Predicted MQL:	0.000393		

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	-.00000	-.000	.000	.00316	.001	1
S1	.02000	.02115	.001	5.75	.19503	.001	1
S3	2.5000	2.4017	-.098	-3.93	21.716	.073	1
S4	5.0000	5.0480	.048	.960	45.636	.383	1
S5	10.000	10.068	.068	.680	91.017	.826	1
S2	.80000	.78106	-.019	-2.37	7.0640	.032	1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

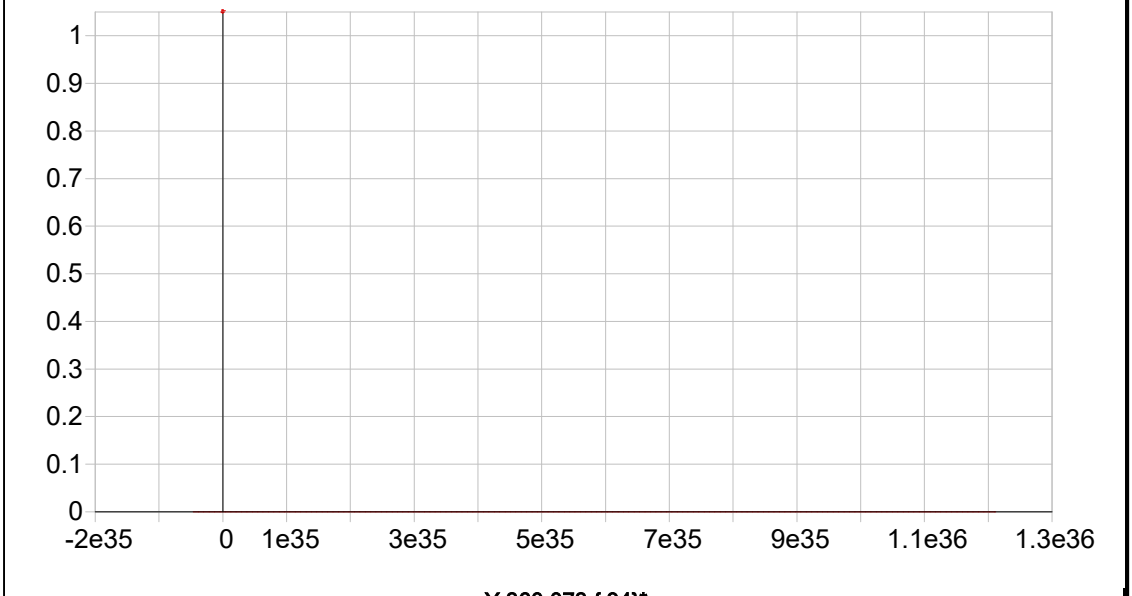


Y 224.306 {450}*

Date of Fit:	8/7/2025 16:51:42	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



Y 360.073 { 94}*

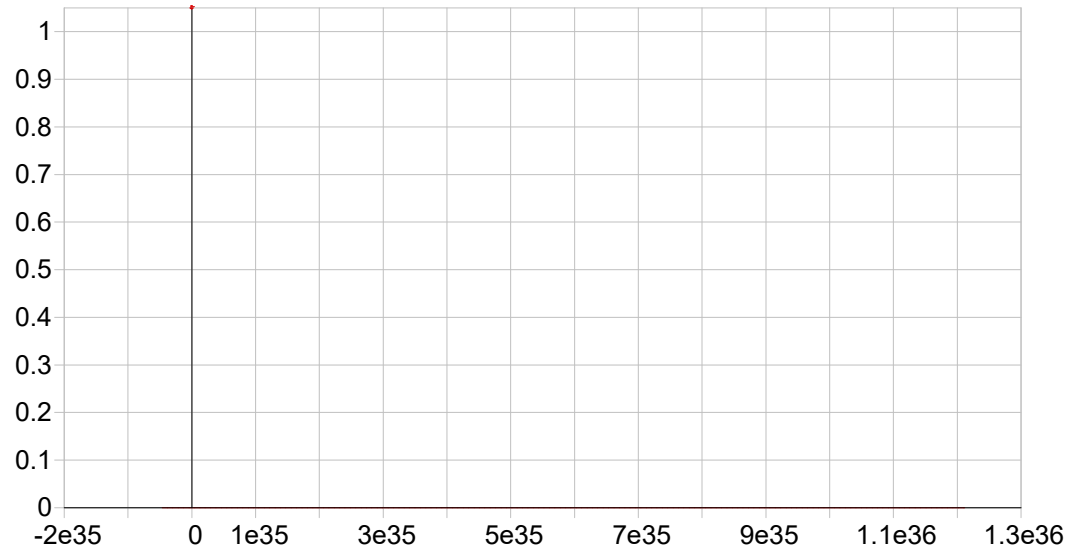
Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc

A0 (Offset):	0.000000	Re-Slope:	1.000000
A1 (Gain):	0.000000	Y-int:	0.000000

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

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

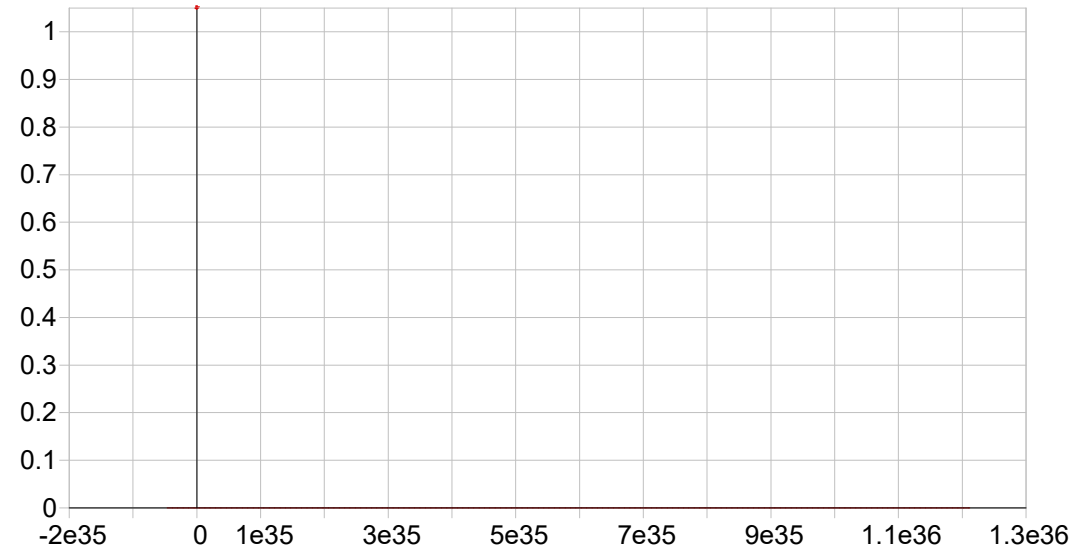


Y 371.030 { 91}*

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

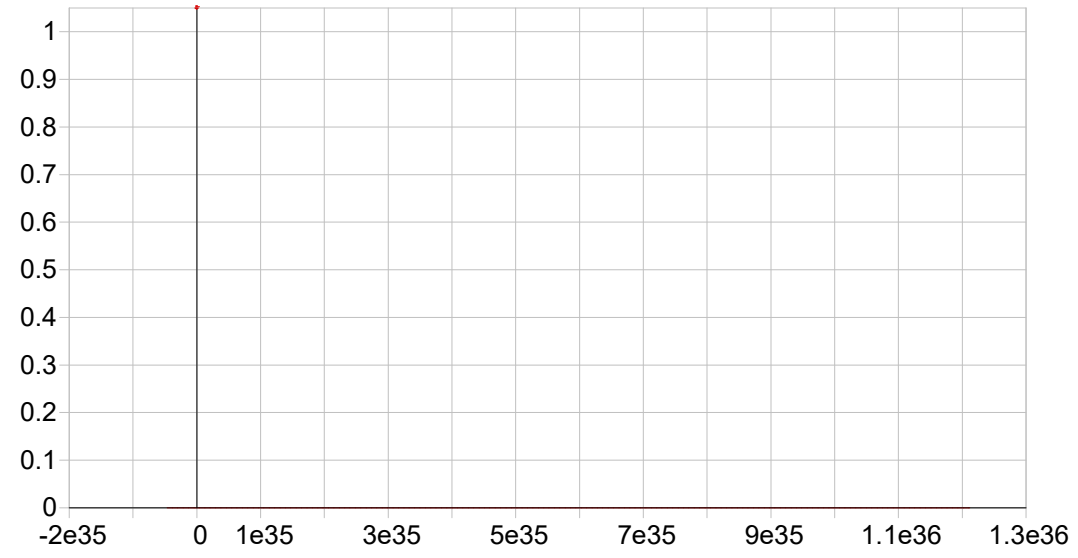
Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746



Y 224.306 {150}*

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



In 230.606 {446}*

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	

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

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**

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: S0 Acquired: 8/7/2025 12:46:40 Type: Cal
Method: 6010-200.7 NEW(v86) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: 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	**.00006**	**.00120**	**.00014**	**.00025**	**.00047**	**.00067**	**.07976**	**-.00082**
Stddev	.00005	.00007	.00046	.00015	.00007	.00045	.00195	.00013
%RSD	76.389	5.6684	333.33	58.630	14.521	67.228	2.4425	15.467
#1	.00002	.00113	.00023	.00031	.00050	.00020	.07855	-.00079
#2	.00011	.00119	.00055	.00037	.00052	.00111	.08201	-.00096
#3	.00005	.00127	-.00036	.00009	.00040	.00071	.07872	-.00071

Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00027**	**.00273**	**.00018**	**.00023**	**.00047**	**.00005**	**.00046**	**.00009**
Stddev	.00014	.00035	.00002	.00012	.00011	.00001	.00020	.00017
%RSD	53.249	12.992	12.596	51.446	23.880	20.509	42.979	190.98
#1	-.00019	.00303	.00017	.00009	.00040	.00006	.00025	.00002
#2	-.00018	.00281	.00021	.00029	.00060	.00005	.00063	.00028
#3	-.00043	.00234	.00016	.00031	.00041	.00004	.00049	-.00004

Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00063**	**-.00058**	**.00448**	**-.00034**	**.00563**	**-.00048**	**.00511**	**.00074**
Stddev	.00013	.00013	.00012	.00024	.00023	.00025	.00032	.00007
%RSD	21.013	22.139	2.7746	70.661	4.0845	50.977	6.3354	8.9485
#1	-.00078	-.00065	.00460	-.00007	.00587	-.00024	.00489	.00070
#2	-.00058	-.00066	.00448	-.00052	.00561	-.00048	.00548	.00071
#3	-.00052	-.00043	.00436	-.00044	.00541	-.00073	.00496	.00082

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00041**	**.00145**	**.00009**	**-.00087**	**.00036**	**.01245**	**.00316**
Stddev	.00003	.00025	.00002	.00002	.00002	.00159	.00095
%RSD	7.9384	17.355	28.986	1.9925	5.4343	12.806	29.963
#1	.00040	.00148	.00007	-.00085	.00034	.01429	.00312
#2	.00045	.00169	.00007	-.00088	.00036	.01158	.00413
#3	.00039	.00119	.00012	-.00087	.00038	.01148	.00223

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: S0 Acquired: 8/7/2025 12:46:40 Type: Cal
Method: 6010-200.7 NEW(v86) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: 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	6183.0	103560.	8374.1	5382.9	7351.3
Stddev	11.0	650.	35.3	7.9	10.1
%RSD	.17840	.62755	.42199	.14653	.13756
#1	6182.8	103300.	8411.6	5389.9	7358.7
#2	6194.1	104300.	8341.4	5374.4	7355.5
#3	6172.1	103090.	8369.4	5384.5	7339.8

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: S1 Acquired: 8/7/2025 12:51:03 Type: Cal
Method: 6010-200.7 NEW(v86) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: 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	**.00084**	**.00229**	**.00239**	**.00094**	**.00436**	**.00831**	**.37645**	**.04193**
Stddev	.00007	.00012	.00006	.00012	.00008	.00046	.00132	.00057
%RSD	8.4212	5.0734	2.5774	12.425	1.9172	5.5762	.34975	1.3531
#1	.00085	.00237	.00246	.00081	.00427	.00882	.37700	.04243
#2	.00089	.00216	.00237	.00105	.00442	.00792	.37740	.04204
#3	.00076	.00234	.00235	.00095	.00440	.00818	.37495	.04131

Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.01499**	**.12814**	**.00162**	**.02787**	**.01300**	**.00036**	**.01220**	**.02255**
Stddev	.00007	.00197	.00004	.00014	.00013	.00002	.00032	.00004
%RSD	.48038	1.5389	2.2945	.50813	1.0348	6.7155	2.6405	.19799
#1	.01491	.12933	.00166	.02787	.01295	.00035	.01250	.02257
#2	.01499	.12587	.00160	.02773	.01290	.00039	.01186	.02259
#3	.01506	.12924	.00160	.02801	.01315	.00035	.01225	.02250

Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02147**	**.00108**	**.01880**	**.00327**	**.08861**	**.00628**	**.06105**	**.10393**
Stddev	.00021	.00010	.00009	.00006	.00025	.00020	.00149	.00030
%RSD	.99710	9.4786	.49470	1.7446	.28670	3.1650	2.4406	.28952
#1	.02130	.00108	.01875	.00326	.08886	.00641	.06276	.10404
#2	.02171	.00098	.01891	.00333	.08835	.00639	.06001	.10359
#3	.02139	.00118	.01874	.00321	.08861	.00605	.06039	.10416

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00527**	**.01353**	**.00078**	**-.00028**	**.00079**	**.01672**	**.19503**
Stddev	.00004	.00013	.00002	.00006	.00005	.00277	.00105
%RSD	.83490	.96065	2.3751	20.486	6.7656	16.543	.53790
#1	.00522	.01340	.00081	-.00021	.00077	.01653	.19574
#2	.00530	.01353	.00077	-.00032	.00076	.01957	.19383
#3	.00529	.01366	.00077	-.00031	.00086	.01405	.19552

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: S1 Acquired: 8/7/2025 12:51:03 Type: Cal
Method: 6010-200.7 NEW(v86) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: 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	6315.9	106410.	8557.7	5549.1	7532.9
Stddev	18.2	190.	95.7	2.6	21.4
%RSD	.28783	.17897	1.1181	.04758	.28433
#1	6326.8	106630.	8454.8	5549.7	7551.5
#2	6325.9	106340.	8644.1	5551.4	7537.6
#3	6294.9	106270.	8574.2	5546.2	7509.5

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: S2 Acquired: 8/7/2025 12:55:22 Type: Cal
Method: 6010-200.7 NEW(v86) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: 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	.03195	.02499	.13771	.02510	.05890	.10806	4.6049	.28460
Stddev	.00023	.00078	.00070	.00022	.00026	.00097	.0143	.00209
%RSD	.73310	3.1096	.50666	.88057	.44662	.89803	.31012	.73424
#1	.03221	.02481	.13757	.02522	.05910	.10918	4.6149	.28700
#2	.03186	.02431	.13847	.02523	.05901	.10746	4.5886	.28364
#3	.03177	.02584	.13710	.02484	.05860	.10754	4.6113	.28316

Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.98621	.24193	.02326	.35310	.11514	.00245	.19345	.04090
Stddev	.00141	.00252	.00016	.00115	.00065	.00002	.00074	.00041
%RSD	.14321	1.0435	.69401	.32649	.56452	.65890	.38350	.99449
#1	.98671	.24223	.02319	.35352	.11587	.00243	.19362	.04134
#2	.98730	.23928	.02315	.35399	.11492	.00246	.19264	.04082
#3	.98461	.24430	.02345	.35180	.11463	.00246	.19409	.04054

Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.20695	.03371	.03759	.03543	.79732	.01517	.47849	.39397
Stddev	.00047	.00016	.00029	.00041	.00239	.00024	.00343	.00098
%RSD	.22501	.46624	.75893	1.1676	.30010	1.5813	.71699	.24921
#1	.20742	.03386	.03733	.03590	.79970	.01495	.48218	.39485
#2	.20694	.03370	.03753	.03530	.79736	.01513	.47790	.39415
#3	.20649	.03355	.03790	.03511	.79491	.01543	.47539	.39291

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.09902	.24712	.00163	.02011	.01782	.38380	7.0640
Stddev	.00026	.00150	.00002	.00017	.00013	.00322	.0318
%RSD	.26172	.60826	1.1147	.82472	.70994	.83993	.45025
#1	.09925	.24734	.00165	.02028	.01796	.38636	7.0881
#2	.09907	.24553	.00164	.02011	.01778	.38485	7.0280
#3	.09874	.24851	.00161	.01995	.01772	.38018	7.0759

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: S2 Acquired: 8/7/2025 12:55:22 Type: Cal
Method: 6010-200.7 NEW(v86) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: 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	6222.7	103120.	8491.9	5371.8	7273.0
Stddev	1.5	233.	61.3	37.8	4.5
%RSD	.02359	.22549	.72134	.70400	.06179
#1	6223.2	103060.	8431.9	5336.9	7278.0
#2	6224.0	102930.	8489.4	5366.6	7269.4
#3	6221.1	103380.	8554.3	5412.0	7271.5

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: S3 Acquired: 8/7/2025 12:59:27 Type: Cal
Method: 6010-200.7 NEW(v86) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: 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	**.09937**	**.07612**	**.42535**	**.07783**	**.18115**	**.33131**	**14.062**	**.87427**
Stddev	.00022	.00097	.00176	.00034	.00114	.00154	.039	.00583
%RSD	.22102	1.2792	.41464	.43654	.63158	.46367	.27438	.66731
#1	.09927	.07724	.42475	.07769	.18066	.33306	14.093	.87715
#2	.09922	.07565	.42397	.07759	.18033	.33068	14.075	.87811
#3	.09962	.07547	.42734	.07822	.18246	.33020	14.019	.86756

Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3.0921**	**.73279**	**.07120**	**1.0955**	**.34992**	**.00747**	**.58908**	**.12440**
Stddev	.0116	.00377	.00041	.0043	.00141	.00002	.00202	.00038
%RSD	.37397	.51442	.57389	.39150	.40430	.30847	.34277	.30536
#1	3.0853	.73643	.07166	1.0934	.34891	.00747	.59005	.12476
#2	3.0856	.73304	.07090	1.0927	.34931	.00745	.59043	.12400
#3	3.1055	.72890	.07103	1.1005	.35154	.00749	.58676	.12443

Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.64047**	**.10451**	**.11010**	**.11013**	**2.4245**	**.04974**	**1.4597**	**1.2042**
Stddev	.00303	.00025	.00029	.00030	.0030	.00023	.0101	.0048
%RSD	.47250	.24397	.26466	.27342	.12524	.46851	.68826	.39605
#1	.63892	.10448	.10995	.11046	2.4263	.04947	1.4678	1.2029
#2	.63854	.10478	.10991	.11003	2.4210	.04985	1.4627	1.2003
#3	.64396	.10427	.11044	.10989	2.4262	.04990	1.4485	1.2095

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.30849**	**.75743**	**.00493**	**.06392**	**.05532**	**1.1558**	**21.716**
Stddev	.00072	.00448	.00002	.00026	.00017	.0003	.073
%RSD	.23214	.59132	.40113	.40137	.31029	.02873	.33596
#1	.30811	.75976	.00495	.06411	.05529	1.1561	21.786
#2	.30805	.76026	.00491	.06363	.05516	1.1555	21.720
#3	.30932	.75227	.00492	.06403	.05550	1.1559	21.641

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: S3 Acquired: 8/7/2025 12:59:27 Type: Cal
Method: 6010-200.7 NEW(v86) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: 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	6195.7	102070.	8517.1	5338.5	7090.8
Stddev	19.9	290.	56.3	10.2	16.6
%RSD	.32167	.28414	.66142	.19046	.23344
#1	6202.7	101740.	8464.2	5341.3	7097.0
#2	6211.1	102180.	8510.7	5327.3	7103.4
#3	6173.2	102290.	8576.3	5347.0	7072.1

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: S4 Acquired: 8/7/2025 13:03:24 Type: Cal
Method: 6010-200.7 NEW(v86) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: 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	.21180	.14937	.89019	.16264	.38267	.68666	29.349	1.7832
Stddev	.00035	.00511	.00203	.00039	.00053	.00123	.397	.0149
%RSD	.16481	3.4193	.22841	.23830	.13846	.17924	1.3513	.83363
#1	.21214	.15458	.89089	.16294	.38294	.68689	29.420	1.7828
#2	.21144	.14916	.88789	.16220	.38206	.68533	29.706	1.7982
#3	.21183	.14437	.89178	.16279	.38300	.68776	28.922	1.7685

Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6.5510	1.5237	.14605	2.3216	.72701	.01555	1.2264	.25906
Stddev	.0159	.0077	.00034	.0052	.00083	.00004	.0041	.00024
%RSD	.24353	.50380	.23603	.22397	.11471	.27822	.33512	.09396
#1	6.5559	1.5229	.14623	2.3211	.72617	.01554	1.2278	.25932
#2	6.5332	1.5317	.14627	2.3167	.72702	.01552	1.2296	.25901
#3	6.5640	1.5165	.14565	2.3271	.72784	.01560	1.2217	.25884

Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.3565	.21528	.23052	.23058	5.0354	.10634	2.9032	2.5603
Stddev	.0030	.00014	.00172	.00050	.0071	.00085	.0195	.0029
%RSD	.22348	.06427	.74415	.21553	.14118	.80131	.67092	.11418
#1	1.3577	.21517	.23060	.23081	5.0420	.10615	2.9084	2.5625
#2	1.3530	.21543	.22877	.23001	5.0363	.10559	2.9196	2.5570
#3	1.3587	.21523	.23220	.23093	5.0278	.10727	2.8817	2.5614

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.65686	1.5828	.01049	.13390	.11773	2.4143	45.636
Stddev	.00154	.0054	.00012	.00035	.00042	.0058	.383
%RSD	.23447	.34375	1.1350	.26441	.35623	.23951	.83820
#1	.65774	1.5821	.01047	.13431	.11814	2.4183	45.697
#2	.65508	1.5886	.01039	.13376	.11774	2.4077	45.985
#3	.65776	1.5778	.01062	.13364	.11730	2.4169	45.227

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: S4 Acquired: 8/7/2025 13:03:24 Type: Cal
Method: 6010-200.7 NEW(v86) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: 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	6086.5	102350.	8549.9	5297.0	6850.3
Stddev	5.8	55.	65.8	8.1	12.5
%RSD	.09525	.05394	.77015	.15364	.18176
#1	6091.0	102310.	8536.9	5291.4	6846.1
#2	6088.7	102410.	8491.5	5293.4	6864.2
#3	6080.0	102320.	8621.3	5306.4	6840.4

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: S5 Acquired: 8/7/2025 13:07:36 Type: Cal
Method: 6010-200.7 NEW(v86) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: 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	.42989	.32295	1.8346	.33629	.77368	1.3750	59.440	3.6648
Stddev	.00150	.01112	.0039	.00151	.00313	.0013	.252	.0320
%RSD	.34780	3.4418	.21306	.44903	.40440	.09298	.42460	.87390
#1	.42847	.31018	1.8317	.33472	.77177	1.3748	59.392	3.6555
#2	.42975	.32823	1.8329	.33642	.77198	1.3739	59.216	3.7005
#3	.43145	.33044	1.8390	.33773	.77729	1.3764	59.713	3.6385

Elem	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404	Mn2576	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	13.380	3.1169	.28509	4.7417	1.4444	.03153	2.4670	.51502
Stddev	.032	.0303	.00060	.0108	.0027	.00029	.0126	.00180
%RSD	.23712	.97138	.21080	.22821	.18412	.91775	.51097	.35030
#1	13.350	3.0887	.28491	4.7340	1.4435	.03139	2.4558	.51293
#2	13.378	3.1489	.28460	4.7372	1.4422	.03134	2.4806	.51611
#3	13.413	3.1131	.28576	4.7541	1.4473	.03186	2.4645	.51600

Elem	Ni2316	Ag3280	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2.7631	.44122	.46677	.46278	10.153	.22300	6.1038	5.0319
Stddev	.0071	.00048	.00353	.00110	.013	.00151	.0562	.0131
%RSD	.25695	.10812	.75603	.23666	.13012	.67714	.92034	.26046
#1	2.7567	.44173	.46734	.46154	10.156	.22263	6.0887	5.0215
#2	2.7618	.44079	.46299	.46359	10.139	.22171	6.1659	5.0275
#3	2.7707	.44113	.46998	.46322	10.165	.22466	6.0567	5.0466

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.3192	3.2432	.02135	.27441	.25344	4.9464	91.017
Stddev	.0038	.0267	.00011	.00055	.00146	.0092	.826
%RSD	.28892	.82323	.51452	.19873	.57696	.18551	.90778
#1	1.3153	3.2202	.02139	.27403	.25204	4.9423	90.986
#2	1.3195	3.2725	.02123	.27417	.25332	4.9399	90.206
#3	1.3229	3.2369	.02144	.27504	.25496	4.9569	91.858

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: S5 Acquired: 8/7/2025 13:07:36 Type: Cal
Method: 6010-200.7 NEW(v86) Mode: IR Corr. Factor: 1.000000
User: Jaswal Custom ID1: 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	5987.4	100350.	8415.8	5103.8	6561.4
Stddev	7.0	360.	52.6	23.0	2.1
%RSD	.11635	.35871	.62538	.45129	.03134
#1	5979.4	100060.	8412.7	5082.8	6561.8
#2	5992.3	100750.	8364.8	5128.4	6559.2
#3	5990.5	100240.	8469.9	5100.1	6563.3

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: ICV01 Acquired: 8/7/2025 13:11:47 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.894472**	**3.903583**	**3.808998**	**3.946897**	**4.091930**	**7.828463**
Stddev	.007599	.121807	.008735	.005873	.006773	.006018
%RSD	.1951239	3.120390	.2293340	.1487997	.1655199	.0768714
#1	3.896059	3.978019	3.802535	3.951527	4.087471	7.822733
#2	3.886204	3.969716	3.805523	3.948872	4.088596	7.827926
#3	3.901152	3.763014	3.818936	3.940291	4.099724	7.834732

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.862667**	**.2020748**	**1.934284**	**19.66930**	**.7855454**	**1.961237**
Stddev	.029048	.0014371	.004280	.12268	.0034631	.005258
%RSD	.3694415	.7111787	.2212672	.6237217	.4408549	.2681101
#1	7.829439	.2004593	1.932517	19.54958	.7878183	1.958156
#2	7.883245	.2032110	1.931171	19.66358	.7815596	1.958246
#3	7.875318	.2025542	1.939165	19.79474	.7872583	1.967308

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.007166**	**3.943866**	**1.969263**	**19.55329**	**1.958836**	**.9607131**
Stddev	.001169	.028486	.003246	.06790	.004444	.0006740
%RSD	.1160348	.7222981	.1648427	.3472734	.2268612	.0701557
#1	1.006550	3.950063	1.968536	19.51517	1.956058	.9608203
#2	1.006434	3.912791	1.966441	19.51301	1.956489	.9613271
#3	1.008514	3.968743	1.972811	19.63169	1.963962	.9599919

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**19.27311**	**1.992303**	**1.967015**	**19.47865**	F **.0059934**	F **.0013310**
Stddev	.10903	.005557	.002548	.08384	.0008062	.0003284
%RSD	.5657022	.2789395	.1295481	.4304225	13.45104	24.67063
#1	19.39743	1.998720	1.964919	19.57522	.0055128	.0012352
#2	19.19377	1.989026	1.969851	19.42448	.0069241	.0016966
#3	19.22812	1.989164	1.966275	19.43624	.0055432	.0010612

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: ICV01 Acquired: 8/7/2025 13:11:47 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICV01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.000366	F -.003670	F -.018738	F .0101302	F .0122634	F .0003669
Stddev	.000198	.001331	.007118	.0001588	.0016158	.0015719
%RSD	54.04234	36.27615	37.98599	1.567411	13.17575	428.4632
#1	-.000481	-.005135	-.017612	.0099672	.0137364	.0017101
#2	-.000137	-.003340	-.026352	.0102844	.0105352	-.001362
#3	-.000478	-.002534	-.012250	.0101390	.0125187	.000752

Elem	Sr4077
Units	ppm
Avg	F -.003449
Stddev	.000088
%RSD	2.554693
#1	-.003546
#2	-.003429
#3	-.003373

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6160.486	103318.0	8684.524	5301.921	7006.357
Stddev	6.377	401.0	67.332	23.440	8.608
%RSD	.1035097	.3881388	.7753127	.4421054	.1228616
#1	6154.885	103653.6	8756.487	5328.323	7003.589
#2	6167.426	103426.6	8674.032	5283.561	7016.008
#3	6159.148	102873.9	8623.054	5293.878	6999.473

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: LLICV01 Acquired: 8/7/2025 13:21:04 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: LLICV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0206294**	**.0329258**	**.0124430**	**.0214309**	**.0521702**	**.1155923**
Stddev	.0008646	.0034275	.0020865	.0006687	.0006394	.0079072
%RSD	4.191205	10.40976	16.76883	3.120122	1.225595	6.840625
#1	.0197271	.0341039	.0100922	.0206589	.0519120	.1167478
#2	.0207105	.0290647	.0140756	.0218048	.0517002	.1071709
#3	.0214506	.0356089	.0131612	.0218289	.0528983	.1228582

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1047291**	**.0060924**	**.0059174**	**2.115911**	**.0101301**	**.0300005**
Stddev	.0043537	.0001544	.0000978	.068474	.0001982	.0002538
%RSD	4.157072	2.533601	1.652338	3.236168	1.956617	.8460717
#1	.1024440	.0060735	.0058673	2.065213	.0099191	.0298680
#2	.1019937	.0059483	.0058549	2.088713	.0103124	.0298404
#3	.1097495	.0062553	.0060301	2.193805	.0101587	.0302932

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0215437**	**.1000028**	**.0229902**	**2.210313**	**.0408160**	**.0102048**
Stddev	.0000670	.0058483	.0005733	.095000	.0003652	.0002923
%RSD	.3111819	5.848179	2.493715	4.298032	.8946852	2.864023
#1	.0215733	.0932687	.0226638	2.155027	.0404994	.0100434
#2	.0215909	.1029312	.0226547	2.155905	.0407330	.0105421
#3	.0214670	.1038084	.0236522	2.320009	.0412155	.0100288

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.633933**	**.0468491**	**.0419233**	**1.727684**	**.0996003**	**.2033954**
Stddev	.016657	.0042932	.0001366	.044383	.0020861	.0007902
%RSD	1.019415	9.163924	.3258579	2.568938	2.094470	.3884974
#1	1.649509	.0451490	.0420309	1.731524	.0979850	.2036393
#2	1.616373	.0436664	.0417696	1.681506	.0988603	.2025120
#3	1.635917	.0517320	.0419693	1.770023	.1019555	.2040349

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: LLICV01 Acquired: 8/7/2025 13:21:04 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: LLICV01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0373981	.0400954	.3489892	F .0245274	.0171581	F .0087524
Stddev	.0001698	.0016067	.0100655	.0026142	.0006704	.0063689
%RSD	.4539724	4.007130	2.884174	10.65835	3.907294	72.76721
#1	.0372028	.0391717	.3604911	.0261796	.0164265	.0043123
#2	.0375101	.0391638	.3417912	.0215134	.0173047	.0058954
#3	.0374815	.0419506	.3446854	.0258892	.0177431	.0160495

Elem	Sr4077
Units	ppm
Avg	.0213893
Stddev	.0008012
%RSD	3.745846
#1	.0209147
#2	.0209388
#3	.0223143

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6399.615	109516.7	8765.238	5551.840	7620.811
Stddev	16.811	1138.9	206.664	23.651	23.364
%RSD	.2626882	1.039934	2.357773	.4259992	.3065820
#1	6415.983	108226.8	8906.233	5524.801	7641.103
#2	6400.468	109939.7	8861.475	5568.682	7626.063
#3	6382.394	110383.5	8528.006	5562.036	7595.268

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: ICB01 Acquired: 8/7/2025 13:25:18 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICB01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000728**	**-.006037**	**.0004313**	**.0002580**	**.0012628**	**.0062762**	**.0003781**
Stddev	.000709	.002074	.0005425	.0015860	.0013589	.0050293	.0001737
%RSD	97.50515	34.35918	125.7773	614.7325	107.6082	80.13398	45.95390
#1	-.001124	-.007632	.0007947	-.001443	.0028306	.0081704	.0003763
#2	-.001150	-.003692	.0006914	.000521	.0004243	.0100834	.0002052
#3	.000091	-.006787	-.000192	.001696	.0005334	.0005748	.0005527

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000088**	**.0001281**	**-.006114**	**-.000051**	**.0002783**	**.0000711**	**-.000763**
Stddev	.0000935	.0000783	.006439	.000232	.0000427	.0000992	.002851
%RSD	1060.886	61.11700	105.3237	457.2641	15.32498	139.4191	373.3767
#1	.0000522	.0001788	-.013162	.000182	.0002915	.0001560	-.003526
#2	-.000098	.0001676	-.000539	-.000053	.0002306	.0000954	-.000932
#3	.000073	.0000379	-.004640	-.000281	.0003128	-.000038	.002168

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000409**	**.0251650**	**.0003866**	**-.000461**	**-.276103**	**.0015640**	**.0001485**
Stddev	.0007406	.0181755	.0004225	.000257	.011650	.0045892	.0001059
%RSD	1808.435	72.22513	109.2767	55.80419	4.219588	293.4283	71.26616
#1	-.000006	.0104561	.0003061	-.000720	-.264206	.0002454	.0000465
#2	-.000675	.0195547	.0008435	-.000205	-.276612	-.002222	.0002578
#3	.000804	.0454842	.0000102	-.000460	-.287490	.006668	.0001412

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.179319**	**-.000491**	**-.000310**	**-.000189**	**.0016985**	**.0029934**	**.0069573**
Stddev	.026682	.000651	.000426	.000340	.0012715	.0184187	.0012888
%RSD	14.87952	132.6067	137.1415	179.7054	74.86345	615.3140	18.52454
#1	-.209951	-.000525	-.000793	-.000093	.0031618	.0172937	.0071311
#2	-.161141	.000177	-.000146	-.000568	.0008624	-.017790	.0081504
#3	-.166866	-.001125	.000009	.000092	.0010712	.009477	.0055904

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: ICB01 Acquired: 8/7/2025 13:25:18 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICB01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.001806	-.005739	.0001177
Stddev	.002795	.001778	.0000825
%RSD	154.7800	30.98217	70.08955
#1	.000663	-.005297	.0002129
#2	-.001239	-.004224	.0000733
#3	-.004841	-.007696	.0000669

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6290.096	106877.7	8755.524	5420.831	7522.603
Stddev	8.466	128.6	39.194	18.115	7.814
%RSD	.1345887	.1203452	.4476464	.3341650	.1038778
#1	6283.381	106771.3	8795.464	5405.139	7514.970
#2	6287.302	106841.3	8717.121	5440.654	7530.587
#3	6299.606	107020.6	8753.986	5416.699	7522.250

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: CRI01 Acquired: 8/7/2025 13:29:38 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0189047**	**.0361521**	**.0135677**	**.0233903**	**.0540642**	**.1148366**
Stddev	.0019710	.0022293	.0007975	.0023928	.0010772	.0041222
%RSD	10.42624	6.166328	5.878231	10.22992	1.992434	3.589608
#1	.0183790	.0367547	.0131064	.0234757	.0547258	.1115290
#2	.0210853	.0380181	.0131081	.0257393	.0546455	.1194547
#3	.0172498	.0336835	.0144886	.0209560	.0528212	.1135261

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1066453**	**.0061140**	**.0064590**	**2.116392**	**.0104876**	**.0303972**
Stddev	.0022732	.0000480	.0000577	.012497	.0004625	.0001140
%RSD	2.131587	.7851931	.8933281	.5904952	4.409657	.3749762
#1	.1086808	.0060763	.0063999	2.129124	.0110193	.0302677
#2	.1041922	.0061680	.0064618	2.104144	.0102639	.0304824
#3	.1070630	.0060976	.0065152	2.115910	.0101794	.0304415

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0219076**	**.1024653**	**.0246384**	**2.207667**	**.0409985**	**.0101090**
Stddev	.0006276	.0043914	.0007113	.017984	.0001451	.0001414
%RSD	2.864826	4.285755	2.886982	.8146013	.3537950	1.398487
#1	.0222027	.0974195	.0240912	2.220169	.0408654	.0101363
#2	.0223334	.1054237	.0243816	2.187057	.0409771	.0099560
#3	.0211869	.1045526	.0254425	2.215776	.0411531	.0102348

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.574155**	**.0393380**	**.0428809**	**1.641658**	**.0978412**	**.2063649**
Stddev	.014091	.0030200	.0003197	.028788	.0011887	.0010932
%RSD	.8951438	7.677008	.7455663	1.753615	1.214929	.5297348
#1	1.558642	.0425839	.0430485	1.608584	.0990770	.2057785
#2	1.586163	.0366113	.0430819	1.655306	.0967060	.2056900
#3	1.577659	.0388188	.0425122	1.661084	.0977405	.2076262

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: CRI01 Acquired: 8/7/2025 13:29:38 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0382680	.0421614	.3474105	.0237714	.0192785	F .0104888
Stddev	.0005836	.0009357	.0145011	.0035929	.0005923	.0011963
%RSD	1.525066	2.219312	4.174047	15.11423	3.072271	11.40550
#1	.0386128	.0422581	.3440067	.0277741	.0186127	.0104530
#2	.0375942	.0430450	.3633107	.0227146	.0194759	.0117026
#3	.0385970	.0411811	.3349142	.0208254	.0197469	.0093108

Elem	Sr4077
Units	ppm
Avg	.0229624
Stddev	.0000440
%RSD	.1914483
#1	.0230005
#2	.0229143
#3	.0229724

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6436.663	108809.9	8740.911	5530.499	7761.935
Stddev	10.771	468.6	71.170	22.249	14.968
%RSD	.1673459	.4306343	.8142193	.4022968	.1928432
#1	6433.693	108333.4	8664.567	5513.391	7754.231
#2	6448.607	108826.3	8805.425	5555.651	7779.186
#3	6427.687	109270.1	8752.741	5522.454	7752.388

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: ICSA01 Acquired: 8/7/2025 13:34:05 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSA01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0052924	.0171585	-.008669	-.008284	-.003435	251.3401	.0055226
Stddev	.0053553	.0010248	.002265	.005730	.000799	.9175	.0008316
%RSD	101.1886	5.972799	26.12916	69.16450	23.26830	.3650346	15.05903
#1	.0114222	.0162693	-.006551	-.014868	-.004274	251.9496	.0047376
#2	.0015212	.0182794	-.011057	-.004428	-.003348	250.2849	.0063941
#3	.0029338	.0169267	-.008400	-.005556	-.002683	251.7858	.0054362

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0016986	-.000258	238.2947	.0590931	.0022489	.0029877	101.5989
Stddev	.0000187	.000027	1.4029	.0001775	.0001467	.0005173	.3930
%RSD	1.098369	10.50259	.5887056	.3003921	6.521368	17.31482	.3868203
#1	.0017177	-.000286	236.9164	.0592961	.0023503	.0025281	102.0035
#2	.0016804	-.000257	238.2469	.0589670	.0023157	.0028870	101.5748
#3	.0016976	-.000232	239.7209	.0590163	.0020808	.0035479	101.2186

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0089283	250.3083	.0063214	.0027176	-.101913	.0038633	.0015550
Stddev	.0004208	1.0252	.0004041	.0004333	.011588	.0034120	.0001215
%RSD	4.713171	.4095617	6.392094	15.94235	11.37096	88.31947	7.811468
#1	.0090312	250.9137	.0061727	.0022355	-.107951	.0078008	.0016161
#2	.0092881	249.1246	.0067787	.0030744	-.109235	.0017755	.0016338
#3	.0084656	250.8865	.0060127	.0028431	-.088552	.0020136	.0014151

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.036729	.0023596	-.000406	-.003290	-.004309	.0186737	.0113213
Stddev	.022423	.0012225	.000578	.001159	.002110	.0131301	.0019099
%RSD	61.05021	51.81048	142.4339	35.23992	48.97240	70.31327	16.87023
#1	-.062580	.0024974	.000208	-.004470	-.004569	.0208342	.0120038
#2	-.025072	.0035073	-.000939	-.002152	-.002080	.0305895	.0091639
#3	-.022535	.0010740	-.000487	-.003248	-.006276	.0045973	.0127962

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: ICSA01 Acquired: 8/7/2025 13:34:05 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSA01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**-.006102**	**.0187076**	**.0015445**
Stddev	.003219	.0013719	.0004617
%RSD	52.75675	7.333540	29.89180
#1	-.004481	.0202893	.0011194
#2	-.009810	.0179934	.0014785
#3	-.004016	.0178401	.0020356

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**5581.387**	**93017.19**	**8422.043**	**4823.195**	**6077.599**
Stddev	11.703	292.87	52.170	17.203	11.357
%RSD	.2096868	.3148506	.6194487	.3566702	.1868683
#1	5590.306	92681.32	8433.509	4803.488	6089.815
#2	5585.720	93219.22	8467.528	4835.206	6075.622
#3	5568.135	93151.04	8365.094	4830.892	6067.361

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: ICSAB01 Acquired: 8/7/2025 13:39:29 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSAB01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1027126**	**.1177122**	**.0374329**	**.0464934**	**.6040635**	**250.4929**
Stddev	.0034942	.0059114	.0036238	.0046819	.0053883	.1611
%RSD	3.401958	5.021929	9.680834	10.07007	.8920088	.0642959
#1	.1034810	.1115168	.0403844	.0453394	.6007043	250.5386
#2	.1057588	.1232913	.0333884	.0424964	.6012076	250.3140
#3	.0988982	.1183284	.0385259	.0516444	.6102786	250.6262

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5018604**	**.4992637**	**.9690677**	**239.8164**	**.5469868**	**.4928162**
Stddev	.0008374	.0039458	.0013180	1.6286	.0026598	.0012704
%RSD	.1668672	.7903321	.1360014	.6791140	.4862683	.2577869
#1	.5008972	.4949537	.9693646	238.0918	.5500165	.4924436
#2	.5024162	.5001388	.9676267	240.0291	.5459083	.4917737
#3	.5022678	.5026985	.9702119	241.3282	.5450356	.4942312

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4807809**	**101.5317**	**.4948537**	**249.3139**	**.9794167**	**.2162569**
Stddev	.0007779	.2684	.0022577	.5108	.0018071	.0004868
%RSD	.1618044	.2643530	.4562448	.2048934	.1845077	.2250982
#1	.4801283	101.8415	.4924909	249.0771	.9788615	.2168137
#2	.4805726	101.3833	.4950811	248.9646	.9779524	.2160451
#3	.4816418	101.3703	.4969891	249.9002	.9814363	.2159119

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.149904**	**.4873019**	**1.033682**	**-.152676**	F **-.001120**	F **.0001106**
Stddev	.004528	.0068529	.001500	.029318	.003430	.0001046
%RSD	3.020907	1.406292	.1450748	19.20256	306.2441	94.62625
#1	-.155024	.4938338	1.031968	-.174269	.002838	.0002099
#2	-.146424	.4801678	1.034331	-.164459	-.003221	.0001204
#3	-.148264	.4879041	1.034748	-.119300	-.002978	.0000014

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: ICSAB01 Acquired: 8/7/2025 13:39:29 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSAB01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.002596	F -.006407	F .0111507	F .0120822	F -.003224	F .0175878
Stddev	.000311	.002191	.0089547	.0018942	.003943	.0025462
%RSD	11.96677	34.19674	80.30630	15.67771	122.3032	14.47707
#1	-.002474	-.006025	.0134858	.0141324	-.007773	.0201826
#2	-.002950	-.004432	.0187066	.0103971	-.001117	.0150932
#3	-.002366	-.008764	.0012598	.0117170	-.000782	.0174875

Elem	Sr4077
Units	ppm
Avg	F .0014049
Stddev	.0006466
%RSD	46.02311
#1	.0006815
#2	.0016067
#3	.0019266

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5673.399	93444.79	8482.126	4799.858	6200.809
Stddev	15.222	260.34	35.809	10.960	18.957
%RSD	.2682975	.2786008	.4221679	.2283360	.3057226
#1	5671.274	93146.48	8516.770	4811.456	6194.870
#2	5689.571	93561.83	8484.353	4789.673	6222.025
#3	5659.351	93626.08	8445.256	4798.446	6185.532

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: ICSADLX25 Acquired: 8/7/2025 13:43:33 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSA01DLX25 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.003067**	**-.002111**	**-.001534**	**-.003435**	**-.000980**	**12.16207**	**.0000990**
Stddev	.001083	.000723	.000665	.002588	.002457	.04344	.0009336
%RSD	35.30461	34.23779	43.33480	75.34203	250.5675	.3571599	943.0723
#1	-.004316	-.001449	-.001842	-.000481	-.002473	12.20671	.0011031
#2	-.002485	-.002001	-.001989	-.005306	-.002323	12.11995	-.000063
#3	-.002399	-.002882	-.000771	-.004519	.001855	12.15954	-.000743

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001191**	**-.000082**	**12.34066**	**.0025161**	**.0001763**	**.0002632**	**4.795002**
Stddev	.0001086	.000030	.03192	.0002582	.0002199	.0002262	.036079
%RSD	91.19710	35.96384	.2586349	10.26339	124.7515	85.93758	.7524318
#1	.0001182	-.000091	12.37711	.0024138	.0003390	.0003842	4.756453
#2	.0002282	-.000106	12.31771	.0023247	.0002636	.0000023	4.800596
#3	.0000109	-.000049	12.32716	.0028098	-.000074	.0004032	4.827958

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0007463**	**12.59748**	**.0005606**	**.0002135**	**-.255375**	**.0049450**	**.0006907**
Stddev	.0001566	.04390	.0004445	.0000926	.011338	.0025280	.0003663
%RSD	20.97630	.3484782	79.29750	43.36621	4.439675	51.12147	53.03005
#1	.0006443	12.64753	.0006170	.0001258	-.244073	.0023458	.0009395
#2	.0006681	12.56552	.0000906	.0002045	-.255304	.0050942	.0008626
#3	.0009266	12.57937	.0009742	.0003104	-.266749	.0073951	.0002701

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.223100**	**-.004797**	**-.000758**	**-.002316**	**-.000570**	**-.005650**	**.0063425**
Stddev	.027463	.000426	.000312	.000058	.000782	.016061	.0002300
%RSD	12.30988	8.884438	41.12176	2.498718	137.1207	284.2570	3.626398
#1	-.211073	-.004534	-.001067	-.002297	-.000271	-.011472	.0063726
#2	-.203702	-.004569	-.000764	-.002381	.000018	-.017988	.0060989
#3	-.254525	-.005289	-.000443	-.002270	-.001457	.012510	.0065559

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: ICSADLX25 Acquired: 8/7/2025 13:43:33 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSA01DLX25 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.002699	-.007458	.0001977
Stddev	.003532	.001126	.0000845
%RSD	130.8689	15.09700	42.72211
#1	-.001783	-.007101	.0001177
#2	-.006600	-.006554	.0002860
#3	.000285	-.008719	.0001895

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6136.939	104222.1	8613.083	5286.778	7189.158
Stddev	9.182	362.2	65.700	5.818	12.230
%RSD	.1496184	.3475589	.7627959	.1100550	.1701151
#1	6136.359	104060.3	8537.799	5280.060	7180.051
#2	6146.396	104637.0	8642.620	5290.226	7203.058
#3	6128.060	103969.0	8658.831	5290.047	7184.364

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: ICSABDLX25 Acquired: 8/7/2025 13:48:23 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSAB01DLX25 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0020479	-.000043	.0022817	.0010400	.0289482	12.10489	.0245236
Stddev	.0023340	.001293	.0014726	.0010294	.0006799	.04392	.0008588
%RSD	113.9678	3007.553	64.53881	98.98051	2.348796	.3628260	3.501779
#1	.0042722	-.001198	.0027875	.0013248	.0292319	12.11083	.0236167
#2	.0022537	-.000283	.0034349	-.000102	.0281724	12.05830	.0253244
#3	-.000382	.001353	.0006229	.001897	.0294405	12.14553	.0246298

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0256083	.0461476	12.33368	.0270431	.0237365	.0250941	4.779968
Stddev	.0000885	.0000784	.02912	.0002690	.0002787	.0001519	.032562
%RSD	.3454705	.1698283	.2360936	.9946318	1.174067	.6054282	.6812124
#1	.0255577	.0461277	12.30034	.0273317	.0234346	.0251761	4.817208
#2	.0257105	.0460812	12.34655	.0267994	.0237911	.0249188	4.765836
#3	.0255568	.0462340	12.35414	.0269983	.0239839	.0251874	4.756859

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0259204	12.51728	.0475345	.0095796	-.250425	.0267957	.0517633
Stddev	.0001471	.02483	.0000251	.0007435	.016974	.0029833	.0000805
%RSD	.5675402	.1983259	.0528951	7.761294	6.778061	11.13361	.1554115
#1	.0260311	12.49308	.0475238	.0101673	-.239639	.0236287	.0517976
#2	.0257534	12.51608	.0475164	.0098277	-.269991	.0272052	.0516714
#3	.0259765	12.54269	.0475632	.0087437	-.241646	.0295531	.0518209

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.224434	-.004922	-.000854	-.001832	-.000526	.0004501	.0060179
Stddev	.058630	.000808	.000129	.000326	.000890	.0041594	.0007909
%RSD	26.12340	16.42623	15.15926	17.79093	169.2002	924.1064	13.14270
#1	-.284595	-.004882	-.000834	-.002207	-.000287	-.003107	.0067520
#2	-.221240	-.005749	-.000992	-.001624	-.001512	.005023	.0061212
#3	-.167466	-.004134	-.000736	-.001665	.000220	-.000566	.0051804

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: ICSABDLX25 Acquired: 8/7/2025 13:48:23 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSAB01DLX25 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**-.003080**	**-.008151**	**.0001017**
Stddev	.002557	.000624	.0001393
%RSD	83.03340	7.660277	136.9659
#1	-.004240	-.008831	-.000056
#2	-.000148	-.007604	.000206
#3	-.004852	-.008019	.000155

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6213.155**	**103807.4**	**8533.803**	**5270.101**	**7344.240**
Stddev	4.163	15.4	34.942	10.702	9.160
%RSD	.0670045	.0148599	.4094550	.2030662	.1247304
#1	6214.663	103823.6	8573.261	5269.272	7346.111
#2	6216.353	103792.8	8506.778	5259.838	7352.320
#3	6208.448	103805.9	8521.368	5281.193	7334.288

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: CCV01 Acquired: 8/7/2025 13:58:37 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.884459**	**5.114370**	**4.798947**	**4.895856**	**4.896109**	**9.694356**	**9.673488**
Stddev	.019067	.168293	.007181	.029118	.017177	.033342	.129036
%RSD	.3903522	3.290600	.1496337	.5947386	.3508313	.3439314	1.333911
#1	4.876592	4.945928	4.807186	4.875713	4.880790	9.672928	9.821609
#2	4.870584	5.114668	4.794016	4.882614	4.892857	9.677370	9.613408
#3	4.906200	5.282514	4.795641	4.929241	4.914680	9.732771	9.585448

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2421415**	**2.412785**	**24.36638**	**.9624460**	**2.411666**	**1.222104**	**4.948647**
Stddev	.0007047	.003432	.05905	.0036443	.003660	.002016	.042295
%RSD	.2910381	.1422422	.2423246	.3786468	.1517473	.1649713	.8546770
#1	.2429509	2.416144	24.35568	.9664927	2.411812	1.221756	4.899835
#2	.2416643	2.409284	24.31341	.9614221	2.407936	1.220285	4.974429
#3	.2418092	2.412928	24.43004	.9594233	2.415251	1.224272	4.971678

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.428686**	**23.98577**	**2.420572**	**1.220211**	**24.51022**	**2.419535**	**2.448090**
Stddev	.002626	.07729	.002781	.001067	.12147	.011076	.006164
%RSD	.1081139	.3222279	.1148929	.0874532	.4955729	.4577581	.2518046
#1	2.426848	23.92855	2.422780	1.221421	24.37267	2.412315	2.452518
#2	2.427516	23.95507	2.417448	1.219405	24.60274	2.414002	2.441050
#3	2.431693	24.07369	2.421487	1.219806	24.55525	2.432287	2.450702

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**24.51178**	**4.861920**	**4.864744**	**4.803417**	**4.867941**	**4.917797**	**4.806235**
Stddev	.10105	.019623	.013926	.010716	.018598	.071965	.003690
%RSD	.4122555	.4035984	.2862739	.2230968	.3820418	1.463351	.0767778
#1	24.39734	4.884354	4.855468	4.811517	4.855357	4.836394	4.802475
#2	24.54927	4.847949	4.858005	4.791266	4.859163	4.944038	4.806377
#3	24.58873	4.853456	4.880758	4.807469	4.889303	4.972958	4.809851

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: CCV01 Acquired: 8/7/2025 13:58:37 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**4.838809**	**4.817622**	**4.874320**
Stddev	.021860	.019154	.032656
%RSD	.4517650	.3975827	.6699576
#1	4.822175	4.795512	4.911139
#2	4.830683	4.829155	4.862961
#3	4.863568	4.828200	4.848861

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6115.957**	**102915.5**	**8766.765**	**5254.914**	**6870.025**
Stddev	13.648	325.6	56.709	24.226	26.895
%RSD	.2231549	.3163581	.6468612	.4610117	.3914818
#1	6101.543	102625.3	8706.280	5262.180	6842.038
#2	6117.646	103267.6	8818.734	5274.676	6872.361
#3	6128.681	102853.6	8775.280	5227.887	6895.676

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: CCB01 Acquired: 8/7/2025 14:02:51 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000625**	**-.004641**	**.0019398**	**.0017807**	**.0014947**	**.0143187**	**.0042109**
Stddev	.000746	.003582	.0002086	.0007349	.0009068	.0150334	.0003729
%RSD	119.2828	77.17889	10.75398	41.27123	60.66836	104.9912	8.856869
#1	.000185	-.001658	.0021417	.0009365	.0015204	-.002511	.0039187
#2	-.000777	-.008614	.0019528	.0021284	.0023884	.026419	.0040830
#3	-.001284	-.003652	.0017251	.0022772	.0005753	.019047	.0046310

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000878**	**.0008091**	**-.002661**	**.0002432**	**.0007100**	**.0006421**	**.0034601**
Stddev	.0000169	.0000736	.003624	.0003415	.0000541	.0002652	.0042489
%RSD	19.21927	9.101860	136.1980	140.3923	7.615639	41.29683	122.7986
#1	.0000965	.0008941	-.000012	-.000148	.0007724	.0003534	.0079615
#2	.0000986	.0007680	-.006791	.000483	.0006794	.0008748	-.000481
#3	.0000683	.0007652	-.001179	.000395	.0006782	.0006982	.002899

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0009896**	**.0256438**	**.0013547**	**.0004792**	**-.298219**	**.0015897**	**.0014742**
Stddev	.0001390	.0223189	.0003578	.0002008	.006895	.0016411	.0000836
%RSD	14.04381	87.03425	26.41024	41.91049	2.312138	103.2368	5.669502
#1	.0008924	.0030498	.0009846	.0004318	-.293758	.0029846	.0013795
#2	.0011488	.0262046	.0016987	.0003063	-.306160	.0020029	.0015055
#3	.0009275	.0476769	.0013808	.0006995	-.294737	-.000219	.0015376

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.260472**	**.0053937**	**.0016733**	**.0015059**	**.0021015**	**-.000897**	**.0084830**
Stddev	.014636	.0003722	.0002665	.0001177	.0003310	.015493	.0003457
%RSD	5.618849	6.901394	15.92374	7.817837	15.75084	1728.174	4.074993
#1	-.248100	.0052076	.0019405	.0016406	.0017344	-.017199	.0087793
#2	-.276628	.0051512	.0014076	.0014227	.0023772	.000874	.0085665
#3	-.256688	.0058222	.0016717	.0014544	.0021930	.013635	.0081032

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: CCB01 Acquired: 8/7/2025 14:02:51 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.000362	-.009259	.0016091
Stddev	.000651	.002942	.0001595
%RSD	180.1072	31.77016	9.911681
#1	-.001111	-.012552	.0014252
#2	.000062	-.008335	.0016922
#3	-.000035	-.006891	.0017098

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6419.530	108955.0	8767.725	5458.310	7833.567
Stddev	17.827	312.3	50.072	29.737	7.693
%RSD	.2777055	.2866740	.5710976	.5448099	.0982017
#1	6399.832	108597.8	8785.832	5424.798	7826.233
#2	6424.201	109090.3	8711.119	5468.585	7832.895
#3	6434.557	109176.8	8806.226	5481.548	7841.574

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2772-01 Acquired: 8/7/2025 14:07:09 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2841877**	**-.136744**	**.0706594**	**.0014754**	**-.041522**	**103.5652**	**.1888473**
Stddev	.0035591	.003220	.0018607	.0041906	.002450	.0961	.0012135
%RSD	1.252378	2.354656	2.633388	284.0385	5.901097	.0927593	.6425680
#1	.2882067	-.133470	.0685124	.0060853	-.038891	103.5139	.1890977
#2	.2829216	-.139907	.0718053	-.002103	-.041936	103.6761	.1875282
#3	.2814347	-.136855	.0716605	.000444	-.043739	103.5057	.1899160

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0241968**	**-.003765**	**27.56841**	**.5595701**	**.0622267**	**.1267619**	**718.3593**
Stddev	.0001777	.000554	.04959	.0013693	.0001418	.0052077	5.6566
%RSD	.7341661	14.71366	.1798717	.2447098	.2278216	4.108282	.7874400
#1	.0242347	-.004401	27.62428	.5604586	.0620930	.1208760	724.8437
#2	.0243525	-.003391	27.52962	.5602585	.0622115	.1286384	714.4375
#3	.0240033	-.003502	27.55132	.5579932	.0623754	.1307713	715.7965

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.7530260**	**9.900947**	**.0931362**	**.0172638**	**1.116170**	**.7406355**	**.7251531**
Stddev	.0025354	.063973	.0006877	.0012176	.007099	.0052397	.0015712
%RSD	.3366931	.6461333	.7383494	7.052759	.6360236	.7074561	.2166773
#1	.7559335	9.840908	.0926217	.0185580	1.123916	.7378120	.7261583
#2	.7512754	9.893696	.0928698	.0161411	1.114621	.7374132	.7259586
#3	.7518690	9.968237	.0939173	.0170921	1.109973	.7466814	.7233425

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**12.84962**	**^ *****	**.0026831**	**.0147553**	**1.682627**	**2.409987**	**11.02492**
Stddev	.13561	-----	.0002008	.0008422	.006819	.029048	.04416
%RSD	1.055377	-----	7.482783	5.707768	.4052881	1.205330	.4005142
#1	13.00366	^ -----	.0027343	.0139132	1.685912	2.441323	10.97570
#2	12.79696	^ -----	.0024617	.0155976	1.687182	2.404679	11.03802
#3	12.74823	^ -----	.0028533	.0147549	1.674787	2.383958	11.06105

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2772-01 Acquired: 8/7/2025 14:07:09 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.7323710	.0881183	-.490914
Stddev	.0070395	.0014552	.005115
%RSD	.9611924	1.651375	1.041867
#1	.7244835	.0894844	-.496739
#2	.7380163	.0882825	-.487159
#3	.7346131	.0865880	-.488843

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6576.348	109066.0	9649.739	5539.858	6977.975
Stddev	5.598	587.1	58.722	28.969	6.011
%RSD	.0851227	.5383388	.6085295	.5229144	.0861389
#1	6570.978	108576.0	9692.555	5520.020	6972.439
#2	6575.917	108905.3	9582.798	5526.453	6977.118
#3	6582.149	109716.8	9673.865	5573.101	6984.368

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2774-03 Acquired: 8/7/2025 14:11:22 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1352366**	**-.014592**	**.9761356**	**.0053488**	**-.013356**	**222.2278**	**.9163579**
Stddev	.0012786	.003475	.0006390	.0010007	.002811	.1872	.0011303
%RSD	.9454557	23.81106	.0654590	18.70790	21.04959	.0842491	.1233496
#1	.1339407	-.012128	.9759947	.0048960	-.013180	222.2924	.9153171
#2	.1352719	-.018567	.9755789	.0046546	-.016251	222.3742	.9175604
#3	.1364971	-.013083	.9768333	.0064958	-.010636	222.0169	.9161962

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0147532**	**.0145391**	**51.18422**	**1.047149**	**.4060715**	**.6148531**	**476.0289**
Stddev	.0002131	.0006958	.23826	.002215	.0004941	.0034512	4.2631
%RSD	1.444708	4.785653	.4654956	.2115461	.1216677	.5613064	.8955557
#1	.0145485	.0141032	50.90989	1.045047	.4065492	.6120589	479.9319
#2	.0147371	.0141725	51.33946	1.049462	.4055626	.6137894	476.6753
#3	.0149739	.0153415	51.30330	1.046936	.4061026	.6187109	471.4795

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**15.73063**	**80.07723**	**.5028652**	**.0190798**	**5.516246**	**1.104743**	**1.567937**
Stddev	.02147	.11361	.0014976	.0015822	.052666	.006647	.001750
%RSD	.1364677	.1418806	.2978047	8.292478	.9547510	.6017121	.1115956
#1	15.70684	80.18411	.5027353	.0207498	5.576774	1.111673	1.569914
#2	15.74857	79.95791	.5014368	.0188863	5.491081	1.104135	1.567310
#3	15.73647	80.08968	.5044234	.0176032	5.480883	1.098420	1.566587

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.544927**	**^ *****	**.0063069**	**.0565448**	**11.33272**	**1.930659**	**8.938219**
Stddev	.073246	-----	.0002422	.0015337	.04059	.007043	.049182
%RSD	.7673777	-----	3.839976	2.712339	.3581855	.3648015	.5502419
#1	9.624853	^ -----	.0060367	.0562706	11.28587	1.929481	8.904710
#2	9.528919	^ -----	.0063795	.0581971	11.35478	1.924279	8.915266
#3	9.481009	^ -----	.0065045	.0551667	11.35750	1.938217	8.994682

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2774-03 Acquired: 8/7/2025 14:11:22 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	7.334308	.2245039	-.257666
Stddev	.049229	.0012185	.004314
%RSD	.6712178	.5427719	1.674303
#1	7.313084	.2259104	-.261619
#2	7.299250	.2237665	-.258316
#3	7.390589	.2238349	-.253064

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7713.687	127912.6	11806.00	6469.977	6642.199
Stddev	10.387	93.6	41.63	24.220	11.385
%RSD	.1346551	.0731775	.3525823	.3743368	.1714089
#1	7725.070	127822.5	11854.03	6442.256	6653.249
#2	7711.265	128009.4	11783.60	6480.637	6642.841
#3	7704.724	127905.9	11780.38	6487.038	6630.506

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2774-05 Acquired: 8/7/2025 14:15:38 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1317714	-.012906	.9651323	.0076070	-.010884	205.6681	.9117939
Stddev	.0012399	.001800	.0065109	.0018976	.001500	1.0521	.0006953
%RSD	.9409068	13.95008	.6746107	24.94590	13.78379	.5115601	.0762553
#1	.1305503	-.012849	.9596109	.0054303	-.010038	205.9968	.9110091
#2	.1317347	-.011135	.9634738	.0084769	-.012616	206.5166	.9120398
#3	.1330291	-.014735	.9723120	.0089137	-.009997	204.4909	.9123328

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0145885	.0143998	36.80376	.9920899	.3915685	.5182045	420.0856
Stddev	.0000766	.0003204	.15627	.0034769	.0026423	.0042672	.9912
%RSD	.5253189	2.224754	.4245998	.3504608	.6748128	.8234539	.2359520
#1	.0145229	.0140308	36.62537	.9948750	.3902124	.5143241	421.0401
#2	.0145697	.0145621	36.91644	.9881931	.3898795	.5175149	419.0614
#3	.0146727	.0146065	36.86948	.9932015	.3946135	.5227745	420.1555

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.54920	61.69847	.4595434	.0166151	2.960207	1.024351	1.280198
Stddev	.03717	.24263	.0017278	.0008431	.009327	.004929	.005036
%RSD	.2117899	.3932517	.3759818	5.074192	.3150831	.4812064	.3933414
#1	17.51034	61.41832	.4591179	.0157785	2.966000	1.018672	1.285771
#2	17.58440	61.83571	.4580682	.0174645	2.965174	1.027510	1.275975
#3	17.55286	61.84138	.4614442	.0166023	2.949448	1.026872	1.278848

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.431694	-.021712	.0058504	.0496429	9.797642	2.021190	8.265579
Stddev	.021976	.002897	.0004784	.0010955	.035494	.059179	.041481
%RSD	.2606389	13.34236	8.177792	2.206817	.3622682	2.927941	.5018581
#1	8.455633	-.021974	.0054671	.0500333	9.762377	2.077456	8.255161
#2	8.412433	-.024470	.0056975	.0504897	9.833360	2.026640	8.230300
#3	8.427017	-.018693	.0063866	.0484056	9.797187	1.959475	8.311277

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2774-05 Acquired: 8/7/2025 14:15:38 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	6.582163	.1952823	-.201528
Stddev	.045338	.0011681	.001455
%RSD	.6888043	.5981708	.7221408
#1	6.538324	.1953840	-.202888
#2	6.579300	.1940667	-.199993
#3	6.628865	.1963963	-.201703

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7902.453	132450.1	11882.14	6698.188	6747.581
Stddev	21.514	239.7	49.68	8.410	25.764
%RSD	.2722464	.1810025	.4181140	.1255627	.3818189
#1	7918.621	132407.4	11939.03	6689.041	6766.545
#2	7910.703	132708.2	11860.04	6699.935	6757.949
#3	7878.035	132234.5	11847.34	6705.587	6718.249

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2774-07 Acquired: 8/7/2025 14:19:46 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1229653	-.015869	.6887964	.0061040	-.015640	206.5537	.9076181
Stddev	.0008774	.004689	.0037948	.0050872	.002521	.2135	.0025650
%RSD	.7135437	29.54901	.5509379	83.34350	16.11545	.1033661	.2826116
#1	.1236493	-.018689	.6911475	.0112866	-.018543	206.4437	.9046566
#2	.1219760	-.010456	.6908233	.0011179	-.014000	206.7998	.9090586
#3	.1232705	-.018462	.6844185	.0059074	-.014378	206.4177	.9091391

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0152090	.0044576	31.91571	.9092902	.2766255	.5788448	430.7904
Stddev	.0001355	.0001801	.20130	.0018836	.0008478	.0026767	2.4760
%RSD	.8907265	4.041357	.6307089	.2071505	.3064632	.4624280	.5747639
#1	.0150530	.0042564	31.69213	.9071152	.2775155	.5779386	433.6382
#2	.0152979	.0046039	32.08253	.9103870	.2765337	.5818570	429.1473
#3	.0152760	.0045126	31.97248	.9103684	.2758275	.5767388	429.5856

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.160785	54.91109	.3525255	.0164933	.8082191	1.196045	.9871071
Stddev	.033427	.06487	.0012698	.0004509	.0204392	.007310	.0037025
%RSD	.4096074	.1181394	.3601917	2.733825	2.528925	.6112000	.3750822
#1	8.124066	54.84391	.3517439	.0169913	.8234997	1.201627	.9899001
#2	8.189447	54.97338	.3539906	.0163758	.8161558	1.198737	.9829075
#3	8.168843	54.91596	.3518420	.0161128	.7850019	1.187770	.9885138

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.475955	-.000650	.0052145	.0422392	10.85576	1.896612	7.602477
Stddev	.032002	.014873	.0002857	.0009610	.06189	.013021	.025094
%RSD	.4941630	2287.215	5.479627	2.275217	.5701006	.6865497	.3300736
#1	6.512905	.015612	.0050098	.0419503	10.79503	1.911084	7.629839
#2	6.457117	-.013561	.0055409	.0414557	10.91875	1.892905	7.597053
#3	6.457842	-.004002	.0050926	.0433115	10.85351	1.885846	7.580538

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2774-07 Acquired: 8/7/2025 14:19:46 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**5.840216**	**.2020535**	**-.297875**
Stddev	.013624	.0021850	.002455
%RSD	.2332795	1.081370	.8242554
#1	5.849616	.2045047	-.300649
#2	5.824591	.2003107	-.295980
#3	5.846440	.2013450	-.296997

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6998.080**	**118618.8**	**10703.76**	**5995.841**	**6774.714**
Stddev	24.740	180.5	100.52	32.828	20.342
%RSD	.3535258	.1521808	.9390668	.5475115	.3002566
#1	6988.345	118415.1	10819.54	5960.217	6766.712
#2	6979.688	118759.2	10638.77	6024.872	6759.589
#3	7026.207	118682.0	10652.98	6002.434	6797.839

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2774-07DUP Acquired: 8/7/2025 14:23:49 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1236586**	**-.018698**	**.7181026**	**.0125536**	**-.011391**	**214.5639**	**.9367161**
Stddev	.0017618	.002478	.0014674	.0042692	.003191	.1796	.0018655
%RSD	1.424765	13.25137	.2043470	34.00781	28.01403	.0837207	.1991484
#1	.1220606	-.016717	.7164119	.0173934	-.015041	214.4436	.9349620
#2	.1233672	-.017900	.7190458	.0093224	-.009131	214.4777	.9365104
#3	.1255480	-.021476	.7188500	.0109450	-.010001	214.7704	.9386759

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0153152**	**.0060438**	**32.97627**	**.9017031**	**.2858056**	**.5760862**	**419.7124**
Stddev	.0001078	.0001546	.19121	.0048947	.0007978	.0028846	2.5686
%RSD	.7037395	2.557615	.5798378	.5428245	.2791298	.5007190	.6119893
#1	.0153789	.0060187	32.82310	.8991555	.2849358	.5727555	420.7212
#2	.0153759	.0062094	32.91514	.8986077	.2859777	.5777271	416.7926
#3	.0151907	.0059033	33.19056	.9073461	.2865032	.5777761	421.6234

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.747568**	**51.24747**	**.3243922**	**.0154026**	**.9296967**	**1.201572**	**1.007447**
Stddev	.014635	.11476	.0015663	.0014245	.0038634	.002345	.004110
%RSD	.1673068	.2239298	.4828543	9.248250	.4155567	.1951866	.4079767
#1	8.739178	51.18085	.3230171	.0154041	.9252800	1.202988	1.012193
#2	8.739058	51.37998	.3240623	.0139774	.9324488	1.202862	1.005047
#3	8.764467	51.18158	.3260972	.0168264	.9313612	1.198865	1.005101

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.986440**	**-.030092**	**.0056937**	**.0460493**	**10.45473**	**2.154794**	**7.883190**
Stddev	.038954	.016891	.0003607	.0011727	.04140	.019753	.036741
%RSD	.5575724	56.13174	6.335240	2.546598	.3959684	.9167228	.4660668
#1	6.996365	-.018521	.0059870	.0449442	10.41613	2.148432	7.850734
#2	6.943483	-.049475	.0052910	.0472796	10.44960	2.139005	7.875757
#3	7.019472	-.022280	.0058032	.0459241	10.49845	2.176944	7.923079

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2774-07DUP Acquired: 8/7/2025 14:23:49 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	6.325169	.1998705	-.279028
Stddev	.029997	.0022538	.002423
%RSD	.4742528	1.127622	.8685260
#1	6.290697	.1981318	-.280176
#2	6.339465	.1990628	-.276244
#3	6.345344	.2024168	-.280665

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7154.844	119631.9	10715.88	6019.640	6855.977
Stddev	28.492	402.5	65.41	31.027	27.039
%RSD	.3982143	.3364347	.6103925	.5154228	.3943855
#1	7181.763	119946.7	10789.79	5984.846	6881.916
#2	7157.764	119770.6	10665.45	6029.644	6858.058
#3	7125.004	119178.4	10692.40	6044.430	6827.958

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2774-07LX5 Acquired: 8/7/2025 14:27:51 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0245891	-.007113	.1406626	-.002032	-.002152	46.20347	.2072687
Stddev	.0011519	.004690	.0017481	.003229	.001364	.17901	.0006747
%RSD	4.684711	65.94197	1.242768	158.8859	63.35759	.3874398	.3255014
#1	.0256090	-.002981	.1388586	-.005348	-.003223	46.15527	.2076306
#2	.0233397	-.006146	.1407805	-.001853	-.000617	46.40165	.2076851
#3	.0248185	-.012211	.1423488	.001103	-.002617	46.05350	.2064903

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0035847	-.000270	7.387293	.2080975	.0548970	.1368138	96.10078
Stddev	.0001119	.000126	.025990	.0002465	.0001979	.0007177	.09084
%RSD	3.121811	46.49602	.3518145	.1184581	.3604816	.5245660	.0945287
#1	.0035805	-.000312	7.360603	.2083701	.0546711	.1368464	95.99618
#2	.0036987	-.000370	7.412521	.2078903	.0549804	.1360804	96.14635
#3	.0034750	-.000129	7.388756	.2080322	.0550396	.1375146	96.15983

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.915683	12.86295	.0713645	.0033557	-.014846	.2754546	.2182680
Stddev	.004667	.05906	.0003082	.0002677	.002827	.0037839	.0008986
%RSD	.2435987	.4591383	.4319077	7.977442	19.04376	1.373701	.4116786
#1	1.911437	12.80561	.0715969	.0035384	-.016041	.2736631	.2186569
#2	1.920679	12.85966	.0714816	.0030484	-.011618	.2798016	.2189066
#3	1.914934	12.92359	.0710148	.0034805	-.016880	.2728991	.2172405

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.208295	-.024899	.0002367	.0072859	2.492561	.4365515	1.521470
Stddev	.003986	.001300	.0002794	.0010565	.005621	.0365561	.007502
%RSD	.3299077	5.222142	118.0510	14.49981	.2254939	8.373843	.4930453
#1	1.212896	-.025026	.0000411	.0069658	2.492472	.4269861	1.524381
#2	1.206120	-.026132	.0001122	.0084654	2.498226	.4057289	1.512949
#3	1.205870	-.023540	.0005567	.0064266	2.486986	.4769393	1.527079

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2774-07LX5 Acquired: 8/7/2025 14:27:51 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.129425	.0364049	-.065787
Stddev	.006751	.0024860	.000114
%RSD	.5977484	6.828785	.1727421
#1	1.136509	.0390714	-.065777
#2	1.123065	.0359923	-.065678
#3	1.128701	.0341510	-.065905

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6477.301	109222.2	9278.864	5557.281	7235.679
Stddev	9.454	178.7	20.255	15.643	12.246
%RSD	.1459549	.1636188	.2182871	.2814778	.1692386
#1	6469.428	109358.7	9283.461	5546.033	7224.462
#2	6474.687	109288.0	9256.706	5550.665	7233.831
#3	6487.786	109019.9	9296.426	5575.144	7248.743

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2774-07MS Acquired: 8/7/2025 14:31:57 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.8464068**	**1.913660**	**1.809795**	**1.707048**	**.2616447**	**267.1559**	**1.201941**
Stddev	.0036358	.063048	.009050	.006253	.0007090	1.9599	.000208
%RSD	.4295518	3.294602	.5000702	.3663185	.2709911	.7336307	.0173396
#1	.8501603	1.881943	1.818842	1.712119	.2608703	269.3395	1.201708
#2	.8429015	1.872770	1.809802	1.708964	.2622621	266.5788	1.202005
#3	.8461586	1.986269	1.800742	1.700061	.2618017	265.5492	1.202110

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1910173**	**.2141713**	**41.81336**	**1.396735**	**.5392243**	**.8978115**	**520.2733**
Stddev	.0005102	.0004286	.11894	.002949	.0024197	.0010167	5.4484
%RSD	.2670724	.2001275	.2844630	.2111257	.4487376	.1132439	1.047226
#1	.1914861	.2146482	41.67707	1.397304	.5416336	.8982477	526.1241
#2	.1904740	.2140474	41.86676	1.399358	.5392451	.8985373	519.3508
#3	.1910919	.2138182	41.89623	1.393543	.5367943	.8966494	515.3450

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.10911**	**64.14028**	**.9176133**	**.0883762**	**4.080385**	**1.712581**	**1.332323**
Stddev	.02347	.03003	.0037440	.0028533	.004237	.005674	.004535
%RSD	.2321819	.0468121	.4080193	3.228604	.1038367	.3312971	.3403914
#1	10.08481	64.16440	.9213636	.0916644	4.076346	1.712552	1.330768
#2	10.13165	64.14978	.9176007	.0865519	4.080012	1.718270	1.328770
#3	10.11086	64.10665	.9138755	.0869124	4.084796	1.706922	1.337431

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**17.71552**	**^ *****	**.3524725**	**.6733458**	**11.78869**	**2.715493**	**15.51592**
Stddev	.08616	-----	.0002915	.0022746	.02881	.010406	.04868
%RSD	.4863612	-----	.0826994	.3378021	.2443801	.3832125	.3137204
#1	17.71907	^ -----	.3528075	.6758837	11.75565	2.718611	15.54773
#2	17.79986	^ -----	.3523335	.6726625	11.80186	2.723983	15.45989
#3	17.62765	^ -----	.3522765	.6714912	11.80856	2.703884	15.54016

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2774-07MS Acquired: 8/7/2025 14:31:57 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	7.004165	.4316858	-.184115
Stddev	.017257	.0006020	.005588
%RSD	.2463871	.1394622	3.035270
#1	7.006495	.4316046	-.190051
#2	6.985860	.4323243	-.183337
#3	7.020138	.4311285	-.178956

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7119.976	119497.4	10848.83	6097.471	6641.933
Stddev	7.413	403.2	17.67	35.073	14.334
%RSD	.1041118	.3373944	.1628586	.5752007	.2158169
#1	7118.705	119798.8	10868.15	6131.879	6630.170
#2	7113.280	119039.4	10844.85	6098.763	6637.730
#3	7127.942	119654.0	10833.50	6061.770	6657.899

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2774-07MSD Acquired: 8/7/2025 14:36:10 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.7851217**	**1.768606**	**1.616610**	**1.664281**	**.2624821**	**220.7919**	**1.010343**
Stddev	.0020448	.021985	.004373	.011567	.0020176	2.3307	.001334
%RSD	.2604448	1.243071	.2704896	.6949932	.7686460	1.055592	.1320184
#1	.7830107	1.743234	1.612611	1.666620	.2601540	221.3792	1.008805
#2	.7852612	1.782032	1.615940	1.651723	.2637205	218.2238	1.011190
#3	.7870932	1.780552	1.621279	1.674499	.2635718	222.7727	1.011032

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1835406**	**.1983023**	**30.93476**	**1.272277**	**.4626692**	**.7914257**	**405.1045**
Stddev	.0005247	.0013891	.02728	.005470	.0023185	.0049673	2.0906
%RSD	.2858966	.7004771	.0881734	.4299481	.5011206	.6276407	.5160574
#1	.1832585	.1977023	30.92176	1.266530	.4613483	.7918431	403.9194
#2	.1832172	.1973142	30.96610	1.272882	.4613129	.7862628	407.5184
#3	.1841460	.1998906	30.91642	1.277420	.4653463	.7961711	403.8758

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.424782**	**52.69620**	**.8111605**	**.0818624**	**3.607026**	**1.405438**	**1.177091**
Stddev	.009828	.17192	.0037974	.0005667	.022889	.003392	.007283
%RSD	.1323684	.3262462	.4681393	.6922685	.6345651	.2413546	.6186871
#1	7.428737	52.76085	.8097615	.0819236	3.587258	1.403803	1.171063
#2	7.413593	52.50132	.8082612	.0823960	3.632103	1.403173	1.185182
#3	7.432016	52.82641	.8154590	.0812675	3.601718	1.409338	1.175028

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**15.64259**	**.1034413**	**.3422750**	**.6402798**	**10.14815**	**2.314482**	**12.98757**
Stddev	.04549	.0051651	.0020570	.0041883	.00541	.016786	.07526
%RSD	.2908157	4.993291	.6009771	.6541291	.0533138	.7252438	.5794572
#1	15.60035	.0984021	.3410644	.6363740	10.14247	2.296352	12.94080
#2	15.69075	.1087237	.3411104	.6397629	10.15324	2.329483	12.94752
#3	15.63667	.1031981	.3446500	.6447026	10.14874	2.317611	13.07438

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2774-07MSD Acquired: 8/7/2025 14:36:10 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	5.662080	.3743487	-.105382
Stddev	.043295	.0014744	.002300
%RSD	.7646552	.3938630	2.182113
#1	5.663327	.3754598	-.104257
#2	5.618175	.3749103	-.108027
#3	5.704739	.3726760	-.103861

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7122.851	119765.9	10679.57	6086.101	6904.948
Stddev	22.049	93.9	58.14	33.482	25.431
%RSD	.3095493	.0784329	.5444443	.5501344	.3683066
#1	7148.235	119766.4	10642.17	6101.685	6933.506
#2	7111.858	119859.5	10746.56	6047.668	6896.592
#3	7108.460	119671.7	10649.97	6108.950	6884.747

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2774-07A Acquired: 8/7/2025 14:40:12 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7833679	1.677416	1.557191	1.688388	.6531874	203.1713	1.052302
Stddev	.0043684	.064127	.006193	.013245	.0022334	.2122	.002868
%RSD	.5576446	3.822974	.3976979	.7844913	.3419246	.1044494	.2725483
#1	.7815904	1.669445	1.557437	1.678698	.6542716	202.9752	1.049664
#2	.7801685	1.617647	1.550879	1.682985	.6506189	203.1421	1.051886
#3	.7883449	1.745156	1.563257	1.703481	.6546718	203.3967	1.055355

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1777280	.1894400	32.09192	1.225897	.4540449	.7946902	420.8935
Stddev	.0003594	.0012907	.13037	.006185	.0026183	.0044365	2.8648
%RSD	.2021985	.6813213	.4062297	.5045408	.5766675	.5582703	.6806499
#1	.1777339	.1900187	31.94845	1.218809	.4549515	.7960475	417.7742
#2	.1773657	.1879612	32.12420	1.228682	.4510938	.7897336	423.4069
#3	.1780844	.1903400	32.20312	1.230200	.4560895	.7982896	421.4992

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.143255	55.16876	.8080021	.0814541	3.436147	1.412797	1.134760
Stddev	.019014	.08808	.0040120	.0010817	.012117	.009348	.006384
%RSD	.2334977	.1596593	.4965382	1.327934	.3526280	.6616680	.5625798
#1	8.124827	55.26614	.8083968	.0803705	3.422308	1.418808	1.127883
#2	8.142134	55.14550	.8038074	.0825338	3.441282	1.402027	1.140497
#3	8.162806	55.09464	.8118023	.0814581	3.444850	1.417556	1.135899

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	15.37501	.1898169	.3361210	.6709735	10.78672	2.681306	12.58453
Stddev	.10914	.0125679	.0015413	.0033031	.04491	.018915	.07724
%RSD	.7098616	6.621069	.4585625	.4922849	.4163493	.7054506	.6137919
#1	15.25003	.1845091	.3364475	.6705902	10.73916	2.659464	12.54473
#2	15.42348	.2041679	.3344426	.6678787	10.79260	2.692264	12.53530
#3	15.45152	.1807737	.3374730	.6744515	10.82840	2.692190	12.67356

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2774-07A Acquired: 8/7/2025 14:40:12 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	5.557237	.3581294	-.125817
Stddev	.043781	.0013156	.002532
%RSD	.7878115	.3673652	2.012774
#1	5.555970	.3566681	-.123137
#2	5.514104	.3585003	-.128170
#3	5.601638	.3592198	-.126143

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7116.594	119147.5	10659.81	6047.235	6936.899
Stddev	9.735	529.3	26.10	31.779	19.691
%RSD	.1367904	.4442216	.2448668	.5255205	.2838578
#1	7114.245	119755.5	10669.60	6078.822	6926.920
#2	7127.289	118790.3	10679.61	6015.266	6959.582
#3	7108.249	118896.5	10630.23	6047.618	6924.195

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2774-09 Acquired: 8/7/2025 14:44:08 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1157483**	**-.021915**	**.7259727**	**.0068423**	**-.019421**	**222.2750**	**1.042973**
Stddev	.0025246	.003562	.0017005	.0025661	.002977	.6137	.003355
%RSD	2.181073	16.25226	.2342372	37.50410	15.32618	.2760915	.3216691
#1	.1167716	-.024596	.7278987	.0088844	-.019601	222.4793	1.044850
#2	.1128727	-.017874	.7253410	.0076805	-.022304	221.5852	1.039100
#3	.1176005	-.023275	.7246786	.0039618	-.016359	222.7604	1.044970

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0155875**	**.0113002**	**60.88275**	**1.041087**	**.4276415**	**.9085672**	**545.0067**
Stddev	.0001366	.0000931	.52200	.006258	.0008226	.0036481	2.9470
%RSD	.8760579	.8241821	.8573867	.6010816	.1923581	.4015221	.5407305
#1	.0157273	.0112422	61.22505	1.036707	.4280966	.9047320	548.4005
#2	.0154544	.0112508	60.28194	1.038301	.4281361	.9119938	543.0939
#3	.0155808	.0114077	61.14126	1.048254	.4266920	.9089757	543.5257

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**12.09643**	**76.26805**	**.5653021**	**.0195533**	**8.909699**	**1.473479**	**1.214467**
Stddev	.06706	.38336	.0006190	.0007736	.027815	.004338	.004911
%RSD	.5544019	.5026539	.1095057	3.956488	.3121923	.2944222	.4043375
#1	12.10820	76.17252	.5646243	.0203557	8.883506	1.468816	1.219314
#2	12.02426	75.94149	.5658376	.0188121	8.906696	1.474224	1.214591
#3	12.15683	76.69015	.5654443	.0194922	8.938894	1.477396	1.209495

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.563352**	**^ *****	**.0032655**	**.0341562**	**17.50845**	**2.462240**	**11.43151**
Stddev	.103508	-----	.0003519	.0005617	.11918	.043652	.03920
%RSD	1.082340	-----	10.77577	1.644490	.6807198	1.772876	.3429075
#1	9.605643	^ -----	.0034431	.0343018	17.57975	2.413140	11.42231
#2	9.445395	^ -----	.0028602	.0335360	17.37086	2.496660	11.39773
#3	9.639019	^ -----	.0034932	.0346307	17.57473	2.476919	11.47449

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2774-09 Acquired: 8/7/2025 14:44:08 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**5.476694**	**.1983525**	**-.263983**
Stddev	.024785	.0020905	.002107
%RSD	.4525589	1.053945	.7980703
#1	5.462810	.1960935	-.266342
#2	5.461962	.1987453	-.263319
#3	5.505309	.2002188	-.262289

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**7312.036**	**124200.4**	**11374.13**	**6319.754**	**6461.129**
Stddev	12.087	292.3	17.18	27.552	13.134
%RSD	.1653091	.2353686	.1510436	.4359602	.2032806
#1	7298.364	124467.8	11368.24	6296.204	6446.347
#2	7316.443	124245.1	11393.48	6313.003	6465.582
#3	7321.302	123888.3	11360.67	6350.053	6471.457

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: CCV02 Acquired: 8/7/2025 14:48:26 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV02 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.922022**	**4.864941**	**4.821089**	**4.938711**	**4.901156**	**9.607651**	**9.580929**
Stddev	.049782	.469771	.036055	.062192	.038536	.012424	.057963
%RSD	1.011410	9.656246	.7478683	1.259280	.7862619	.1293176	.6049862
#1	4.867380	4.398009	4.780395	4.869505	4.858197	9.620992	9.606308
#2	4.933883	4.859313	4.833821	4.956706	4.912588	9.605550	9.514605
#3	4.964801	5.337499	4.849050	4.989922	4.932682	9.596411	9.621874

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2426056**	**2.427795**	**24.36104**	**.9556479**	**2.419616**	**1.231773**	**5.078752**
Stddev	.0000834	.017062	.05028	.0038842	.015679	.007679	.022858
%RSD	.0343590	.7027813	.2064126	.4064422	.6479812	.6234438	.4500675
#1	.2425421	2.408507	24.39254	.9546890	2.402100	1.223739	5.053065
#2	.2427000	2.433960	24.30305	.9523330	2.424411	1.232542	5.096852
#3	.2425747	2.440918	24.38753	.9599217	2.432338	1.239040	5.086338

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.416985**	**23.73949**	**2.431928**	**1.211642**	**23.65237**	**2.407432**	**2.425071**
Stddev	.001764	.09844	.015836	.000646	.03868	.005651	.003145
%RSD	.0729844	.4146757	.6511719	.0532910	.1635516	.2347231	.1296661
#1	2.415023	23.74980	2.413949	1.211436	23.69689	2.406564	2.428106
#2	2.417492	23.83238	2.438028	1.212366	23.62693	2.413466	2.425281
#3	2.418440	23.63631	2.443807	1.211125	23.63329	2.402265	2.421828

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**24.04191**	**4.850241**	**4.838136**	**4.820408**	**4.850877**	**4.834279**	**4.838420**
Stddev	.03457	.013353	.042401	.043476	.014651	.024159	.047636
%RSD	.1438111	.2753079	.8763938	.9019113	.3020373	.4997488	.9845268
#1	24.03387	4.834986	4.793171	4.771924	4.854555	4.846555	4.783485
#2	24.01207	4.859808	4.843842	4.833375	4.834737	4.849835	4.863491
#3	24.07980	4.855930	4.877395	4.855925	4.863339	4.806447	4.868284

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: CCV02 Acquired: 8/7/2025 14:48:26 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV02 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**4.886429**	**4.580412**	**4.831086**
Stddev	.086790	.012062	.032075
%RSD	1.776139	.2633491	.6639383
#1	4.788669	4.593188	4.842482
#2	4.916208	4.578828	4.855908
#3	4.954408	4.569219	4.794869

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6128.664**	**104138.0**	**8832.561**	**5341.665**	**6874.131**
Stddev	28.124	442.3	32.850	33.570	30.820
%RSD	.4588947	.4247447	.3719241	.6284602	.4483469
#1	6158.673	103689.8	8811.133	5315.124	6908.885
#2	6124.408	104149.9	8816.168	5330.469	6863.383
#3	6102.910	104574.2	8870.382	5379.403	6850.123

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: CCB02 Acquired: 8/7/2025 14:52:36 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB02 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000899**	**-.002992**	**.0026447**	**-.001587**	**.0027538**	**.0286041**
Stddev	.002421	.002438	.0009352	.001962	.0010948	.0099559
%RSD	269.4353	81.46860	35.36368	123.6628	39.75551	34.80594
#1	-.000398	-.005710	.0035167	-.003706	.0015847	.0309394
#2	-.003531	-.000999	.0027603	.000168	.0029217	.0176881
#3	.001233	-.002268	.0016570	-.001222	.0037549	.0371847

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0042116**	**.0001111**	**.0010333**	**.0034692**	**.0004502**	**.0007797**
Stddev	.0007288	.0000760	.0000656	.0031352	.0002118	.0000913
%RSD	17.30587	68.45541	6.349581	90.37209	47.04548	11.71300
#1	.0038386	.0000971	.0010683	.0032449	.0002095	.0007628
#2	.0037447	.0001931	.0010741	.0004521	.0006081	.0006980
#3	.0050514	.0000430	.0009576	.0067104	.0005331	.0008783

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004945**	**.0418437**	**.0025765**	**.0064601**	**.0015019**	**.0001043**
Stddev	.0000938	.0088156	.0002305	.0233509	.0002431	.0003572
%RSD	18.97390	21.06803	8.946569	361.4647	16.18446	342.4015
#1	.0005845	.0383714	.0023700	.0298883	.0015117	.0000305
#2	.0003973	.0352928	.0028252	-.016813	.0017399	.0004927
#3	.0005018	.0518667	.0025344	.006305	.0012541	-.000210

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.265549**	**.0025083**	**.0014603**	**-.114007**	**.0023154**	**.0024761**
Stddev	.019028	.0021764	.0003529	.007996	.0002129	.0002471
%RSD	7.165670	86.76651	24.16458	7.013527	9.194568	9.979413
#1	-.243752	.0002100	.0011884	-.114219	.0023048	.0027374
#2	-.278845	.0027772	.0018590	-.121894	.0021079	.0022463
#3	-.274049	.0045378	.0013334	-.105906	.0025333	.0024446

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: CCB02 Acquired: 8/7/2025 14:52:36 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB02 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0012043	.0043209	.0048737	F .0123536	.0025661	-.007319
Stddev	.0005093	.0002361	.0161362	.0016307	.0029660	.000960
%RSD	42.29133	5.464833	331.0844	13.20009	115.5816	13.12206
#1	.0008373	.0042357	-.013738	.0117924	.0059774	-.006916
#2	.0009898	.0045877	.014944	.0110777	.0005973	-.006626
#3	.0017858	.0041391	.013415	.0141908	.0011236	-.008415

Elem	Sr4077
Units	ppm
Avg	.0021699
Stddev	.0001570
%RSD	7.236223
#1	.0020041
#2	.0021894
#3	.0023163

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6428.517	109398.4	8812.661	5558.056	7707.630
Stddev	12.798	127.8	13.510	23.917	13.830
%RSD	.1990805	.1168220	.1532995	.4303065	.1794371
#1	6422.516	109478.5	8827.039	5531.671	7693.308
#2	6443.212	109251.0	8810.713	5578.311	7720.909
#3	6419.821	109465.8	8800.231	5564.186	7708.672

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2774-11 Acquired: 8/7/2025 14:56:56 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1286034	-.022181	.6701814	.0020229	-.019394	192.4326	1.225595
Stddev	.0008731	.002494	.0037255	.0046112	.001005	.1844	.001931
%RSD	.6789260	11.24440	.5558970	227.9425	5.182115	.0958060	.1575927
#1	.1277528	-.019308	.6659539	.0016427	-.020540	192.2930	1.224548
#2	.1294974	-.023793	.6729848	.0068125	-.018664	192.3632	1.224414
#3	.1285600	-.023442	.6716055	-.002386	-.018978	192.6416	1.227824

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0161781	.0084231	31.55959	.4632661	.2790908	.4089218	420.4081
Stddev	.0000921	.0000393	.08395	.0028858	.0004483	.0018460	.5092
%RSD	.5689780	.4669307	.2659926	.6229311	.1606304	.4514327	.1211300
#1	.0160934	.0083860	31.46549	.4664376	.2786435	.4072566	420.9684
#2	.0161647	.0084190	31.58652	.4625658	.2790887	.4086019	420.2827
#3	.0162761	.0084643	31.62677	.4607948	.2795401	.4109068	419.9733

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.09374	45.20409	.3246616	.0152376	.7658887	.9323347	1.079311
Stddev	.02384	.09709	.0001992	.0006307	.0068496	.0029024	.005361
%RSD	.2148875	.2147852	.0613462	4.139187	.8943308	.3113059	.4967522
#1	11.06871	45.09254	.3248867	.0145320	.7617609	.9296557	1.083994
#2	11.09633	45.25018	.3245898	.0154342	.7621098	.9319302	1.080477
#3	11.11618	45.26955	.3245082	.0157466	.7737953	.9354181	1.073463

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.37760	.0243787	.0069636	.0336674	5.936509	2.189252	8.975573
Stddev	.04106	.0039378	.0004110	.0008160	.008174	.016519	.016974
%RSD	.3608877	16.15259	5.902278	2.423628	.1376984	.7545432	.1891145
#1	11.36977	.0202380	.0074332	.0334822	5.935704	2.204725	8.993169
#2	11.42201	.0248219	.0066691	.0329599	5.945056	2.191176	8.959298
#3	11.34102	.0280761	.0067886	.0345600	5.928766	2.171856	8.974251

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2774-11 Acquired: 8/7/2025 14:56:56 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	6.241779	.1894092	-.237310
Stddev	.024098	.0020816	.000668
%RSD	.3860754	1.098982	.2813007
#1	6.263271	.1906313	-.238080
#2	6.246340	.1905906	-.236899
#3	6.215727	.1870057	-.236952

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7395.777	124577.0	11278.31	6360.939	6805.938
Stddev	11.185	185.5	32.60	2.872	14.628
%RSD	.1512293	.1488846	.2890464	.0451565	.2149350
#1	7407.909	124375.2	11301.28	6361.698	6821.147
#2	7393.546	124740.1	11292.64	6363.355	6804.699
#3	7385.877	124615.6	11241.00	6357.763	6791.969

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2774-13 Acquired: 8/7/2025 15:00:59 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1187106	-.019052	.6287464	.0067374	-.019881	190.4955	1.125037
Stddev	.0013169	.004524	.0022856	.0032355	.002773	.3825	.002814
%RSD	1.109359	23.74712	.3635196	48.02293	13.94901	.2007991	.2501586
#1	.1192954	-.014340	.6282051	.0095280	-.022793	190.3050	1.123762
#2	.1196338	-.023361	.6267800	.0074934	-.019579	190.9358	1.128263
#3	.1172025	-.019455	.6312540	.0031908	-.017272	190.2455	1.123084

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0146428	.0092436	47.01374	.5805547	.3648544	.5550816	438.6422
Stddev	.0000930	.0003274	.06983	.0028331	.0012295	.0022696	.7962
%RSD	.6354327	3.542262	.1485210	.4879939	.3369804	.4088818	.1815229
#1	.0145611	.0089587	47.07587	.5808604	.3653309	.5561756	438.8553
#2	.0147441	.0091708	47.02718	.5832225	.3634579	.5524721	439.3101
#3	.0146233	.0096013	46.93817	.5775812	.3657742	.5565969	437.7610

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.05312	64.51328	.3964311	.0147934	4.233599	1.071864	1.236632
Stddev	.01442	.13260	.0023888	.0004179	.009199	.009074	.002254
%RSD	.1104786	.2055362	.6025870	2.825148	.2172862	.8465624	.1822795
#1	13.05513	64.40114	.3957765	.0150736	4.223012	1.063004	1.235723
#2	13.06644	64.65963	.3944378	.0149936	4.239636	1.081138	1.239199
#3	13.03780	64.47907	.3990790	.0143130	4.238150	1.071450	1.234975

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.23651	.0437102	.0054257	.0351484	8.619801	2.140191	8.390173
Stddev	.05322	.0044786	.0001107	.0009750	.004574	.040841	.016982
%RSD	.4736747	10.24602	2.041047	2.773816	.0530595	1.908279	.2024002
#1	11.27218	.0455376	.0054216	.0358087	8.625082	2.157102	8.387935
#2	11.26202	.0386069	.0055385	.0340286	8.617124	2.169860	8.374422
#3	11.17533	.0469862	.0053171	.0356079	8.617196	2.093611	8.408164

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2774-13 Acquired: 8/7/2025 15:00:59 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**7.178376**	**.1886323**	**-.217003**
Stddev	.034114	.0041201	.000413
%RSD	.4752309	2.184170	.1901046
#1	7.156526	.1848126	-.217157
#2	7.160916	.1929982	-.217316
#3	7.217686	.1880860	-.216536

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**7470.736**	**125723.7**	**11339.35**	**6404.892**	**6786.490**
Stddev	14.350	432.4	30.15	4.881	22.756
%RSD	.1920894	.3439296	.2658748	.0762115	.3353128
#1	7470.803	125296.1	11308.86	6401.552	6791.718
#2	7485.052	125714.2	11340.06	6410.494	6806.178
#3	7456.352	126160.8	11369.14	6402.631	6761.576

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2780-01 Acquired: 8/7/2025 15:05:01 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0401347	-.012038	.9314246	-.002308	-.003648	39.90673	.6880116
Stddev	.0009977	.004942	.0017665	.004222	.000885	.01344	.0021092
%RSD	2.485955	41.04993	.1896510	182.9274	24.25928	.0336752	.3065710
#1	.0390160	-.006388	.9294957	-.004271	-.002767	39.92223	.6899886
#2	.0409326	-.015557	.9318145	-.005191	-.004537	39.89962	.6882552
#3	.0404554	-.014168	.9329635	.002538	-.003639	39.89834	.6857912

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0041707	.0020810	53.30157	.1424237	.0478824	.3314561	98.37411
Stddev	.0000335	.0001279	.11651	.0014615	.0001711	.0007399	.98272
%RSD	.8020780	6.146139	.2185864	1.026144	.3572236	.2232164	.9989574
#1	.0041350	.0020874	53.41597	.1417629	.0477392	.3317368	98.42268
#2	.0042013	.0022056	53.30569	.1414093	.0478362	.3306169	97.36801
#3	.0041757	.0019500	53.18306	.1440989	.0480718	.3320145	99.33164

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.338721	26.61263	.1854828	.0041344	3.283549	.1687659	.7324485
Stddev	.000866	.09291	.0002816	.0005690	.016183	.0027257	.0021157
%RSD	.0647078	.3491377	.1518152	13.76236	.4928444	1.615091	.2888482
#1	1.339699	26.67844	.1853689	.0044836	3.273010	.1671527	.7320797
#2	1.338417	26.50634	.1852760	.0034778	3.275455	.1672320	.7347242
#3	1.338049	26.65310	.1858035	.0044417	3.302182	.1719129	.7305414

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.073636	.0199236	.0033758	.0544694	1.879318	1.748874	2.354237
Stddev	.062150	.0047422	.0004846	.0004745	.003723	.017013	.006505
%RSD	.8786160	23.80197	14.35401	.8710449	.1981097	.9728175	.2763002
#1	7.080254	.0210766	.0035294	.0549913	1.883212	1.740360	2.360445
#2	7.008441	.0147112	.0028331	.0543529	1.878949	1.737797	2.347471
#3	7.132211	.0239830	.0037650	.0540641	1.875793	1.768463	2.354796

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2780-01 Acquired: 8/7/2025 15:05:01 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	12.81803	.0766387	.1632825
Stddev	.01013	.0044394	.0011569
%RSD	.0790361	5.792670	.7085105
#1	12.82961	.0750679	.1634887
#2	12.81080	.0731983	.1643224
#3	12.81368	.0816500	.1620364

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6505.370	110202.1	9505.405	5588.069	7194.265
Stddev	23.729	644.6	30.636	17.184	24.474
%RSD	.3647624	.5849236	.3223006	.3075202	.3401844
#1	6505.454	110353.8	9510.768	5568.576	7193.866
#2	6529.057	110757.3	9472.441	5601.029	7218.936
#3	6481.599	109495.1	9533.005	5594.601	7169.993

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2780-05 Acquired: 8/7/2025 15:09:06 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1340033	-.056104	5.524546	-.000913	.0043722	120.3093
Stddev	.0037032	.003330	.033636	.005553	.0018935	1.7940
%RSD	2.763544	5.934922	.6088486	608.0746	43.30744	1.491129
#1	.1382746	-.056251	5.485715	-.002665	.0065017	122.3807
#2	.1320452	-.059358	5.544665	.005305	.0028782	119.2833
#3	.1316902	-.052703	5.543258	-.005379	.0037367	119.2638

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.298591	.0168331	.0386723	214.1331	.7271024	.2014687
Stddev	.034586	.0000877	.0004648	2.5243	.0008307	.0013924
%RSD	1.504660	.5211827	1.201839	1.178866	.1142475	.6911066
#1	2.338385	.0168327	.0381357	217.0236	.7279704	.1998700
#2	2.281619	.0167456	.0389331	213.0130	.7263148	.2021204
#3	2.275770	.0169211	.0389481	212.3625	.7270221	.2024158

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.982773	418.8304	5.898485	72.90388	.7336760	.0329324
Stddev	.015074	1.8198	.076745	1.05972	.0040540	.0012467
%RSD	.7602453	.4344952	1.301094	1.453584	.5525598	3.785737
#1	1.966108	420.9303	5.987099	74.11670	.7290109	.0342845
#2	1.986757	417.7150	5.854789	72.15675	.7363435	.0318283
#3	1.995455	417.8457	5.853566	72.43819	.7356737	.0326844

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.93100	.4643369	5.614446	35.94876	.1160577	.1414272
Stddev	.07934	.0035375	.017303	.13647	.0027894	.0007475
%RSD	.5313498	.7618437	.3081951	.3796368	2.403495	.5285111
#1	15.02093	.4684042	5.600814	36.04326	.1174439	.1406607
#2	14.90119	.4619764	5.608611	36.01073	.1178826	.1421541
#3	14.87089	.4626302	5.633912	35.79230	.1128467	.1414668

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2780-05 Acquired: 8/7/2025 15:09:06 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6305853	7.649632	3.444153	8.467757	F 27.83449	.2314683
Stddev	.0020099	.098618	.026444	.063405	.20337	.0024743
%RSD	.3187345	1.289181	.7677960	.7487764	.7306468	1.068966
#1	.6293006	7.761970	3.473178	8.400122	27.72464	.2341859
#2	.6329015	7.609601	3.421427	8.525849	28.06916	.2293457
#3	.6295538	7.577324	3.437855	8.477301	27.70966	.2308734

Elem	Sr4077
Units	ppm
Avg	.7934725
Stddev	.0155393
%RSD	1.958395
#1	.8112854
#2	.7864357
#3	.7826964

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6646.068	111612.7	10028.31	5647.416	6637.510
Stddev	43.591	188.0	86.55	16.529	42.319
%RSD	.6558985	.1684212	.8630940	.2926891	.6375671
#1	6694.197	111627.6	9930.55	5651.797	6686.364
#2	6634.767	111792.8	10095.21	5661.313	6612.153
#3	6609.240	111417.7	10059.15	5629.137	6614.014

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2783-01 Acquired: 8/7/2025 15:13:05 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0605703	-.026167	.9081447	-.001808	-.008769	117.6839
Stddev	.0021335	.005196	.0009649	.003256	.001033	.1921
%RSD	3.522301	19.85749	.1062448	180.0835	11.78504	.1632643
#1	.0618486	-.026563	.9070990	-.003697	-.008053	117.8610
#2	.0617549	-.031155	.9083349	-.003679	-.008300	117.7112
#3	.0581074	-.020785	.9090004	.001952	-.009954	117.4796

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7290071	.0081440	.0086150	97.83785	1.735083	.2789548
Stddev	.0008464	.0001226	.0003223	.50766	.003279	.0004427
%RSD	.1161038	1.505071	3.741089	.5188832	.1889895	.1586981
#1	.7287102	.0082855	.0084817	97.25459	1.738535	.2792289
#2	.7299620	.0080711	.0089826	98.07874	1.732010	.2791914
#3	.7283492	.0080754	.0083808	98.18023	1.734704	.2784441

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9811783	323.1297	2.407180	136.5587	1.005364	.0087801
Stddev	.0014047	.8647	.003596	.3393	.000673	.0003179
%RSD	.1431622	.2676000	.1493949	.2484704	.0669561	3.620711
#1	.9801458	323.7063	2.403425	136.9438	1.006108	.0089970
#2	.9827779	322.1354	2.407521	136.4289	1.004797	.0089281
#3	.9806113	323.5472	2.410594	136.3036	1.005187	.0084152

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.517481	.4666413	.5974288	78.72436	.0138123	.1423135
Stddev	.010193	.0025688	.0019217	.33143	.0127993	.0000665
%RSD	.2897839	.5504906	.3216609	.4209944	92.66590	.0467211
#1	3.529251	.4695616	.5970611	79.01132	.0285400	.1422892
#2	3.511642	.4656314	.5995078	78.36160	.0053788	.1423887
#3	3.511549	.4647309	.5957175	78.80017	.0075182	.1422625

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2783-01 Acquired: 8/7/2025 15:13:05 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0712301	12.24890	2.276421	17.82415	F 53.09610	.1662035
Stddev	.0004180	.04982	.044347	.02890	.16462	.0011784
%RSD	.5868152	.4067618	1.948120	.1621168	.3100419	.7090182
#1	.0716242	12.19140	2.282141	17.79137	53.21703	.1673619
#2	.0707917	12.27910	2.229491	17.84594	53.16266	.1662425
#3	.0712742	12.27621	2.317631	17.83513	52.90863	.1650061

Elem	Sr4077
Units	ppm
Avg	-.190295
Stddev	.000917
%RSD	.4817686
#1	-.190682
#2	-.189248
#3	-.190954

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7657.514	128907.6	11576.61	6500.606	6468.934
Stddev	11.592	56.7	69.95	28.181	3.438
%RSD	.1513811	.0439671	.6042476	.4335116	.0531524
#1	7670.282	128965.8	11645.11	6516.233	6472.027
#2	7647.649	128852.6	11505.29	6468.074	6465.231
#3	7654.613	128904.4	11579.41	6517.510	6469.543

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2784-01 Acquired: 8/7/2025 15:17:07 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0685146	-.026509	.2912310	-.000279	-.017515	116.5220	.6005517
Stddev	.0021533	.008607	.0023189	.001696	.003593	.6430	.0029163
%RSD	3.142832	32.46733	.7962313	607.1618	20.51609	.5518488	.4856055
#1	.0695061	-.017056	.2932248	.001292	-.013711	117.2218	.6035547
#2	.0699935	-.028578	.2886863	-.000052	-.020853	115.9571	.5977306
#3	.0660441	-.033892	.2917818	-.002077	-.017981	116.3872	.6003698

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0101815	.0039354	66.71200	.2909224	.1765465	.3140712	289.0290
Stddev	.0001302	.0001999	.43780	.0024899	.0008791	.0019332	3.3140
%RSD	1.278842	5.080117	.6562522	.8558798	.4979548	.6155427	1.146593
#1	.0103041	.0041107	67.21138	.2881291	.1762770	.3163012	285.2343
#2	.0100448	.0037177	66.53035	.2917292	.1758337	.3128684	290.4992
#3	.0101955	.0039777	66.39426	.2929090	.1775288	.3130439	291.3536

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.848258	44.75747	.2537198	.0073463	10.88399	.6211227	.5764776
Stddev	.022147	.23719	.0006142	.0013727	.11932	.0012066	.0013865
%RSD	.4568086	.5299401	.2420716	18.68588	1.096309	.1942629	.2405032
#1	4.872844	45.00173	.2535191	.0058452	10.74813	.6214447	.5776319
#2	4.829869	44.74262	.2532311	.0085376	10.93206	.6221357	.5749398
#3	4.842062	44.52806	.2544092	.0076563	10.97177	.6197878	.5768612

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.383051	-.020408	.0063097	.0184973	5.483930	3.407419	7.203817
Stddev	.090723	.019416	.0002684	.0005698	.031370	.070080	.032069
%RSD	1.421309	95.13708	4.254199	3.080416	.5720344	2.056696	.4451641
#1	6.282330	-.042156	.0062946	.0182624	5.520135	3.349642	7.208260
#2	6.408470	-.014251	.0065853	.0180825	5.466817	3.387241	7.169758
#3	6.458354	-.004818	.0060491	.0191470	5.464839	3.485375	7.233432

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2784-01 Acquired: 8/7/2025 15:17:07 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	5.020669	.1149844	.0132435
Stddev	.010316	.0024183	.0047520
%RSD	.2054623	2.103125	35.88206
#1	5.009635	.1167967	.0187158
#2	5.022301	.1122385	.0101590
#3	5.030072	.1159181	.0108555

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7474.648	125011.2	11016.01	6323.145	6927.379
Stddev	12.516	970.9	84.20	15.117	19.844
%RSD	.1674432	.7766869	.7643846	.2390672	.2864605
#1	7477.508	126091.8	10918.79	6337.875	6930.637
#2	7485.486	124729.4	11063.77	6323.890	6945.393
#3	7460.949	124212.3	11065.49	6307.669	6906.108

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2786-01 Acquired: 8/7/2025 15:21:09 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0432496	-.018919	.1920710	-.000140	-.011793	90.72192	.6242091
Stddev	.0027530	.005039	.0024247	.001016	.002469	.25394	.0012724
%RSD	6.365364	26.63475	1.262416	725.2832	20.93307	.2799093	.2038456
#1	.0439180	-.016941	.1913094	.000975	-.009628	90.82389	.6249260
#2	.0402239	-.015168	.1947851	-.001012	-.011270	90.90902	.6249612
#3	.0456068	-.024646	.1901185	-.000383	-.014482	90.43284	.6227399

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0077994	.0018349	110.7400	.2486329	.1059504	.3325175	211.5158
Stddev	.0001016	.0002626	.3466	.0020756	.0004884	.0026651	2.8325
%RSD	1.302133	14.30850	.3129443	.8347868	.4609435	.8014896	1.339127
#1	.0076985	.0015459	110.5955	.2509734	.1053965	.3295437	214.7300
#2	.0079016	.0019001	111.1354	.2479095	.1061353	.3333190	210.4327
#3	.0077979	.0020587	110.4891	.2470159	.1063193	.3346899	209.3847

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.380300	67.80990	.1630272	.0049170	3.341936	.4186463	.6219106
Stddev	.010165	.15022	.0007020	.0009028	.049719	.0045141	.0011864
%RSD	.1889216	.2215332	.4306045	18.36034	1.487743	1.078260	.1907722
#1	5.376258	67.91651	.1628709	.0059412	3.399342	.4229366	.6232771
#2	5.391864	67.87509	.1637941	.0042367	3.312569	.4139375	.6211429
#3	5.372779	67.63809	.1624165	.0045732	3.313897	.4190647	.6213118

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.01155	.0477887	.0044787	.0154005	3.325725	2.123023	5.719846
Stddev	.13962	.0137855	.0001319	.0007173	.010160	.030060	.008642
%RSD	1.394585	28.84680	2.944939	4.657317	.3055063	1.415886	.1510887
#1	10.16831	.0636980	.0043266	.0148382	3.322394	2.157569	5.718576
#2	9.96577	.0393744	.0045488	.0151550	3.337133	2.108673	5.711909
#3	9.90056	.0402938	.0045607	.0162082	3.317649	2.102829	5.729053

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2786-01 Acquired: 8/7/2025 15:21:09 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**4.911575**	**.1328939**	**.0263583**
Stddev	.031091	.0016575	.0025322
%RSD	.6330114	1.247199	9.606939
#1	4.923796	.1333282	.0234349
#2	4.876231	.1342909	.0278685
#3	4.934699	.1310625	.0277716

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6572.689**	**111411.9**	**9705.195**	**5634.961**	**6876.961**
Stddev	18.701	1135.1	45.361	29.669	19.453
%RSD	.2845330	1.018857	.4673913	.5265082	.2828790
#1	6593.612	110151.1	9751.398	5600.718	6897.760
#2	6557.600	111731.7	9660.726	5651.186	6859.213
#3	6566.854	112352.8	9703.460	5652.978	6873.909

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2786-04 Acquired: 8/7/2025 15:25:12 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0425642	-.010740	.4322388	.0019042	-.008741	92.87949	1.454849
Stddev	.0006792	.002643	.0036842	.0034268	.001760	.01118	.000389
%RSD	1.595755	24.61014	.8523564	179.9618	20.13403	.0120379	.0267217
#1	.0424370	-.013196	.4296335	.0002703	-.010137	92.88174	1.455126
#2	.0419576	-.007943	.4306289	-.000400	-.006764	92.88938	1.455015
#3	.0432981	-.011082	.4364540	.005842	-.009321	92.86736	1.454404

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0096370	.0019910	30.98275	.3063926	.1345982	.2387991	198.4600
Stddev	.0000607	.0002746	.05080	.0009062	.0015356	.0033412	.6986
%RSD	.6302957	13.79458	.1639626	.2957778	1.140858	1.399174	.3520315
#1	.0095713	.0018110	30.93671	.3054421	.1334707	.2353281	199.2591
#2	.0096485	.0018549	30.97430	.3064886	.1339768	.2390759	197.9644
#3	.0096911	.0023071	31.03725	.3072470	.1363470	.2419933	198.1566

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.005801	39.28791	.2315423	.0067953	12.78506	.4606914	.6784141
Stddev	.002588	.06404	.0025625	.0001434	.07100	.0010050	.0014034
%RSD	.1290224	.1629985	1.106705	2.110420	.5553302	.2181570	.2068674
#1	2.003216	39.26223	.2290065	.0066665	12.86322	.4598005	.6777753
#2	2.008392	39.36080	.2314898	.0067696	12.76740	.4617809	.6800233
#3	2.005795	39.24068	.2341307	.0069498	12.72456	.4604927	.6774438

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.543258	.0481779	.0043983	.0172081	4.422777	2.207379	4.678264
Stddev	.077683	.0035867	.0002436	.0009273	.008864	.024122	.043732
%RSD	.9092944	7.444625	5.538397	5.388490	.2004072	1.092786	.9347823
#1	8.629352	.0509544	.0046216	.0164396	4.412573	2.228925	4.643376
#2	8.522015	.0441283	.0041385	.0169467	4.428561	2.211894	4.664091
#3	8.478405	.0494509	.0044348	.0182380	4.427198	2.181319	4.727324

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2786-04 Acquired: 8/7/2025 15:25:12 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	5.877550	.1720172	.0235471
Stddev	.072582	.0036132	.0006435
%RSD	1.234908	2.100475	2.732651
#1	5.849013	.1742482	.0230021
#2	5.823573	.1739549	.0242570
#3	5.960064	.1678485	.0233822

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7139.969	121011.7	10574.74	6153.300	7040.434
Stddev	35.682	389.4	26.01	21.987	45.154
%RSD	.4997521	.3217768	.2459942	.3573284	.6413587
#1	7175.812	120575.1	10595.11	6127.994	7083.600
#2	7139.645	121323.0	10583.69	6167.733	7044.179
#3	7104.450	121137.1	10545.44	6164.172	6993.524

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: PB169143BL Acquired: 8/7/2025 15:29:16 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.003625**	**-.007379**	**-.001056**	**.0009784**	**-.000314**	**-.003490**	**-.001883**
Stddev	.002017	.003269	.000994	.0028340	.002156	.012640	.001382
%RSD	55.64539	44.30069	94.19320	289.6697	686.5202	362.2065	73.41303
#1	-.004169	-.009584	-.001440	-.002110	-.000969	.008979	-.000333
#2	-.001392	-.003623	-.001800	.003459	-.002067	-.003153	-.002989
#3	-.005315	-.008930	.000074	.001586	.002093	-.016295	-.002327

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000048**	**-.000089**	**-.015379**	**-.000116**	**-.000070**	**-.000463**	**.0071987**
Stddev	.000094	.000061	.004224	.000304	.000017	.000207	.0051262
%RSD	195.1869	68.37666	27.46403	261.5026	24.24296	44.67564	71.21019
#1	-.000017	-.000068	-.017905	-.000396	-.000054	-.000628	.0057780
#2	-.000153	-.000158	-.017729	.000207	-.000068	-.000231	.0128854
#3	.000026	-.000042	-.010503	-.000159	-.000087	-.000531	.0029327

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000671**	**-.012429**	**.0003071**	**.0001545**	**-.225593**	**-.001168**	**-.000498**
Stddev	.0004729	.022714	.0000820	.0006441	.004801	.002925	.000104
%RSD	704.9268	182.7541	26.69004	416.8993	2.128324	250.5127	20.82044
#1	.0003433	-.037396	.0002202	-.000166	-.220695	-.004328	-.000544
#2	.0003369	.007013	.0003180	-.000266	-.225790	.001445	-.000379
#3	-.000479	-.006903	.0003831	.000896	-.230292	-.000620	-.000570

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.083961**	**-.004871**	**-.000795**	**-.000359**	**-.001025**	**-.007914**	**.0061531**
Stddev	.011994	.000338	.000085	.000082	.001359	.004312	.0006343
%RSD	14.28561	6.938390	10.74785	22.80984	132.4877	54.49280	10.30879
#1	-.097458	-.005051	-.000868	-.000323	-.000976	-.008388	.0054853
#2	-.079907	-.004481	-.000701	-.000453	-.002408	-.003384	.0062263
#3	-.074520	-.005082	-.000815	-.000302	.000308	-.011969	.0067476

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: PB169143BL Acquired: 8/7/2025 15:29:16 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0004645	-.008480	-.000231
Stddev	.0009388	.001726	.000056
%RSD	202.1256	20.35474	24.27663
#1	-.000173	-.006616	-.000274
#2	.001542	-.010023	-.000168
#3	.000024	-.008802	-.000251

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6449.582	108625.7	8826.492	5468.698	7840.194
Stddev	19.519	568.5	55.859	47.560	29.417
%RSD	.3026424	.5233345	.6328514	.8696717	.3752053
#1	6452.400	107979.7	8832.300	5414.144	7840.139
#2	6467.539	108847.7	8879.220	5490.506	7869.639
#3	6428.807	109049.7	8767.957	5501.442	7810.805

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: PB169143BS Acquired: 8/7/2025 15:33:35 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7811266	2.025361	.9601979	1.982040	.8135802	2.024179
Stddev	.0061125	.111849	.0032367	.011424	.0060197	.006649
%RSD	.7825240	5.522404	.3370891	.5763971	.7398997	.3285029
#1	.7789289	1.919893	.9601219	1.976666	.8123338	2.016979
#2	.7764168	2.013539	.9569998	1.974294	.8082813	2.025470
#3	.7880341	2.142651	.9634719	1.995161	.8201255	2.030088

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2032332	.2076069	.1911370	1.042895	.4040209	.1974514
Stddev	.0005516	.0005264	.0004853	.017526	.0011595	.0008068
%RSD	.2714154	.2535507	.2538779	1.680497	.2869998	.4085888
#1	.2026015	.2078325	.1910970	1.040133	.4033473	.1970493
#2	.2036196	.2070053	.1906729	1.061638	.4053598	.1969248
#3	.2034786	.2079829	.1916410	1.026915	.4033557	.1983802

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3091343	2.988232	.2079498	2.020252	.4946727	.0753819
Stddev	.0008602	.013746	.0005712	.007085	.0015726	.0005876
%RSD	.2782746	.4600081	.2746990	.3506897	.3179150	.7795347
#1	.3092940	2.982228	.2073331	2.019689	.4940826	.0754692
#2	.3082054	3.003959	.2084609	2.013465	.4934805	.0759209
#3	.3099036	2.978509	.2080553	2.027601	.4964550	.0747554

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.633666	.3074915	.2056261	9.503173	.3013900	.4083391
Stddev	.009904	.0015305	.0008742	.027161	.0028868	.0019940
%RSD	.3760376	.4977288	.4251603	.2858103	.9578303	.4883193
#1	2.638762	.3058028	.2046549	9.489552	.3045591	.4069051
#2	2.639984	.3078849	.2058731	9.534450	.2989103	.4074960
#3	2.622252	.3087869	.2063502	9.485519	.3007005	.4106161

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: PB169143BS Acquired: 8/7/2025 15:33:35 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.6786664**	**.2017466**	**.8612840**	**5.564901**	F **.0004677**	**.1810120**
Stddev	.0035778	.0021434	.0137005	.022815	.0022594	.0033133
%RSD	.5271842	1.062410	1.590708	.4099776	483.1096	1.830408
#1	.6767873	.2001677	.8466271	5.554034	-.002090	.1842078
#2	.6764197	.2041867	.8737685	5.549551	.001303	.1775926
#3	.6827923	.2008856	.8634563	5.591118	.002190	.1812358

Elem	Sr4077
Units	ppm
Avg	**.1989827**
Stddev	.0001298
%RSD	.0652062
#1	.1991048
#2	.1988464
#3	.1989968

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6425.427**	**107929.6**	**8776.865**	**5504.698**	**7610.552**
Stddev	7.560	317.4	11.898	19.780	9.762
%RSD	.1176515	.2940611	.1355666	.3593348	.1282710
#1	6429.862	108220.1	8763.803	5524.436	7606.720
#2	6429.722	107590.8	8787.086	5484.876	7621.648
#3	6416.699	107977.9	8779.704	5504.782	7603.286

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: CCV03 Acquired: 8/7/2025 15:45:13 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV03 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.986220**	**5.451152**	**4.813863**	**5.005530**	**4.981910**	**9.729302**	**9.727714**
Stddev	.031722	.052934	.032777	.045332	.037975	.028251	.164766
%RSD	.6361891	.9710572	.6808942	.9056364	.7622627	.2903673	1.693783
#1	4.981435	5.472551	4.819350	5.005565	4.978590	9.739113	9.867672
#2	4.957163	5.390869	4.778688	4.960181	4.945704	9.751338	9.546125
#3	5.020063	5.490037	4.843550	5.050845	5.021437	9.697453	9.769345

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2420604**	**2.432271**	**24.66785**	**.9749631**	**2.432149**	**1.239855**	**5.034023**
Stddev	.0020101	.018263	.19572	.0082076	.018672	.010148	.041766
%RSD	.8304011	.7508438	.7934219	.8418337	.7676972	.8185180	.8296674
#1	.2443799	2.436327	24.88012	.9730042	2.435741	1.238920	4.986555
#2	.2408263	2.412321	24.49453	.9839728	2.411942	1.230206	5.065137
#3	.2409751	2.448164	24.62889	.9679122	2.448763	1.250438	5.050378

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.445505**	**24.03145**	**2.437945**	**1.222878**	**24.47710**	**2.451140**	**2.474754**
Stddev	.007714	.08509	.018308	.003580	.28604	.008873	.002340
%RSD	.3154417	.3540625	.7509512	.2927307	1.168620	.3619923	.0945665
#1	2.453440	24.05918	2.441616	1.219998	24.23677	2.455802	2.472669
#2	2.445041	24.09921	2.418080	1.226886	24.79349	2.456711	2.477285
#3	2.438033	23.93596	2.454139	1.221751	24.40105	2.440908	2.474307

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**24.53806**	**4.773838**	**4.949788**	**4.880793**	**4.916357**	**4.979055**	**4.759742**
Stddev	.24566	.044380	.041001	.033085	.029201	.080095	.025951
%RSD	1.001120	.9296541	.8283367	.6778664	.5939586	1.608640	.5452173
#1	24.28567	4.825080	4.951628	4.888466	4.950071	4.918833	4.768536
#2	24.77637	4.747732	4.907898	4.844545	4.899960	5.069954	4.730537
#3	24.55213	4.748701	4.989838	4.909367	4.899039	4.948377	4.780154

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: CCV03 Acquired: 8/7/2025 15:45:13 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV03 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**4.962471**	**4.606959**	**4.885470**
Stddev	.033626	.014551	.023320
%RSD	.6775967	.3158551	.4773257
#1	4.968424	4.611213	4.910519
#2	4.926266	4.618909	4.864389
#3	4.992722	4.590755	4.881502

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6296.559**	**106283.5**	**9098.580**	**5473.955**	**7086.269**
Stddev	44.152	732.3	74.719	9.173	42.166
%RSD	.7012015	.6890532	.8212145	.1675833	.5950345
#1	6297.112	106614.7	9014.096	5484.133	7080.754
#2	6340.431	105444.0	9125.665	5471.408	7130.921
#3	6252.133	106791.7	9155.979	5466.325	7047.132

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: CCB03 Acquired: 8/7/2025 15:49:24 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB03 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.002985**	**-.008864**	**.0000544**	**-.000533**	**.0006113**	**-.002014**
Stddev	.002115	.003470	.0006703	.000291	.0015734	.020788
%RSD	70.85067	39.14736	1232.410	54.50126	257.3971	1032.205
#1	-.001610	-.011604	.0001943	-.000277	.0013164	-.004390
#2	-.001924	-.010025	.0006437	-.000474	.0017087	-.021511
#3	-.005420	-.004962	-.000675	-.000849	-.001191	.019860

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.001323**	**.0000014**	**-.000037**	**-.013438**	**.0002584**	**-.000021**
Stddev	.001451	.0000388	.000060	.010016	.0000414	.000164
%RSD	109.6199	2842.587	159.5462	74.53720	16.00077	774.8396
#1	-.001779	.0000321	-.000078	-.022691	.0002544	.000120
#2	.000300	.0000143	-.000065	-.002802	.0003016	-.000201
#3	-.002492	-.000042	.000031	-.014820	.0002192	.000017

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000197**	**.0022826**	**-.000070**	**-.005391**	**.0004265**	**-.000341**
Stddev	.0000537	.0047867	.000385	.005298	.0002694	.000429
%RSD	273.3278	209.6973	553.0452	98.26997	63.17411	125.8972
#1	.0000783	-.001125	.000344	-.000122	.0007340	-.000675
#2	.0000077	.000217	-.000134	-.010718	.0002319	-.000492
#3	-.000027	.007755	-.000418	-.005335	.0003136	.000143

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.227732**	**.0022436**	**-.000181**	**.0098225**	**.0002844**	**.0003004**
Stddev	.005954	.0013272	.000114	.0262383	.0005324	.0003873
%RSD	2.614441	59.15300	62.95701	267.1246	187.2425	128.9238
#1	-.223270	.0007118	-.000113	.0041876	-.000138	.0006407
#2	-.225434	.0029712	-.000118	-.013141	.000882	.0003815
#3	-.234493	.0030479	-.000313	.038420	.000109	-.000121

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: CCB03 Acquired: 8/7/2025 15:49:24 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB03 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002070	-.000480	-.004153	.0059570	-.001354	F -.012791
Stddev	.0006661	.000455	.001185	.0003792	.002618	.003277
%RSD	321.8448	94.77468	28.52703	6.365623	193.3070	25.61784
#1	-.000511	-.000596	-.003362	.0062199	-.004080	-.012563
#2	.000804	.000022	-.005516	.0055223	-.001125	-.016177
#3	.000328	-.000865	-.003583	.0061287	.001141	-.009635

Elem	Sr4077
Units	ppm
Avg	-.000086
Stddev	.000029
%RSD	33.82461
#1	-.000053
#2	-.000109
#3	-.000095

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6503.365	110340.4	8988.303	5600.473	7780.565
Stddev	6.479	166.3	56.349	17.140	6.753
%RSD	.0996215	.1507423	.6269121	.3060397	.0867921
#1	6501.084	110503.4	8925.087	5617.948	7772.887
#2	6510.676	110346.8	9006.569	5583.689	7785.583
#3	6498.335	110170.9	9033.253	5599.783	7783.224

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: PB169142BL Acquired: 8/7/2025 15:57:44 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.002526**	**-.008403**	**.0000745**	**-.003528**	**-.000314**	**-.007700**
Stddev	.002641	.002090	.0012361	.001261	.001847	.009077
%RSD	104.5289	24.87183	1659.291	35.75532	587.8120	117.8855
#1	.000514	-.008745	.0008994	-.004820	-.001202	-.017391
#2	-.004243	-.006163	.0006709	-.002299	-.001550	.000604
#3	-.003849	-.010301	-.001347	-.003465	.001809	-.006313

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.001034**	**-.000007**	**-.000092**	**-.021607**	**-.000328**	**.0001179**
Stddev	.000453	.000017	.000052	.006391	.000307	.0002608
%RSD	43.77027	237.7904	56.50562	29.58004	93.46051	221.3419
#1	-.001255	-.000006	-.000098	-.016739	.000011	.0004179
#2	-.000513	.000009	-.000141	-.019236	-.000410	-.000009
#3	-.001333	-.000025	-.000037	-.028844	-.000585	-.000055

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000397**	**-.002104**	**-.000030**	**.0132894**	**.0001972**	**-.000324**
Stddev	.000067	.005030	.000269	.0318499	.0003272	.000519
%RSD	16.81771	239.0895	894.8456	239.6639	165.9364	159.8698
#1	-.000417	-.007390	.000280	.0399803	.0004022	.000104
#2	-.000451	.002623	-.000209	.0218553	.0003696	-.000176
#3	-.000322	-.001545	-.000161	-.021967	-.000180	-.000901

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.275675**	**.0046845**	**-.000461**	**-.044185**	**-.002332**	**-.000683**
Stddev	.004595	.0027235	.000118	.034041	.000439	.000203
%RSD	1.666888	58.13790	25.65039	77.04219	18.81970	29.76260
#1	-.272218	.0045694	-.000481	-.077464	-.002006	-.000556
#2	-.280890	.0020205	-.000334	-.009430	-.002831	-.000575
#3	-.273918	.0074638	-.000568	-.045661	-.002160	-.000917

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: PB169142BL Acquired: 8/7/2025 15:57:44 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000738	-.000520	-.000922	.0076775	-.005661	F -.013431
Stddev	.000373	.001323	.010977	.0008780	.003407	.003796
%RSD	50.51760	254.3132	1190.228	11.43605	60.18761	28.26671
#1	-.000691	.000970	-.003673	.0085115	-.009474	-.010806
#2	-.001132	-.000976	-.010262	.0067612	-.002916	-.011702
#3	-.000391	-.001555	.011169	.0077597	-.004593	-.017784

Elem	Sr4077
Units	ppm
Avg	-.000276
Stddev	.000077
%RSD	27.91892
#1	-.000187
#2	-.000320
#3	-.000321

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6556.000	112335.7	9054.927	5643.892	7960.777
Stddev	44.579	286.1	17.509	29.324	59.873
%RSD	.6799705	.2546834	.1933653	.5195743	.7521024
#1	6607.379	112083.4	9043.157	5671.934	8029.400
#2	6527.588	112646.5	9075.048	5646.307	7933.738
#3	6533.032	112277.1	9046.576	5613.435	7919.192

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: PB169142BS Acquired: 8/7/2025 16:02:03 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7670273	2.081148	.9443146	1.954812	.7988324	1.958004
Stddev	.0112192	.079278	.0114371	.028696	.0114040	.007843
%RSD	1.462680	3.809345	1.211150	1.467944	1.427584	.4005852
#1	.7543270	2.021790	.9313905	1.924009	.7859852	1.952079
#2	.7711647	2.050472	.9531289	1.959640	.8027536	1.966899
#3	.7755902	2.171180	.9484244	1.980787	.8077585	1.955034

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1982356	.2018668	.1882829	1.024876	.3902673	.1948608
Stddev	.0004670	.0010934	.0023433	.007676	.0005561	.0025350
%RSD	.2355699	.5416554	1.244583	.7489871	.1424895	1.300914
#1	.1977327	.2016343	.1855774	1.033732	.3901708	.1919376
#2	.1986556	.2030577	.1895954	1.020759	.3897658	.1961903
#3	.1983184	.2009082	.1896758	1.020136	.3908653	.1964544

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3053113	2.915394	.2025395	1.976004	.4873865	.0739964
Stddev	.0040454	.014333	.0015930	.015759	.0066708	.0002661
%RSD	1.325003	.4916460	.7865095	.7975174	1.368683	.3595541
#1	.3006551	2.923788	.2012172	1.961778	.4796951	.0737337
#2	.3073154	2.898844	.2043080	1.973290	.4908697	.0742657
#3	.3079634	2.923550	.2020933	1.992943	.4915947	.0739900

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.555097	.3002340	.2022360	9.332246	.2942388	.4004689
Stddev	.025471	.0016685	.0004013	.035562	.0024633	.0056187
%RSD	.9968871	.5557326	.1984277	.3810680	.8371720	1.403034
#1	2.570843	.3009773	.2023562	9.330945	.2923770	.3942176
#2	2.525711	.3014016	.2017884	9.297353	.2970320	.4020907
#3	2.568739	.2983230	.2025635	9.368441	.2933075	.4050983

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: PB169142BS Acquired: 8/7/2025 16:02:03 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6640802	.1948798	.8362202	5.429190	F .0006952	.1734103
Stddev	.0083703	.0010416	.0165069	.080566	.0029978	.0007677
%RSD	1.260431	.5344824	1.973988	1.483935	431.2132	.4427201
#1	.6544220	.1936890	.8535581	5.336281	.0040377	.1742248
#2	.6685906	.1953293	.8206937	5.471552	-.001756	.1727000
#3	.6692279	.1956213	.8344087	5.479737	-.000196	.1733060

Elem	Sr4077
Units	ppm
Avg	.1935218
Stddev	.0004761
%RSD	.2459991
#1	.1934917
#2	.1940122
#3	.1930615

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6529.818	111183.0	9054.078	5649.091	7732.490
Stddev	58.714	399.1	23.005	17.822	70.331
%RSD	.8991715	.3589342	.2540841	.3154762	.9095467
#1	6597.598	111067.1	9071.487	5655.517	7812.074
#2	6494.604	111627.2	9027.997	5662.809	7678.691
#3	6497.251	110854.8	9062.749	5628.948	7706.707

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: PB169122TB Acquired: 8/7/2025 16:06:04 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.004481**	**-.005266**	**-.000033**	**.0033098**	**-.000845**	**.0087689**	**-.001136**
Stddev	.000799	.002978	.000958	.0040046	.002143	.0142753	.000625
%RSD	17.82706	56.55192	2865.787	120.9902	253.6764	162.7939	55.01056
#1	-.004941	-.006039	.001069	.0062913	.000450	.0212640	-.001847
#2	-.004944	-.001978	-.000667	-.001242	-.003318	.0118321	-.000888
#3	-.003559	-.007781	-.000502	.004880	.000334	-.006789	-.000674

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000120**	**-.000110**	**.1143742**	**.0002418**	**-.000210**	**.0000856**	**.0034067**
Stddev	.000026	.000033	.0033079	.0001119	.000067	.0001038	.0020024
%RSD	21.97837	29.88853	2.892136	46.27130	32.06930	121.2029	58.77783
#1	-.000150	-.000130	.1181829	.0003435	-.000140	.0000000	.0056746
#2	-.000110	-.000128	.1127193	.0001219	-.000274	.0002011	.0026627
#3	-.000101	-.000072	.1122203	.0002600	-.000214	.0000558	.0018828

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0085307**	**-.000857**	**.0017046**	**-.000414**	**431.4960**	**-.000835**	**.0033873**
Stddev	.0003467	.022516	.0002430	.000165	4.7866	.000797	.0003152
%RSD	4.063803	2628.377	14.25720	39.75782	1.109309	95.44441	9.305939
#1	.0086891	.024164	.0019130	-.000398	431.7339	-.001361	.0033233
#2	.0081331	-.007247	.0017630	-.000586	426.5948	-.001224	.0031090
#3	.0087699	-.019487	.0014377	-.000258	436.1592	.000082	.0037296

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.068644**	**-.000388**	**-.000310**	**.0020014**	**-.000171**	**.0259250**	**.0131191**
Stddev	.017954	.000574	.000237	.0003898	.000164	.0108086	.0014294
%RSD	26.15438	147.9299	76.61357	19.47479	95.63303	41.69193	10.89552
#1	-.086685	-.000271	-.000286	.0017014	-.000228	.0137305	.0114973
#2	-.050779	.000119	-.000557	.0018608	.000013	.0297203	.0141956
#3	-.068470	-.001010	-.000085	.0024419	-.000299	.0343240	.0136645

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: PB169122TB Acquired: 8/7/2025 16:06:04 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.1854105	-.020915	.0002060
Stddev	.0041602	.002335	.0000918
%RSD	2.243772	11.16231	44.56914
#1	.1813740	-.022052	.0001024
#2	.1851732	-.022464	.0002771
#3	.1896842	-.018230	.0002385

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6142.346	102980.1	9183.007	5275.102	6835.066
Stddev	17.756	177.7	69.343	12.169	18.177
%RSD	.2890710	.1725453	.7551176	.2306899	.2659374
#1	6153.355	103154.9	9209.682	5278.744	6848.126
#2	6151.820	102985.7	9235.051	5285.035	6842.765
#3	6121.862	102799.7	9104.289	5261.528	6814.306

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2758-02 Acquired: 8/7/2025 16:10:31 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.004787**	**-.009925**	**.1654762**	**-.001079**	**.0035104**	**.0983904**	**.1966019**
Stddev	.001721	.002471	.0014143	.001712	.0013116	.0047646	.0011430
%RSD	35.94322	24.89805	.8547107	158.7432	37.36261	4.842577	.5813664
#1	-.003678	-.012150	.1642884	-.001200	.0025448	.1022463	.1977396
#2	-.006770	-.010360	.1650993	-.002727	.0029828	.0930638	.1966125
#3	-.003915	-.007265	.1670407	.000691	.0050036	.0998610	.1954537

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000205**	**.0104152**	**28.59385**	**-.000068**	**.0057951**	**.0718623**	**.0300636**
Stddev	.000083	.0001088	.02530	.000166	.0001971	.0007693	.0012010
%RSD	40.47352	1.044933	.0884893	245.7327	3.401725	1.070520	3.994995
#1	-.000173	.0102962	28.56894	-.000027	.0060035	.0719767	.0303601
#2	-.000143	.0104397	28.61953	.000074	.0056116	.0710423	.0287421
#3	-.000300	.0105097	28.59310	-.000251	.0057701	.0725680	.0310886

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.8061851**	**1.426879**	**.0358922**	**-.000311**	**295.0635**	**.0035357**	**1.608920**
Stddev	.0009125	.008109	.0003698	.000297	1.3535	.0034802	.002900
%RSD	.1131836	.5682847	1.030274	95.68069	.4587166	98.42844	.1802226
#1	.8072366	1.418012	.0362466	-.000021	294.9646	-.000401	1.611547
#2	.8057183	1.428708	.0355087	-.000615	293.7621	.004806	1.605809
#3	.8056005	1.433917	.0359213	-.000295	296.4637	.006202	1.609404

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.157371**	**.0520684**	**-.000751**	**-.001653**	**-.001828**	**1.046528**	**.0318542**
Stddev	.040090	.0006472	.000131	.000498	.000551	.004709	.0015444
%RSD	3.463886	1.242971	17.39429	30.15686	30.15335	.4499413	4.848343
#1	1.202638	.0528115	-.000873	-.001110	-.002456	1.049435	.0335040
#2	1.143129	.0517660	-.000767	-.002090	-.001606	1.049055	.0316156
#3	1.126347	.0516278	-.000613	-.001758	-.001423	1.041096	.0304430

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2758-02 Acquired: 8/7/2025 16:10:31 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.786755	-.012919	.1451481
Stddev	.010029	.001245	.0000706
%RSD	.3598916	9.634182	.0486379
#1	2.776838	-.011606	.1452290
#2	2.796893	-.014081	.1450990
#3	2.786535	-.013071	.1451162

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6256.486	106178.1	9340.219	5396.925	6977.446
Stddev	23.862	355.9	10.582	16.535	25.804
%RSD	.3813946	.3352156	.1132905	.3063733	.3698253
#1	6248.629	105811.0	9351.769	5377.852	6968.056
#2	6283.286	106521.6	9337.895	5407.204	7006.631
#3	6237.543	106201.7	9330.992	5405.720	6957.652

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2759-02 Acquired: 8/7/2025 16:14:51 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.005545**	**-.007172**	**.0059781**	**-.001378**	**.0012184**	**.1699687**	**.0865712**
Stddev	.001468	.002620	.0014076	.002126	.0004170	.0156184	.0002774
%RSD	26.48060	36.52482	23.54505	154.2884	34.22638	9.189014	.3204898
#1	-.004011	-.004420	.0043616	-.003481	.0007676	.1864344	.0862535
#2	-.005689	-.007462	.0069323	-.001424	.0012973	.1553644	.0866938
#3	-.006937	-.009635	.0066405	.000771	.0015903	.1681072	.0867662

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000069**	**-.000165**	**175.9332**	**.0003416**	**.0069765**	**.0005405**	**4.276754**
Stddev	.000015	.000015	.7567	.0000677	.0001468	.0004968	.028374
%RSD	22.57306	9.176132	.4301061	19.82387	2.104727	91.92805	.6634513
#1	-.000073	-.000183	175.3321	.0002941	.0068216	-.000027	4.309501
#2	-.000051	-.000156	175.6847	.0003116	.0069940	.000751	4.261294
#3	-.000081	-.000158	176.7830	.0004192	.0071137	.000897	4.259467

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5393287**	**14.71639**	**.0026817**	**-.000696**	**407.3492**	**.0025332**	**.0447987**
Stddev	.0039790	.03557	.0000364	.000141	8.6348	.0041697	.0002777
%RSD	.7377614	.2417184	1.357307	20.18068	2.119754	164.6067	.6198200
#1	.5391919	14.75511	.0026765	-.000814	414.0144	-.001732	.0446055
#2	.5354199	14.68516	.0026482	-.000735	410.4385	.002732	.0446737
#3	.5433742	14.70889	.0027205	-.000541	397.5947	.006600	.0451169

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.440697**	**.0909531**	**.0005710**	**-.003251**	**-.005852**	**3.836672**	**1.160110**
Stddev	.028552	.0006993	.0001470	.000695	.000504	.020483	.009499
%RSD	.3024348	.7689075	25.74730	21.37906	8.618617	.5338656	.8187870
#1	9.463206	.0917538	.0007298	-.003901	-.005603	3.847966	1.149572
#2	9.450304	.0906436	.0004397	-.002518	-.006432	3.849022	1.168014
#3	9.408580	.0904619	.0005436	-.003335	-.005521	3.813029	1.162744

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2759-02 Acquired: 8/7/2025 16:14:51 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	13.57298	.0211173	.6578566
Stddev	.06558	.0028276	.0035119
%RSD	.4831322	13.38992	.5338327
#1	13.50716	.0179286	.6564869
#2	13.63831	.0233196	.6552360
#3	13.57345	.0221036	.6618469

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6157.474	104565.3	9508.326	5276.329	6800.064
Stddev	3.318	592.4	15.168	24.547	9.056
%RSD	.0538904	.5665733	.1595234	.4652363	.1331746
#1	6159.004	104418.1	9517.469	5269.114	6807.806
#2	6153.667	104060.3	9516.691	5256.198	6790.105
#3	6159.751	105217.5	9490.817	5303.675	6802.280

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2763-04 Acquired: 8/7/2025 16:19:13 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005833	-.007084	.0476424	-.000815	.0024046	.1291819	.3802008
Stddev	.0014681	.003038	.0009779	.002050	.0020444	.0085466	.0003860
%RSD	251.7095	42.87577	2.052516	251.6615	85.01827	6.615979	.1015177
#1	.0017826	-.010190	.0474458	.001487	.0004395	.1282771	.3803719
#2	-.001054	-.004120	.0467777	-.002444	.0022543	.1211236	.3797588
#3	.001021	-.006943	.0487036	-.001487	.0045200	.1381449	.3804716

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000114	.0015523	102.1701	.0002029	.0333827	.0023886	6.447852
Stddev	.000026	.0000360	.0551	.0001366	.0001769	.0000892	.066752
%RSD	22.49224	2.318902	.0539682	67.30015	.5298432	3.733436	1.035254
#1	-.000091	.0015366	102.1257	.0003532	.0334941	.0024908	6.407958
#2	-.000142	.0015934	102.1528	.0001692	.0331787	.0023264	6.410684
#3	-.000110	.0015267	102.2318	.0000864	.0334752	.0023486	6.524914

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.103996	2.999921	.0776128	-.000201	414.4128	.0042881	.3802308
Stddev	.001818	.044219	.0003534	.000388	5.1355	.0015829	.0058955
%RSD	.0585724	1.474006	.4553896	193.1647	1.239218	36.91403	1.550517
#1	3.103896	2.952632	.0777240	-.000496	413.1860	.0058564	.3742592
#2	3.102231	3.006887	.0772172	-.000346	410.0019	.0043169	.3803859
#3	3.105863	3.040243	.0778973	.000239	420.0506	.0026910	.3860472

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.293182	.0334583	.0003479	-.002696	-.005005	1.057309	.0170510
Stddev	.031689	.0004534	.0000533	.000830	.001241	.021042	.0010739
%RSD	2.450477	1.355133	15.32027	30.78989	24.78702	1.990171	6.298186
#1	1.293640	.0333936	.0003796	-.003479	-.004535	1.059597	.0182442
#2	1.261267	.0330407	.0003777	-.002783	-.006412	1.035217	.0161620
#3	1.324640	.0339406	.0002864	-.001826	-.004068	1.077114	.0167469

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2763-04 Acquired: 8/7/2025 16:19:13 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.597172	-.012941	.3844628
Stddev	.009056	.000767	.0007584
%RSD	.5670182	5.930311	.1972705
#1	1.605183	-.012092	.3839886
#2	1.587346	-.013144	.3840623
#3	1.598986	-.013586	.3853375

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6137.105	103315.8	9312.928	5260.837	6769.573
Stddev	9.790	1216.2	14.519	90.054	14.519
%RSD	.1595247	1.177213	.1558991	1.711781	.2144756
#1	6128.677	104117.0	9328.591	5351.408	6759.946
#2	6147.844	103914.0	9299.920	5259.794	6786.273
#3	6134.793	101916.3	9310.273	5171.309	6762.500

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2773-01 Acquired: 8/7/2025 16:23:34 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.005856**	**-.005828**	**.0049298**	**-.000196**	**.0019756**	**.0561175**	**.1861712**
Stddev	.000961	.003952	.0004955	.000741	.0016080	.0142403	.0025402
%RSD	16.41721	67.81350	10.05036	378.4683	81.39192	25.37587	1.364445
#1	-.005078	-.002625	.0054963	-.000691	.0005307	.0505348	.1848341
#2	-.005560	-.010244	.0045775	.000656	.0016883	.0455144	.1891007
#3	-.006931	-.004614	.0047157	-.000552	.0037079	.0723033	.1845789

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000090**	**.0006287**	**3.299731**	**.0005295**	**.0003495**	**.0596974**	**2.472193**
Stddev	.000060	.0000728	.050606	.0001028	.0000659	.0004111	.020409
%RSD	66.88393	11.57836	1.533629	19.41903	18.84022	.6886105	.8255280
#1	-.000134	.0007121	3.256213	.0004114	.0003672	.0599218	2.481378
#2	-.000021	.0005967	3.355263	.0005986	.0004048	.0592230	2.486395
#3	-.000115	.0005775	3.287717	.0005786	.0002766	.0599476	2.448806

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0497985**	**.3509780**	**.0037682**	**-.000141**	**233.9043**	**.0009894**	**.6352176**
Stddev	.0000775	.0176434	.0000891	.000347	1.9242	.0029060	.0028432
%RSD	.1556722	5.026929	2.365706	246.3952	.8226633	293.7211	.4475940
#1	.0497505	.3320550	.0036680	-.000522	234.7894	.0040272	.6340656
#2	.0498879	.3669763	.0037981	.000157	231.6967	-.001764	.6384560
#3	.0497570	.3539028	.0038386	-.000057	235.2266	.000705	.6331312

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9173912**	**.0327460**	**-.000868**	**-.001544**	**.0000655**	**.2062637**	**.0282400**
Stddev	.0263162	.0013569	.000245	.000274	.0004592	.0137077	.0009817
%RSD	2.868585	4.143711	28.27497	17.76837	701.4046	6.645716	3.476366
#1	.9307200	.0319925	-.000868	-.001856	.0002607	.2179305	.0289187
#2	.9343762	.0319331	-.000623	-.001339	-.000459	.1911667	.0286870
#3	.8870773	.0343125	-.001113	-.001438	.000395	.2096940	.0271143

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2773-01 Acquired: 8/7/2025 16:23:34 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.7966734	-.020937	.0176800
Stddev	.0095150	.002056	.0002750
%RSD	1.194337	9.820991	1.555548
#1	.7908787	-.020707	.0173946
#2	.7914866	-.019006	.0179433
#3	.8076547	-.023099	.0177023

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6400.626	107942.8	9351.125	5457.656	7260.747
Stddev	23.030	682.5	128.233	26.852	22.031
%RSD	.3598018	.6322930	1.371310	.4920118	.3034197
#1	6420.689	107623.8	9468.198	5454.222	7277.001
#2	6405.709	107478.2	9214.077	5432.686	7269.567
#3	6375.479	108726.4	9371.102	5486.060	7235.673

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2773-02 Acquired: 8/7/2025 16:27:57 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.005507**	**-.009461**	**.0501164**	**.0029195**	**.0000678**	**.0138881**	**.1560524**
Stddev	.000325	.001279	.0003995	.0022861	.0014464	.0047590	.0004472
%RSD	5.897707	13.51471	.7971963	78.30394	2131.801	34.26658	.2865716
#1	-.005179	-.009250	.0496834	.0003157	-.001544	.0119086	.1557396
#2	-.005828	-.008301	.0504707	.0038455	.000493	.0104383	.1558529
#3	-.005514	-.010832	.0501952	.0045974	.001254	.0193173	.1565646

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000075**	**.0012167**	**.5129253**	**.0005439**	**.0005372**	**.0520782**	**5.637815**
Stddev	.000058	.0001291	.0098413	.0005837	.0002078	.0004040	.030461
%RSD	77.58684	10.60999	1.918659	107.3015	38.67664	.7757246	.5402908
#1	-.000062	.0010679	.5021767	-.000101	.0003578	.0520876	5.605832
#2	-.000024	.0012837	.5151058	.001036	.0007649	.0516695	5.666482
#3	-.000139	.0012985	.5214935	.000697	.0004889	.0524773	5.641130

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0223957**	**.0590680**	**.0017272**	**-.000439**	**279.4312**	**.0019948**	**.2412490**
Stddev	.0005281	.0388295	.0001690	.000514	2.3670	.0042067	.0007775
%RSD	2.358053	65.73681	9.783284	117.0708	.8470838	210.8809	.3222749
#1	.0229832	.0642844	.0019069	-.000621	280.8106	.0028996	.2404072
#2	.0219605	.0950256	.0017033	.000141	280.7850	-.002591	.2419402
#3	.0222432	.0178941	.0015715	-.000837	276.6981	.005676	.2413995

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1427627**	**.0291057**	**-.000604**	**-.000614**	**.0006827**	**.0110454**	**.0148091**
Stddev	.0317027	.0005003	.000157	.000762	.0011814	.0084877	.0024741
%RSD	22.20654	1.718928	26.08743	124.1243	173.0549	76.84368	16.70641
#1	.1067452	.0293480	-.000563	-.001481	.0018991	.0048183	.0144859
#2	.1664381	.0285304	-.000777	-.000309	.0006095	.0207131	.0174288
#3	.1551048	.0294388	-.000471	-.000051	-.000460	.0076047	.0125125

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2773-02 Acquired: 8/7/2025 16:27:57 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.6751066	-.017844	-.002052
Stddev	.0053751	.004005	.000110
%RSD	.7961835	22.44524	5.380412
#1	.6703856	-.015510	-.001963
#2	.6739778	-.015553	-.002175
#3	.6809565	-.022468	-.002017

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6400.260	108232.2	9552.982	5480.142	7254.628
Stddev	13.469	574.5	29.859	12.622	20.250
%RSD	.2104380	.5308053	.3125579	.2303312	.2791350
#1	6406.459	108843.4	9584.636	5493.704	7261.966
#2	6409.512	107703.2	9525.320	5477.985	7270.187
#3	6384.808	108150.1	9548.991	5468.737	7231.732

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2773-03 Acquired: 8/7/2025 16:32:20 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.005357**	**-.006840**	**.0007401**	**.0009991**	**.0009168**	**.0082583**	**.3238574**
Stddev	.000551	.001528	.0009604	.0008788	.0003103	.0072896	.0021724
%RSD	10.29106	22.34468	129.7676	87.96223	33.85103	88.27040	.6707862
#1	-.004723	-.006065	-.000352	.0015782	.0012731	.0156851	.3249660
#2	-.005625	-.008601	.001118	-.000012	.0007054	.0079757	.3252518
#3	-.005723	-.005855	.001454	.001431	.0007718	.0011140	.3213543

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000121**	**-.000065**	**.2912910**	**.0000621**	**-.000226**	**.0035987**	**.0216123**
Stddev	.000050	.000023	.0070746	.0002218	.000025	.0004230	.0034424
%RSD	41.45398	34.56897	2.428691	357.2766	11.24109	11.75382	15.92782
#1	-.000134	-.000072	.2880740	.0002537	-.000234	.0035353	.0254864
#2	-.000164	-.000040	.2994023	-.000181	-.000197	.0032110	.0204453
#3	-.000066	-.000083	.2863966	.000113	-.000246	.0040498	.0189051

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0038870**	**.0556715**	**.0011637**	**-.000326**	**424.7508**	**-.000195**	**.2140805**
Stddev	.0004830	.0085035	.0000741	.000345	2.1088	.001900	.0006140
%RSD	12.42458	15.27447	6.363969	105.9772	.4964743	972.1851	.2868243
#1	.0039991	.0467110	.0011016	-.000067	426.9331	-.001687	.2135919
#2	.0043041	.0636291	.0011438	-.000193	424.5951	.001944	.2138799
#3	.0033579	.0566745	.0012457	-.000718	422.7242	-.000843	.2147698

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.3547550**	**.0438322**	**-.000512**	**.0013947**	**-.000357**	**.0180280**	**.0151953**
Stddev	.0476870	.0003502	.000140	.0002321	.001101	.0098303	.0018269
%RSD	13.44222	.7989635	27.38715	16.64488	307.9708	54.52819	12.02310
#1	.3372086	.0441718	-.000576	.0013125	.000675	.0250702	.0131338
#2	.4087293	.0434722	-.000351	.0016567	-.000232	.0067971	.0158381
#3	.3183272	.0438527	-.000609	.0012148	-.001516	.0222166	.0166140

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2773-03 Acquired: 8/7/2025 16:32:20 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.9905636	-.021435	.0106492
Stddev	.0132845	.001776	.0000884
%RSD	1.341108	8.283583	.8303025
#1	1.005886	-.019385	.0107436
#2	.982281	-.022428	.0106357
#3	.983523	-.022492	.0105683

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6205.104	106418.8	9692.275	5369.345	6948.436
Stddev	56.098	239.8	43.556	35.715	63.121
%RSD	.9040597	.2253235	.4493924	.6651575	.9084270
#1	6141.460	106578.4	9649.385	5391.573	6876.092
#2	6247.368	106535.0	9690.971	5388.314	6992.295
#3	6226.485	106143.1	9736.468	5328.149	6976.921

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2780-04 Acquired: 8/7/2025 16:36:45 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000423**	**-.012999**	**.0850024**	**.0000512**	**.0004441**	**.1452614**	**.1863542**
Stddev	.000149	.001919	.0002948	.0014106	.0010439	.0112725	.0008351
%RSD	35.16864	14.76060	.3468314	2755.743	235.0426	7.760140	.4481086
#1	-.000549	-.012400	.0847497	.0016568	.0002391	.1506283	.1855841
#2	-.000259	-.015146	.0853263	-.000989	.0015753	.1323083	.1872418
#3	-.000461	-.011452	.0849311	-.000514	-.000482	.1528477	.1862366

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001148**	**.0000998**	**59.08188**	**.0001343**	**.0049491**	**.0013046**	**10.13418**
Stddev	.0000786	.0000466	.32350	.0001139	.0001284	.0002951	.03578
%RSD	68.45248	46.66618	.5475369	84.82755	2.593309	22.62243	.3530163
#1	.0002021	.0001399	58.93766	.0000435	.0050952	.0010255	10.09414
#2	.0000498	.0001108	59.45240	.0002622	.0048975	.0016135	10.16299
#3	.0000925	.0000487	58.85557	.0000972	.0048547	.0012748	10.14541

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.6458662**	**1.940900**	**.0395647**	**.0004791**	**288.0120**	**.0016748**	**.2057614**
Stddev	.0024292	.035010	.0002842	.0002667	4.1543	.0017306	.0003126
%RSD	.3761185	1.803778	.7182179	55.65931	1.442416	103.3335	.1519272
#1	.6440529	1.937945	.0392710	.0007835	292.2385	.0036495	.2054818
#2	.6486262	1.977293	.0395849	.0002869	287.8637	.0009527	.2060990
#3	.6449195	1.907462	.0398383	.0003669	283.9339	.0004221	.2057035

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9438673**	**.0206511**	**.0000730**	**-.003487**	**-.001988**	**.6696158**	**.0263232**
Stddev	.0508956	.0005254	.0002428	.000733	.000607	.0073337	.0021159
%RSD	5.392238	2.544101	332.6100	21.01569	30.54629	1.095206	8.038185
#1	1.001681	.0206355	.0003336	-.004331	-.001298	.6715529	.0273864
#2	.924098	.0211842	.0000323	-.003119	-.002224	.6757864	.0238865
#3	.905822	.0201337	-.000147	-.003011	-.002443	.6615080	.0276967

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2780-04 Acquired: 8/7/2025 16:36:45 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.198454	-.014300	.2424870
Stddev	.006490	.003616	.0006752
%RSD	.5415313	25.28702	.2784315
#1	1.196501	-.010198	.2420038
#2	1.193166	-.015676	.2432584
#3	1.205697	-.017026	.2421988

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6335.751	106759.6	9560.262	5419.036	7086.331
Stddev	18.965	434.8	41.492	9.422	22.755
%RSD	.2993364	.4072958	.4340053	.1738618	.3211156
#1	6347.271	106585.2	9548.956	5426.888	7099.719
#2	6346.121	106439.1	9525.596	5408.589	7099.217
#3	6313.862	107254.6	9606.236	5421.633	7060.057

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: CCV04 Acquired: 8/7/2025 16:56:04 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV04 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.770049**	**5.229004**	**4.578998**	**4.800799**	**4.843907**	**9.443519**
Stddev	.036472	.272518	.034305	.034241	.025507	.018647
%RSD	.7646114	5.211657	.7491862	.7132399	.5265802	.1974586
#1	4.729737	4.979499	4.540996	4.764380	4.823435	9.425339
#2	4.779651	5.187695	4.588316	4.805679	4.835806	9.442617
#3	4.800760	5.519818	4.607682	4.832339	4.872481	9.462601

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.633951**	**.2341361**	**2.297547**	**24.23208**	**.9326079**	**2.322964**
Stddev	.191832	.0014030	.019368	.04885	.0031662	.017715
%RSD	1.991204	.5992160	.8429845	.2015724	.3395054	.7625939
#1	9.430041	.2326301	2.276034	24.19328	.9344402	2.303554
#2	9.810839	.2343721	2.303013	24.21603	.9289518	2.327079
#3	9.660973	.2354061	2.313595	24.28693	.9344316	2.338259

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.183674**	**4.920878**	**2.401682**	**23.32197**	**2.316760**	**1.188988**
Stddev	.007567	.033248	.003568	.09119	.017024	.001808
%RSD	.6392663	.6756445	.1485731	.3909975	.7348006	.1520405
#1	1.175763	4.956124	2.398720	23.35130	2.297561	1.188847
#2	1.184417	4.890076	2.400683	23.21973	2.322708	1.190862
#3	1.190842	4.916434	2.405644	23.39489	2.330012	1.187254

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**23.36459**	**2.407808**	**2.424980**	**24.01950**	**4.625472**	**4.865868**
Stddev	.10372	.006333	.002198	.08557	.024401	.036720
%RSD	.4439259	.2629994	.0906494	.3562415	.5275409	.7546530
#1	23.47636	2.403178	2.427283	24.11820	4.599052	4.826655
#2	23.34598	2.415024	2.424752	23.97399	4.630202	4.871504
#3	23.27144	2.405222	2.422905	23.96630	4.647162	4.899444

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: CCV04 Acquired: 8/7/2025 16:56:04 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV04 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.643183**	**4.859735**	**4.772888**	F **4.366567**	**4.610284**	F **4.455156**
Stddev	.040475	.002591	.025988	.037748	.060936	.005355
%RSD	.8716994	.0533210	.5444960	.8644815	1.321734	.1201957
#1	4.597692	4.856858	4.767331	4.327141	4.547241	4.453152
#2	4.656648	4.861885	4.750127	4.370184	4.614745	4.451091
#3	4.675208	4.860463	4.801205	4.402377	4.668867	4.461224

Elem	Sr4077
Units	ppm
Avg	**4.833564**
Stddev	.071894
%RSD	1.487392
#1	4.834048
#2	4.761430
#3	4.905215

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6604.569**	**111231.4**	**9450.763**	**5576.418**	**7555.924**
Stddev	44.032	465.7	63.846	13.108	59.320
%RSD	.6666913	.4186496	.6755643	.2350657	.7850793
#1	6651.478	110907.5	9482.642	5561.699	7621.498
#2	6598.101	111765.0	9492.392	5586.833	7540.282
#3	6564.129	111021.5	9377.255	5580.723	7505.993

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: CCB04 Acquired: 8/7/2025 17:00:29 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB04 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.003121**	**-.009008**	**-.000404**	**-.001813**	**.0004213**	**-.007404**	**-.002443**
Stddev	.001492	.000898	.000848	.001324	.0007274	.006301	.000379
%RSD	47.81343	9.969883	209.8091	73.01605	172.6663	85.10173	15.52370
#1	-.002362	-.009267	-.001288	-.001194	.0001315	-.000280	-.002721
#2	-.004840	-.008009	-.000327	-.000912	.0012489	-.012246	-.002011
#3	-.002161	-.009749	.000402	-.003332	-.000117	-.009687	-.002598

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000034**	**.0000517**	**-.018283**	**-.000156**	**-.000014**	**-.000172**	**-.001842**
Stddev	.000037	.0000436	.006803	.000187	.000144	.000215	.007395
%RSD	109.2035	84.25521	37.21020	119.7169	992.7833	125.0917	401.5303
#1	.000009	.0000838	-.016955	-.000366	-.000180	.000048	-.009608
#2	-.000051	.0000692	-.025652	-.000094	.000068	-.000382	-.001031
#3	-.000058	.0000021	-.012242	-.000008	.000069	-.000181	.005114

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000034**	**-.016971**	**.0002586**	**-.000582**	**.2613437**	**.0007041**	**-.000413**
Stddev	.000223	.044110	.0002688	.000260	.0182619	.0040114	.000172
%RSD	659.7359	259.9093	103.9331	44.76637	6.987695	569.6834	41.66414
#1	-.000192	-.058250	.0002012	-.000882	.2804461	-.003847	-.000555
#2	-.000130	-.022173	.0005514	-.000416	.2595271	.002233	-.000222
#3	.000221	.029509	.0000232	-.000447	.2440580	.003726	-.000463

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5177492**	**-.000790**	**.0001884**	**-.000306**	**-.001228**	**.0060410**	**.0067198**
Stddev	.0505711	.000418	.0003426	.000778	.000209	.0116836	.0007865
%RSD	9.767485	52.88957	181.8798	254.4006	17.03306	193.4050	11.70437
#1	.5197273	-.000743	.0005109	-.000868	-.001269	.0158018	.0064633
#2	.5673021	-.000398	.0002255	.000583	-.001002	.0092262	.0060936
#3	.4662181	-.001230	-.000171	-.000633	-.001414	-.006905	.0076026

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: CCB04 Acquired: 8/7/2025 17:00:29 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB04 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**-.004955**	**-.000587**	**-.000191**
Stddev	.002756	.002646	.000071
%RSD	55.62332	450.5046	37.29971
#1	-.006960	.002262	-.000185
#2	-.006095	-.002966	-.000123
#3	-.001812	-.001058	-.000266

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6510.817**	**113181.6**	**9239.220**	**5688.217**	**7715.624**
Stddev	14.897	442.0	20.984	19.693	5.426
%RSD	.2288112	.3905106	.2271159	.3462034	.0703258
#1	6527.035	113545.0	9221.788	5670.325	7721.450
#2	6507.675	112689.5	9262.510	5685.010	7714.710
#3	6497.741	113310.2	9233.362	5709.316	7710.714

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2780-08 Acquired: 8/7/2025 17:04:48 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0008191	-.008610	.0016715	-.000691	.0024673	.1358829	.2858900
Stddev	.0009410	.002092	.0002076	.003005	.0022498	.0214752	.0025451
%RSD	114.8791	24.29298	12.42020	434.7559	91.18713	15.80416	.8902536
#1	.0018755	-.006265	.0014336	.002457	.0031651	.1606799	.2856467
#2	.0000707	-.010283	.0017653	-.003529	.0042855	.1236043	.2885481
#3	.0005112	-.009283	.0018156	-.001001	-.000049	.1233646	.2834753

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000486	-.000371	152.5131	.0001103	.0084218	.0008672	16.27693
Stddev	.0000148	.000012	1.5411	.0001883	.0001638	.0003822	.14497
%RSD	30.48733	3.324431	1.010503	170.6532	1.945449	44.07385	.8906369
#1	.0000532	-.000358	152.7078	.0003139	.0083721	.0006925	16.20950
#2	.0000605	-.000373	153.9476	-.000057	.0086047	.0006035	16.17795
#3	.0000320	-.000383	150.8838	.000074	.0082886	.0013055	16.44333

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.105293	5.085571	.0437968	.0000998	359.2295	.0039511	.0862612
Stddev	.004431	.032460	.0000203	.0004015	.3297	.0010197	.0001952
%RSD	.4009260	.6382805	.0463081	402.4113	.0917721	25.80834	.2262953
#1	1.104378	5.057656	.0438202	-.000119	359.6076	.0050246	.0863356
#2	1.110111	5.121190	.0437852	.000563	359.0018	.0038333	.0860398
#3	1.101391	5.077867	.0437850	-.000145	359.0793	.0029954	.0864083

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.981193	.0835442	.0178729	-.003174	-.007145	2.737202	.0326545
Stddev	.052855	.0006329	.0002118	.000206	.001080	.056409	.0019465
%RSD	1.327623	.7575329	1.184800	6.502465	15.11764	2.060845	5.961010
#1	3.982481	.0837915	.0178095	-.003403	-.006013	2.723244	.0312751
#2	3.927707	.0840160	.0177000	-.003117	-.008165	2.689081	.0348810
#3	4.033393	.0828250	.0181091	-.003002	-.007256	2.799280	.0318073

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2780-08 Acquired: 8/7/2025 17:04:48 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.422694	-.009205	.8960912
Stddev	.011238	.002987	.0046437
%RSD	.4638507	32.44727	.5182165
#1	2.424662	-.012488	.8966747
#2	2.410603	-.008479	.9004155
#3	2.432818	-.006648	.8911833

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6113.543	103781.6	9120.411	5233.161	6768.202
Stddev	22.557	313.8	93.678	6.250	15.328
%RSD	.3689727	.3023460	1.027123	.1194242	.2264741
#1	6124.365	103568.2	9091.184	5229.945	6772.907
#2	6128.650	104141.9	9044.831	5240.364	6780.626
#3	6087.614	103634.8	9225.218	5229.174	6751.072

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2780-08DUP Acquired: 8/7/2025 17:09:08 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001210**	**-.013590**	**.0032127**	**-.001458**	**.0023120**	**.1633327**	**.3544393**
Stddev	.0027722	.002927	.0007200	.001402	.0010949	.0107927	.0043851
%RSD	2290.672	21.54110	22.41071	96.14461	47.35626	6.607798	1.237197
#1	.0000277	-.015915	.0039603	-.001713	.0017328	.1757944	.3519190
#2	-.002603	-.014552	.0031536	.000054	.0035748	.1569956	.3595028
#3	.002939	-.010303	.0025240	-.002714	.0016283	.1572080	.3518961

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000547**	**-.000365**	**187.2963**	**.0001580**	**.0104008**	**.0012848**	**20.65852**
Stddev	.0000422	.000119	1.1244	.0001137	.0000547	.0003881	.04560
%RSD	77.19182	32.69419	.6003123	71.96383	.5263402	30.20775	.2207253
#1	.0000204	-.000343	186.7100	.0002795	.0103399	.0010934	20.61235
#2	.0001018	-.000494	188.5926	.0000540	.0104167	.0010295	20.70352
#3	.0000418	-.000258	186.5862	.0001406	.0104459	.0017314	20.65967

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.363998**	**6.210926**	**.0534514**	**.0006219**	**447.0697**	**.0041517**	**.1068023**
Stddev	.012205	.074337	.0009653	.0003612	4.2271	.0008985	.0005590
%RSD	.8948264	1.196881	1.805983	58.08347	.9455145	21.64149	.5234418
#1	1.358484	6.199253	.0539890	.0006342	448.9053	.0033029	.1065918
#2	1.377988	6.290409	.0523369	.0009769	450.0686	.0050927	.1074360
#3	1.355523	6.143116	.0540281	.0002547	442.2351	.0040593	.1063790

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.238237**	**.1033304**	**.0222676**	**-.003157**	**-.006407**	**3.469712**	**.0396010**
Stddev	.006788	.0004836	.0003476	.000232	.001749	.021513	.0032199
%RSD	.1295849	.4679898	1.561217	7.359080	27.29001	.6200194	8.130815
#1	5.231548	.1030994	.0223711	-.002900	-.008117	3.445144	.0388718
#2	5.238045	.1038862	.0218799	-.003352	-.006482	3.485175	.0431229
#3	5.245119	.1030057	.0225516	-.003219	-.004623	3.478818	.0368082

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2780-08DUP Acquired: 8/7/2025 17:09:08 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.970347	-.006766	1.114027
Stddev	.065758	.001754	.010466
%RSD	2.213828	25.92115	.9395176
#1	2.952600	-.004974	1.106168
#2	2.915283	-.008480	1.125908
#3	3.043157	-.006844	1.110006

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6059.489	102190.2	9254.606	5179.014	6702.628
Stddev	63.574	289.8	33.866	21.910	70.633
%RSD	1.049163	.2835851	.3659417	.4230501	1.053813
#1	6040.533	101889.0	9252.106	5160.107	6692.446
#2	6130.385	102467.1	9222.059	5173.908	6777.800
#3	6007.549	102214.4	9289.653	5203.026	6637.639

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2780-08LX5 Acquired: 8/7/2025 17:13:29 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.001964**	**-.007789**	**-.000452**	**-.005460**	**.0004296**	**.0312530**	**.0575007**
Stddev	.001070	.003694	.000948	.002887	.0012870	.0115493	.0009685
%RSD	54.44391	47.42435	209.7995	52.87918	299.5694	36.95429	1.684258
#1	-.003187	-.008142	.000421	-.005587	-.000843	.0196701	.0571844
#2	-.001503	-.011293	-.001461	-.008282	.001730	.0427685	.0567300
#3	-.001203	-.003931	-.000315	-.002512	.000402	.0313203	.0585878

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000032**	**-.000094**	**32.32777**	**-.000620**	**.0017728**	**-.000042**	**3.343838**
Stddev	.000057	.000055	.10272	.000314	.0001055	.000477	.031114
%RSD	176.6836	59.02666	.3177319	50.75653	5.951308	1132.862	.9304809
#1	.000028	-.000147	32.24150	-.000301	.0017384	-.000450	3.371811
#2	-.000038	-.000098	32.30042	-.000627	.0016888	.000483	3.349376
#3	-.000086	-.000036	32.44139	-.000930	.0018912	-.000160	3.310328

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2339136**	**1.061794**	**.0091720**	**-.000346**	**66.85707**	**.0019445**	**.0169547**
Stddev	.0001640	.016410	.0002216	.000376	1.12353	.0006050	.0001333
%RSD	.0701080	1.545466	2.415907	108.7517	1.680492	31.11204	.7862007
#1	.2340776	1.077203	.0094252	-.000528	67.82870	.0013150	.0171012
#2	.2339135	1.044540	.0090137	-.000596	67.11573	.0025215	.0168405
#3	.2337497	1.063638	.0090771	.000087	65.62676	.0019971	.0169226

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.118863**	**.0157171**	**.0029123**	**-.002026**	**-.001854**	**.5432556**	**.0120617**
Stddev	.079342	.0003870	.0001823	.000661	.000890	.0099826	.0007432
%RSD	3.744571	2.462521	6.259986	32.61005	48.02975	1.837560	6.161494
#1	2.207008	.0157248	.0030657	-.002564	-.001188	.5543757	.0112040
#2	2.096422	.0153263	.0029604	-.001289	-.002865	.5350668	.0124664
#3	2.053157	.0161003	.0027107	-.002224	-.001508	.5403243	.0125147

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2780-08LX5 Acquired: 8/7/2025 17:13:29 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.4744934	.0330561	.1885333
Stddev	.0035755	.0070418	.0006544
%RSD	.7535345	21.30247	.3471054
#1	.4778746	.0399903	.1891967
#2	.4748545	.0332666	.1885151
#3	.4707511	.0259115	.1878882

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6517.889	110544.1	9431.309	5567.834	7471.197
Stddev	11.356	748.9	77.831	27.464	18.910
%RSD	.1742317	.6774340	.8252421	.4932552	.2531013
#1	6508.793	109951.2	9495.167	5588.736	7456.478
#2	6530.617	110295.5	9454.146	5536.729	7492.524
#3	6514.258	111385.7	9344.614	5578.037	7464.589

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2780-08MS Acquired: 8/7/2025 17:17:46 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.8634144**	**1.990376**	**.9603396**	**2.201766**	**.8736166**	**2.211078**	**.5535226**
Stddev	.0036407	.080099	.0033893	.012355	.0016259	.037079	.0104795
%RSD	.4216675	4.024303	.3529297	.5611242	.1861171	1.676961	1.893235
#1	.8615763	2.021197	.9615730	2.191955	.8744709	2.185510	.5478530
#2	.8610593	1.899445	.9565063	2.197703	.8717416	2.253604	.5656154
#3	.8676078	2.050487	.9629396	2.215641	.8746373	2.194121	.5470993

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.1975117**	**.2015791**	**182.9095**	**.4020646**	**.2157397**	**.3017427**	**23.31018**
Stddev	.0032754	.0004065	3.6576	.0037060	.0005770	.0008212	.17064
%RSD	1.658314	.2016433	1.999695	.9217463	.2674519	.2721565	.7320262
#1	.1955727	.2015743	180.9765	.4048405	.2163240	.3008171	23.42881
#2	.2012933	.2011750	187.1281	.4034972	.2157249	.3020271	23.38711
#3	.1956690	.2019879	180.6240	.3978561	.2151703	.3023839	23.11463

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.528725**	**7.996836**	**.5642112**	**.0785503**	**435.4036**	**.3173019**	**.3237263**
Stddev	.025774	.196549	.0003842	.0005328	2.2141	.0067497	.0012151
%RSD	1.685966	2.457831	.0681008	.6782539	.5085242	2.127226	.3753409
#1	1.515743	7.871711	.5645338	.0789994	433.5859	.3121144	.3224368
#2	1.558408	8.223377	.5637861	.0786899	437.8695	.3249331	.3238922
#3	1.512023	7.895418	.5643136	.0779616	434.7555	.3148581	.3248499

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**16.76848**	**.3660419**	**.4590571**	**.7163010**	**.2007498**	**4.335174**	**6.090155**
Stddev	.08440	.0048622	.0011077	.0025131	.0048385	.017363	.019732
%RSD	.5033393	1.328312	.2412973	.3508417	2.410241	.4005067	.3240040
#1	16.76010	.3628228	.4585153	.7150937	.1973485	4.343397	6.112606
#2	16.85677	.3716350	.4583246	.7146194	.2062890	4.346897	6.075564
#3	16.68859	.3636679	.4603314	.7191899	.1986117	4.315227	6.082295

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2780-08MS Acquired: 8/7/2025 17:17:46 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.846604	.1955127	1.290695
Stddev	.006721	.0046074	.024575
%RSD	.2361107	2.356554	1.904009
#1	2.851438	.1923667	1.276835
#2	2.838929	.2008011	1.319069
#3	2.849444	.1933701	1.276180

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6091.087	102833.8	9290.994	5178.416	6728.652
Stddev	3.248	528.9	146.142	9.890	6.214
%RSD	.0533315	.5143098	1.572941	.1909932	.0923580
#1	6091.983	102290.6	9358.923	5168.711	6722.843
#2	6087.484	102863.8	9123.251	5178.053	6727.908
#3	6093.793	103347.1	9390.807	5188.482	6735.205

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2780-08MSD Acquired: 8/7/2025 17:21:52 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7939248	1.873524	.8864213	2.028018	.7889495	1.985488	.4618423
Stddev	.0022845	.052006	.0017159	.004583	.0066851	.013880	.0013664
%RSD	.2877436	2.775829	.1935820	.2260027	.8473377	.6990587	.2958587
#1	.7963996	1.932710	.8866209	2.025682	.7878904	1.998885	.4631072
#2	.7918967	1.852725	.8846142	2.025074	.7828572	1.971171	.4620265
#3	.7934779	1.835136	.8880287	2.033299	.7961009	1.986407	.4603931

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1810415	.1856011	145.1407	.3679054	.1971153	.2804292	18.84239
Stddev	.0022955	.0003349	.9897	.0009612	.0006048	.0009861	.15635
%RSD	1.267940	.1804330	.6819160	.2612758	.3068304	.3516471	.8297943
#1	.1827762	.1857780	145.5986	.3688684	.1968937	.2809977	18.74786
#2	.1819098	.1852148	145.8186	.3669459	.1966526	.2792905	18.75644
#3	.1784385	.1858104	144.0050	.3679018	.1977996	.2809994	19.02286

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.242112	6.576895	.5138451	.0709897	345.3717	.2857971	.2845874
Stddev	.004098	.021427	.0009098	.0005218	.9691	.0051120	.0009284
%RSD	.3299497	.3257962	.1770616	.7350479	.2806077	1.788667	.3262340
#1	1.246398	6.594969	.5141020	.0705292	345.5347	.2854624	.2853439
#2	1.241705	6.582491	.5128345	.0708835	344.3314	.2808606	.2848670
#3	1.238232	6.553225	.5145989	.0715564	346.2490	.2910681	.2835513

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.32869	.3256005	.4140801	.6540393	.1792310	3.521882	5.597949
Stddev	.10654	.0033486	.0007412	.0028401	.0014123	.045530	.009508
%RSD	.7435378	1.028426	.1789960	.4342408	.7879726	1.292783	.1698543
#1	14.25897	.3268357	.4139589	.6561410	.1804352	3.498286	5.607433
#2	14.27578	.3281560	.4134069	.6508083	.1795812	3.492994	5.588416
#3	14.45133	.3218098	.4148744	.6551687	.1776765	3.574367	5.597999

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2780-08MSD Acquired: 8/7/2025 17:21:52 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	2.300651	.1674664	1.049225
Stddev	.008923	.0002576	.003145
%RSD	.3878568	.1538009	.2997136
#1	2.301982	.1675599	1.050783
#2	2.291137	.1676641	1.051287
#3	2.308834	.1671751	1.045606

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6175.819	105613.5	9471.935	5341.856	6828.173
Stddev	18.555	172.5	108.956	13.318	18.966
%RSD	.3004476	.1633570	1.150300	.2493211	.2777611
#1	6185.625	105811.5	9409.715	5342.152	6834.426
#2	6187.412	105495.3	9408.347	5328.392	6843.223
#3	6154.418	105533.6	9597.744	5355.024	6806.870

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2780-08A Acquired: 8/7/2025 17:25:59 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006906	-.011546	.0023486	-.001868	.0051231	.1388055	.3092627
Stddev	.0017594	.004693	.0007969	.002226	.0012415	.0131180	.0035488
%RSD	254.7771	40.64667	33.93109	119.2088	24.23458	9.450600	1.147490
#1	.0023373	-.015626	.0017519	.000698	.0059404	.1427142	.3051702
#2	.0008976	-.012594	.0032536	-.003011	.0057344	.1495249	.3114879
#3	-.001163	-.006417	.0020402	-.003291	.0036944	.1241775	.3111301

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000974	-.000363	164.0603	-.000156	.0095474	.0013365	18.11671
Stddev	.0000633	.000060	1.9915	.000416	.0000327	.0004206	.15460
%RSD	64.97802	16.58033	1.213869	266.9387	.3424101	31.47176	.8533312
#1	.0000470	-.000376	161.8029	-.000187	.0095421	.0008515	18.00947
#2	.0001684	-.000415	164.8092	-.000555	.0095177	.0015571	18.04674
#3	.0000767	-.000297	165.5687	.000275	.0095824	.0016009	18.29392

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.192368	5.474446	.0484547	-.000155	397.2667	.0028143	.0951424
Stddev	.012347	.052370	.0006958	.000067	1.0859	.0008248	.0003332
%RSD	1.035469	.9566337	1.436019	43.33130	.2733357	29.30790	.3502140
#1	1.178203	5.420200	.0479084	-.000199	398.5186	.0035271	.0947586
#2	1.200849	5.524714	.0482177	-.000188	396.5801	.0030048	.0953106
#3	1.198053	5.478424	.0492381	-.000078	396.7015	.0019109	.0953580

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.647503	.0890681	.0202058	-.003405	-.006304	3.026181	.0361018
Stddev	.049801	.0011340	.0001365	.000494	.001783	.031907	.0007827
%RSD	1.071559	1.273170	.6755944	14.50786	28.27777	1.054356	2.168155
#1	4.637215	.0886384	.0203304	-.003872	-.005343	3.030664	.0362803
#2	4.603650	.0882119	.0200599	-.002888	-.008361	2.992270	.0367799
#3	4.701645	.0903542	.0202270	-.003455	-.005207	3.055609	.0352453

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2780-08A Acquired: 8/7/2025 17:25:59 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**2.684049**	**-.007972**	**.9728642**
Stddev	.012901	.002083	.0083011
%RSD	.4806439	26.12922	.8532658
#1	2.670497	-.005735	.9632792
#2	2.685472	-.009856	.9775967
#3	2.696180	-.008327	.9777169

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6079.099**	**104325.3**	**9475.715**	**5282.820**	**6714.485**
Stddev	22.776	578.8	99.808	30.296	23.346
%RSD	.3746544	.5548069	1.053305	.5734810	.3476995
#1	6090.860	104759.3	9586.122	5292.211	6734.877
#2	6093.591	104548.4	9391.886	5307.309	6719.559
#3	6052.848	103668.1	9449.136	5248.941	6689.019

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2759-01DLX5 Acquired: 8/7/2025 17:30:19 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0109657**	**-.009660**	**8.515949**	**-.001940**	**.0089828**	**8.396147**	**2.943786**
Stddev	.0006760	.001068	.048101	.002144	.0008320	.100209	.030722
%RSD	6.164980	11.05324	.5648332	110.4938	9.262521	1.193514	1.043605
#1	.0108617	-.008427	8.461666	-.002423	.0084894	8.283103	2.908640
#2	.0116877	-.010286	8.532908	.000404	.0085156	8.474061	2.965529
#3	.0103477	-.010266	8.553274	-.003801	.0099434	8.431277	2.957188

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0015765**	**.0112943**	**68.28069**	**.1487859**	**.0361229**	**.3127882**	**27.38996**
Stddev	.0000850	.0000966	.79330	.0004879	.0000857	.0020084	.01213
%RSD	5.390565	.8554720	1.161825	.3278967	.2371897	.6420924	.0442792
#1	.0016635	.0112012	67.39491	.1485213	.0360449	.3104943	27.38102
#2	.0015724	.0113941	68.92575	.1493489	.0362146	.3136399	27.38509
#3	.0014937	.0112878	68.52141	.1484875	.0361092	.3142303	27.40376

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4213738**	**14.93999**	**.0217499**	**.0014804**	**5.076737**	**.0451711**	**14.04322**
Stddev	.0042820	.18299	.0001278	.0002405	.107666	.0052752	.08067
%RSD	1.016200	1.224816	.5876100	16.24696	2.120776	11.67826	.5744116
#1	.4168619	14.73525	.0218547	.0015804	5.195515	.0458451	14.10114
#2	.4253811	14.99713	.0216076	.0016547	5.049144	.0395913	14.07742
#3	.4218786	15.08759	.0217875	.0012060	4.985553	.0500769	13.95108

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.495060**	**.0220213**	**.0000076**	**.0156232**	**.1460835**	**.3721966**	**3.956465**
Stddev	.109916	.0004485	.0000899	.0003584	.0024428	.0176826	.028521
%RSD	2.445256	2.036563	1189.244	2.294090	1.672223	4.750881	.7208779
#1	4.600118	.0222850	.0001025	.0152267	.1433840	.3760384	3.923652
#2	4.504202	.0215035	-.000004	.0157185	.1481417	.3529090	3.970428
#3	4.380858	.0222755	-.000076	.0159243	.1467247	.3876425	3.975314

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: Q2759-01DLX5 Acquired: 8/7/2025 17:30:19 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	16.22212	.0660024	.2851108
Stddev	.06810	.0011530	.0029751
%RSD	.4198212	1.746964	1.043483
#1	16.14775	.0648546	.2817421
#2	16.23717	.0671606	.2873782
#3	16.28145	.0659921	.2862121

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6500.986	113457.3	9926.881	5689.572	7362.750
Stddev	32.054	451.8	119.206	33.135	31.229
%RSD	.4930617	.3982303	1.200835	.5823859	.4241497
#1	6534.163	113424.9	10051.58	5670.622	7394.866
#2	6498.608	113022.5	9814.05	5670.261	7360.895
#3	6470.188	113924.4	9915.01	5727.832	7332.490

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: CCV05 Acquired: 8/7/2025 17:38:35 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV05 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.834996**	**5.366424**	**4.667693**	**4.919734**	**4.878427**	**9.286740**
Stddev	.034232	.103164	.027615	.018813	.022861	.097188
%RSD	.7079968	1.922403	.5916154	.3823917	.4686102	1.046528
#1	4.840505	5.475808	4.664225	4.933092	4.878556	9.184603
#2	4.798344	5.352586	4.641975	4.898219	4.855501	9.297540
#3	4.866139	5.270877	4.696877	4.927890	4.901222	9.378078

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.489994**	**.2309775**	**2.349592**	**23.52797**	**.9241788**	**2.355747**
Stddev	.108526	.0049325	.012283	.34007	.0075179	.014486
%RSD	1.143581	2.135481	.5227540	1.445370	.8134703	.6149088
#1	9.430308	.2252824	2.346583	23.13661	.9277773	2.353382
#2	9.424412	.2337666	2.339094	23.75144	.9292212	2.342590
#3	9.615263	.2338836	2.363100	23.69587	.9155380	2.371270

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.202092**	**4.890961**	**2.348464**	**22.94677**	**2.355362**	**1.184125**
Stddev	.006263	.037340	.031913	.32862	.014699	.004391
%RSD	.5210378	.7634556	1.358899	1.432096	.6240627	.3708222
#1	1.200266	4.934075	2.311645	22.57582	2.352598	1.181115
#2	1.196945	4.868962	2.365552	23.06303	2.342241	1.189164
#3	1.209066	4.869847	2.368195	23.20145	2.371247	1.182097

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**22.73696**	**2.354968**	**2.382962**	**24.08640**	**4.654514**	**4.795841**
Stddev	.10804	.028405	.017569	.19471	.097000	.024581
%RSD	.4751749	1.206175	.7372903	.8083629	2.083998	.5125382
#1	22.85702	2.322213	2.368542	24.25303	4.542514	4.791937
#2	22.64757	2.369861	2.402531	24.13380	4.711442	4.773446
#3	22.70629	2.372828	2.377813	23.87237	4.709587	4.822140

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: CCV05 Acquired: 8/7/2025 17:38:35 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV05 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.693206**	**4.707339**	**4.848660**	**4.563830**	**4.813275**	F **4.416182**
Stddev	.027387	.074796	.038551	.029609	.022768	.053881
%RSD	.5835368	1.588913	.7950890	.6487666	.4730333	1.220084
#1	4.687920	4.620974	4.889898	4.566219	4.823543	4.355974
#2	4.668848	4.750127	4.842559	4.533100	4.787181	4.432707
#3	4.722850	4.750916	4.813523	4.592172	4.829101	4.459865

Elem	Sr4077
Units	ppm
Avg	**4.753202**
Stddev	.131214
%RSD	2.760547
#1	4.611054
#2	4.869692
#3	4.778861

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6528.182**	**111511.6**	**9649.136**	**5653.067**	**7376.442**
Stddev	37.210	447.9	171.528	25.486	40.183
%RSD	.5699840	.4016340	1.777655	.4508365	.5447537
#1	6537.807	111413.0	9847.130	5681.189	7384.910
#2	6559.634	111121.3	9545.576	5631.495	7411.716
#3	6487.106	112000.6	9554.703	5646.517	7332.699

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: CCB05 Acquired: 8/7/2025 17:42:47 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB05 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.002287**	**-.010343**	**-.000106**	**-.001346**	**.0002874**	**-.009544**	**-.003207**
Stddev	.000360	.000358	.000550	.000492	.0011322	.005857	.000342
%RSD	15.72618	3.463557	517.5020	36.57437	393.9622	61.37406	10.67738
#1	-.002062	-.009929	.000348	-.001219	-.000554	-.010118	-.003353
#2	-.002098	-.010532	.000051	-.001889	-.000158	-.003420	-.003452
#3	-.002702	-.010566	-.000718	-.000930	.001575	-.015093	-.002816

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000001**	**.0001134**	**-.004893**	**-.000185**	**.0001580**	**-.000212**	**-.000397**
Stddev	.000083	.0000995	.008859	.000249	.0002446	.000320	.006748
%RSD	13548.16	87.74260	181.0533	134.8202	154.7815	151.1992	1697.768
#1	-.000030	.0000114	.005126	.000084	-.000071	-.000160	-.007714
#2	-.000065	.0002102	-.011689	-.000229	.000415	.000080	.005584
#3	.000093	.0001185	-.008116	-.000408	.000130	-.000554	.000937

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.000257**	**.0223986**	**.0003884**	**-.000223**	**.3047481**	**.0023404**	**.0016883**
Stddev	.000103	.0169349	.0001645	.000060	.0280651	.0015337	.0004130
%RSD	40.30617	75.60705	42.34896	27.07589	9.209277	65.53171	24.46593
#1	-.000160	.0125483	.0005737	-.000292	.3370132	.0021276	.0021576
#2	-.000244	.0419532	.0003322	-.000186	.2912369	.0039694	.0015271
#3	-.000366	.0126944	.0002594	-.000189	.2859942	.0009242	.0013801

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4519616**	**.0020016**	**.0005913**	**.0006591**	**.0005491**	**.0118958**	**.0068758**
Stddev	.0241546	.0001736	.0003268	.0004832	.0002525	.0106821	.0023294
%RSD	5.344390	8.671767	55.26616	73.31748	45.97678	89.79711	33.87849
#1	.4798318	.0019407	.0002430	.0003038	.0004026	.0195880	.0074267
#2	.4389658	.0018667	.0008912	.0012093	.0008407	.0164001	.0088804
#3	.4370872	.0021974	.0006398	.0004642	.0004041	-.000301	.0043203

Reviewed By:janvi
On:8/8/2025 3:37:12 PM
Inst Id :P4
LB :LB136746

Sample Name: CCB05 Acquired: 8/7/2025 17:42:47 Type: Unk
Method: 6010-200.7 NEW(v86) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB05 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	**-.002242**	**.0023509**	**-.000097**
Stddev	.002154	.0010471	.000060
%RSD	96.05567	44.54167	62.00675
#1	-.003695	.0031120	-.000132
#2	.000232	.0027840	-.000131
#3	-.003263	.0011567	-.000028

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**6768.471**	**115216.3**	**9288.238**	**5821.170**	**8248.958**
Stddev	16.833	2010.2	92.357	114.618	26.061
%RSD	.2487018	1.744707	.9943449	1.968980	.3159268
#1	6765.713	113881.2	9305.594	5755.936	8239.092
#2	6786.513	117528.2	9188.434	5953.515	8278.512
#3	6753.187	114239.5	9370.685	5754.060	8229.271

Reviewed By:jaswal
On:8/10/2025 10:17:35 PM
Inst Id :CV1
LB :LB136741

LB136741 INSTRUMENT ID:CV1

Method: 7470A Operator: Admin Date of Analysis: 07 Aug 2025 14:11:51

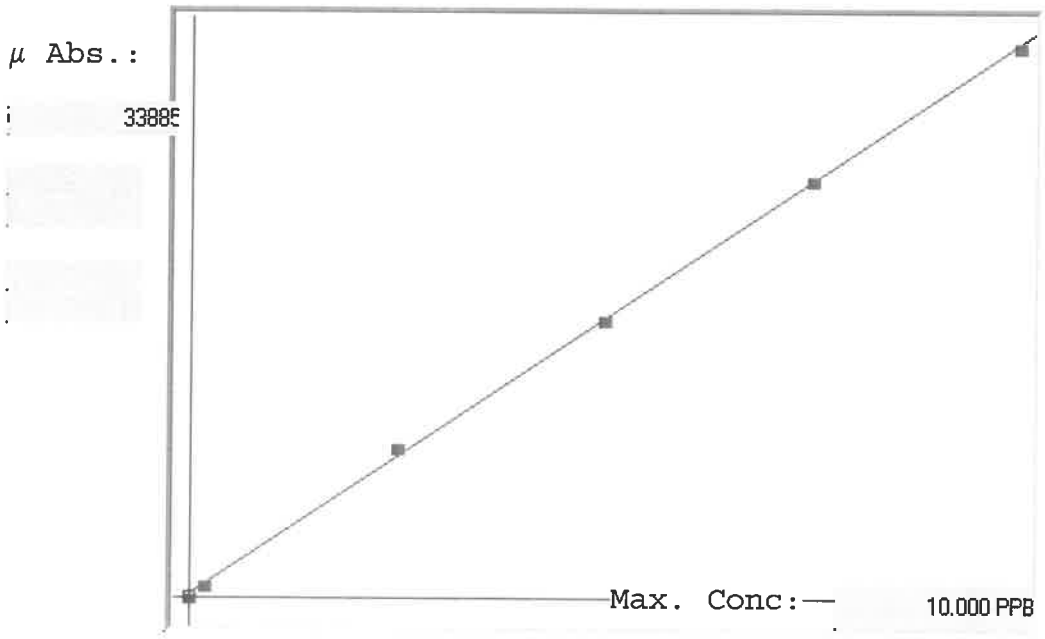
Type	Sample ID	Extended ID	Conc.	µ Abs.	Units	Type	Stnd Conc	Method	Date
S	0.0 - 1	S0.0	-	-80	PPB	Std	0.00000	7470A	07 Aug 2025 14:12:11
S	0.2 - 1	S0.2	-	811	PPB	Std	0.20000	7470A	07 Aug 2025 14:17:22
S	2.5 - 1	S2.5	-	9201	PPB	Std	2.50000	7470A	07 Aug 2025 14:19:39
S	5.0 - 1	S5.0	-	17089	PPB	Std	5.00000	7470A	07 Aug 2025 14:21:56
S	7.5 - 1	S7.5	-	25698	PPB	Std	7.50000	7470A	07 Aug 2025 14:24:13
S	10.0 - 1	S10.0	-	33885	PPB	Std	10.00000	7470A	07 Aug 2025 14:26:30
U	ICV03 - 1	ICV03	3.9997	13756	PPB	SMPL		-7470A	07 Aug 2025 14:29:29
U	CCV05 - 1	CCV05	4.9264	16893	PPB	SMPL		-7470A	07 Aug 2025 14:36:32
U	CCB05 - 1	CCB05	-0.0510	43	PPB	SMPL		-7470A	07 Aug 2025 14:41:21
U	CRA - 1	CRA	0.1676	783	PPB	SMPL		-7470A	07 Aug 2025 14:43:36
U	HighStd - 1	HighStd	10.0231	34147	PPB	SMPL		-7470A	07 Aug 2025 14:45:51
U	ChkStd - 1	ChkStd	7.3793	25197	PPB	SMPL		-7470A	07 Aug 2025 14:48:07
U	PB169163BL - 1	PBW	0.0001	216	PPB	SMPL		-7470A	07 Aug 2025 14:50:25
U	PB169163BS - 1	LCSW	3.7114	12780	PPB	SMPL		-7470A	07 Aug 2025 14:52:43
U	Q2758-02 - 1	WASTE	-0.1145	-172	PPB	SMPL		-7470A	07 Aug 2025 14:54:59
U	Q2759-02 - 1	SOLID-DRUMS	-0.0811	-59	PPB	SMPL		-7470A	07 Aug 2025 14:57:17
U	Q2763-04 - 1	TP-2	-0.0661	-8	PPB	SMPL		-7470A	07 Aug 2025 14:59:34
U	Q2773-01 - 1	COMP-1	-0.0617	7	PPB	SMPL		-7470A	07 Aug 2025 15:01:51
U	Q2773-02 - 1	COMP-2	-0.0519	40	PPB	SMPL		-7470A	07 Aug 2025 15:04:06
U	CCV06 - 1	CCV06	4.9349	16922	PPB	SMPL		-7470A	07 Aug 2025 15:06:22
U	CCB06 - 1	CCB06	-0.0407	78	PPB	SMPL		-7470A	07 Aug 2025 15:11:18
U	Q2773-03 - 1	COMP-3	-0.0711	-25	PPB	SMPL		-7470A	07 Aug 2025 15:13:34
U	Q2780-04 - 1	TP-3	-0.0439	67	PPB	SMPL		-7470A	07 Aug 2025 15:15:49
U	Q2780-08 - 1	TP-1	-0.0271	124	PPB	SMPL		-7470A	07 Aug 2025 15:18:04
U	Q2780-08DUP - 1	TP-1DUP	-0.0221	141	PPB	SMPL		-7470A	07 Aug 2025 15:20:20
U	Q2780-08MS - 1	TP-1MS	3.9563	13609	PPB	SMPL		-7470A	07 Aug 2025 15:22:37
U	Q2780-08MSD - 1	TP-1MSD	4.4289	15209	PPB	SMPL		-7470A	07 Aug 2025 15:24:54
U	Q2780-08LX5 - 1		-0.1432	-269	PPB	SMPL		-7470A	07 Aug 2025 15:27:12
U	Q2780-08A - 1		4.0942	14076	PPB	SMPL		-7470A	07 Aug 2025 15:29:31
U	PB169122TB - 1	PB169122TB	0.0131	260	PPB	SMPL		-7470A	07 Aug 2025 15:31:48
U	CCV07 - 1	CCV07	5.0209	17213	PPB	SMPL		-7470A	07 Aug 2025 15:34:05
U	CCB07 - 1	CCB07	-0.0720	-28	PPB	SMPL		-7470A	07 Aug 2025 15:36:20

Reviewed By:jaswal
On:8/10/2025 10:17:35 PM
Inst Id :CV1
LB :LB136741

LB136741
INSTRUMENT ID: CV_1

7470A

Linear



A=	0.0000e+000
B=	2.9539e-004
C=	-6.3720e-002
Rho=	0.9997801
Accept=	Accepted

Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	%D
0.0	0.000	-0.087	-0.087	-80	0.000	-80	0				-
0.2	0.200	0.176	-0.024	811	0.0 %	811					-12
2.5	2.500	2.654	0.154	9201	0.0 %	9201	0				6
5.0	5.000	4.984	-0.016	17089	0.0 %	17089					0
7.5	7.500	7.527	0.027	25698	0.0 %	25698					0
10.0	10.000	9.946	-0.054	33885	0.0 %	33885					-1

Alliance TECHNICAL GROUP

Water Metals Preparation Sheet

PB169142

SOP ID : M3010A-Digestion-17

SDG No : N/A

Matrix : WATER

Pippete ID: ICP A

Balance ID : N/A

Filter paper ID : N/A

pH Strip ID : M6069

Hood ID : #3

Block ID: 1. HOT BLOCK #1 2. N/A

Start Digest Date: 08/06/2025 **Time :** 12:30 **Temp :** 96 °C

End Digest Date: 08/06/2025 **Time :** 15:32 **Temp :** 96 °C

Digestion tube ID: M5595

Block thermometer ID: MET-DIG. #1

Dig Technician Signature: SLG

Supervisor Signature:

Temp : 1. 96°C 2. N/A

Standared Name	MLS USED	STD REF. # FROM LOG
LFS-1	0.25	M6007
LFS-2	0.25	M6015
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Chemical Used	ML/SAMPLE USED	Lot Number
Conc. HNO3	3.00	M6158
1:1 HCL	5.00	MP85156
N/A	N/A	N/A
Conc. HCL	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Extraction Conformance/Non-Conformance Comments:

HOT BLOCK#1 CELL#50 96C

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
8/6/25 15:45	SLG metdio	Metals Lab
	Preparation Group	Analysis Group

Alliance TECHNICAL GROUP

Water Metals Preparation Sheet

PB169142

Lab Sample ID	Client Sample ID	pH	Initial Vol (ml)	Final Vol (ml)	Color Before	Color After	Clarity Before	Clarity After	Comment	Prep Pos
PB169122TB	PB169122TB	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	1
PB169142BL	PBW142	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	2
PB169142BS	LCS142	<2	5	25	Colorless	Colorless	Clear	Clear	M6007,M6016	3
Q2758-02	WASTE	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	4
Q2759-02	SOLID-DRUMS	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	5
Q2763-04	TP-2	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	6
Q2773-01	COMP-1	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	7
Q2773-02	COMP-2	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	8
Q2773-03	COMP-3	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	9
Q2780-04	TP-3	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	10
Q2780-08	TP-1	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	11
Q2780-08MS	TP-1MS	<2	5	25	Colorless	Colorless	Clear	Clear	M6007,M6015	13
Q2780-08MSD	TP-1MSD	<2	5	25	Colorless	Colorless	Clear	Clear	M6007,M6015	14
Q2780-08DUP	TP-1DUP	<2	5	25	Colorless	Colorless	Clear	Clear	N/A	12

Alliance TECHNICAL GROUP

TCLP EXTRACTION LOGPAGE

PB169122

Sample ID	ClientID	TCLP Vessel ID	Sample Wt (g)	Volume Extraction Fluid #1 (mL)	Multi phasic	Phase Miscible	Phases Combined	Final Leachate PH	Metals Leachate Adj. PH	Prep Pos
PB169122TB	LEB122	09	N/A	2000	N/A	N/A	N/A	4.93	1.5	T-1
Q2758-02	WASTE	01	100.02	2000	N/A	N/A	N/A	5.6	1.0	T-1
Q2759-02	SOLID-DRUMS	02	100.01	2000	N/A	N/A	N/A	4.5	1.5	T-1
Q2763-04	TP-2	03	100.03	2000	N/A	N/A	N/A	6.2	1.0	T-1
Q2773-01	COMP-1	04	100.02	2000	N/A	N/A	N/A	3.0	1.5	T-1
Q2773-02	COMP-2	05	100.03	2000	N/A	N/A	N/A	3.5	1.0	T-1
Q2773-03	COMP-3	06	100.02	2000	N/A	N/A	N/A	3.0	1.5	T-1
Q2780-04	TP-3	07	100.03	2000	N/A	N/A	N/A	6.0	1.0	T-1
Q2780-08	TP-1	08	100.02	2000	N/A	N/A	N/A	6.4	1.5	T-1

Alliance TECHNICAL GROUP

Water Mercury Preparation Sheet

PB169163

SOP ID : M7470A-Mercury-20

SDG No : N/A

Matrix : WATER

Pippete ID: HG A

Balance ID : N/A

Filter paper ID : N/A

pH Strip ID : M6069

Hood ID : #1

Block ID: 1. HG HOT BLOCK#3 2. N/A

Start Digest Date: 08/07/2025 **Time :** 12:32 **Temp :** 95 °C

End Digest Date: 08/07/2025 **Time :** 14:35 **Temp :** 95 °C

Digestion tube ID: M5595

Block thermometer ID: HG-DIG#3

Dig Technician Signature:

Supervisor Signature:

Temp : 1. 95°C 2. N/A

Standared Name	MLS USED	STD REF. # FROM LOG
ICV	30mL	MP86680
CCV	30mL	MP86682
CRA	30mL	MP86684
Blank Spike	0.48mL	MP86673
Matrix Spike	0.48mL	MP86673

Chemical Used	ML/SAMPLE USED	Lot Number
HNO3/H2SO4 1:2	2.25mL	MP85892
KMnO4 (5%)	4.5mL	MP85893
K2S2O8 (5%)	2.4mL	MP85894
Hydroxylamine HCL (12%)	1.8mL	MP85895
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

LAB SAMPLE ID	CLIENT SAMPLE ID	Wt(g)/Vol(ml)	Comment
0.0 ppb	S0	30mL	MP86674
0.05 ppb	S0.05	N/A	N/A
0.2 ppb	S0.2	30mL	MP86675
2.5 ppb	S2.5	30mL	MP86676
5.0 ppb	S5.0	30mL	MP86677
7.5 ppb	S7.5	30mL	MP86678
10.0 ppb	S10.0	30mL	MP86679
ICV	ICV	30mL	MP86680
ICB	ICB	30mL	MP86681
CCV	CCV	30mL	MP86682
CCB	CCB	30mL	MP86683
CRI	CRI	30mL	MP86684
CHK STD	CHK STD	30mL	MP86685

Extraction Conformance/Non-Conformance Comments:

N/A

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
8/7/25 14:45	SKS Metals Lab	Metals Lab
	Preparation Group	Analysis Group

Alliance TECHNICAL GROUP

Water Mercury Preparation Sheet

PB169163

Lab Sample ID	Client Sample ID	Initial Vol (ml)	Final Vol (ml)	pH	Comment	Prep Pos
PB169122TB	PB169122TB	3	30	<2	N/A	1-1
PB169149TB	PB169149TB	3	30	<2	N/A	2
PB169163BL	PBW163	30	30	<2	N/A	3
PB169163BS	LCS163	30	30	<2	MP86673	4
Q2758-02	WASTE	3	30	<2	N/A	5
Q2759-02	SOLID-DRUMS	3	30	<2	N/A	6
Q2763-04	TP-2	3	30	<2	N/A	7
Q2773-01	COMP-1	3	30	<2	N/A	8
Q2773-02	COMP-2	3	30	<2	N/A	9
Q2773-03	COMP-3	3	30	<2	N/A	10
Q2780-04	TP-3	3	30	<2	N/A	13
Q2780-08	TP-1	3	30	<2	N/A	14
Q2780-08MS	TP-1MS	3	30	<2	MP86673	16
Q2780-08MSD	TP-1MSD	3	30	<2	MP86673	17
Q2780-08DUP	TP-1DUP	3	30	<2	N/A	15

Alliance TECHNICAL GROUP

TCLP EXTRACTION LOGPAGE

PB169122

Sample ID	ClientID	TCLP Vessel ID	Sample Wt (g)	Volume Extraction Fluid #1 (mL)	Multi phasic	Phase Miscible	Phases Combined	Final Leachate PH	Metals Leachate Adj. PH	Prep Pos
PB169122TB	LEB122	09	N/A	2000	N/A	N/A	N/A	4.93	1.5	T-1
Q2758-02	WASTE	01	100.02	2000	N/A	N/A	N/A	5.6	1.0	T-1
Q2759-02	SOLID-DRUMS	02	100.01	2000	N/A	N/A	N/A	4.5	1.5	T-1
Q2763-04	TP-2	03	100.03	2000	N/A	N/A	N/A	6.2	1.0	T-1
Q2773-01	COMP-1	04	100.02	2000	N/A	N/A	N/A	3.0	1.5	T-1
Q2773-02	COMP-2	05	100.03	2000	N/A	N/A	N/A	3.5	1.0	T-1
Q2773-03	COMP-3	06	100.02	2000	N/A	N/A	N/A	3.0	1.5	T-1
Q2780-04	TP-3	07	100.03	2000	N/A	N/A	N/A	6.0	1.0	T-1
Q2780-08	TP-1	08	100.02	2000	N/A	N/A	N/A	6.4	1.5	T-1

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

Instrument ID: CV1

Daily Analysis Runlog For Sequence/QCBatch ID # LB136741

Review By	MOHAN	Review On	8/8/2025 1:40:33 PM
Supervise By	jaswal	Supervise On	8/10/2025 10:17:35 PM

STD. NAME	STD REF.#
ICAL Standard	MP86673,MP86674,MP86675,MP86676,MP86677,MP86678,MP86679
ICV Standard	MP86680
CCV Standard	MP86682
ICSA Standard	
CRI Standard	MP86684
LCS Standard	
Chk Standard	MP86681,MP86683,MP86684,MP86689

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	08/07/25 14:12		MOHAN	OK
2	S0.2	S0.2	CAL2	08/07/25 14:17		MOHAN	OK
3	S2.5	S2.5	CAL3	08/07/25 14:19		MOHAN	OK
4	S5	S5	CAL4	08/07/25 14:21		MOHAN	OK
5	S7.5	S7.5	CAL5	08/07/25 14:24		MOHAN	OK
6	S10	S10	CAL6	08/07/25 14:26		MOHAN	OK
7	ICV03	ICV03	ICV	08/07/25 14:29		MOHAN	OK
8	ICB03	ICB03	ICB	08/07/25 14:34		MOHAN	OK
9	CCV05	CCV05	CCV	08/07/25 14:36		MOHAN	OK
10	CCB05	CCB05	CCB	08/07/25 14:41		MOHAN	OK
11	CRA	CRA	CRDL	08/07/25 14:43		MOHAN	OK
12	HighStd	HighStd	HIGH STD	08/07/25 14:45		MOHAN	OK
13	ChkStd	ChkStd	SAM	08/07/25 14:48		MOHAN	OK
14	PB169163BL	PB169163BL	MB	08/07/25 14:50		MOHAN	OK
15	PB169163BS	PB169163BS	LCS	08/07/25 14:52		MOHAN	OK
16	Q2758-02	WASTE	SAM	08/07/25 14:54		MOHAN	OK
17	Q2759-02	SOLID-DRUM	SAM	08/07/25 14:57		MOHAN	OK
18	Q2763-04	TP-2	SAM	08/07/25 14:59		MOHAN	OK

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

Instrument ID: CV1

Daily Analysis Runlog For Sequence/QCBatch ID # LB136741

Review By	MOHAN	Review On	8/8/2025 1:40:33 PM
Supervise By	jaswal	Supervise On	8/10/2025 10:17:35 PM

STD. NAME	STD REF.#
ICAL Standard	MP86673,MP86674,MP86675,MP86676,MP86677,MP86678,MP86679
ICV Standard	MP86680
CCV Standard	MP86682
ICSA Standard	
CRI Standard	MP86684
LCS Standard	
Chk Standard	MP86681,MP86683,MP86684,MP86689

19	Q2773-01	COMP-1	SAM	08/07/25 15:01		MOHAN	OK
20	Q2773-02	COMP-2	SAM	08/07/25 15:04		MOHAN	OK
21	CCV06	CCV06	CCV	08/07/25 15:06		MOHAN	OK
22	CCB06	CCB06	CCB	08/07/25 15:11		MOHAN	OK
23	Q2773-03	COMP-3	SAM	08/07/25 15:13		MOHAN	OK
24	Q2780-04	TP-3	SAM	08/07/25 15:15		MOHAN	OK
25	Q2780-08	TP-1	SAM	08/07/25 15:18		MOHAN	OK
26	Q2780-08DUP	TP-1DUP	DUP	08/07/25 15:20		MOHAN	OK
27	Q2780-08MS	TP-1MS	MS	08/07/25 15:22		MOHAN	OK
28	Q2780-08MSD	TP-1MSD	MSD	08/07/25 15:24		MOHAN	OK
29	Q2780-08L	TP-1L	SD	08/07/25 15:27		MOHAN	OK
30	Q2780-08A	TP-1A	PS	08/07/25 15:29		MOHAN	OK
31	PB169122TB	PB169122TB	MB	08/07/25 15:31		MOHAN	OK
32	CCV07	CCV07	CCV	08/07/25 15:34		MOHAN	OK
33	CCB07	CCB07	CCB	08/07/25 15:36		MOHAN	OK

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

Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB136746

Review By	jaswal	Review On	8/8/2025 11:39:02 AM
Supervise By	janvi	Supervise On	8/8/2025 3:37:12 PM

STD. NAME	STD REF.#
ICAL Standard	MP86640,MP86641,MP86642,MP86643,MP86653,MP86656
ICV Standard	MP86645
CCV Standard	MP86646
ICSA Standard	MP86651,MP86652
CRI Standard	MP86656
LCS Standard	
Chk Standard	MP86647,MP86648

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	08/07/25 12:46		Jaswal	OK
2	S1	S1	CAL2	08/07/25 12:51		Jaswal	OK
3	S2	S2	CAL3	08/07/25 12:55		Jaswal	OK
4	S3	S3	CAL4	08/07/25 12:59		Jaswal	OK
5	S4	S4	CAL5	08/07/25 13:03		Jaswal	OK
6	S5	S5	CAL6	08/07/25 13:07		Jaswal	OK
7	ICV01	ICV01	ICV	08/07/25 13:11		Jaswal	OK
8	LLICV01	LLICV01	LLICV	08/07/25 13:21		Jaswal	OK
9	ICB01	ICB01	ICB	08/07/25 13:25		Jaswal	OK
10	CRI01	CRI01	CRDL	08/07/25 13:29		Jaswal	OK
11	ICSA01	ICSA01	ICSA	08/07/25 13:34		Jaswal	OK
12	ICSAB01	ICSAB01	ICSAB	08/07/25 13:39		Jaswal	OK
13	ICSADL	ICSADL	ICSA	08/07/25 13:43		Jaswal	OK
14	ICSABDL	ICSABDL	ICSAB	08/07/25 13:48		Jaswal	OK
15	CCV01	CCV01	CCV	08/07/25 13:58		Jaswal	OK
16	CCB01	CCB01	CCB	08/07/25 14:02		Jaswal	OK
17	Q2772-01	500-3B-SOIL	SAM	08/07/25 14:07		Jaswal	OK
18	Q2774-03	256	SAM	08/07/25 14:11		Jaswal	OK

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

Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB136746

Review By	jaswal	Review On	8/8/2025 11:39:02 AM
Supervise By	janvi	Supervise On	8/8/2025 3:37:12 PM

STD. NAME	STD REF.#
ICAL Standard	MP86640,MP86641,MP86642,MP86643,MP86653,MP86656
ICV Standard	MP86645
CCV Standard	MP86646
ICSA Standard	MP86651,MP86652
CRI Standard	MP86656
LCS Standard	
Chk Standard	MP86647,MP86648

19	Q2774-05	R5	SAM	08/07/25 14:15		Jaswal	OK
20	Q2774-07	RT3826	SAM	08/07/25 14:19		Jaswal	OK
21	Q2774-07DUP	RT3826DUP	DUP	08/07/25 14:23		Jaswal	OK
22	Q2774-07L	RT3826L	SD	08/07/25 14:27		Jaswal	OK
23	Q2774-07MS	RT3826MS	MS	08/07/25 14:31		Jaswal	OK
24	Q2774-07MSD	RT3826MSD	MSD	08/07/25 14:36		Jaswal	OK
25	Q2774-07A	RT3826A	PS	08/07/25 14:40	0.1ml m6004,m6017-10ml sample	Jaswal	OK
26	Q2774-09	248	SAM	08/07/25 14:44		Jaswal	OK
27	CCV02	CCV02	CCV	08/07/25 14:48		Jaswal	OK
28	CCB02	CCB02	CCB	08/07/25 14:52		Jaswal	OK
29	Q2774-11	224	SAM	08/07/25 14:56		Jaswal	OK
30	Q2774-13	254	SAM	08/07/25 15:00		Jaswal	OK
31	Q2780-01	TP-3	SAM	08/07/25 15:05		Jaswal	OK
32	Q2780-05	TP-1	SAM	08/07/25 15:09		Jaswal	OK
33	Q2783-01	RT5414	SAM	08/07/25 15:13		Jaswal	OK
34	Q2784-01	EO-01-080625	SAM	08/07/25 15:17		Jaswal	OK
35	Q2786-01	PL-01-08062025	SAM	08/07/25 15:21		Jaswal	OK
36	Q2786-04	PL-03-08062025	SAM	08/07/25 15:25		Jaswal	OK
37	PB169143BL	PB169143BL	MB	08/07/25 15:29		Jaswal	OK

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

Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB136746

Review By	jaswal	Review On	8/8/2025 11:39:02 AM
Supervise By	janvi	Supervise On	8/8/2025 3:37:12 PM

STD. NAME	STD REF.#
ICAL Standard	MP86640,MP86641,MP86642,MP86643,MP86653,MP86656
ICV Standard	MP86645
CCV Standard	MP86646
ICSA Standard	MP86651,MP86652
CRI Standard	MP86656
LCS Standard	
Chk Standard	MP86647,MP86648

38	PB169143BS	PB169143BS	LCS	08/07/25 15:33		Jaswal	OK
39	CCV03	CCV03	CCV	08/07/25 15:45		Jaswal	OK
40	CCB03	CCB03	CCB	08/07/25 15:49		Jaswal	OK
41	PB169142BL	PB169142BL	MB	08/07/25 15:57		Jaswal	OK
42	PB169142BS	PB169142BS	LCS	08/07/25 16:02		Jaswal	OK
43	PB169122TB	PB169122TB	MB	08/07/25 16:06		Jaswal	OK
44	Q2758-02	WASTE	SAM	08/07/25 16:10		Jaswal	OK
45	Q2759-02	SOLID-DRUM	SAM	08/07/25 16:14		Jaswal	OK
46	Q2763-04	TP-2	SAM	08/07/25 16:19		Jaswal	OK
47	Q2773-01	COMP-1	SAM	08/07/25 16:23		Jaswal	OK
48	Q2773-02	COMP-2	SAM	08/07/25 16:27		Jaswal	OK
49	Q2773-03	COMP-3	SAM	08/07/25 16:32		Jaswal	OK
50	Q2780-04	TP-3	SAM	08/07/25 16:36		Jaswal	OK
51	CCV04	CCV04	CCV	08/07/25 16:56		Jaswal	OK
52	CCB04	CCB04	CCB	08/07/25 17:00		Jaswal	OK
53	Q2780-08	TP-1	SAM	08/07/25 17:04		Jaswal	OK
54	Q2780-08DUP	TP-1DUP	DUP	08/07/25 17:09		Jaswal	OK
55	Q2780-08L	TP-1L	SD	08/07/25 17:13		Jaswal	OK
56	Q2780-08MS	TP-1MS	MS	08/07/25 17:17		Jaswal	OK
57	Q2780-08MSD	TP-1MSD	MSD	08/07/25 17:21		Jaswal	OK

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

Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB136746

Review By	jaswal	Review On	8/8/2025 11:39:02 AM
Supervise By	janvi	Supervise On	8/8/2025 3:37:12 PM

STD. NAME	STD REF.#
ICAL Standard	MP86640,MP86641,MP86642,MP86643,MP86653,MP86656
ICV Standard	MP86645
CCV Standard	MP86646
ICSA Standard	MP86651,MP86652
CRI Standard	MP86656
LCS Standard	
Chk Standard	MP86647,MP86648

58	Q2780-08A	TP-1A	PS	08/07/25 17:25	0.1ml m6004,m6017-10ml sample	Jaswal	OK
59	Q2759-01DL	SOLID-DRUMDL	SAM	08/07/25 17:30	5x for Zn	Jaswal	Confirms
60	CCV05	CCV05	CCV	08/07/25 17:38		Jaswal	OK
61	CCB05	CCB05	CCB	08/07/25 17:42		Jaswal	OK

Alliance TECHNICAL GROUP

TCLP EXTRACTION LOGPAGE

PB169122

SOP ID : M1311-TCLP-16

SDG No : N/A

Weigh By : JP

Balance ID : WC SC-7

pH Meter ID : WC PH METER-1

Extraction By : JP

Filter By : JP

Pippete ID : WC

Tumbler ID : T-1

TCLP Filter ID : 115525

Start Prep Date : 08/05/2025 **Time :** 15:30

End Prep Date : 08/06/2025 **Time :** 09:25

Combination Ratio : 20

ZHE Cleaning Batch : ~~N/A~~ 18

Initial Room Temperature: 22 °C

Final Room Temperature: 21 °C

TCLP Technician Signature : JP

Supervisor By : 12

Standared Name	MLS USED	STD REF. # FROM LOG
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

Chemical Used	ML/SAMPLE U	Lot Number
TCLP-FLUID-1	N/A	WP112804
HCL-TCLP,1N	N/A	WP112797
HNO3-TCLP,1N	N/A	WP112799
pH Strips	N/A	W1931,W1934,W3171,W3172
pH Strips	W1940,W1941,W1942	W3166,W1938,W1939,
1 Liter Amber	N/A	90924-08
120ml Plastic bottle	N/A	2738
1:1 HNO3	N/A	MP84041

Extraction Conformance/Non-Conformance Comments:

TUMBLER T-1 checked,30 rpm. Particle size reduction is not required. Matrix spikes are added after fiftration in not required. Q2780-08 IS USED FOR MS-MSD.

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
08/06/25 10:30	JP TCLP Room	SHB. RJ / ETL
	Preparation Group	Analysis Group MA DJG.

Alliance TECHNICAL GROUP

TCLP EXTRACTION LOGPAGE

PB169122

Sample ID	ClientID	TCLP Vessel ID	Sample Wt (g)	Volume Extraction Fluid #1 (mL)	Multi phasic	Phase Miscible	Phases Combined	Final Leachate PH	Metals Leachate Adj. PH	Prep Pos
PB169122TB	LEB122	09	N/A	2000	N/A	N/A	N/A	4.93	1.5	T-1
Q2758-02	WASTE	01	100.02	2000	N/A	N/A	N/A	5.6	1.0	T-1
Q2759-02	SOLID-DRUMS	02	100.01	2000	N/A	N/A	N/A	4.5	1.5	T-1
Q2763-04	TP-2	03	100.03	2000	N/A	N/A	N/A	6.2	1.0	T-1
Q2773-01	COMP-1	04	100.02	2000	N/A	N/A	N/A	3.0	1.5	T-1
Q2773-02	COMP-2	05	100.03	2000	N/A	N/A	N/A	3.5	1.0	T-1
Q2773-03	COMP-3	06	100.02	2000	N/A	N/A	N/A	3.0	1.5	T-1
Q2780-04	TP-3	07	100.03	2000	N/A	N/A	N/A	6.0	1.0	T-1
Q2780-08	TP-1	08	100.02	2000	N/A	N/A	N/A	6.4	1.5	T-1

SampleID	ClientID	Sample Weight (g)	Filter Weight (g)	Filtrate (mL)	Filter + Solid (After 100°C)	% solids	% Dry Solids
PB169122TB	LEB122	N/A	N/A	N/A	N/A	N/A	N/A
Q2758-02	WASTE	N/A	N/A	N/A	N/A	100	N/A
Q2759-02	SOLID-DRUMS	N/A	N/A	N/A	N/A	100	N/A
Q2763-04	TP-2	N/A	N/A	N/A	N/A	100	N/A
Q2773-01	COMP-1	N/A	N/A	N/A	N/A	100	N/A
Q2773-02	COMP-2	N/A	N/A	N/A	N/A	100	N/A
Q2773-03	COMP-3	N/A	N/A	N/A	N/A	100	N/A
Q2780-04	TP-3	N/A	N/A	N/A	N/A	100	N/A
Q2780-08	TP-1	N/A	N/A	N/A	N/A	100	N/A

Alliance TECHNICAL GROUP

TCLP Fluid Determination

PB169122

Hot Block ID : WC S-1 / WC S-2

Thermometer ID : FLASHPOINT

SampleID	ClientID	Sample Weight (g)	Volume DI Water (mL)	PH after 5 min stir	PH after 10 min stir	Extraction Fluid 1 or 2	pH Extraction Fluid
PB169122TB	LEB122	N/A	N/A	N/A	N/A	#1	4.93
Q2758-02	WASTE	5.02	96.5	7.6	2.5	#1	4.93
Q2759-02	SOLID-DRUMS	5.03	96.5	7.0	2.5	#1	4.93
Q2763-04	TP-2	5.02	96.5	8.6	3.5	#1	4.93
Q2773-01	COMP-1	5.00	96.5	5.8	2.0	#1	4.93
Q2773-02	COMP-2	5.02	96.5	5.6	2.0	#1	4.93
Q2773-03	COMP-3	5.01	96.5	5.5	1.5	#1	4.93
Q2780-04	TP-3	5.05	96.5	8.4	3.5	#1	4.93
Q2780-08	TP-1	5.04	96.5	8.6	3.5	#1	4.93

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

Prep Standard - Chemical Standard Summary

Order ID : Q2758

Test : TCLP ICP Metals,TCLP Mercury

Prepbatch ID : PB169142,PB169163,

Sequence ID/Qc Batch ID: LB136741,LB136746,LB136746,

Standard ID :
MP85156,MP85892,MP85893,MP85894,MP85895,MP86640,MP86641,MP86642,MP86643,MP86645,MP86646,MP86647,MP86648,MP86651,MP86652,MP86653,MP86655,MP86656,MP86673,MP86674,MP86675,MP86676,MP86677,MP86678,MP86679,MP86680,MP86681,MP86682,MP86683,MP86684,MP86689,

Chemical ID :
M4371,M4465,M4916,M5062,M5467,M5658,M5697,M5748,M5798,M5799,M5800,M5801,M5805,M5814,M5816,M5820,M5884,M5962,M5969,M5970,M5979,M5985,M5998,M6007,M6015,M6021,M6023,M6027,M6028,M6030,M6032,M6041,M6077,M6086,M6128,M6137,M6140,M6142,M6144,M6145,M6146,M6151,M6158,M6159,M6162,M6163,M6164,M6165,M6171,M6174,M6176,M6177,M6178,M6179,M6182,M6184,W3112,

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
170	1:1HCL	MP85156	04/07/2025	09/06/2025	Kareem Khairalla	None	None	Sarabjit Jaswal 04/07/2025

FROM 1250.00000ml of M6151 + 1250.00000ml of W3112 = Final Quantity: 2500.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3965	2:1 H2SO4 : HNO3	MP85892	06/05/2025	11/27/2025	Mohan Bera	None	None	Sarabjit Jaswal 06/14/2025

FROM 1600.00000ml of M6041 + 800.00000ml of M6162 = Final Quantity: 3200.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
65	POTASSIUM PERMANGANATE SOLUTION 5 %	MP85893	06/05/2025	12/05/2025	Mohan Bera	METALS_SCALE_3 (M SC-3)	None	Sarabjit Jaswal 06/14/2025

FROM 100.00000gram of M4916 + 2000.00000ml of W3112 = Final Quantity: 2000.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
66	POTASSIUM PERSULFATE SOLUTION 5 %	MP85894	06/05/2025	08/31/2025	Mohan Bera	METALS_SCALE_3 (M SC-3)	None	Sarabjit Jaswal 06/14/2025

FROM 100.00000ml of M4465 + 2000.00000ml of W3112 = Final Quantity: 2000.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
67	SODIUM CHLORIDE - HYDROXYL- CHLORIDE SOLUTION	MP85895	06/05/2025	08/08/2025	Mohan Bera	METALS_SCALE_3 (M SC-3)	None	Sarabjit Jaswal 06/14/2025

FROM 2000.00000ml of W3112 + 240.00000gram of M4371 + 240.00000gram of M5884 = Final Quantity: 2000.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
902	ICP AES CAL BLK (SO/ICB/CCB)	MP86640	08/06/2025	08/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 08/07/2025

FROM 125.00000ml of M6151 + 2350.00000ml of W3112 + 25.00000ml of M6162 = Final Quantity: 2500.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
907	ICP AES STD S (S5)	MP86641	08/06/2025	08/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 08/07/2025

FROM 5.00000ml of M5467 + 5.00000ml of M5820 + 5.00000ml of M5969 + 5.00000ml of M5970 + 5.00000ml of M5998 + 5.00000ml of M6077 + 5.00000ml of M6146 + 5.00000ml of M6174 + 5.00000ml of M6176 + 455.00000ml of MP86640 = Final Quantity: 500.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
910	ICP AES STD S4	MP86642	08/06/2025	08/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 08/07/2025

FROM 50.00000ml of MP86640 + 50.00000ml of MP86641 = Final Quantity: 100.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
909	ICP AES STD S3	MP86643	08/06/2025	08/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 08/07/2025

FROM 25.00000ml of MP86641 + 75.00000ml of MP86640 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
4163	NEW ICV-060925	MP86645	08/06/2025	08/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 08/07/2025

FROM 0.40000ml of M6163 + 0.40000ml of M6164 + 0.40000ml of M6165 + 48.80000ml of MP86640 = Final Quantity: 50.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
911	ICP AES CCV SOLN	MP86646	08/06/2025	08/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 08/07/2025

FROM 50.00000ml of MP86640 + 50.00000ml of MP86641 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
919	ICP AES INTERNAL STD	MP86647	08/06/2025	08/27/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 08/07/2025

FROM 1.00000ml of M6179 + 10.00000ml of M5985 + 1969.00000ml of W3112 + 20.00000ml of M6162 = Final Quantity: 2000.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
903	ICP AES RINSE SOLN	MP86648	08/06/2025	08/27/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 08/07/2025

FROM 200.00000ml of M6162 + 9800.00000ml of W3112 = Final Quantity: 10000.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
904	ICP AES ICSA SOLN	MP86651	08/06/2025	08/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 08/07/2025

FROM 5.00000ml of M6182 + 45.00000ml of MP86640 = Final Quantity: 50.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3494	ICP AES ICSAB SOLN-1	MP86652	08/06/2025	08/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 08/07/2025

FROM 5.00000ml of M6182 + 5.00000ml of M6184 + 40.00000ml of MP86640 = Final Quantity: 50.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3913	ICP AES STD S2	MP86653	08/06/2025	08/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 08/07/2025

FROM 4.00000ml of MP86641 + 46.00000ml of MP86640 = Final Quantity: 50.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
2950	ICP AES S1/CRI STOCK STD	MP86655	08/06/2025	08/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 08/07/2025

FROM 0.00000ml of M5748 + 0.00000ml of M5805 + 0.03000ml of M5798 + 0.03000ml of M6028 + 0.05000ml of M5658 + 0.05000ml of M6030 + 0.05000ml of M6140 + 0.05000ml of M6159 + 0.06000ml of M6177 + 0.10000ml of M5697 + 0.10000ml of M5801 + 0.10000ml of M5816 + 0.10000ml of M5820 + 0.10000ml of M5962 + 0.10000ml of M5970 + 0.10000ml of M6128 + 0.10000ml of M6176 + 0.15000ml of M5800 + 0.20000ml of M5799 + 0.20000ml of M5979 + 0.20000ml of M6021 + 0.20000ml of M6023 + 0.20000ml of M6027 + 0.20000ml of M6145 + 0.25000ml of M5467 + 0.25000ml of M6146 + 0.50000ml of M5814 + 0.50000ml of M6032 + 1.00000ml of M6086 + 1.00000ml of M6142 + 1.00000ml of M6144 + 1.00000ml of M6171 + 1.00000ml of M6178 + 2.00000ml of M6137 + 89.03000ml of MP86640 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
2951	ICP AES S1/CRI WORK STD	MP86656	08/06/2025	08/18/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 08/07/2025

FROM 1.00000ml of MP86655 + 49.00000ml of MP86640 = Final Quantity: 50.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
871	MERCURY INTERMEDIATE B 250PPB WORKING STD.	MP86673	08/07/2025	08/08/2025	Mohan Bera	None	None	Sarabjit Jaswal 08/11/2025

FROM 1.00000ml of M6162 + 2.50000ml of M5062 + 96.50000ml of W3112 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1340	Hg 0.00 PPB STD	MP86674	08/07/2025	08/08/2025	Mohan Bera	None	None	Sarabjit Jaswal 08/11/2025

FROM 2.50000ml of M6162 + 247.50000ml of W3112 = Final Quantity: 250.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1341	Hg 0.2 PPB STD	MP86675	08/07/2025	08/08/2025	Mohan Bera	None	None	Sarabjit Jaswal 08/11/2025

FROM 2.50000ml of M6162 + 247.30000ml of W3112 + 0.20000ml of MP86673 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1342	Hg 2.5 PPB STD	MP86676	08/07/2025	08/08/2025	Mohan Bera	None	None	Sarabjit Jaswal 08/11/2025

FROM 2.50000ml of M6162 + 245.00000ml of W3112 + 2.50000ml of MP86673 = Final Quantity: 250.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1343	Hg 5.0 PPB STD	MP86677	08/07/2025	08/08/2025	Mohan Bera	None	None	Sarabjit Jaswal 08/11/2025

FROM 2.50000ml of M6162 + 242.50000ml of W3112 + 5.00000ml of MP86673 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1344	Hg 7.5 PPB STD	MP86678	08/07/2025	08/08/2025	Mohan Bera	None	None	Sarabjit Jaswal 08/11/2025

FROM 2.50000ml of M6162 + 240.00000ml of W3112 + 7.50000ml of MP86673 = Final Quantity: 250.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1345	Hg 10.0 PPB STD	MP86679	08/07/2025	08/08/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 08/11/2025

FROM 2.50000ml of M6162 + 237.50000ml of W3112 + 10.00000ml of MP86673 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1346	Hg ICV SOLUTION	MP86680	08/07/2025	08/08/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 08/11/2025

FROM 2.50000ml of M6162 + 245.00000ml of W3112 = Final Quantity: 250.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1351	ICB (Hg 0.00 PPB SOLUTION)	MP86681	08/07/2025	08/08/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 08/11/2025

FROM 2.50000ml of M6162 + 247.50000ml of W3112 = Final Quantity: 250.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1358	CCV (Hg 5.0 PPB SOLUTION)	MP86682	08/07/2025	08/08/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 08/11/2025

FROM 485.00000ml of W3112 + 5.00000ml of M6162 + 10.00000ml of MP86673 = Final Quantity: 500.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1352	CCB (Hg 0.00 PPB SOLUTION)	MP86683	08/07/2025	08/08/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 08/11/2025

FROM 495.00000ml of W3112 + 5.00000ml of M6162 = Final Quantity: 500.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1349	CRA/CRI (Hg 0.2 PPB SOLUTION)	MP86684	08/07/2025	08/08/2025	Mohan Bera	None	METALS_PIPETTE_5 (HGA)	Sarabjit Jaswal 08/11/2025

FROM 2.50000ml of M6162 + 247.30000ml of W3112 + 0.20000ml of MP86673 = Final Quantity: 250.000 ml

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

Metals STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
104	5% RINSING HCL	MP86689	08/07/2025	08/17/2025	Mohan Bera	None	None	Sarabjit Jaswal 08/11/2025

FROM 100.00000ml of M6151 + 1900.00000ml of W3112 = Final Quantity: 2000.000 ml

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

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-2196-01 / Hydroxylamine Hydrochloride, Crystal (cs/4x500g)	0000215387	06/25/2025	07/01/2019 / RICHARD	06/07/2019 / RICHARD	M4371

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-3238-05 / Potassium Persulfate (2.5kg)	0000234156	08/06/2025	07/23/2019 /	07/25/2019 / manojkumar	M4465

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-3227-05 / Potassium Permanganate (2.5kg)	210800	03/31/2026	11/30/2022 / mohan	07/28/2021 / mohan	M4916

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	MSHG-10PPM / MERCURY HCl 125mL 10ug/mL	S2-HG709270	09/22/2026	05/28/2022 / mohan	01/27/2022 / mohan	M5062

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.	58024 / Chromium, Cr, 500 ml, 1000 PPM	060523	06/05/2026	08/28/2023 / jaswal	08/25/2023 / jaswal	M5658

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

CHEMICAL RECEIPT LOG BOOK

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

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

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

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58120 / Ca, 10000 PPM, 500 ml	122223	12/22/2026	04/17/2025 / Janvi	01/03/2024 / jaswal	M5805

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.	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.	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 #
Seidler Chemical	BA-3624-05 / Sodium Chloride, Crystal (cs/4x2.5kg)	0000281938	07/06/2026	04/30/2024 / mohan	04/25/2024 / mohan	M5884

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

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

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57016 / S, 1000 PPM, 125 ml	122923	03/31/2026	03/31/2025 / kareem	06/11/2024 / Jaswal	M5969

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	CGTI1-1 / TITANIUM 125mL 1000ug/mL	T2-TI719972	08/05/2026	08/06/2025 / Janvi	02/22/2024 / Jaswal	M5979

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	U2-IN729349	02/21/2028	10/08/2024 / Jaswal	06/14/2024 / Jaswal	M5985

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-MEB727800	07/30/2026	07/30/2025 / Janvi	02/22/2024 / kareem	M5998

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	WW-LFS-1 / Laboratory Fortified Stock Solution 1, 125 ml	T2-MEB723367	05/27/2026	05/27/2025 / Janvi	05/14/2024 / Jaswal	M6007

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

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	WW-LFS-2 / Laboratory Fortified Stock Solution 2, 125 ml	U2-MEB731108	03/17/2028	06/19/2025 / MOHAN	05/14/2024 / Jaswal	M6015

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 / Tl, 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.	57028 / Ni, 1000 PPM, 125 ml	062024	06/20/2027	06/04/2025 / Janvi	08/05/2024 / Jaswal	M6027

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	08/05/2024 / 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

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

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57056 / Ba, 1000 PPM, 125 ml	010924	01/09/2027	01/14/2025 / Jaswal	08/05/2024 / Jaswal	M6032

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	Z9651Q / CHEM-CLP-4/.25L	V2-MEB746762	09/06/2029	01/23/2025 / kareem	09/19/2024 / kareem	M6077

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58120 / Calcium, 500 ml, 10000 PPM	082324	08/23/2027	03/06/2025 / JANVI	10/14/2024 / jaswal	M6086

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	101124	10/11/2027	01/13/2025 / kareem	01/13/2025 / kareem	M6128

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGSI1-1 / SILICON 125mL 1000ug/mL	V2-SI744713	07/10/2029	01/14/2025 / Jaswal	10/03/2024 / Jaswal	M6137

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

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58126 / Fe, 10000 PPM, 500 ml	011025	01/10/2028	06/25/2025 / Janvi	01/13/2025 / Jaswal	M6140

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	103024	10/30/2027	05/06/2025 / JANVI	01/13/2025 / Jaswal	M6142

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	072424	07/24/2027	01/23/2025 / kareem	01/13/2025 / Jaswal	M6144

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	121724	12/17/2027	02/04/2025 /	01/13/2025 / Jaswal	M6145

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	071724	07/17/2027	01/31/2025 / kareem	10/18/2024 / kareem	M6146

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L)	22G2862015	08/17/2025	02/18/2025 / Sagar	01/15/2025 / Sagar	M6151

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

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L)	24D1062002	09/09/2025	03/10/2025 / Eman	02/02/2025 / Sagar	M6158

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	011325	03/18/2026	03/18/2025 / kareem	02/09/2025 / kareem	M6159

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)	24H0162012	11/27/2025	05/27/2025 / Sagar	04/27/2025 / Sagar	M6162

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	QCP-CICV-1-125ML / EPA CLP ICP Verification Standard1	V2-MEB744107	06/08/2026	06/09/2025 / jaswal	06/06/2025 / jaswal	M6163

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	QCP-CICV-2-125ML / EPA CLP ICP Verification Standard2	U2-MEB733713	06/08/2026	06/09/2025 / jaswal	06/09/2025 / jaswal	M6164

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	QCP-CICV-3-125ML / EPA CLP ICP Verification Standard3	V2-MEB749572	06/08/2026	06/09/2025 / jaswal	06/09/2025 / jaswal	M6165

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

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58112 / Mg, 10000 PPM, 500 ml	011525	01/15/2028	07/15/2025 /	02/13/2025 / Janvi	M6171

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	V2-MEB742428	07/31/2026	07/31/2025 / Janvi	05/05/2025 / Janvi	M6174

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	092724	09/27/2027	08/06/2025 / Janvi	08/06/2025 / Janvi	M6176

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	/ Lead (Pb) 1000PPM	031525	03/15/2028	08/06/2025 / Janvi	08/06/2025 / Janvi	M6177

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	080528	08/05/2028	08/06/2025 / Janvi	08/06/2025 / Janvi	M6178

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	08/05/2026	08/06/2025 / Janvi	06/02/2024 / Janvi	M6179

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

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	PART A / ICSA (ICP) STOCK SOLN	ICSA-1211	02/05/2026	08/06/2025 / Janvi	03/06/2024 / Janvi	M6182

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	02/05/2026	08/06/2025 / Janvi	03/06/2024 / Janvi	M6184

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

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M6032

R: 8/5/24

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

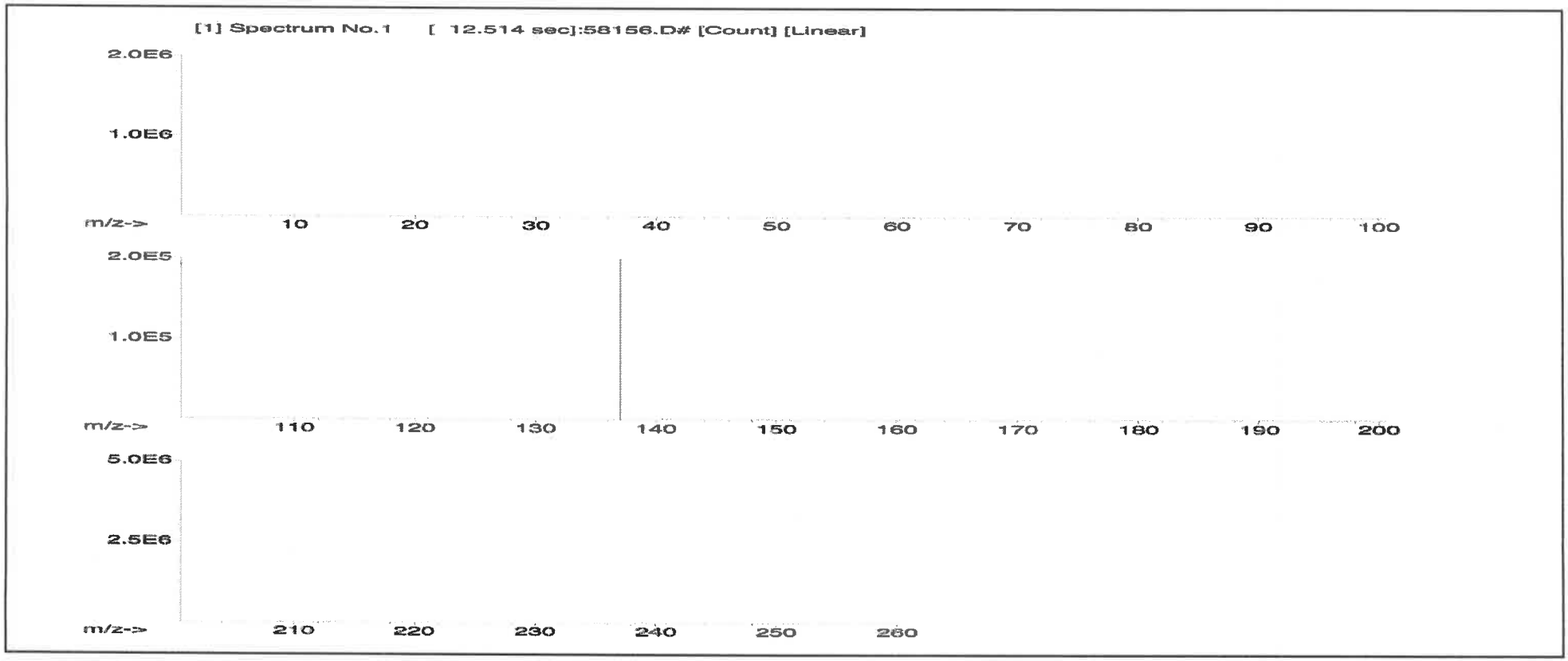
CERTIFIED WEIGHT REPORT:

Part Number:	**57056**		**Lot #**		
Lot Number:	**010924**	**Solvent:**	24002546	Nitric Acid	
Description:	**Barium (Ba)**				
		2%	40.0 (mL)	Nitric Acid	
Expiration Date:	010927				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	2000.02	0.058	Flask Uncertainty		

Giovanni Esposito

Formulated By:	Giovanni Esposito	010924
Reviewed By:	Pedro L. Rentas	010924

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)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Barium nitrate (Ba)	IN023	BAD022019A1	1000	99.999	0.10	52.3	3.82417	3.82441	**1000.1**	**2.0**	10022-31-8	0.5 mg/m3	orl-rat 355 mg/kg	3104a



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	T	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 certifed (+/-) 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).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

R: 01/03/24 M5804, M5805

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number: 58120
Lot Number: 122223
Description: Calcium (Ca)

Expiration Date: 122226
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 4000.0 0.06 Flask Uncertainty

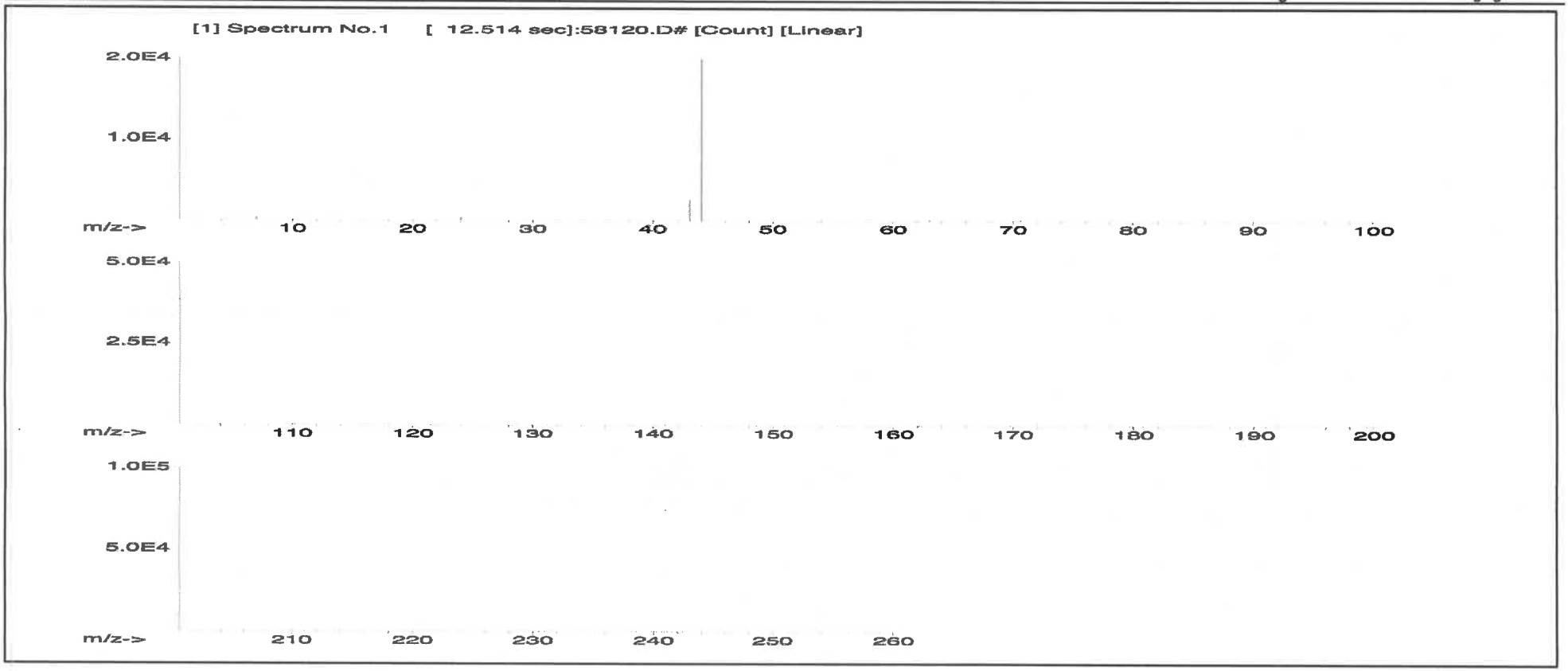
		Lot #	
Solvent:	24002546	Nitric Acid	
2%	80.0 (mL)	Nitric Acid	

5E-05 Balance Uncertainty

Giovanni Esposito

Formulated By:	Giovanni Esposito	122223
Reviewed By:	Pedro L. Rentas	122223

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)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Calcium carbonate (Ca)	IN014	CAD03202383	10000	99.999	0.10	39.9	100.2525	100.2670	**10001.4**	**20.0**	471-34-1	5 mg/m3	orl-rat >2000mg/kg	3109a



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	T	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	30	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:

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 certifed (+/-) 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).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

Revd 10/14/2024 M6085/M6086/M6087

CERTIFIED WEIGHT REPORT:

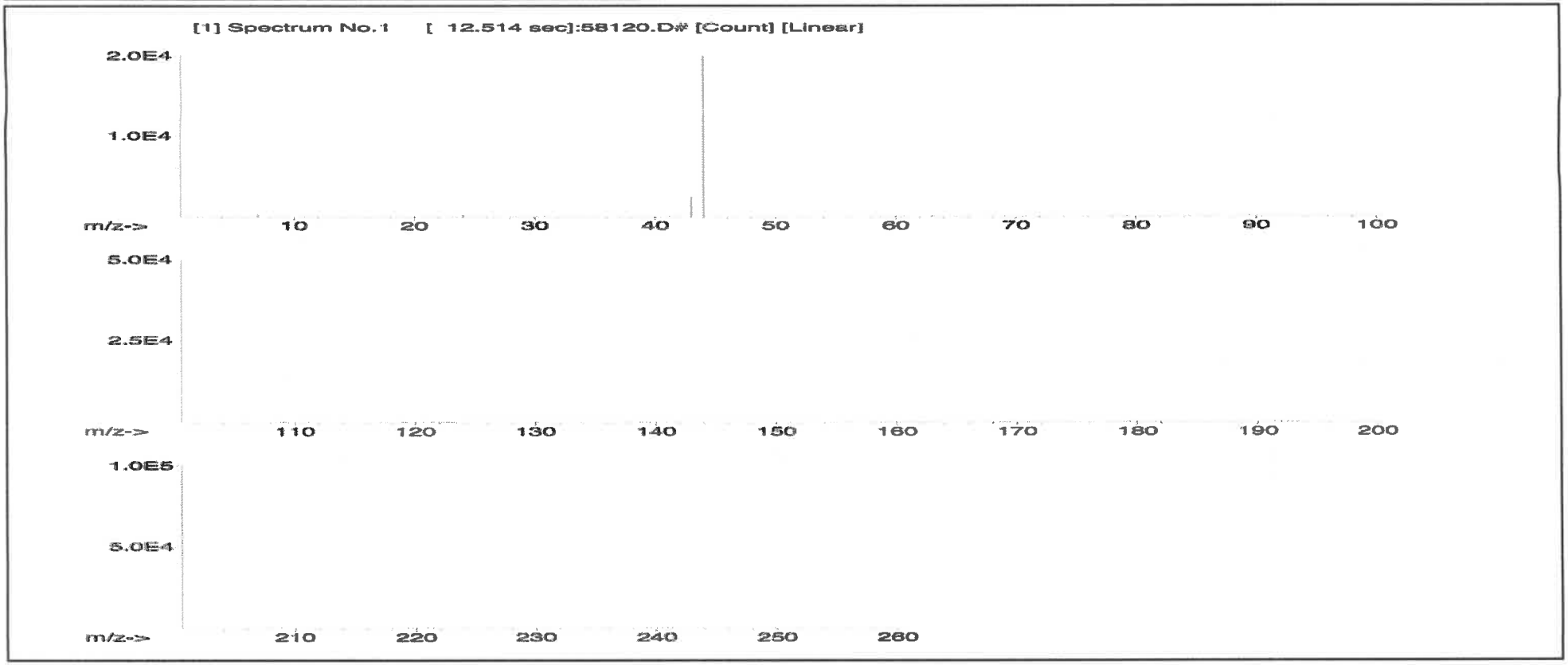
Part Number:	**58120**		**Solvent:**	24002546	Nitric Acid
Lot Number:	**082324**				
Description:	**Calcium (Ca)**		2%	80.0	Nitric Acid
Expiration Date:	082327			(mL)	
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**10000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	4000.1	0.15	Flask Uncertainty		

Lot #

Giovanni Esposito

Formulated By:	Giovanni Esposito	082324
Reviewed By:	Pedro L. Rentas	082324

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)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Calcium carbonate (Ca)	IN014	CAD03203B3	10000	99.999	0.10	39.9	100.2537	100.2656	**10001.2**	**20.0**	471-34-1	5 mg/m3	ori-rat >2000mg/kg	3109a



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	T	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	30	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:

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 certifed (+/-) 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).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

R 8/5/24

M6028

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

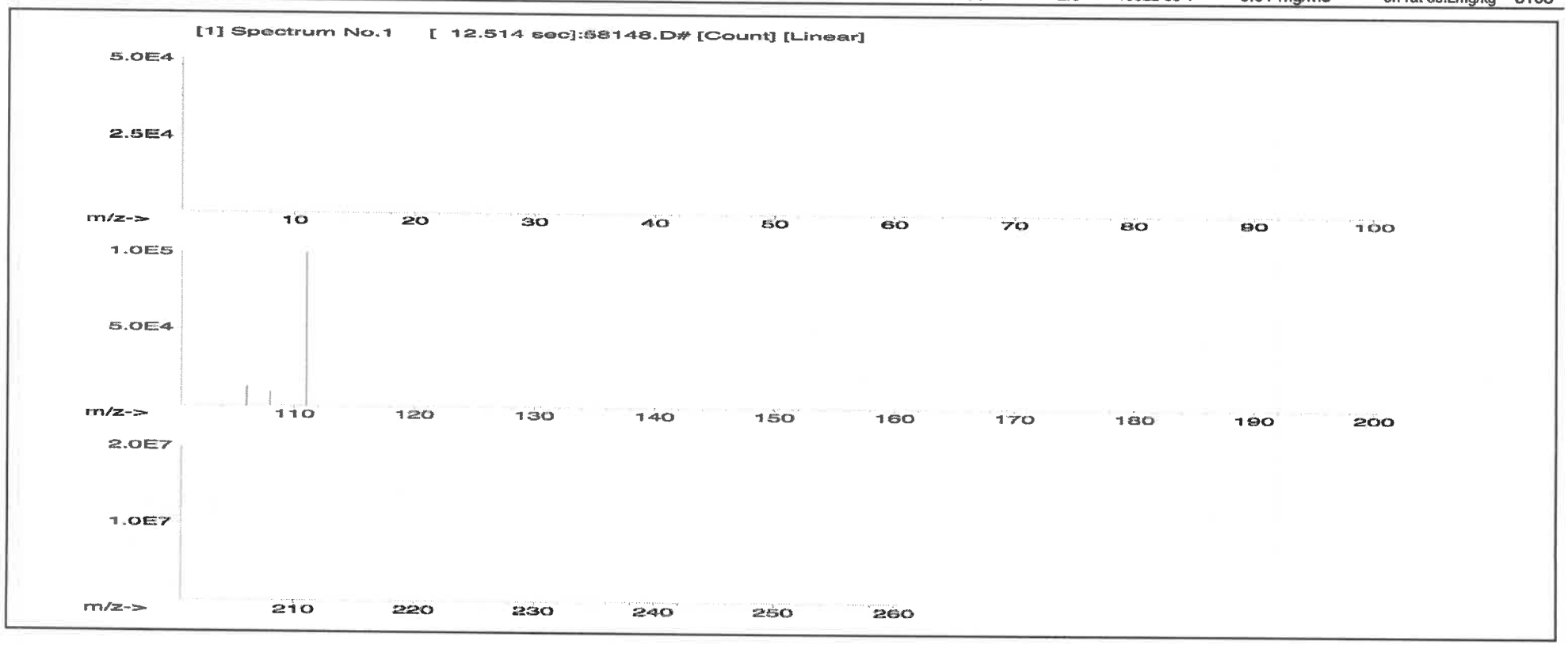
CERTIFIED WEIGHT REPORT:

Part Number:	**57048**		**Lot #**		
Lot Number:	**070124**	**Solvent:**	24002546	Nitric Acid	
Description:	**Cadmium (Cd)**	2%	40.0 (mL)	Nitric Acid	
Expiration Date:	070127				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	2000.07	0.100	Flask Uncertainty		

Aleah O'Brady

Formulated By:	Aleah O'Brady	070124
Reviewed By:	Pedro L. Rentas	070124

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)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Cadmium nitrate tetrahydrate (Cd)	IN024	CDM092021A1	1000	99.999	0.10	36.5	5.4797	5.4804	**1000.1**	**2.0**	10022-68-1	0.01 mg/m3	orl-rat 60.2mg/kg	3108



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

Trace Metals Verification by ICP-MS (µg/mL)																	
Al	<0.02	Cd	T	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	<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:

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 certifed (+/-) 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).

INORGANIC VENTURES™

Refine your results. Redefine your industry.

Certificate of Analysis

RD:05/14/2024

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).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	WW-LFS-1
Lot Number:	T2-MEB723367
Matrix:	5% (v/v) HNO3

Value / Analyte(s):	1 000 µg/mL ea: Potassium,	
	600 µg/mL ea: Phosphorus,	
	300 µg/mL ea: Sodium,	Iron,
	200 µg/mL ea: Magnesium, Cerium, Thallium,	Aluminum, Selenium,
	100 µg/mL ea: Lead,	Calcium,
	80 µg/mL ea: Arsenic,	
	70 µg/mL ea: Mercury,	
	50 µg/mL ea: Nickel,	
	40 µg/mL ea: Chromium,	
	30 µg/mL ea: Copper, Vanadium,	Boron,
	20 µg/mL ea: Zinc, Barium, Cadmium, Manganese,	Strontium, Beryllium, Cobalt, Lithium,
	7.5 µg/mL ea: Silver	

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	200.0 ± 0.7 µg/mL	Arsenic, As	80.0 ± 0.7 µg/mL
Barium, Ba	20.00 ± 0.09 µg/mL	Beryllium, Be	20.00 ± 0.13 µg/mL
Boron, B	30.00 ± 0.18 µg/mL	Cadmium, Cd	20.00 ± 0.09 µg/mL
Calcium, Ca	100.0 ± 0.4 µg/mL	Cerium, Ce	200.0 ± 0.8 µg/mL
Chromium, Cr	40.00 ± 0.30 µg/mL	Cobalt, Co	20.00 ± 0.10 µg/mL
Copper, Cu	30.00 ± 0.13 µg/mL	Iron, Fe	300.0 ± 1.3 µg/mL
Lead, Pb	100.0 ± 0.4 µg/mL	Lithium, Li	20.00 ± 0.08 µg/mL
Magnesium, Mg	200.0 ± 0.8 µg/mL	Manganese, Mn	20.00 ± 0.08 µg/mL
Mercury, Hg	70.0 ± 0.3 µg/mL	Nickel, Ni	50.00 ± 0.22 µg/mL
Phosphorus, P	600.0 ± 2.7 µg/mL	Potassium, K	1 000 ± 4 µg/mL
Selenium, Se	200.0 ± 1.3 µg/mL	Silver, Ag	7.50 ± 0.03 µg/mL
Sodium, Na	300.0 ± 1.4 µg/mL	Strontium, Sr	20.01 ± 0.08 µg/mL
Thallium, Tl	200.0 ± 1.4 µg/mL	Vanadium, V	30.00 ± 0.13 µg/mL
Zinc, Zn	20.00 ± 0.09 µg/mL		

Density: 1.034 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
As	ICP Assay	3103a	100818
B	ICP Assay	3107	190605
Ba	ICP Assay	3104a	140909
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Cd	ICP Assay	3108	130116
Cd	EDTA	928	928
Ce	ICP Assay	3110	090504
Ce	EDTA	928	928
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
Hg	ICP Assay	3133	160921
Hg	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Li	ICP Assay	3129a	100714
Li	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	Traceable to 3152A	S2-NA700842
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	ICP Assay	3149	100901
Sr	EDTA	928	928
Sr	ICP Assay	Traceable to 3153a	K2-SR650985
Tl	ICP Assay	3158	151215
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, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

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

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:

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ 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 Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

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

- 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**

Low Silver Note: This solution contains "LOW" levels of Silver. Please store this entire bottle inside a sealed glass jar.

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

August 30, 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

- **August 30, 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:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



INORGANIC VENTURES

Refine your results. Redefine your industry.

Certificate of Analysis

RD:05/14/2024

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).

ACCREDITED Testing Laboratory Certificate 863.01 ACCREDITED Reference Material Producer Certificate 863.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	WW-LFS-2
Lot Number:	U2-MEB731108
Matrix:	5% (v/v) HNO3 tr. HF
Value / Analyte(s):	200 µg/mL ea: Silica, 80 µg/mL ea: Antimony, 70 µg/mL ea: Tin, 40 µg/mL ea: Molybdenum, 20 µg/mL ea: Titanium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	80.1 ± 0.6 µg/mL	Molybdenum, Mo	40.03 ± 0.18 µg/mL
Silica, SiO2	200.2 ± 1.3 µg/mL	Tin, Sn	70.0 ± 0.4 µg/mL
Titanium, Ti	20.01 ± 0.13 µg/mL		

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

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Mo	ICP Assay	3134	130418
Mo	Calculated		See Sec. 4.2
Sb	ICP Assay	3102a	140911
SiO2	ICP Assay	3150	130912
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	3162a	130925
Ti	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:

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

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:

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ 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 Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

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**

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

March 17, 2023

- 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 17, 2028

- 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



M4371

Hydroxylamine Hydrochloride, Crystal
BAKER ANALYZED® A.C.S. Reagent
Suitable for Mercury Determination
(hydroxylammonium chloride)

Rec – 06.07.19

J.T.Baker® | avantor™

Material No.: 2196-01
Batch No.: 0000215387
Manufactured Date: 2018/06/27
Retest Date: 2025/06/25
Revision No: 1

Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

Test	Specification	Result
Assay ($NH_2OH \cdot HCl$) (by $KMnO_4$ titrn)	>= 96.0 %	99.1
Clarity of Alcohol Solution	Passes Test	PT
Residue after Ignition	<= 0.050 %	0.017
Titrable Free Acid (meq/g)	<= 0.25	0.19
Ammonium (NH_4)	Passes Test	PT
Sulfur Compounds (as SO_4)	<= 0.005 %	< 0.003
Trace Impurities - ACS - Heavy Metals (as Pb)	<= 5 ppm	4
Trace Impurities - Iron (Fe)	<= 5 ppm	< 3
Trace Impurities - Mercury (Hg)	<= 0.050 ppm	< 0.005

For Laboratory, Research or Manufacturing Use

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

ISO
Phillipsburg, NJ 9001:2015, FSSC22000
Paris, KY 9001:2008
Mexico City, Mexico 9001:2008
Gliwice, Poland 9001:2015, 13485:2012
Selangor, Malaysia 9001:2008
Dehradun, India, 9001:2008, 14001:2004, 13485:2003
Mumbai, India, 9001:2015, 17025:2005
Panoli, India 9001:2015

James Ethier
Jamie Ethier
Vice President Global Quality

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

ThermoFisher SCIENTIFIC

M4913-16

MB

Certificate of Analysis

1 Reagent Lane
Fair Lawn, NJ 07410
201.796.7100 tel
201.796.1329 fax

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2015 by SAI Global Certificate Number CERT – 0120632

This is to certify that units of the lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Thermo Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Products are for research use or further manufacturing. Not for direct administration to humans or animals. It is the responsibility of the final formulator and end user to determine suitability based upon the intended use of the end product. Products are tested to meet the analytical requirements of the noted grade. The following information is the actual analytical results obtained.

Catalog Number	P279	Quality Test / Release Date	01/12/2021
Lot Number	210306		
Description	POTASSIUM PERMANGANATE, A.C.S.		
Country of Origin	United States	Suggested Retest Date	Jan/2026

N/A			
Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	Dark purple to purple green crystals
ASSAY	%	>= 99	99.3
CHLORIDE & CHLORATE	%	<= 0.005	<0.005
IDENTIFICATION	PASS/FAIL	= PASS TEST	pass test
INSOLUBLE MATTER	%	<= 0.2	<0.2
MERCURY (Hg)	ppm	<= 0.05	<0.004
SULFATE (SO4)	%	<= 0.02	<0.02

Julian Burton

Julian Burton - Quality Control Manager – Fair Lawn

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.
If there are any questions with this certificate, please call at (800) 227-6701.
*Based on suggested storage condition.

INORGANIC VENTURES
Refine your results. Redefine your industry.

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

M5062
M5063
M3

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).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Mass Spec Solution
Catalog Number:	MSHG-10PPM
Lot Number:	S2-HG709270
Matrix:	10% (v/v) HCl
Value / Analyte(s):	10 µg/mL ea: Mercury
Starting Material:	Hg metal
Starting Material Lot#:	1959
Starting Material Purity:	99.9994%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10.001 ± 0.053 µg/mL

Density: 1.020 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Hg	ICP Assay	3133	160921
Hg	EDTA	928	928
Hg	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:

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

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.

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ 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 Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

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.

O	Ag		0.000011	M	Eu	<	0.000201	O	Na		0.000004	M	Se	<	0.015915	O	Zn	<	0.001510
O	Al		0.000001	O	Fe		0.000001	M	Nb	<	0.000201	O	Si		0.000005	M	Zr	<	0.000201
M	As	<	0.000402	M	Ga	<	0.000201	M	Nd	<	0.000201	M	Sm	<	0.000201				
M	Au	<	0.003631	M	Gd	<	0.000201	M	Ni	<	0.000402	M	Sn	<	0.001007				
M	B	<	0.001208	M	Ge	<	0.000201	M	Os	<	0.000605	M	Sr	<	0.000201				
M	Ba	<	0.000201	M	Hf	<	0.000201	O	P	<	0.032370	M	Ta	<	0.000201				
M	Be	<	0.000201	s	Hg	<		M	Pb	<	0.000201	M	Tb	<	0.000201				
M	Bi	<	0.000201	M	Ho	<	0.000201	M	Pd	<	0.000403	M	Te	<	0.002216				
O	Ca		0.000007	M	In	<	0.000201	M	Pr	<	0.000201	M	Th	<	0.000201				
M	Cd	<	0.000201	M	Ir	<	0.000201	M	Pt	<	0.000402	M	Ti	<	0.000402				
M	Ce	<	0.000201	O	K		0.000020	M	Rb	<	0.000201	O	Tl	<	0.016508				
M	Co	<	0.000201	M	La	<	0.000201	M	Re	<	0.000201	M	Tm	<	0.000201				
O	Cr	<	0.003021	O	Li	<	0.000107	M	Rh	<	0.000201	M	U	<	0.008058				
M	Cs	<	0.001208	M	Lu	<	0.000201	M	Ru	<	0.000201	M	V	<	0.000201				
M	Cu	<	0.000402	O	Mg		0.000001	O	S	<	0.053950	M	W	<	0.000604				
M	Dy	<	0.000201	M	Mn	<	0.000604	M	Sb	<	0.001208	M	Y	<	0.000201				
M	Er	<	0.000201	M	Mo		0.000009	M	Sc	<	0.000201	M	Yb	<	0.000201				

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 - 200.59 +2 4 Hg(OH)(aq) 1+

Chemical Compatibility - Stable in HNO_3. Avoid basic media forming insoluble carbonate. The sulfide, basic carbonate, oxalate, phosphate, arsenite, arsenate and iodide are insoluble in water.

Stability - 2-100 ppb levels not stable in 1% HNO_3 / LDPE container, stable in 10% HNO_3 packaged in borosilicate glass. 1-100 ppm levels stable in 7% HNO_3 packaged in borosilicate glass. 1000-10,000 ppm solutions are chemically stable for years in 5-10% HNO_3 / LDPE container.

Hg Containing Samples (Preparation and Solution) - Metal (soluble in HNO_3); Oxide (Soluble in HNO_3); Ores and Organic based (The literature has more references to the preparation of Hg containing samples than any other element. Please consult the literature for your specific sample type, since such preparations are prone to error. Or e-mail our technical staff and we will contact you to discuss your particular sample preparation questions in further detail.).

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 202 amu	9 ppt	n/a	186W16O
ICP-OES 184.950 nm	0.03 / 0.005 µg/mL	1	
ICP-OES 194.227 nm	0.03 / 0.005 µg/mL	1	V
ICP-OES 253.652 nm	0.1 / 0.03 µg/mL	1	Ta, Co, Th ,Rh , Fe, U

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

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 22, 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

- September 22, 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 Prepared By:

Uyen Truong
Supervisor, Product Documentation



Certificate Approved By:

Michael Booth
Director, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M5467 R: 03/01/23 (LA)

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number: 57058
Lot Number: 020623
Description: Cerium (Ce)

Expiration Date: 020626
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

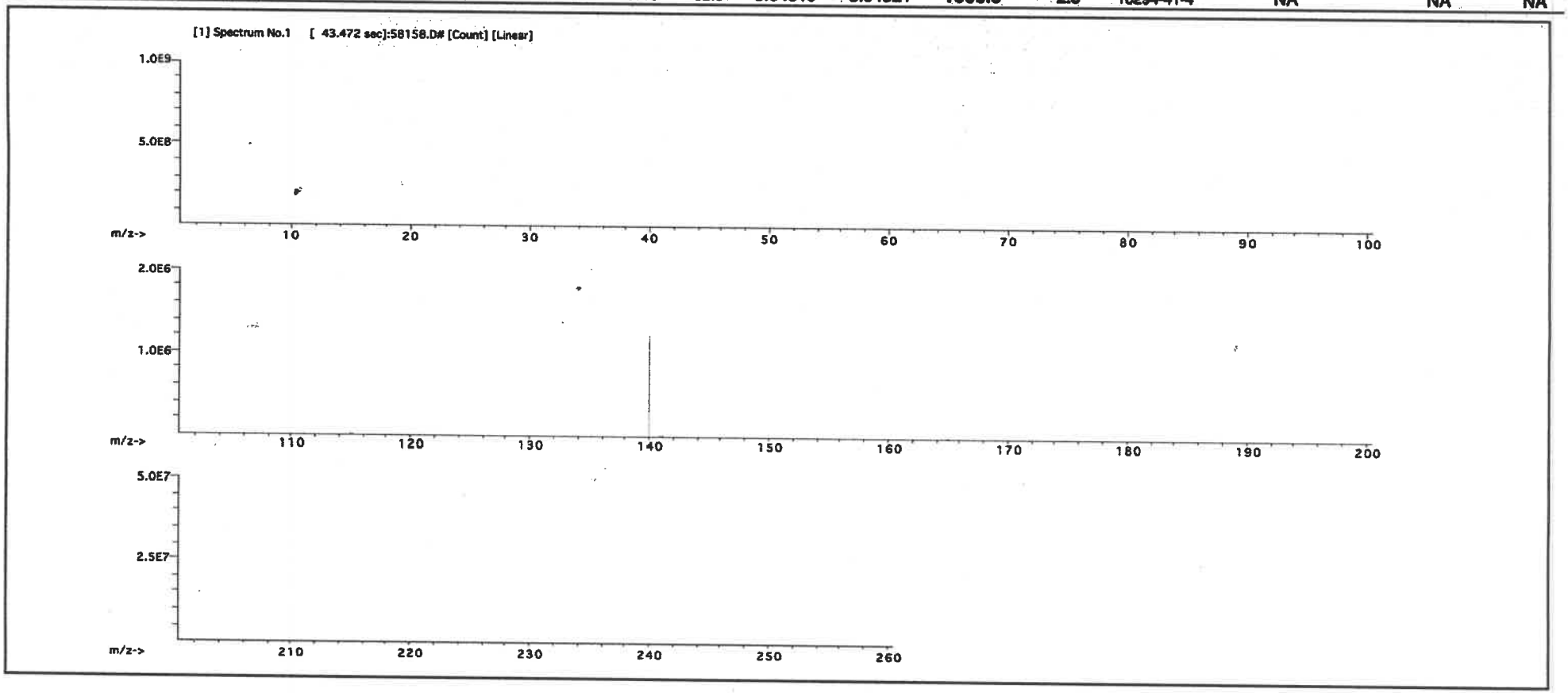
Weight shown below was diluted to (mL): 1000.12 0.058 Flask Uncertainty

		Lot #	
Solvent:	21110221	Nitric Acid	
2%	20.0 (mL)	Nitric Acid	

5E-05 Balance Uncertainty

Formulated By:	Lawrence Barry	020623
Reviewed By:	Pedro L. Rentas	020623

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)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Cerium nitrate hexahydrate (Ce)	IN146	Z512CEB1	1000	99.999	0.10	32.8	3.04919	3.04921	**1000.0**	**2.0**	10294-41-4	NA	NA	NA



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	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	<0.2	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:

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 certifed (+/-) 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).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M5658 R ! 8/25/23

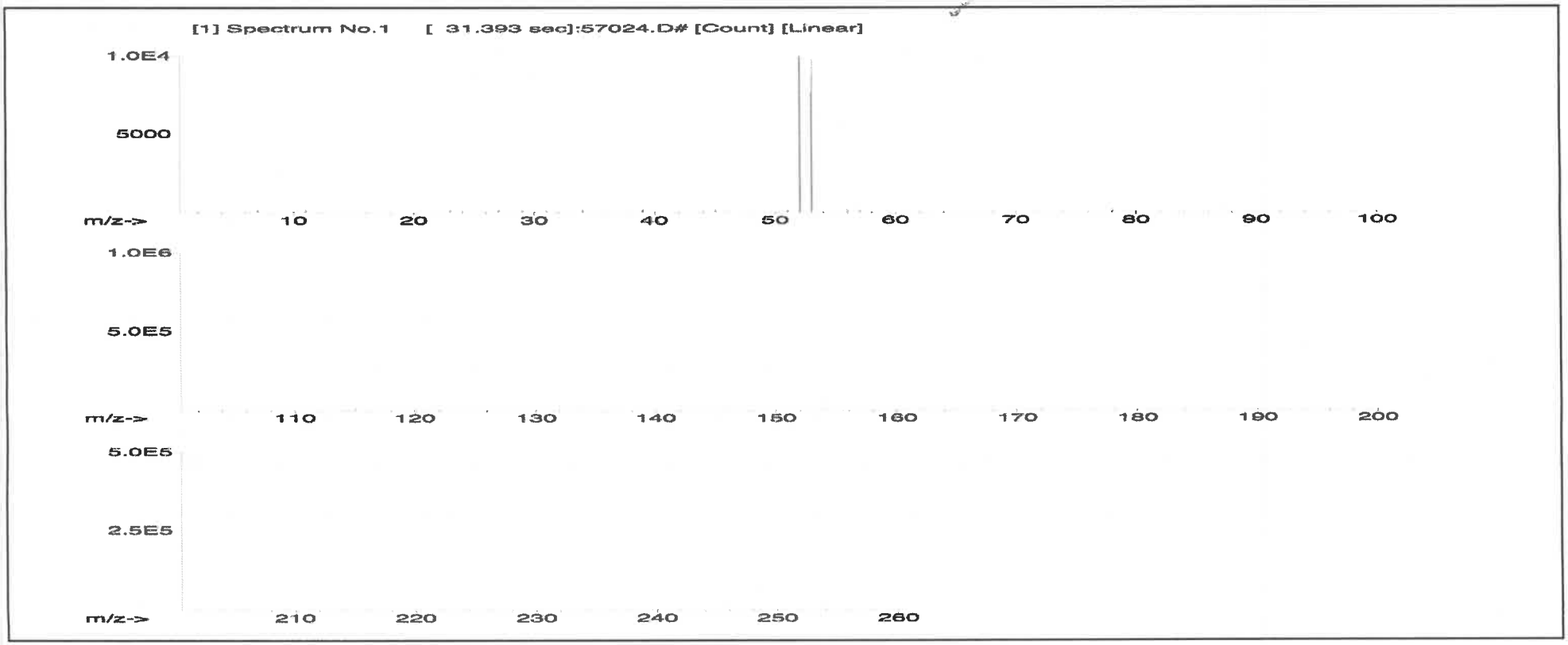
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**58024**	21110221	Nitric Acid	
Lot Number:	**060523**			
Description:	**Chromium (Cr)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	060526			
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:	Lawrence Barry	060523
Reviewed By:	Pedro L. Rentas	060523

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)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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	orl-rat 3250 mg/kg	3112a



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:

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 certifed (+/-) 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).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M5697 R: 10/27/23

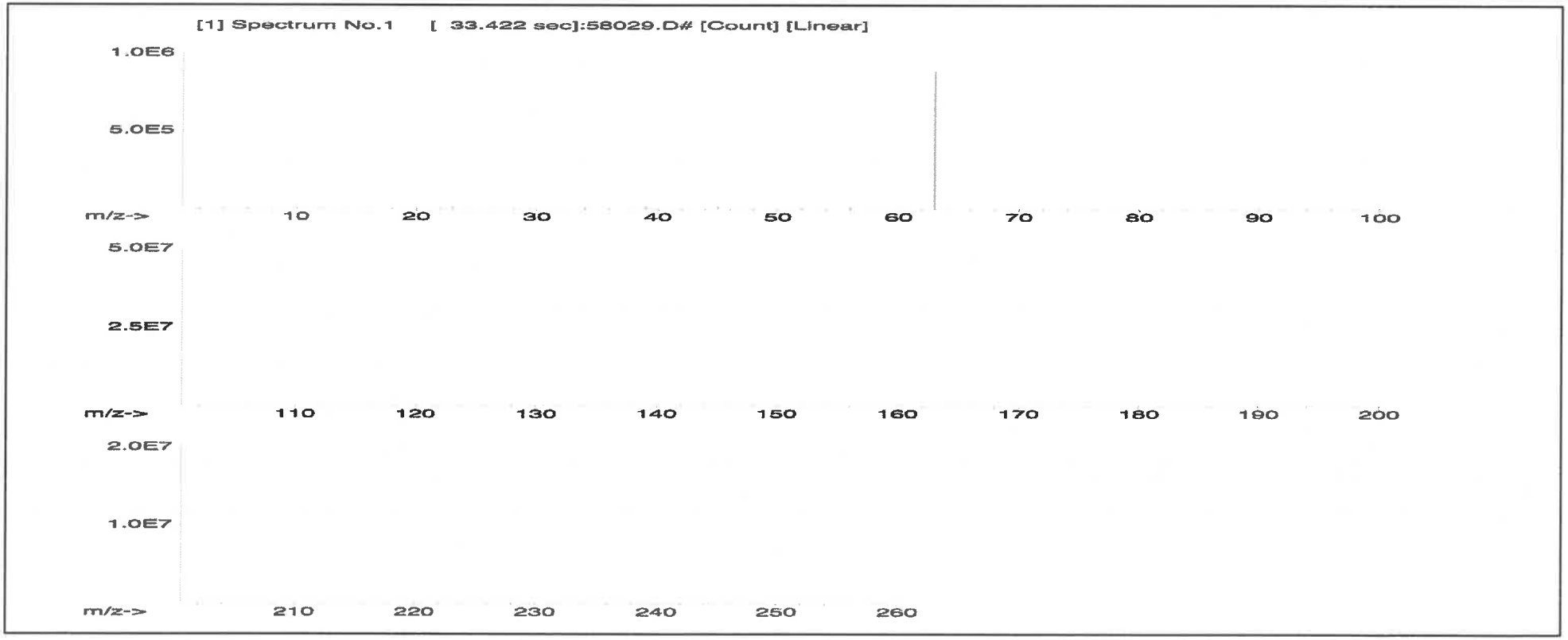
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**58029**	24002546	Nitric Acid	
Lot Number:	**102523**			
Description:	**Copper (Cu)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	102526			
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:	Benson Chan	102523
Reviewed By:	Pedro L. Rentas	102523

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)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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	orl-rat 794 mg/kg	3114



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	<0.02	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:

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 certifed (+/-) 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).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

R: 12/20/23 M5748

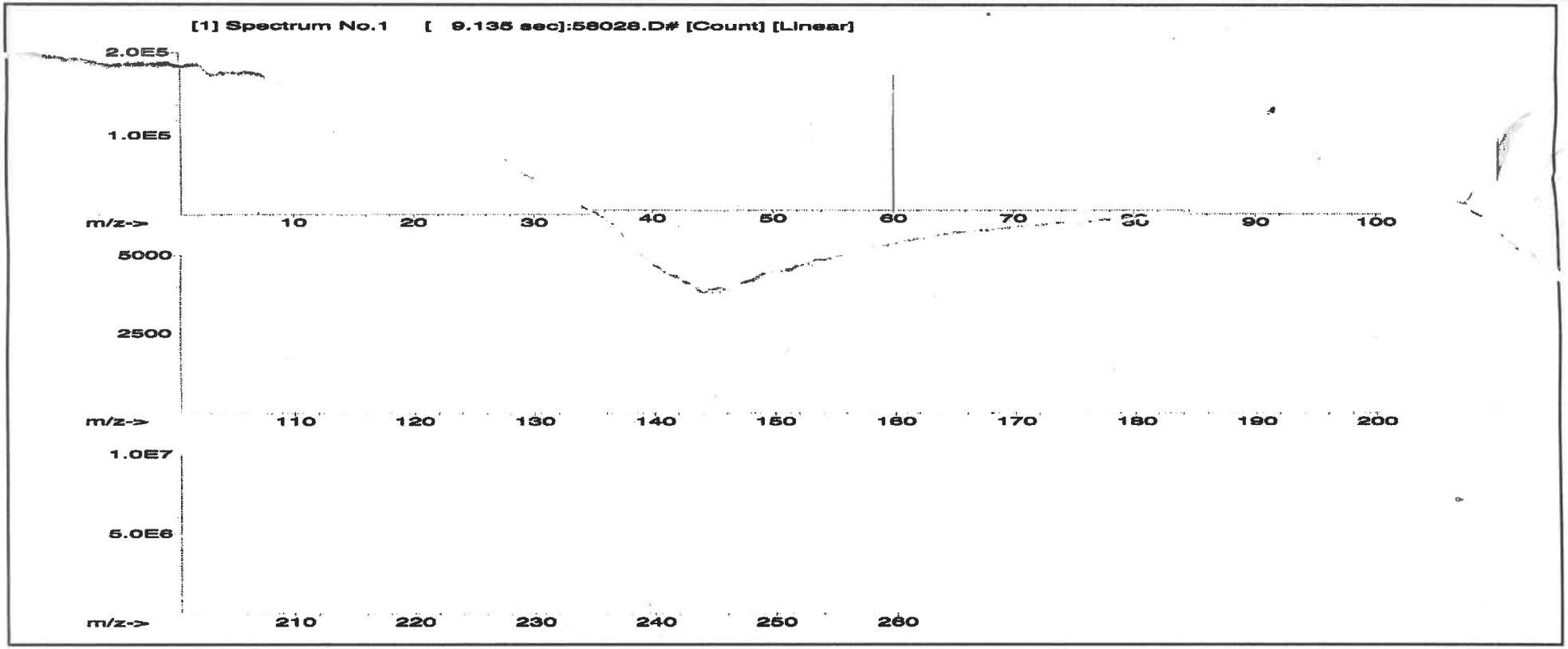
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**57028**	24002546	Nitric Acid	
Lot Number:	**091223**			
Description:	**Nickel (Ni)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	091226			
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:	Lawrence Barry	091223
Reviewed By:	Pedro L. Rentas	091223

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)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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	orl-rat 1620 mg/kg	3136



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	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:

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 certifed (+/-) 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).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

R: 02/09/24 M5798

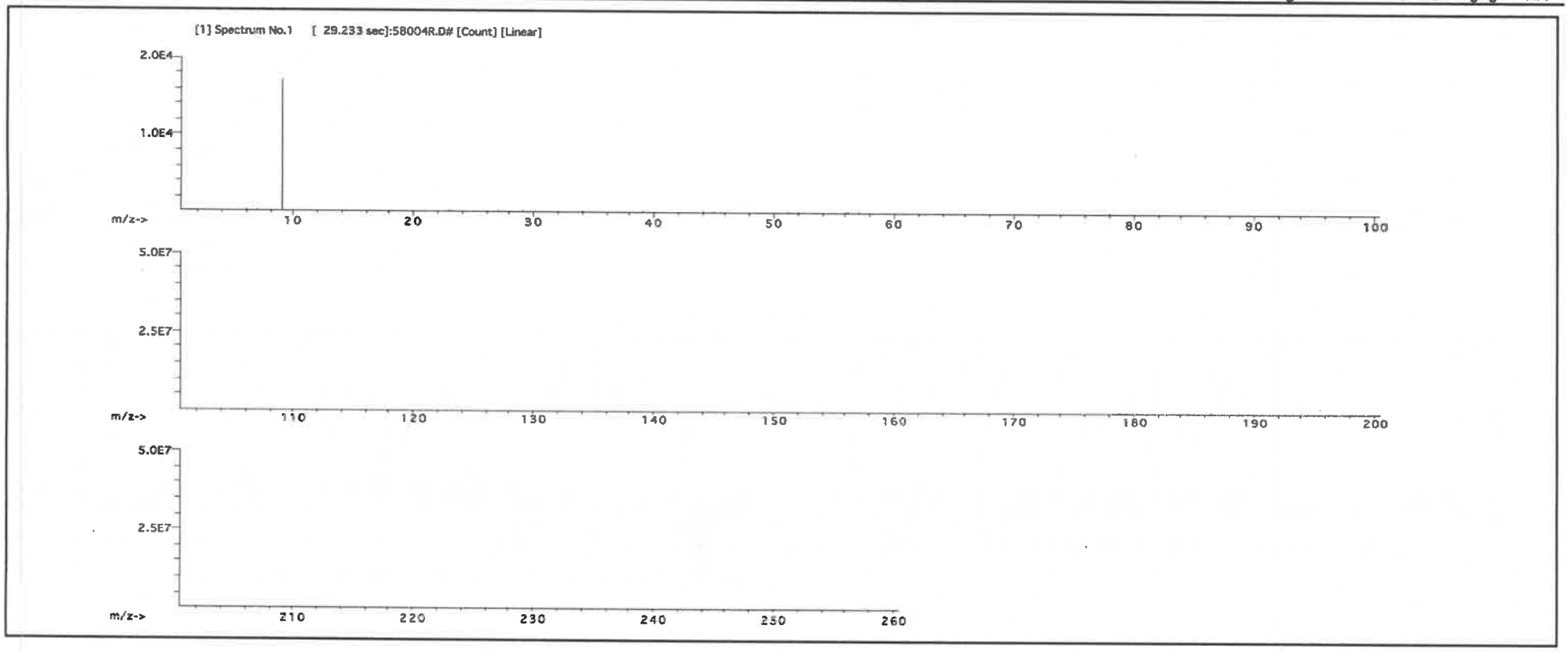
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**57004**	24002546	Nitric Acid	
Lot Number:	**102523**			
Description:	**Beryllium (Be)**	2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	102526			
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:	Benson Chan	102523
Reviewed By:	Pedro L. Rentas	102523

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)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Beryllium nitrate (Be)	58104	091423	0.1000	200.0	0.084	1000	10001.5	**1000.0**	**2.2**	13597-99-4	0.2ug/m3	intrvns-rat 3.16mg/kg	NA



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	T	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:

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 certifed (+/-) 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).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

R? 02/09/24 IV15799

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number: 57050
Lot Number: 071123
Description: Tin (Sn)

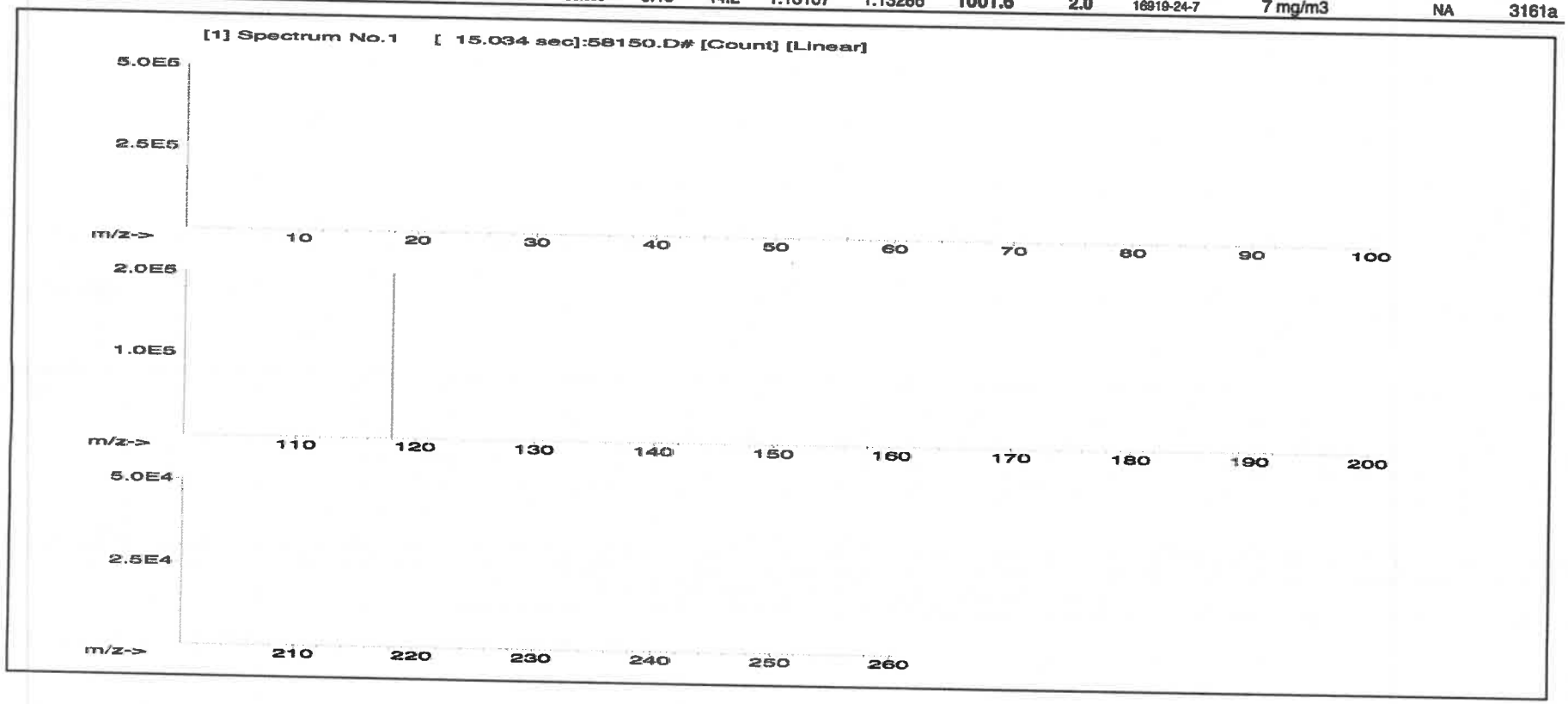
Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 499.93

	Lot #	
Solvents:	21110221	Nitric Acid
	22D0562008	Hydrochloric acid
2%	10.0	Nitric Acid
6%	30.0	Hydrochloric acid
	(mL)	

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Formulated By:	Benson Chan	071123
Reviewed By:	Pedro L. Rentas	071123

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)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium hexafluorostannate(IV) (Sn)	IN010	SND042023A1	1000	99.999	0.10	44.2	1.13107	1.13286	**1001.6**	**2.0**	16919-24-7	7 mg/m3	NA	3161a



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	<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	Sn	T	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 certifed (+/-) 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).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

R: 02/09/24 IM5800 BH

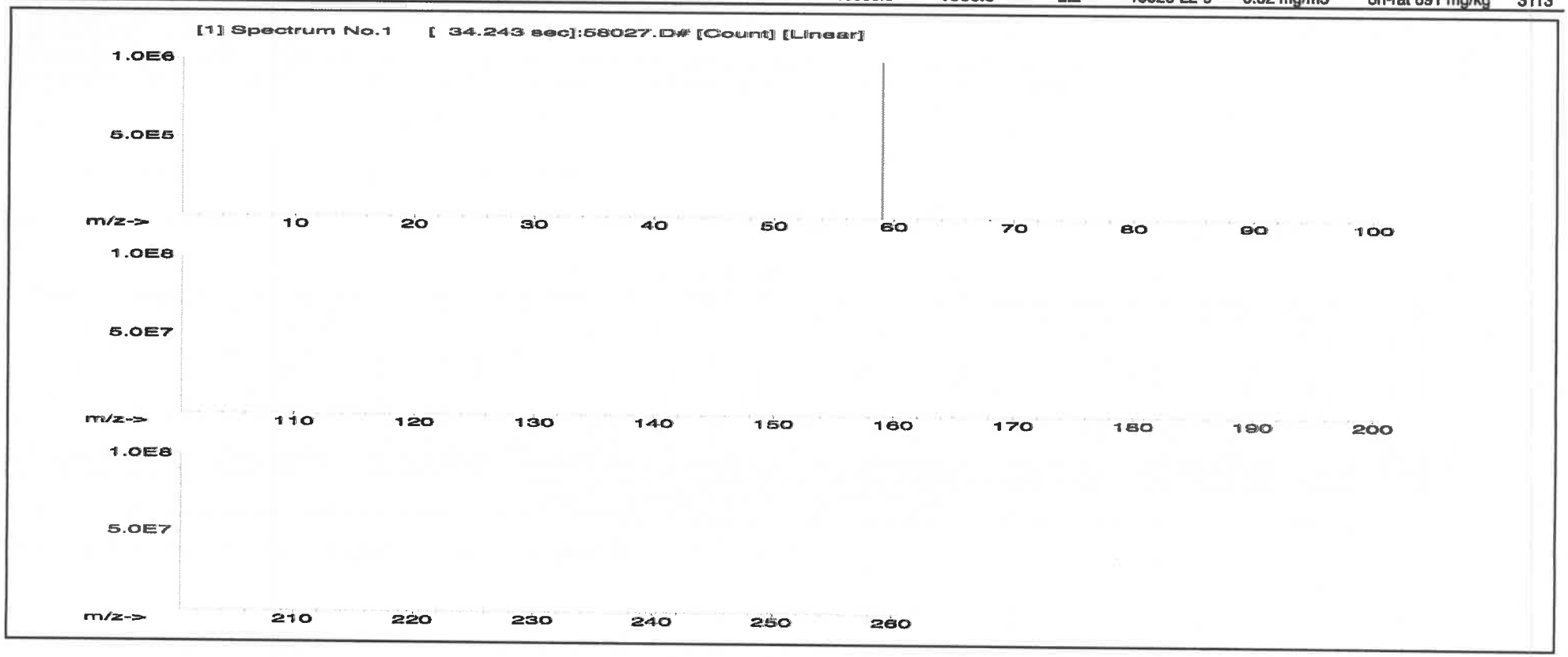
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:		
Part Number:	**57027**	24002546	Nitric Acid		
Lot Number:	**091923**				
Description:	**Cobalt (Co)**	2.0%	40.0 (mL)	Nitric Acid	
Expiration Date:	091926				
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:	Lawrence Barry	091923
Reviewed By:	Pedro L. Rentas	091923

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)	SDS Information (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	<0.01	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	T	Gé	<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:

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 certifed (+/-) 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).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

R: 02/09/24 IM5801 BH

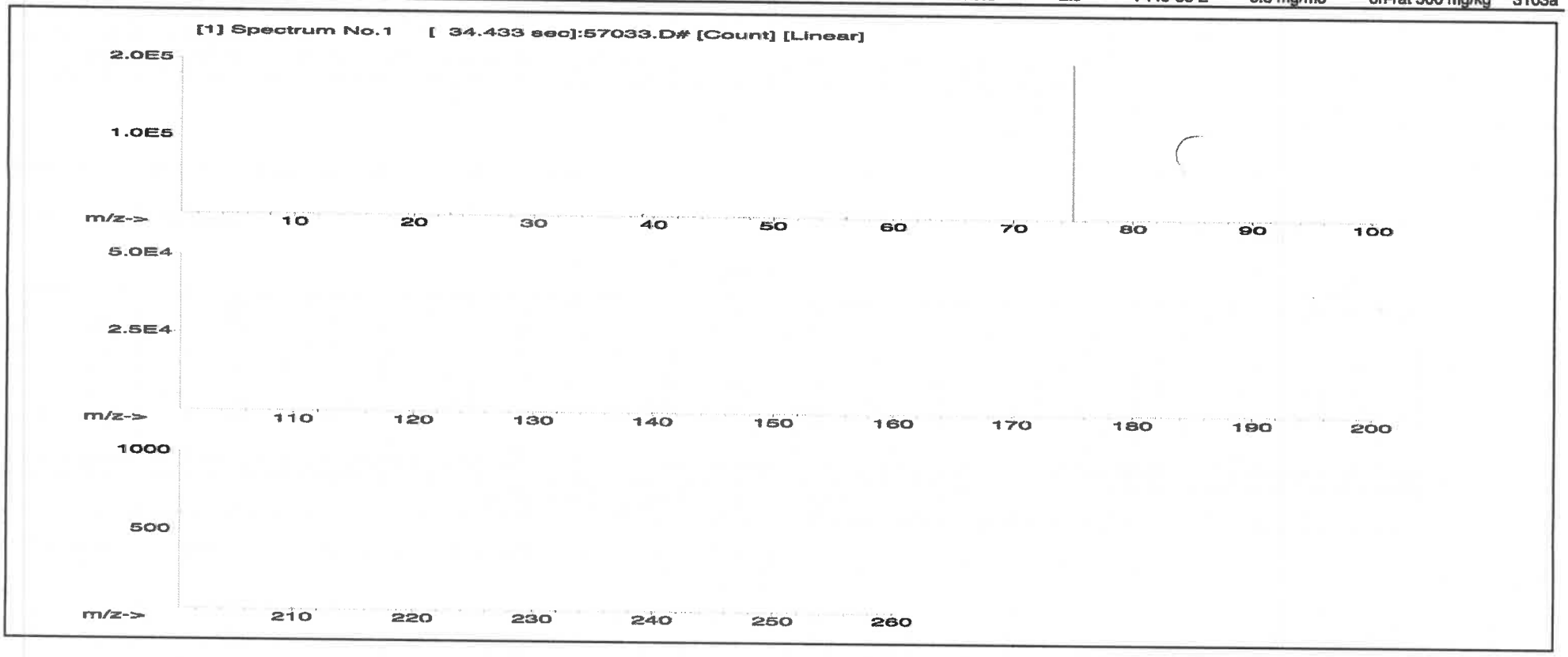
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED **WEIGHT** REPORT:

		Lot #	Solvent:		
Part Number:	**57033**	24002546	Nitric Acid		
Lot Number:	**111323**				
Description:	**Arsenic (As)**	2.0%	80.0 (mL)	Nitric Acid	
Expiration Date:	111326				
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):	4000.0	0.06	Flask Uncertainty		

Formulated By:	Lawrence Barry	111323
Reviewed By:	Pedro L. Rentas	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)	SDS Information (Solvent Safety Info. On Attached pg.) 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	orl-rat 500 mg/kg	3103a



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	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	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:

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 certifed (+/-) 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).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

A: 02/09/24 M.5814

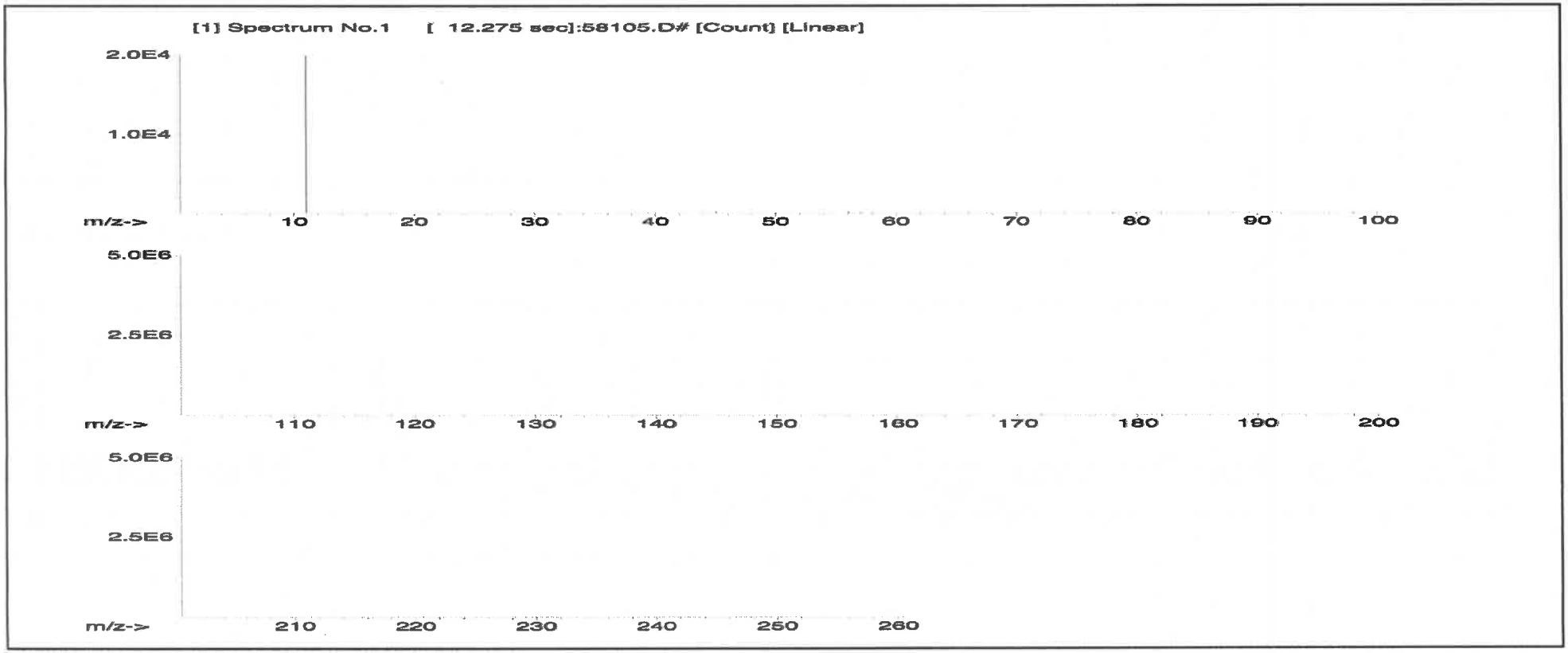
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number:	**57005**		**Solvent:**	MKBQ8597V	Ammonium hydroxide
Lot Number:	**071123**				
Description:	**Boron (B)**		2.0%	40.0 (mL)	Ammonium hydroxide
Expiration Date:	071126				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	1999.48	0.058	Flask Uncertainty		

Formulated By:	Benson Chan	071123
Reviewed By:	Pedro L. Rentas	071123

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)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Boric acid (B)	IN018	BV092016A1	1000	99.9999	0.10	17.3	11.55772	11.56201	**1000.4**	**2.0**	10043-35-3	2 mg/m3	orl-rat 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	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	<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 certifed (+/-) 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).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

R: 02/09/24 M5816

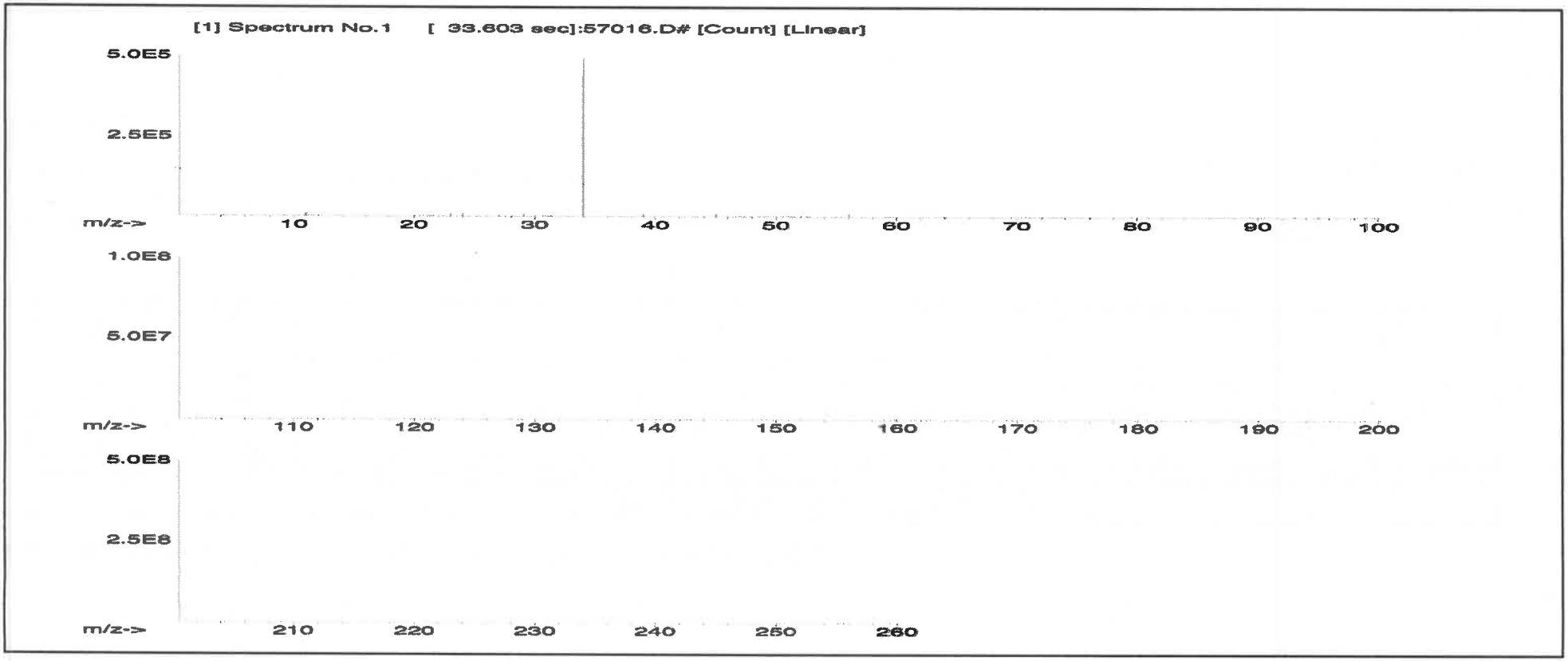
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number:	**57016**	**Solvent:**	**Lot #** 122923	ASTM Type 1 Water
Lot Number:	**122923**			
Description:	**Sulfur (S)**			
Expiration Date:	122926			
Recommended Storage:	Ambient (20 °C)			
Nominal Concentration (µg/mL):	**1000**			
NIST Test Number:	6UTB	5E-05	Balance Uncertainty	
Weight shown below was diluted to (mL):	4000.0	0.06	Flask Uncertainty	

Formulated By:	Benson Chan	122923
Reviewed By:	Pedro L. Rentas	122923

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)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium sulfate (S)	IN117	SLBR7225V	1000	99.9	0.10	24.3	16.4979	16.4980	**1000.0**	**2.0**	7783-20-2	NA	orl-rat 4250mg/kg	3181



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	<0.02	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

(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 certifed (+/-) 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).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

R: 02/09/24 M5820

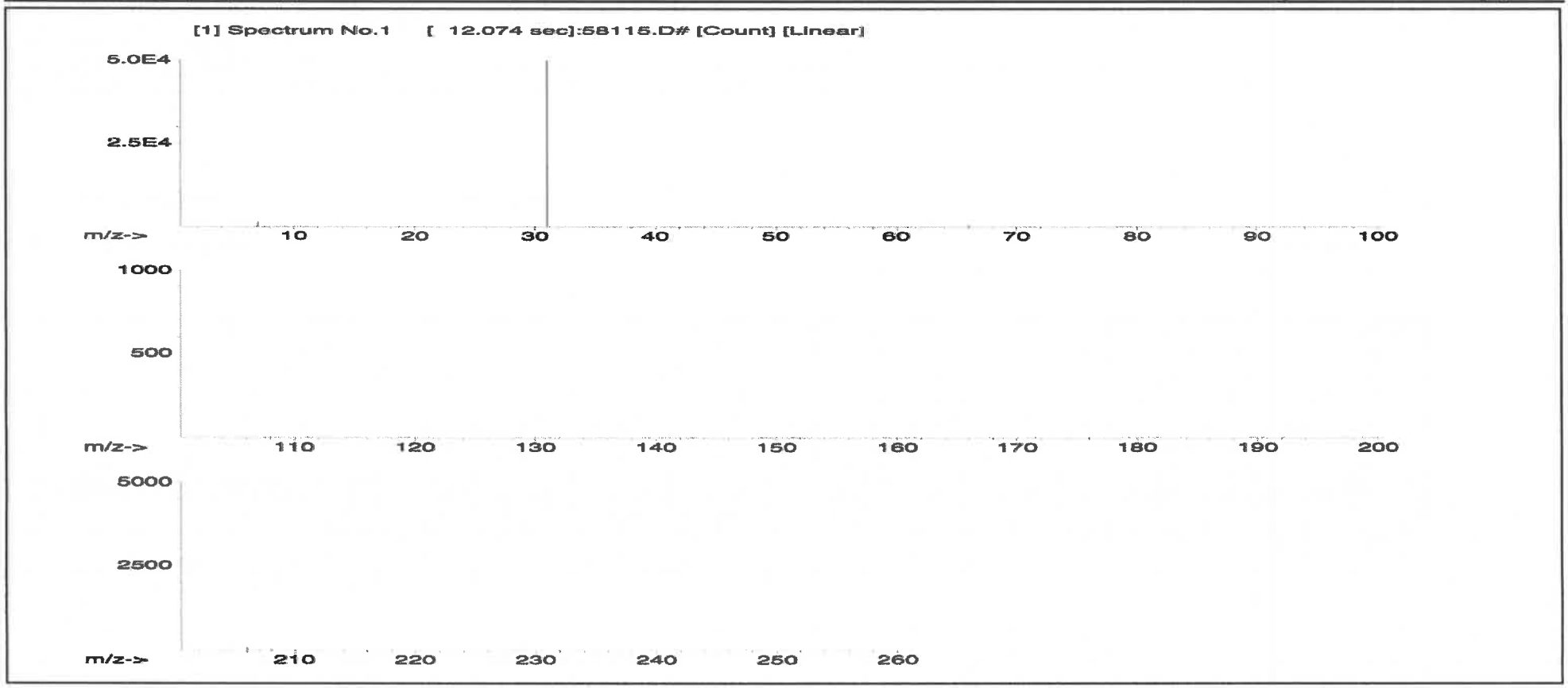
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number:	**57015**		**Lot #**		
Lot Number:	**091123**	**Solvent:**	24002546	Nitric Acid	
Description:	**Phosphorous (P)**				
		2%	40.0 (mL)	Nitric Acid	
Expiration Date:	091126				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	2000.02	0.058	Flask Uncertainty		

Formulated By:	Lawrence Barry	091123
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)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium dihydrogen phosphate (P)	IN008	PV082019A1	1000	99.999	0.10	27.5	7.2729	7.2730	**1000.0**	**2.0**	7722-76-1	5 mg/m3	orl-rat >2000mg/k	3186



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	<0.02	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:

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 certifed (+/-) 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).

Sodium Chloride, Crystal
BAKER ANALYZED® A.C.S. Reagent

MT884
MB

avantor™ | J.T.Baker®

Material No.: 3624-01
Batch No.: 0000281938
Manufactured Date: 2021-06-07
Retest Date: 2026-06-07
Revision No.: 1

Certificate of Analysis

Test	Specification	Result
Assay (NaCl) (by Ag titrn)	≥ 99.0 %	100.0 %
pH of 5% Solution at 25°C	5.0 - 9.0	6.3
Insoluble Matter	≤ 0.005 %	0.003 %
Iodide (I)	≤ 0.002 %	< 0.002 %
Bromide (Br)	≤ 0.01 %	< 0.01 %
Chlorate and Nitrate (as NO_3)	≤ 0.003 %	< 0.001 %
ACS - Phosphate (PO_4)	≤ 5 ppm	< 5 ppm
Sulfate (SO_4)	≤ 0.004 %	< 0.004 %
Barium (Ba)	Passes Test	Passes Test
ACS - Heavy Metals (as Pb)	≤ 5 ppm	< 5 ppm
Iron (Fe)	≤ 2 ppm	< 1 ppm
Calcium (Ca)	≤ 0.002 %	< 0.001 %
Magnesium (Mg)	≤ 0.001 %	< 0.001 %
Potassium (K)	≤ 0.005 %	0.001 %

For Laboratory,Research,or Manufacturing Use
Meets Reagent Specifications for testing USP/NF monographs
Country of Origin: USA
Packaging Site: Paris Mfg Ctr & DC

James T Ethier

Jamie Ethier
Vice President Global Quality

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

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M5962 R! 06/14/24.

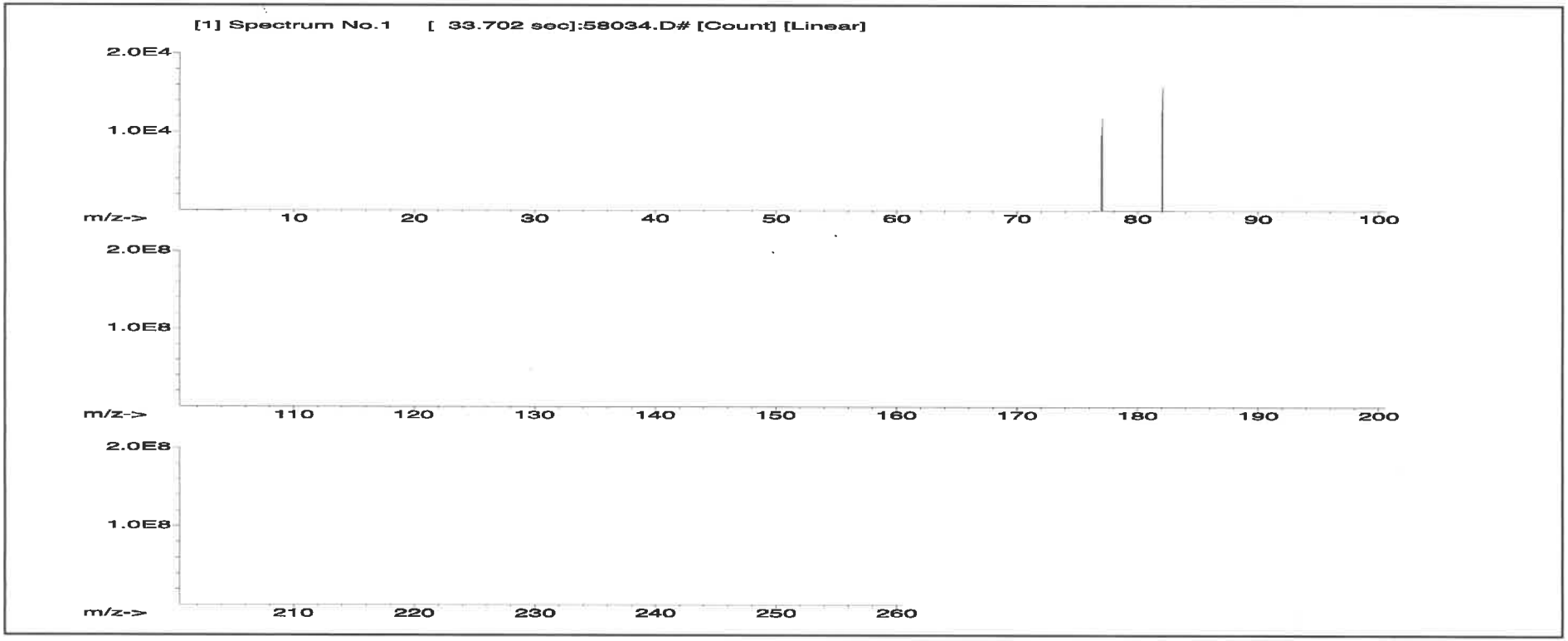
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**57034**	24002546	Nitric Acid	
Lot Number:	**060624**			
Description:	**Selenium (Se)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	060627			
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):	2000.07	0.100	Flask Uncertainty	

Formulated By:	Benson Chan	060624
Reviewed By:	Pedro L. Rentas	060624

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)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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	orl-rat 6700 mg/kg	3149



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	T	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	<0.2	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 certifed (+/-) 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).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M5969 R: 06/11/24

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

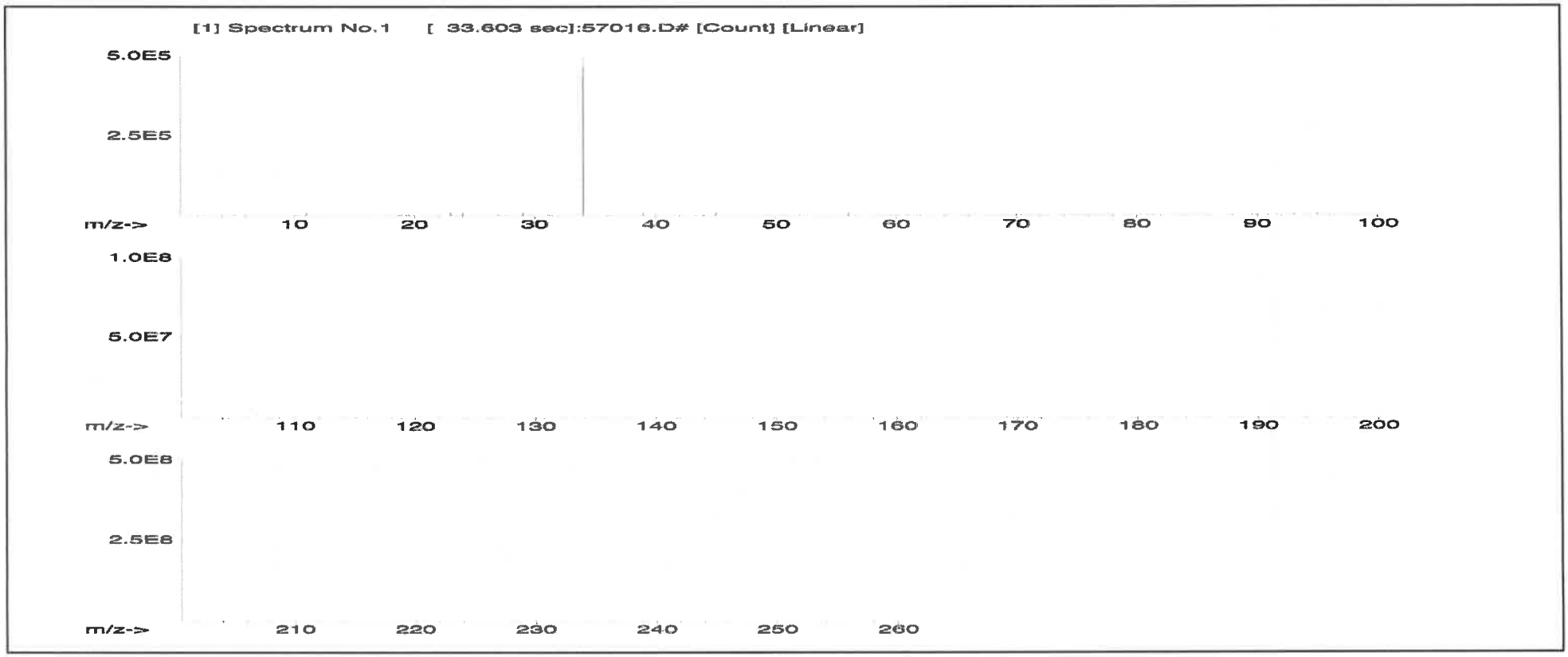
CERTIFIED WEIGHT REPORT:

Part Number:	**57016**	**Solvent:**	122923	ASTM Type 1 Water
Lot Number:	**122923**			
Description:	**Sulfur (S)**			
Expiration Date:	122926			
Recommended Storage:	Ambient (20 °C)			
Nominal Concentration (µg/mL):	**1000**			
NIST Test Number:	6UTB	5E-05	Balance Uncertainty	
Weight shown below was diluted to (mL):	4000.0	0.06	Flask Uncertainty	

Lot #

Formulated By:	Benson Chan	122923
Reviewed By:	Pedro L. Rentas	122923

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)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium sulfate (S)	IN117	SLBR7225V	1000	99.9	0.10	24.3	16.4979	16.4980	**1000.0**	**2.0**	7783-20-2	NA	orl-rat 4250mg/kg	3181



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M5970, M5971 R: 7/01/24

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

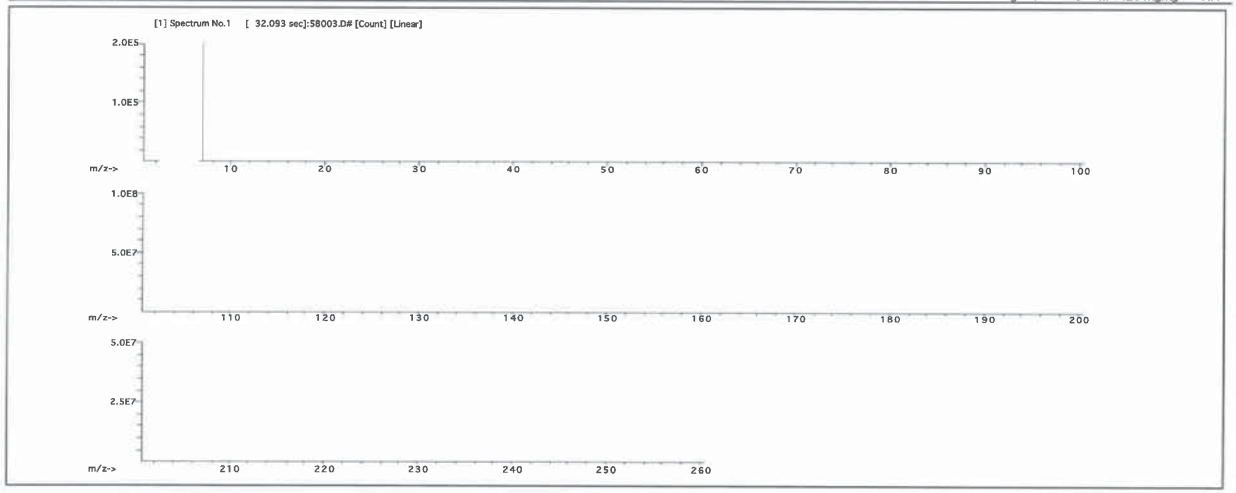
CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:
Part Number:	**57003**	24002546	Nitric Acid
Lot Number:	**062124**		
Description:	**Lithium (Li)**		
		2.0%	5.0 (mL) Nitric Acid
Expiration Date:	062127		
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):	250.11	0.016 Flask Uncertainty	

Giovanni Esposito
Formulated By: Giovanni Esposito 062124

Pedro Rentas
Reviewed By: Pedro L. Rentas 062124

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)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Lithium nitrate (Li)	58103	070622	0.1000	25.0	0.004	1000	10000.4	**1000.0**	**2.0**	7790-69-4	5 mg/m3	orl-rat 1426 mg/kg	NA



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	T	Ni	<0.02	Pr	<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	<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 certifed (+/-) 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).

M5978, M5979

INORGANIC VENTURES
Refine your results. Redefine your industry.

Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

R: 2/22/24

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).

ACCREDITED Testing Laboratory Certificate 883.01 ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGTI1
Lot Number:	T2-TI719972
Matrix:	2% (v/v) HNO_3 tr. HF
Value / Analyte(s):	1 000 µg/mL ea: Titanium
Starting Material:	Ti Metal
Starting Material Lot#:	2094
Starting Material Purity:	99.9975%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1002 ± 5 µg/mL

Density: 1.012 g/mL (measured at 20 ± 4 °C)

Assay Information:

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:

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

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

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma(w_i)^2\ (u_{char\ i})^2]^{½}$ 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 Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

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	<	0.000536	M	Eu	<	0.000268	O	Na	<	0.032670	M	Se		0.001204	O	Zn	<	0.003267
O	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		0.000096				
O	B	<	0.008929	M	Ge	<	0.002146	M	Os	<	0.000269	O	Sr		0.000096				
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	Te	<	0.001341				
O	Ca		0.000676	M	In	<	0.002683	M	Pr	<	0.000268	M	Th	<	0.053663				
M	Cd	<	0.000268	M	Ir	<	0.000269	M	Pt	<	0.000536	s	Ti	<					
M	Ce	<	0.000268	M	K		0.001172	M	Rb	<	0.000268	M	Tl	<	0.000268				
M	Co	<	0.004293	M	La	<	0.000268	M	Re	<	0.000268	M	Tm	<	0.000268				
M	Cr		0.000752	O	Li	<	0.027225	M	Rh	<	0.000268	M	U	<	0.000268				
M	Cs	<	0.000268	M	Lu	<	0.000268	M	Ru	<	0.000269	M	V	<	0.019855				
O	Cu	<	0.010890	O	Mg	<	0.005445	i	S	<		M	W		0.000473				
M	Dy	<	0.000268	O	Mn	<	0.003267	M	Sb	<	0.006976	M	Y	<	0.002146				
M	Er	<	0.000268	M	Mo		0.000774	O	Sc	<	0.004900	M	Yb	<	0.000536				

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 - 47.87 +4 6 Ti(F)6-2

Chemical Compatibility - Soluble in concentrated HCl, HF, H3PO4 H2SO4 and HNO3. Avoid neutral to basic 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); Oxide - high temperature history (~800EC) brookite (fuse in Pt0 with K2S2O7); Ores (fuse in Pt0 with KF + K2S2O7 - no KF if silica not present); Organic Matrices (Dry ash at 450EC in Pt0 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 crystalline form).

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 48 amu	14 ppt	N/A	32S16O, 32S14N, 14N16O18O, 14N17N2, 36Ar12C, 48Ca, [96X=2 (where X = Zr, Mo, Ru)]
ICP-OES 323.452 nm	0.0054 / 0.00092 µg/mL	1	Ce, Ar, Ni
ICP-OES 334.941 nm	0.0038 / 0.000028 µg/mL	1	Nb, Ta, Cr, U
ICP-OES 336.121 nm	0.0053 / 0.000034 µg/mL	1	W, Mo, Co

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

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 Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



INORGANIC VENTURES™
Refine your results. Redefine your industry.

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

MS985
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).

ACCREDITED Testing Laboratory Certificate 863.01
ACCREDITED Reference Material Producer Certificate 863.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGIN10
Lot Number:	U2-IN729349
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Indium
Starting Material:	Indium Metal
Starting Material Lot#:	2511
Starting Material Purity:	99.9995%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10022 ± 30 µg/mL

Density: 1.044 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	**10021 ± 56 µg/mL** ICP Assay NIST SRM 3124a Lot Number: 110516
Assay Method #2	**10035 ± 25 µg/mL** EDTA NIST SRM 928 Lot Number: 928
Assay Method #3	**10001 ± 33 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:

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

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:

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ 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 Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

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	<	0.000760	M	Eu	<	0.000760	O	Na		0.012771	M	Se	<	0.023000	M	Zn	<	0.006100
M	Al		0.003385	O	Fe		0.004462	M	Nb	<	0.000760	O	Si		0.024619	M	Zr	<	0.000760
M	As	<	0.004600	M	Ga	<	0.000760	M	Nd	<	0.000760	M	Sm	<	0.000760				
M	Au	<	0.002300	M	Gd	<	0.000760	O	Ni	<	0.005100	M	Sn	<	0.000760				
O	B		0.003692	M	Ge	<	0.001600	M	Os	<	0.000760	O	Sr	<	0.000610				
M	Ba	<	0.001600	M	Hf	<	0.000760	n	P	<		M	Ta	<	0.000760				
O	Be	<	0.000130	M	Hg	<	0.003100	M	Pb		0.001400	M	Tb	<	0.000760				
M	Bi	<	0.000760	M	Ho	<	0.000760	M	Pd	<	0.001600	M	Te	<	0.000760				
O	Ca		0.004616	s	In	<		M	Pr	<	0.000760	M	Th	<	0.000760				
M	Cd	<	0.000760	M	Ir	<	0.000760	M	Pt	<	0.000760	O	Ti	<	0.001100				
M	Ce	<	0.000760	O	K		0.007078	M	Rb	<	0.000760	M	Tl	<	0.000760				
M	Co	<	0.000760	M	La	<	0.000760	M	Re	<	0.000760	M	Tm	<	0.000760				
O	Cr	<	0.001300	O	Li	<	0.000130	M	Rh	<	0.000760	M	U	<	0.000760				
M	Cs	<	0.000760	M	Lu	<	0.000760	M	Ru	<	0.000760	M	V	<	0.001600				
M	Cu	<	0.003800	O	Mg		0.000707	n	S	<		M	W	<	0.001600				
M	Dy	<	0.000760	O	Mn		0.000149	M	Sb	<	0.000760	M	Y	<	0.000760				
M	Er	<	0.000760	M	Mo	<	0.002300	M	Sc	<	0.000760	M	Yb	<	0.000760				

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 - 114.82 +3 6 In(H2O)6+3

Chemical Compatibility -Soluble in HCl, HNO3, and H2SO4. Avoid neutral and basic media. Stable with most metals and inorganic anions. The oxalate, sulfide, carbonate, hydroxide and phosphate are insoluble in water.

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.

In Containing Samples (Preparation and Solution) -Metal (Best dissolved in HCl / HNO3); Oxide (Soluble in mineral acids); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Sulfuric/peroxide digestion or dry ash and dissolution in dilute 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 115 amu	1 ppt	n/a	115Sn, 99Ru16O
ICP-OES 158.583 nm	0.05 / 0.002 µg/mL	1	
ICP-OES 230.606 nm	0.1 / 0.03 µg/mL	1	Ni, Os
ICP-OES 325.609 nm	0.2 / 0.05 µg/mL	1	Mn, Mo, 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

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

February 21, 2023

- 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 21, 2028

- 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



INORGANIC VENTURES
Refine your results. Redefine your industry.

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

R: 2/22/24
MS-997

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).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	CLPP-CAL-3
Lot Number:	T2-MEB727800
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 ± 7 µg/mL**	**Cadmium, Cd**	**500.0 ± 2.2 µg/mL**
Lead, Pb	**1 000 ± 4 µg/mL**	**Selenium, Se**	**1 000 ± 6 µg/mL**
Thallium, Tl	**1 000 ± 7 µg/mL**		

Density: 1.042 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
As	ICP Assay	3103a	100818
As	Calculated		See Sec. 4.2
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, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

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

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:

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i}^2)]^{1/2}$ 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 Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

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

December 21, 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

- December 21, 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



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

M 6041-46
MS

avantor™ | J.T.Baker®

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

Certificate of Analysis

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

>>> Continued on page 2 >>>

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

avantor™ | J.T.Baker®

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

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

For Laboratory,Research,or Manufacturing Use

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

James T Ethier

Jamie Ethier
Vice President Global Quality

INORGANIC VENTURES™
Refine your results. Redefine your industry.

Certificate of Analysis

M6074
M6075
M6076
M6077

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

P: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com

EXP.: 9/6/2029

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).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	CHEM-CLP-4
Lot Number:	V2-MEB746762
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 ± 5 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	**1 000 ± 6 µg/mL**		

Density: 1.033 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
B	ICP Assay	3107	190605
B	Calculated		See Sec. 4.2
Mo	ICP Assay	traceable to 3134	U2-MO739068
Si	ICP Assay	Traceable to 3150	S2-SI702546
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	traceable to 3162a	T2-TI725816

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:

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

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:

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ 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 Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

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**

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

September 06, 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

- September 06, 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



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

R->1/13/28

M6128

Part Number:	**58025**	**Solvent:**	**Lot #** 24002546	Nitric Acid
Lot Number:	**101124**			
Description:	**Manganese (Mn)**	2%	80.0 (mL)	Nitric Acid
Expiration Date:	101127			
Recommended Storage:	Ambient (20 °C)			
Nominal Concentration (µg/mL):	**1000**			
NIST Test Number:	6UTB	5E-05	Balance Uncertainty	
Weight shown below was diluted to (mL):	4000.2	0.10	Flask Uncertainty	

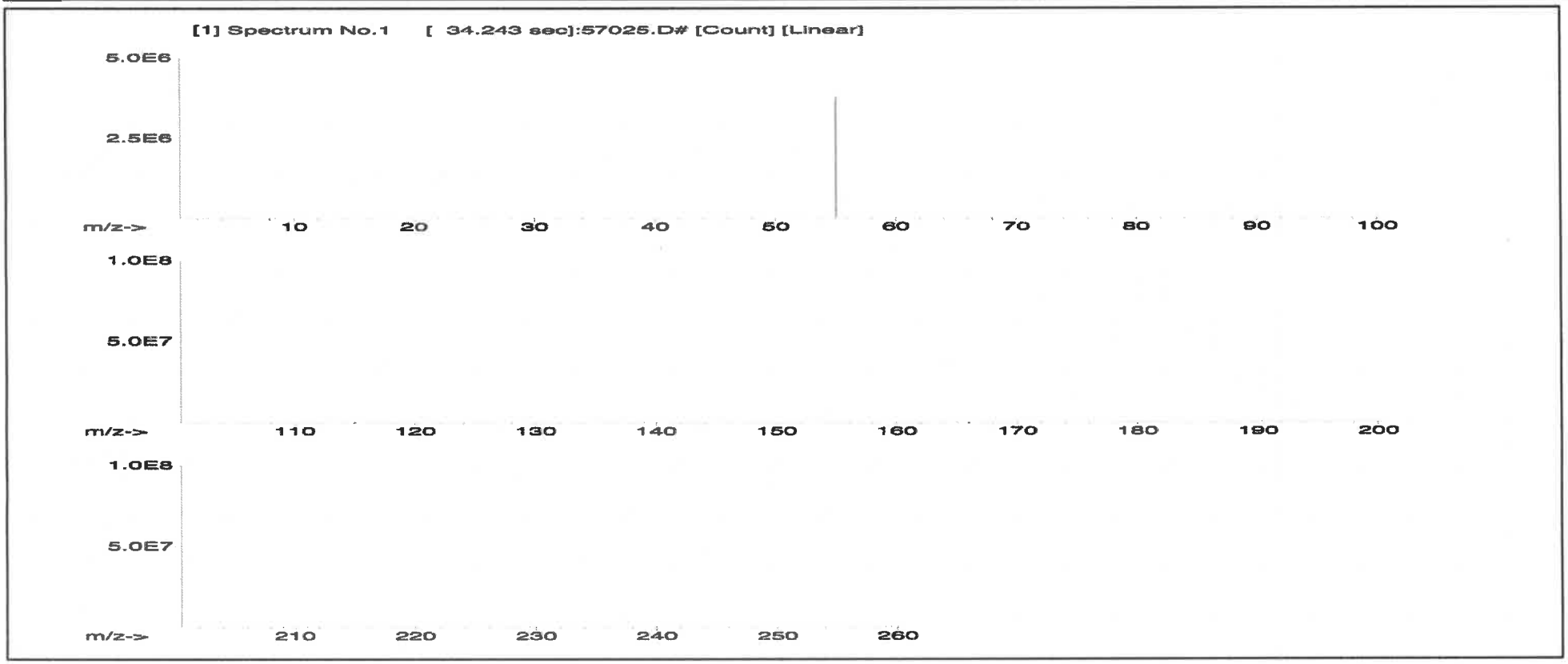
Giovanni Esposito

Formulated By:	Giovanni Esposito	101124

Pedro Rentas

Reviewed By:	Pedro L. Rentas	101124

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)	**SDS Information** (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Manganese(II) nitrate hydrate (Mn)	IN031	MNM092020A1	1000	99.999	0.10	20.8	19.2322	19.2344	**1000.1**	**2.0**	15710-66-4	5 mg/m3	orl-rat >300mg/kg	3132



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	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 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 certifed (+/-) 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).

INORGANIC VENTURES™
Refine your results. Redefine your industry.

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

M6137 R→10/3/24

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).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGSI1
Lot Number:	V2-SI744713
Matrix:	tr. HNO3 tr. HF
Value / Analyte(s):	1 000 µg/mL ea: Silicon
Starting Material:	Silica
Starting Material Lot#:	1771
Starting Material Purity:	99.9981%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 999 ± 6 µg/mL

Density: 1.003 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	**999 ± 5 µg/mL** ICP Assay NIST SRM Traceable to 3150 Lot Number: S2-SI702546
Assay Method #2	**1000 ± 7 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:

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

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:

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2 (u_{char\ i})^2)]^{1/2}$ 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 Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

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	<	0.000310	M	Eu	<	0.000310	O	Na		0.001656	M	Se	<	0.022000	M	Zn	<	0.002500
M	Al		0.010787	M	Fe	<	0.027000	M	Nb	<	0.001300	s	Si	<		O	Zr	<	0.001900
M	As	<	0.001900	M	Ga	<	0.001300	M	Nd	<	0.000310	M	Sm	<	0.000310				
M	Au	<	0.000910	M	Gd	<	0.000310	M	Ni	<	0.005500	M	Sn		0.000096				
M	B		0.016180	M	Ge	<	0.001900	M	Os	<	0.000610	O	Sr		0.000092				
M	Ba		0.000096	M	Hf		0.000423	i	P	<		M	Ta		0.002542				
O	Be	<	0.000570	M	Hg	<	0.000610	M	Pb	<	0.000310	M	Tb	<	0.000310				
M	Bi	<	0.000310	M	Ho	<	0.000610	M	Pd	<	0.000610	M	Te	<	0.000910				
O	Ca		0.011557	M	In	<	0.000310	M	Pr	<	0.000310	M	Th	<	0.001900				
M	Cd	<	0.000310	M	Ir	<	0.000310	M	Pt	<	0.000310	M	Ti		0.001078				
M	Ce	<	0.000610	O	K		0.000577	M	Rb	<	0.009100	M	Tl	<	0.000310				
M	Co	<	0.001600	M	La	<	0.000310	M	Re	<	0.000310	M	Tm	<	0.000310				
M	Cr	<	0.010000	O	Li	<	0.000460	M	Rh	<	0.000310	M	U	<	0.000310				
M	Cs	<	0.000310	M	Lu	<	0.000310	M	Ru	<	0.000310	O	V	<	0.001300				
M	Cu	<	0.002500	O	Mg		0.001348	O	S	<	0.570000	M	W	<	0.001900				
M	Dy	<	0.000310	M	Mn	<	0.002500	M	Sb	<	0.000310	M	Y	<	0.000310				
M	Er	<	0.000310	M	Mo	<	0.000310	O	Sc	<	0.000590	M	Yb	<	0.000310				

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 - 28.09 +4 6 Si(OH)x(F)y2-

Chemical Compatibility -Soluble in HCl, HF, H3PO4 H2SO4 and HNO3 as the Si(OH)x(F)y2-. Avoid neutral to basic 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 silicic acid (silicic acid is soluble up to ∼100 ppm in water) in all dilute acids except HF.

Stability - 2-100 ppb levels - stability unknown - (alone or mixed with all other metals) as the Si(OH)x(F)y2-. 1-10,000 ppm single element solutions as the Si(OH)x(F)y2- chemically stable for years in 2-5 % HNO3 / trace HF in a LDPE container.

Si Containing Samples (Preparation and Solution) -Metal (Soluble in 1:1:1 H2O / HF / HNO3); Oxide - SiO2, amorphic (dissolve by heating in 1:1:1 H2O / HF / HNO3); Oxide - quartz (fuse in Pt0 with Na2CO3); Geological Samples(fuse in Pt0with Na2CO3 followed by HCl solution of the fuseate); Organic Matrices containing silicates and non volatile silicon compounds (dry ash at 4500C in Pt0 and dissolve by gently warming with 1:1:1 H2O / HF / H2SO4 or fuse / ash with Na2CO3 and dissolve fuseate with HCl / H2O); Silicone Oils - dimethyl silicones depolymerize to form volatile monomer units when heated (Measure directly in alcoholic KOH / xylene mixture where sample is treated first with the KOH at 60-1000C to "unzip" the Si- O-Si polymeric structure or digest with conc. H2SO4 / H2O2 followed by cooling and dissolution of the dehydrated silica with HF.) Note that the direct analysis of silicone oils in an organic solvent will result in false high results due to high vapor pressure of volatile monomer units like hexamethylcyclotrisiloxane. The KOH forms the K2+Si(CH3)2O= salt which is not volatile at room temperature.

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 28 amu	4000 - 8000 ppt	N/A	N2, 12C16O
ICP-OES 212.412 nm	0.02/0.01 µg/mL	1	Hf, Os, Mo, Ta
ICP-OES 251.611 nm	0.012/0.003 µg/mL	1	Ta, U, Zn, Th
ICP-OES 288.158 nm	0.03/0.004 µg/mL	1	Ta, Ce, Cr, Cd, Th

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

July 10, 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

- **July 10, 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



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

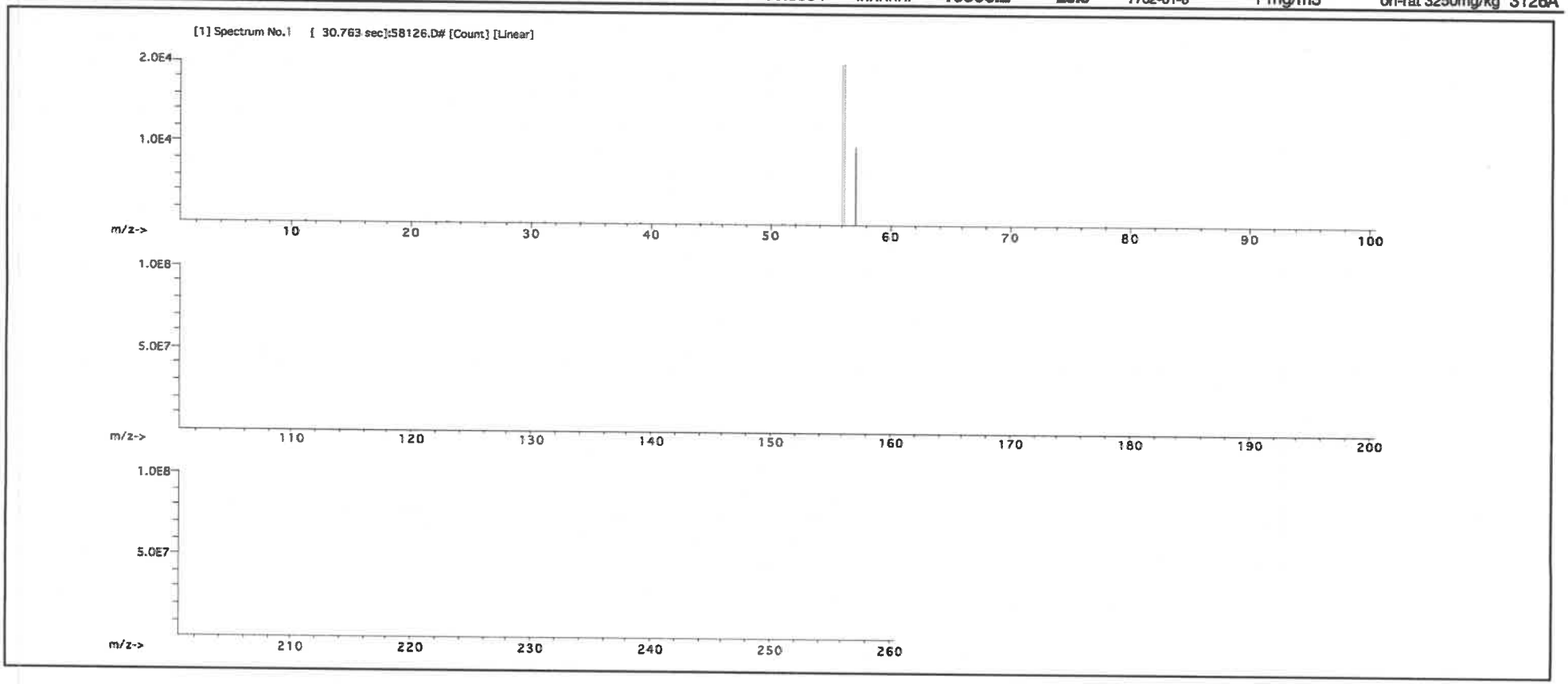
Part Number: 58126 R->1|B|2S
Lot Number: 011025
Description: Iron (Fe) M6140
Expiration Date: 011028
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.07 ± 0.100 Flask Uncertainty

		Lot #	
Solvent:	24012496	Nitric Acid	
	2%	40.0 (mL)	Nitric Acid

5E-05 Balance Uncertainty

Formulated By:	Benson Chan	011025
Reviewed By:	Pedro L. Rentas	011025

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)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Iron(III) nitrate nonahydrate (Fe)	IN028	FED082023A1	10000	99.999	0.10	13.0	153.8534	######	**10000.2**	**20.0**	7782-61-8	1 mg/m3	orl-rat 3250mg/kg	3126A



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	<0.02	Fe	T	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:

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 certifed (+/-) 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).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

R-> 1/13/25

Part Number: 57119
Lot Number: 103024
Description: Potassium (K)

M6141
M6142
M6143

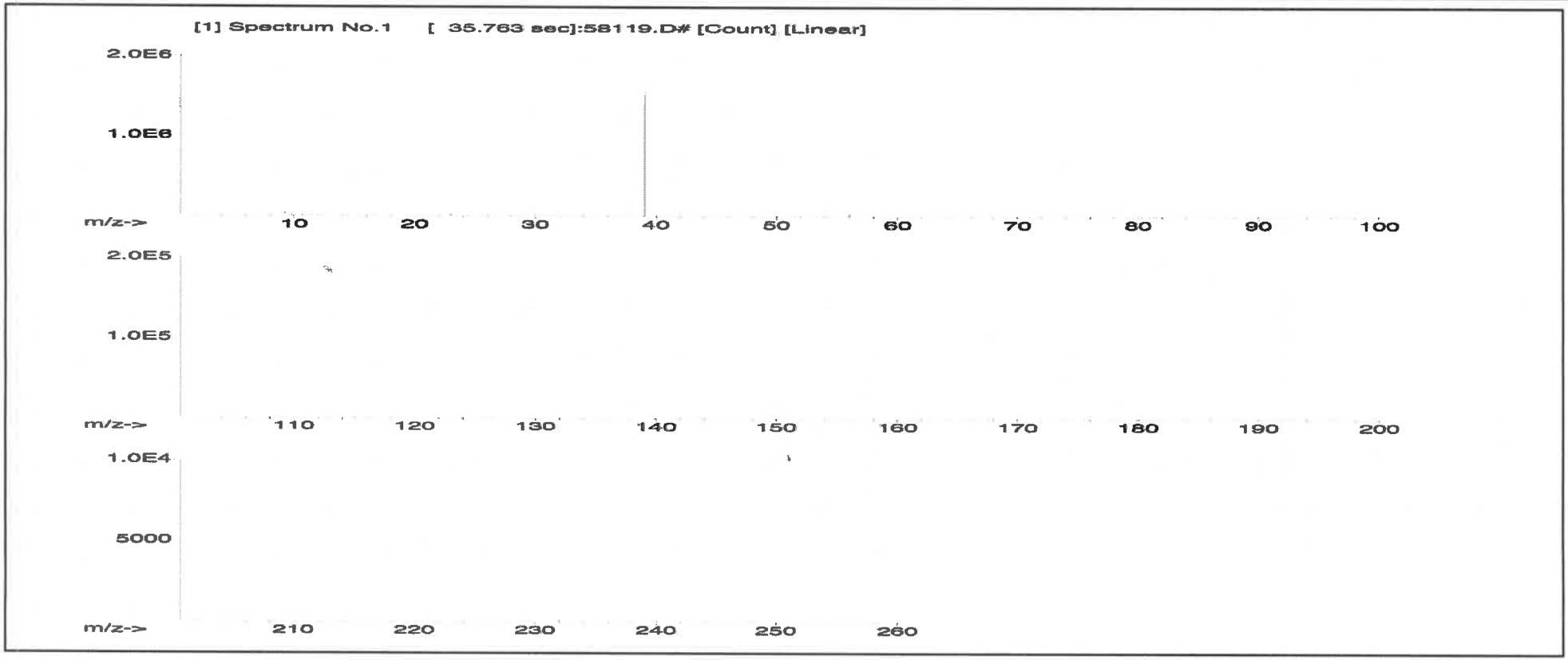
Expiration Date: 103027
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB

	Lot #		
Solvent:	24002546	Nitric Acid	
	2%	80.0 (mL)	Nitric Acid
	5E-05	Balance Uncertainty	
Weight shown below was diluted to (mL):	4000.1	0.15	Flask Uncertainty

Giovanni Esposito

Formulated By:	Giovanni Esposito	103024
Reviewed By:	Pedro L. Rentas	103024

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)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Potassium nitrate (K)	IN034	KD062022A1	10000	99.999	0.10	37.7	106.1040	######	**10001.1**	**20.0**	7757-79-1	5 mg/m3	orl-rat 3750 mg/kg	3141a



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	<0.02	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	T	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 certifed (+/-) 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).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

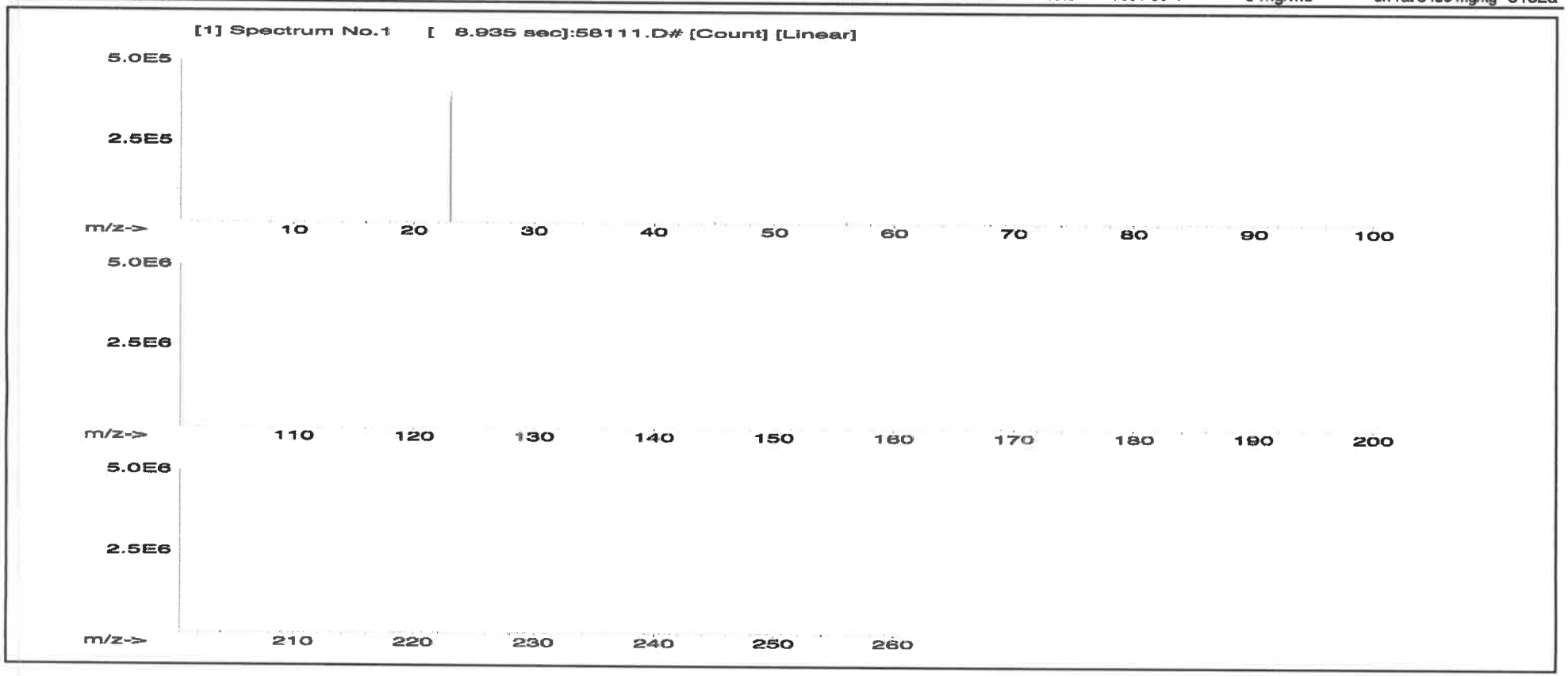
CERTIFIED WEIGHT REPORT:

R->1/13/25

Part Number:	**58111**		**Lot #**		
Lot Number:	**072424**	**Solvent:**	24002546	Nitric Acid	
Description:	**Sodium (Na)**				
		MG144 2%	80.0 (mL)	Nitric Acid	
Expiration Date:	072427				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**10000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	4000.2	0.10	Flask Uncertainty		

Formulated By:	Benson Chan 072424
Reviewed By:	Pedro L. Rentas 072424

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)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Sodium nitrate (Na)	IN036	NAV012015I1	10000	99.999	0.10	26.9	148.7096	######	**10000.0**	**20.0**	7631-99-4	5 mg/m3	orl-rat 3430 mg/kg	3152a



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	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	<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	T	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:

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 certifed (+/-) 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).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

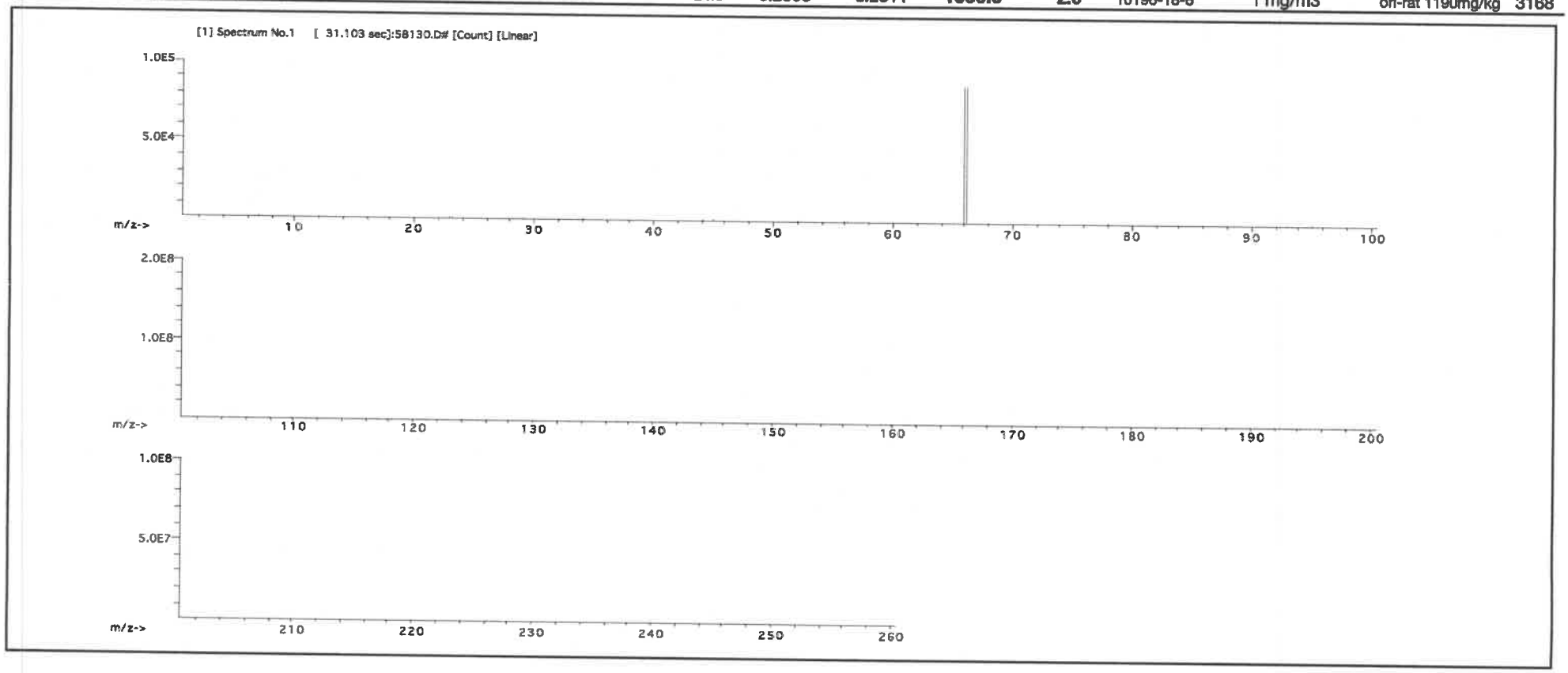
CERTIFIED WEIGHT REPORT:

Part Number:	**58030**	R → 1/13/25	**Solvent:**	**Lot #** 24012496	Nitric Acid
Lot Number:	**121724**				
Description:	**Zinc (Zn)**	M6145	2%	40.0 (mL)	Nitric Acid
Expiration Date:	121727				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05 Balance Uncertainty			
Weight shown below was diluted to (mL):	2000.1	0.10 Flask Uncertainty			

Aleah O'Brady

Formulated By:	Aleah O'Brady	121724
Reviewed By:	Pedro L. Rentas	121724

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)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Zinc nitrate hexahydrate (Zn)	IN016	ZNE032021A1	1000	99.999	0.10	24.3	8.2308	8.2311	**1000.0**	**2.0**	10196-18-6	1 mg/m3	orl-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	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	T
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:

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 certifed (+/-) 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).

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

avantor™ | J.T.Baker®

M6151

R-> 1/15/25

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

Certificate of Analysis

Test	Specification	Result
ACS – Assay (as HCl) (by acid-base titrn)	36.5 – 38.0 %	37.9 %
ACS – Color (APHA)	≤ 10	5
ACS – Residue after Ignition	≤ 3 ppm	< 1 ppm
ACS – Specific Gravity at 60°/60°F	1.185 – 1.192	1.191
ACS – Bromide (Br)	≤ 0.005 %	< 0.005 %
ACS – Extractable Organic Substances	≤ 5 ppm	< 1 ppm
ACS – Free Chlorine (as Cl_2)	≤ 0.5 ppm	< 0.5 ppm
Phosphate (PO_4)	≤ 0.05 ppm	< 0.03 ppm
Sulfate (SO_4)	≤ 0.5 ppm	< 0.3 ppm
Sulfite (SO_3)	≤ 0.8 ppm	0.3 ppm
Ammonium (NH_4)	≤ 3 ppm	< 1 ppm
Trace Impurities – Arsenic (As)	≤ 0.010 ppm	< 0.003 ppm
Trace Impurities – Aluminum (Al)	≤ 10.0 ppb	1.3 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 3.0 ppb
Trace Impurities – Barium (Ba)	≤ 1.0 ppb	0.2 ppb
Trace Impurities – Beryllium (Be)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Bismuth (Bi)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Boron (B)	≤ 20.0 ppb	< 5.0 ppb
Trace Impurities – Cadmium (Cd)	≤ 1.0 ppb	< 0.3 ppb
Trace Impurities – Calcium (Ca)	≤ 50.0 ppb	163.0 ppb
Trace Impurities – Chromium (Cr)	≤ 1.0 ppb	0.7 ppb
Trace Impurities – Cobalt (Co)	≤ 1.0 ppb	< 0.3 ppb
Trace Impurities – Copper (Cu)	≤ 1.0 ppb	< 0.1 ppb
Trace Impurities – Gallium (Ga)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Germanium (Ge)	≤ 3.0 ppb	< 2.0 ppb
Trace Impurities – Gold (Au)	≤ 4.0 ppb	0.6 ppb
Heavy Metals (as Pb)	≤ 100 ppb	< 50 ppb
Trace Impurities – Iron (Fe)	≤ 15 ppb	6 ppb

>>> Continued on page 2 >>>

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

avantor™ | J.T.Baker®

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

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

>>> Continued on page 3 >>>

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

avantor™ | J.T.Baker®

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

Test	Specification	Result

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

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

James T Ethier

Jamie Ethier
Vice President Global Quality

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

R-02102/2025

M-6158

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

avantor™ | J.T.Baker®

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™ | J.T.Baker®

Material No.: 9606-03
Batch No.: 24D1062002

Test	Specification	Result

For Microelectronic Use

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

Jamie Croak
Director Quality Operations, Bioscience Production

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

m-5162

R. Date :- 04/27/2025

Material No.: 9606-03
Batch No.: 24H0162012
Manufactured Date: 2024-06-28
Retest Date: 2029-06-27
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	< 1.0 ppb
Trace Impurities – Boron (B)	≤ 10.0 ppb	0.1 ppb
Trace Impurities – Cadmium (Cd)	≤ 50 ppb	< 1 ppb
Trace Impurities – Calcium (Ca)	≤ 50.0 ppb	0.3 ppb
Trace Impurities – Chromium (Cr)	≤ 30.0 ppb	0.1 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	< 1 ppb
Trace Impurities – Gold (Au)	≤ 20 ppb	< 1 ppb
Heavy Metals (as Pb)	≤ 100 ppb	< 50 ppb
Trace Impurities – Iron (Fe)	≤ 40.0 ppb	< 1.0 ppb
Trace Impurities – Lead (Pb)	≤ 20.0 ppb	< 1.0 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	< 1.0 ppb

>>> Continued on page 2 >>>

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

Material No.: 9606-03
Batch No.: 24H0162012

Test	Specification	Result
Trace Impurities - Niobium (Nb)	≤ 50.0 ppb	< 1.0 ppb
Trace Impurities - Potassium (K)	≤ 50 ppb	< 1 ppb
Trace Impurities - Silicon (Si)	≤ 50 ppb	1 ppb
Trace Impurities - Silver (Ag)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities - Sodium (Na)	≤ 150.0 ppb	< 1.0 ppb
Trace Impurities - Strontium (Sr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities - Tantalum (Ta)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Thallium (Tl)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Tin (Sn)	≤ 20.0 ppb	< 1.0 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	13 par/ml
Particle Count - 1.0 µm and greater	≤ 10 par/ml	5 par/ml

>>> Continued on page 3 >>>

Nitric Acid 69%
CMOS

avantor™ | J.T.Baker®

Material No.: 9606-03
Batch No.: 24H0162012

Test	Specification	Result

For Microelectronic Use

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

Jamie Croak
Director Quality Operations, Bioscience Production

INORGANIC VENTURES™
Refine your results. Redefine your industry.

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).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	QCP-CICV-1
Lot Number:	V2-MEB744107
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	2 500 µg/mL ea: Calcium, Potassium, Magnesium, Sodium, 1 000 µg/mL ea: Aluminum, Barium, 500 µg/mL ea: Iron, 250 µg/mL ea: Nickel, Vanadium, Zinc, Cobalt, Manganese, 125 µg/mL ea: Silver, Copper, 100 µg/mL ea: Chromium, 25 µg/mL ea: Beryllium

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
Aluminum, Al	**1 000 ± 4 µg/mL**	**Barium, Ba**	**1 000 ± 6 µg/mL**
Beryllium, Be	**24.98 ± 0.12 µg/mL**	**Calcium, Ca**	**2 500 ± 8 µg/mL**
Chromium, Cr	**99.9 ± 0.6 µg/mL**	**Cobalt, Co**	**250.2 ± 1.2 µg/mL**
Copper, Cu	**125.0 ± 0.5 µg/mL**	**Iron, Fe**	**500.0 ± 2.2 µg/mL**
Magnesium, Mg	**2 500 ± 11 µg/mL**	**Manganese, Mn**	**249.9 ± 1.1 µg/mL**
Nickel, Ni	**250.0 ± 1.2 µg/mL**	**Potassium, K**	**2 500 ± 11 µg/mL**
Silver, Ag	**125.0 ± 0.6 µg/mL**	**Sodium, Na**	**2 500 ± 11 µg/mL**
Vanadium, V	**250.0 ± 1.1 µg/mL**	**Zinc, Zn**	**249.9 ± 1.1 µg/mL**

Density: 1.081 g/mL (measured at 20 ± 4 ºC)

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
Cu	ICP Assay	3114	120618
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	200413
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
V	ICP 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, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

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

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:

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ 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 Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

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**

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

May 22, 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

- **May 22, 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

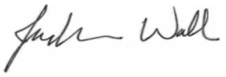
Certificate Prepared By:

Justin Dirico
Stock Processing Supervisor



Certificate Approved By:

Jodie Wall
Stock VSM Coordinator



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



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).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	QCP-CICV-2
Lot Number:	U2-MEB733713
Matrix:	3% (w/v) Tartaric acid 1% (v/v) HNO3
Value / Analyte(s):	500 µg/mL ea: Antimony

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
Antimony, Sb	**500.0 ± 2.8 µg/mL**		

Density: 1.017 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Sb	ICP Assay	3102a	140911

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:

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

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2
$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ 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 Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

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

June 01, 2023

- 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 01, 2028**

- 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

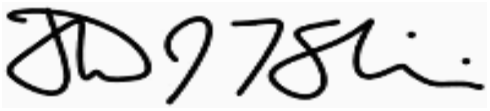
- Sealed TCT Bag Open Date: _____

- 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



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).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	QCP-CICV-3
Lot Number:	V2-MEB749572
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	500 µg/mL ea: Arsenic, Lead, Selenium, Thallium, 250 µg/mL ea: Cadmium

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
Arsenic, As	**500.0 ± 3.1 µg/mL**	**Cadmium, Cd**	**250.1 ± 1.1 µg/mL**
Lead, Pb	**500.0 ± 2.3 µg/mL**	**Selenium, Se**	**500.0 ± 3.2 µg/mL**
Thallium, Tl	**500.0 ± 3.0 µg/mL**		

Density: 1.040 g/mL (measured at 20 ± 4 ºC)

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

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

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:

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ 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 Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

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

January 02, 2025

- 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 02, 2030**

- 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

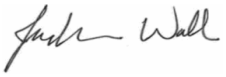
Certificate Prepared By:

Justin Dirico
Stock Processing Supervisor



Certificate Approved By:

Jodie Wall
Stock VSM Coordinator



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



R -> 2/13/25

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number: 58112
Lot Number: 011525
Description: Magnesium (Mg)

M 6171

	Lot #	
Solvent:	24012496	Nitric Acid
2%	40.0 (mL)	Nitric Acid

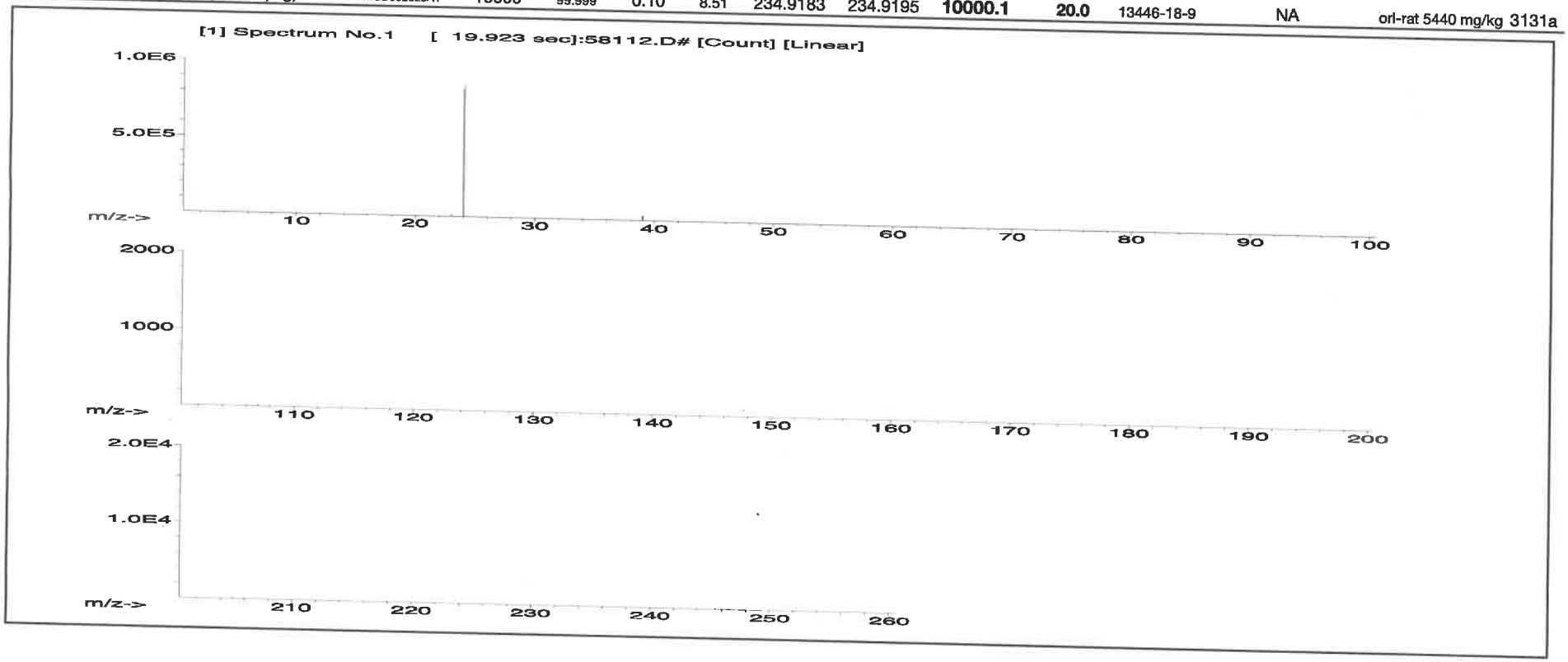
Expiration Date: 011528
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB

5E-05	Balance Uncertainty	
0.100	Flask Uncertainty	

Weight shown below was diluted to (mL): 2000.07

Formulated By:	Benson Chan	011525
Reviewed By:	Pedro L. Rentas	011525

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)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Magnesium nitrate hexahydrate (Mg)	IN030	MGD052023A1	10000	99.999	0.10	8.51	234.9183	234.9195	**10000.1**	**20.0**	13446-18-9	NA	orl-rat 5440 mg/kg	3131a



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.
* 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 certifed (+/-) 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).

INORGANIC VENTURES
Refine your results. Redefine your industry.

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

M6174
R-> 5/5/24

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).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	CLPP-CAL-1
Lot Number:	V2-MEB742428
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	5 000 µg/mL ea:
	Calcium, Potassium,
	Magnesium, Sodium,
	2 000 µg/mL ea:
	Aluminum, Barium,
	1 000 µg/mL ea:
	Iron,
	500 µg/mL ea:
	Nickel, Vanadium,
	Zinc, Cobalt,
	Manganese,
	250 µg/mL ea:
	Silver, Copper,
	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	50.03 ± 0.30 µg/mL	Calcium, Ca	5 000 ± 16 µg/mL
Chromium, Cr	200.0 ± 1.1 µg/mL	Cobalt, Co	500.0 ± 2.3 µg/mL
Copper, Cu	250.0 ± 1.1 µg/mL	Iron, Fe	1 000 ± 4 µg/mL
Magnesium, Mg	5 000 ± 22 µg/mL	Manganese, Mn	499.9 ± 2.2 µg/mL
Nickel, Ni	500.1 ± 2.3 µg/mL	Potassium, K	5 000 ± 22 µg/mL
Silver, Ag	250.0 ± 1.1 µg/mL	Sodium, Na	5 000 ± 22 µg/mL
Vanadium, V	500.0 ± 2.2 µg/mL	Zinc, Zn	500.0 ± 2.2 µg/mL

Density: 1.117 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
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Cr	ICP Assay	3112a	170630
Cu	ICP Assay	3114	120618
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	200413
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
V	ICP 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, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

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

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:

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ 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 Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

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**

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

March 22, 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 22, 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:

Jodie Wall
Stock VSM Coordinator



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

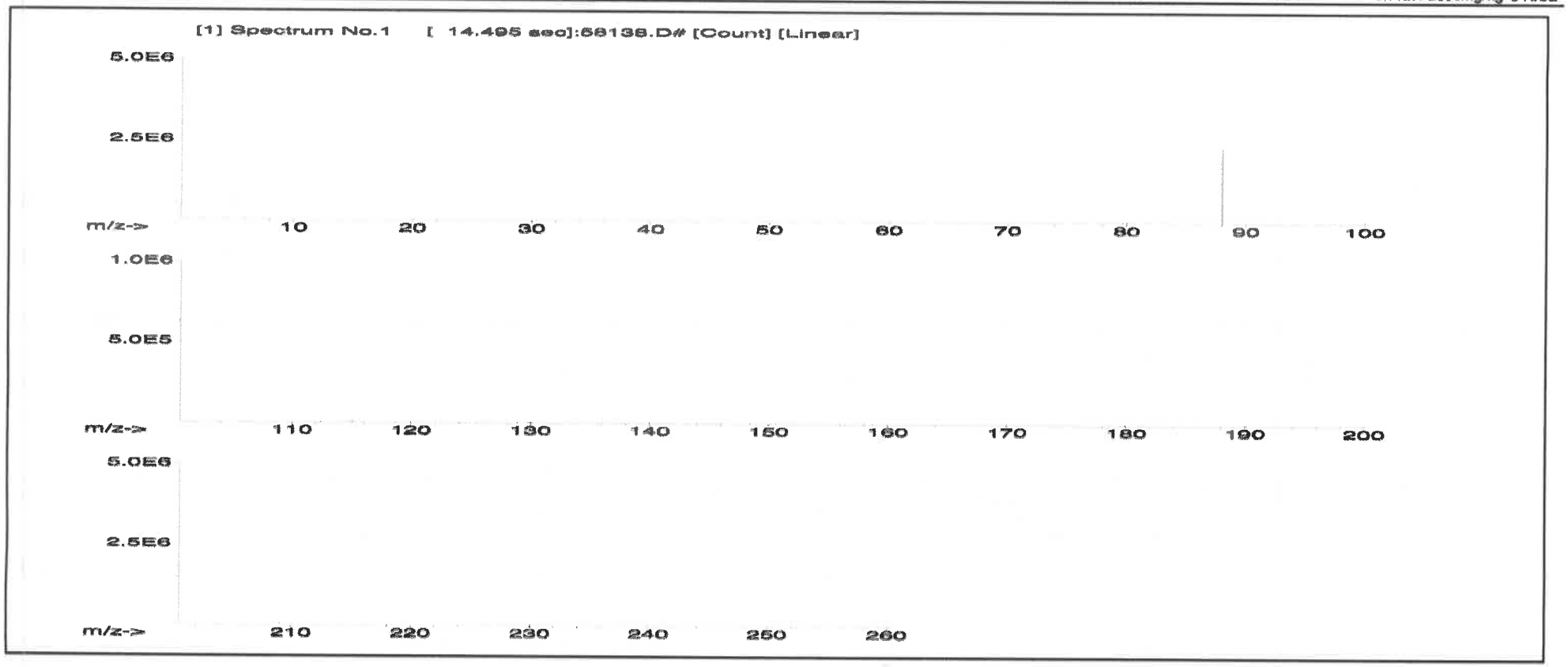
CERTIFIED WEIGHT REPORT:

R->8/6/29

Part Number:	57038		**Lot #**		
Lot Number:	092724	**Solvent:**	24002546	Nitric Acid	
Description:	Strontium (Sr)				
		M6176 2%	40.0 (mL)	Nitric Acid	
Expiration Date:	092727				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	1000				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	2000.07	0.100	Flask Uncertainty		

Formulated By:	Benson Chan	092724
Reviewed By:	Pedro L. Rentas	092724

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)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Strontium nitrate (Sr)	IN017	SRZ022018A1	1000	99.997	0.10	41.2	4.85470	4.85481	**1000.0**	**2.0**	10042-76-9	NA	orl-rat >2000mg/kg	3153a



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	<0.02	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:

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 certifed (+/-) 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).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

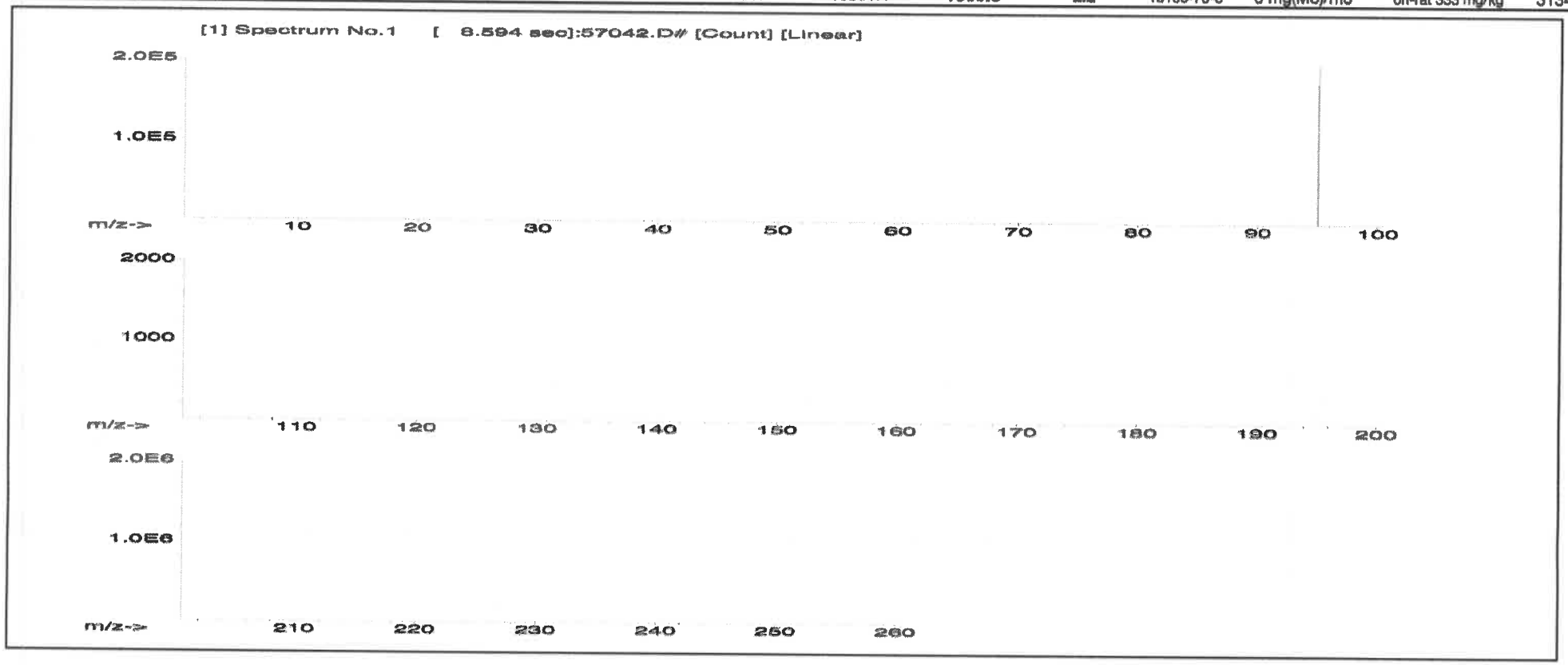
CERTIFIED WEIGHT REPORT:

R→ 8/6/25
M6177

		Lot #	Solvent:		
Part Number:	57042	MKBQ8597V	Ammonium hydroxide		
Lot Number:	080525	080525	ASTM Type 1 Water		
Description:	Molybdenum (Mo)	0.5%	10.0 (mL)	Ammonium hydroxide	
Expiration Date:	080528				
Recommended Storage:	Ambient (15 - 30 °C)				
Nominal Concentration (µg/mL):	1000				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Volume shown below was diluted to (mL):	1999.41	0.058	Flask Uncertainty		

Formulated By:	Benson Chan	080525
Reviewed By:	Pedro L. Rentas	080525

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)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium molybdate (Mo)	58142	112322	0.1000	200.0	0.084	1000	10001.4	**1000.5**	**2.2**	13106-76-8	5 mg(Mo)/m3	orl-rat 333 mg/kg	3134



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	<0.02	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 by an ISO17025 certified organization with weights traceable through NIST to the SI kilogram (see above).
* Standards are certifed (+/-) 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).
Rev 1.0, 2/25/2025

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

R>8/6/28
M6178

Part Number:	**57082**		**Lot #**		
Lot Number:	**031525**	**Solvent:**	24014457	Nitric Acid	
Description:	**Lead (Pb)**		2%	40.0 (mL)	Nitric Acid
Expiration Date:	031528				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	2000.07	0.10	Flask Uncertainty		

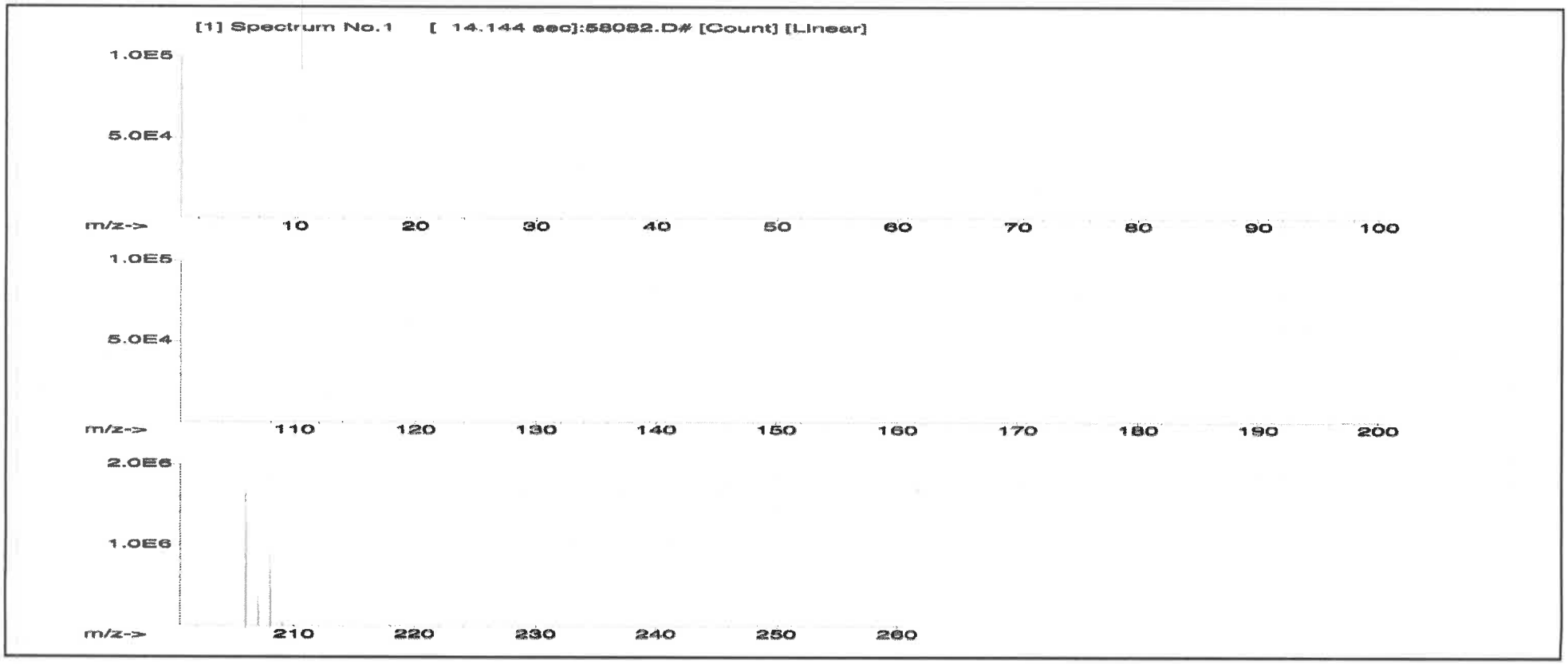
Giovanni Esposito

Formulated By:	Giovanni Esposito	031525

Pedro Rentas

Reviewed By:	Pedro L. Rentas	031525

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)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Lead(II) nitrate (Pb)	IN029	PBD122016A1	1000	99.999	0.10	62.5	3.20015	3.20067	**1000.2**	**2.0**	10099-74-8	0.05 mg/m3	intrvns-rat 93 mg/kg	3128



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	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	<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

(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 certifed (+/-) 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).

INORGANIC VENTURES™
Refine your results. Redefine your industry.

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

M6179
R -> 6/2/24

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).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

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:

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

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:

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

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ 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 Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

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	<	0.004600	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 Pt0 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	73Ge16O, 178Hf+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

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

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



R→03/06/24

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.

M6182

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,

The Quality Assurance Technical Support (QATS) contract is operated by APTIM Federal Services, LLC.

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 HNO_3. 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 HNO_3. 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.

R→03/06/24

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

M6184

(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,

The Quality Assurance Technical Support (QATS) contract is operated by APTIM Federal Services, LLC.

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 HNO_3. 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 HNO_3. 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.

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

R 8/05/24

M6027

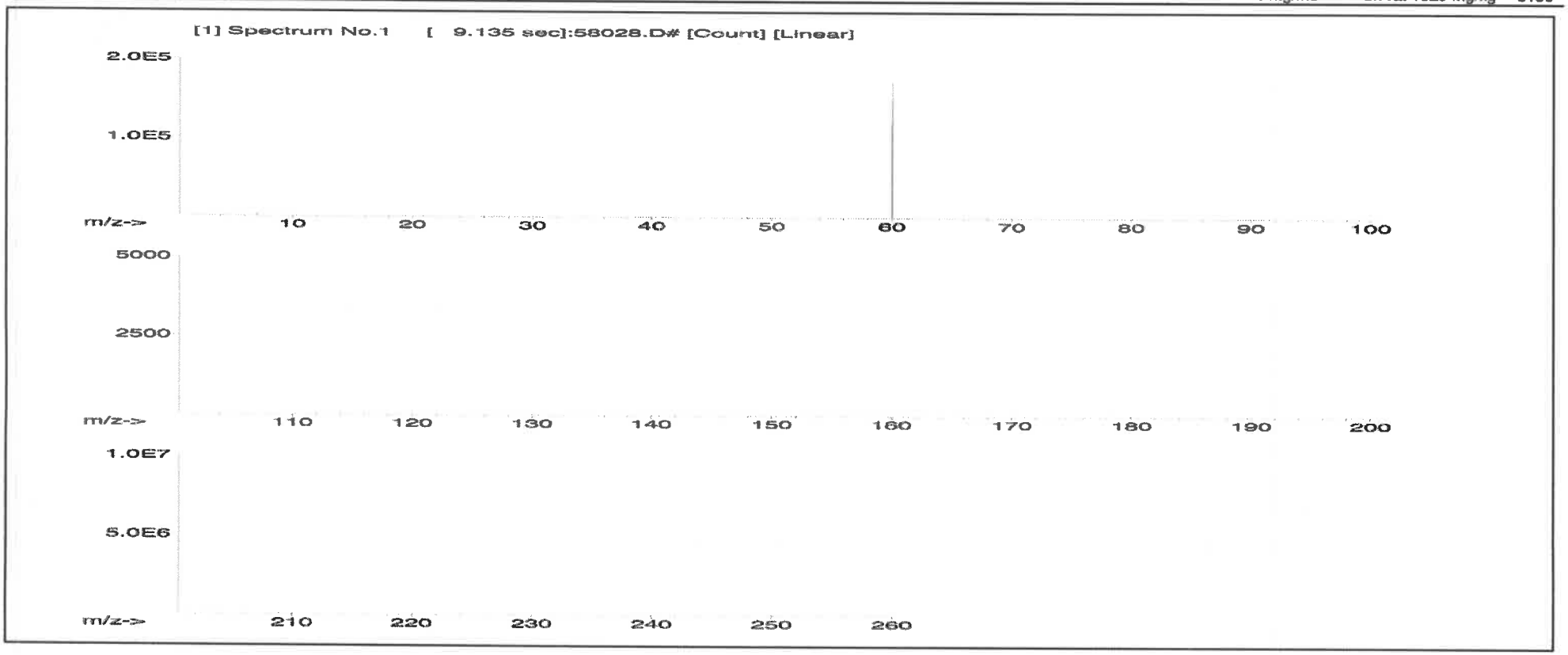
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**57028**			
Lot Number:	**062024**	24002546	Nitric Acid	
Description:	**Nickel (Ni)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	062027			
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):	2000.07	0.100	Flask Uncertainty	

Formulated **By:**	Benson Chan	062024
Reviewed By:	Pedro L. Rentas	062024

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)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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	orl-rat 1620 mg/kg	3136



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	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:

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 certifed (+/-) 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).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M6030

R: 8/5/24

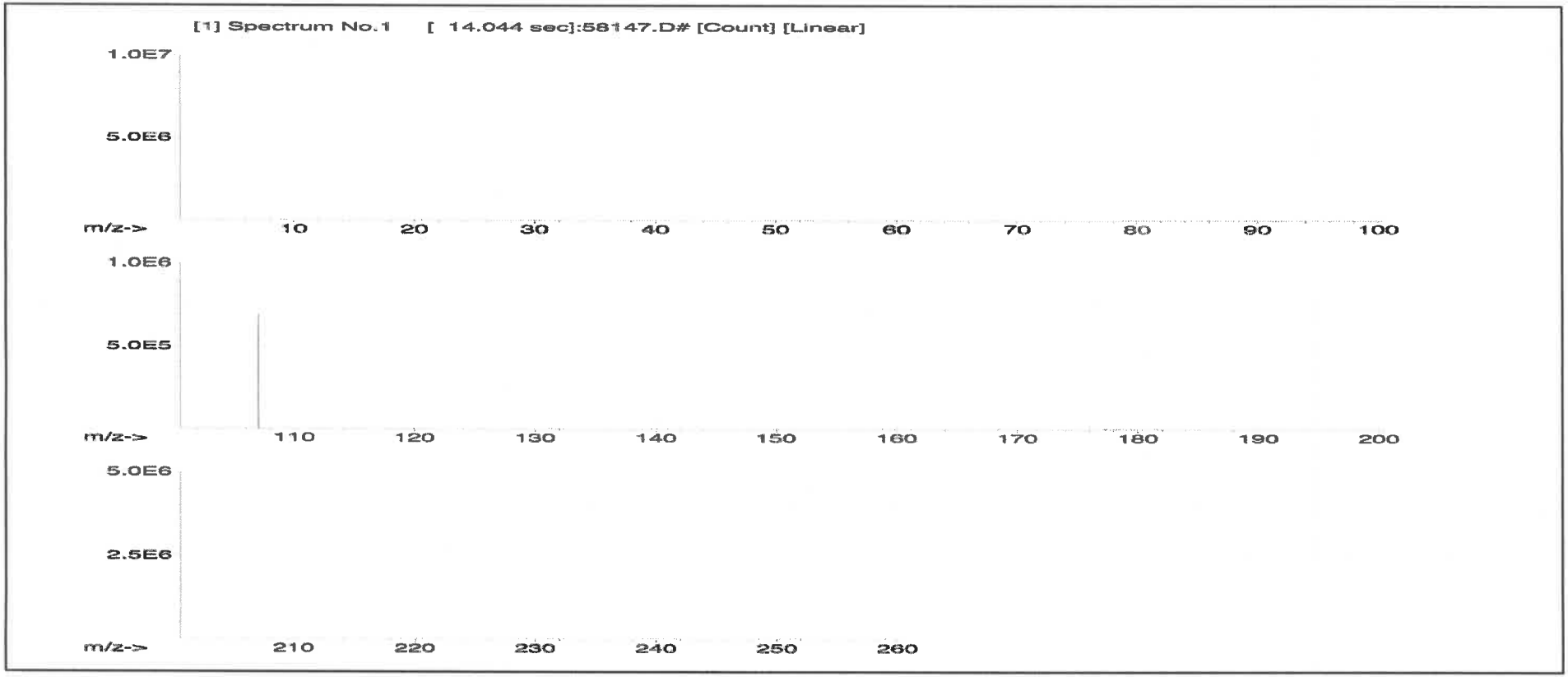
ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number:	**57047**		**Lot #**		
Lot Number:	**122823**	**Solvent:**	24002546	Nitric Acid	
Description:	**Silver (Ag)**	2%	80.0 (mL)	Nitric Acid	
Expiration Date:	122826				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	4000.30	0.058	Flask Uncertainty		

Formulated By:	Benson Chan	122823
Reviewed By:	Pedro L. Rentas	122823

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)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Silver nitrate (Ag)	IN035	J0612AGA1	1000.0	99.9999	0.10	63.7	6.27992	6.27998	**1000.0**	**2.0**	7761-88-8	10 ug/m3	NA	3151



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	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 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 certifed (+/-) 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).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

R: 10/18/24

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

MG146

		Lot #	Solvent:	
Part Number:	**57051**	24002546	Nitric Acid	
Lot Number:	**071724**			
Description:	**Antimony (Sb)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	071727			
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):	2000.26	0.058	Flask Uncertainty	

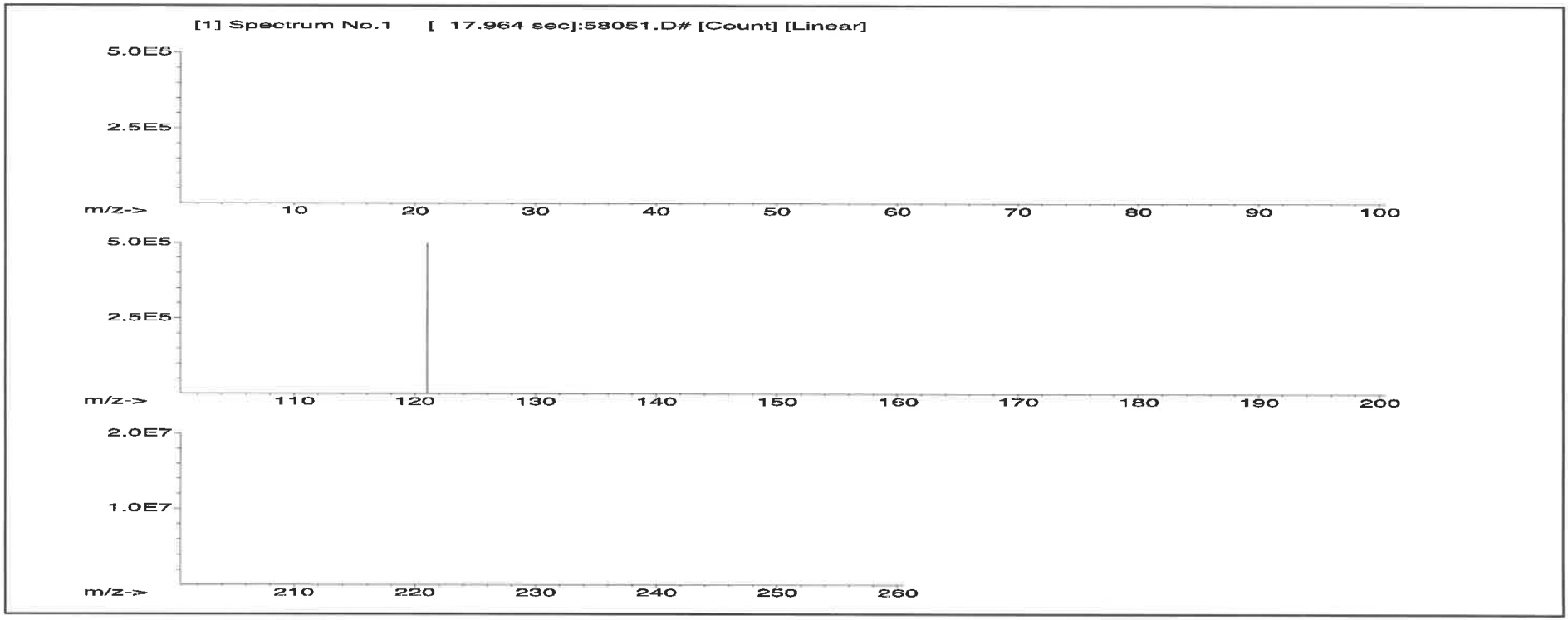
Giovanni Esposito

Formulated By:	Giovanni Esposito	071724

Pedro Rentas

Reviewed By:	Pedro L. Rentas	071724

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)	**SDS Information** (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Antimony (Sb)	58151	060324	0.1000	200.0	0.084	1000	10001.4	**1000.0**	**2.2**	7440-36-0	0.5 mg/m3	orl-rat 7000 mg/kg	3102a



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	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 certifed (+/-) 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).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

R ! 8/5/24

M6023

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

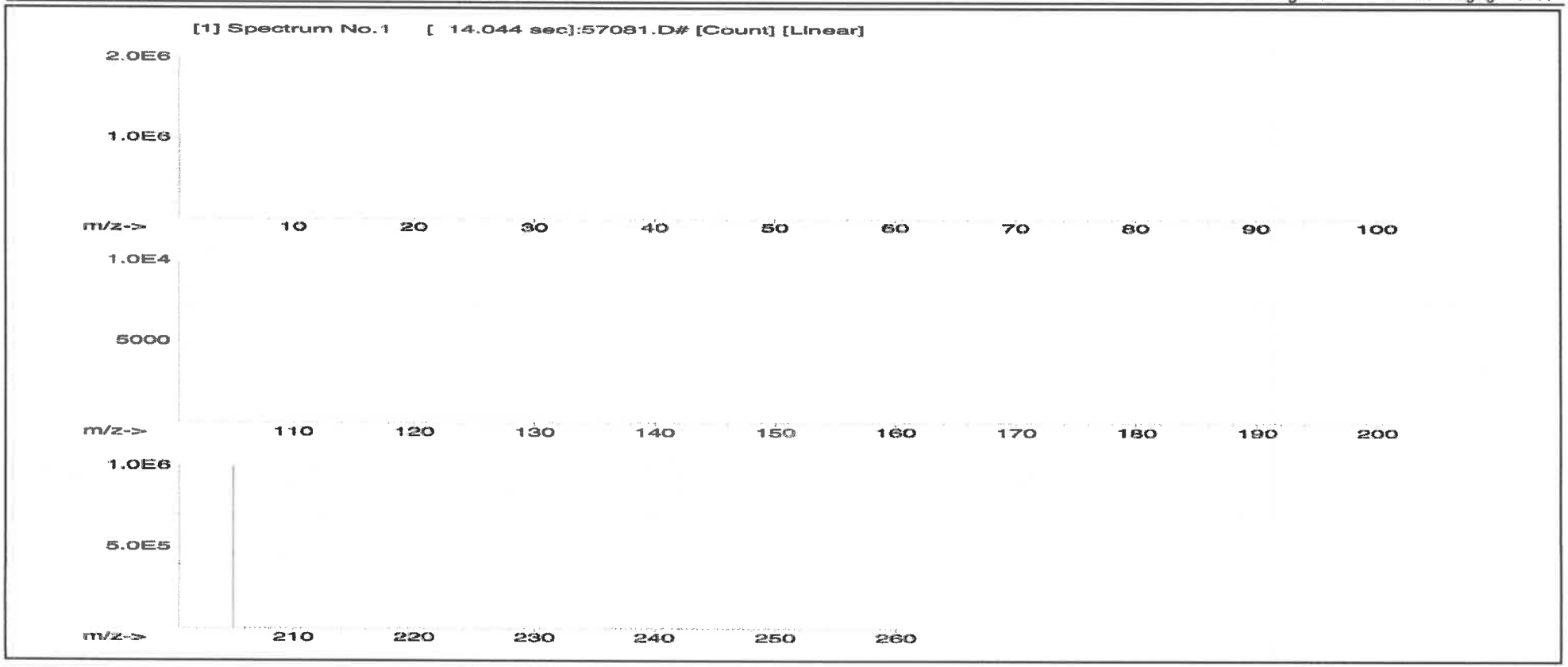
CERTIFIED WEIGHT REPORT:

Part Number:	**57081**		**Lot #**		
Lot Number:	**062724**	**Solvent:**	24002546	Nitric Acid	
Description:	**Thallium (Tl)**				
		2%	40.0 (mL)	Nitric Acid	
Expiration Date:	062727				
Recommended Storage:	Ambient (20 °C)				
Nominal Concentration (µg/mL):	**1000**				
NIST Test Number:	6UTB	5E-05	Balance Uncertainty		
Weight shown below was diluted to (mL):	2000.1	0.10	Flask Uncertainty		

Aleah O'Brady

Formulated By:	Aleah O'Brady	062724
Reviewed By:	Pedro L. Rentas	062724

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)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Thallium nitrate (Tl)	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



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	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	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 certifed (+/-) 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).

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

M6021

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

Bc. 8/5/24

CERTIFIED WEIGHT REPORT:

		Lot #	Solvent:	
Part Number:	**57023**			
Lot Number:	**062424**	24002546	Nitric Acid	
Description:	**Vanadium (V)**			
		2.0%	40.0 (mL)	Nitric Acid
Expiration Date:	062427			
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):	2000.3	0.06	Flask Uncertainty	

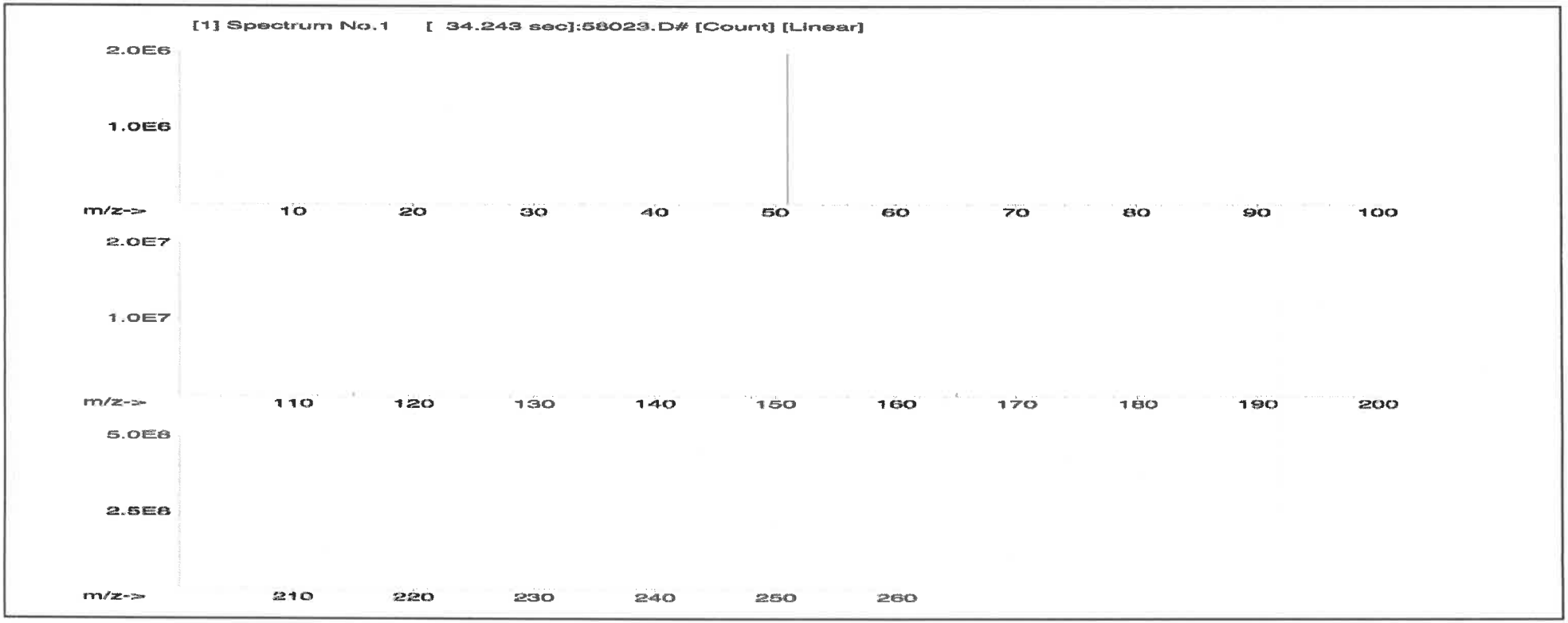
Aleah O'Brady

Formulated By:	Aleah O'Brady	062424

Pedro Rentas

Reviewed By:	Pedro L. Rentas	062424

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)	SDS Information (Solvent Safety Info. On Attached pg.) 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	orl-rat 58.1mg/kg	3165



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	T
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:

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 certifed (+/-) 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).



SHIPPING DOCUMENTS

Q2758
92 Clifford Street.

CHEMTECH
CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 Fax (908) 789-8922
www.chemtech.net

Chemtech Project Number: Newark
COC Number:

CLIENT INFORMATION			PROJECT INFORMATION		BILLING INFORMATION		
Report to be sent to:			PROJECT NAME:		BILL TO:	PO#	
COMPANY:			PROJECT #:	LOCATION:	ADDRESS:		
ADDRESS:			PROJECT MANAGER:		CITY: SCIACCA	STATE:	ZIP:
CITY:	STATE:	ZIP:	E-MAIL:		ATTENTION:		
ATTENTION:			PHONE:	FAX:	PHONE:		
PHONE:	FAX:						

DATA TURNAROUND INFORMATION

FAX (RUSH) _____ DAYS*
HARDCOPY (DATA PACKAGE): _____ DAYS*
EDD: _____ DAYS*
*TO BE APPROVED BY CHEMTECH
STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION

- ☐ Level 1 (Results Only)
- ☐ Level 2 (Results + QC)
- ☐ Level 3 (Results + QC + Raw Data)
- ☐ EDD FORMAT _____
- ☐ Level 4 (QC + Full Raw Data)
- ☐ NJ Reduced ☐ US EPA CLP
- ☐ NYS ASP A ☐ NYS ASP B
- ☐ Other _____

ANALYSIS

1 TPH_GC, 2 VOC, 3 EPH_F2, 4, 5, 6, 7, 8, 9

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE: COMP	SAMPLE TYPE: GRAB	SAMPLE COLLECTION: DATE	SAMPLE COLLECTION: TIME	# of Bottles	PRESERVATIVES 1	2	3	4	5	6	7	8	9	COMMENTS
1.	WASTE						1	X									
2.	VOC						1		X								
3.	1						1			X							
4.	2						1			X							
5.	3						1			X							
6.	4						1			X							
7.	5						1			X							
8.																	
9.																	
10.																	

Please follow Sundew list for Cont. Waste.

<-- Specify Preservatives
A-HCl D-NaOH
B-HNO3 E-ICE
C-H2SO4 F-OTHER

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE PROSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER	DATE/TIME	RECEIVED BY	
1.	8-1-25 1533	1.	1533
RELINQUISHED BY	DATE/TIME	RECEIVED BY	
2.		2.	8-1-25
RELINQUISHED BY	DATE/TIME	RECEIVED FOR LAB BY	
3.	8-1-25 1640	3.	

Conditions of bottles or coolers at receipt: ☐ COMPLIANT ☐ NON COMPLIANT ☐ COOLER TEMP 3.0°C
Comments: _____

Page _____ of _____

CLIENT: ☐ Hand Delivered ☐ Other: _____
CHEMTECH: ☐ Picked Up

Shipment Complete ☐ YES ☐ NO

10/2018

WHITE - CHEMTECH COPY FOR RETURN TO CLIENT YELLOW - CHEMTECH COPY PINK - SAMPLER COPY

284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Laboratory Certification

Certified By	License No.
CAS EPA CLP Contract	68HERH20D0011
Connecticut	PH-0830
DOD ELAP (ANAB)	L2219
Maine	2024021
Maryland	296
New Hampshire	255424 Rev 1
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	525-24-234-08441
Texas	T104704488

QA Control Code: A2070148

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

YG 08/06/2025

LOGIN REPORT/SAMPLE TRANSFER

Order ID : Q2758 SCIA01
Client Name : Sciacca General Contractors
Client Contact : Rosanne Scirica
Invoice Name : Sciacca General Contractors
Invoice Contact : Rosanne Scirica

Order Date : 8/1/2025 4:14:00 PM
Project Name : ~~89 E. Centre St, Nutley~~ 92 Clifford Street, Newark
Receive DateTime : 8/1/2025 ~~12:00:00 AM~~ 04:40:00 PM
Purchase Order :

Project Mgr :
Report Type : Results Only
EDD Type : EXCEL NJCLEANUP
Hard Copy Date :
Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
Q2758-01	WASTE	Solid	08/01/2025	00:00					
					VOC-TCLVOA-10		8260D		10 Bus. Days

Relinguished By :
Date / Time : 8/4/25 1040

Received By :
Date / Time : 08/04/25 10:40
Storage Area : VOA Refridgerator Room

NJ #6
PS 2