

DATA PACKAGE

METALS

PROJECT NAME : NEWPCP SLUDGE SCREEN 13923-GE-25

AMBRIC TECHNOLOGY CORPORATION

100 Pine Street

Colwyn, PA - 19023

Phone No: 215-928-8930

ORDER ID : Q3068

ATTENTION : Dan Mulvihill



Laboratory Certification ID # 20012



1) METALS DATA	2
2) Signature Page	4
3) Case Narrative	5
4) Qualifier Page	6
5) Conformance/Non Conformance	7
6) QA Checklist	8
7) Chronicle	9
8) Hit Summary	10
9) Sample Data	11
9.1) AMBRIC-TECH-9-9	12
10) METALS CALIBRATION DATA	13
10.1) Initial and Continuing Calibration Verification	14
10.2) CRDL Standard For AA & ICP	18
10.3) Initial and Continuing Calibration Blank Summary	19
10.4) Preparation Blank Summary	22
10.5) Interference Check Sample	23
11) METALS QC DATA	24
11.1) Matrix Spike Summary	25
11.2) Post Digest Spike Summary	27
11.3) Duplicate Sample Summary	28
11.4) Laboratory Control Sample Summary	30
11.5) ICP Serial Dilutions	31
12) METALS PREPARATION & INSTRUMENT DATA	32
12.1) ICP Interelement Correction Factors	33
13) PREPARATION & ANALYTICAL SUMMARY	38
13.1) Sample Preparation Summary	39
13.2) Analysis Run Log	40
14) METALS RAW DATA	41
14.1) METALS RAW DATA - ANALYTICAL	42
14.2) LB137144	42
14.3) METALS RAW DATA - PREP	212
14.3.1) PB169634	212
15) Percent Solid	215
16) Analytical Runlogs	219
17) Standard Prep Logs	223

Table Of Contents for Q3068

18) Shipping Document	386
18.1) Chain Of Custody	387
18.2) Lab Certificate	388

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18

Cover Page

Order ID : Q3068

Project ID : NEWPCP Sludge Screen 13923-GE-25

Client : Ambric Technology Corporation

Lab Sample Number

Q3068-01

Client Sample Number

AMBRIC-TECH-9-9

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: 9/18/2025

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012



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

CASE NARRATIVE

Ambric Technology Corporation

Project Name: NEWPCP Sludge Screen 13923-GE-25

Project # N/A

Order ID # Q3068

Test Name: Metals Group4

A. Number of Samples and Date of Receipt:

1 Solid sample was received on 09/10/2025.

B. Parameters:

According to the Chain of Custody document, the following analyses were requested: Metals Group4. This data package contains results for Metals Group4.

C. Analytical Techniques:

The analysis of Metals Group4 was based on method 6010D and digestion based on method 3050 (soils).

D. QA/ QC Samples:

The Holding Times were met for all analysis.

The Blank Spike met requirements for all compounds.

The Duplicate (MH-384DUP) analysis met criteria for all compounds except for Calcium, Copper, Manganese and Zinc due to Sample Matrix interference.

The Matrix Spike analysis met criteria for all compounds.

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:

The Date and time of sampling was not listed in the COC.

The temperature of the samples at the time of receipt was 27.3°C.

The Fax and Hardcopy is not matching. At the time of second review lab noticed the fax data were not calculated with Percent solids, therefore the data were reprocessed with Percent solids and reported in Hardcopy. Hardcopy is reported corrected.

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_____

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

METALS CONFORMANCE/NON-CONFORMANCE SUMMARY

ORDER ID: Q3068

MATRIX: Solid

METHOD: 6010D

	NA	NO	YES
1. Calibration Summary met criteria.			✓
2. ICP Interference Check Sample Results Summary Submitted.			✓
3. Serial Dilution Summary (if applicable) Submitted.			✓
4. Laboratory Control Sample Summary (if applicable) Submitted.			✓
5. Blank Contamination - If yes, list compounds and concentrations in each blank:		✓	
6. Matrix Spike/Matrix Spike Duplicate Recoveries Met Criteria			✓
If not met, list those compounds and their recoveries which fall outside the acceptable range.			
7. Sample Duplicate Analysis Met QC Criteria		✓	
If not met, list those compounds and their recoveries which fall outside the acceptable range.			
The Duplicate (MH-384DUP) analysis met criteria for all compounds except for Calcium, Copper, Manganese and Zinc due to Sample Matrix interference.			
8. Digestion Holding Time Met			✓
If not met, list number of days exceeded for each sample:			
9. Analysis Holding Time Met			✓
If not met, list those compounds and their recoveries which fall outside the acceptable range.			

ADDITIONAL COMMENTS: The Date and time of sampling was not listed in the COC.

The temperature of the samples at the time of receipt was 27.3°C.

The Fax and Hardcopy is not matching. At the time of second review lab noticed the fax data were not calculated with Percent solids, therefore the data were reprocessed with Percent solids and reported in Hardcopy. Hardcopy is reported corrected.

 QA REVIEW

 Date

APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: Q3068

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 Custody

✓

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: 09/18/2025

LAB CHRONICLE

OrderID:	Q3068	OrderDate:	9/10/2025 10:27:58 AM
Client:	Ambric Technology Corporation	Project:	NEWPCP Sludge Screen 13923-GE-25
Contact:	Dan Mulvihill	Location:	D31

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
Q3068-01	AMBRIC-TECH-9-9	SOIL	Metals Group4	6010D	09/09/25	09/10/25	09/10/25	09/10/25

Hit Summary Sheet SW-846

SDG No.:	Q3068	Order ID:	Q3068
Client:	Ambric Technology Corporation	Project ID:	NEWPCP Sludge Screen 13923-GE-25

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID : AMBRIC-TECH-9-9								
Q3068-01	AMBRIC-TECH-9-9	SOIL	Calcium	11800		11.7	105	mg/Kg
Q3068-01	AMBRIC-TECH-9-9	SOIL	Copper	34.9		0.23	1.05	mg/Kg
Q3068-01	AMBRIC-TECH-9-9	SOIL	Iron	19900		4.19	5.25	mg/Kg
Q3068-01	AMBRIC-TECH-9-9	SOIL	Magnesium	6560		12.6	105	mg/Kg
Q3068-01	AMBRIC-TECH-9-9	SOIL	Manganese	286		0.15	1.05	mg/Kg
Q3068-01	AMBRIC-TECH-9-9	SOIL	Potassium	2850		29.1	105	mg/Kg
Q3068-01	AMBRIC-TECH-9-9	SOIL	Zinc	90.8		0.24	2.10	mg/Kg



SAMPLE DATA

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18

Report of Analysis

Client:	Ambric Technology Corporation	Date Collected:	09/09/25
Project:	NEWPCP Sludge Screen 13923-GE-25	Date Received:	09/10/25
Client Sample ID:	AMBRIC-TECH-9-9	SDG No.:	Q3068
Lab Sample ID:	Q3068-01	Matrix:	SOIL
Level (low/med):	low	% Solid:	89

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7440-70-2	Calcium	11800	*	1	11.7	105	mg/Kg	09/10/25 14:10	09/10/25 16:12	6010D	SW3050
7440-50-8	Copper	34.9	*	1	0.23	1.05	mg/Kg	09/10/25 14:10	09/10/25 16:12	6010D	SW3050
7439-89-6	Iron	19900		1	4.19	5.25	mg/Kg	09/10/25 14:10	09/10/25 16:12	6010D	SW3050
7439-95-4	Magnesium	6560		1	12.6	105	mg/Kg	09/10/25 14:10	09/10/25 16:12	6010D	SW3050
7439-96-5	Manganese	286	*	1	0.15	1.05	mg/Kg	09/10/25 14:10	09/10/25 16:12	6010D	SW3050
7440-09-7	Potassium	2850		1	29.1	105	mg/Kg	09/10/25 14:10	09/10/25 16:12	6010D	SW3050
7440-66-6	Zinc	90.8	*	1	0.24	2.10	mg/Kg	09/10/25 14:10	09/10/25 16:12	6010D	SW3050

Color Before:	Brown	Clarity Before:	Texture:	Medium
Color After:	Yellow	Clarity After:	Artifacts:	No
Comments:	Metals Group4			

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

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Ambric Technology Corporation
Contract: AMBR01
Initial Calibration Source: EPA
Continuing Calibration Source: Inorganic Ventures

SDG No.: Q3068
Lab Code: ACE

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV01	Calcium	19000	20000	95	90 - 110	P	09/10/2025	11:31	LB137144
	Copper	982	1000	98	90 - 110	P	09/10/2025	11:31	LB137144
	Iron	3870	4000	97	90 - 110	P	09/10/2025	11:31	LB137144
	Magnesium	19000	20000	95	90 - 110	P	09/10/2025	11:31	LB137144
	Manganese	1900	2000	95	90 - 110	P	09/10/2025	11:31	LB137144
	Potassium	18900	20000	95	90 - 110	P	09/10/2025	11:31	LB137144
	Zinc	1940	2000	97	90 - 110	P	09/10/2025	11:31	LB137144

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Ambric Technology Corporation
Contract: AMBR01
Initial Calibration Source: EPA
Continuing Calibration Source: Inorganic Ventures

SDG No.: Q3068
Lab Code: ACE

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLICV01	Calcium	2070	2000	104	80 - 120	P	09/10/2025	11:39	LB137144
	Copper	21.3	20.0	106	80 - 120	P	09/10/2025	11:39	LB137144
	Iron	109	100	109	80 - 120	P	09/10/2025	11:39	LB137144
	Magnesium	2120	2000	106	80 - 120	P	09/10/2025	11:39	LB137144
	Manganese	21.4	20.0	107	80 - 120	P	09/10/2025	11:39	LB137144
	Potassium	1890	2000	94	80 - 120	P	09/10/2025	11:39	LB137144
	Zinc	42.4	40.0	106	80 - 120	P	09/10/2025	11:39	LB137144

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Ambric Technology Corporation

Contract: AMBR01

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

SDG No.: Q3068

Lab Code: ACE

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV01	Calcium	24700	25000	99	90 - 110	P	09/10/2025	12:09	LB137144
	Copper	1240	1250	99	90 - 110	P	09/10/2025	12:09	LB137144
	Iron	4940	5000	99	90 - 110	P	09/10/2025	12:09	LB137144
	Magnesium	24700	25000	99	90 - 110	P	09/10/2025	12:09	LB137144
	Manganese	2460	2500	99	90 - 110	P	09/10/2025	12:09	LB137144
	Potassium	24600	25000	98	90 - 110	P	09/10/2025	12:09	LB137144
	Zinc	2510	2500	100	90 - 110	P	09/10/2025	12:09	LB137144
CCV02	Calcium	24300	25000	97	90 - 110	P	09/10/2025	13:14	LB137144
	Copper	1220	1250	98	90 - 110	P	09/10/2025	13:14	LB137144
	Iron	4930	5000	99	90 - 110	P	09/10/2025	13:14	LB137144
	Magnesium	24100	25000	96	90 - 110	P	09/10/2025	13:14	LB137144
	Manganese	2430	2500	97	90 - 110	P	09/10/2025	13:14	LB137144
	Potassium	24400	25000	98	90 - 110	P	09/10/2025	13:14	LB137144
	Zinc	2410	2500	96	90 - 110	P	09/10/2025	13:14	LB137144
CCV03	Calcium	23600	25000	94	90 - 110	P	09/10/2025	14:04	LB137144
	Copper	1200	1250	96	90 - 110	P	09/10/2025	14:04	LB137144
	Iron	4880	5000	98	90 - 110	P	09/10/2025	14:04	LB137144
	Magnesium	23500	25000	94	90 - 110	P	09/10/2025	14:04	LB137144
	Manganese	2340	2500	94	90 - 110	P	09/10/2025	14:04	LB137144
	Potassium	26700	25000	107	90 - 110	P	09/10/2025	14:04	LB137144
	Zinc	2420	2500	97	90 - 110	P	09/10/2025	14:04	LB137144
CCV04	Calcium	24200	25000	97	90 - 110	P	09/10/2025	15:27	LB137144
	Copper	1200	1250	96	90 - 110	P	09/10/2025	15:27	LB137144
	Iron	4810	5000	96	90 - 110	P	09/10/2025	15:27	LB137144
	Magnesium	24300	25000	97	90 - 110	P	09/10/2025	15:27	LB137144
	Manganese	2400	2500	96	90 - 110	P	09/10/2025	15:27	LB137144
	Potassium	24200	25000	97	90 - 110	P	09/10/2025	15:27	LB137144
	Zinc	2480	2500	99	90 - 110	P	09/10/2025	15:27	LB137144
CCV05	Calcium	24100	25000	96	90 - 110	P	09/10/2025	16:16	LB137144
	Copper	1210	1250	97	90 - 110	P	09/10/2025	16:16	LB137144
	Iron	4870	5000	97	90 - 110	P	09/10/2025	16:16	LB137144
	Magnesium	24300	25000	97	90 - 110	P	09/10/2025	16:16	LB137144
	Manganese	2380	2500	95	90 - 110	P	09/10/2025	16:16	LB137144
	Potassium	24000	25000	96	90 - 110	P	09/10/2025	16:16	LB137144

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Ambric Technology Corporation

SDG No.: Q3068

Contract: AMBR01

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	Zinc	2500	2500	100	90 - 110	P	09/10/2025	16:16	LB137144
CCV06	Calcium	24400	25000	98	90 - 110	P	09/10/2025	16:43	LB137144
	Copper	1220	1250	98	90 - 110	P	09/10/2025	16:43	LB137144
	Iron	4900	5000	98	90 - 110	P	09/10/2025	16:43	LB137144
	Magnesium	24800	25000	99	90 - 110	P	09/10/2025	16:43	LB137144
	Manganese	2410	2500	97	90 - 110	P	09/10/2025	16:43	LB137144
	Potassium	24100	25000	96	90 - 110	P	09/10/2025	16:43	LB137144
	Zinc	2550	2500	102	90 - 110	P	09/10/2025	16:43	LB137144

Metals

- 2b -

CRDL STANDARD FOR AA & ICP

Client: Ambric Technology Corporation

SDG No.: Q3068

Contract: AMBR01

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	Calcium	2080	2000	104	65 - 135	P	09/10/2025	11:48	LB137144
	Copper	21.7	20.0	108	65 - 135	P	09/10/2025	11:48	LB137144
	Iron	109	100	109	65 - 135	P	09/10/2025	11:48	LB137144
	Magnesium	2100	2000	105	65 - 135	P	09/10/2025	11:48	LB137144
	Manganese	21.5	20.0	108	65 - 135	P	09/10/2025	11:48	LB137144
	Potassium	1970	2000	99	65 - 135	P	09/10/2025	11:48	LB137144
	Zinc	43.0	40.0	108	65 - 135	P	09/10/2025	11:48	LB137144



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

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Ambric Technology Corporation

SDG No.: Q3068

Contract: AMBR01

Lab Code: ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Calcium	234	+/-1000	U	2000	P	09/10/2025	11:43	LB137144
	Copper	4.60	+/-10	U	20.0	P	09/10/2025	11:43	LB137144
	Iron	23.4	+/-50	U	100	P	09/10/2025	11:43	LB137144
	Magnesium	244	+/-1000	U	2000	P	09/10/2025	11:43	LB137144
	Manganese	5.94	+/-10	U	20.0	P	09/10/2025	11:43	LB137144
	Potassium	918	+/-1000	U	2000	P	09/10/2025	11:43	LB137144
	Zinc	16.7	+/-20	U	40.0	P	09/10/2025	11:43	LB137144

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Ambric Technology Corporation

SDG No.: Q3068

Contract: AMBR01

Lab Code: ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Calcium	234	+/-1000	U	2000	P	09/10/2025	12:13	LB137144
	Copper	4.60	+/-10	U	20.0	P	09/10/2025	12:13	LB137144
	Iron	23.4	+/-50	U	100	P	09/10/2025	12:13	LB137144
	Magnesium	244	+/-1000	U	2000	P	09/10/2025	12:13	LB137144
	Manganese	5.94	+/-10	U	20.0	P	09/10/2025	12:13	LB137144
	Potassium	918	+/-1000	U	2000	P	09/10/2025	12:13	LB137144
	Zinc	16.7	+/-20	U	40.0	P	09/10/2025	12:13	LB137144
CCB02	Calcium	234	+/-1000	U	2000	P	09/10/2025	13:18	LB137144
	Copper	4.60	+/-10	U	20.0	P	09/10/2025	13:18	LB137144
	Iron	23.4	+/-50	U	100	P	09/10/2025	13:18	LB137144
	Magnesium	244	+/-1000	U	2000	P	09/10/2025	13:18	LB137144
	Manganese	5.94	+/-10	U	20.0	P	09/10/2025	13:18	LB137144
	Potassium	918	+/-1000	U	2000	P	09/10/2025	13:18	LB137144
	Zinc	16.7	+/-20	U	40.0	P	09/10/2025	13:18	LB137144
CCB03	Calcium	234	+/-1000	U	2000	P	09/10/2025	14:25	LB137144
	Copper	4.60	+/-10	U	20.0	P	09/10/2025	14:25	LB137144
	Iron	23.4	+/-50	U	100	P	09/10/2025	14:25	LB137144
	Magnesium	244	+/-1000	U	2000	P	09/10/2025	14:25	LB137144
	Manganese	5.94	+/-10	U	20.0	P	09/10/2025	14:25	LB137144
	Potassium	918	+/-1000	U	2000	P	09/10/2025	14:25	LB137144
	Zinc	16.7	+/-20	U	40.0	P	09/10/2025	14:25	LB137144
CCB04	Calcium	234	+/-1000	U	2000	P	09/10/2025	15:31	LB137144
	Copper	4.60	+/-10	U	20.0	P	09/10/2025	15:31	LB137144
	Iron	23.4	+/-50	U	100	P	09/10/2025	15:31	LB137144
	Magnesium	244	+/-1000	U	2000	P	09/10/2025	15:31	LB137144
	Manganese	5.94	+/-10	U	20.0	P	09/10/2025	15:31	LB137144
	Potassium	918	+/-1000	U	2000	P	09/10/2025	15:31	LB137144
	Zinc	16.7	+/-20	U	40.0	P	09/10/2025	15:31	LB137144
CCB05	Calcium	234	+/-1000	U	2000	P	09/10/2025	16:20	LB137144
	Copper	4.60	+/-10	U	20.0	P	09/10/2025	16:20	LB137144
	Iron	23.4	+/-50	U	100	P	09/10/2025	16:20	LB137144
	Magnesium	244	+/-1000	U	2000	P	09/10/2025	16:20	LB137144
	Manganese	5.94	+/-10	U	20.0	P	09/10/2025	16:20	LB137144
	Potassium	918	+/-1000	U	2000	P	09/10/2025	16:20	LB137144
	Zinc	16.7	+/-20	U	40.0	P	09/10/2025	16:20	LB137144
CCB06	Calcium	234	+/-1000	U	2000	P	09/10/2025	16:48	LB137144
	Copper	4.60	+/-10	U	20.0	P	09/10/2025	16:48	LB137144
	Iron	23.4	+/-50	U	100	P	09/10/2025	16:48	LB137144
	Magnesium	244	+/-1000	U	2000	P	09/10/2025	16:48	LB137144

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Ambric Technology Corporation

SDG No.: Q3068

Contract: AMBR01

Lab Code: ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB06	Manganese	5.94	+/-10	U	20.0	P	09/10/2025	16:48	LB137144
	Potassium	918	+/-1000	U	2000	P	09/10/2025	16:48	LB137144
	Zinc	16.7	+/-20	U	40.0	P	09/10/2025	16:48	LB137144

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: Ambric Technology Corporation

SDG No.: Q3068

Instrument: P4

Sample ID	Analyte	Result (mg/Kg)	Acceptance Limit	Conc Qual	CRQL mg/Kg	M	Analysis Date	Analysis Time	Run
PB169634BL	SOLID			Batch Number:	PB169634		Prep Date:	09/10/2025	
	Calcium	11.1	<50	U	100	P	09/10/2025	15:23	LB137144
	Copper	0.22	<0.5	U	1.00	P	09/10/2025	15:23	LB137144
	Iron	3.99	<2.5	U	5.00	P	09/10/2025	15:23	LB137144
	Magnesium	12.0	<50	U	100	P	09/10/2025	15:23	LB137144
	Manganese	0.14	<0.5	U	1.00	P	09/10/2025	15:23	LB137144
	Potassium	27.7	<50	U	100	P	09/10/2025	15:23	LB137144
	Zinc	0.23	<1	U	2.00	P	09/10/2025	15:23	LB137144

Metals
- 4 -
INTERFERENCE CHECK SAMPLE

Client: <u>Ambric Technology Corporation</u>	SDG No.: <u>Q3068</u>
Contract: <u>AMBR01</u>	Lab Code: <u>ACE</u>
ICS Source: <u>EPA</u>	Instrument ID: <u>P4</u>

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	Calcium	265000	245000	108	208000	282000	09/10/2025	11:52	LB137144
	Copper	2.32	2.0	116	-18	22	09/10/2025	11:52	LB137144
	Iron	111000	101000	110	85600	116500	09/10/2025	11:52	LB137144
	Magnesium	281000	255000	110	216000	294000	09/10/2025	11:52	LB137144
	Manganese	10.8	7.0	155	-13	27	09/10/2025	11:52	LB137144
	Potassium	200			0	0	09/10/2025	11:52	LB137144
	Zinc	4.41			-40	40	09/10/2025	11:52	LB137144
ICSAB01	Calcium	236000	235000	100	199000	271000	09/10/2025	11:56	LB137144
	Copper	471	511	92	434	588	09/10/2025	11:56	LB137144
	Iron	97500	99300	98	84400	114500	09/10/2025	11:56	LB137144
	Magnesium	251000	248000	101	210000	286000	09/10/2025	11:56	LB137144
	Manganese	486	507	96	430	584	09/10/2025	11:56	LB137144
	Potassium	-95.0			0	0	09/10/2025	11:56	LB137144
	Zinc	1030	952	108	809	1095	09/10/2025	11:56	LB137144



METAL QC DATA

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18

metals
- 5a -
MATRIX SPIKE SUMMARY

client: <u>Ambric Technology Corporation</u>	level: <u>low</u>	sdg no.: <u>Q3068</u>
contract: <u>AMBR01</u>		lab code: <u>ACE</u>
matrix: <u>Solid</u>	sample id: <u>Q3054-05</u>	client id: <u>MH-384MS</u>
Percent Solids for Sample: 89.5	Spiked ID: Q3054-05MS	Percent Solids for Spike Sample: 89.5

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Calcium	mg/Kg	75 - 125	1450		1210		50.1	495		P
Copper	mg/Kg	75 - 125	19.6		6.77		15.0	85		P
Iron	mg/Kg	75 - 125	11800		10600		150	805		P
Magnesium	mg/Kg	75 - 125	1350		1170		100	183		P
Manganese	mg/Kg	75 - 125	332		320		10.0	117		P
Potassium	mg/Kg	75 - 125	933		412		500	104		P
Zinc	mg/Kg	75 - 125	25.1		13.9		10.0	112		P

metals
- 5a -
MATRIX SPIKE DUPLICATE SUMMARY

client: <u>Ambric Technology Corporation</u>	level: <u>low</u>	sdg no.: <u>Q3068</u>
contract: <u>AMBR01</u>		lab code: <u>ACE</u>
matrix: <u>Solid</u>	sample id: <u>Q3054-05</u>	client id: <u>MH-384MSD</u>
Percent Solids for Sample: 89.5	Spiked ID: Q3054-05MSD	Percent Solids for Spike Sample: 89.5

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Calcium	mg/Kg	75 - 125	1580		1210		51.3	736		P
Copper	mg/Kg	75 - 125	19.6		6.77		15.4	83		P
Iron	mg/Kg	75 - 125	10900		10600		150	230		P
Magnesium	mg/Kg	75 - 125	1260		1170		100	88		P
Manganese	mg/Kg	75 - 125	330		320		10.3	92		P
Potassium	mg/Kg	75 - 125	946		412		510	105		P
Zinc	mg/Kg	75 - 125	23.8		13.9		10.3	97		P



- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18

Sample ID: _____ **Spiked ID:** _____

Metals

- 6 -

DUPLICATE SAMPLE SUMMARY

Client:	<u>Ambric Technology Corporation</u>	Level:	<u>LOW</u>	SDG No.:	<u>Q3068</u>
Contract:	<u>AMBR01</u>			Lab Code:	<u>ACE</u>
Matrix:	<u>Solid</u>	Sample ID:	<u>Q3054-05</u>	Client ID:	<u>MH-384DUP</u>
Percent Solids for Sample:	89.5	Duplicate ID	Q3054-05DUP	Percent Solids for Spike Sample:	89.5

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Calcium	mg/Kg	20	1210		2060		52	*	P
Copper	mg/Kg	20	6.77		8.58		24	*	P
Iron	mg/Kg	20	10600		12600		17		P
Magnesium	mg/Kg	20	1170		1300		11		P
Manganese	mg/Kg	20	320		451		34	*	P
Potassium	mg/Kg	20	412		496		19		P
Zinc	mg/Kg	20	13.9		18.7		29	*	P

“A control limit of $\pm 20\%$ RPD for each matrix applies for sample values greater than 10 times Detection Limit”

Metals

- 6 -

DUPLICATE SAMPLE SUMMARY

Client: Ambric Technology Corporation **Level:** LOW **SDG No.:** Q3068
Contract: AMBR01 **Lab Code:** ACE
Matrix: Solid **Sample ID:** Q3054-05MS **Client ID:** MH-384MSD
Percent Solids for Sample: 89.5 **Duplicate ID** Q3054-05MSD **Percent Solids for Spike Sample:** 89.5

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Calcium	mg/Kg	20	1450		1580		9		P
Copper	mg/Kg	20	19.6		19.6		0		P
Iron	mg/Kg	20	11800		10900		8		P
Magnesium	mg/Kg	20	1350		1260		7		P
Manganese	mg/Kg	20	332		330		1		P
Potassium	mg/Kg	20	933		946		1		P
Zinc	mg/Kg	20	25.1		23.8		5		P

“A control limit of $\pm 20\%$ RPD for each matrix applies for sample values greater than 10 times Detection Limit”

Metals

- 7 -

LABORATORY CONTROL SAMPLE SUMMARY

Client: Ambric Technology Corporation

SDG No.: Q3068

Contract: AMBR01

Lab Code: ACE

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB169634BS							
Calcium	mg/Kg	50.0	48.8	J	98	80 - 120	P
Copper	mg/Kg	15.0	14.4		96	80 - 120	P
Iron	mg/Kg	150	140		93	80 - 120	P
Magnesium	mg/Kg	100	98.0	J	98	80 - 120	P
Manganese	mg/Kg	10.0	9.68		97	80 - 120	P
Potassium	mg/Kg	500	496		99	80 - 120	P
Zinc	mg/Kg	10.0	9.95		100	80 - 120	P

Metals
-9 -
ICP SERIAL DILUTIONS

SAMPLE NO.

MH-384L

Lab Name: Alliance **Contract:** AMBR01
Lab Code: ACE **Lb No.:** lb137144 **Lab Sample ID :** Q3054-05L **SDG No.:** Q3068
Matrix (soil/water): Solid **Level (low/med):** LOW
Concentration Units: mg/Kg

Analyte	Initial Sample Result (I)		Serial Dilution Result (S)		% Differ- ence		Q	M
Calcium	1210	C	1350	C	12			P
Copper	6.77		8.08		19			P
Iron	10600		11100		5			P
Magnesium	1170		1320		13			P
Manganese	320		360		12			P
Potassium	412		495		20			P
Zinc	13.9		15.2		9			P



METAL PREPARATION & INSTRUMENT DATA

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18

Metals

- 11 -

ICP INTERELEMENT CORRECTION FACTORS

Client: Ambric Technology Corporation

SDG No.: Q3068

Contract: AMBR01

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
Calcium	373.690	0.0000000	0.0000000	-0.0075970	0.0000000	0.0000000
Copper	224.700	0.0000000	0.0000000	0.0007850	0.0000000	0.0000000
Iron	240.488	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.079	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.610	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.490	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	213.800	0.0000000	0.0000000	0.0001050	0.0000000	0.0000000

Metals

- 11 -

ICP INTERELEMENT CORRECTION FACTORS

Client: Ambric Technology Corporation

SDG No.: Q3068

Contract: AMBR01

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
Calcium	373.690	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	224.700	0.0000000	0.0000000	0.0000000	0.0000000	0.0009530
Iron	240.488	0.0000000	0.0000000	0.0000000	0.0000000	-0.0039600
Magnesium	279.079	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.610	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.490	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	213.800	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Metals

- 11 -

ICP INTERELEMENT CORRECTION FACTORS

Client: Ambric Technology Corporation

SDG No.: Q3068

Contract: AMBR01

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
Calcium	373.690	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	224.700	0.0000000	0.0000000	0.0000000	0.0006510	0.0020500
Iron	240.488	0.0000000	0.0000000	0.0000730	0.0000000	-0.0015250
Magnesium	279.079	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.610	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.490	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	213.800	0.0000000	0.0009010	0.0000000	0.0000000	0.0000000

Metals

- 11 -

ICP INTERELEMENT CORRECTION FACTORS

Client: Ambric Technology Corporation

SDG No.: Q3068

Contract: AMBR01

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
Calcium	373.690	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	224.700	0.0000000	-0.0047000	0.0036100	0.0000000	0.0000000
Iron	240.488	0.0000000	-0.0017000	0.0000000	0.0000000	0.0000000
Magnesium	279.079	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.610	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.490	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	213.800	0.0000000	0.0067600	0.0000000	0.0000000	0.0000000

Metals

- 11 -

ICP INTERELEMENT CORRECTION FACTORS

Client: Ambric Technology Corporation

SDG No.: Q3068

Contract: AMBR01

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
Calcium	373.690	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	224.700	0.0000000	0.0003840	0.0000000	0.0000000	0.0000000
Iron	240.488	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.079	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.610	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.490	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	213.800	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

METAL PREPARATION & ANALYICAL SUMMARY

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18

Metals
- 13 -

SAMPLE PREPARATION SUMMARY

Client: Ambric Technology Corporation **SDG No.:** Q3068
Contract: AMBR01 **Lab Code:** ACE **Method:** _____

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(g)	Final Sample Volume (mL)	Percent Solids
Batch Number: PB169634							
PB169634BL	PB169634BL	MB	SOLID	09/10/2025	2.00	100.0	100.00
PB169634BS	PB169634BS	LCS	SOLID	09/10/2025	2.00	100.0	100.00
Q3054-05DUP	MH-384DUP	DUP	SOLID	09/10/2025	2.21	100.0	89.50
Q3054-05MS	MH-384MS	MS	SOLID	09/10/2025	2.23	100.0	89.50
Q3054-05MSD	MH-384MSD	MSD	SOLID	09/10/2025	2.18	100.0	89.50
Q3068-01	AMBRIC-TECH-9-9	SAM	SOLID	09/10/2025	2.14	100.0	89.00

metals
- 14 -
ANALYSIS RUN LOG

Client: Ambric Technology Corporation

Contract: AMBR01

Lab code: ACE

Sdg no.: Q3068

Instrument id number: _____

Method: _____

Run number: LB137144

Start date: 09/10/2025

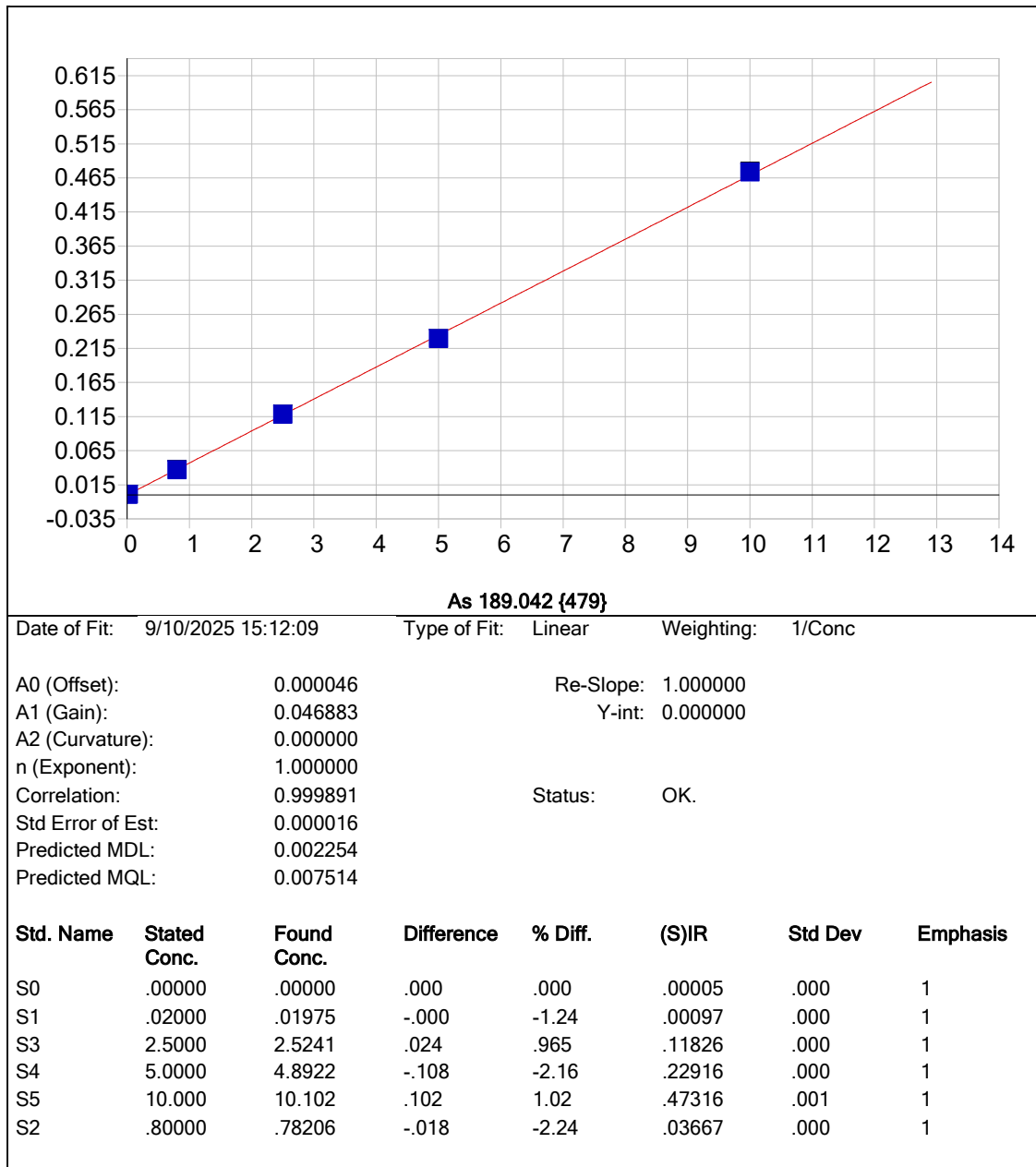
End date: 09/10/2025

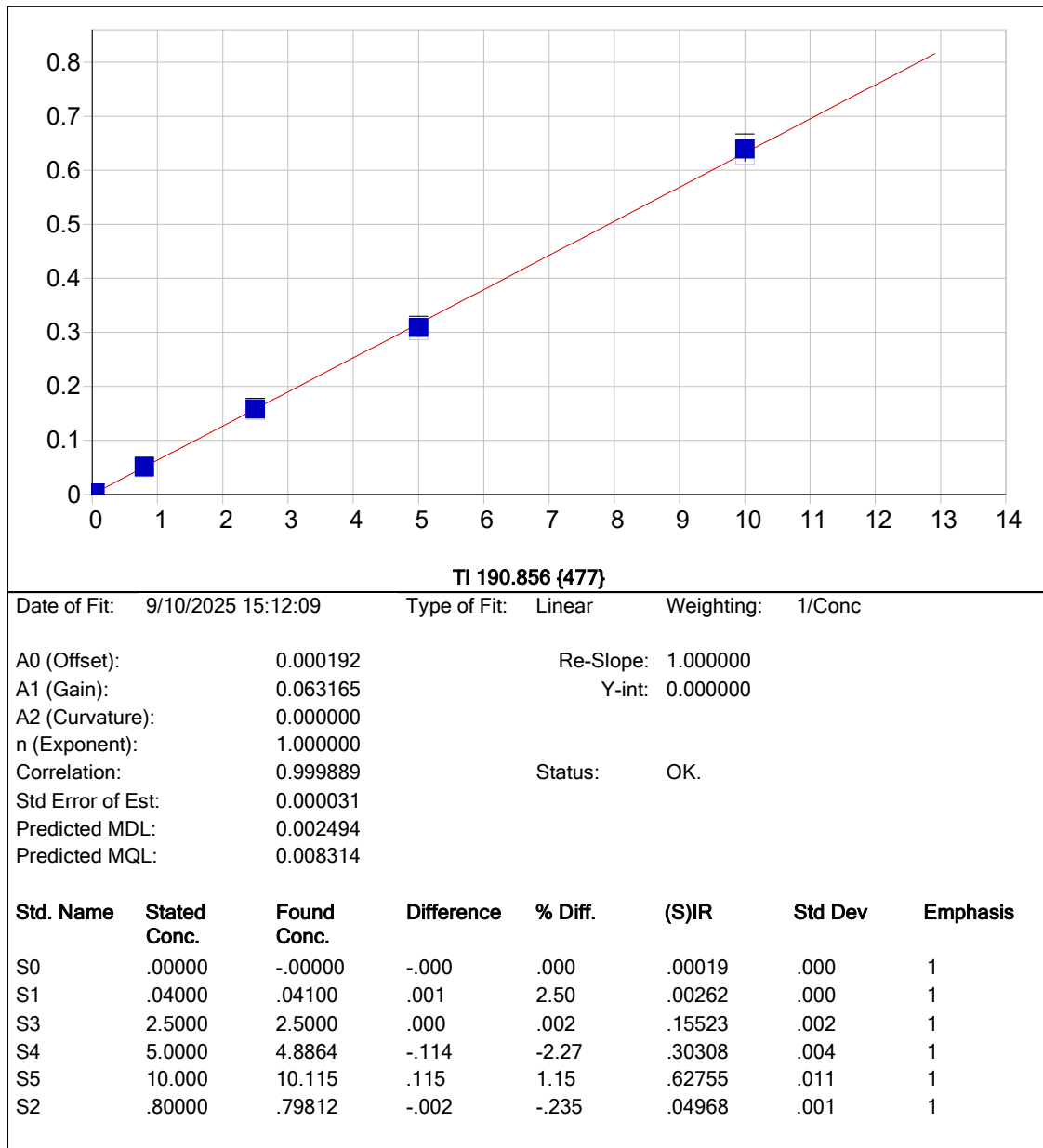
Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1106	Ca,Cu,Fe,K,Mg,Mn,Zn
S1	S1	1	1110	Ca,Cu,Fe,K,Mg,Mn,Zn
S2	S2	1	1114	Ca,Cu,Fe,K,Mg,Mn,Zn
S3	S3	1	1119	Ca,Cu,Fe,K,Mg,Mn,Zn
S4	S4	1	1123	Ca,Cu,Fe,K,Mg,Mn,Zn
S5	S5	1	1127	Ca,Cu,Fe,K,Mg,Mn,Zn
ICV01	ICV01	1	1131	Ca,Cu,Fe,K,Mg,Mn,Zn
LLICV01	LLICV01	1	1139	Ca,Cu,Fe,K,Mg,Mn,Zn
ICB01	ICB01	1	1143	Ca,Cu,Fe,K,Mg,Mn,Zn
CRI01	CRI01	1	1148	Ca,Cu,Fe,K,Mg,Mn,Zn
ICSA01	ICSA01	1	1152	Ca,Cu,Fe,K,Mg,Mn,Zn
ICSAB01	ICSAB01	1	1156	Ca,Cu,Fe,K,Mg,Mn,Zn
CCV01	CCV01	1	1209	Ca,Cu,Fe,K,Mg,Mn,Zn
CCB01	CCB01	1	1213	Ca,Cu,Fe,K,Mg,Mn,Zn
CCV02	CCV02	1	1314	Ca,Cu,Fe,K,Mg,Mn,Zn
CCB02	CCB02	1	1318	Ca,Cu,Fe,K,Mg,Mn,Zn
CCV03	CCV03	1	1404	Ca,Cu,Fe,K,Mg,Mn,Zn
CCB03	CCB03	1	1425	Ca,Cu,Fe,K,Mg,Mn,Zn
PB169634BS	PB169634BS	1	1517	Ca,Cu,Fe,K,Mg,Mn,Zn
PB169634BL	PB169634BL	1	1523	Ca,Cu,Fe,K,Mg,Mn,Zn
CCV04	CCV04	1	1527	Ca,Cu,Fe,K,Mg,Mn,Zn
CCB04	CCB04	1	1531	Ca,Cu,Fe,K,Mg,Mn,Zn
Q3054-05DUP	MH-384DUP	1	1551	Ca,Cu,Fe,K,Mg,Mn,Zn
Q3054-05L	MH-384L	5	1556	Ca,Cu,Fe,K,Mg,Mn,Zn
Q3054-05MS	MH-384MS	1	1600	Ca,Cu,Fe,K,Mg,Mn,Zn
Q3054-05MSD	MH-384MSD	1	1604	Ca,Cu,Fe,K,Mg,Mn,Zn
Q3068-01	AMBRIC-TECH-9-9	1	1612	Ca,Cu,Fe,K,Mg,Mn,Zn
CCV05	CCV05	1	1616	Ca,Cu,Fe,K,Mg,Mn,Zn
CCB05	CCB05	1	1620	Ca,Cu,Fe,K,Mg,Mn,Zn
CCV06	CCV06	1	1643	Ca,Cu,Fe,K,Mg,Mn,Zn
CCB06	CCB06	1	1648	Ca,Cu,Fe,K,Mg,Mn,Zn

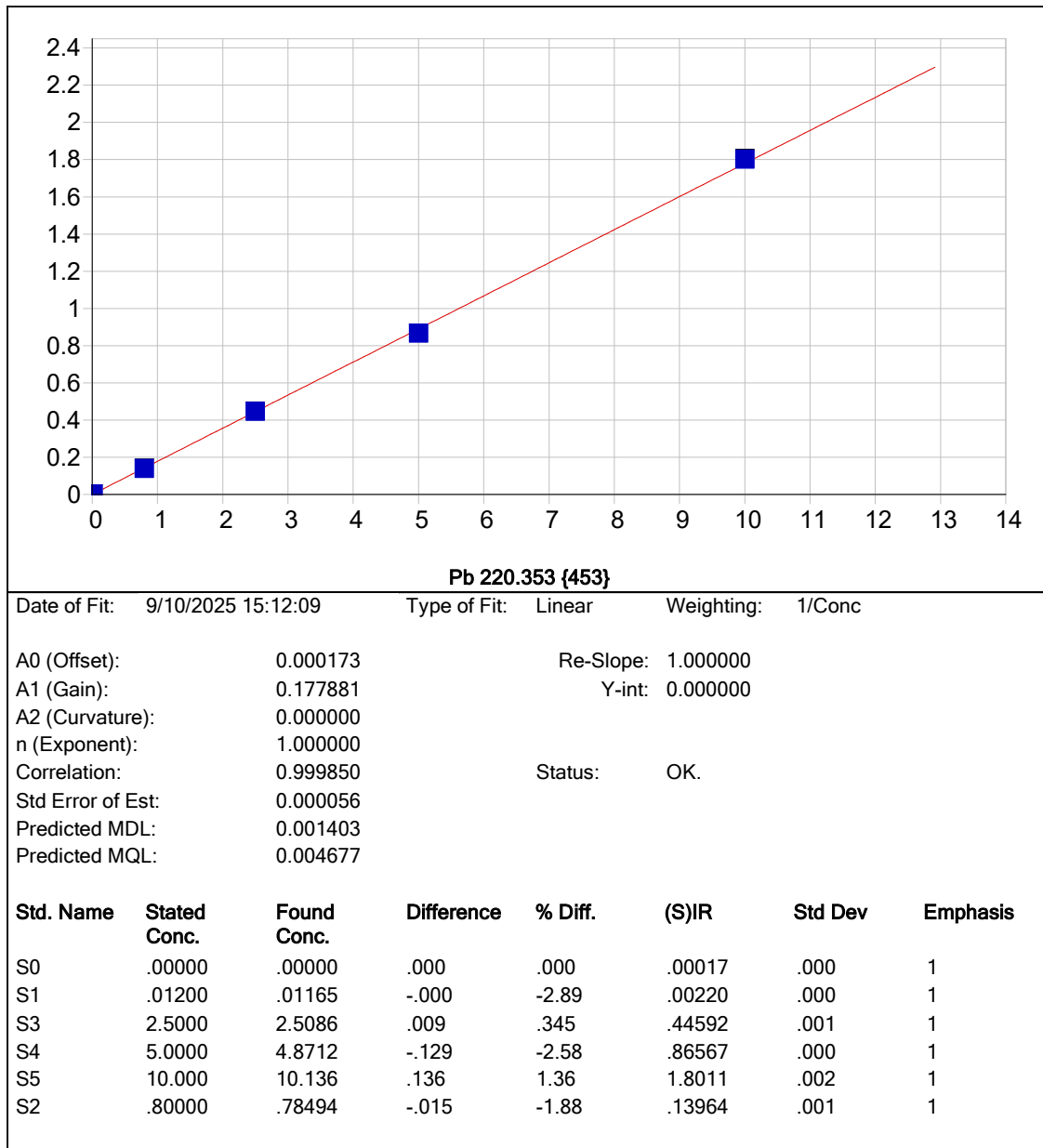


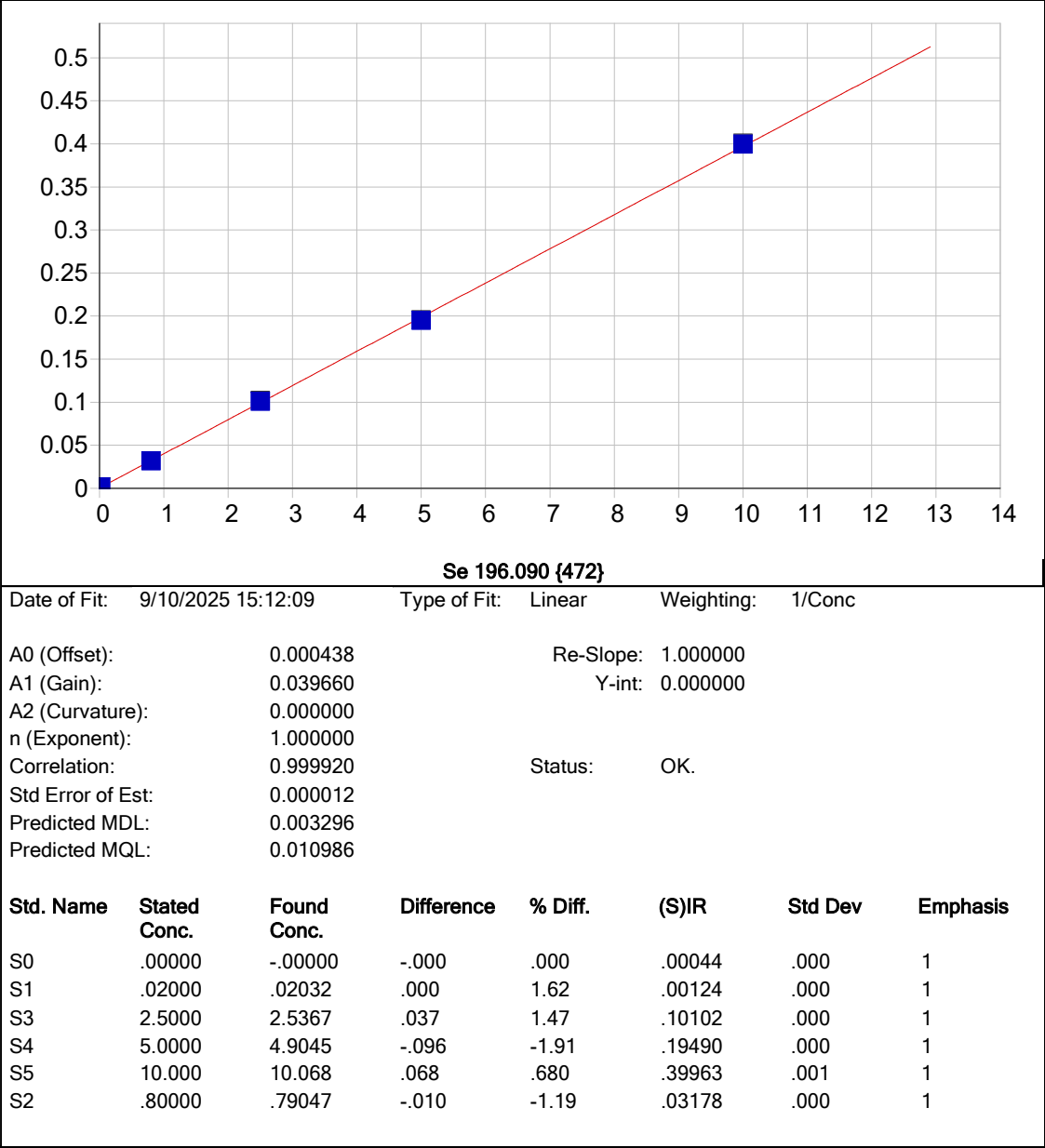
METAL RAW DATA

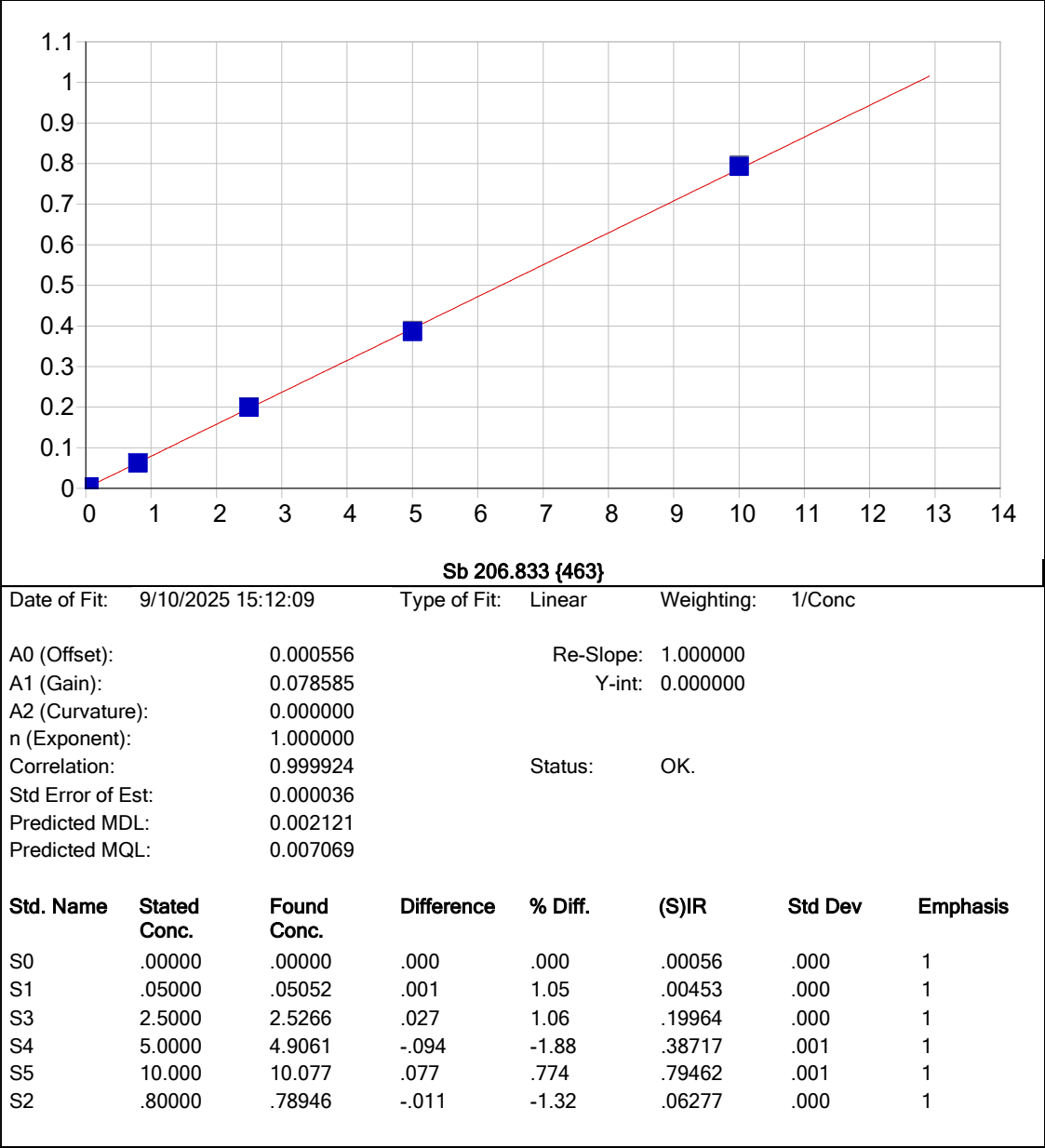
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18

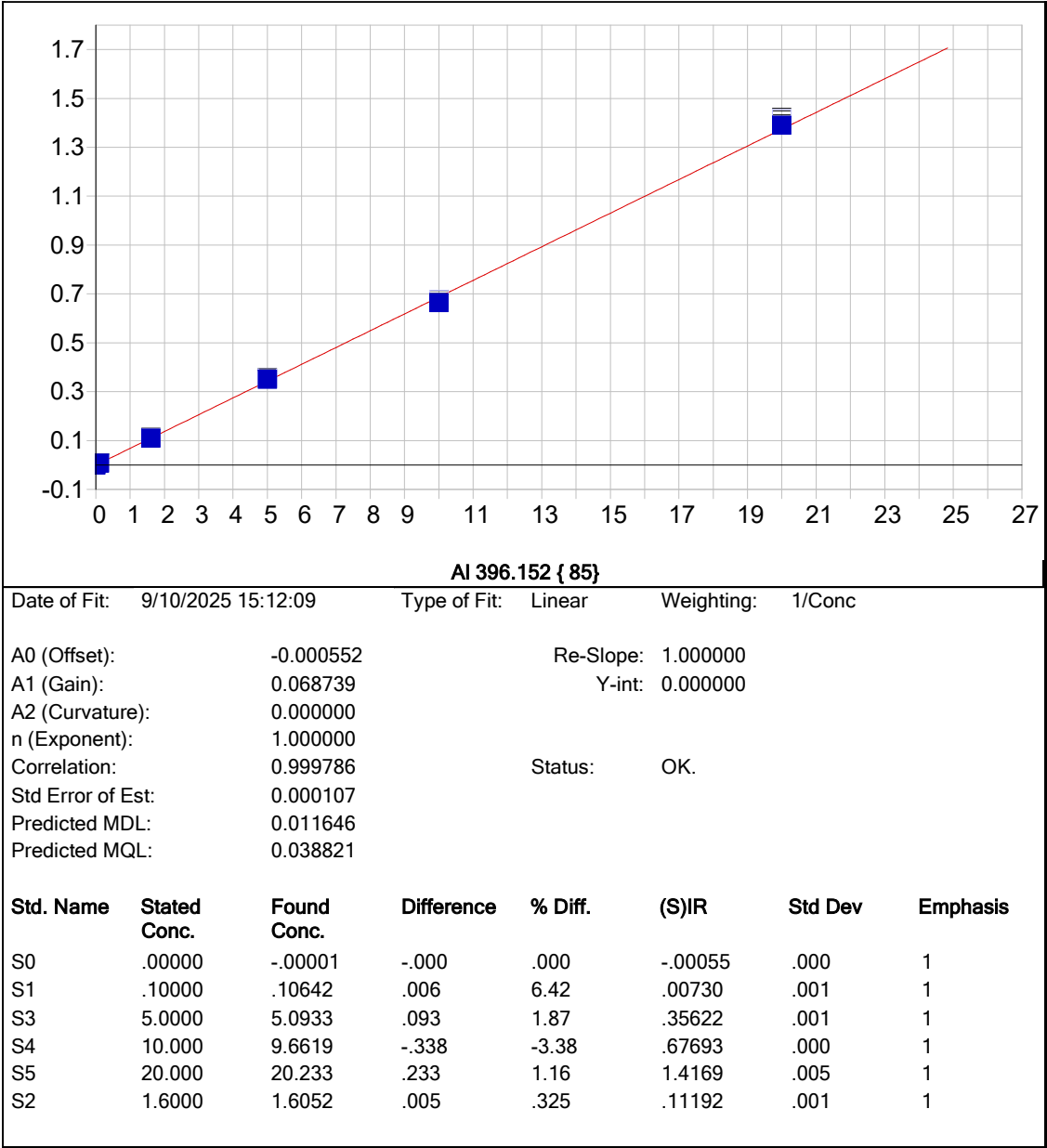


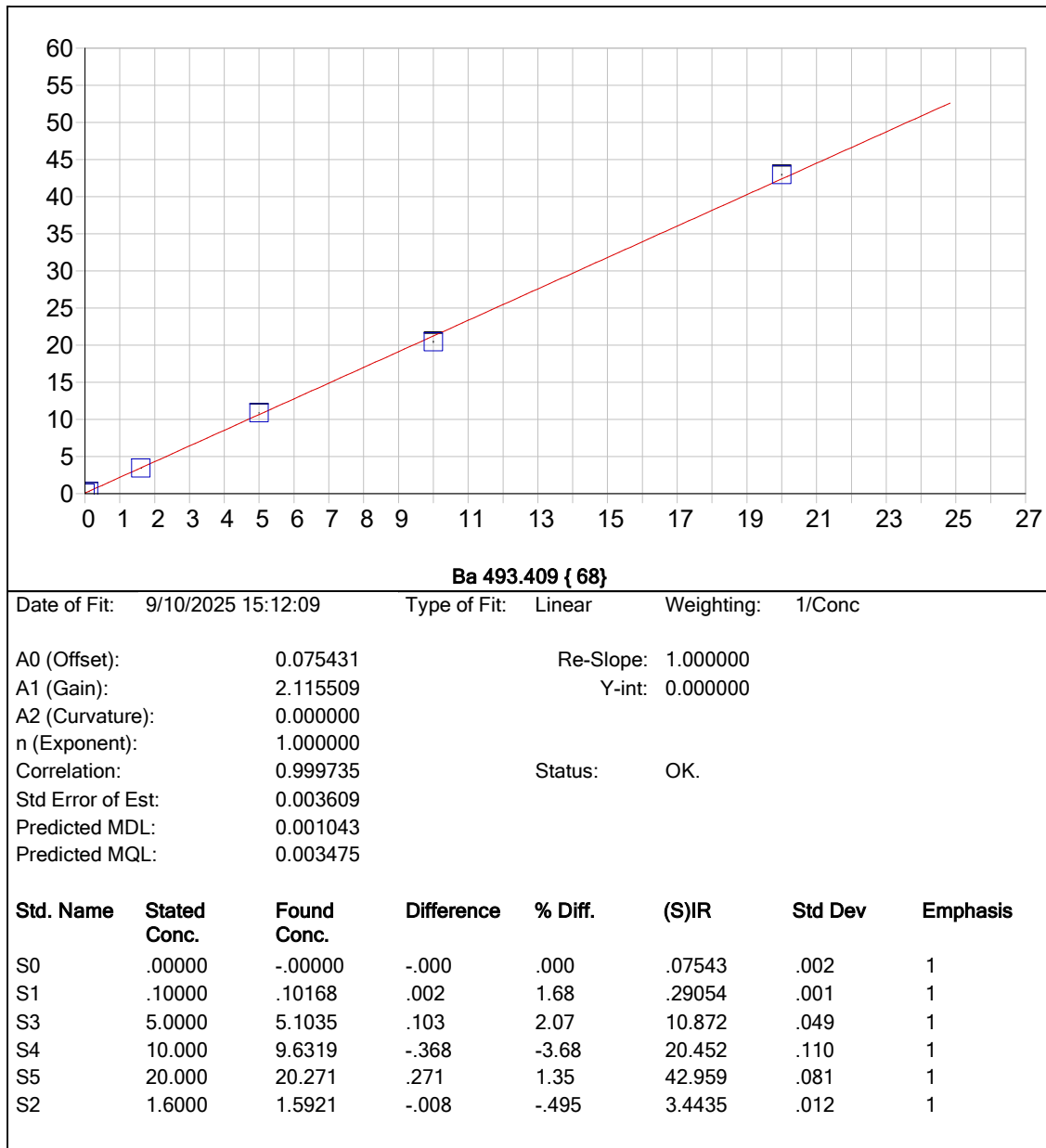


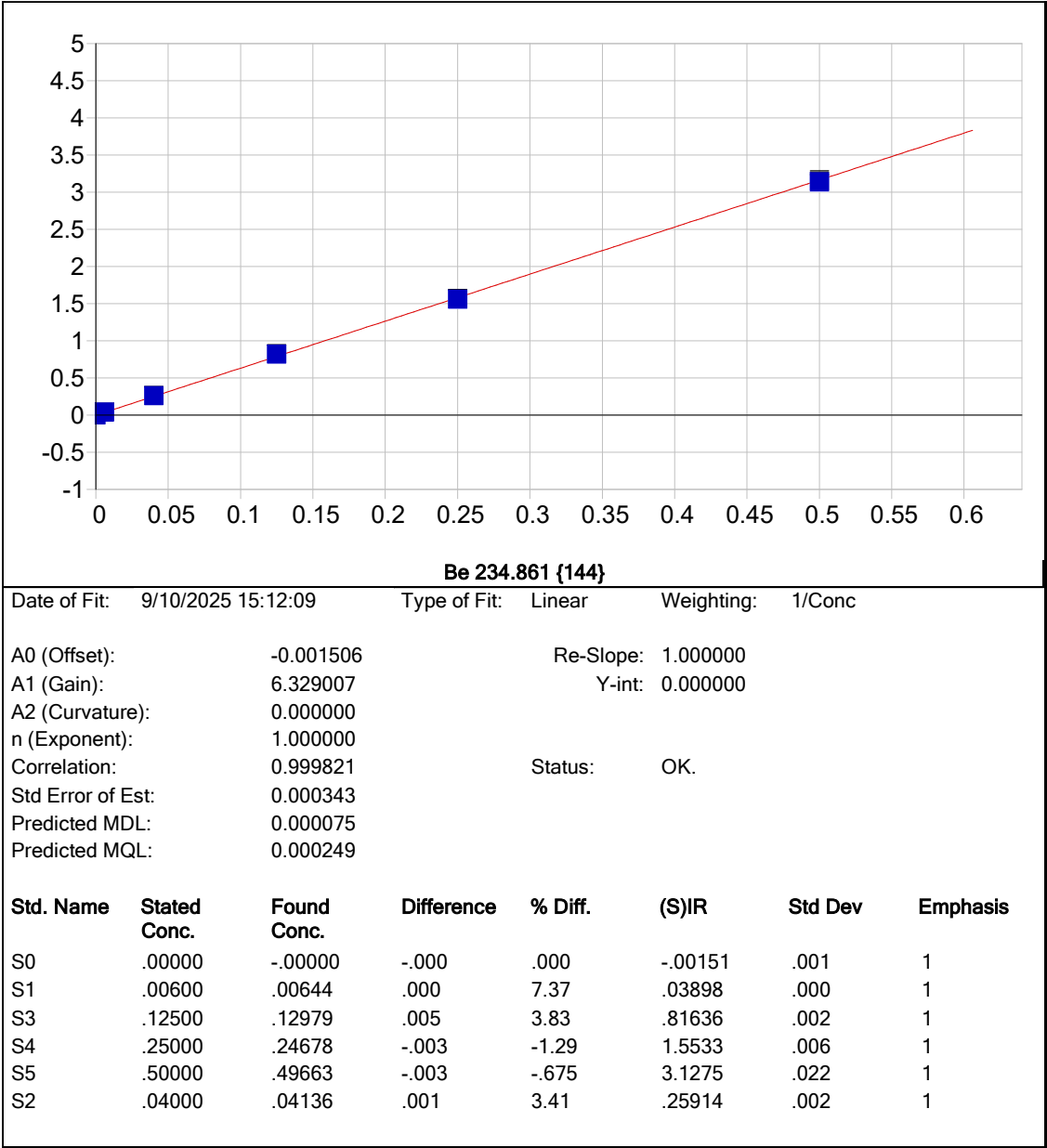


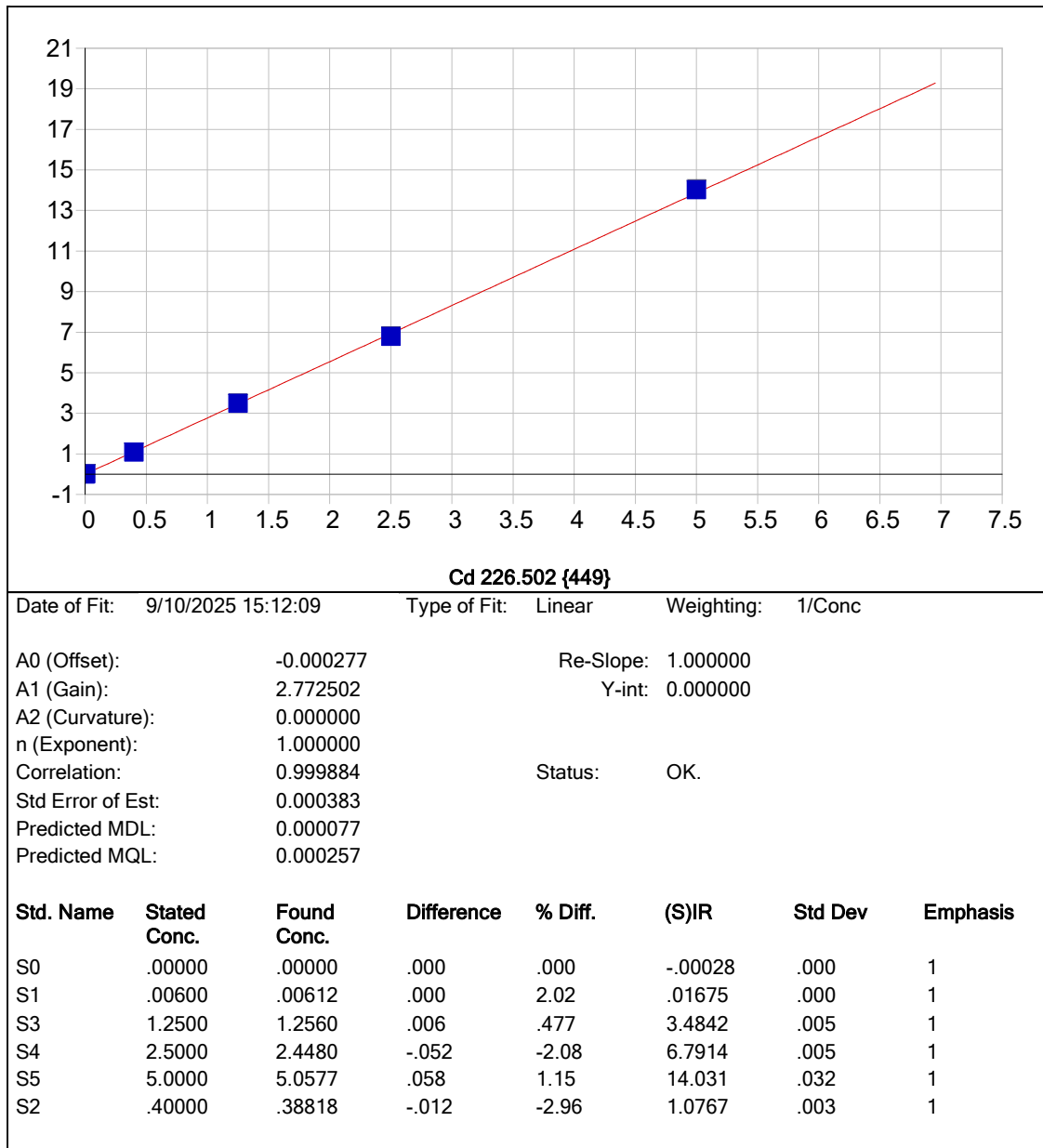


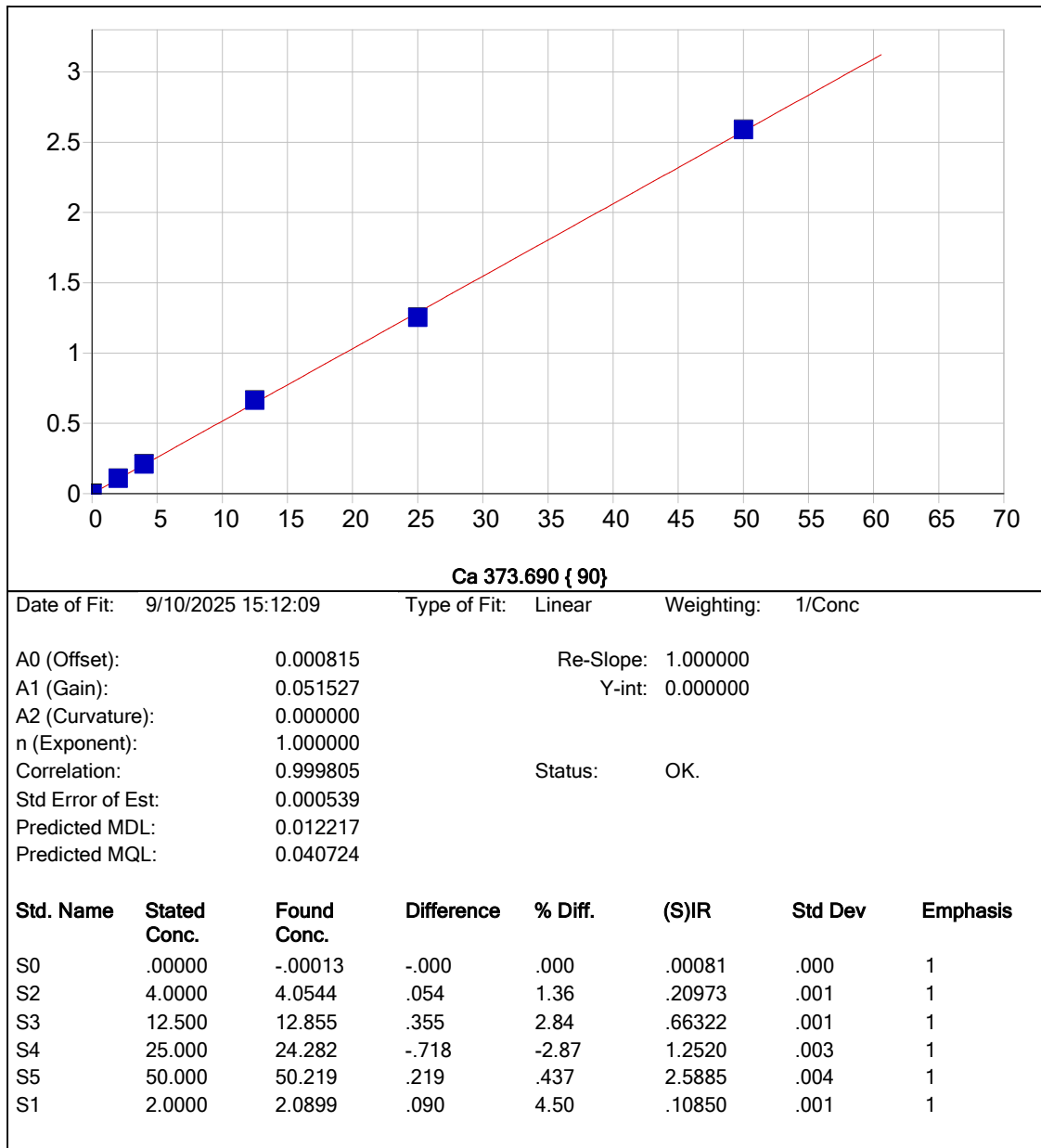


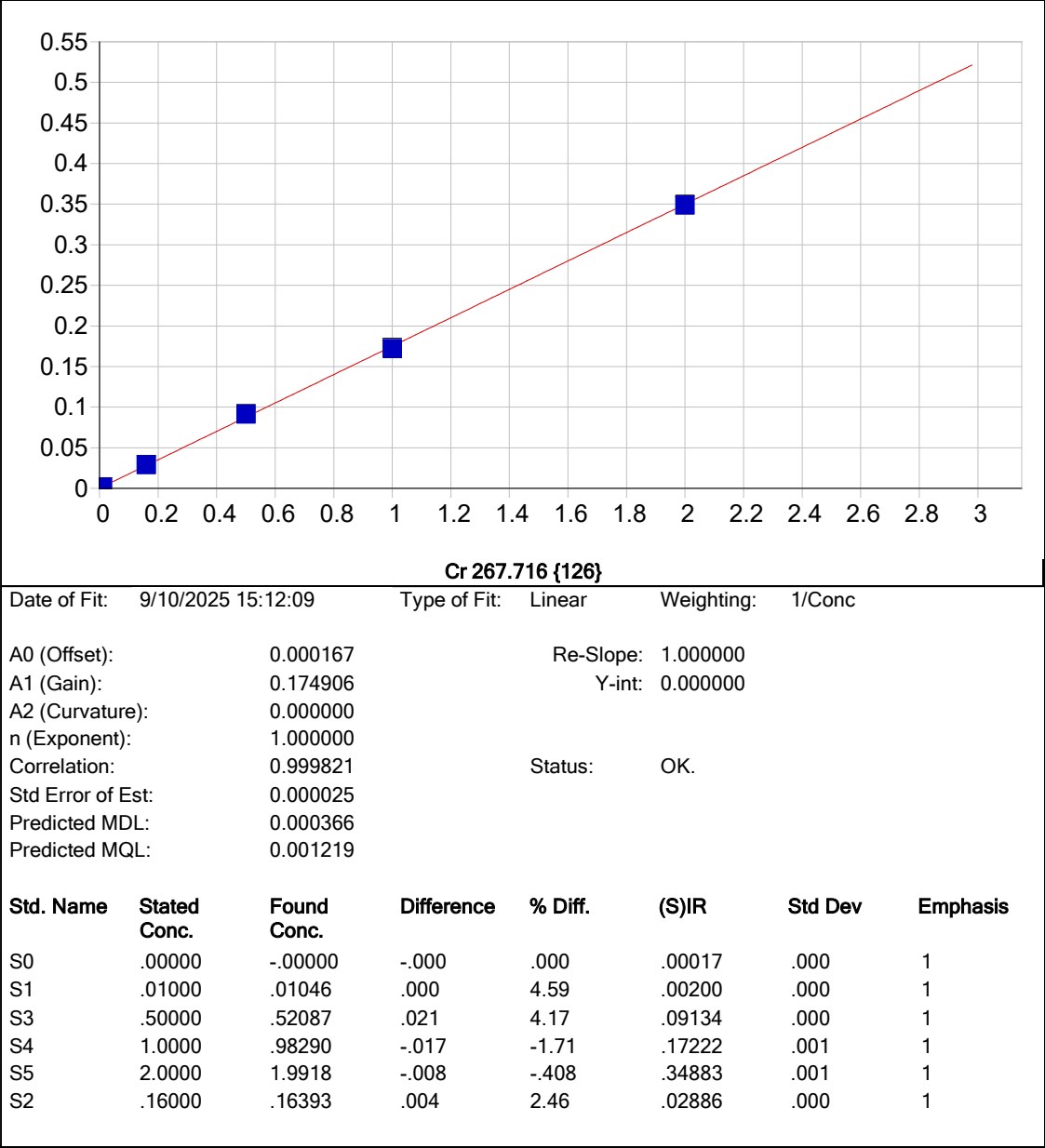


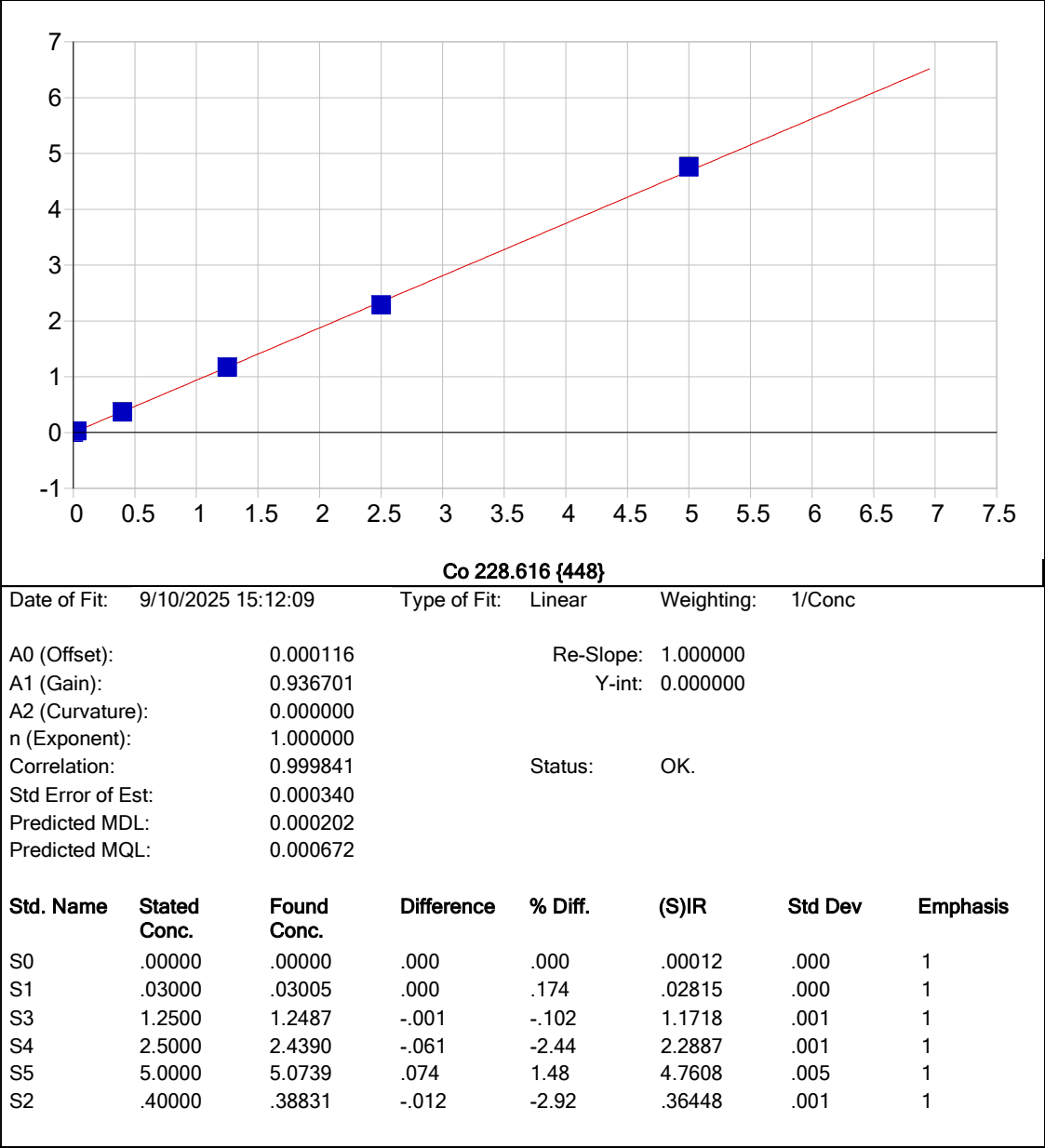


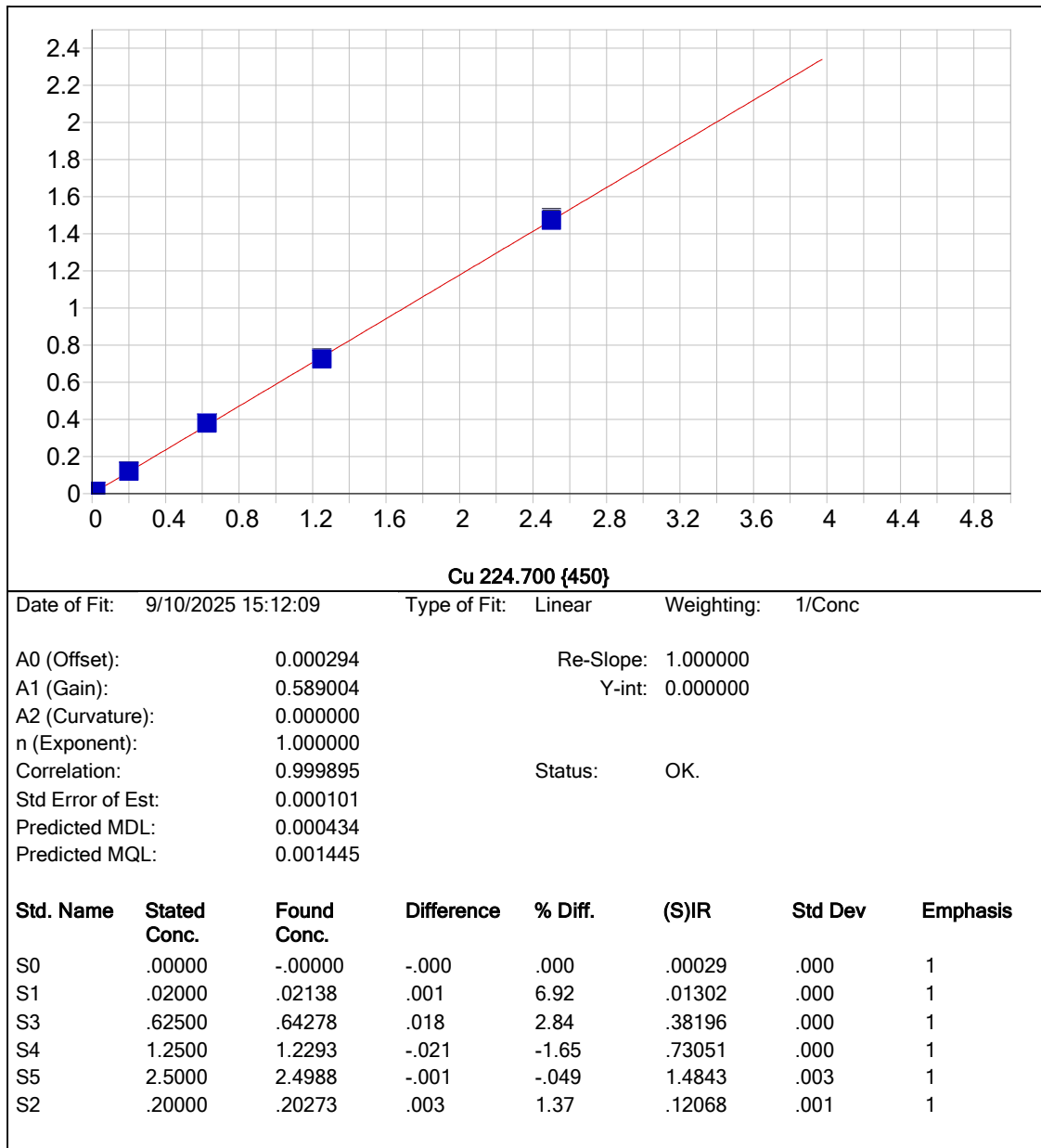


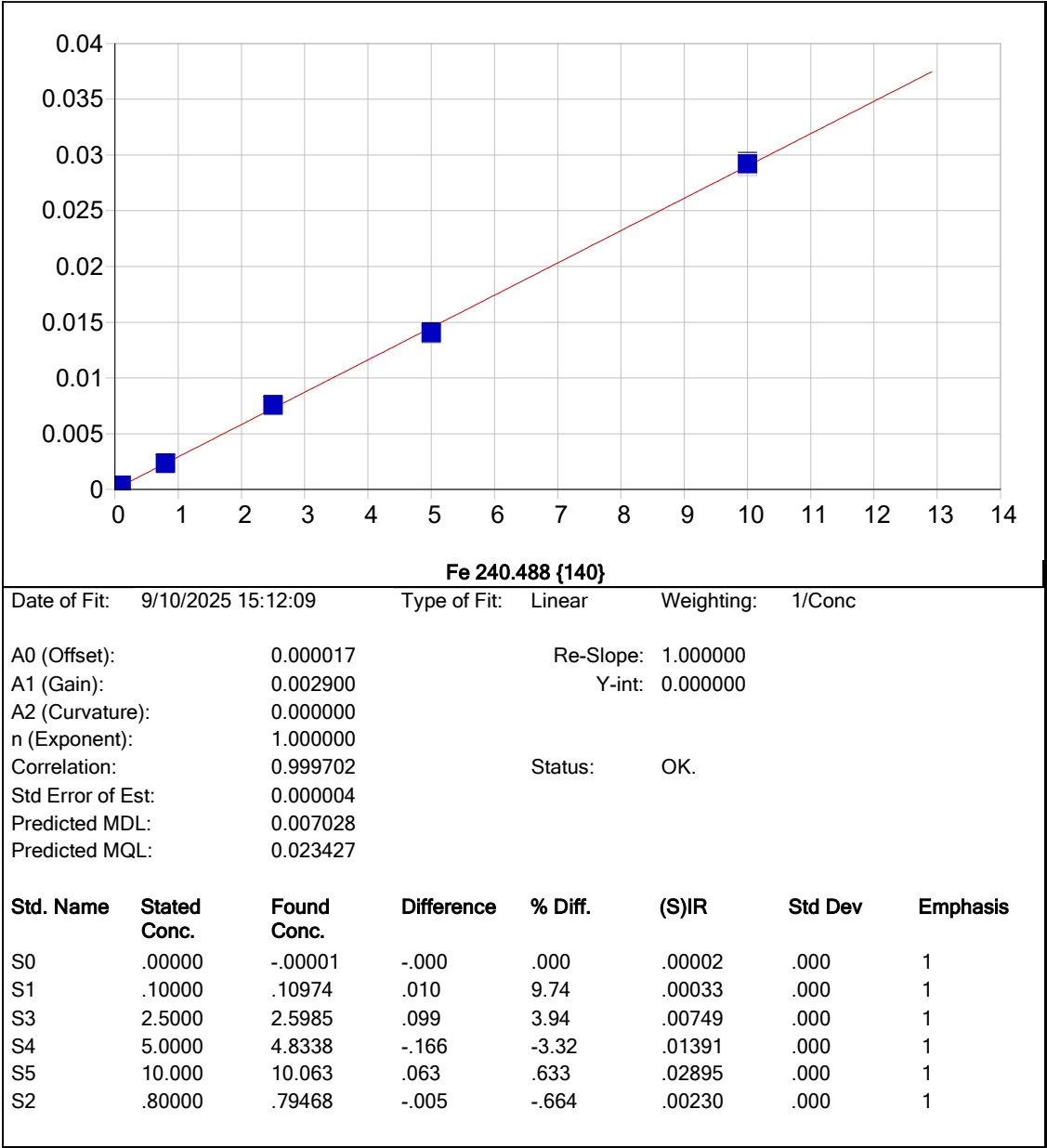


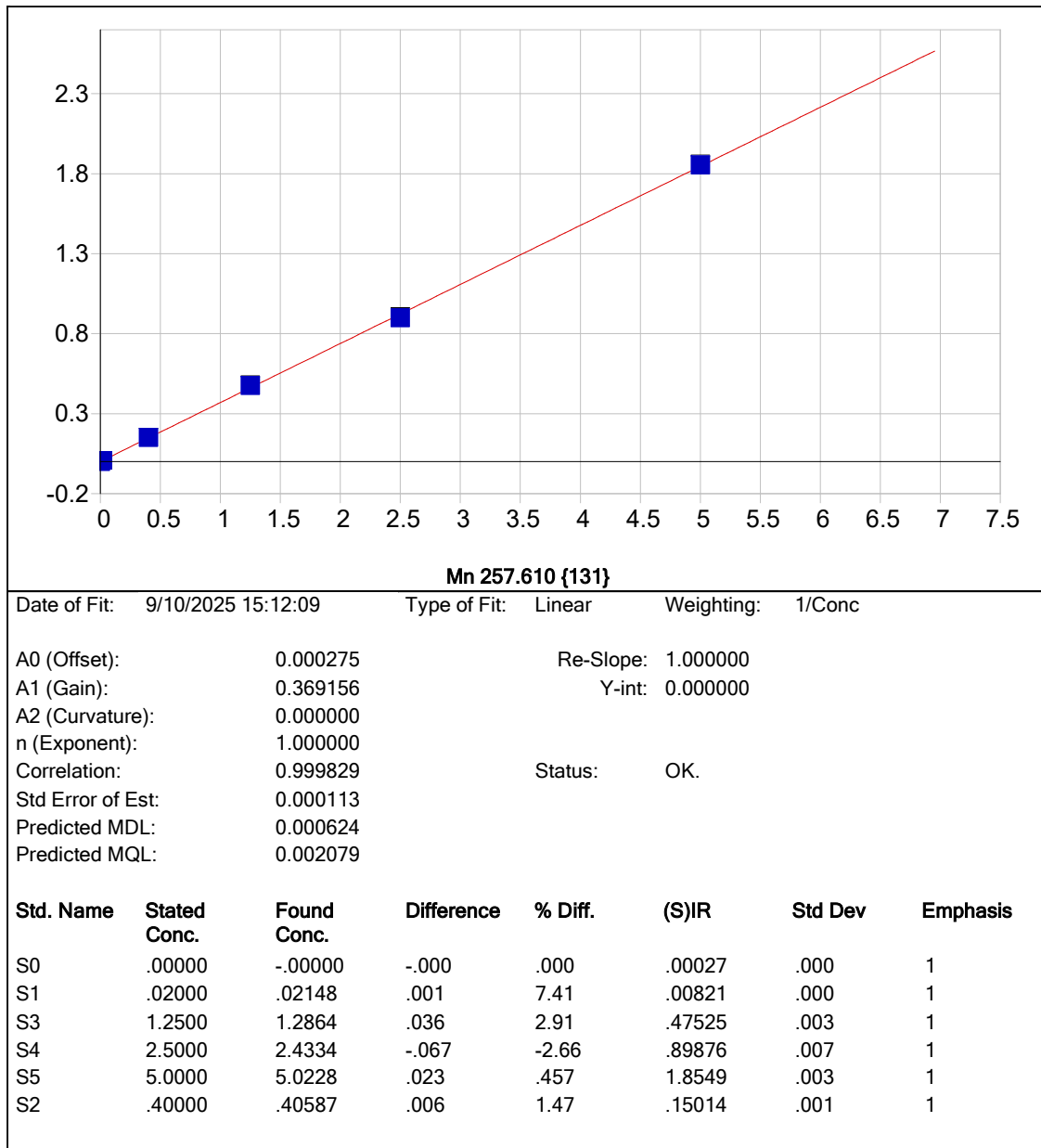


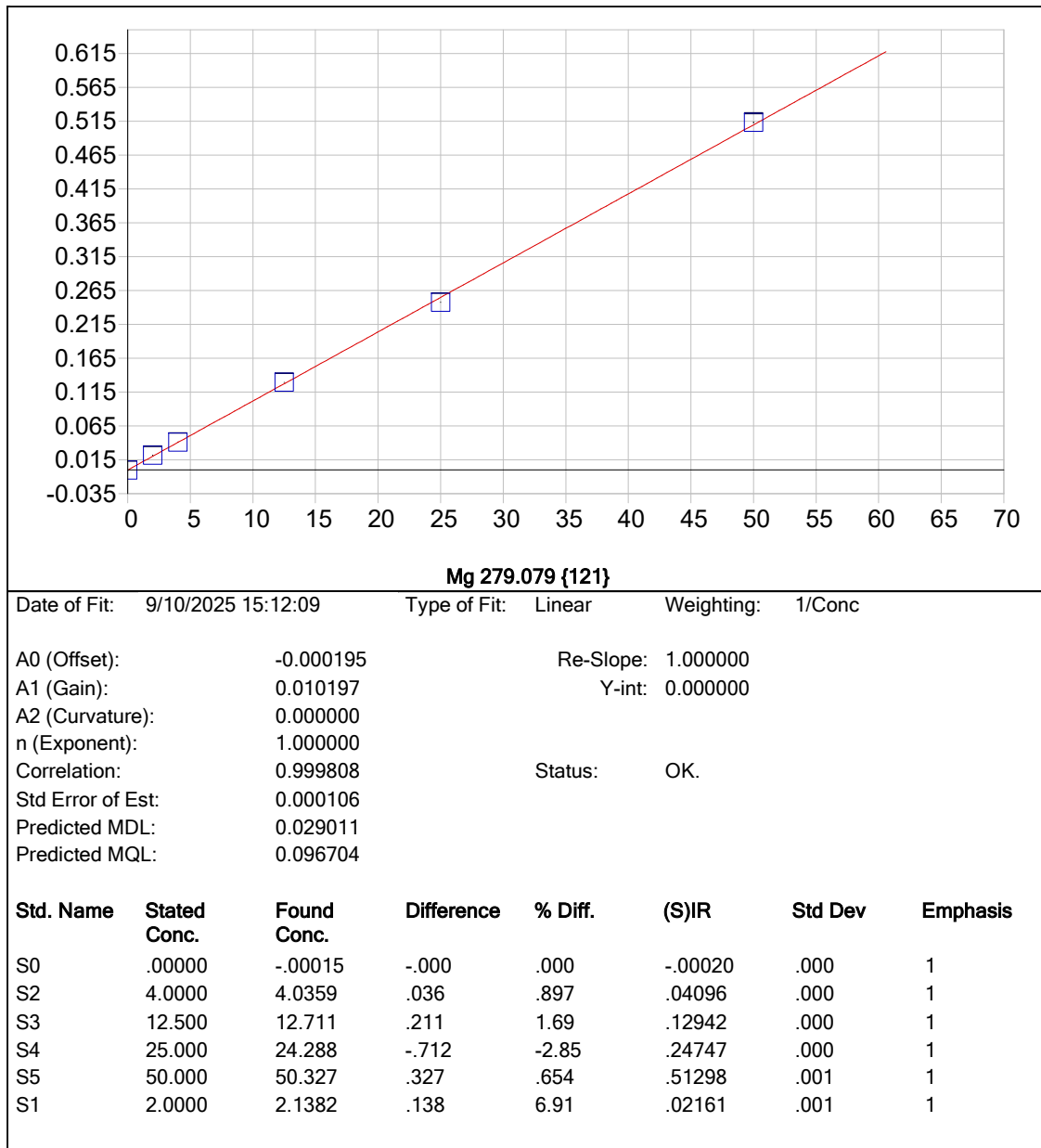


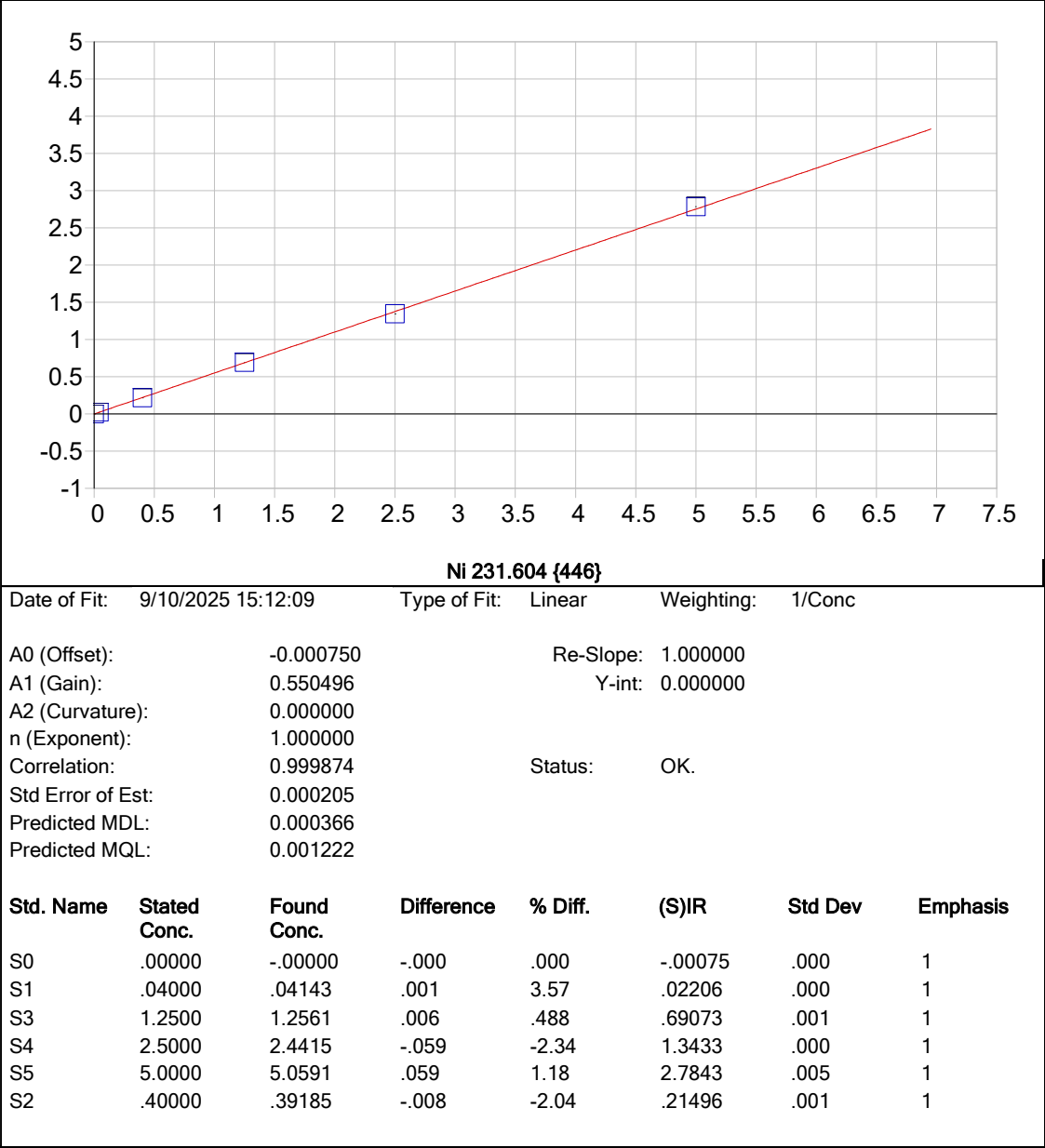


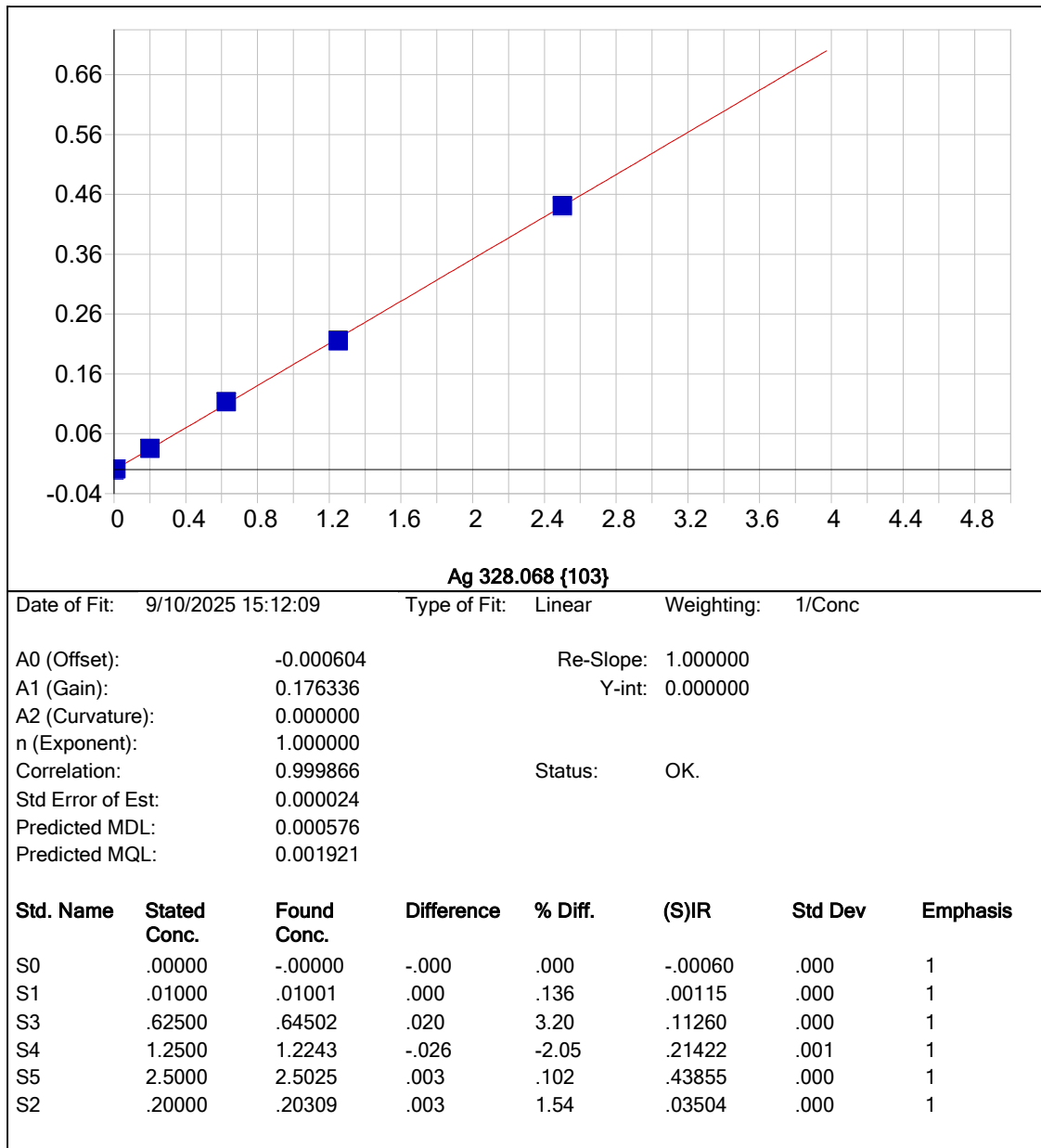


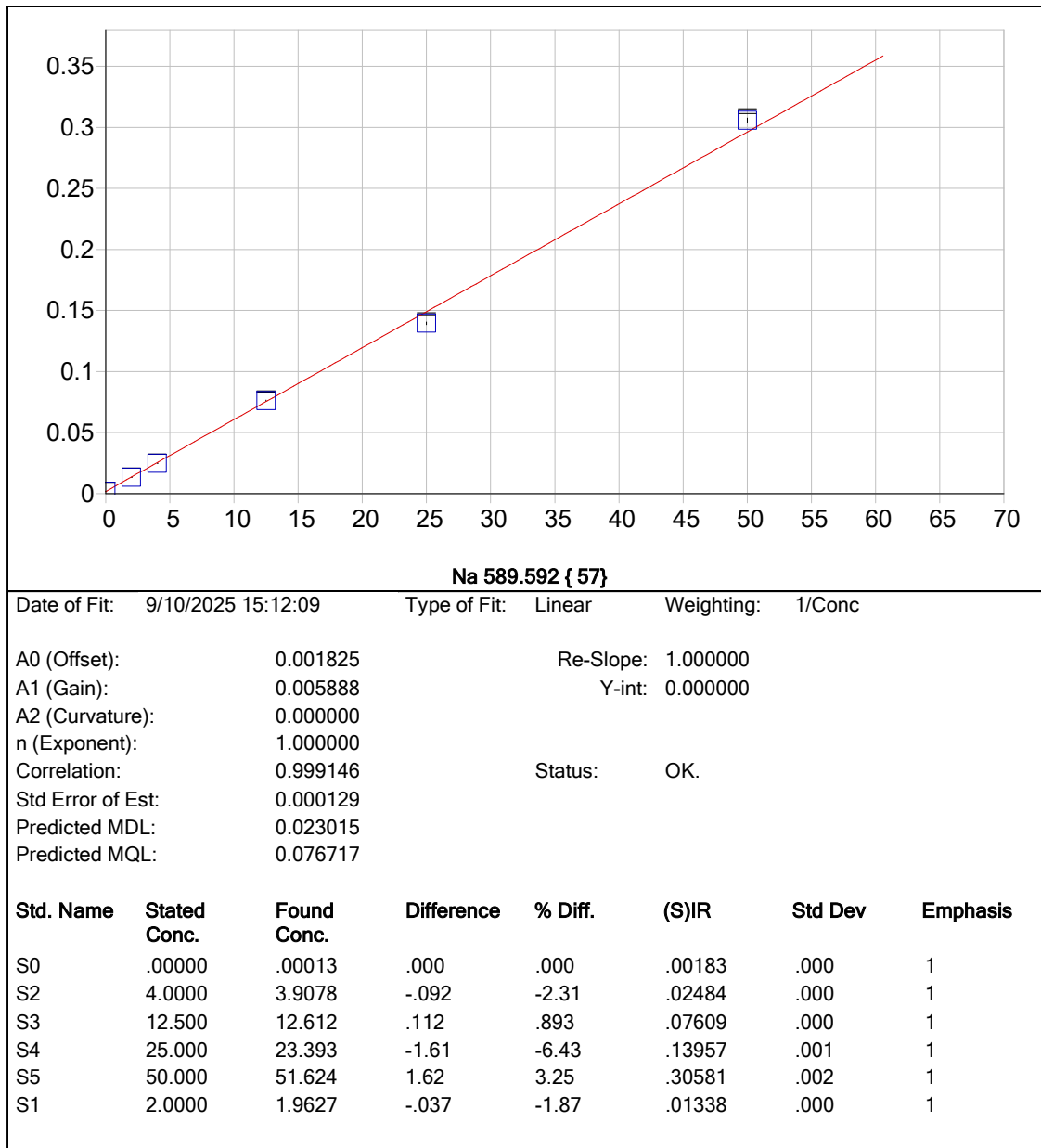


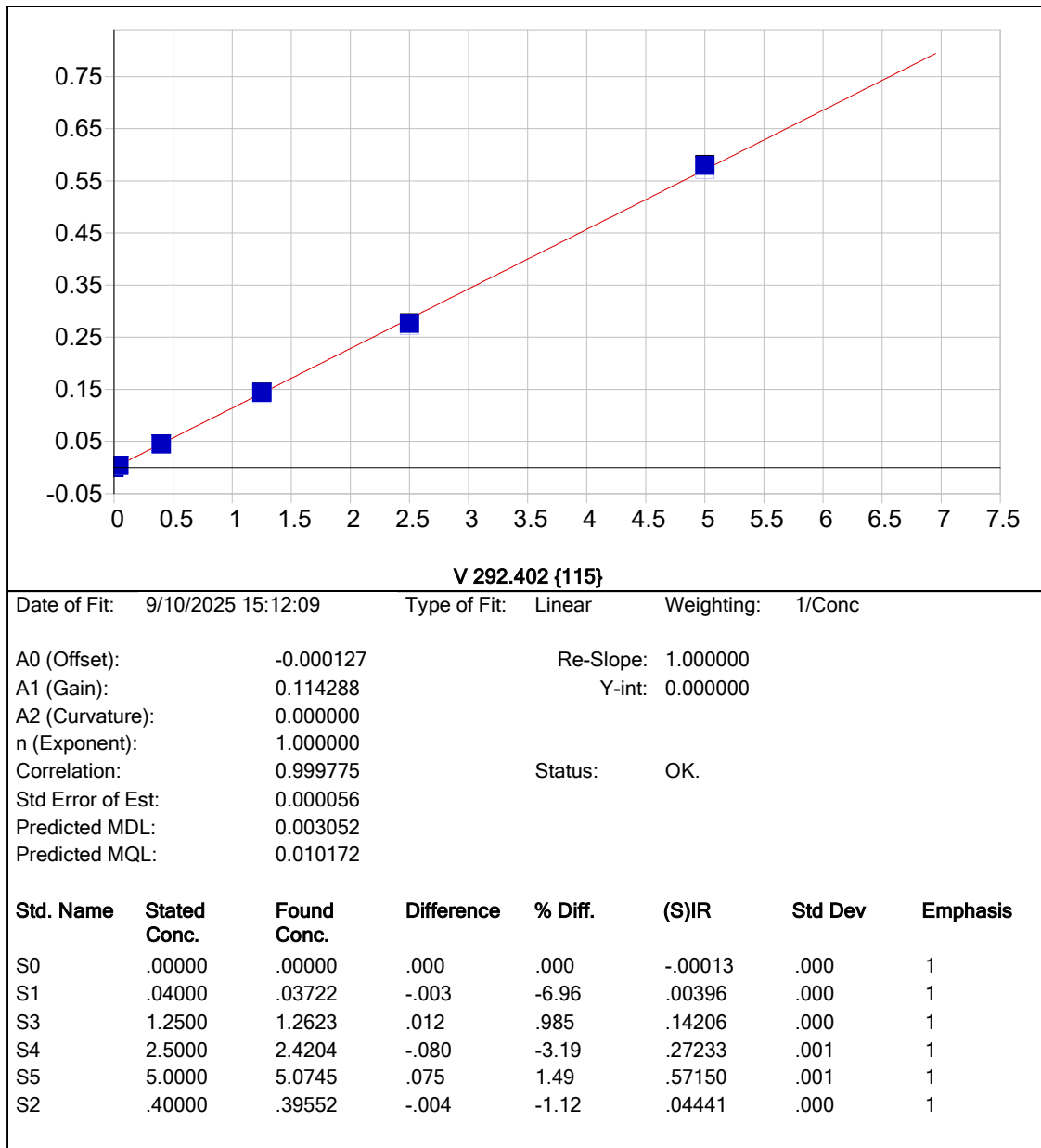


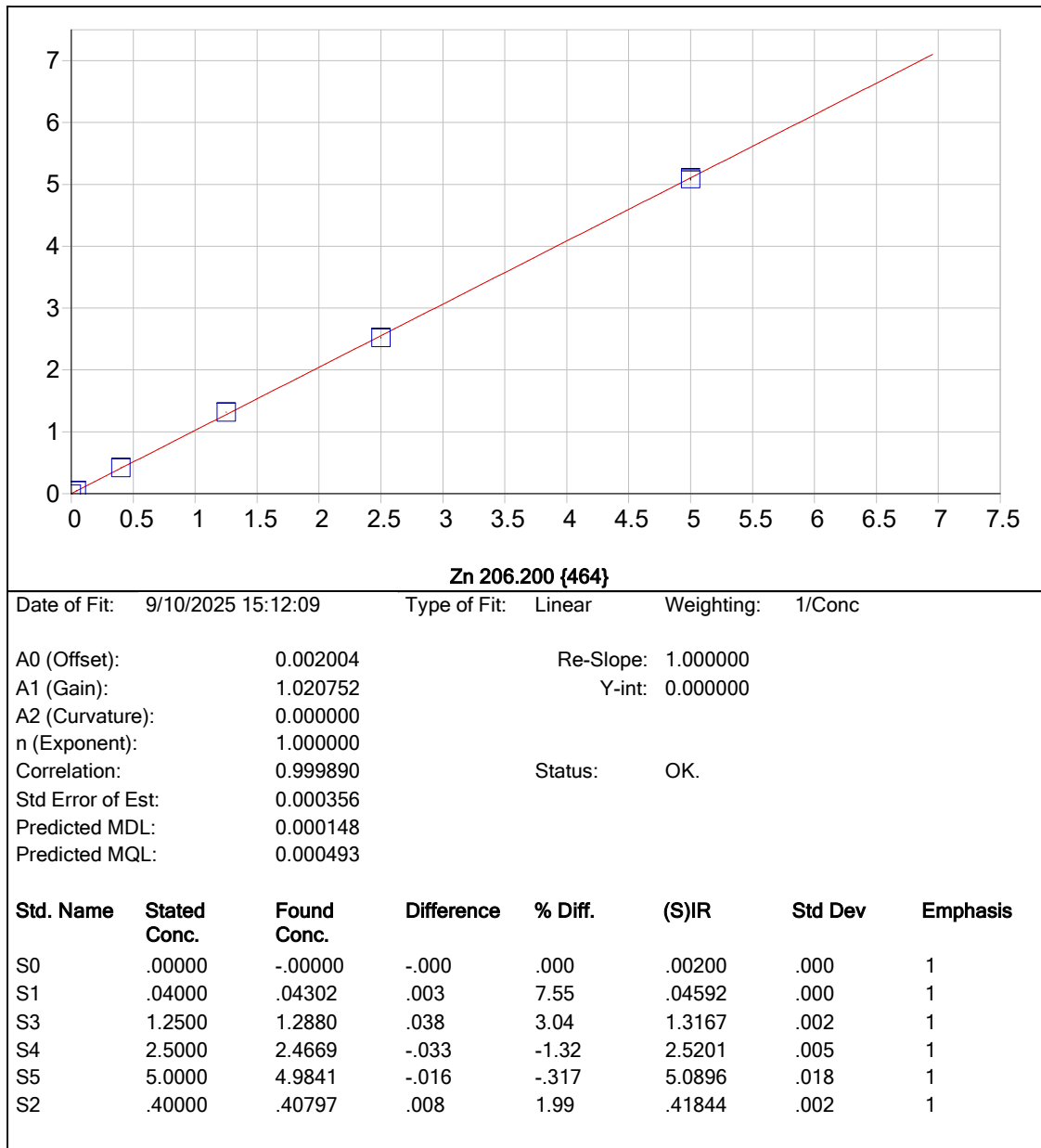


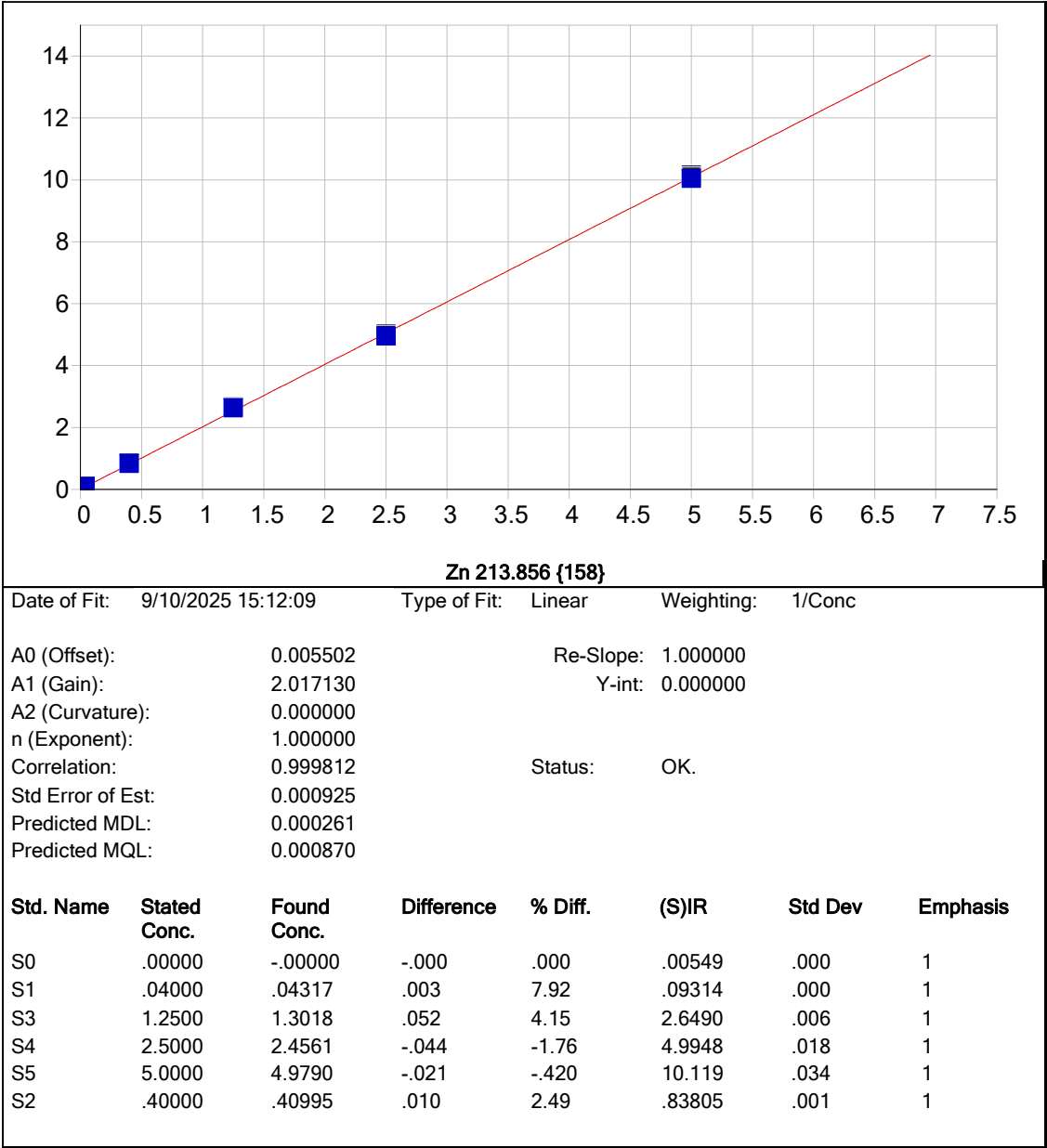


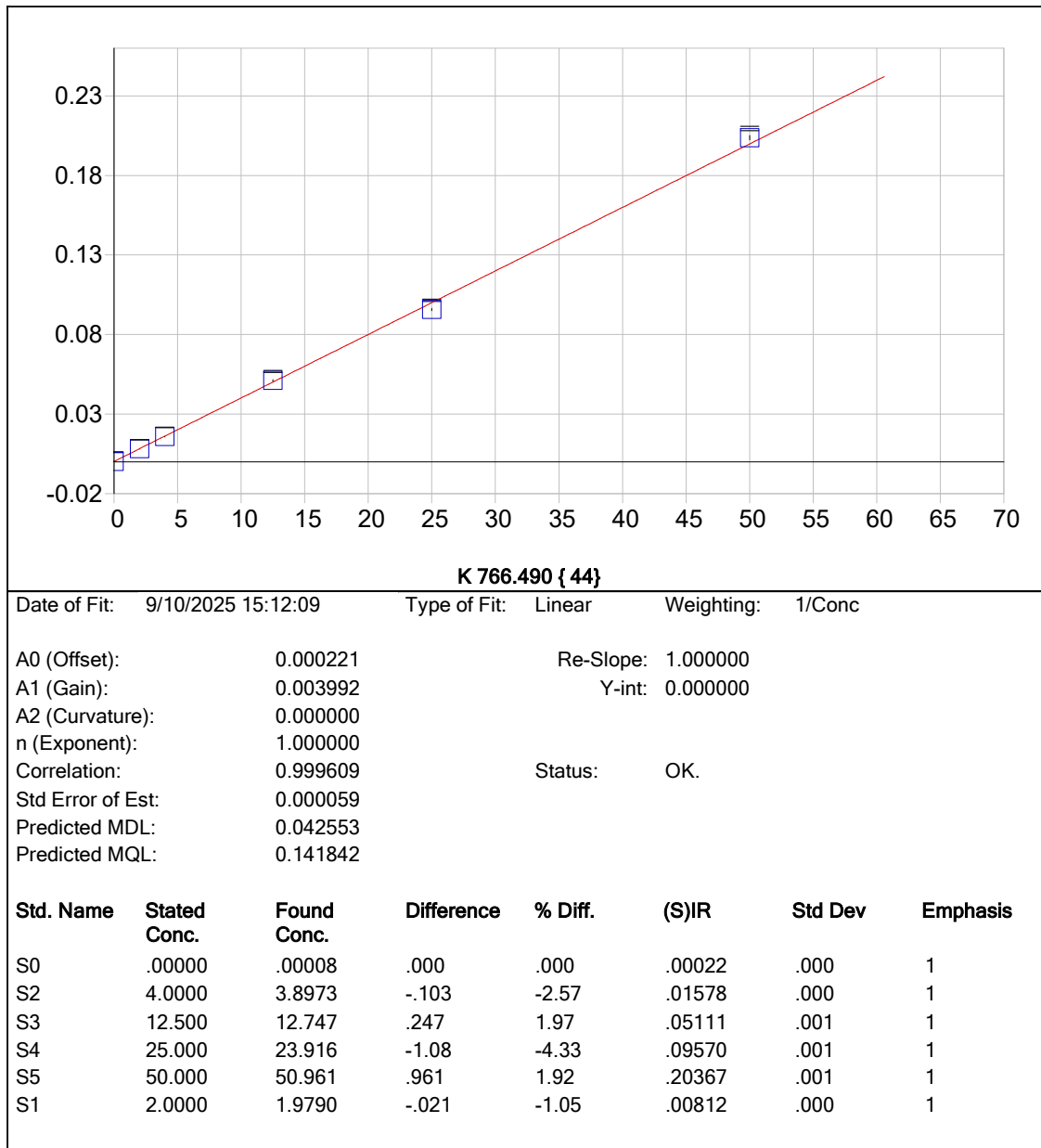


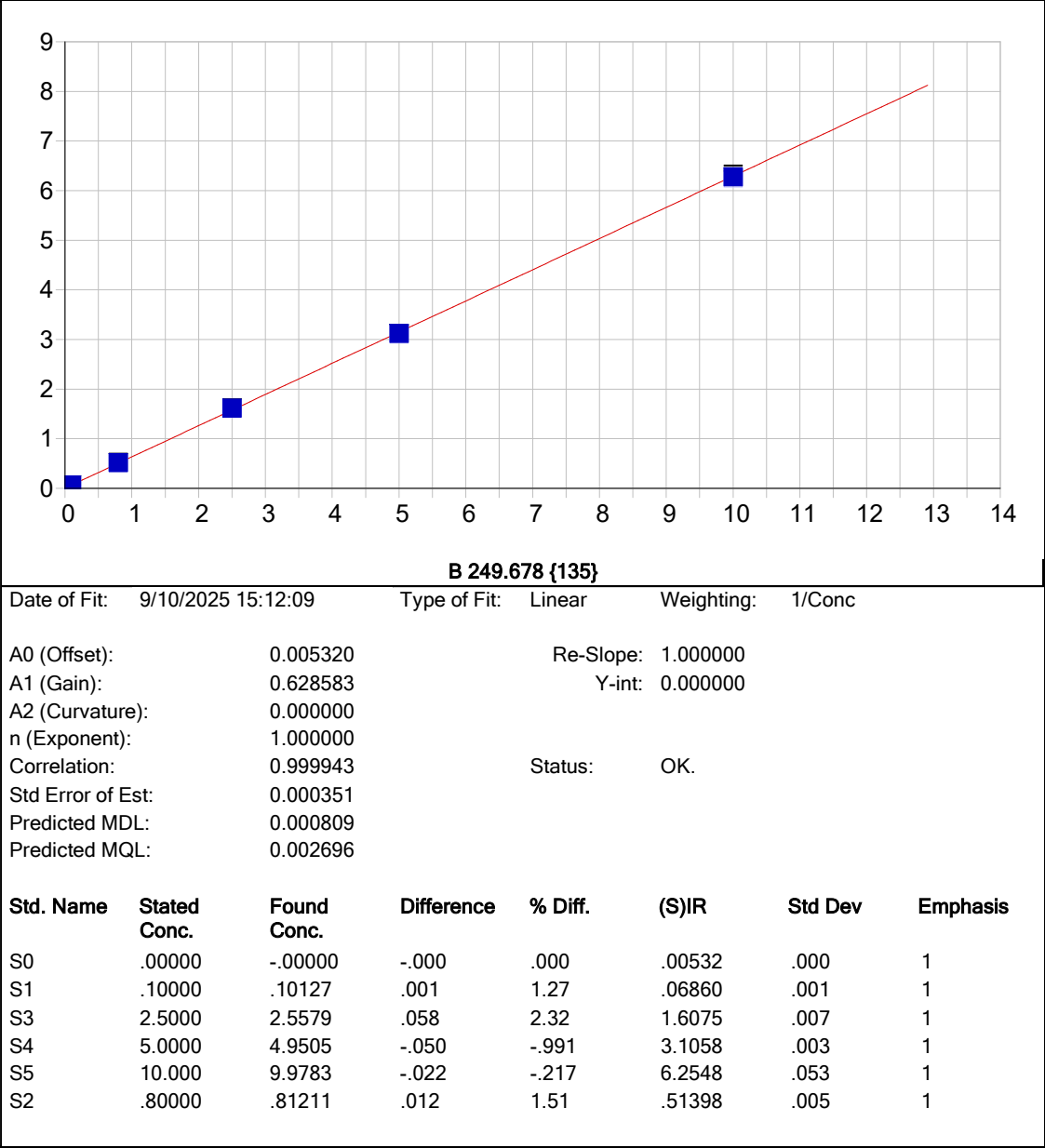


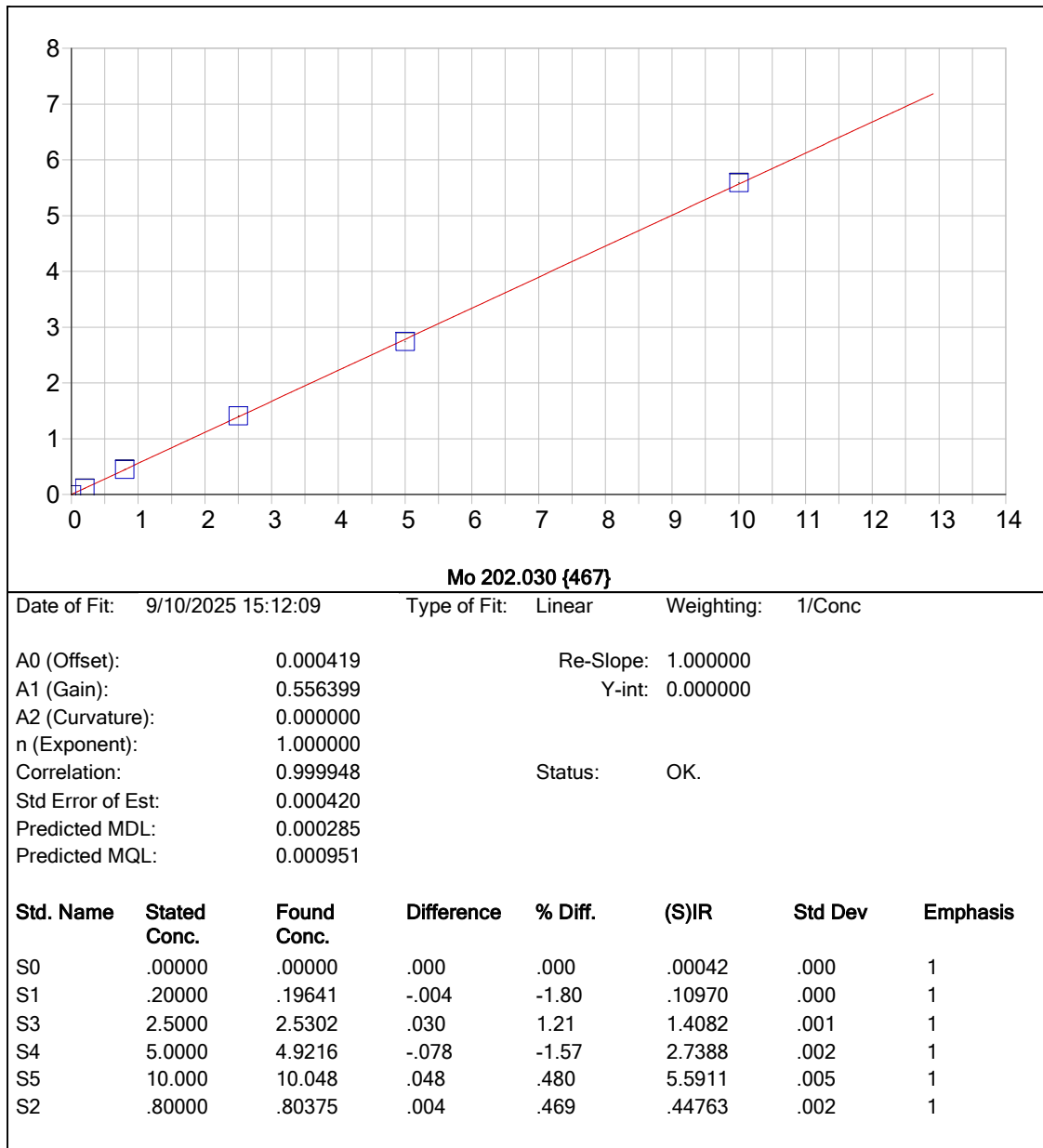


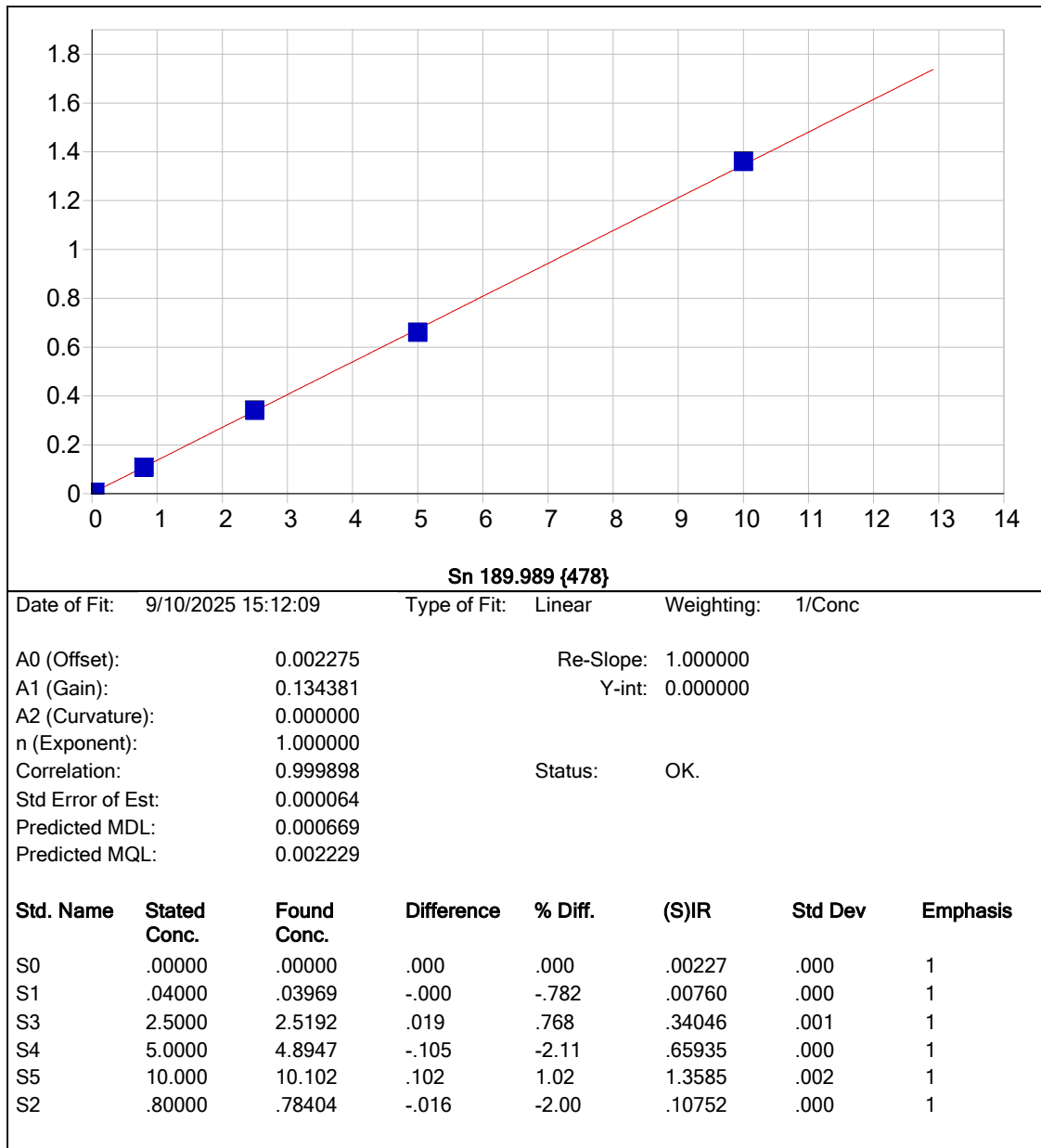


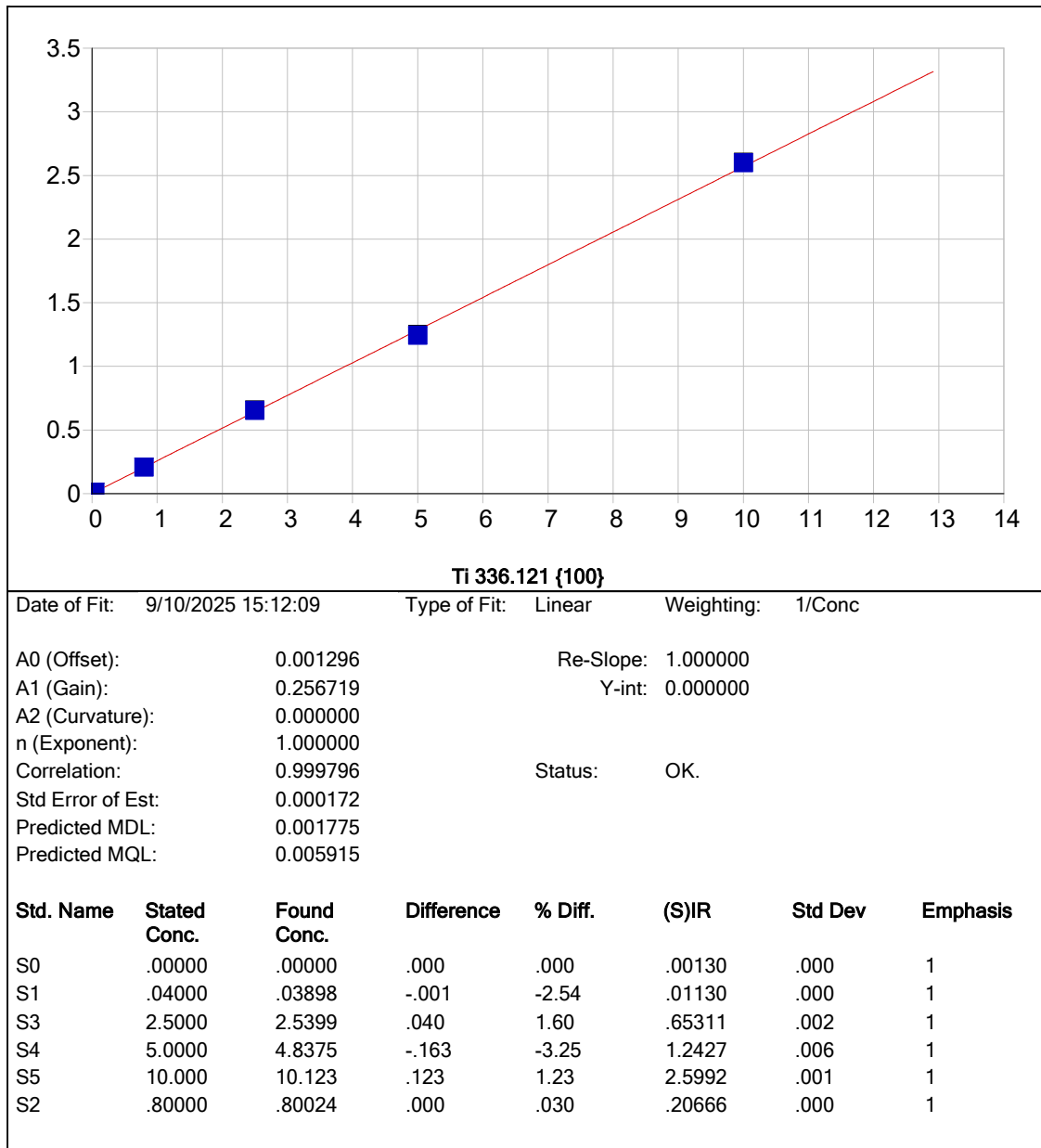


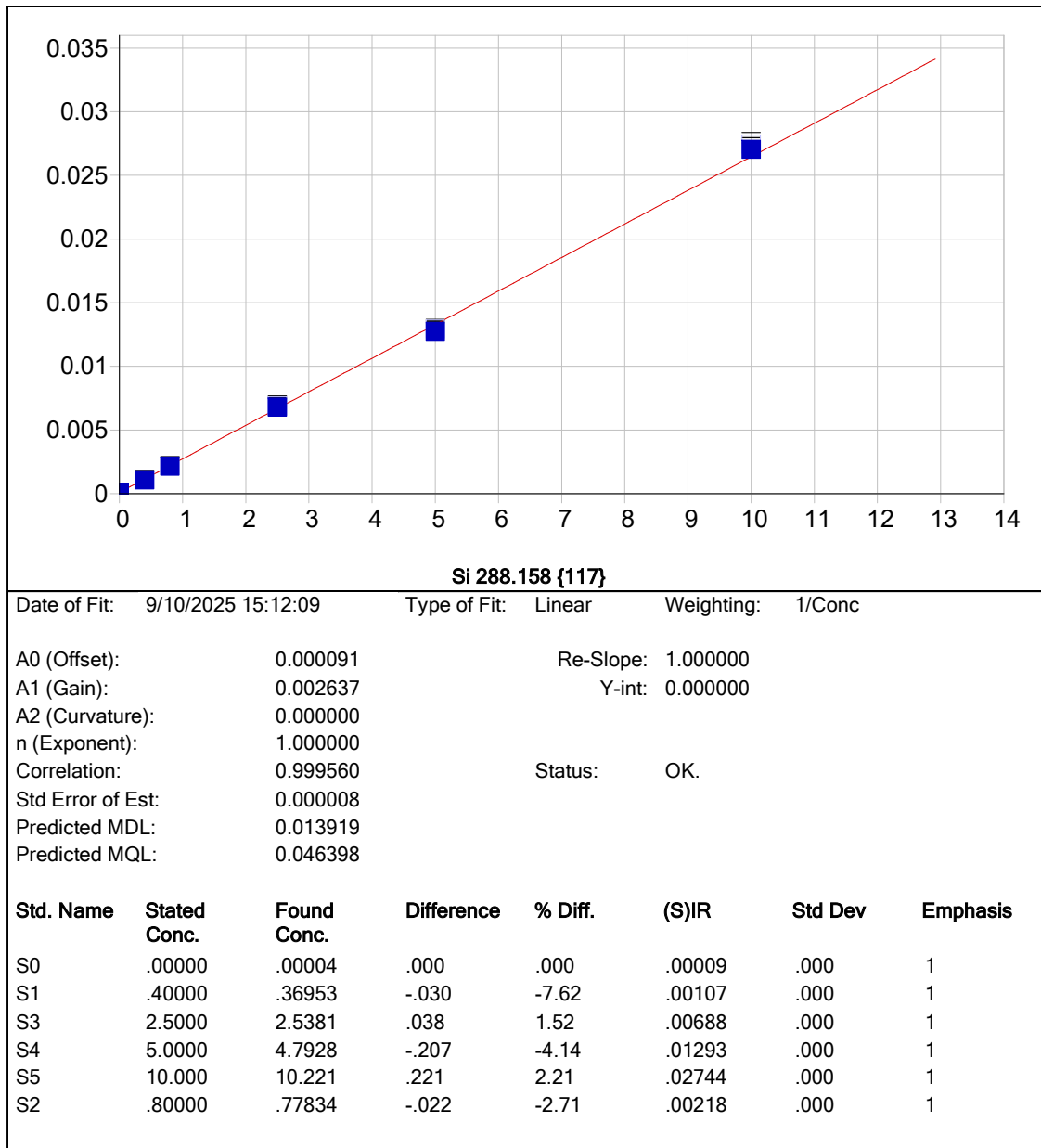


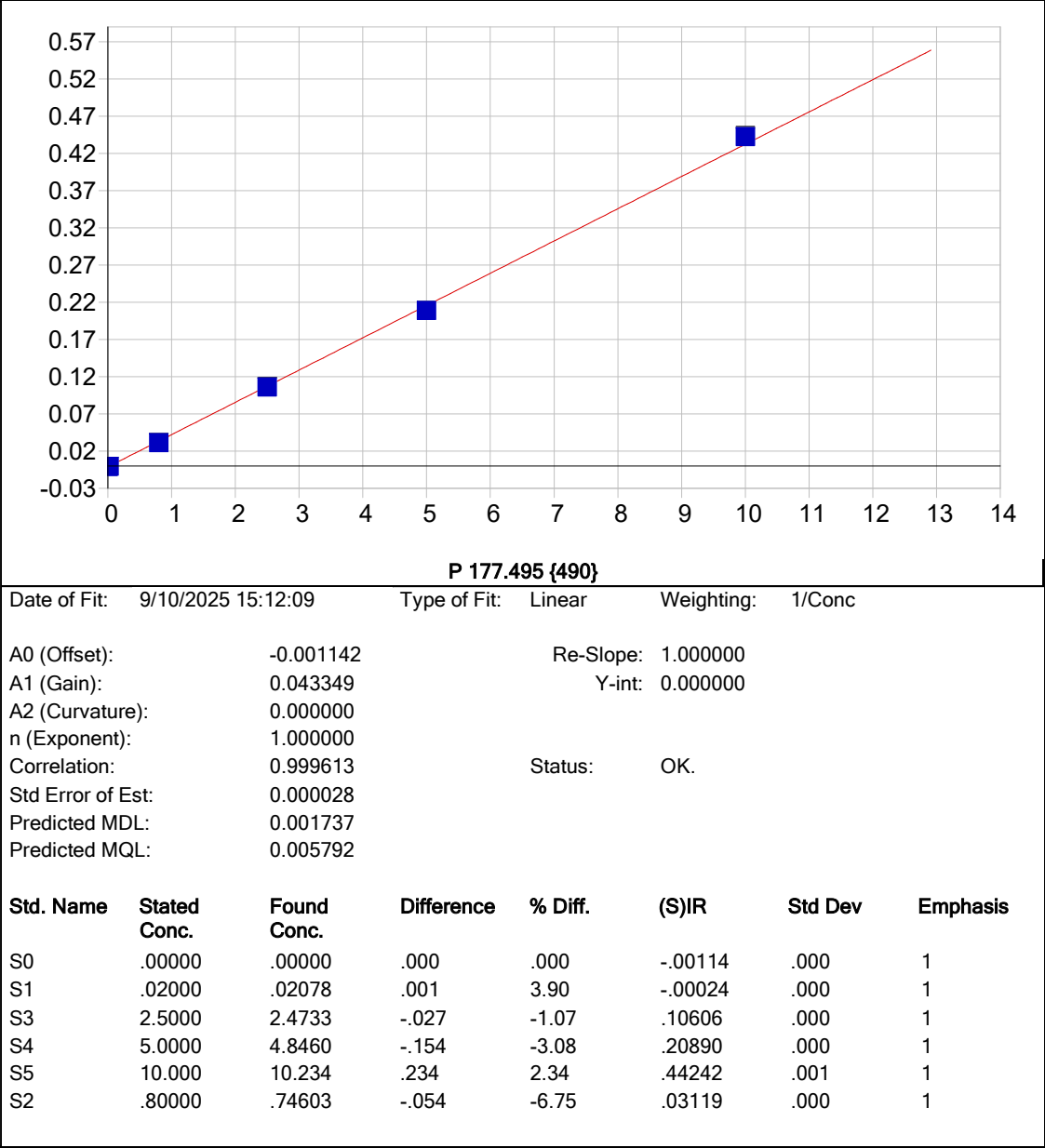


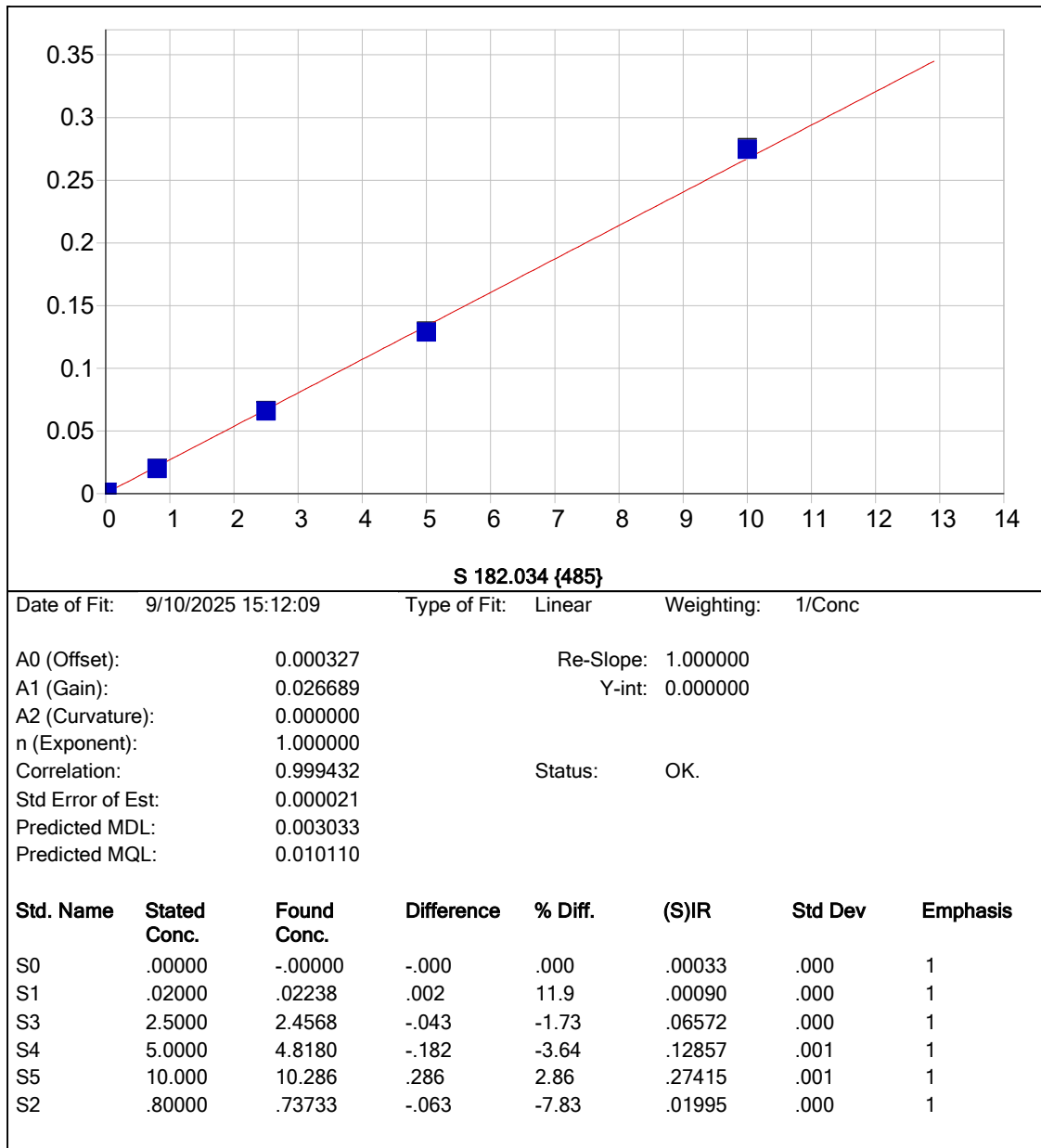


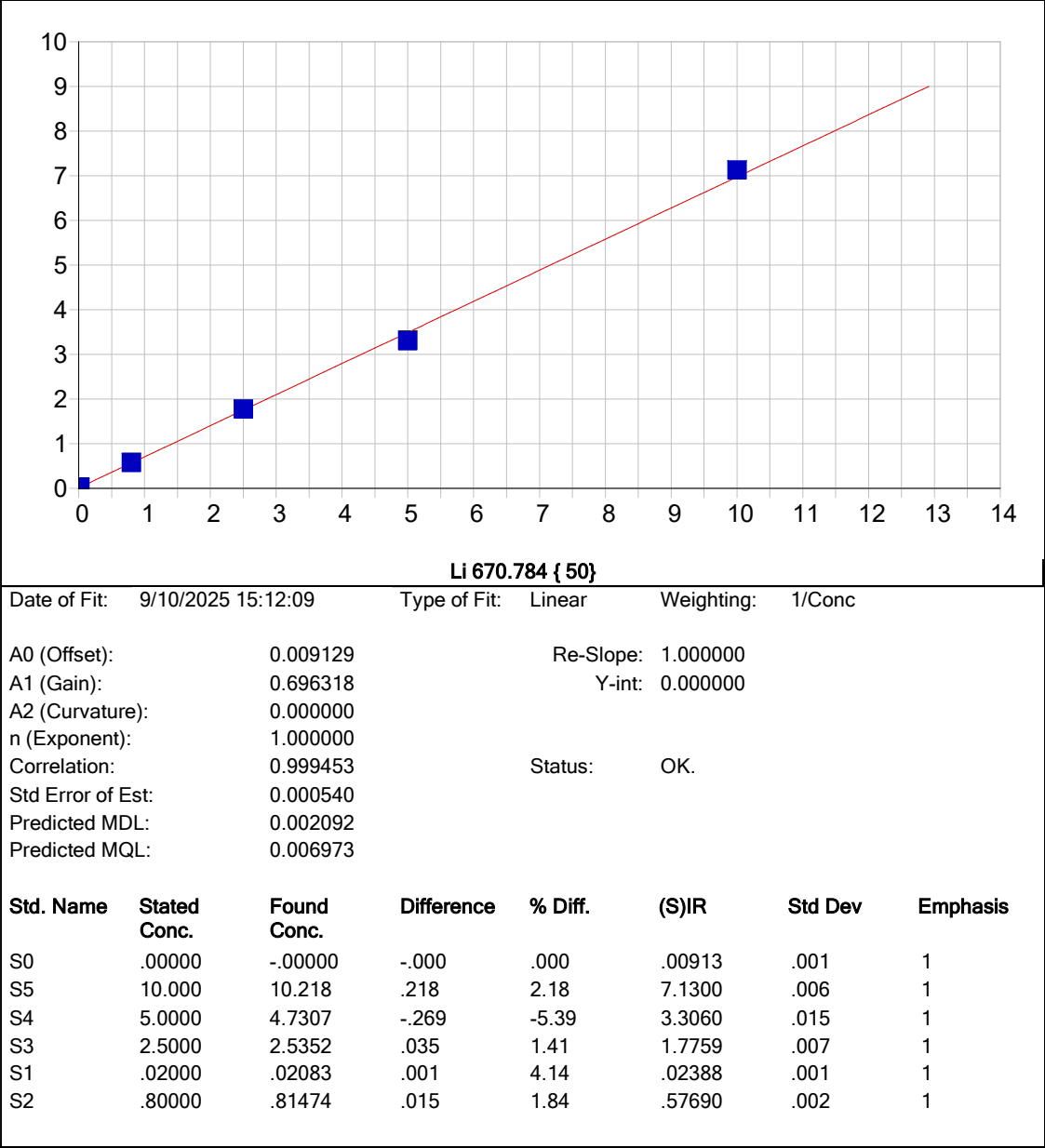


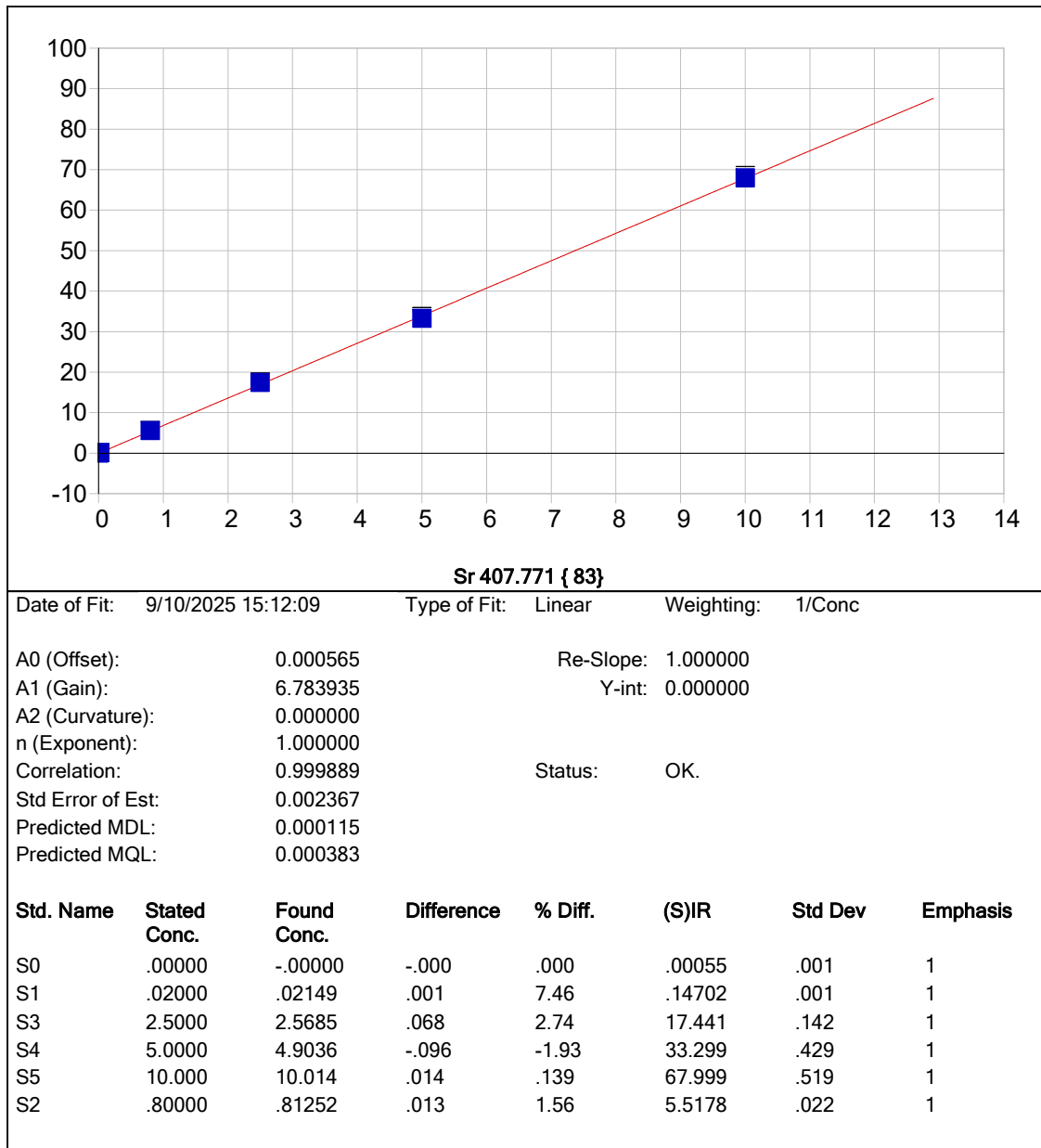


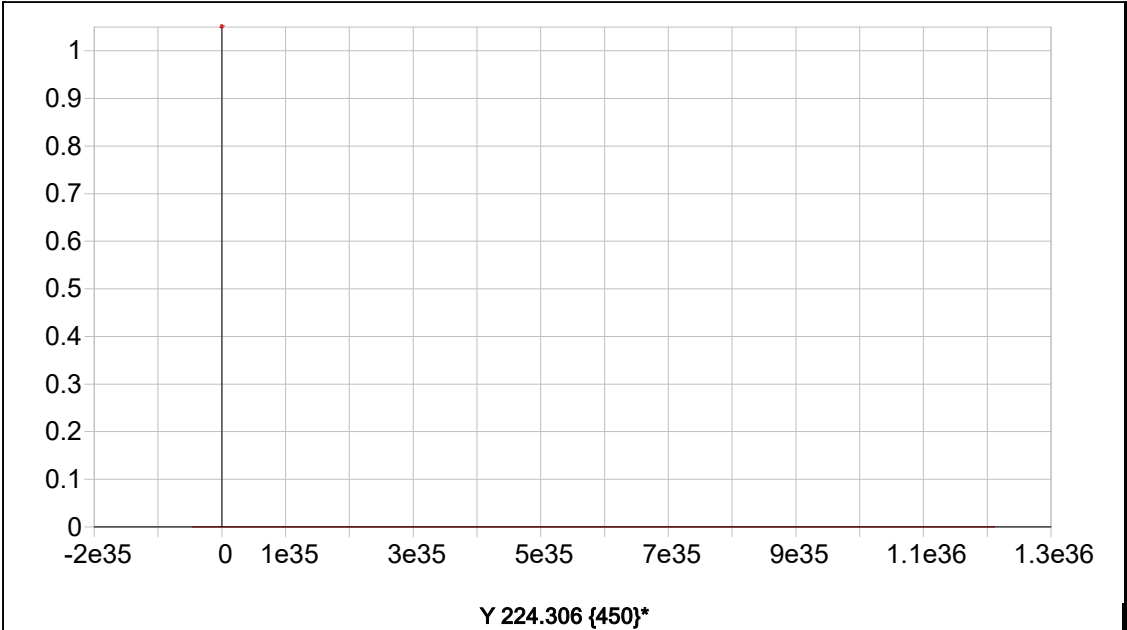






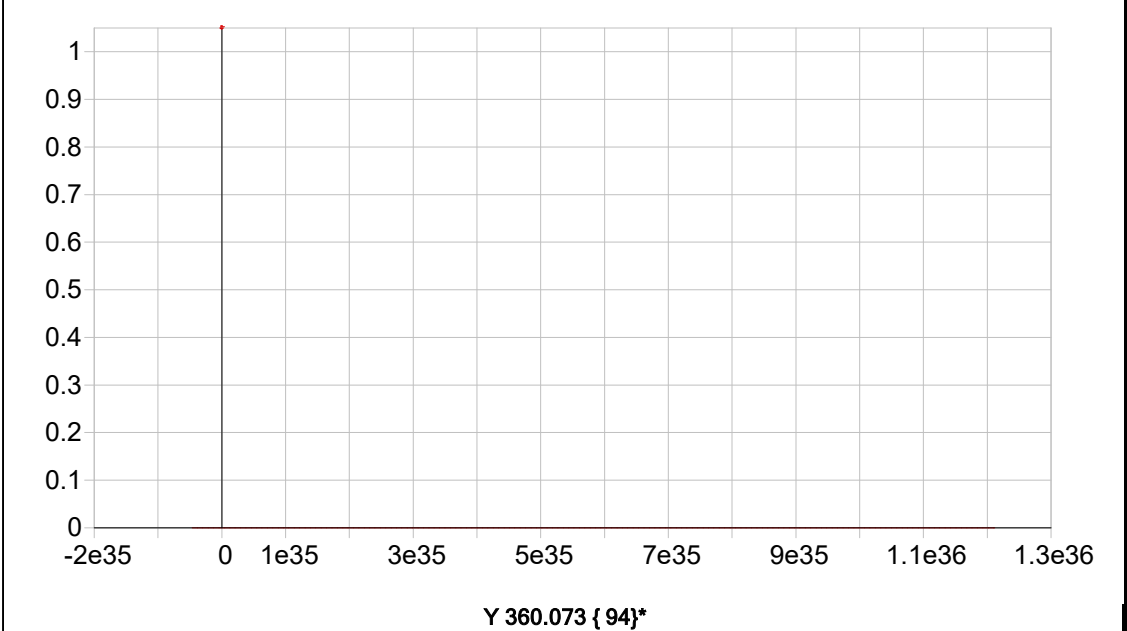




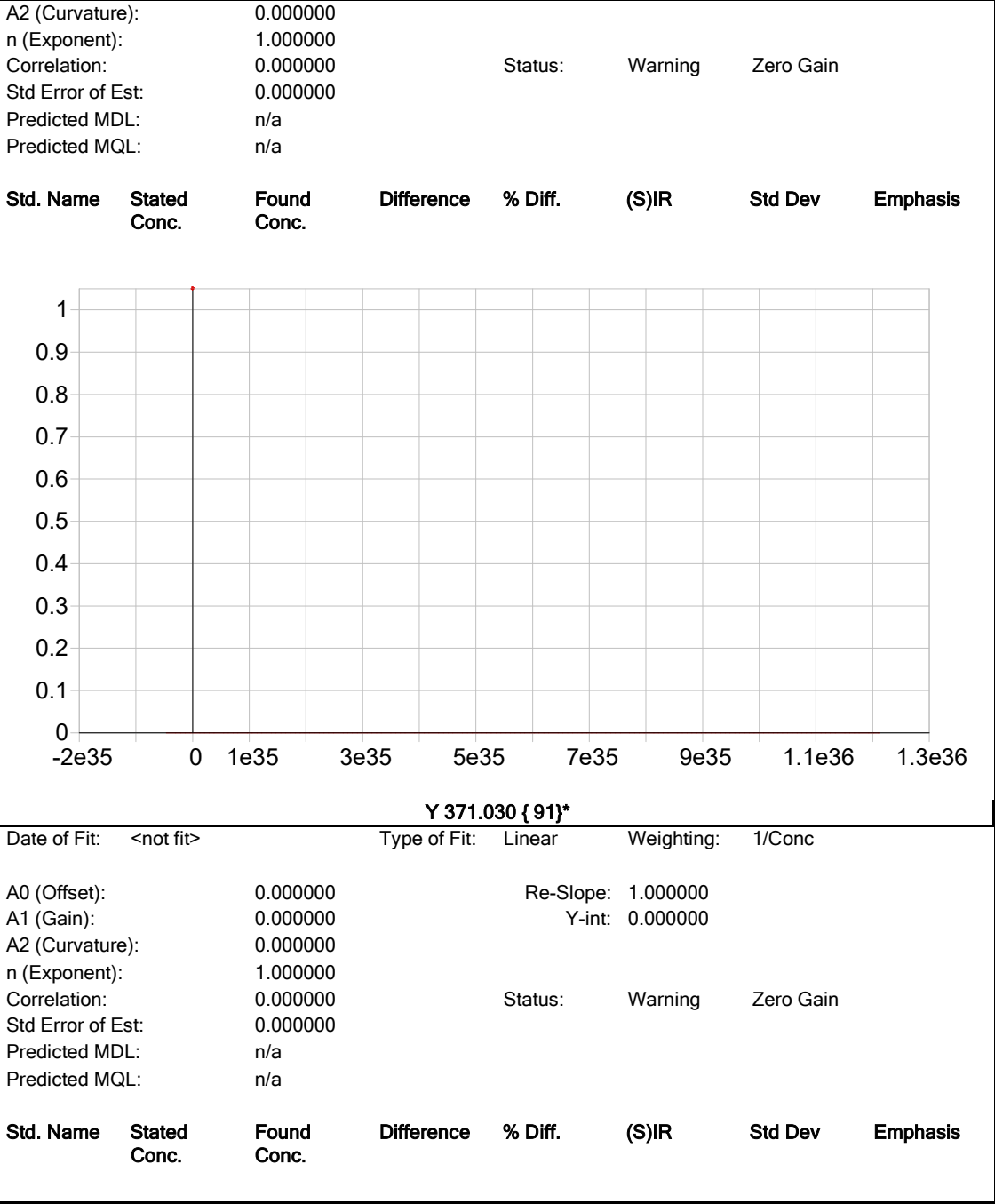


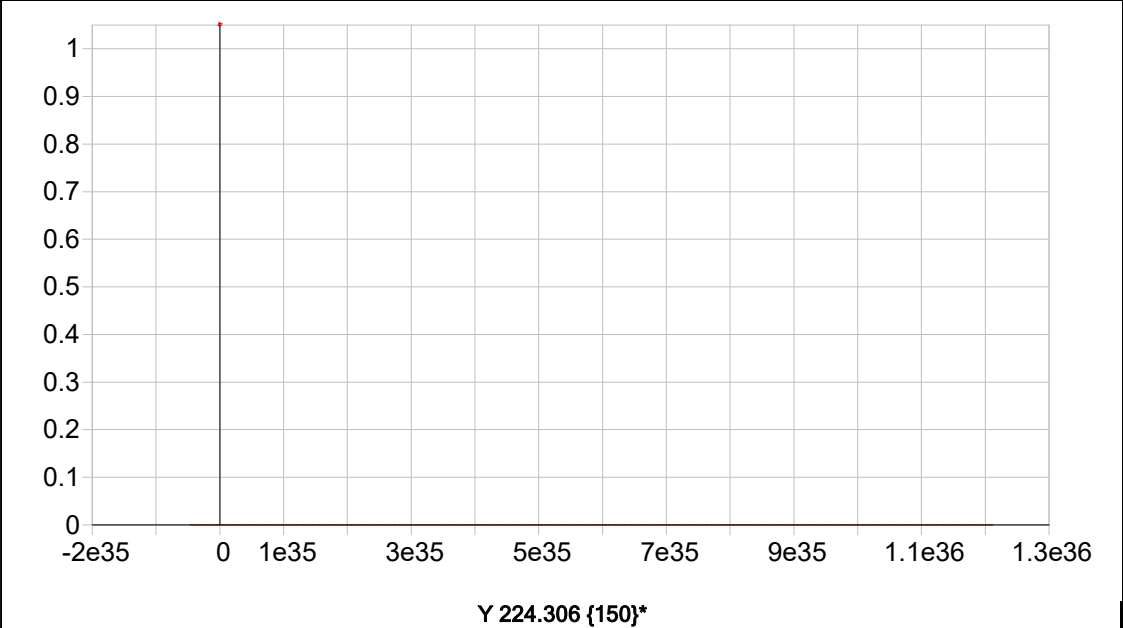
Date of Fit:	9/10/2025 15:12:09	Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000	Re-Slope:	1.000000		
A1 (Gain):	0.000000	Y-int:	0.000000		
A2 (Curvature):	0.000000				
n (Exponent):	1.000000				
Correlation:	0.000000	Status:	Warning	Zero Gain	
Std Error of Est:	0.000000				
Predicted MDL:	n/a				
Predicted MQL:	n/a				

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
-----------	--------------	-------------	------------	---------	-------	---------	----------



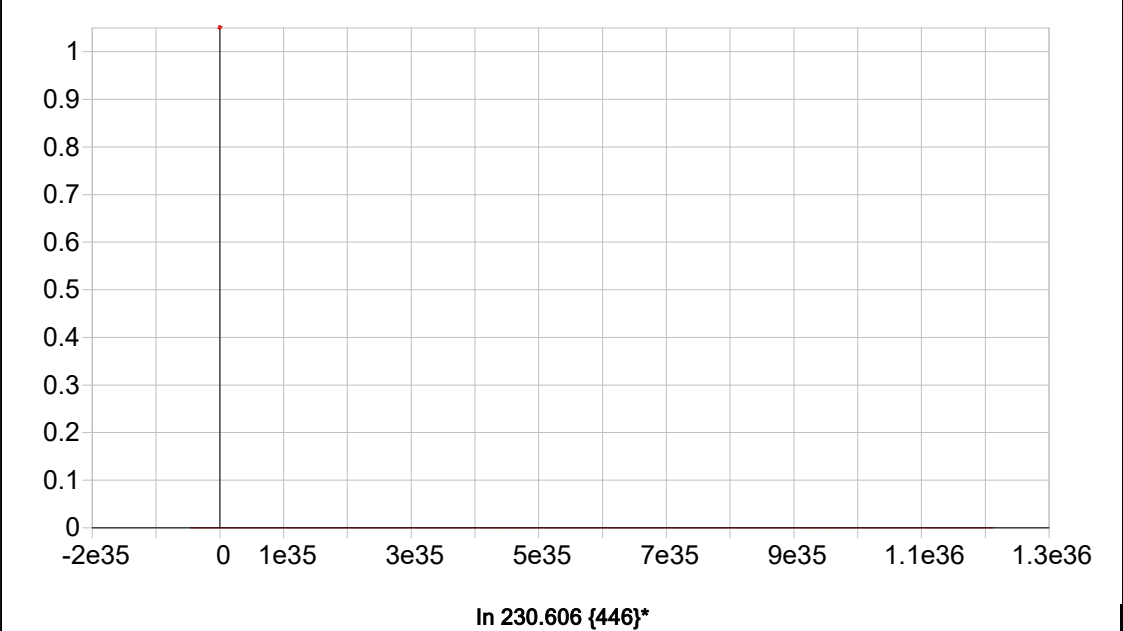
Date of Fit:	<not fit>	Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000	Re-Slope:	1.000000		
A1 (Gain):	0.000000	Y-int:	0.000000		





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

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
-----------	--------------	-------------	------------	---------	-------	---------	----------



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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18

Sample Name: S0 Acquired: 9/10/2025 11:06:09 Type: Cal
Method: 6010-200.7 NEW(v160) 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	.00005	.00019	.00017	.00044	.00056	-.00055	.07543	-.00151
Stddev	.00010	.00012	.00015	.00004	.00005	.00048	.00215	.00058
%RSD	219.42	64.992	85.349	8.3288	9.3483	87.752	2.8457	38.415
#1	.00004	.00030	.00001	.00041	.00050	-.00099	.07746	-.00141
#2	-.00005	.00005	.00021	.00042	.00056	-.00064	.07318	-.00099
#3	.00015	.00022	.00030	.00048	.00060	-.00003	.07564	-.00213
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	-.00028	.00081	.00017	.00012	.00029	.00002	.00027	-.00020
Stddev	.00011	.00030	.00004	.00013	.00008	.00001	.00033	.00006
%RSD	40.060	37.084	24.463	113.71	27.615	72.106	120.69	29.826
#1	-.00029	.00115	.00020	-.00003	.00039	.00002	.00064	-.00013
#2	-.00016	.00060	.00012	.00017	.00025	.00001	-.00001	-.00024
#3	-.00038	.00067	.00017	.00022	.00024	.00003	.00019	-.00022
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	-.00075	-.00060	.00183	-.00013	.00549	.00022	.00532	.00042
Stddev	.00013	.00005	.00014	.00032	.00046	.00024	.00028	.00008
%RSD	17.086	7.5229	7.4940	255.11	8.3073	108.65	5.2954	19.767
#1	-.00088	-.00056	.00167	-.00016	.00507	.00018	.00564	.00036
#2	-.00062	-.00060	.00186	.00021	.00598	.00000	.00513	.00052
#3	-.00074	-.00065	.00194	-.00043	.00543	.00048	.00518	.00038
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	.00227	.00130	.00009	-.00114	.00033	.00913	.00055	
Stddev	.00007	.00019	.00003	.00005	.00007	.00150	.00056	
%RSD	3.0916	14.532	36.132	4.0967	19.938	16.410	101.30	
#1	.00233	.00130	.00009	-.00114	.00027	.01002	-.00009	
#2	.00230	.00111	.00006	-.00119	.00040	.00996	.00092	
#3	.00220	.00148	.00012	-.00110	.00031	.00740	.00083	

Sample Name: S0 Acquired: 9/10/2025 11:06:09 Type: Cal
Method: 6010-200.7 NEW(v160) 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	6430.5	109360.	10705.	5112.8	7907.8
Stddev	4.0	270.	61.	16.5	7.2
%RSD	.06241	.24714	.57124	.32189	.09158
#1	6428.8	109330.	10642.	5095.7	7902.3
#2	6435.0	109100.	10708.	5128.6	7916.0
#3	6427.5	109640.	10764.	5114.1	7905.0

Sample Name: S1 Acquired: 9/10/2025 11:10:34 Type: Cal
Method: 6010-200.7 NEW(v160) 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	.00097	.00262	.00220	.00124	.00453	.00730	.29054	.03898
Stddev	.00006	.00019	.00018	.00001	.00011	.00051	.00073	.00029
%RSD	6.2240	7.3503	8.2838	1.0960	2.4901	6.9407	.24959	.75642
#1	.00091	.00250	.00241	.00126	.00458	.00719	.29124	.03897
#2	.00103	.00252	.00210	.00123	.00462	.00785	.29058	.03928
#3	.00096	.00284	.00210	.00125	.00441	.00685	.28979	.03869
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	.01675	.10850	.00200	.02815	.01302	.00033	.00821	.02161
Stddev	.00013	.00060	.00009	.00015	.00035	.00001	.00008	.00056
%RSD	.78643	.55544	4.5932	.52560	2.7161	2.3860	.93028	2.5973
#1	.01686	.10909	.00205	.02810	.01313	.00034	.00823	.02117
#2	.01678	.10789	.00189	.02831	.01263	.00032	.00827	.02224
#3	.01660	.10853	.00205	.02803	.01331	.00033	.00812	.02141
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	.02206	.00115	.01338	.00396	.09314	.00812	.06860	.10970
Stddev	.00014	.00000	.00010	.00013	.00023	.00004	.00060	.00050
%RSD	.64673	.08608	.73133	3.2458	.25058	.43763	.86978	.45519
#1	.02210	.00115	.01337	.00381	.09340	.00809	.06813	.10952
#2	.02190	.00115	.01349	.00399	.09308	.00816	.06841	.10931
#3	.02218	.00115	.01329	.00406	.09294	.00811	.06927	.11026
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	.00760	.01130	.00107	-.00024	.00090	.02388	.14702	
Stddev	.00006	.00016	.00003	.00007	.00004	.00067	.00090	
%RSD	.80821	1.4376	2.6608	28.071	4.2663	2.7877	.61121	
#1	.00766	.01135	.00108	-.00031	.00094	.02335	.14776	
#2	.00754	.01111	.00108	-.00018	.00089	.02365	.14729	
#3	.00761	.01143	.00103	-.00022	.00087	.02462	.14602	

Sample Name: S1 Acquired: 9/10/2025 11:10:34 Type: Cal
Method: 6010-200.7 NEW(v160) 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	6174.1	106250.	10773.	5005.2	7297.0
Stddev	7.6	705.	72.	14.8	10.0
%RSD	.12267	.66367	.66902	.29595	.13764
#1	6180.1	106750.	10852.	5012.1	7305.6
#2	6176.6	105440.	10711.	4988.2	7299.4
#3	6165.6	106550.	10756.	5015.3	7285.9

Sample Name: S2 Acquired: 9/10/2025 11:14:56 Type: Cal
Method: 6010-200.7 NEW(v160) 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	.03667	.04968	.13964	.03178	.06277	.11192	3.4435	.25914
Stddev	.00021	.00090	.00074	.00012	.00026	.00108	.0117	.00154
%RSD	.55975	1.8022	.53330	.36435	.41040	.96531	.34028	.59288
#1	.03646	.04953	.13906	.03165	.06249	.11311	3.4508	.25864
#2	.03686	.05065	.13939	.03187	.06282	.11166	3.4496	.26087
#3	.03670	.04887	.14048	.03182	.06299	.11099	3.4300	.25792
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	1.0767	.20973	.02886	.36448	.12068	.00230	.15014	.04096
Stddev	.0032	.00104	.00017	.00108	.00074	.00002	.00089	.00023
%RSD	.29372	.49699	.59056	.29644	.61300	.84007	.59220	.55798
#1	1.0736	.21045	.02897	.36364	.12002	.00229	.15080	.04070
#2	1.0765	.21021	.02867	.36412	.12056	.00232	.15048	.04113
#3	1.0799	.20853	.02895	.36570	.12148	.00229	.14913	.04105
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	.21496	.03504	.02484	.04441	.83805	.01578	.51398	.44763
Stddev	.00076	.00012	.00005	.00011	.00070	.00017	.00459	.00190
%RSD	.35526	.35449	.18993	.25447	.08388	1.1026	.89371	.42389
#1	.21436	.03518	.02486	.04453	.83731	.01565	.51572	.44548
#2	.21470	.03500	.02478	.04430	.83872	.01598	.51746	.44830
#3	.21582	.03494	.02487	.04440	.83811	.01572	.50878	.44909
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	.10752	.20666	.00218	.03119	.01995	.57690	5.5178	
Stddev	.00036	.00022	.00001	.00008	.00011	.00240	.0221	
%RSD	.33138	.10419	.56435	.25341	.57327	.41636	.39952	
#1	.10715	.20678	.00216	.03117	.01982	.57877	5.5332	
#2	.10785	.20678	.00218	.03128	.02004	.57774	5.5277	
#3	.10758	.20641	.00218	.03113	.01999	.57419	5.4926	

Sample Name: S2 Acquired: 9/10/2025 11:14:56 Type: Cal
Method: 6010-200.7 NEW(v160) 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	6226.7	105660.	10707.	5018.4	7333.3
Stddev	20.6	165.	78.	17.5	17.2
%RSD	.33096	.15637	.73188	.34907	.23417
#1	6244.0	105830.	10691.	5001.4	7349.5
#2	6232.1	105650.	10637.	5036.4	7335.1
#3	6203.9	105500.	10791.	5017.5	7315.3

Sample Name: S3 Acquired: 9/10/2025 11:19:05 Type: Cal
Method: 6010-200.7 NEW(v160) 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	.11826	.15523	.44592	.10102	.19964	.35622	10.872	.81636
Stddev	.00042	.00244	.00102	.00042	.00039	.00150	.049	.00248
%RSD	.35442	1.5721	.22924	.41889	.19723	.42014	.45175	.30343

#1	.11791	.15337	.44474	.10102	.20006	.35677	10.837	.81916
#2	.11814	.15432	.44657	.10059	.19929	.35737	10.928	.81445
#3	.11873	.15799	.44645	.10144	.19957	.35453	10.851	.81548

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	3.4842	.66322	.09134	1.1718	.38196	.00749	.47525	.12942
Stddev	.0053	.00124	.00039	.0012	.00024	.00006	.00280	.00022
%RSD	.15323	.18680	.42226	.10111	.06383	.77422	.58833	.16777

#1	3.4787	.66252	.09093	1.1708	.38171	.00742	.47421	.12938
#2	3.4893	.66465	.09138	1.1731	.38219	.00753	.47842	.12965
#3	3.4845	.66250	.09170	1.1714	.38198	.00752	.47313	.12923

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	.69073	.11260	.07609	.14206	2.6490	.05111	1.6075	1.4082
Stddev	.00125	.00037	.00045	.00022	.0065	.00066	.0065	.0011
%RSD	.18146	.33249	.59150	.15371	.24435	1.2993	.40600	.07770

#1	.68934	.11230	.07559	.14185	2.6451	.05042	1.6128	1.4077
#2	.69178	.11249	.07646	.14229	2.6454	.05175	1.6002	1.4074
#3	.69106	.11302	.07621	.14203	2.6565	.05115	1.6094	1.4095

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	.34046	.65311	.00688	.10606	.06572	1.7759	17.441	
Stddev	.00061	.00191	.00007	.00020	.00039	.0067	.142	
%RSD	.17915	.29267	1.0447	.18702	.59367	.37897	.81173	

#1	.33986	.65131	.00680	.10590	.06560	1.7702	17.533	
#2	.34045	.65512	.00694	.10599	.06541	1.7833	17.278	
#3	.34108	.65290	.00691	.10628	.06616	1.7741	17.513	

Sample Name: S3 Acquired: 9/10/2025 11:19:05 Type: Cal
Method: 6010-200.7 NEW(v160) 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	6011.8	101970.	10629.	4873.7	6931.7
Stddev	16.7	277.	21.	13.3	26.3
%RSD	.27753	.27179	.19850	.27208	.37933
#1	6028.9	102280.	10605.	4886.1	6957.4
#2	5995.6	101740.	10645.	4859.7	6904.8
#3	6011.1	101890.	10636.	4875.4	6933.0

Sample Name: S4 Acquired: 9/10/2025 11:23:13 Type: Cal
Method: 6010-200.7 NEW(v160) 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	.22916	.30308	.86567	.19490	.38717	.67693	20.452	1.5533
Stddev	.00007	.00380	.00048	.00033	.00128	.00035	.110	.0064
%RSD	.03179	1.2552	.05535	.16928	.32976	.05177	.53938	.40994

#1	.22912	.30066	.86512	.19451	.38574	.67654	20.331	1.5510
#2	.22925	.30111	.86592	.19508	.38756	.67722	20.546	1.5484
#3	.22912	.30746	.86598	.19509	.38820	.67704	20.479	1.5605

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	6.7914	1.2520	.17222	2.2887	.73051	.01391	.89876	.24747
Stddev	.0049	.0026	.00085	.0012	.00046	.00009	.00660	.00026
%RSD	.07194	.20478	.49331	.05374	.06235	.63818	.73490	.10382

#1	6.7928	1.2517	.17150	2.2876	.73050	.01382	.89634	.24746
#2	6.7955	1.2495	.17201	2.2900	.73097	.01393	.89371	.24722
#3	6.7860	1.2547	.17316	2.2885	.73005	.01399	.90624	.24773

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	1.3433	.21422	.13957	.27233	4.9948	.09570	3.1058	2.7388
Stddev	.0005	.00092	.00116	.00118	.0182	.00077	.0031	.0021
%RSD	.03501	.43079	.82997	.43311	.36403	.80628	.09812	.07589

#1	1.3430	.21340	.13893	.27225	4.9949	.09502	3.1075	2.7408
#2	1.3438	.21405	.13888	.27119	4.9765	.09554	3.1022	2.7367
#3	1.3431	.21522	.14091	.27354	5.0129	.09654	3.1075	2.7389

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	.65935	1.2427	.01293	.20890	.12857	3.3060	33.299	
Stddev	.00023	.0056	.00005	.00038	.00061	.0147	.429	
%RSD	.03483	.45256	.37248	.18355	.47305	.44547	1.2877	

#1	.65908	1.2412	.01287	.20850	.12813	3.2970	32.897	
#2	.65952	1.2380	.01295	.20893	.12831	3.2980	33.250	
#3	.65943	1.2489	.01296	.20926	.12926	3.3230	33.750	

Sample Name: S4 Acquired: 9/10/2025 11:23:13 Type: Cal
Method: 6010-200.7 NEW(v160) 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	6140.7	106400.	10863.	5038.6	6995.0
Stddev	13.0	655.	55.	43.1	16.8
%RSD	.21140	.61579	.50877	.85521	.24047
#1	6133.1	106800.	10860.	5061.6	6989.9
#2	6133.3	106750.	10920.	5065.2	6981.4
#3	6155.7	105640.	10810.	4988.9	7013.8

Sample Name: S5 Acquired: 9/10/2025 11:27:26 Type: Cal
Method: 6010-200.7 NEW(v160) 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	.47316	.62755	1.8011	.39963	.79462	1.4169	42.959	3.1275
Stddev	.00085	.01107	.0021	.00079	.00106	.0049	.081	.0223
%RSD	.17913	1.7637	.11887	.19773	.13285	.34687	.18828	.71324

#1	.47219	.62036	1.8023	.39875	.79367	1.4185	42.974	3.1441
#2	.47368	.62200	1.8024	.39987	.79445	1.4114	43.031	3.1021
#3	.47363	.64030	1.7987	.40027	.79575	1.4208	42.871	3.1362

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	14.031	2.5885	.34883	4.7608	1.4843	.02895	1.8549	.51298
Stddev	.032	.0039	.00075	.0049	.0030	.00021	.0034	.00085
%RSD	.22817	.14889	.21611	.10302	.20121	.72509	.18300	.16627

#1	14.048	2.5928	.34796	4.7632	1.4857	.02874	1.8581	.51321
#2	14.052	2.5855	.34923	4.7640	1.4864	.02916	1.8551	.51204
#3	13.994	2.5871	.34930	4.7552	1.4809	.02897	1.8513	.51370

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	2.7843	.43855	.30581	.57150	10.119	.20367	6.2548	5.5911
Stddev	.0052	.00020	.00198	.00129	.034	.00143	.0532	.0050
%RSD	.18694	.04578	.64877	.22644	.33568	.70019	.85096	.08936

#1	2.7862	.43843	.30369	.57230	10.082	.20210	6.2980	5.5856
#2	2.7883	.43844	.30762	.57218	10.127	.20489	6.1954	5.5954
#3	2.7784	.43878	.30612	.57000	10.148	.20401	6.2712	5.5924

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	1.3585	2.5992	.02744	.44242	.27415	7.1300	67.999	
Stddev	.0018	.0013	.00020	.00103	.00123	.0061	.519	
%RSD	.13323	.05107	.73528	.23359	.44717	.08571	.76372	

#1	1.3573	2.5997	.02725	.44171	.27282	7.1346	68.583	
#2	1.3606	2.5977	.02765	.44195	.27439	7.1231	67.825	
#3	1.3576	2.6003	.02742	.44361	.27524	7.1324	67.590	

Sample Name: S5 Acquired: 9/10/2025 11:27:26 Type: Cal
Method: 6010-200.7 NEW(v160) 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	5887.8	103530.	10662.	4795.8	6570.4
Stddev	16.8	286.	56.	36.5	20.0
%RSD	.28507	.27589	.52724	.76062	.30442
#1	5878.7	103780.	10607.	4832.0	6559.0
#2	5877.6	103220.	10719.	4759.0	6558.8
#3	5907.2	103590.	10660.	4796.4	6593.5

Sample Name: ICV01 Acquired: 9/10/2025 11:31:38 Type: Unk
Method: 6010-200.7 NEW(v160) 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	3.878485	3.797544	3.747251	3.899665	3.959305	7.620146
Stddev	.018964	.097124	.005494	.012620	.006561	.012898
%RSD	.4889444	2.557535	.1466039	.3236191	.1657105	.1692567

#1	3.886921	3.708898	3.740973	3.896635	3.964087	7.605326
#2	3.856768	3.782374	3.751174	3.888836	3.951825	7.628831
#3	3.891768	3.901360	3.749607	3.913524	3.962003	7.626281

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.702464	1.1928900	1.910706	18.98688	7.7817881	1.915321
Stddev	.040232	.0020450	.002921	.03534	.0019751	.002563
%RSD	.5223232	1.060174	.1528593	.1861454	.2526371	.1337918

#1	7.739149	1.1909875	1.907336	18.94921	7.7795075	1.912493
#2	7.708805	1.1950526	1.912503	18.99211	7.7829415	1.915981
#3	7.659439	1.1926300	1.912278	19.01932	7.7829153	1.917489

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9817785	3.874155	1.901878	19.03293	1.920170	9.9797976
Stddev	.0002962	.034945	.003861	.08017	.002976	.0020647
%RSD	.0301694	.9019977	.2030259	.4211929	.1549846	.2107284

#1	9.9814889	3.897245	1.902540	18.94129	1.916747	9.9781214
#2	9.9817657	3.833952	1.897728	19.06749	1.921625	9.9791674
#3	9.9820809	3.891269	1.905365	19.09003	1.922139	9.9821039

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	18.78638	1.900701	1.938312	18.94103	3.749363	3.871481
Stddev	.16817	.001617	.004914	.17785	.041894	.005509
%RSD	.8951489	.0850610	.2535400	.9389719	1.117355	.1422975

#1	18.93445	1.900826	1.935726	19.05639	3.711399	3.872400
#2	18.60355	1.899025	1.943980	18.73621	3.794309	3.865570
#3	18.82114	1.902251	1.935231	19.03049	3.742380	3.876473

Sample Name: ICV01 Acquired: 9/10/2025 11:31:38 Type: Unk
Method: 6010-200.7 NEW(v160) 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	3.825560	3.798831	3.614705	F .0054444	F .0209225	F -.002436
Stddev	.012630	.011902	.044071	.0004871	.0033318	.002145
%RSD	.3301535	.3133174	1.219213	8.946538	15.92446	88.05520
#1	3.823165	3.797040	3.613736	.0056780	.0247093	-.004523
#2	3.814299	3.787926	3.571126	.0057707	.0196175	-.000237
#3	3.839216	3.811528	3.659251	.0048845	.0184408	-.002549
Elem	Sr4077					
Units	ppm					
Avg	F -.003062					
Stddev	.000007					
%RSD	.2352279					
#1	-.003071					
#2	-.003059					
#3	-.003058					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	6173.346	107909.4	11312.69	5018.352	7109.421	
Stddev	19.023	255.6	68.16	12.440	16.268	
%RSD	.3081517	.2368780	.6025490	.2478841	.2288235	
#1	6157.951	107633.3	11352.01	5004.521	7100.883	
#2	6167.474	108137.8	11233.98	5021.908	7099.201	
#3	6194.613	107957.2	11352.07	5028.626	7128.181	

Sample Name: LLICV01 Acquired: 9/10/2025 11:39:42 Type: Unk
Method: 6010-200.7 NEW(v160) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: LLICV01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0204437	.0422102	.0119205	.0185372	.0511046	.1013883	.1002830
Stddev	.0009432	.0018706	.0017084	.0021445	.0008490	.0090059	.0008165
%RSD	4.613463	4.431618	14.33142	11.56880	1.661358	8.882566	.8141759
#1	.0195010	.0443242	.0099684	.0171173	.0515304	.0980193	.0993465
#2	.0204428	.0407692	.0131428	.0174902	.0501269	.1115929	.1006575
#3	.0213873	.0415373	.0126502	.0210041	.0516564	.0945525	.1008451
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0063212	.0060734	2.074755	.0104395	.0298750	.0212770	.1089789
Stddev	.0001341	.0000396	.003964	.0001771	.0001831	.0001784	.0036367
%RSD	2.121336	.6516889	.1910621	1.696770	.6127195	.8382423	3.337094
#1	.0062253	.0060425	2.071272	.0106044	.0297897	.0212255	.1106839
#2	.0062638	.0060598	2.079069	.0104618	.0297501	.0211300	.1114499
#3	.0064744	.0061180	2.073924	.0102523	.0300851	.0214754	.1048029
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0213571	2.120326	.0401841	.0095998	1.922947	.0363081	.0423518
Stddev	.0000152	.009925	.0003951	.0003974	.027811	.0006107	.0006196
%RSD	.0710239	.4680866	.9831176	4.140199	1.446264	1.682048	1.462947
#1	.0213445	2.109150	.0406076	.0098002	1.923444	.0364105	.0430494
#2	.0213739	2.123718	.0398256	.0098570	1.894891	.0356526	.0421405
#3	.0213528	2.128111	.0401192	.0091420	1.950506	.0368611	.0418654
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.889217	.1036219	.1941594	.0364800	.0386506	.3597566	.0189453
Stddev	.042603	.0013640	.0011578	.0009082	.0007321	.0064825	.0008771
%RSD	2.255042	1.316324	.5963277	2.489585	1.894078	1.801908	4.629632
#1	1.841696	.1028109	.1935978	.0355197	.0382605	.3561652	.0186236
#2	1.923992	.1028583	.1933894	.0373252	.0381962	.3558647	.0199378
#3	1.901963	.1051967	.1954909	.0365950	.0394951	.3672399	.0182744

Sample Name: LLICV01 Acquired: 9/10/2025 11:39:42 Type: Unk
Method: 6010-200.7 NEW(v160) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: LLICV01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0226464	.0199257	.0211884
Stddev	.0027679	.0008054	.0002022
%RSD	12.22224	4.041797	.9544509
#1	.0194504	.0190106	.0210349
#2	.0242663	.0205267	.0211127
#3	.0242225	.0202397	.0214175

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6273.882	108426.8	11229.20	5095.113	7383.864
Stddev	11.335	113.6	97.30	12.174	9.856
%RSD	.1806617	.1047334	.8665044	.2389407	.1334768
#1	6279.844	108514.4	11223.86	5090.510	7389.854
#2	6280.991	108467.5	11329.05	5085.911	7389.250
#3	6260.811	108298.5	11134.67	5108.917	7372.489

Sample Name: ICB01 Acquired: 9/10/2025 11:43:57 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0014556	.0008662	.0004876	-.001357	.0015433	.0092742	.0008138
Stddev	.0026910	.0019942	.0007055	.000898	.0005692	.0040525	.0012237
%RSD	184.8732	230.2250	144.6746	66.15601	36.88610	43.69610	150.3689
#1	.0045347	.0000978	.0011747	-.000358	.0021357	.0129931	.0004984
#2	-.000446	.0031302	.0005230	-.001619	.0014937	.0098744	-.000221
#3	.000278	-.000629	-.000235	-.002095	.0010004	.0049551	.002164
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000932	-.000003	.0017080	.0003614	.0000825	-.000069	.0014427
Stddev	.0000473	.000053	.0117818	.0001362	.0000769	.000315	.0066866
%RSD	50.75210	1701.361	689.7815	37.67413	93.16180	458.7620	463.4699
#1	.0000475	.000014	.0024602	.0005131	.0000055	-.000289	-.002611
#2	.0001419	-.000063	.0130957	.0003213	.0001592	-.000210	-.002221
#3	.0000901	.000040	-.010432	.0002498	.0000829	.000293	.009160
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000206	.0210730	.0001811	-.000464	-.086064	-.000995	-.000656
Stddev	.000247	.0091641	.0002992	.000460	.037204	.000963	.000148
%RSD	120.3015	43.48755	165.2404	99.09916	43.22869	96.81774	22.58698
#1	.000015	.0214600	.0002376	-.000169	-.121972	-.001349	-.000755
#2	-.000473	.0300376	.0004479	-.000993	-.088533	-.001730	-.000728
#3	-.000159	.0117216	-.000142	-.000229	-.047686	.000095	-.000486
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.065315	.0035033	.0000462	.0001557	.0009271	.0029155	-.000554
Stddev	.023519	.0003302	.0000928	.0002653	.0012053	.0011302	.001605
%RSD	36.00781	9.426343	200.7295	170.3996	130.0014	38.76387	289.6864
#1	-.053092	.0036831	.0000148	-.000093	-.000190	.0038927	-.001565
#2	-.092429	.0037045	-.000027	.000125	.002204	.0031760	-.001393
#3	-.050425	.0031222	.000151	.000435	.000767	.0016779	.001297

Sample Name: ICB01 Acquired: 9/10/2025 11:43:57 Type: Unk
Method: 6010-200.7 NEW(v160) 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	-.001697	-.001211	.0000037
Stddev	.000132	.000818	.0001133
%RSD	7.797330	67.59623	3035.474
#1	-.001826	-.001273	.0001115
#2	-.001704	-.001996	.0000141
#3	-.001562	-.000363	-.000114

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6433.297	111515.3	11338.08	5218.538	7692.987
Stddev	10.696	795.7	62.77	35.458	18.534
%RSD	.1662608	.7134973	.5536129	.6794634	.2409173
#1	6425.723	110798.9	11367.20	5181.455	7678.521
#2	6445.533	111375.5	11381.00	5222.047	7713.878
#3	6428.635	112371.6	11266.04	5252.110	7686.561

Sample Name: CRI01 Acquired: 9/10/2025 11:48:15 Type: Unk
Method: 6010-200.7 NEW(v160) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0195343	.0423665	.0134111	.0192306	.0502085	.1067292	.1001300
Stddev	.0004229	.0010204	.0004625	.0015080	.0020993	.0046934	.0004561
%RSD	2.164647	2.408483	3.448679	7.841883	4.181145	4.397494	.4555197
#1	.0194554	.0427144	.0133025	.0184026	.0480740	.1094139	.1006324
#2	.0199910	.0412177	.0130126	.0209712	.0502809	.1013098	.0997419
#3	.0191564	.0431675	.0139183	.0183180	.0522707	.1094640	.1000156
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0062809	.0060414	2.079349	.0107609	.0300662	.0216552	.1090180
Stddev	.0000483	.0000217	.007343	.0002765	.0001091	.0002176	.0012912
%RSD	.7682660	.3582902	.3531568	2.569185	.3629676	1.004588	1.184422
#1	.0063306	.0060180	2.087352	.0109880	.0300298	.0218840	.1076238
#2	.0062342	.0060454	2.077773	.0104531	.0299799	.0214510	.1101727
#3	.0062780	.0060607	2.072922	.0108417	.0301889	.0216307	.1092574
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0215267	2.104956	.0407037	.0097934	1.907116	.0363818	.0429841
Stddev	.0002586	.018913	.0004594	.0007049	.011462	.0047186	.0001312
%RSD	1.201170	.8985208	1.128654	7.197374	.6009998	12.96953	.3051665
#1	.0217358	2.110103	.0406003	.0092385	1.901087	.0417998	.0431322
#2	.0216066	2.084002	.0403048	.0105865	1.920333	.0341716	.0429378
#3	.0212376	2.120763	.0412060	.0095552	1.899926	.0331741	.0428824
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.971835	.1002189	.1952657	.0366445	.0389090	.3765161	.0198467
Stddev	.025643	.0018356	.0004951	.0003637	.0006536	.0073532	.0004285
%RSD	1.300460	1.831620	.2535700	.9925508	1.679922	1.952966	2.159047
#1	1.972146	.1021003	.1951390	.0364324	.0394026	.3826179	.0193638
#2	1.946038	.0984328	.1948462	.0364365	.0381677	.3785786	.0199946
#3	1.997321	.1001236	.1958118	.0370644	.0391566	.3683519	.0201816

Sample Name: CRI01 Acquired: 9/10/2025 11:48:15 Type: Unk
Method: 6010-200.7 NEW(v160) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0226174	.0187849	.0211035
Stddev	.0018381	.0005424	.0000574
%RSD	8.126834	2.887589	.2718086
#1	.0240867	.0183255	.0211144
#2	.0205563	.0186458	.0210414
#3	.0232092	.0193833	.0211546

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6264.673	105749.4	11114.10	5028.931	7407.073
Stddev	7.210	110.3	69.20	9.713	9.713
%RSD	.1150914	.1042869	.6226071	.1931386	.1311279
#1	6257.448	105842.9	11045.47	5025.265	7396.781
#2	6264.704	105627.8	11183.85	5039.944	7408.359
#3	6271.868	105777.6	11112.98	5021.585	7416.078

Sample Name: ICSA01 Acquired: 9/10/2025 11:52:30 Type: Unk
Method: 6010-200.7 NEW(v160) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSA01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0070161	.0069040	.0042947	.0063653	-.000183	279.0936
Stddev	.0016945	.0026725	.0017854	.0028044	.001386	.8681
%RSD	24.15124	38.70881	41.57218	44.05711	756.2195	.3110400
#1	.0072347	.0038308	.0034926	.0076040	-.001526	279.8973
#2	.0085907	.0086828	.0063405	.0031548	.001243	279.2106
#3	.0052229	.0081985	.0030510	.0083369	-.000267	278.1730
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0054555	.0018764	.0002320	264.7308	.0607817	.0018767
Stddev	.0014682	.0000790	.0002264	1.0136	.0001317	.0002874
%RSD	26.91232	4.208196	97.61386	.3828799	.2167433	15.31416
#1	.0057158	.0017983	.0004048	265.7766	.0609236	.0021169
#2	.0067761	.0018747	.0003155	264.6631	.0606632	.0015583
#3	.0038746	.0019562	-.000024	263.7528	.0607583	.0019550
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0023169	111.4515	.0108268	280.9140	.0076676	.0012985
Stddev	.0004891	1.2632	.0000561	1.2018	.0007748	.0003838
%RSD	21.10838	1.133401	.5180549	.4278049	10.10486	29.55602
#1	.0026362	112.8953	.0107758	281.8210	.0084269	.0017207
#2	.0025607	110.9089	.0108178	281.3700	.0076977	.0009708
#3	.0017539	110.5502	.0108869	279.5510	.0068782	.0012038
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1881009	.0024600	.0044138	.2001057	.0653801	.0022380
Stddev	.0138424	.0034570	.0000644	.0282776	.0038903	.0007344
%RSD	7.358999	140.5247	1.458344	14.13133	5.950310	32.81379
#1	.1732536	-.000771	.0043479	.1793459	.0698688	.0029158
#2	.2006507	.006105	.0044765	.2323121	.0629844	.0023405
#3	.1903985	.002046	.0044168	.1886591	.0632869	.0014578

Sample Name: ICSA01 Acquired: 9/10/2025 11:52:30 Type: Unk
Method: 6010-200.7 NEW(v160) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSA01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.003310	-.004495	.0315088	.0102638	-.008101	F -.032769
Stddev	.000749	.000284	.0068407	.0021493	.004536	.001684
%RSD	22.62054	6.315898	21.71052	20.94044	55.99216	5.138930
#1	-.003329	-.004795	.0382551	.0113217	-.006637	-.033827
#2	-.002552	-.004459	.0316940	.0116790	-.004477	-.033653
#3	-.004049	-.004230	.0245774	.0077906	-.013187	-.030827
Elem	Sr4077					
Units	ppm					
Avg	.0047941					
Stddev	.0007715					
%RSD	16.09191					
#1	.0042156					
#2	.0044966					
#3	.0056700					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	5765.414	98458.31	10854.91	4584.906	6472.496	
Stddev	21.067	391.25	57.99	12.305	26.534	
%RSD	.3653970	.3973812	.5342045	.2683906	.4099441	
#1	5742.521	98683.57	10921.50	4581.368	6443.278	
#2	5769.738	98006.53	10815.54	4574.758	6479.122	
#3	5783.983	98684.84	10827.69	4598.593	6495.089	

Sample Name: ICSAB01 Acquired: 9/10/2025 11:56:40 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.1024831	.1101508	.0500709	.0521134	.5857863	248.7054
Stddev	.0048694	.0014462	.0020209	.0034659	.0017546	.2183
%RSD	4.751440	1.312950	4.036122	6.650618	.2995261	.0877631
#1	.0985848	.1100645	.0477449	.0552684	.5843697	248.4882
#2	.1079414	.1087497	.0513959	.0526681	.5877490	248.7031
#3	.1009232	.1116383	.0510720	.0484036	.5852402	248.9248
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4871788	.4977067	.9477865	235.9138	.5549640	.4795866
Stddev	.0013219	.0002863	.0001789	.3480	.0014935	.0007185
%RSD	.2713423	.0575339	.0188700	.1475321	.2691192	.1498210
#1	.4871278	.4980269	.9476391	235.5189	.5562020	.4799509
#2	.4858831	.4974751	.9479855	236.0463	.5533052	.4787589
#3	.4885254	.4976182	.9477349	236.1760	.5553847	.4800499
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4712930	97.45379	.4860831	250.8526	.9527495	.2122091
Stddev	.0016936	.16205	.0015440	.1666	.0007975	.0008270
%RSD	.3593488	.1662821	.3176489	.0664194	.0837013	.3897059
#1	.4729254	97.31412	.4862026	250.6602	.9536057	.2113901
#2	.4695442	97.41579	.4875640	250.9482	.9526150	.2130438
#3	.4714094	97.63146	.4844828	250.9493	.9520279	.2121934
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0604927	.4774325	1.033219	-.095018	.9770648	.9827998
Stddev	.0129263	.0033496	.002413	.049325	.0021798	.0020279
%RSD	21.36844	.7015828	.2335220	51.91093	.2230952	.2063350
#1	.0456367	.4751861	1.031089	-.151797	.9766356	.9839642
#2	.0691721	.4812824	1.035839	-.070510	.9794272	.9804582
#3	.0666691	.4758291	1.032729	-.062747	.9751315	.9839770

Sample Name: ICSAB01 Acquired: 9/10/2025 11:56:40 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.9531709	.9508181	.9861224	F .0105086	F .0039201	F -.032558
Stddev	.0025103	.0019685	.0079318	.0020758	.0011997	.002092
%RSD	.2633604	.2070309	.8043448	19.75355	30.60444	6.423893
#1	.9524796	.9486824	.9774135	.0108907	.0032664	-.033538
#2	.9510788	.9525598	.9929324	.0082683	.0031893	-.030157
#3	.9559544	.9512120	.9880215	.0123669	.0053048	-.033980
Elem	Sr4077					
Units	ppm					
Avg	F .0052482					
Stddev	.0000289					
%RSD	.5498506					
#1	.0052757					
#2	.0052182					
#3	.0052507					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	5939.746	100066.7	10859.43	4637.731	6675.588	
Stddev	14.197	203.3	9.06	9.373	10.190	
%RSD	.2390228	.2031597	.0834453	.2021065	.1526481	
#1	5923.418	100029.4	10849.08	4635.244	6665.604	
#2	5949.180	100286.1	10865.92	4629.851	6675.189	
#3	5946.640	99884.6	10863.30	4648.096	6685.973	

Sample Name: ICSADLX20 Acquired: 9/10/2025 12:00:41 Type: Unk
Method: 6010-200.7 NEW(v160) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSA01DLX20 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000727	.0019062	.0004867	-.001240	.0001369	11.41735	.0010297
Stddev	.001506	.0006175	.0009468	.000485	.0015182	.03228	.0009454
%RSD	207.2606	32.39277	194.5502	39.09700	1108.688	.2827247	91.81054
#1	.000408	.0012735	.0012612	-.001039	.0016024	11.38855	-.000061
#2	-.002435	.0025072	.0007676	-.000889	.0002374	11.41125	.001533
#3	-.000153	.0019377	-.000569	-.001794	-.001429	11.45224	.001617
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001721	-.000004	11.30872	.0027405	.0001900	.0003153	4.486796
Stddev	.0000640	.000034	.03180	.0001127	.0001940	.0001643	.010053
%RSD	37.20964	936.8534	.2812100	4.113385	102.0679	52.08932	.2240553
#1	.0002444	-.000036	11.32288	.0028563	.0000994	.0003058	4.496632
#2	.0001497	.000031	11.33098	.0027342	.0000580	.0004841	4.476539
#3	.0001223	-.000006	11.27230	.0026311	.0004127	.0001560	4.487219
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007703	11.85879	.0006318	-.000550	-.142022	.0009953	-.000238
Stddev	.0006121	.03852	.0004868	.000568	.032108	.0024499	.000045
%RSD	79.46615	.3248400	77.05133	103.2627	22.60801	246.1547	18.95348
#1	.0011934	11.89864	.0006345	-.000947	-.178812	.0000417	-.000253
#2	.0000684	11.85600	.0001437	.000101	-.127597	-.000834	-.000187
#3	.0010490	11.82174	.0011174	-.000804	-.119655	.003779	-.000274
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.294757	.0019040	.0001815	-.001006	.0006463	-.000120	.0006668
Stddev	.031663	.0006930	.0001934	.000666	.0008912	.007804	.0019188
%RSD	10.74194	36.39803	106.4966	66.17926	137.8902	6522.572	287.7721
#1	-.327020	.0014235	.0002465	-.001512	.0009236	.006775	.0019258
#2	-.263732	.0015901	-.000036	-.000252	.0013660	-.008592	.0016161
#3	-.293519	.0026984	.000334	-.001255	-.000351	.001459	-.001542

Sample Name: ICSADLX20 Acquired: 9/10/2025 12:00:41 Type: Unk
Method: 6010-200.7 NEW(v160) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSA01DLX20 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.001099	-.005121	.0003472
Stddev	.000408	.000777	.0000875
%RSD	37.14104	15.16558	25.19860
#1	-.000743	-.005261	.0003740
#2	-.001009	-.004284	.0004181
#3	-.001544	-.005818	.0002494

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6432.356	109634.0	11227.63	5129.542	7662.682
Stddev	2.702	136.7	28.00	5.477	8.924
%RSD	.0420124	.1246643	.2494107	.1067717	.1164607
#1	6430.623	109591.8	11225.93	5133.709	7652.936
#2	6430.974	109786.8	11200.52	5131.578	7664.657
#3	6435.469	109523.4	11256.45	5123.338	7670.453

Sample Name: ICSABDLX20 Acquired: 9/10/2025 12:04:56 Type: Unk
Method: 6010-200.7 NEW(v160) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSAB01DLX20 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0050904	.0065976	.0019318	.0007970	.0287943	12.38000	.0257892
Stddev	.0010785	.0014616	.0006485	.0011348	.0006223	.03825	.0009349
%RSD	21.18657	22.15408	33.56992	142.3881	2.161287	.3089625	3.625089

#1	.0051753	.0054646	.0026090	.0016534	.0294458	12.33593	.0259672
#2	.0039719	.0060807	.0018701	.0012277	.0287312	12.40457	.0247782
#3	.0061239	.0082474	.0013164	-.000490	.0282060	12.39949	.0266223

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0256041	.0479867	12.27236	.0285491	.0239297	.0253922	4.808966
Stddev	.0004524	.0001813	.04736	.0000526	.0002932	.0003791	.051973
%RSD	1.766723	.3779183	.3859383	.1841096	1.225234	1.493124	1.080760

#1	.0251068	.0477797	12.23455	.0285774	.0236357	.0254858	4.845432
#2	.0257144	.0481176	12.32549	.0284885	.0242221	.0249750	4.832013
#3	.0259911	.0480629	12.25704	.0285815	.0239312	.0257158	4.749455

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0252311	12.87159	.0491055	.0096835	-.154691	.0231377	.0508107
Stddev	.0003860	.05745	.0002320	.0001543	.002953	.0022065	.0001948
%RSD	1.529943	.4463260	.4725191	1.593171	1.908841	9.536590	.3832970

#1	.0250589	12.80973	.0488427	.0098207	-.152794	.0206035	.0510088
#2	.0256733	12.92326	.0492822	.0095165	-.158093	.0241762	.0508037
#3	.0249612	12.88179	.0491915	.0097134	-.153186	.0246334	.0506195

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.273857	.0492465	.0503080	.0468143	.0500151	.0550144	.0016443
Stddev	.028285	.0004594	.0001027	.0003982	.0009439	.0037610	.0004791
%RSD	10.32836	.9329415	.2042231	.8504995	1.887249	6.836474	29.13777

#1	-.302199	.0487175	.0504266	.0463604	.0494054	.0532963	.0020254
#2	-.245630	.0494763	.0502483	.0469781	.0511023	.0593277	.0011065
#3	-.273742	.0495457	.0502489	.0471044	.0495374	.0524193	.0018011

Sample Name: ICSABDLX20 Acquired: 9/10/2025 12:04:56 Type: Unk
Method: 6010-200.7 NEW(v160) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: ICSAB01DLX20 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.002367	-.006925	.0004609
Stddev	.002933	.000477	.0001039
%RSD	123.9133	6.888427	22.53485
#1	-.004315	-.006391	.0003639
#2	.001006	-.007308	.0004484
#3	-.003792	-.007077	.0005705

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6413.582	110754.0	11310.53	5117.519	7654.961
Stddev	13.477	456.4	89.98	38.623	15.601
%RSD	.2101296	.4120925	.7955086	.7547211	.2038067
#1	6428.348	110513.8	11414.37	5125.153	7672.564
#2	6410.453	110467.9	11255.62	5075.649	7642.845
#3	6401.945	111280.4	11261.60	5151.754	7649.472

Sample Name: CCV01 Acquired: 9/10/2025 12:09:07 Type: Unk
Method: 6010-200.7 NEW(v160) 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	4.970478	4.957738	4.880945	4.983528	4.971516	9.938828	9.852827
Stddev	.013512	.089776	.007992	.005354	.005310	.029253	.066652
%RSD	.2718539	1.810823	.1637397	.1074270	.1068010	.2943287	.6764739

#1	4.955829	4.873360	4.872455	4.978819	4.975645	9.908486	9.821932
#2	4.973150	4.947774	4.882056	4.989351	4.973377	9.941143	9.807229
#3	4.982454	5.052080	4.888323	4.982414	4.965527	9.966854	9.929320

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.457963	2.453851	24.72245	9.982891	2.448670	1.236591	4.943810
Stddev	.0022680	.006009	.01746	.0033048	.003805	.002254	.032906
%RSD	.9227288	.2448987	.0706183	.3310477	.1553924	.1823110	.6656076

#1	2.439567	2.447346	24.70243	9.951708	2.444285	1.234024	4.955388
#2	2.451019	2.455012	24.73449	9.979431	2.450630	1.237498	4.969363
#3	2.483304	2.459196	24.73044	1.001753	2.451096	1.238249	4.906680

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.464322	24.66385	2.449667	1.241373	24.93777	2.484360	2.512667
Stddev	.009436	.04158	.004244	.002091	.12259	.000476	.006282
%RSD	.3829103	.1685765	.1732647	.1684117	.4915831	.0191734	.2500070

#1	2.453807	24.64279	2.444816	1.241983	24.94354	2.483977	2.514667
#2	2.472053	24.71174	2.451484	1.239045	25.05737	2.484893	2.505628
#3	2.467105	24.63701	2.452700	1.243091	24.81240	2.484210	2.517705

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.59138	4.914693	5.003404	4.918573	4.959962	4.967240	4.877107
Stddev	.10966	.035399	.001849	.008872	.017567	.048850	.027106
%RSD	.4459400	.7202739	.0369517	.1803776	.3541787	.9834343	.5557876

#1	24.62978	4.883872	5.001443	4.908653	4.940662	4.990878	4.848553
#2	24.67668	4.906850	5.005116	4.921317	4.975019	4.999775	4.880279
#3	24.46768	4.953355	5.003652	4.925749	4.964206	4.911068	4.902487

Sample Name: CCV01 Acquired: 9/10/2025 12:09:07 Type: Unk
Method: 6010-200.7 NEW(v160) 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	4.857109	4.948876	4.981889
Stddev	.027871	.008918	.060913
%RSD	.5738155	.1802062	1.222687
#1	4.827691	4.938615	4.912885
#2	4.860515	4.953259	5.028190
#3	4.883120	4.954755	5.004593

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6162.835	107425.7	11147.21	4935.481	7061.404
Stddev	16.137	365.5	101.25	11.413	23.465
%RSD	.2618510	.3402779	.9082991	.2312510	.3323055
#1	6171.379	107846.7	11247.58	4939.724	7076.500
#2	6172.905	107241.9	11148.94	4944.165	7073.341
#3	6144.222	107188.5	11045.10	4922.554	7034.370

Sample Name: CCB01 Acquired: 9/10/2025 12:13:19 Type: Unk
Method: 6010-200.7 NEW(v160) 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	-.001257	.0003832	.0002678	-.001948	-.000321	.0017037	-.000141
Stddev	.001454	.0012740	.0012755	.001724	.000436	.0116683	.000624
%RSD	115.6441	332.4668	476.2592	88.52360	135.9834	684.8646	443.5097
#1	-.002161	.0018472	.0002265	-.003851	-.000310	.0065263	-.000782
#2	.000420	-.000473	.0015635	-.001503	.000110	.0101877	-.000104
#3	-.002030	-.000225	-.000987	-.000489	-.000762	-.011603	.000464
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001392	.0001135	.0007469	.0003712	.0001445	-.000151	.0052643
Stddev	.0000146	.0000346	.0084463	.0001651	.0001169	.000326	.0028673
%RSD	10.51396	30.44175	1130.877	44.48051	80.89321	215.3069	54.46739
#1	.0001472	.0000785	.0104212	.0002119	.0002641	-.000336	.0079726
#2	.0001481	.0001145	-.003020	.0005416	.0001388	.000225	.0022608
#3	.0001223	.0001476	-.005161	.0003602	.0000306	-.000343	.0055595
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003498	.0048893	.0003259	-.000222	-.151789	.0013850	-.000327
Stddev	.0006432	.0076727	.0002350	.000117	.011074	.0008515	.000017
%RSD	183.8872	156.9280	72.12238	52.97720	7.295868	61.48301	5.256834
#1	.0007601	.0129170	.0005439	-.000106	-.163712	.0022032	-.000313
#2	-.000391	.0041220	.0003569	-.000341	-.149829	.0014480	-.000347
#3	.000681	-.002371	.0000769	-.000217	-.141825	.0005037	-.000323
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.284719	.0045192	.0005835	.0001552	.0001373	.0098993	.0012764
Stddev	.011080	.0005279	.0002012	.0003064	.0014481	.0067722	.0001415
%RSD	3.891477	11.68121	34.47570	197.4641	1054.940	68.41083	11.08500
#1	-.286301	.0045603	.0006338	.0004794	.0013654	.0152104	.0013299
#2	-.272933	.0039720	.0007547	-.000130	-.001460	.0022731	.0013834
#3	-.294923	.0050254	.0003619	.000116	.000506	.0122145	.0011160

Sample Name: CCB01 Acquired: 9/10/2025 12:13:19 Type: Unk
Method: 6010-200.7 NEW(v160) 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	-.000533	-.004567	.0002522
Stddev	.000538	.001034	.0000527
%RSD	101.0746	22.64160	20.88984
#1	-.000404	-.004535	.0002065
#2	-.001124	-.005617	.0002404
#3	-.000070	-.003550	.0003098

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6337.804	111538.7	11474.75	5182.771	7568.632
Stddev	19.597	493.3	47.88	7.384	22.468
%RSD	.3092090	.4422860	.4172574	.1424776	.2968524
#1	6342.426	112105.7	11510.58	5183.748	7573.921
#2	6354.676	111302.8	11420.37	5174.947	7587.984
#3	6316.309	111207.6	11493.30	5189.618	7543.992

Sample Name: LR-1 Acquired: 9/10/2025 12:17:37 Type: Unk
Method: 6010-200.7 NEW(v160) 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	-.000945	.0057343	.0169481	-.023405	.0192912	.2043062	-.007025
Stddev	.001764	.0029514	.0013429	.003917	.0037182	.0198247	.000601
%RSD	186.7697	51.46930	7.923630	16.73762	19.27396	9.703419	8.560657

#1	-.000098	.0067374	.0163486	-.027273	.0216850	.1878155	-.007392
#2	-.002973	.0080534	.0184864	-.019440	.0211809	.1988018	-.006331
#3	.000237	.0024121	.0160095	-.023501	.0150077	.2263015	-.007353

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003706	.0007122	2469.546	.0266098	.0001630	.0031411	.5143729
Stddev	.0000679	.0001417	14.941	.0001834	.0002412	.0005998	.0072348
%RSD	18.32023	19.89177	.6050235	.6893587	147.9830	19.09347	1.406522

#1	.0004466	.0008008	2475.767	.0268215	-.000023	.0031025	.5061760
#2	.0003491	.0005488	2452.499	.0264982	.000436	.0025616	.5198678
#3	.0003160	.0007869	2480.371	.0265098	.000076	.0037593	.5170750

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0163784	2243.311	.0179784	-.002283	2528.536	.0075259	.0558527
Stddev	.0001874	5.228	.0003228	.000611	31.419	.0020633	.0006488
%RSD	1.144346	.2330519	1.795308	26.77417	1.242578	27.41565	1.161720

#1	.0165924	2249.160	.0179919	-.001913	2521.870	.0099081	.0564020
#2	.0162993	2239.093	.0176492	-.001948	2500.984	.0063675	.0560191
#3	.0162435	2241.678	.0182943	-.002989	2562.753	.0063022	.0551368

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.604153	.0095809	.0043907	-.014689	-.113051	-.025217	.0182880
Stddev	.670676	.0002603	.0007351	.000430	.001978	.007570	.0015634
%RSD	11.96748	2.716529	16.74219	2.925144	1.749986	30.01858	8.548847

#1	4.891098	.0093572	.0048469	-.014193	-.114978	-.016484	.0166032
#2	5.699013	.0095189	.0047824	-.014933	-.111025	-.029259	.0185689
#3	6.222348	.0098666	.0035427	-.014941	-.113151	-.029909	.0196920

Sample Name: LR-1 Acquired: 9/10/2025 12:17:37 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.2191950	-.385295	.0637106
Stddev	.0105897	.003349	.0003477
%RSD	4.831189	.8691792	.5456804

#1	.2302156	-.388161	.0637927
#2	.2090965	-.381614	.0640098
#3	.2182727	-.386111	.0633292

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4195.472	75779.11	9888.645	3324.222	4458.958
Stddev	10.982	260.37	20.532	9.594	20.498
%RSD	.2617653	.3435899	.2076322	.2886183	.4597149

#1	4195.200	76063.49	9900.556	3326.568	4449.362
#2	4184.629	75721.44	9900.443	3332.425	4445.017
#3	4206.588	75552.42	9864.937	3313.671	4482.494

Sample Name: LR-2 Acquired: 9/10/2025 12:22:16 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.1047105	-.177451	.1063313	.0290805	-.128163	1820.865	.0210559
Stddev	.0080235	.008122	.0017227	.0126989	.004378	24.089	.0009700
%RSD	7.662590	4.576850	1.620143	43.66815	3.415841	1.322933	4.607045

#1	.1139161	-.175723	.1057793	.0171912	-.131517	1848.672	.0214700
#2	.1010134	-.170332	.1049523	.0424579	-.129762	1807.576	.0199475
#3	.0992021	-.186297	.1082624	.0275924	-.123211	1806.348	.0217501

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0382932	.0038435	11.29941	-.245390	.0572172	.0796345	2595.870
Stddev	.0002798	.0004631	.17076	.001195	.0002219	.0035598	6.918
%RSD	.7307084	12.04892	1.511202	.4871732	.3878015	4.470235	.2664872

#1	.0383509	.0034360	11.41230	-.244013	.0569711	.0836185	2588.761
#2	.0385397	.0037474	11.10297	-.246002	.0574020	.0785194	2596.272
#3	.0379890	.0043471	11.38297	-.246157	.0572784	.0767658	2602.578

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.172436	1.179537	.0479188	^ *****	4.231388	.0441292	.0678894
Stddev	.001937	.023744	.0008759	-----	.028632	.0024668	.0012238
%RSD	1.123091	2.013033	1.827883	-----	.6766460	5.589910	1.802564

#1	-.173064	1.200606	.0476142	^ -----	4.251506	.0432174	.0692012
#2	-.173980	1.153808	.0472359	^ -----	4.244049	.0469221	.0667785
#3	-.170263	1.184196	.0489064	^ -----	4.198608	.0422482	.0676886

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1756.502	^ *****	-.014212	.0156583	.0028362	.4898420	.0828388
Stddev	17.173	-----	.000826	.0008413	.0011170	.0185455	.0040520
%RSD	.9776850	-----	5.808873	5.372873	39.38297	3.786013	4.891385

#1	1762.931	^ -----	-.013426	.0166150	.0016196	.4731403	.0808191
#2	1769.533	^ -----	-.015072	.0153261	.0038154	.5097999	.0875036
#3	1737.042	^ -----	-.014136	.0150338	.0030737	.4865858	.0801936

Sample Name: LR-2 Acquired: 9/10/2025 12:22:16 Type: Unk
Method: 6010-200.7 NEW(v160) 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	-4.72644	.2538931	-2.48834
Stddev	.009203	.0013154	.00673
%RSD	1.947179	.5181063	.2706592
#1	-4.78117	.2527968	-2.48143
#2	-4.62018	.2553518	-2.48870
#3	-4.77796	.2535308	-2.49488

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5206.915	88445.02	11293.55	4138.451	5624.740
Stddev	.867	138.36	83.63	5.722	1.519
%RSD	.0166469	.1564348	.7405506	.1382635	.0270046
#1	5206.273	88334.36	11205.05	4133.221	5622.989
#2	5206.571	88400.57	11304.33	4144.563	5625.708
#3	5207.901	88600.15	11371.28	4137.571	5625.523

Sample Name: PB169620BS Acquired: 9/10/2025 12:35:38 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.7644555	1.971297	.9272577	1.946159	.7760358	1.920772
Stddev	.0005681	.021620	.0011197	.003057	.0013950	.003905
%RSD	.0743195	1.096722	.1207543	.1570911	.1797607	.2032787

#1	.7644364	1.985838	.9267583	1.946672	.7768557	1.916791
#2	.7650329	1.981600	.9264745	1.948927	.7768266	1.920931
#3	.7638971	1.946453	.9285402	1.942878	.7744250	1.924595

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1869647	.1923535	.1881066	.9793522	.3879271	.1894891
Stddev	.0013413	.0014560	.0002537	.0064115	.0006843	.0005336
%RSD	.7174035	.7569563	.1348675	.6546645	.1763886	.2816259

#1	.1875906	.1914376	.1878277	.9726181	.3879028	.1894827
#2	.1854249	.1915905	.1883236	.9853830	.3886232	.1900259
#3	.1878787	.1940325	.1881686	.9800557	.3872553	.1889587

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2962149	2.890556	.1932846	1.919827	.4748874	.0725064
Stddev	.0000623	.012287	.0008714	.040859	.0003902	.0001201
%RSD	.0210406	.4250673	.4508578	2.128244	.0821556	.1656683

#1	.2961430	2.899887	.1942688	1.878045	.4745137	.0724849
#2	.2962477	2.895146	.1926111	1.959695	.4752922	.0723985
#3	.2962539	2.876635	.1929739	1.921742	.4748562	.0726358

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.828507	.2877576	.2004711	9.418613	.2829936	.3925060
Stddev	.009028	.0040518	.0004588	.078992	.0023489	.0005763
%RSD	.3191810	1.408061	.2288433	.8386834	.8300300	.1468364

#1	2.834080	.2860596	.2007485	9.502979	.2807827	.3931282
#2	2.833350	.2848310	.2007233	9.406456	.2827384	.3923994
#3	2.818091	.2923821	.1999416	9.346404	.2854597	.3919904

Sample Name: PB169620BS Acquired: 9/10/2025 12:35:38 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.6639346	.1882316	.8769711	5.433305	F -.008182	.1935193
Stddev	.0013888	.0011133	.0093561	.008025	.004276	.0019195
%RSD	.2091728	.5914341	1.066867	.1476924	52.26705	.9918723

#1	.6627461	.1869868	.8841768	5.426855	-.010254	.1953842
#2	.6635964	.1891319	.8803394	5.442291	-.011028	.1915495
#3	.6654612	.1885760	.8663973	5.430768	-.003264	.1936241

Elem	Sr4077
Units	ppm
Avg	.1889285
Stddev	.0008378
%RSD	.4434547

#1	.1896078
#2	.1879923
#3	.1891853

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6324.124	111887.7	11614.17	5140.734	7492.747
Stddev	7.043	96.9	76.59	14.807	14.721
%RSD	.1113739	.0866342	.6594584	.2880362	.1964677

#1	6331.262	111908.7	11674.76	5130.712	7508.324
#2	6317.179	111782.0	11639.67	5133.748	7479.065
#3	6323.931	111972.4	11528.08	5157.742	7490.852

Sample Name: PB169596BL Acquired: 9/10/2025 12:39:39 Type: Unk
Method: 6010-200.7 NEW(v160) 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	-.003181	.0005163	-.000200	-.001285	-.000100	.0007453	-.000737
Stddev	.000894	.0029149	.001107	.002701	.001027	.0049337	.001866
%RSD	28.12138	564.5558	553.0446	210.1073	1029.753	662.0145	253.2598

#1	-.003921	-.000529	-.000770	.000079	-.001038	.0008409	-.002744
#2	-.002187	.003810	-.000906	-.004396	.000998	.0056304	-.000411
#3	-.003433	-.001732	.001075	.000461	-.000259	-.004236	.000945

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000825	-.000012	-.002588	.0004971	.0000566	-.000282	.0020887
Stddev	.0001067	.000044	.014699	.0003043	.0001180	.000054	.0016866
%RSD	129.3402	373.0655	567.9766	61.21106	208.3276	19.23076	80.74951

#1	.0001804	-.000035	-.002123	.0004560	.0000516	-.000303	.0023957
#2	.0000984	.000039	-.017514	.0008198	.0001770	-.000220	.0002697
#3	-.000031	-.000039	.011873	.0002155	-.000059	-.000322	.0036006

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000020	.0291633	.0001848	-.000541	.0018506	-.001659	-.000469
Stddev	.000179	.0191382	.0002522	.000790	.0059430	.001870	.000290
%RSD	885.0691	65.62447	136.4430	146.1547	321.1443	112.6853	61.83587

#1	.000179	.0218634	-.000014	-.000027	.0086819	-.003401	-.000697
#2	-.000070	.0508771	.000100	-.001451	-.001000	-.001894	-.000567
#3	-.000170	.0147492	.000469	-.000145	-.002130	.000317	-.000143

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.014901	-.003114	.0000822	.0001577	.0006683	-.004461	.0019562
Stddev	.020888	.000189	.0000840	.0002359	.0003682	.010839	.0015975
%RSD	140.1848	6.058578	102.2288	149.5497	55.10111	242.9441	81.65940

#1	-.031853	-.003332	.0000601	.0004087	.0009620	-.013335	.0015010
#2	.008435	-.003006	.0000114	.0001239	.0002552	-.007668	.0037319
#3	-.021283	-.003004	.0001750	-.000059	.0007876	.007619	.0006358

Sample Name: PB169596BL Acquired: 9/10/2025 12:39:39 Type: Unk
Method: 6010-200.7 NEW(v160) 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	-.002958	-.003388	.0000178
Stddev	.001588	.001378	.0000670
%RSD	53.69221	40.67287	375.3255

#1	-.001879	-.003151	.0000830
#2	-.004782	-.004868	.0000212
#3	-.002213	-.002143	-.000051

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6315.559	110371.5	11373.44	5081.642	7629.983
Stddev	2.163	325.4	127.08	8.505	3.299
%RSD	.0342480	.2948099	1.117340	.1673677	.0432348

#1	6313.083	110498.2	11500.80	5082.878	7633.750
#2	6316.512	110001.8	11372.89	5072.586	7628.591
#3	6317.081	110614.5	11246.64	5089.461	7627.609

Sample Name: PB169596BS Acquired: 9/10/2025 12:43:59 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.7500181	1.902716	.9155882	1.908349	.7627911	1.938200
Stddev	.0031173	.021257	.0033820	.012635	.0041194	.009945
%RSD	.4156351	1.117171	.3693824	.6620910	.5400432	.5131239
#1	.7527322	1.882568	.9181322	1.921385	.7660924	1.927298
#2	.7507086	1.924930	.9168821	1.907504	.7641062	1.940527
#3	.7466134	1.900650	.9117502	1.896158	.7581748	1.946777
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1900785	.1958441	.1843280	.9839090	.3867553	.1867644
Stddev	.0002473	.0001105	.0005704	.0100757	.0001990	.0009107
%RSD	.1300947	.0564309	.3094305	1.024050	.0514474	.4875991
#1	.1902616	.1959436	.1847622	.9811115	.3866533	.1877855
#2	.1901767	.1957251	.1845397	.9950879	.3869846	.1864713
#3	.1897972	.1958637	.1836820	.9755276	.3866281	.1860364
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2926684	2.854763	.1945689	1.963144	.4677035	.0728238
Stddev	.0007804	.007545	.0007390	.003262	.0016730	.0002699
%RSD	.2666496	.2643096	.3798335	.1661869	.3577120	.3706466
#1	.2934229	2.857208	.1952317	1.962531	.4693101	.0725158
#2	.2927177	2.860783	.1937720	1.966670	.4678292	.0729367
#3	.2918645	2.846299	.1947031	1.960232	.4659712	.0730190
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.729434	.2893939	.1998172	9.232452	.2895216	.3888731
Stddev	.004966	.0018895	.0002585	.049138	.0004327	.0013751
%RSD	.1819532	.6529157	.1293885	.5322349	.1494662	.3536079
#1	2.734972	.2915550	.1995330	9.287829	.2894505	.3904198
#2	2.725375	.2885728	.2000386	9.215472	.2899855	.3884107
#3	2.727955	.2880538	.1998799	9.194056	.2891289	.3877889

Sample Name: PB169596BS Acquired: 9/10/2025 12:43:59 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.6469291	.1890125	.8464739	5.265630	F -.006444	.2008061
Stddev	.0034141	.0026400	.0070006	.018998	.002639	.0002770
%RSD	.5277341	1.396744	.8270356	.3607991	40.94848	.1379258
#1	.6501229	.1918636	.8545552	5.285317	-.007703	.2004880
#2	.6473337	.1885215	.8422633	5.264168	-.008217	.2009360
#3	.6433308	.1866525	.8426033	5.247404	-.003411	.2009941
Elem	Sr4077					
Units	ppm					
Avg	.1906037					
Stddev	.0011609					
%RSD	.6090789					
#1	.1919120					
#2	.1896966					
#3	.1902023					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	6471.014	112831.0	11421.60	5154.697	7742.130	
Stddev	14.593	226.3	6.96	16.431	21.523	
%RSD	.2255131	.2005280	.0609038	.3187526	.2779991	
#1	6457.687	112995.5	11414.89	5142.254	7722.991	
#2	6468.747	112572.9	11428.78	5148.515	7737.971	
#3	6486.608	112924.4	11421.15	5173.322	7765.430	

Sample Name: PB169620BL Acquired: 9/10/2025 12:52:45 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0002786	.0003250	.0047273	-.001108	-.000420	.0023476	-.001175
Stddev	.0023565	.0010813	.0013734	.000379	.001736	.0033580	.000300
%RSD	845.7853	332.7567	29.05264	34.17864	413.6526	143.0404	25.57266

#1	-.002292	.0012608	.0031620	-.000707	.001170	.0045756	-.000986
#2	.000792	.0005729	.0057302	-.001460	-.002272	-.001515	-.001017
#3	.002336	-.000859	.0052899	-.001156	-.000157	.003982	-.001521

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001221	.0000445	-.001210	.0012250	.0001058	.0016027	.0019908
Stddev	.0000210	.0000573	.004961	.0000232	.0001486	.0005302	.0078547
%RSD	17.20523	128.5764	410.0537	1.895172	140.4266	33.08105	394.5543

#1	.0001430	.0000000	-.006512	.0012512	.0002439	.0018513	.0100295
#2	.0001010	.0001091	-.000440	.0012164	-.000051	.0009939	-.005666
#3	.0001221	.0000244	.003321	.0012072	.000125	.0019630	.001609

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0023861	.0226813	.0008039	-.000155	-.073986	-.001023	.0028146
Stddev	.0005749	.0018417	.0001100	.000302	.010896	.001511	.0005167
%RSD	24.09497	8.119778	13.68733	194.8333	14.72646	147.6772	18.35877

#1	.0025908	.0214366	.0009153	-.000489	-.080177	-.000456	.0026423
#2	.0017368	.0218104	.0006953	.000098	-.061406	-.002736	.0033954
#3	.0028307	.0247969	.0008011	-.000074	-.080375	.000122	.0024060

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.062348	-.003420	.0001795	.0000867	-.000033	-.004323	.0015987
Stddev	.050937	.000297	.0000525	.0005110	.000311	.009285	.0016010
%RSD	81.69801	8.678010	29.25893	589.7439	948.6183	214.7917	100.1424

#1	-.119743	-.003220	.0001257	-.000287	-.000199	.006299	.0033827
#2	-.022520	-.003279	.0001820	.000669	-.000225	-.008371	.0002870
#3	-.044781	-.003761	.0002307	-.000122	.000326	-.010896	.0011264

Sample Name: PB169620BL Acquired: 9/10/2025 12:52:45 Type: Unk
Method: 6010-200.7 NEW(v160) 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	-.001563	-.003755	.0000732
Stddev	.002358	.001581	.0001149
%RSD	150.8802	42.09730	156.9110

#1	.000802	-.004129	-.000048
#2	-.001577	-.005114	.000180
#3	-.003914	-.002020	.000087

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6466.191	112980.3	11582.56	5143.619	7858.331
Stddev	19.524	368.6	114.63	27.775	18.062
%RSD	.3019458	.3262491	.9897028	.5399958	.2298432

#1	6481.157	113268.3	11480.36	5138.904	7877.065
#2	6473.310	113107.6	11706.51	5173.450	7856.902
#3	6444.106	112564.9	11560.82	5118.503	7841.027

Sample Name: Q3046-01 Acquired: 9/10/2025 12:57:04 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0830086	-.008427	.2457272	-.008320	.0005274	216.4917
Stddev	.0023909	.005139	.0024838	.002660	.0020701	1.7299
%RSD	2.880304	60.97799	1.010793	31.97076	392.4928	.7990524

#1	.0843521	-.002497	.2485861	-.006866	.0011165	218.0092
#2	.0802482	-.011230	.2444961	-.006705	-.001773	216.8578
#3	.0844256	-.011555	.2440994	-.011391	.002239	214.6080

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.488980	.0131350	.0058610	1767.691	.2453216	.0956954
Stddev	.008813	.0002177	.0000995	20.459	.0017309	.0002905
%RSD	.5919118	1.657369	1.698533	1.157361	.7055628	.3036197

#1	1.499124	.0133031	.0059094	1791.043	.2471670	.0956053
#2	1.484617	.0132128	.0059270	1759.113	.2450634	.0960204
#3	1.483199	.0128891	.0057465	1752.918	.2437342	.0954606

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3895117	257.6101	2.610987	71.20459	.1819465	.0021299
Stddev	.0013290	1.0613	.025149	.75182	.0003377	.0006072
%RSD	.3412043	.4119777	.9632031	1.055860	.1855997	28.50850

#1	.3902975	257.4426	2.637567	71.88479	.1817267	.0025749
#2	.3902603	256.6426	2.607825	71.33164	.1823354	.0014382
#3	.3879772	258.7452	2.587568	70.39734	.1817776	.0023767

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.715589	.4464767	.4410524	12.55966	.8229153	.0254613
Stddev	.055961	.0007643	.0032348	.11970	.0004183	.0005696
%RSD	1.186725	.1711883	.7334342	.9530169	.0508367	2.237248

#1	4.666717	.4473236	.4441393	12.54821	.8224500	.0261117
#2	4.703415	.4462681	.4413304	12.44610	.8232604	.0250508
#3	4.776635	.4458383	.4376875	12.68466	.8230355	.0252216

Sample Name: Q3046-01 Acquired: 9/10/2025 12:57:04 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.1773349	8.109163	2.380451	8.673984	F 105.6615	.0393742
Stddev	.0021307	.048157	.000784	.033430	.5880	.0014223
%RSD	1.201500	.5938538	.0329329	.3854044	.5564708	3.612281
#1	.1790958	8.161435	2.380635	8.703304	106.2697	.0382993
#2	.1779425	8.099450	2.379591	8.681067	105.6187	.0388363
#3	.1749664	8.066603	2.381126	8.637580	105.0960	.0409870

Elem	Sr4077
Units	ppm
Avg	6.114671
Stddev	.097005
%RSD	1.586424
#1	6.167538
#2	6.173758
#3	6.002718

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6488.728	110315.4	13209.51	5059.699	5993.377
Stddev	7.564	189.6	168.10	31.325	8.293
%RSD	.1165647	.1719017	1.272537	.6191117	.1383733
#1	6488.867	110124.2	13074.12	5024.481	5988.944
#2	6481.096	110318.8	13156.75	5070.168	5988.243
#3	6496.222	110503.4	13397.65	5084.450	6002.945

Sample Name: LR-3 Acquired: 9/10/2025 13:01:22 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0947641	.0128918	236.3181	-.003458	.1397123	.0549853	-.001852
Stddev	.0019475	.0009779	1.2464	.001797	.0084175	.0023881	.001020
%RSD	2.055071	7.585536	.5274243	51.97493	6.024920	4.343074	55.08884

#1	.0941404	.0131186	234.8987	-.005371	.1394520	.0560119	-.001845
#2	.0969470	.0137364	236.8217	-.001804	.1314279	.0522556	-.000835
#3	.0932049	.0118204	237.2339	-.003200	.1482570	.0566884	-.002875

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.004459	-.001692	.2481818	23.86143	.0064688	51.81636	.0586758
Stddev	.000092	.000034	.0014531	.28559	.0001521	.16058	.0054987
%RSD	2.055462	1.999762	.5854806	1.196870	2.351378	.3099072	9.371362

#1	-.004450	-.001653	.2465044	23.76931	.0063167	51.89518	.0549797
#2	-.004372	-.001713	.2490550	24.18171	.0066209	51.63159	.0649949
#3	-.004555	-.001709	.2489859	23.63326	.0064686	51.92230	.0560528

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	48.87572	-.198727	23.68723	.0034474	-.024967	-.040867	30.78070
Stddev	.71426	.023326	.08112	.0009102	.014171	.002052	.16469
%RSD	1.461383	11.73785	.3424773	26.40255	56.75974	5.021925	.5350361

#1	49.32794	-.212481	23.73784	.0024895	-.041035	-.042425	30.96184
#2	48.05229	-.211904	23.59366	.0043009	-.014253	-.038542	30.74025
#3	49.24693	-.171794	23.73019	.0035518	-.019613	-.041635	30.64000

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.168253	.0005145	-.015930	-.005984	-.043804	-.134882	.1439100
Stddev	.042830	.0001270	.000179	.000233	.001600	.006689	.0028768
%RSD	25.45561	24.68651	1.120528	3.886879	3.651884	4.959038	1.999062

#1	-.189709	.0006604	-.015816	-.005851	-.042651	-.128153	.1472212
#2	-.196114	.0004292	-.015838	-.006253	-.043130	-.141530	.1420238
#3	-.118936	.0004538	-.016136	-.005849	-.045630	-.134961	.1424849

Sample Name: LR-3 Acquired: 9/10/2025 13:01:22 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0748088	-.004047	.0007465
Stddev	.0064948	.001448	.0000469
%RSD	8.681825	35.78308	6.281672
#1	.0707242	-.004410	.0007306
#2	.0822980	-.002452	.0007993
#3	.0714041	-.005280	.0007096

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6041.482	108564.6	11605.06	4898.520	7510.967
Stddev	7.244	531.4	23.22	2.306	12.197
%RSD	.1199027	.4894720	.2001087	.0470774	.1623896
#1	6045.608	109067.4	11615.46	4900.824	7505.662
#2	6045.720	108008.6	11621.26	4896.212	7524.918
#3	6033.118	108617.6	11578.45	4898.526	7502.321

Sample Name: Q3048-01 Acquired: 9/10/2025 13:06:16 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0872473	-.019780	.9284102	.0054102	-.009658	168.4455	2.135062
Stddev	.0008964	.001504	.0002409	.0017348	.000480	.1596	.012625
%RSD	1.027396	7.604043	.0259520	32.06572	4.972977	.0947644	.5913366
#1	.0879562	-.021179	.9284780	.0048781	-.009966	168.6285	2.146165
#2	.0875459	-.018189	.9281426	.0040037	-.009104	168.3349	2.121329
#3	.0862397	-.019972	.9286099	.0073487	-.009903	168.3730	2.137693
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0146746	.0076666	78.70423	.3040114	.1825017	.4776402	338.8205
Stddev	.0002258	.0005862	.17019	.0017028	.0005198	.0013771	2.9514
%RSD	1.538899	7.645539	.2162412	.5601058	.2848445	.2883138	.8710944
#1	.0147962	.0079442	78.89215	.3020870	.1822050	.4768774	337.5585
#2	.0148134	.0080624	78.66005	.3046240	.1821980	.4792299	336.7098
#3	.0144140	.0069932	78.56048	.3053230	.1831019	.4768133	342.1931
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.980573	71.45224	.3688433	.0099538	5.022060	.4682821	2.055091
Stddev	.036865	.15060	.0010394	.0009963	.081375	.0023210	.012464
%RSD	.5281136	.2107713	.2817901	10.00961	1.620351	.4956353	.6064993
#1	7.020895	71.54360	.3676489	.0095648	4.973437	.4661830	2.043245
#2	6.948595	71.53471	.3693385	.0092107	4.976738	.4707747	2.068093
#3	6.972229	71.27842	.3695424	.0110860	5.116004	.4678887	2.053935
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	28.85120	.3179211	.0081574	.0702353	3.977011	5.206459	8.427034
Stddev	.22481	.0123135	.0003894	.0009390	.016284	.034054	.039766
%RSD	.7792157	3.873136	4.773669	1.336969	.4094519	.6540689	.4718896
#1	28.69176	.3116554	.0077164	.0695110	3.993368	5.170853	8.404851
#2	28.75352	.3100006	.0084539	.0698986	3.960801	5.209811	8.472943
#3	29.10834	.3321074	.0083019	.0712962	3.976865	5.238713	8.403308

Sample Name: Q3048-01 Acquired: 9/10/2025 13:06:16 Type: Unk
Method: 6010-200.7 NEW(v160) 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	3.209754	.4787352	.0781389
Stddev	.025413	.0001947	.0032604
%RSD	.7917504	.0406629	4.172633
#1	3.208978	.4789498	.0813510
#2	3.235546	.4786855	.0782336
#3	3.184737	.4785701	.0748322

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7104.628	126639.6	14230.38	5759.075	6915.144
Stddev	4.088	808.8	68.50	37.975	3.517
%RSD	.0575384	.6386788	.4813338	.6593910	.0508610
#1	7102.426	127521.8	14197.65	5796.493	6918.183
#2	7102.114	126464.2	14184.39	5720.567	6915.957
#3	7109.345	125933.0	14309.10	5760.164	6911.291

Sample Name: Q3048-01DUP Acquired: 9/10/2025 13:10:17 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0909779	-.020219	1.015360	.0061217	-.006092	182.1631	2.342643
Stddev	.0020387	.002562	.003371	.0026996	.001983	.7186	.013157
%RSD	2.240916	12.67150	.3319741	44.09865	32.54475	.3944944	.5616397

#1	.0907229	-.021742	1.019024	.0060415	-.006506	181.3684	2.348257
#2	.0931321	-.021655	1.012390	.0088604	-.003935	182.3535	2.327610
#3	.0890786	-.017261	1.014666	.0034631	-.007836	182.7673	2.352062

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0159295	.0109168	73.79085	.3292003	.2093412	.5621903	375.5652
Stddev	.0000728	.0001241	.26779	.0015259	.0005714	.0024684	.4605
%RSD	.4572373	1.136461	.3628988	.4635057	.2729562	.4390745	.1226268

#1	.0158672	.0109940	73.62043	.3276056	.2093131	.5598114	375.7226
#2	.0160096	.0107737	73.65261	.3293489	.2087844	.5620202	375.0466
#3	.0159118	.0109827	74.09950	.3306465	.2099262	.5647394	375.9264

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.700729	80.36028	.4339700	.0093249	5.113733	.5053247	2.337397
Stddev	.049144	.28879	.0009125	.0005292	.025256	.0040083	.008905
%RSD	.6381695	.3593650	.2102638	5.674611	.4938893	.7932105	.3809651

#1	7.711587	80.11098	.4344680	.0098195	5.130130	.5022053	2.330523
#2	7.647064	80.29314	.4329169	.0087669	5.084649	.5039231	2.334211
#3	7.743536	80.67672	.4345252	.0093883	5.126421	.5098455	2.347456

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	30.96694	.3733250	.0109453	.0674602	4.389884	4.899644	8.864708
Stddev	.10473	.0060211	.0002959	.0006105	.016427	.048774	.025165
%RSD	.3381900	1.612839	2.703113	.9049524	.3742051	.9954509	.2838799

#1	30.86229	.3782052	.0107167	.0681513	4.385429	4.866586	8.835736
#2	30.96678	.3751734	.0108396	.0672349	4.376144	4.955660	8.881129
#3	31.07175	.3665964	.0112795	.0669943	4.408079	4.876686	8.877260

Sample Name: Q3048-01DUP Acquired: 9/10/2025 13:10:17 Type: Unk
Method: 6010-200.7 NEW(v160) 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	2.959844	.5196420	.0232587
Stddev	.004616	.0022159	.0018476
%RSD	.1559529	.4264273	7.943675
#1	2.954823	.5175535	.0234945
#2	2.960806	.5194061	.0213045
#3	2.963903	.5219664	.0249770

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7167.063	123903.1	14340.35	5658.710	6751.750
Stddev	21.285	401.7	66.21	9.160	21.195
%RSD	.2969797	.3241898	.4616743	.1618789	.3139188
#1	7173.272	124366.6	14372.21	5667.794	6747.836
#2	7184.553	123657.5	14384.60	5658.861	6774.629
#3	7143.364	123685.2	14264.24	5649.475	6732.785

Sample Name: CCV02 Acquired: 9/10/2025 13:14:18 Type: Unk
Method: 6010-200.7 NEW(v160) 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	4.954439	4.884225	4.756953	5.002908	4.968256	9.796534	9.767588
Stddev	.009217	.070634	.001454	.012742	.005110	.055161	.110339
%RSD	.1860309	1.446173	.0305575	.2547004	.1028541	.5630665	1.129647

#1	4.946520	4.942724	4.755899	4.995895	4.962411	9.859835	9.748267
#2	4.952241	4.805756	4.758612	4.995211	4.970480	9.771006	9.668185
#3	4.964556	4.904195	4.756349	5.017616	4.971878	9.758761	9.886312

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2393314	2.398500	24.28894	.9675513	2.397791	1.223537	4.927942
Stddev	.0019843	.000637	.12737	.0008530	.001849	.000421	.018298
%RSD	.8290905	.0265409	.5243768	.0881588	.0771160	.0344374	.3713133

#1	.2416133	2.397982	24.42425	.9667760	2.397035	1.223743	4.906830
#2	.2380114	2.398309	24.27118	.9684650	2.396439	1.223052	4.939240
#3	.2383695	2.399211	24.17138	.9674127	2.399898	1.223815	4.937755

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.428006	24.10588	2.398774	1.219652	24.60864	2.448831	2.406764
Stddev	.016941	.10005	.001928	.003108	.08580	.015049	.002607
%RSD	.6977200	.4150640	.0803652	.2548172	.3486769	.6145262	.1083391

#1	2.444341	24.22135	2.398209	1.222029	24.56136	2.461239	2.404282
#2	2.429158	24.04503	2.397192	1.220792	24.70769	2.453164	2.409481
#3	2.410518	24.05124	2.400921	1.216135	24.55688	2.432092	2.406530

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.41366	4.806891	4.909277	4.796163	4.902210	4.923912	4.886652
Stddev	.14633	.042169	.004042	.011351	.030694	.021886	.020081
%RSD	.5993799	.8772525	.0823339	.2366756	.6261247	.4444887	.4109334

#1	24.26817	4.855520	4.908600	4.790101	4.935158	4.902654	4.890404
#2	24.56082	4.780431	4.905616	4.789130	4.897047	4.922707	4.864959
#3	24.41198	4.784722	4.913615	4.809259	4.874425	4.946376	4.904592

Sample Name: CCV02 Acquired: 9/10/2025 13:14:18 Type: Unk
Method: 6010-200.7 NEW(v160) 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	4.896620	4.858008	4.944927
Stddev	.034103	.029098	.055926
%RSD	.6964628	.5989766	1.130969
#1	4.885425	4.890238	5.009460
#2	4.869522	4.850116	4.910579
#3	4.934914	4.833670	4.914742

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6234.086	111456.6	11621.88	5107.226	7162.710
Stddev	7.682	259.7	81.85	19.094	4.906
%RSD	.1232284	.2329904	.7042695	.3738651	.0684987
#1	6230.213	111752.1	11529.73	5128.930	7159.749
#2	6229.112	111353.4	11686.16	5093.016	7160.008
#3	6242.934	111264.5	11649.74	5099.731	7168.374

Sample Name: CCB02 Acquired: 9/10/2025 13:18:30 Type: Unk
Method: 6010-200.7 NEW(v160) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB02 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002685	.0023783	.0011492	.0003226	-.000017	.0030248	-.000521
Stddev	.001825	.0008335	.0008659	.0009858	.001287	.0159421	.001014
%RSD	67.96693	35.04778	75.34938	305.5762	7698.843	527.0447	194.8487
#1	-.003243	.0025937	.0019903	.0009472	.000080	-.014606	-.001678
#2	-.004165	.0014582	.0011967	-.000814	.001219	.016426	.000214
#3	-.000646	.0030829	.0002605	.000834	-.001349	.007254	-.000097
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001229	.0001077	-.000508	.0003395	.0001416	.0001415	.0050555
Stddev	.0000355	.0000587	.008558	.0002328	.0001933	.0005996	.0058961
%RSD	28.88125	54.50656	1685.843	68.58079	136.5185	423.6364	116.6282
#1	.0000868	.0000935	.008918	.0003201	-.000082	-.000157	-.000412
#2	.0001578	.0001723	-.002648	.0001170	.000259	-.000250	.011302
#3	.0001240	.0000574	-.007793	.0005815	.000248	.000832	.004276
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001924	.0111604	.0001964	-.000633	-.066022	-.000654	-.000370
Stddev	.0002814	.0174593	.0001916	.000440	.020240	.001723	.000345
%RSD	146.2811	156.4393	97.59012	69.48249	30.65625	263.2124	93.26224
#1	.0002732	.0313196	.0002834	-.001007	-.083864	-.002640	-.000255
#2	-.000121	.0009022	-.000023	-.000148	-.044028	.000234	-.000757
#3	.000424	.0012595	.000329	-.000744	-.070172	.000442	-.000097
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.064735	.0013338	.0004853	.0001661	.0024821	-.003546	.0006947
Stddev	.015960	.0008508	.0002458	.0005172	.0008786	.002649	.0011744
%RSD	24.65382	63.78922	50.64999	311.4072	35.39560	74.71461	169.0374
#1	-.078127	.0018714	.0005214	.0006141	.0023630	-.006311	.0012617
#2	-.069003	.0017771	.0007110	-.000400	.0034142	-.001030	.0014781
#3	-.047075	.0003529	.0002234	.000284	.0016692	-.003296	-.000656

Sample Name: CCB02 Acquired: 9/10/2025 13:18:30 Type: Unk
Method: 6010-200.7 NEW(v160) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB02 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.000332	-.002922	.0001270
Stddev	.002750	.001308	.0000665
%RSD	828.6204	44.76701	52.33483
#1	-.002726	-.003539	.0001970
#2	-.000942	-.001420	.0001193
#3	.002672	-.003807	.0000648

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6220.646	111816.8	11597.81	5115.293	7484.856
Stddev	16.225	1052.6	47.54	37.310	17.779
%RSD	.2608250	.9413882	.4099131	.7293739	.2375322
#1	6202.862	112463.8	11604.54	5133.389	7465.660
#2	6234.641	112384.5	11547.27	5140.105	7500.757
#3	6224.436	110602.2	11641.63	5072.387	7488.150

Sample Name: Q3048-01LX5 Acquired: 9/10/2025 13:22:48 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0173300	-.002734	.1944599	-.003067	-.004713	39.12759	.4822372
Stddev	.0007994	.000656	.0010401	.001232	.001548	.05307	.0015863
%RSD	4.612523	23.99788	.5348466	40.18142	32.85068	.1356238	.3289395
#1	.0171746	-.003371	.1947251	-.002397	-.003451	39.08589	.4823880
#2	.0181956	-.002773	.1933129	-.002315	-.006441	39.18732	.4805809
#3	.0166198	-.002060	.1953417	-.004490	-.004249	39.10956	.4837426
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0036797	.0007194	18.92562	.0734530	.0371406	.1178658	77.08990
Stddev	.0000642	.0001607	.02415	.0006031	.0001838	.0005340	.43834
%RSD	1.745527	22.34469	.1276071	.8210333	.4948680	.4530897	.5686151
#1	.0037424	.0008999	18.92556	.0740762	.0373393	.1183531	76.62635
#2	.0036140	.0005918	18.94979	.0734104	.0371060	.1172949	77.49770
#3	.0036829	.0006664	18.90149	.0728723	.0369766	.1179495	77.14566
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.669708	17.31122	.0768817	.0006163	.9991762	.1097425	.4867383
Stddev	.005292	.07886	.0005161	.0004680	.0273618	.0013349	.0035286
%RSD	.3169648	.4555595	.6713237	75.93947	2.738437	1.216370	.7249370
#1	1.675729	17.24477	.0769824	.0007274	.9781981	.1087256	.4839944
#2	1.667604	17.39836	.0773400	.0001027	.9892055	.1092479	.4907187
#3	1.665791	17.29052	.0763226	.0010188	1.030125	.1112541	.4855018
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.107552	.0582120	.0021005	.0141891	.9305799	1.144739	1.727580
Stddev	.064185	.0019715	.0000318	.0002722	.0008659	.015098	.010523
%RSD	1.050905	3.386682	1.514416	1.918206	.0930523	1.318911	.6091321
#1	6.034382	.0576005	.0020642	.0138991	.9296047	1.136801	1.736250
#2	6.154347	.0604167	.0021236	.0142293	.9312589	1.162150	1.730617
#3	6.133928	.0566187	.0021136	.0144390	.9308759	1.135265	1.715872

Sample Name: Q3048-01LX5 Acquired: 9/10/2025 13:22:48 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.6314918	.1034551	.0195452
Stddev	.0052653	.0015683	.0006303
%RSD	.8337931	1.515877	3.224764

#1	.6354395	.1024162	.0200492
#2	.6335224	.1026899	.0188385
#3	.6255135	.1052590	.0197478

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6505.762	114204.9	12038.23	5235.823	7395.899
Stddev	10.809	701.9	34.88	35.339	12.281
%RSD	.1661430	.6145542	.2897666	.6749519	.1660499

#1	6495.449	114807.5	12003.58	5262.967	7384.451
#2	6504.831	113434.3	12037.77	5195.864	7394.375
#3	6517.007	114372.8	12073.35	5248.637	7408.870

Sample Name: Q3048-01MS Acquired: 9/10/2025 13:26:52 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.7381896	1.832990	1.891853	1.605372	.3221209	178.6550
Stddev	.0045916	.022640	.004443	.006096	.0006512	.8984
%RSD	.6220123	1.235117	.2348407	.3797322	.2021641	.5028636
#1	.7433544	1.831787	1.892497	1.612388	.3214727	178.5535
#2	.7366449	1.856207	1.895939	1.601377	.3221149	179.5999
#3	.7345695	1.810975	1.887123	1.602349	.3227751	177.8117
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.204096	.1685107	.1963490	62.76749	.6309369	.4025772
Stddev	.005585	.0004226	.0004543	.19893	.0030789	.0006197
%RSD	.2533770	.2508024	.2313641	.3169387	.4879908	.1539421
#1	2.199482	.1682770	.1960471	62.77011	.6339752	.4029025
#2	2.210304	.1689985	.1968715	62.96511	.6310166	.4029666
#3	2.202501	.1682564	.1961285	62.56727	.6278189	.4018626
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8055249	315.5107	7.133925	72.90502	.8416181	.0717427
Stddev	.0016115	1.4131	.009374	.23642	.0019988	.0009656
%RSD	.2000553	.4478862	.1314030	.3242896	.2374956	1.345912
#1	.8037325	317.0415	7.141822	72.96706	.8404945	.0728170
#2	.8068539	315.2346	7.136387	73.10423	.8439258	.0709472
#3	.8059883	314.2560	7.123565	72.64376	.8404338	.0714638
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.158992	.6933186	2.182532	38.21574	.5035229	.3327922
Stddev	.016915	.0029489	.006739	.15836	.0025182	.0004763
%RSD	.2362731	.4253305	.3087804	.4143955	.5001095	.1431293
#1	7.173930	.6918492	2.185040	38.32180	.5059462	.3325118
#2	7.162421	.6967135	2.187658	38.29172	.5037029	.3333421
#3	7.140626	.6913930	2.174899	38.03371	.5009196	.3325225

Sample Name: Q3048-01MS Acquired: 9/10/2025 13:26:52 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.7240119	4.604662	6.861759	F 13.25398	3.110008	.6337823
Stddev	.0029786	.015161	.182700	.04498	.013001	.0015169
%RSD	.4113983	.3292537	2.662578	.3393499	.4180443	.2393358
#1	.7257671	4.598378	6.660335	13.21966	3.112673	.6343507
#2	.7256958	4.621954	7.016788	13.30490	3.121470	.6349328
#3	.7205728	4.593653	6.908154	13.23738	3.095880	.6320633

Elem	Sr4077
Units	ppm
Avg	.2327749
Stddev	.0019041
%RSD	.8179794
#1	.2306249
#2	.2342481
#3	.2334516

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7085.607	126295.8	14069.33	5726.755	6779.920
Stddev	7.608	612.8	26.54	41.391	10.793
%RSD	.1073693	.4852159	.1886120	.7227665	.1591927
#1	7086.140	125647.5	14050.66	5704.263	6775.936
#2	7077.747	126374.5	14057.62	5701.479	6771.685
#3	7092.934	126865.5	14099.71	5774.522	6792.138

Sample Name: Q3048-01MSD Acquired: 9/10/2025 13:30:47 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.7261319	1.682810	2.047378	1.543170	.3326412	193.5799
Stddev	.0024371	.030214	.001399	.010218	.0013401	.3512
%RSD	.3356275	1.795437	.0683474	.6621347	.4028571	.1814418
#1	.7233646	1.649143	2.046006	1.531427	.3322061	193.6084
#2	.7270726	1.691720	2.047324	1.548047	.3315727	193.9160
#3	.7279585	1.707566	2.048803	1.550035	.3341447	193.2152
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.372682	.1638827	.1905502	72.08112	.6495398	.5345534
Stddev	.011866	.0002225	.0006608	.19409	.0008207	.0011971
%RSD	.5001203	.1357556	.3468019	.2692726	.1263593	.2239528
#1	2.365115	.1636447	.1904699	72.13743	.6495593	.5349265
#2	2.386358	.1639181	.1899332	72.24084	.6487095	.5332141
#3	2.366572	.1640854	.1912475	71.86510	.6503507	.5355195
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9418676	366.1796	7.607861	82.08946	.8746687	.0716124
Stddev	.0034711	1.7816	.042452	.30193	.0012212	.0008829
%RSD	.3685355	.4865246	.5580067	.3678035	.1396173	1.232957
#1	.9419897	366.2052	7.599906	82.25906	.8744801	.0715729
#2	.9383371	367.9482	7.653728	82.26845	.8735529	.0725144
#3	.9452761	364.3854	7.569949	81.74086	.8759733	.0707498
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.734838	.7211874	2.897450	39.84172	.5496322	.3243878
Stddev	.044547	.0054103	.002227	.08452	.0060906	.0008043
%RSD	.5759222	.7501859	.0768463	.2121498	1.108116	.2479466
#1	7.696545	.7256027	2.895537	39.87571	.5511090	.3236447
#2	7.783727	.7228073	2.896919	39.90397	.5548486	.3242769
#3	7.724241	.7151523	2.899894	39.74550	.5429390	.3252418

Sample Name: Q3048-01MSD Acquired: 9/10/2025 13:30:47 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.7800646	4.812267	8.799471	F 13.86511	3.721765	.6641071
Stddev	.0026571	.016437	.040683	.09025	.019380	.0015640
%RSD	.3406264	.3415692	.4623384	.6509294	.5207104	.2355073

#1	.7776895	4.809819	8.832813	13.76701	3.699446	.6623044
#2	.7795703	4.829792	8.811460	13.88368	3.734330	.6649145
#3	.7829342	4.797192	8.754140	13.94463	3.731519	.6651024

Elem	Sr4077
Units	ppm
Avg	.2329480
Stddev	.0011191
%RSD	.4804016

#1	.2316565
#2	.2335572
#3	.2336304

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7120.309	124694.2	14217.26	5681.746	6780.769
Stddev	13.205	71.4	23.89	14.431	12.780
%RSD	.1854613	.0572415	.1680459	.2539804	.1884689

#1	7108.402	124664.7	14234.10	5676.981	6766.914
#2	7134.512	124642.3	14189.92	5697.956	6792.096
#3	7118.014	124775.6	14227.76	5670.300	6783.297

Sample Name: Q3048-01A Acquired: 9/10/2025 13:34:42 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.7487410	1.795626	1.825820	1.641214	.6524357	173.1540
Stddev	.0028445	.011458	.009739	.001450	.0045319	.5476
%RSD	.3799074	.6380815	.5334024	.0883515	.6946171	.3162305

#1	.7520210	1.782751	1.814585	1.640299	.6500410	173.7560
#2	.7472501	1.804700	1.831852	1.642886	.6496034	172.6857
#3	.7469518	1.799427	1.831024	1.640457	.6576626	173.0204

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.306581	.1687733	.1917432	80.94039	.6140822	.3724583
Stddev	.010767	.0022212	.0018931	.27906	.0271752	.0012232
%RSD	.4668148	1.316076	.9873270	.3447705	4.425335	.3284234

#1	2.313900	.1713358	.1899777	81.19666	.6361172	.3710631
#2	2.294217	.1675872	.1915095	80.64309	.6224125	.3729653
#3	2.311625	.1673970	.1937423	80.98141	.5837170	.3733466

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7233559	337.7011	7.214400	74.51526	.8342147	.0720721
Stddev	.0082337	11.3056	.039675	.20424	.0026879	.0010863
%RSD	1.138263	3.347826	.5499453	.2740940	.3222023	1.507302

#1	.7158518	346.0696	7.239020	74.70509	.8311238	.0726937
#2	.7220524	342.1940	7.168631	74.29915	.8355172	.0727048
#3	.7321637	324.8397	7.235549	74.54155	.8360032	.0708177

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.374855	.7242300	2.198122	36.95515	.5306966	.3420536
Stddev	.272829	.0023206	.091717	1.27384	.0331953	.0012102
%RSD	3.699454	.3204283	4.172524	3.446986	6.255043	.3538080

#1	7.587998	.7261113	2.269554	37.87160	.5518657	.3406637
#2	7.469191	.7216368	2.230119	37.49330	.5477858	.3426225
#3	7.067377	.7249418	2.094692	35.50055	.4924385	.3428745

Sample Name: Q3048-01A Acquired: 9/10/2025 13:34:42 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.7206103	4.206027	7.172467	F 13.89733	3.250442	.6510785
Stddev	.0035797	.011969	.240919	.02524	.010221	.0029640
%RSD	.4967581	.2845568	3.358949	.1816531	.3144561	.4552505

#1	.7164887	4.218307	7.329756	13.86901	3.239141	.6542911
#2	.7229424	4.194396	7.292536	13.91746	3.259039	.6504945
#3	.7223998	4.205376	6.895108	13.90552	3.253146	.6484500

Elem	Sr4077
Units	ppm
Avg	.2462035
Stddev	.0116942
%RSD	4.749789

#1	.2408731
#2	.2381242
#3	.2596131

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7009.781	126933.0	13896.46	5749.035	6800.658
Stddev	7.727	4580.9	116.92	195.113	8.843
%RSD	.1102371	3.608928	.8413366	3.393832	.1300291

#1	7006.516	123225.8	13793.07	5597.699	6804.355
#2	7004.222	125518.9	14023.34	5680.163	6790.567
#3	7018.605	132054.2	13872.95	5969.244	6807.053

Sample Name: Q3033-01 Acquired: 9/10/2025 13:38:39 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0854115	-.000711	.5532494	.0038972	.0086340	47.08570
Stddev	.0030612	.001895	.0031802	.0027993	.0032533	.15454
%RSD	3.584047	266.5911	.5748281	71.82847	37.67951	.3282146

#1	.0880368	-.002066	.5549397	.0061643	.0094007	46.91615
#2	.0861486	-.001521	.5495809	.0007684	.0050659	47.21867
#3	.0820490	.001454	.5552275	.0047589	.0114354	47.12229

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6179458	.0050774	.0263314	112.3632	.1048163	.1887737
Stddev	.0019002	.0001221	.0000957	.1780	.0003658	.0007526
%RSD	.3075030	2.405437	.3634639	.1583965	.3490304	.3986979

#1	.6158296	.0051737	.0263313	112.4129	.1051521	.1882739
#2	.6195060	.0051186	.0262357	112.5111	.1048705	.1884078
#3	.6185018	.0049400	.0264272	112.1657	.1044265	.1896393

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.726583	87.79120	5.294339	35.78394	.2434902	.0042693
Stddev	.005839	.46692	.004607	.09983	.0007003	.0006620
%RSD	.3381703	.5318502	.0870173	.2789816	.2875927	15.50561

#1	1.721127	87.25298	5.296419	35.77028	.2432788	.0043846
#2	1.725880	88.08780	5.297540	35.88990	.2429200	.0035572
#3	1.732741	88.03281	5.289059	35.69165	.2442718	.0048661

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	179.5512	.1787943	7.496525	28.79686	.2177430	.0584954
Stddev	1.1562	.0012671	.026311	.13896	.0010101	.0002507
%RSD	.6439310	.7087000	.3509705	.4825610	.4638743	.4286163

#1	178.8703	.1776664	7.475473	28.73216	.2173765	.0587836
#2	180.8861	.1801654	7.526021	28.70205	.2169674	.0583270
#3	178.8971	.1785512	7.488081	28.95638	.2188852	.0583757

Sample Name: Q3033-01 Acquired: 9/10/2025 13:38:39 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0017413	1.208359	F 60.24236	8.709320	F 52.91157	.0450360
Stddev	.0009484	.001433	.07753	.049507	.31427	.0019443
%RSD	54.46090	.1185973	.1287022	.5684362	.5939513	4.317207

#1	.0024944	1.207094	60.21766	8.667239	52.81631	.0430666
#2	.0020533	1.208068	60.18018	8.696851	52.65595	.0469542
#3	.0006763	1.209916	60.32923	8.763869	53.26245	.0450872

Elem	Sr4077
Units	ppm
Avg	.4156134
Stddev	.0005516
%RSD	.1327315

#1	.4151298
#2	.4154961
#3	.4162142

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6528.869	115643.6	12768.02	5288.426	6699.046
Stddev	9.372	173.5	26.02	22.290	9.245
%RSD	.1435539	.1500261	.2037617	.4214878	.1379990

#1	6539.572	115839.3	12746.99	5312.237	6704.502
#2	6524.912	115582.4	12759.95	5268.058	6704.264
#3	6522.125	115508.9	12797.11	5284.982	6688.372

Sample Name: Q3036-03DLX5 Acquired: 9/10/2025 13:42:48 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0056685	-.007608	.0061079	.0034565	-.001273	.2242557
Stddev	.0012027	.000567	.0010289	.0019111	.000662	.0185546
%RSD	21.21650	7.454589	16.84499	55.29128	52.02383	8.273850

#1	.0062975	-.007421	.0072299	.0031606	-.000535	.2031863
#2	.0042818	-.008244	.0058850	.0054983	-.001815	.2314238
#3	.0064263	-.007157	.0052087	.0017106	-.001468	.2381570

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0123784	.0016089	-.000909	2.776883	.0372922	.0055377
Stddev	.0008776	.0001127	.000043	.022409	.0003259	.0001471
%RSD	7.089360	7.001749	4.739552	.8069983	.8738666	2.655648

#1	.0131602	.0016450	-.000955	2.751011	.0376397	.0053751
#2	.0114292	.0014826	-.000870	2.790199	.0369934	.0056613
#3	.0125460	.0016990	-.000901	2.789439	.0372436	.0055767

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0406187	93.31684	.4365192	.5941637	.0546877	.0015716
Stddev	.0004038	.41441	.0010865	.0095595	.0003867	.0002900
%RSD	.9940717	.4440936	.2488973	1.608894	.7071170	18.45011

#1	.0407436	92.90297	.4376695	.5885793	.0546215	.0013943
#2	.0401672	93.31576	.4355104	.6052018	.0543384	.0014142
#3	.0409453	93.73179	.4363777	.5887102	.0551032	.0019062

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	199.5913	.0019559	7.525753	2.430374	2.788409	.1465455
Stddev	1.9954	.0025255	.013470	.070376	.010444	.0007569
%RSD	.9997264	129.1200	.1789875	2.895677	.3745457	.5164683

#1	197.5184	.0048334	7.536751	2.391743	2.785660	.1473001
#2	199.7568	.0001072	7.510728	2.387774	2.779615	.1457864
#3	201.4988	.0009272	7.529779	2.511604	2.799952	.1465500

Sample Name: Q3036-03DLX5 Acquired: 9/10/2025 13:42:48 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0114429	.0080615	1.759724	.9900771	F 93.97983	.0051469
Stddev	.0002031	.0009570	.022638	.0054003	.22632	.0012749
%RSD	1.774683	11.87095	1.286429	.5454398	.2408212	24.76994

#1	.0112344	.0088856	1.733909	.9930561	93.84869	.0059960
#2	.0116401	.0082871	1.769076	.9838434	93.84963	.0057637
#3	.0114543	.0070119	1.776188	.9933317	94.24116	.0036809

Elem	Sr4077
Units	ppm
Avg	-.070679
Stddev	.000501
%RSD	.7089548

#1	-.070197
#2	-.070643
#3	-.071197

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6197.461	105522.1	11088.62	4860.312	7186.748
Stddev	16.624	278.4	28.50	16.898	18.755
%RSD	.2682386	.2638207	.2569757	.3476681	.2609675

#1	6184.621	105671.7	11097.33	4843.554	7174.818
#2	6191.523	105693.6	11111.74	4860.036	7177.060
#3	6216.239	105200.8	11056.79	4877.346	7208.365

Sample Name: Q3045-02 Acquired: 9/10/2025 13:47:04 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.3146594	.0072629	.0260336	.0132795	.1808314	.0244454
Stddev	.0008645	.0017513	.0026029	.0033603	.0057896	.0082609
%RSD	.2747359	24.11278	9.998412	25.30431	3.201643	33.79301

#1	.3150161	.0092500	.0257690	.0167644	.1836702	.0326956
#2	.3152885	.0059443	.0287587	.0100595	.1846537	.0161740
#3	.3136737	.0065944	.0235730	.0130146	.1741704	.0244667

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.011754	-.000075	.0030993	15.55006	F 30.72716	.0283631
Stddev	.001047	.000028	.0000929	.06629	.10886	.0003444
%RSD	8.910516	37.70286	2.996675	.4263145	.3542744	1.214379

#1	-.011454	-.000095	.0031207	15.61694	30.70168	.0287064
#2	-.012918	-.000087	.0029976	15.48438	30.84650	.0283654
#3	-.010888	-.000043	.0031797	15.54885	30.63331	.0280175

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0745088	2.680820	.4754462	156.6780	.0901541	-.000017
Stddev	.0009013	.030757	.0002684	.5611	.0011473	.000277
%RSD	1.209680	1.147300	.0564441	.3581308	1.272557	1633.553

#1	.0752517	2.666548	.4752340	156.8736	.0901472	-.000158
#2	.0747687	2.716120	.4757479	156.0453	.0913048	.000302
#3	.0735061	2.659791	.4753567	157.1152	.0890103	-.000195

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 3899.558	-.016704	.1801150	167.7163	1.316590	.0310144
Stddev	29.323	.002336	.0000985	2.0130	.004521	.0002879
%RSD	.7519651	13.98695	.0546905	1.200240	.3434186	.9284416

#1	3918.210	-.019359	.1802251	165.5437	1.318155	.0313452
#2	3914.706	-.015790	.1800846	169.5182	1.311494	.0308775
#3	3865.759	-.014963	.1800352	168.0870	1.320122	.0308204

Sample Name: Q3045-02 Acquired: 9/10/2025 13:47:04 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0291711	-.000494	7.865545	.0488111	F 315.4184	.0312815
Stddev	.0001454	.001179	.046885	.0006955	1.2115	.0007790
%RSD	.4984628	238.6084	.5960795	1.424823	.3840806	2.490419

#1	.0291836	-.001444	7.831395	.0484679	314.9612	.0320263
#2	.0293098	.000826	7.919000	.0483540	316.7919	.0313458
#3	.0290198	-.000864	7.846241	.0496115	314.5021	.0304722

Elem	Sr4077
Units	ppm
Avg	.0719461
Stddev	.0001657
%RSD	.2302658

#1	.0718717
#2	.0718307
#3	.0721359

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4481.556	81411.24	11152.35	3588.527	5011.042
Stddev	29.992	335.66	56.32	20.913	38.963
%RSD	.6692341	.4123054	.5050496	.5827636	.7775515

#1	4456.542	81492.76	11095.84	3571.124	4988.871
#2	4473.319	81042.33	11208.49	3582.731	4988.223
#3	4514.805	81698.64	11152.72	3611.726	5056.031

Sample Name: Q3045-02DUP Acquired: 9/10/2025 13:51:29 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.2791955	.0070558	.0231606	.0060287	.1550206	.0157357
Stddev	.0017045	.0021963	.0009093	.0014223	.0034250	.0097106
%RSD	.6104889	31.12778	3.926261	23.59242	2.209401	61.71066

#1	.2773881	.0085241	.0237878	.0076710	.1515645	.0241376
#2	.2794248	.0045309	.0235762	.0052129	.1584137	.0051042
#3	.2807737	.0081124	.0221177	.0052022	.1550835	.0179651

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.009536	-.000161	.0027953	14.05101	F 27.39788	.0251762
Stddev	.001447	.000055	.0000859	.02727	.14934	.0002324
%RSD	15.16964	34.41944	3.072147	.1940455	.5450655	.9230086

#1	-.010080	-.000148	.0028916	14.07829	27.53624	.0251301
#2	-.007897	-.000222	.0027676	14.05096	27.41782	.0254281
#3	-.010632	-.000113	.0027267	14.02376	27.23958	.0249703

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0651499	2.243182	.4277888	142.1635	.0791862	.0002157
Stddev	.0010562	.029279	.0021775	.6890	.0008854	.0004674
%RSD	1.621202	1.305223	.5090132	.4846387	1.118094	216.6289

#1	.0648473	2.221864	.4293857	142.4491	.0793418	.0007215
#2	.0663243	2.231116	.4286723	142.6638	.0799836	.0001259
#3	.0642780	2.276565	.4253084	141.3777	.0782334	-.000200

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 3432.497	-.015550	.1562837	143.1846	1.225348	.0272311
Stddev	25.620	.002771	.0007717	2.2093	.015423	.0004330
%RSD	.7463863	17.81924	.4937749	1.542946	1.258697	1.590275

#1	3461.589	-.015297	.1568572	142.1826	1.233759	.0270176
#2	3422.600	-.018440	.1565875	141.6538	1.234738	.0277294
#3	3413.302	-.012915	.1554063	145.7172	1.207548	.0269462

Sample Name: Q3045-02DUP Acquired: 9/10/2025 13:51:29 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0193774	.0000512	6.659851	.0414196	F 276.9136	.0277476
Stddev	.0008660	.0012247	.070209	.0028382	4.4289	.0006084
%RSD	4.469249	2392.878	1.054210	6.852290	1.599367	2.192612

#1	.0203518	.0014649	6.622221	.0381569	274.4279	.0273025
#2	.0186954	-.000686	6.616479	.0427834	282.0270	.0274996
#3	.0190851	-.000626	6.740853	.0433184	274.2859	.0284409

Elem	Sr4077
Units	ppm
Avg	.0639731
Stddev	.0001510
%RSD	.2360297

#1	.0641461
#2	.0639051
#3	.0638680

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4714.413	85445.52	10979.18	3787.956	5260.134
Stddev	36.783	111.29	154.65	16.418	38.041
%RSD	.7802285	.1302472	1.408570	.4334256	.7231953

#1	4732.019	85415.90	10899.23	3769.006	5268.272
#2	4672.136	85352.04	10880.87	3797.900	5218.683
#3	4739.085	85568.63	11157.44	3796.963	5293.448

Sample Name: Q3045-02LX5 Acquired: 9/10/2025 13:55:55 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0609225	.0031711	.0058452	.0018404	.0279834	.0117468
Stddev	.0011694	.0030816	.0021267	.0009504	.0021495	.0047206
%RSD	1.919398	97.17679	36.38407	51.63922	7.681360	40.18648
#1	.0597016	.0041982	.0055293	.0027491	.0285321	.0070937
#2	.0610337	-.000293	.0081123	.0019188	.0298055	.0116146
#3	.0620323	.005608	.0038941	.0008533	.0256128	.0165321
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.004336	.0000750	.0007104	3.367853	6.633225	.0060331
Stddev	.001502	.0000336	.0000133	.041091	.028119	.0001280
%RSD	34.63359	44.74911	1.864627	1.220110	.4239097	2.122157
#1	-.003141	.0000978	.0007189	3.415111	6.606119	.0060239
#2	-.006022	.0000907	.0006952	3.340548	6.631299	.0061655
#3	-.003845	.0000365	.0007172	3.347899	6.662257	.0059099
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0159024	.4987772	.1014665	33.83783	.0189471	-.000824
Stddev	.0004320	.0149013	.0009142	.48433	.0004260	.000315
%RSD	2.716697	2.987566	.9009748	1.431324	2.248499	38.24839
#1	.0161265	.4843742	.1024394	34.36263	.0184643	-.000991
#2	.0154044	.5141312	.1013348	33.40806	.0191069	-.001021
#3	.0161764	.4978262	.1006253	33.74278	.0192701	-.000461
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	973.3475	-.006187	.0324741	31.34842	.3162692	.0059780
Stddev	23.5195	.003276	.0002669	1.01577	.0107842	.0001683
%RSD	2.416356	52.94655	.8217447	3.240267	3.409804	2.815094
#1	946.2065	-.009860	.0322080	30.22713	.3280054	.0060434
#2	986.0861	-.003569	.0327417	32.20710	.3067964	.0057868
#3	987.7500	-.005132	.0324726	31.61101	.3140057	.0061037

Sample Name: Q3045-02LX5 Acquired: 9/10/2025 13:55:55 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0064019	.0015771	1.405516	.0093213	F 62.05042	.0171470
Stddev	.0005381	.0005470	.022784	.0004866	.37926	.0044405
%RSD	8.405531	34.68420	1.621027	5.220857	.6112172	25.89697

#1	.0066181	.0009833	1.379209	.0098765	62.45588	.0126237
#2	.0067983	.0020604	1.418405	.0089686	61.99100	.0173175
#3	.0057893	.0016876	1.418934	.0091189	61.70437	.0214999

Elem	Sr4077
Units	ppm
Avg	.0148959
Stddev	.0000814
%RSD	.5464046

#1	.0149879
#2	.0148334
#3	.0148664

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5708.398	100358.7	11728.02	4572.187	6327.012
Stddev	13.469	1251.3	307.81	45.211	25.693
%RSD	.2359547	1.246780	2.624537	.9888229	.4060874

#1	5712.765	101678.2	11466.48	4624.050	6329.784
#2	5693.287	100208.7	12067.22	4541.090	6300.045
#3	5719.141	99189.3	11650.37	4551.421	6351.206

Sample Name: Q3045-02MS Acquired: 9/10/2025 14:00:17 Type: Unk
Method: 6010-200.7 NEW(v160) 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	1.144616	1.627753	.8625053	2.184547	1.022301	1.923323
Stddev	.010762	.061117	.0030381	.025128	.011510	.014646
%RSD	.9401885	3.754670	.3522382	1.150274	1.125887	.7614725
#1	1.144081	1.610088	.8640180	2.190124	1.026125	1.917126
#2	1.134132	1.577414	.8590078	2.157099	1.009365	1.912795
#3	1.155635	1.695756	.8644900	2.206419	1.031412	1.940048
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1670979	.1672891	.1839999	14.90173	F 27.54173	.2089654
Stddev	.0023392	.0018279	.0005167	.13512	.06653	.0011208
%RSD	1.399883	1.092658	.2808058	.9067669	.2415523	.5363739
#1	.1684874	.1676480	.1843042	14.94959	27.46618	.2093245
#2	.1643972	.1653084	.1834034	14.74919	27.56751	.2077090
#3	.1684091	.1689110	.1842923	15.00641	27.59152	.2098626
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3312777	5.651877	.6024074	142.0351	.5311017	.0835074
Stddev	.0013366	.028070	.0052548	1.0234	.0016696	.0003489
%RSD	.4034619	.4966470	.8723017	.7205453	.3143602	.4178081
#1	.3306916	5.652104	.6041065	142.3041	.5317906	.0832178
#2	.3303343	5.679832	.5965132	140.9040	.5291979	.0834096
#3	.3328072	5.623694	.6066023	142.8972	.5323166	.0838947
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 3245.878	.2530980	.3971102	158.5037	1.423533	.4268716
Stddev	42.573	.0060943	.0008379	.8117	.016709	.0031643
%RSD	1.311587	2.407893	.2110132	.5121109	1.173751	.7412801
#1	3234.974	.2576851	.3961715	157.9955	1.424192	.4272865
#2	3292.842	.2461828	.3973766	159.4398	1.406505	.4235204
#3	3209.818	.2554260	.3977827	158.0757	1.439902	.4298081

Sample Name: Q3045-02MS Acquired: 9/10/2025 14:00:17 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.6577554	.1820904	7.782673	6.141813	F 277.8200	.2538304
Stddev	.0022683	.0028085	.054695	.045753	3.0456	.0027919
%RSD	.3448588	1.542383	.7027762	.7449413	1.096243	1.099900
#1	.6593722	.1834451	7.772442	6.166760	278.9664	.2570046
#2	.6551624	.1788613	7.841760	6.089009	274.3676	.2517554
#3	.6587315	.1839647	7.733815	6.169670	280.1260	.2527313
Elem	Sr4077					
Units	ppm					
Avg	.2413854					
Stddev	.0025403					
%RSD	1.052391					
#1	.2429306					
#2	.2384535					
#3	.2427720					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	4724.391	87037.64	11327.53	3796.332	5280.426	
Stddev	35.016	277.87	120.10	14.958	30.236	
%RSD	.7411833	.3192536	1.060222	.3940121	.5726145	
#1	4740.932	87179.54	11304.45	3810.267	5286.737	
#2	4748.074	86717.47	11457.49	3798.203	5307.008	
#3	4684.169	87215.92	11220.64	3780.527	5247.531	

Sample Name: CCV03 Acquired: 9/10/2025 14:04:32 Type: Unk
Method: 6010-200.7 NEW(v160) 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	4.841887	4.832132	4.684950	4.879220	4.859344	9.536409	9.406752
Stddev	.013421	.136989	.001562	.018400	.007647	.026584	.134363
%RSD	.2771814	2.834951	.0333310	.3771089	.1573631	.2787680	1.428366

#1	4.855007	4.968926	4.686556	4.898566	4.850948	9.506550	9.292218
#2	4.828184	4.832518	4.684855	4.861941	4.861176	9.545166	9.373382
#3	4.842470	4.694950	4.683437	4.877152	4.865909	9.557510	9.554655

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2320577	2.356878	23.56510	.9599725	2.358116	1.199609	4.881921
Stddev	.0016810	.003120	.08158	.0020958	.002425	.002899	.011218
%RSD	.7243816	.1323959	.3461719	.2183172	.1028202	.2417009	.2297892

#1	.2303707	2.360478	23.47206	.9575718	2.360187	1.201255	4.892221
#2	.2320700	2.354947	23.59888	.9614370	2.355449	1.196261	4.883575
#3	.2337326	2.355208	23.62436	.9609086	2.358713	1.201311	4.869968

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.343528	23.50740	2.353866	1.205547	26.51875	2.386390	2.419276
Stddev	.013699	.22804	.001375	.000513	.15606	.007601	.011607
%RSD	.5845440	.9700748	.0584272	.0425364	.5885061	.3185354	.4797834

#1	2.328411	23.24529	2.355425	1.205450	26.63309	2.377773	2.406162
#2	2.355119	23.66031	2.352826	1.205090	26.58221	2.389251	2.423433
#3	2.347055	23.61659	2.353347	1.206101	26.34096	2.392146	2.428232

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.68922	4.611998	4.840057	4.730676	4.737979	4.961385	4.813070
Stddev	.06895	.034619	.009886	.015372	.014063	.023702	.008802
%RSD	.2583604	.7506288	.2042550	.3249452	.2968067	.4777314	.1828809

#1	26.60980	4.577525	4.845979	4.748126	4.723373	4.980445	4.821833
#2	26.73376	4.611706	4.828644	4.719136	4.751426	4.968864	4.813149
#3	26.72411	4.646761	4.845546	4.724766	4.739139	4.934845	4.804229

Sample Name: CCV03 Acquired: 9/10/2025 14:04:32 Type: Unk
Method: 6010-200.7 NEW(v160) 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	4.820409	4.609906	4.776817
Stddev	.020971	.012894	.067076
%RSD	.4350408	.2797122	1.404204
#1	4.844586	4.595352	4.699640
#2	4.809490	4.619905	4.809754
#3	4.807150	4.614460	4.821058

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6300.063	111116.2	11908.80	5056.873	7245.102
Stddev	19.075	172.5	86.23	28.656	19.194
%RSD	.3027792	.1552094	.7240745	.5666708	.2649191
#1	6284.348	111293.0	11990.74	5089.230	7224.114
#2	6321.286	111107.2	11916.80	5034.702	7261.761
#3	6294.555	110948.4	11818.84	5046.687	7249.432

Sample Name: CCB03 Acquired: 9/10/2025 14:25:19 Type: Unk
Method: 6010-200.7 NEW(v160) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB03 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.003445	-.002338	-.000876	-.001979	.0003661	.0069334	-.003135
Stddev	.001215	.001017	.000262	.002605	.0008759	.0005106	.000306
%RSD	35.25997	43.50941	29.87635	131.6124	239.2263	7.364517	9.744722

#1	-.002408	-.003508	-.001002	-.003303	-.000642	.0071390	-.003480
#2	-.003146	-.001667	-.000575	-.003656	.000944	.0073092	-.003029
#3	-.004781	-.001839	-.001051	.001022	.000796	.0063521	-.002897

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000043	-.000010	-.004432	.0003259	-.000026	-.000158	.0007980
Stddev	.0000421	.000025	.012610	.0003083	.000060	.000027	.0046118
%RSD	982.9492	245.4598	284.5378	94.59608	228.2953	17.24221	577.9498

#1	.0000502	-.000028	-.014635	.0006816	-.000096	-.000134	-.000009
#2	-.000005	.000018	-.008326	.0001370	.000002	-.000187	-.003357
#3	-.000032	-.000020	.009666	.0001590	.000014	-.000152	.005760

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001254	-.005342	.0005974	-.000607	-.189167	.0012595	-.000215
Stddev	.0006305	.017831	.0001951	.000476	.006988	.0027746	.000110
%RSD	502.9931	333.8209	32.65142	78.40496	3.694001	220.2927	51.21312

#1	.0006508	-.014421	.0007423	-.000126	-.186699	.0026501	-.000142
#2	-.000574	.015202	.0003756	-.000619	-.197054	.0030639	-.000161
#3	.000299	-.016806	.0006743	-.001078	-.183748	-.001935	-.000342

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.276666	-.003824	.0002905	-.015580	.0001497	.0021139	.0011039
Stddev	.023295	.000326	.0002646	.000303	.0005947	.0075711	.0005435
%RSD	8.419835	8.513212	91.08194	1.946411	397.2040	358.1531	49.23800

#1	-.269252	-.003508	.0004118	-.015730	.0001058	.0058911	.0007312
#2	-.257981	-.004159	-.000013	-.015780	.0007651	-.006603	.0017276
#3	-.302766	-.003805	.000473	-.015231	-.000422	.007053	.0008529

Sample Name: CCB03 Acquired: 9/10/2025 14:25:19 Type: Unk
Method: 6010-200.7 NEW(v160) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB03 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.001071	-.008329	.0000274
Stddev	.001296	.001065	.0000654
%RSD	121.0558	12.78245	238.9983

#1	-.000060	-.007272	-.000038
#2	-.000620	-.008314	.000093
#3	-.002533	-.009402	.000026

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6651.749	120849.5	12621.55	5391.861	8138.368
Stddev	14.280	196.4	56.48	2.566	29.715
%RSD	.2146792	.1625447	.4474776	.0475828	.3651228

#1	6667.056	120766.2	12653.47	5389.204	8168.867
#2	6649.404	121073.9	12556.33	5392.056	8136.732
#3	6638.787	120708.4	12654.83	5394.324	8109.505

Sample Name: Q3045-02MSD Acquired: 9/10/2025 14:29:37 Type: Unk
Method: 6010-200.7 NEW(v160) 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	1.030931	1.471830	.7823759	1.916921	.9138886	1.691013
Stddev	.006665	.042761	.0033295	.009062	.0011569	.006207
%RSD	.6464839	2.905270	.4255586	.4727195	.1265913	.3670598
#1	1.033874	1.511830	.7860510	1.924843	.9125638	1.694369
#2	1.023302	1.426760	.7795607	1.907040	.9144025	1.683851
#3	1.035619	1.476900	.7815161	1.918880	.9146996	1.694821
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1522193	.1459302	.1668090	14.04433	F 25.75974	.1894721
Stddev	.0013660	.0019626	.0005594	.08353	.24700	.0006160
%RSD	.8973980	1.344913	.3353290	.5947318	.9588521	.3251314
#1	.1537356	.1464271	.1669818	14.13204	26.00881	.1901239
#2	.1510849	.1475965	.1661836	14.03522	25.51487	.1888995
#3	.1518373	.1437668	.1672614	13.96573	25.75555	.1893928
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3009761	5.258212	.5626104	133.2047	.4840902	.0749047
Stddev	.0005902	.119320	.0036567	.7590	.0013013	.0006314
%RSD	.1960853	2.269212	.6499472	.5697637	.2688132	.8429266
#1	.3003374	5.244411	.5667167	133.7550	.4848681	.0746575
#2	.3010897	5.146393	.5614087	133.5201	.4825879	.0744342
#3	.3015012	5.383833	.5597058	132.3389	.4848146	.0756222
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 3336.325	.2292944	.3755579	152.1487	1.307910	.3749768
Stddev	43.975	.0030497	.0020504	4.1035	.021867	.0004377
%RSD	1.318070	1.330022	.5459723	2.697058	1.671892	.1167358
#1	3313.452	.2324624	.3737161	151.5232	1.314855	.3750520
#2	3308.500	.2263788	.3751904	148.3938	1.325460	.3745064
#3	3387.022	.2290420	.3777673	156.5290	1.283414	.3753721

Sample Name: Q3045-02MSD Acquired: 9/10/2025 14:29:37 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.5947286	.1630627	7.421650	5.520747	F 263.6033	.2359333
Stddev	.0023973	.0008720	.133171	.032767	2.2425	.0024857
%RSD	.4030995	.5347669	1.794360	.5935329	.8506984	1.053549
#1	.5944847	.1640390	7.432952	5.533273	264.3610	.2387184
#2	.5924625	.1623611	7.283189	5.483564	261.0801	.2339399
#3	.5972385	.1627880	7.548811	5.545404	265.3688	.2351415

Elem	Sr4077
Units	ppm
Avg	.2237803
Stddev	.0017170
%RSD	.7672918
#1	.2257251
#2	.2224740
#3	.2231417

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4791.653	88611.62	11889.50	3838.072	5316.607
Stddev	7.699	1349.44	96.93	38.851	5.186
%RSD	.1606748	1.522872	.8152478	1.012257	.0975492
#1	4800.231	88904.00	11868.31	3844.975	5322.579
#2	4785.343	89790.90	11804.92	3873.009	5314.005
#3	4789.386	87139.96	11995.27	3796.232	5313.238

Sample Name: Q3045-02A Acquired: 9/10/2025 14:33:52 Type: Unk
Method: 6010-200.7 NEW(v160) 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	1.148690	1.743744	.8845067	2.190066	1.032955	1.920845
Stddev	.003134	.039435	.0041404	.009904	.000526	.009848
%RSD	.2728638	2.261493	.4680976	.4522068	.0508792	.5126815

#1	1.152308	1.786953	.8892813	2.178713	1.033117	1.932154
#2	1.146794	1.734585	.8819080	2.194546	1.033380	1.914162
#3	1.146967	1.709695	.8823307	2.196937	1.032367	1.916218

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1757306	.1742019	.1880453	15.26901	F 28.08922	.2123119
Stddev	.0023795	.0038550	.0011292	.16022	.20774	.0009766
%RSD	1.354064	2.212920	.6004714	1.049293	.7395688	.4599936

#1	.1782441	.1779994	.1893469	15.44548	28.09470	.2134351
#2	.1754351	.1743144	.1873292	15.22889	27.87879	.2118375
#3	.1735127	.1702919	.1874597	15.13267	28.29416	.2116631

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3323118	5.601828	.6187872	147.6449	.5413800	.0847344
Stddev	.0013128	.090454	.0054074	1.7559	.0033594	.0001354
%RSD	.3950472	1.614720	.8738645	1.189304	.6205171	.1597845

#1	.3338276	5.515141	.6240162	149.6386	.5452522	.0847810
#2	.3315420	5.594714	.6191279	146.9676	.5392438	.0848402
#3	.3315657	5.695628	.6132176	146.3285	.5396441	.0845818

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 3414.206	.2649921	.3850832	163.5367	1.480697	.4348005
Stddev	44.525	.0026993	.0023379	3.6607	.034800	.0007133
%RSD	1.304099	1.018650	.6071130	2.238488	2.350231	.1640505

#1	3460.295	.2618935	.3827652	159.8433	1.513378	.4356169
#2	3371.430	.2662483	.3874405	163.6028	1.484603	.4342978
#3	3410.895	.2668344	.3850439	167.1639	1.444109	.4344868

Sample Name: Q3045-02A Acquired: 9/10/2025 14:33:52 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.6825395	.1869387	7.916688	6.326599	F 282.1834	.2688986
Stddev	.0066738	.0013820	.102840	.029068	1.5781	.0004328
%RSD	.9777819	.7392934	1.299022	.4594597	.5592639	.1609545

#1	.6902439	.1885344	7.812653	6.358175	283.8375	.2691582
#2	.6785445	.1861243	7.919122	6.320668	282.0186	.2683990
#3	.6788300	.1861575	8.018289	6.300954	280.6941	.2691387

Elem	Sr4077
Units	ppm
Avg	.2504727
Stddev	.0011892
%RSD	.4747661

#1	.2515737
#2	.2506327
#3	.2492116

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4716.204	85455.55	10947.24	3791.932	5241.866
Stddev	21.925	472.04	257.08	13.929	26.056
%RSD	.4648899	.5523779	2.348397	.3673370	.4970843

#1	4694.669	85200.99	10659.41	3786.614	5212.109
#2	4738.499	86000.22	11028.23	3807.737	5260.595
#3	4715.446	85165.43	11154.07	3781.446	5252.895

Sample Name: Q3045-02DLX5 Acquired: 9/10/2025 14:41:46 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0584813	.0044274	.0056393	.0036327	.0297465	.0012314
Stddev	.0031522	.0042562	.0008448	.0031163	.0027760	.0089591
%RSD	5.390102	96.13406	14.97995	85.78328	9.332134	727.5788
#1	.0587843	.0056569	.0055569	.0070024	.0295239	.0081045
#2	.0551886	.0079336	.0048388	.0030412	.0326270	-.008901
#3	.0614711	-.000308	.0065223	.0008546	.0270885	.004491
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.005801	.0000785	.0006416	3.171532	6.320326	.0057913
Stddev	.000400	.0000275	.0000095	.019897	.024077	.0001222
%RSD	6.902823	34.97067	1.481092	.6273771	.3809413	2.110036
#1	-.005448	.0000663	.0006520	3.194499	6.347925	.0057374
#2	-.006236	.0001100	.0006334	3.159523	6.309428	.0059312
#3	-.005720	.0000593	.0006393	3.160573	6.303625	.0057053
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0151648	.4766757	.0952429	31.79601	.0179149	-.000542
Stddev	.0002066	.0109128	.0008095	.31116	.0002422	.000604
%RSD	1.362054	2.289344	.8498952	.9786214	1.352030	111.5062
#1	.0152327	.4641036	.0960361	32.14858	.0180704	-.000824
#2	.0149329	.4837008	.0944181	31.55979	.0180384	-.000953
#3	.0153289	.4822225	.0952746	31.67966	.0176358	.000152
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	918.2776	-.005561	.0308379	29.90169	.2933827	.0058834
Stddev	1.8901	.001881	.0001391	.84780	.0062353	.0002968
%RSD	.2058298	33.82030	.4509891	2.835293	2.125326	5.044973
#1	919.9957	-.006656	.0308390	28.93127	.3002978	.0059988
#2	918.5841	-.003390	.0306983	30.27518	.2881887	.0061052
#3	916.2530	-.006638	.0309764	30.49862	.2916615	.0055462

Sample Name: Q3045-02DLX5 Acquired: 9/10/2025 14:41:46 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0065104	-.000451	1.325990	.0094385	F 58.97287	.0169244
Stddev	.0009457	.000498	.004856	.0000661	.12235	.0036867
%RSD	14.52549	110.2523	.3662001	.7002137	.2074604	21.78363

#1	.0062470	.000122	1.320649	.0094010	58.90530	.0137436
#2	.0075599	-.000769	1.330138	.0095148	59.11410	.0160645
#3	.0057244	-.000707	1.327183	.0093996	58.89922	.0209650

Elem	Sr4077
Units	ppm
Avg	.0140163
Stddev	.0000554
%RSD	.3949398

#1	.0140451
#2	.0139524
#3	.0140512

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5771.809	100785.7	11946.03	4674.128	6381.264
Stddev	40.032	714.2	260.67	32.403	52.052
%RSD	.6935769	.7086209	2.182040	.6932390	.8157061

#1	5754.037	100606.4	11680.83	4653.941	6358.003
#2	5743.739	101572.4	12201.92	4711.503	6344.897
#3	5817.650	100178.2	11955.32	4656.939	6440.890

Sample Name: Q3045-02DUPDLX5 Acquired: 9/10/2025 14:46:08 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0544132	.0045112	.0044655	-.000820	.0232382	-.002585
Stddev	.0033538	.0005510	.0014564	.000448	.0026526	.008127
%RSD	6.163579	12.21488	32.61357	54.62922	11.41493	314.3803
#1	.0582533	.0040964	.0029117	-.001245	.0252662	-.002274
#2	.0520593	.0043009	.0046854	-.000352	.0242122	.005382
#3	.0529270	.0051365	.0057994	-.000865	.0202363	-.010863
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.005286	.0000687	.0006282	3.109983	6.182214	.0055781
Stddev	.000426	.0000672	.0000553	.024866	.024438	.0002307
%RSD	8.050006	97.79697	8.798265	.7995517	.3952884	4.135547
#1	-.004795	.0000267	.0006162	3.118124	6.154564	.0057887
#2	-.005545	.0001462	.0005799	3.129757	6.200917	.0056139
#3	-.005519	.0000332	.0006885	3.082066	6.191160	.0053316
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0143568	.4535560	.0937785	31.25588	.0175111	-.000523
Stddev	.0002767	.0046886	.0009612	.25387	.0001549	.000127
%RSD	1.927493	1.033745	1.024983	.8122246	.8843639	24.34922
#1	.0142195	.4565253	.0945258	31.48173	.0176715	-.000550
#2	.0141755	.4559919	.0941156	31.30479	.0174992	-.000635
#3	.0146753	.4481508	.0926941	30.98112	.0173625	-.000384
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	858.3212	-.005665	.0294751	28.36825	.2975546	.0057106
Stddev	12.7754	.000203	.0001853	.58829	.0047549	.0003595
%RSD	1.488421	3.590226	.6284882	2.073769	1.597997	6.295848
#1	843.5814	-.005885	.0292955	27.69291	.3026798	.0061204
#2	866.2068	-.005627	.0296656	28.76934	.2966973	.0054483
#3	865.1753	-.005484	.0294642	28.64250	.2932867	.0055631

Sample Name: Q3045-02DUPDLX5 Acquired: 9/10/2025 14:46:08 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0050500	.0008139	1.277275	.0086478	F 57.53737	.0206011
Stddev	.0004027	.0003971	.018420	.0036237	.62364	.0008002
%RSD	7.973769	48.79396	1.442161	41.90363	1.083892	3.884189
#1	.0050199	.0007077	1.262335	.0061021	58.24777	.0197275
#2	.0046632	.0004807	1.297856	.0070447	57.28432	.0212984
#3	.0054668	.0012534	1.271634	.0127966	57.08003	.0207775
Elem	Sr4077					
Units	ppm					
Avg	.0137390					
Stddev	.0000678					
%RSD	.4933686					
#1	.0138045					
#2	.0137434					
#3	.0136692					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	5782.087	100168.7	11578.49	4603.879	6413.969	
Stddev	26.217	1101.0	60.90	27.298	40.154	
%RSD	.4534224	1.099101	.5260047	.5929303	.6260438	
#1	5768.982	101438.7	11524.81	4635.393	6410.305	
#2	5765.005	99583.5	11565.98	4588.688	6375.772	
#3	5812.273	99484.0	11644.68	4587.557	6455.830	

Sample Name: Q3045-02LDLX25 Acquired: 9/10/2025 14:50:32 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0117973	.0015158	.0000233	.0009669	.0065010	.0084116
Stddev	.0011852	.0010256	.0008864	.0004755	.0015958	.0119110
%RSD	10.04663	67.66248	3808.613	49.17780	24.54673	141.6024

#1	.0111703	.0004148	-.000996	.0014446	.0083161	.0095759
#2	.0131644	.0024442	.000452	.0009626	.0058683	.0196977
#3	.0110573	.0016884	.000614	.0004936	.0053186	-.004039

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001870	.0001216	.0001463	.6368365	1.240029	.0010422
Stddev	.000488	.0000422	.0000506	.0006545	.006267	.0000338
%RSD	26.11497	34.74716	34.61647	.1027756	.5053859	3.246257

#1	-.001317	.0000728	.0000903	.6371440	1.239392	.0010707
#2	-.002049	.0001469	.0001596	.6360848	1.234105	.0010509
#3	-.002242	.0001451	.0001889	.6372806	1.246590	.0010048

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0028795	.0932521	.0188634	6.355410	.0036670	-.000798
Stddev	.0004534	.0030259	.0009203	.032667	.0002259	.000510
%RSD	15.74607	3.244843	4.878644	.5139954	6.160672	63.85994

#1	.0033985	.0911041	.0178067	6.339283	.0034822	-.001240
#2	.0025603	.0967126	.0192946	6.393004	.0039188	-.000240
#3	.0026798	.0919395	.0194889	6.333944	.0035998	-.000915

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	177.4766	-.001178	.0053906	7.268437	.0601475	.0012652
Stddev	3.4421	.001239	.0003332	.339226	.0017580	.0001233
%RSD	1.939446	105.1212	6.180436	4.667116	2.922907	9.747141

#1	175.5997	-.000349	.0055697	6.896564	.0621690	.0012472
#2	175.3808	-.000584	.0055959	7.347804	.0592972	.0011519
#3	181.4491	-.002602	.0050062	7.560944	.0589762	.0013966

Sample Name: Q3045-02LDLX25 Acquired: 9/10/2025 14:50:32 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0013677	.0011581	.2434387	.0025540	F 11.20673	.0127878
Stddev	.0003413	.0006520	.0067195	.0013515	.03568	.0015095
%RSD	24.95042	56.29751	2.760254	52.91591	.3183413	11.80416
#1	.0014579	.0014530	.2385324	.0040467	11.23940	.0114576
#2	.0016548	.0004108	.2406863	.0022019	11.16866	.0124773
#3	.0009904	.0016106	.2510974	.0014135	11.21213	.0144283

Elem	Sr4077
Units	ppm
Avg	.0027257
Stddev	.0000185
%RSD	.6790949
#1	.0027256
#2	.0027072
#3	.0027442

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6239.968	107281.9	11755.78	4973.139	7149.534
Stddev	55.068	1248.0	166.23	40.598	71.759
%RSD	.8825090	1.163305	1.414030	.8163516	1.003686
#1	6177.535	108215.9	11563.96	4982.460	7070.392
#2	6260.737	107765.3	11845.71	5008.267	7167.852
#3	6281.631	105864.5	11857.68	4928.691	7210.359

Sample Name: Q3045-02MSDLX5 Acquired: 9/10/2025 14:54:52 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.2191442	.3803115	.1926678	.4033450	.1807333	.4249879
Stddev	.0033056	.0115880	.0029669	.0076143	.0052286	.0091728
%RSD	1.508430	3.046983	1.539929	1.887798	2.893016	2.158356

#1	.2222041	.3859709	.1950679	.4089475	.1834006	.4355612
#2	.2195904	.3879823	.1935850	.4064120	.1840904	.4202414
#3	.2156382	.3669813	.1893506	.3946754	.1747089	.4191609

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0360990	.0405114	.0401637	3.521440	6.522923	.0451198
Stddev	.0006370	.0004681	.0007742	.044347	.032669	.0010460
%RSD	1.764629	1.155490	1.927584	1.259334	.5008324	2.318230

#1	.0353692	.0403941	.0408093	3.572577	6.552643	.0462087
#2	.0363842	.0410270	.0403764	3.493551	6.528184	.0450278
#3	.0365436	.0401132	.0393054	3.498193	6.487944	.0441228

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0720805	1.139099	.1404125	33.74324	.1165644	.0153845
Stddev	.0011532	.014558	.0019889	.20260	.0027810	.0003016
%RSD	1.599833	1.278047	1.416465	.6004214	2.385782	1.960418

#1	.0732357	1.155902	.1426629	33.97695	.1193340	.0154596
#2	.0720762	1.131129	.1396839	33.63541	.1165869	.0150525
#3	.0709294	1.130266	.1388906	33.61736	.1137722	.0156415

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	880.4261	.0550677	.0780847	29.38794	.3798595	.0862664
Stddev	23.6853	.0010767	.0004783	.49004	.0039171	.0016037
%RSD	2.690211	1.955223	.6125044	1.667503	1.031197	1.859007

#1	903.0005	.0543836	.0786205	29.89997	.3774652	.0877944
#2	882.5101	.0545108	.0779325	28.92332	.3843799	.0864083
#3	855.7676	.0563088	.0777010	29.34053	.3777333	.0845965

Sample Name: Q3045-02MSDLX5 Acquired: 9/10/2025 14:54:52 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.1426150	.0424331	1.505461	1.246500	F 58.26552	.0599060
Stddev	.0029183	.0003629	.021806	.024596	1.32408	.0000419
%RSD	2.046270	.8552116	1.448446	1.973228	2.272496	.0699847

#1	.1454659	.0420969	1.530272	1.268564	59.56377	.0599316
#2	.1427453	.0428178	1.489340	1.250956	58.31574	.0598576
#3	.1396337	.0423846	1.496771	1.219980	56.91704	.0599287

Elem	Sr4077
Units	ppm
Avg	.0546786
Stddev	.0011315
%RSD	2.069366

#1	.0559340
#2	.0543643
#3	.0537374

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5895.149	101457.0	11189.57	4621.004	6544.612
Stddev	22.472	425.9	146.33	21.172	26.801
%RSD	.3811931	.4197518	1.307700	.4581586	.4095116

#1	5894.925	101262.6	11258.40	4596.955	6542.792
#2	5872.790	101163.0	11021.51	4629.224	6518.767
#3	5917.732	101945.3	11288.78	4636.833	6572.276

Sample Name: Q3045-02MSDDLX5 Acquired: 9/10/2025 14:59:07 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.2052051	.3390805	.1764361	.3705687	.1625933	.3838154
Stddev	.00711110	.0072739	.0082383	.0136345	.0120931	.0084911
%RSD	3.465303	2.145178	4.669282	3.679337	7.437666	2.212299
#1	.2128522	.3454367	.1849861	.3851908	.1761618	.3852071
#2	.2039716	.3406573	.1757727	.3683118	.1586667	.3915248
#3	.1987916	.3311476	.1685496	.3582035	.1529514	.3747144
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0339582	.0361071	.0368220	3.341107	6.311636	.0415566
Stddev	.0019444	.0008610	.0016242	.038509	.035351	.0018609
%RSD	5.725837	2.384523	4.410851	1.152595	.5600865	4.478079
#1	.0361869	.0368996	.0384615	3.341244	6.337932	.0434857
#2	.0330788	.0362309	.0367908	3.379548	6.325527	.0414119
#3	.0326089	.0351910	.0352136	3.302530	6.271450	.0397723
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0660591	1.064067	.1310777	32.10117	.1070111	.0142759
Stddev	.0024667	.009456	.0015488	.40393	.0046618	.0003117
%RSD	3.734122	.8886923	1.181576	1.258312	4.356361	2.183281
#1	.0687579	1.053635	.1302141	32.44072	.1119167	.0140260
#2	.0654986	1.066491	.1328657	32.20833	.1064777	.0146251
#3	.0639209	1.072076	.1301533	31.65446	.1026390	.0141764
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	882.6105	.0514722	.0746508	28.99991	.3517971	.0772214
Stddev	22.5766	.0036795	.0004303	.62547	.0074888	.0036676
%RSD	2.557933	7.148551	.5763705	2.156812	2.128720	4.749511
#1	896.6203	.0473227	.0746483	28.36071	.3578314	.0812226
#2	856.5663	.0527564	.0742218	29.02835	.3541440	.0764229
#3	894.6450	.0543375	.0750824	29.61068	.3434160	.0740188

Sample Name: Q3045-02MSDDLX5 Acquired: 9/10/2025 14:59:07 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.1312187	.0372675	1.455195	1.143571	F 55.92047	.0569507
Stddev	.0052362	.0003785	.009606	.041060	2.31110	.0016815
%RSD	3.990420	1.015599	.6601342	3.590488	4.132840	2.952573
#1	.1360799	.0376739	1.446034	1.186090	58.37882	.0553454
#2	.1319016	.0372037	1.465192	1.140475	55.59051	.0586993
#3	.1256745	.0369250	1.454361	1.104146	53.79208	.0568074

Elem	Sr4077
Units	ppm
Avg	.0500966
Stddev	.0005106
%RSD	1.019214
#1	.0498330
#2	.0506852
#3	.0497717

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5678.918	98270.43	11262.61	4564.914	6285.826
Stddev	56.452	482.18	273.56	28.593	62.594
%RSD	.9940629	.4906683	2.428919	.6263592	.9957889
#1	5614.345	97819.50	11015.90	4532.674	6216.683
#2	5703.488	98213.06	11215.14	4574.870	6302.167
#3	5718.921	98778.73	11556.80	4587.197	6338.628

Sample Name: Q3045-02ADLX5 Acquired: 9/10/2025 15:03:24 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.2215219	.3781440	.1942671	.4091353	.1872126	.3918833
Stddev	.0023795	.0033275	.0014900	.0130286	.0061860	.0091994
%RSD	1.074178	.8799590	.7669695	3.184427	3.304264	2.347481
#1	.2234096	.3743256	.1939250	.4232587	.1943043	.3843871
#2	.2223073	.3804233	.1958984	.4065615	.1829274	.4021494
#3	.2188490	.3796831	.1929779	.3975856	.1844059	.3891134
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0348944	.0375980	.0404761	3.321941	6.415967	.0454510
Stddev	.0016132	.0011348	.0003330	.060119	.118287	.0004317
%RSD	4.622960	3.018170	.8227646	1.809764	1.843637	.9498100
#1	.0332324	.0365004	.0407043	3.253399	6.335731	.0456706
#2	.0364538	.0387666	.0406299	3.365739	6.551811	.0457287
#3	.0349970	.0375269	.0400939	3.346686	6.360359	.0449536
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0720380	1.121870	.1324993	31.83320	.1170505	.0155207
Stddev	.0007640	.016332	.0023566	.77430	.0006254	.0003399
%RSD	1.060481	1.455817	1.778606	2.432361	.5342789	2.189777
#1	.0729121	1.107207	.1299843	30.96959	.1176382	.0153064
#2	.0714985	1.139473	.1346567	32.46543	.1171201	.0153432
#3	.0717033	1.118930	.1328568	32.06458	.1163932	.0159126
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	902.9025	.0565188	.0745326	29.91320	.3525753	.0870613
Stddev	11.6277	.0023957	.0010365	.20557	.0098096	.0009352
%RSD	1.287809	4.238840	1.390678	.6872358	2.782262	1.074212
#1	899.5425	.0541369	.0736225	29.72172	.3431781	.0879518
#2	915.8401	.0564912	.0756608	29.88745	.3627508	.0871453
#3	893.3248	.0589282	.0743144	30.13044	.3517971	.0860870

Sample Name: Q3045-02ADLX5 Acquired: 9/10/2025 15:03:24 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.1462584	.0397511	1.502391	1.257613	F 58.53232	.0596944
Stddev	.0015861	.0016508	.011013	.011832	.69777	.0021274
%RSD	1.084451	4.152793	.7330591	.9408438	1.192110	3.563769
#1	.1468403	.0383001	1.492479	1.270336	59.26712	.0572609
#2	.1474713	.0394060	1.514247	1.255566	58.45117	.0606204
#3	.1444635	.0415471	1.500447	1.246939	57.87868	.0612018

Elem	Sr4077
Units	ppm
Avg	.0525498
Stddev	.0005450
%RSD	1.037148
#1	.0519206
#2	.0528745
#3	.0528543

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5760.135	97360.49	11422.08	4510.656	6381.765
Stddev	20.772	1499.88	316.11	85.892	42.874
%RSD	.3606113	1.540544	2.767566	1.904204	.6718205
#1	5777.358	98520.67	11744.69	4567.387	6426.283
#2	5737.067	95666.79	11112.89	4411.837	6340.751
#3	5765.979	97894.01	11408.67	4552.743	6378.261

Sample Name: PB169634BS Acquired: 9/10/2025 15:17:41 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.7331225	2.016069	.9021758	1.862875	.7552967	1.934154
Stddev	.0008210	.019574	.0007976	.005157	.0004138	.013161
%RSD	.1119878	.9709226	.0884107	.2768179	.0547902	.6804667

#1	.7340165	2.030940	.9024001	1.868761	.7557745	1.928834
#2	.7324024	2.023374	.9028372	1.860708	.7550512	1.949142
#3	.7329485	1.993892	.9012900	1.859155	.7550645	1.924484

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1875946	.1963493	.1803313	.9753008	.3851540	.1836467
Stddev	.0025381	.0009246	.0005614	.0161148	.0009529	.0001058
%RSD	1.352974	.4708852	.3113094	1.652292	.2474091	.0576284

#1	.1884166	.1953706	.1797248	.9567475	.3852191	.1835316
#2	.1896199	.1972081	.1804363	.9833451	.3860727	.1837398
#3	.1847474	.1964692	.1808327	.9858098	.3841702	.1836687

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2873241	2.803336	.1936762	1.959890	.4579699	.0719503
Stddev	.0007501	.020940	.0013713	.030581	.0007126	.0003009
%RSD	.2610464	.7469814	.7080490	1.560339	.1556043	.4181942

#1	.2867963	2.812102	.1928045	1.953045	.4571471	.0718519
#2	.2869933	2.818469	.1952569	1.993314	.4583927	.0717109
#3	.2881827	2.779437	.1929673	1.933313	.4583698	.0722880

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.407736	.2895045	.1989247	9.923624	.2876428	.3914030
Stddev	.056419	.0038835	.0001023	.046635	.0021085	.0005687
%RSD	1.655620	1.341432	.0514483	.4699420	.7330190	.1452937

#1	3.345333	.2920352	.1988065	9.875281	.2865590	.3911547
#2	3.455139	.2914452	.1989810	9.927252	.2900727	.3910007
#3	3.422736	.2850332	.1989865	9.968339	.2862966	.3920536

Sample Name: PB169634BS Acquired: 9/10/2025 15:17:41 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.6462760	.1877565	.8409449	5.168006	F .0076229	.1995935
Stddev	.0015003	.0010430	.0054544	.007013	.0003565	.0025644
%RSD	.2321442	.5554939	.6486025	.1356916	4.676475	1.284797

#1	.6450649	.1873708	.8367753	5.169122	.0079236	.1970536
#2	.6458087	.1889373	.8471176	5.160503	.0077161	.1995453
#3	.6479543	.1869612	.8389417	5.174394	.0072291	.2021816

Elem	Sr4077
Units	ppm
Avg	.1892194
Stddev	.0011491
%RSD	.6072862

#1	.1890514
#2	.1904433
#3	.1881636

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6500.770	111023.0	11118.99	5075.766	7859.955
Stddev	17.204	331.7	34.11	15.563	21.214
%RSD	.2646454	.2988083	.3067885	.3066142	.2699025

#1	6520.372	110756.3	11137.83	5063.524	7884.214
#2	6493.764	110918.3	11079.61	5070.494	7844.879
#3	6488.175	111394.5	11139.52	5093.280	7850.773

Sample Name: PB169634BL Acquired: 9/10/2025 15:23:04 Type: Unk
Method: 6010-200.7 NEW(v160) 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	-.001534	.0044875	.0010504	-.001328	.0011711	.0104500	.0012121
Stddev	.000903	.0019543	.0012177	.002841	.0007492	.0086285	.0001367
%RSD	58.87787	43.55042	115.9265	213.9540	63.97337	82.56911	11.27995

#1	-.001782	.0024975	.0017021	.001950	.0003453	.0026066	.0013616
#2	-.000533	.0045609	.0018035	-.003084	.0018072	.0090509	.0010935
#3	-.002287	.0064041	-.000354	-.002850	.0013610	.0196926	.0011812

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000166	.0000056	-.006390	.0002606	-.000051	.0000887	.0043538
Stddev	.0000162	.0000242	.008980	.0002703	.000122	.0004514	.0013586
%RSD	97.70152	433.6786	140.5386	103.7563	237.4117	509.0424	31.20526

#1	.0000312	.0000169	-.002088	-.000018	-.000055	-.000119	.0051225
#2	-.000001	-.000022	-.016711	.000278	.000072	-.000221	.0051537
#3	.000019	.000022	-.000369	.000522	-.000172	.000607	.0027851

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000202	.0083308	.0002548	-.000516	-.171340	-.001692	.0000681
Stddev	.000509	.0184678	.0002517	.000440	.009457	.001839	.0002914
%RSD	251.5722	221.6798	98.78879	85.27467	5.519246	108.6898	427.7375

#1	-.000486	.0184367	.0004891	-.000839	-.160994	-.002031	-.000131
#2	-.000506	-.012984	.0002867	-.000015	-.173486	-.003339	-.000067
#3	.000385	.019540	-.000011	-.000695	-.179539	.000293	.000403

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.338660	-.003321	.0003904	-.015610	.0000052	.0051551	-.001084
Stddev	.029910	.000328	.0001189	.000454	.0015843	.0119224	.000761
%RSD	8.831748	9.860750	30.43972	2.911575	30458.47	231.2770	70.27271

#1	-.304123	-.003546	.0005216	-.015532	-.001399	-.001942	-.000324
#2	-.356050	-.003472	.0002900	-.015199	.001723	.018920	-.001847
#3	-.355806	-.002946	.0003597	-.016098	-.000308	-.001512	-.001079

Sample Name: PB169634BL Acquired: 9/10/2025 15:23:04 Type: Unk
Method: 6010-200.7 NEW(v160) 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	-.002926	-.006283	-.000004
Stddev	.001733	.001367	.000055
%RSD	59.23481	21.76078	1299.993

#1	-.004765	-.007609	.000026
#2	-.001323	-.004878	.000029
#3	-.002689	-.006361	-.000068

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6297.472	111575.4	11044.21	5100.482	7579.398
Stddev	63.496	657.5	146.40	32.920	76.360
%RSD	1.008282	.5893225	1.325543	.6454305	1.007469

#1	6225.017	110819.3	11210.66	5063.856	7493.845
#2	6323.980	111894.2	10986.47	5109.984	7603.700
#3	6343.419	112012.8	10935.48	5127.606	7640.649

Sample Name: CCV04 Acquired: 9/10/2025 15:27:22 Type: Unk
Method: 6010-200.7 NEW(v160) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV04 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.806747	4.516240	4.765560	4.816096	4.856942	9.734410	9.484472
Stddev	.006328	.109844	.018304	.005064	.013271	.060154	.221311
%RSD	.1316448	2.432203	.3840922	.1051529	.2732475	.6179540	2.333407

#1	4.799503	4.624156	4.757861	4.815768	4.849438	9.665942	9.354542
#2	4.811199	4.520000	4.752363	4.811204	4.849122	9.758513	9.358867
#3	4.809537	4.404564	4.786456	4.821317	4.872265	9.778775	9.740008

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2437689	2.379419	24.18393	.9868579	2.389982	1.202229	4.810956
Stddev	.0009975	.006086	.09494	.0041446	.006304	.005132	.010038
%RSD	.4091914	.2557643	.3925545	.4199840	.2637867	.4268931	.2086514

#1	.2431672	2.375923	24.07881	.9838109	2.384954	1.197461	4.799526
#2	.2432192	2.375887	24.20954	.9851852	2.387938	1.201564	4.818338
#3	.2449203	2.386446	24.26343	.9915775	2.397055	1.207661	4.815005

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.404634	24.32122	2.379208	1.221650	23.36845	2.433827	2.475808
Stddev	.004455	.11430	.008759	.005684	.10927	.009182	.011720
%RSD	.1852494	.4699691	.3681563	.4652557	.4675859	.3772502	.4733810

#1	2.400830	24.21418	2.374055	1.219287	23.47425	2.426677	2.477539
#2	2.409534	24.30788	2.374248	1.217528	23.25602	2.444182	2.463319
#3	2.403538	24.44161	2.389322	1.228134	23.37509	2.430624	2.486567

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.15195	4.864333	4.952996	4.817210	4.829223	4.863968	4.793948
Stddev	.12680	.016455	.013001	.004762	.005265	.045940	.025636
%RSD	.5249969	.3382855	.2624845	.0988566	.1090144	.9444868	.5347505

#1	24.06235	4.850810	4.941195	4.813571	4.825005	4.816745	4.819707
#2	24.09648	4.859534	4.950859	4.815460	4.827541	4.866652	4.793700
#3	24.29703	4.882654	4.966932	4.822600	4.835123	4.908507	4.768437

Sample Name: CCV04 Acquired: 9/10/2025 15:27:22 Type: Unk
Method: 6010-200.7 NEW(v160) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV04 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.653714	4.653180	4.812824
Stddev	.024314	.012165	.031230
%RSD	.5224713	.2614305	.6488973
#1	4.679419	4.639211	4.777211
#2	4.650641	4.658889	4.835542
#3	4.631082	4.661440	4.825718

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6221.950	106658.9	10985.02	4884.662	7186.552
Stddev	35.362	491.6	69.41	19.552	33.258
%RSD	.5683495	.4608759	.6318850	.4002662	.4627809
#1	6250.165	107180.1	11064.59	4902.988	7206.940
#2	6233.404	106592.9	10953.55	4886.919	7204.543
#3	6182.280	106203.6	10936.91	4864.081	7148.174

Sample Name: CCB04 Acquired: 9/10/2025 15:31:33 Type: Unk
Method: 6010-200.7 NEW(v160) 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	-.004542	.0054518	.0012417	-.000894	.0010670	-.000379	.0024574
Stddev	.002159	.0014239	.0004232	.001567	.0020284	.015648	.0006220
%RSD	47.54449	26.11875	34.07957	175.3115	190.1076	4127.107	25.31123

#1	-.002790	.0070368	.0014846	.000914	-.000607	-.001644	.0031629
#2	-.003881	.0050381	.0014876	-.001871	.003323	.015863	.0019880
#3	-.006954	.0042805	.0007531	-.001726	.000485	-.015357	.0022213

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000250	.0000812	.0013082	.0003244	.0000629	.0001053	.0009227
Stddev	.0000667	.0000662	.0027757	.0003013	.0001609	.0001248	.0120565
%RSD	266.6265	81.51358	212.1725	92.86653	255.7046	118.5109	1306.587

#1	.0000571	.0000151	.0040395	.0000512	-.000117	.0001798	.0027499
#2	.0000696	.0001476	-.001510	.0006475	.000111	.0001748	-.011943
#3	-.000052	.0000810	.001395	.0002745	.000194	-.000039	.011961

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001063	-.004389	.0007030	-.000187	-.203972	-.001578	-.000066
Stddev	.0009268	.015308	.0002676	.000423	.007236	.000729	.000320
%RSD	871.7528	348.7898	38.07000	226.3789	3.547699	46.21158	484.1941

#1	-.000665	-.014795	.0004874	.000027	-.206436	-.002408	.000276
#2	-.000150	.013189	.0010026	-.000675	-.195825	-.001041	-.000115
#3	.001134	-.011561	.0006192	.000087	-.209654	-.001284	-.000359

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.351495	.0017098	.0004722	-.015526	.0020826	.0066894	-.000096
Stddev	.026791	.0005102	.0002401	.000398	.0007776	.0101845	.000898
%RSD	7.622087	29.83959	50.85234	2.562645	37.33879	152.2489	934.7846

#1	-.326990	.0022870	.0002033	-.015963	.0026985	.0182867	-.000941
#2	-.347395	.0015235	.0006652	-.015430	.0012088	-.000798	-.000194
#3	-.380100	.0013190	.0005480	-.015185	.0023405	.002579	.000847

Sample Name: CCB04 Acquired: 9/10/2025 15:31:33 Type: Unk
Method: 6010-200.7 NEW(v160) 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	-.002972	-.006438	.0001481
Stddev	.000364	.000215	.0000500
%RSD	12.25623	3.346089	33.78497
#1	-.002650	-.006249	.0001962
#2	-.002900	-.006392	.0000964
#3	-.003367	-.006673	.0001517

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6285.817	109533.9	10843.92	5071.128	7581.640
Stddev	50.957	454.9	60.96	11.272	55.434
%RSD	.8106732	.4152957	.5621555	.2222829	.7311581
#1	6343.045	109063.2	10900.67	5058.767	7644.709
#2	6269.052	109567.5	10779.48	5073.777	7559.574
#3	6245.355	109971.1	10851.61	5080.839	7540.637

Sample Name: Q3055-01 Acquired: 9/10/2025 15:35:51 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0390044	-.020999	.1756710	-.005035	-.012455	146.3492
Stddev	.0006111	.003957	.0060358	.004179	.002082	.2270
%RSD	1.566727	18.84422	3.435873	83.00236	16.71908	.1551374

#1	.0387046	-.021254	.1707475	-.009135	-.010051	146.0882
#2	.0386011	-.024823	.1824049	-.005189	-.013603	146.4587
#3	.0397075	-.016921	.1738608	-.000781	-.013710	146.5008

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7009785	.0093482	.0053941	47.72072	.2785728	.1665165
Stddev	.0009308	.0001617	.0014636	.09741	.0116574	.0055177
%RSD	.1327877	1.729609	27.13327	.2041215	4.184674	3.313618

#1	.7015423	.0094871	.0054319	47.72418	.2707170	.1622121
#2	.6999041	.0091707	.0068385	47.62163	.2730346	.1727367
#3	.7014891	.0093869	.0039120	47.81635	.2919669	.1646005

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4299282	269.5408	2.645753	58.98068	.2365025	.0006065
Stddev	.0170803	9.5104	.010635	.19928	.0075132	.0007746
%RSD	3.972834	3.528382	.4019837	.3378810	3.176799	127.7099

#1	.4228478	262.6859	2.647663	58.87176	.2312547	.0012016
#2	.4494101	265.5381	2.634292	58.85959	.2451092	.0008872
#3	.4175267	280.3983	2.655304	59.21069	.2331436	-.000269

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.660280	.4407786	.5661182	24.60048	.1949701	.0057372
Stddev	.219053	.0048103	.0232469	.89537	.0253230	.0006270
%RSD	3.870010	1.091307	4.106362	3.639647	12.98813	10.92850

#1	5.504992	.4352692	.5497181	23.95473	.1725367	.0061058
#2	5.565012	.4429226	.5559145	24.22411	.1899444	.0060926
#3	5.910836	.4441442	.5927219	25.62260	.2224290	.0050133

Sample Name: Q3055-01 Acquired: 9/10/2025 15:35:51 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0315585	7.205291	F 25.39857	7.939902	F 10.55467	.1561251
Stddev	.0013150	.003909	.78025	.271651	.37620	.0024082
%RSD	4.166977	.0542563	3.072021	3.421340	3.564272	1.542455

#1	.0306255	7.204434	24.65687	7.756181	10.34184	.1550049
#2	.0330625	7.209558	25.32648	8.251942	10.98903	.1544811
#3	.0309875	7.201882	26.21237	7.811582	10.33312	.1588893

Elem	Sr4077
Units	ppm
Avg	-.150288
Stddev	.009293
%RSD	6.183743

#1	-.143804
#2	-.146126
#3	-.160935

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6868.430	119095.2	13015.85	5434.319	6636.828
Stddev	134.830	3488.7	68.27	188.362	169.513
%RSD	1.963040	2.929295	.5244766	3.466153	2.554132

#1	6960.198	121477.6	12941.79	5558.878	6749.350
#2	6713.628	120717.3	13029.50	5526.455	6441.863
#3	6931.465	115090.9	13076.26	5217.624	6719.271

Sample Name: Q3056-01 Acquired: 9/10/2025 15:39:53 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0431384	-.020030	.1324057	-.003573	-.014416	140.1186
Stddev	.0024880	.001300	.0010043	.002811	.003339	.8950
%RSD	5.767504	6.489452	.7585266	78.65040	23.16119	.6387686
#1	.0447170	-.018936	.1312988	-.006339	-.016117	140.9124
#2	.0402704	-.021467	.1326595	-.000720	-.010569	140.2950
#3	.0444279	-.019687	.1332587	-.003662	-.016562	139.1486
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5822232	.0099869	.0058227	43.76252	.2150489	.1620366
Stddev	.0042124	.0000878	.0000996	.20851	.0034246	.0009198
%RSD	.7235049	.8786644	1.710882	.4764503	1.592451	.5676504
#1	.5849821	.0100549	.0057090	43.93217	.2179538	.1617344
#2	.5843130	.0098878	.0058645	43.82565	.2159200	.1630694
#3	.5773745	.0100179	.0058947	43.52975	.2112729	.1613058
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9196964	296.1377	3.659014	64.36018	.3066536	.0023612
Stddev	.0047528	1.8630	.023673	.25405	.0011655	.0009221
%RSD	.5167795	.6290902	.6469653	.3947360	.3800661	39.05294
#1	.9142087	297.5836	3.679207	64.50028	.3054285	.0013350
#2	.9224902	296.7942	3.664872	64.51334	.3077486	.0026283
#3	.9223904	294.0353	3.632962	64.06692	.3067838	.0031204
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.611231	.4516408	.4888335	27.54869	.3156360	.0084642
Stddev	.062467	.0017330	.0073163	.31154	.0012259	.0002773
%RSD	.9448669	.3837073	1.496679	1.130877	.3884020	3.276774
#1	6.642327	.4536242	.4946188	27.69877	.3166809	.0081570
#2	6.652048	.4508793	.4912724	27.75678	.3142865	.0086961
#3	6.539319	.4504190	.4806093	27.19051	.3159405	.0085396

Sample Name: Q3056-01 Acquired: 9/10/2025 15:39:53 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.1001966	9.149216	F 19.16777	8.790232	F 13.50643	.2001161
Stddev	.0003166	.046224	.25222	.039211	.06295	.0013848
%RSD	.3160012	.5052214	1.315848	.4460744	.4660387	.6920182
#1	.0998795	9.183820	19.23643	8.745157	13.43403	.1996652
#2	.1005127	9.167108	19.37855	8.809072	13.53711	.2016702
#3	.1001976	9.096721	18.88833	8.816467	13.54815	.1990128
Elem	Sr4077					
Units	ppm					
Avg	-.152672					
Stddev	.000915					
%RSD	.5993568					
#1	-.153393					
#2	-.152981					
#3	-.151643					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	7006.217	121258.6	12984.65	5565.852	6625.291	
Stddev	16.246	1185.8	114.59	57.404	21.918	
%RSD	.2318807	.9779314	.8825356	1.031362	.3308250	
#1	7020.970	120138.1	12862.70	5516.072	6638.510	
#2	6988.806	121137.3	13001.14	5552.837	6599.991	
#3	7008.875	122500.4	13090.10	5628.646	6637.372	

Sample Name: Q3059-01 Acquired: 9/10/2025 15:43:54 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.1256886	-.026037	.2022987	-.000986	-.021040	177.8866
Stddev	.0022287	.001890	.0016161	.004273	.002063	.9008
%RSD	1.773159	7.260183	.7988616	433.3442	9.802721	.5064116

#1	.1263687	-.027050	.2018405	.002773	-.023317	177.6649
#2	.1231991	-.023856	.2009613	-.005633	-.020509	177.1173
#3	.1274980	-.027205	.2040945	-.000097	-.019296	178.8776

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4778316	.0127791	.0025895	86.84545	.2265003	.1262524
Stddev	.0006364	.0001279	.0003573	.27328	.0009455	.0007238
%RSD	.1331948	1.000746	13.79802	.3146700	.4174168	.5732575

#1	.4773860	.0126685	.0022026	86.77441	.2269705	.1256724
#2	.4775482	.0127497	.0026586	86.61471	.2254120	.1260214
#3	.4785605	.0129192	.0029071	87.14723	.2271185	.1270635

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1995949	329.6448	3.081335	42.42039	.1469975	.0033710
Stddev	.0033958	2.6337	.006288	.27824	.0006390	.0014598
%RSD	1.701363	.7989523	.2040594	.6559130	.4346750	43.30479

#1	.1971852	332.3028	3.079179	42.35463	.1464588	.0036913
#2	.1981207	329.5956	3.076408	42.18093	.1477034	.0046441
#3	.2034787	327.0360	3.088417	42.72563	.1468302	.0017776

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.576615	.5594418	.3846152	12.90034	.2167933	.0133415
Stddev	.015251	.0036841	.0026578	.12009	.0115426	.0002812
%RSD	.5918927	.6585346	.6910321	.9309177	5.324243	2.107707

#1	2.585890	.5556058	.3840689	13.02351	.2286603	.0134685
#2	2.559013	.5597670	.3822729	12.89392	.2161146	.0135368
#3	2.584941	.5629525	.3875036	12.78358	.2056050	.0130192

Sample Name: Q3059-01 Acquired: 9/10/2025 15:43:54 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0656213	3.047894	F 11.94737	3.875620	1.489821	.1190040
Stddev	.0017715	.015065	.29546	.026455	.012518	.0014519
%RSD	2.699641	.4942607	2.472981	.6825997	.8402226	1.220053

#1	.0641048	3.039864	12.25249	3.845077	1.476054	.1195001
#2	.0651907	3.065272	11.66263	3.891342	1.492890	.1201429
#3	.0675685	3.038546	11.92699	3.890440	1.500518	.1173691

Elem	Sr4077
Units	ppm
Avg	-.168278
Stddev	.002843
%RSD	1.689608

#1	-.171112
#2	-.168296
#3	-.165426

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6467.128	111872.8	11938.78	5137.599	6769.628
Stddev	20.632	167.2	111.31	32.191	24.826
%RSD	.3190316	.1494603	.9323757	.6265745	.3667231

#1	6483.264	111690.4	12036.26	5166.443	6791.779
#2	6474.240	112018.8	11962.61	5143.480	6774.312
#3	6443.881	111909.2	11817.49	5102.872	6742.794

Sample Name: Q3054-05 Acquired: 9/10/2025 15:47:56 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0331626	-.013267	.1562853	-.000684	-.012333	122.6418
Stddev	.0008520	.002450	.0019650	.004412	.001623	.2351
%RSD	2.569136	18.46469	1.257337	645.1574	13.15697	.1916606

#1	.0323656	-.010557	.1554116	.003796	-.010462	122.5292
#2	.0340606	-.015325	.1585357	-.005025	-.013175	122.4842
#3	.0330617	-.013918	.1549086	-.000822	-.013361	122.9119

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4519300	.0088410	.0027078	24.83143	.1484660	.1013281
Stddev	.0007771	.0000626	.0000768	.05144	.0007471	.0007583
%RSD	.1719597	.7082832	2.835454	.2071694	.5032218	.7483822

#1	.4528216	.0088362	.0026196	24.86606	.1489948	.1010687
#2	.4515721	.0087808	.0027445	24.77232	.1487918	.1021820
#3	.4513964	.0089058	.0027593	24.85591	.1476113	.1007335

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1393326	218.0022	6.588845	24.11765	.1449935	.0028568
Stddev	.0004072	1.2486	.019897	.06981	.0010025	.0005615
%RSD	.2922256	.5727427	.3019859	.2894720	.6914249	19.65690

#1	.1391063	218.1604	6.611103	24.19701	.1444964	.0025849
#2	.1398026	219.1641	6.572783	24.06567	.1461474	.0035025
#3	.1390888	216.6820	6.582648	24.09028	.1443367	.0024829

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.569061	.2447913	.2861990	8.490627	.1442848	.0025583
Stddev	.054688	.0034371	.0010546	.020729	.0087852	.0001688
%RSD	.5715077	1.404090	.3684869	.2441362	6.088819	6.599649

#1	9.587160	.2437118	.2872507	8.469530	.1442505	.0026246
#2	9.612405	.2420236	.2862048	8.491386	.1530872	.0023663
#3	9.507618	.2486386	.2851415	8.510966	.1355168	.0026839

Sample Name: Q3054-05 Acquired: 9/10/2025 15:47:56 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0667376	2.556940	F 18.60158	3.424675	.4973348	.0883578
Stddev	.0006955	.020840	.19912	.007498	.0032321	.0013266
%RSD	1.042131	.8150357	1.070430	.2189506	.6498865	1.501366

#1	.0664106	2.581004	18.69983	3.422500	.4941440	.0878149
#2	.0675363	2.544982	18.73248	3.433020	.5006067	.0873888
#3	.0662658	2.544834	18.37243	3.418504	.4972537	.0898697

Elem	Sr4077
Units	ppm
Avg	-.120882
Stddev	.001242
%RSD	1.027857

#1	-.121035
#2	-.122041
#3	-.119570

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6749.104	116551.3	12445.35	5417.366	6769.709
Stddev	26.060	484.9	102.05	58.959	30.123
%RSD	.3861267	.4160219	.8200215	1.088328	.4449653

#1	6755.001	116038.5	12356.16	5371.501	6773.479
#2	6720.601	116613.0	12556.65	5396.728	6737.879
#3	6771.711	117002.4	12423.24	5483.870	6797.770

Sample Name: Q3054-05DUP Acquired: 9/10/2025 15:51:59 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0492928	-.017457	.2221864	-.003724	-.016938	137.7645
Stddev	.0007839	.001666	.0058299	.000378	.002273	.9689
%RSD	1.590374	9.542569	2.623887	10.16062	13.41726	.7032739

#1	.0496938	-.019368	.2170204	-.004068	-.019194	137.1092
#2	.0497951	-.016308	.2210314	-.003319	-.016970	137.3068
#3	.0483895	-.016695	.2285073	-.003784	-.014649	138.8774

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5524559	.0104556	.0049031	40.71637	.1755557	.1144917
Stddev	.0024108	.0000355	.0006023	.21661	.0006323	.0032522
%RSD	.4363703	.3394069	12.28429	.5319897	.3601673	2.840569

#1	.5530149	.0104661	.0044945	40.59921	.1762346	.1118439
#2	.5498148	.0104160	.0046199	40.58358	.1754489	.1135095
#3	.5545381	.0104847	.0055948	40.96633	.1749836	.1181219

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1697226	249.9838	8.913722	25.81069	.1789999	.0010818
Stddev	.0072589	.3898	.039523	.19654	.0045613	.0003768
%RSD	4.276922	.1559114	.4433931	.7614698	2.548226	34.83277

#1	.1644372	249.9154	8.910597	25.68459	.1757531	.0008386
#2	.1667314	249.6327	8.875855	25.71034	.1770318	.0015158
#3	.1779991	250.4032	8.954715	26.03715	.1842149	.0008909

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.11583	.2809054	.3701925	9.805939	.1533870	.0032509
Stddev	.03594	.0020060	.0023761	.047487	.0031616	.0000695
%RSD	.3553160	.7141107	.6418635	.4842662	2.061160	2.137223

#1	10.08919	.2822869	.3711914	9.754528	.1515868	.0032697
#2	10.15671	.2818247	.3674800	9.815133	.1570375	.0031740
#3	10.10158	.2786045	.3719061	9.848158	.1515366	.0033091

Sample Name: Q3054-05DUP Acquired: 9/10/2025 15:51:59 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0676102	2.654069	F 20.82576	4.598396	1.039753	.1033074
Stddev	.0021260	.012032	.19914	.099765	.029597	.0016868
%RSD	3.144470	.4533502	.9562280	2.169569	2.846517	1.632802

#1	.0662012	2.662350	20.77866	4.511184	1.015551	.1052254
#2	.0665738	2.640268	20.65440	4.576822	1.030957	.1026423
#3	.0700556	2.659591	21.04423	4.707184	1.072750	.1020546

Elem	Sr4077
Units	ppm
Avg	-.097667
Stddev	.000754
%RSD	.7715116

#1	-.096984
#2	-.098475
#3	-.097541

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6966.377	122351.8	12977.37	5651.945	6786.933
Stddev	117.065	209.3	61.72	40.103	146.274
%RSD	1.680431	.1710956	.4756174	.7095424	2.155224

#1	7087.723	122228.8	12964.92	5628.814	6937.122
#2	6957.285	122593.5	13044.36	5698.252	6778.760
#3	6854.123	122233.1	12922.82	5628.770	6644.918

Sample Name: Q3054-05LX5 Acquired: 9/10/2025 15:56:02 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0068668	.0000683	.0321330	-.001187	-.004019	27.14604	.0996092
Stddev	.0027972	.0017621	.0013743	.002276	.000606	.17216	.0014151
%RSD	40.73584	2580.322	4.276981	191.7468	15.07451	.6342035	1.420632
#1	.0041828	-.000214	.0309356	-.002162	-.004308	27.01704	.0981968
#2	.0066527	.001955	.0318297	-.002814	-.003323	27.07955	.0996040
#3	.0097650	-.001536	.0336336	.001414	-.004427	27.34153	.1010269
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0022208	.0001498	5.577495	.0332916	.0194606	.0332501	45.74205
Stddev	.0001138	.0001051	.039908	.0005824	.0001563	.0002625	.13903
%RSD	5.123115	70.13999	.7155269	1.749344	.8028866	.7895397	.3039512
#1	.0022292	.0002610	5.546781	.0336493	.0196351	.0330815	45.86481
#2	.0021030	.0000522	5.563100	.0326196	.0193337	.0335526	45.77028
#3	.0023301	.0001363	5.622604	.0336060	.0194132	.0331163	45.59107
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.480341	5.427385	.0284748	-.001116	2.235161	.0540406	.0625447
Stddev	.011381	.047463	.0003551	.000335	.043735	.0013467	.0003716
%RSD	.7688228	.8745158	1.247069	29.97825	1.956671	2.491930	.5941186
#1	1.472556	5.380596	.0283326	-.000904	2.184665	.0551052	.0628395
#2	1.475064	5.426066	.0288790	-.000942	2.259778	.0525267	.0626673
#3	1.493403	5.475495	.0282129	-.001502	2.261039	.0544899	.0621273
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.039127	.0146235	.0005095	.0119728	.5587180	3.716677	.6555674
Stddev	.033872	.0010973	.0000239	.0003365	.0193825	.079026	.0036281
%RSD	1.661122	7.503961	4.682307	2.810484	3.469106	2.126255	.5534298
#1	2.015638	.0154203	.0005090	.0123564	.5391863	3.626266	.6597182
#2	2.077955	.0150783	.0005336	.0118345	.5779478	3.751185	.6530013
#3	2.023787	.0133719	.0004859	.0117275	.5590198	3.772581	.6539825

Sample Name: Q3054-05LX5 Acquired: 9/10/2025 15:56:02 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0959626	.0211483	-.024294
Stddev	.0013237	.0022312	.000353
%RSD	1.379338	10.55008	1.454062

#1	.0972072	.0189479	-.024695
#2	.0945720	.0210881	-.024154
#3	.0961084	.0234090	-.024031

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6489.881	112036.9	11155.25	5150.838	7492.166
Stddev	4.301	257.5	114.43	24.387	5.126
%RSD	.0662669	.2298172	1.025776	.4734613	.0684170

#1	6484.935	111774.6	11235.53	5122.700	7497.847
#2	6492.734	112289.3	11206.00	5163.950	7490.764
#3	6491.976	112047.0	11024.23	5165.865	7487.888

Sample Name: Q3054-05MS Acquired: 9/10/2025 16:00:13 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.6982574	1.847736	1.081742	1.603877	.3379212	150.0020
Stddev	.0035243	.035941	.000200	.007515	.0010396	.2097
%RSD	.5047227	1.945148	.0184622	.4685804	.3076478	.1398209
#1	.7009598	1.879071	1.081768	1.610216	.3391203	149.8065
#2	.6995412	1.855634	1.081531	1.605839	.3373724	150.2236
#3	.6942712	1.808502	1.081928	1.595575	.3372711	149.9759
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6654640	.1750188	.1932841	29.02689	.5075505	.2929533
Stddev	.0005608	.0003716	.0005470	.00781	.0024293	.0005021
%RSD	.0842717	.2123156	.2830019	.0269205	.4786297	.1714056
#1	.6648322	.1754230	.1939072	29.02242	.5100277	.2934301
#2	.6656572	.1746920	.1930619	29.02234	.5074516	.2930007
#3	.6659027	.1749414	.1928831	29.03592	.5051722	.2924292
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3902879	235.4688	6.621793	27.02990	.6428919	.0670277
Stddev	.0011525	.7570	.019126	.06072	.0008760	.0003467
%RSD	.2952823	.3214855	.2888410	.2246509	.1362659	.5171980
#1	.3913078	236.2155	6.643235	27.05869	.6438850	.0673055
#2	.3905181	235.4889	6.615653	27.07088	.6422286	.0671384
#3	.3890377	234.7019	6.606490	26.96014	.6425622	.0666392
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.20528	.5278177	.5017263	18.62180	.3491154	.3405957
Stddev	.05395	.0021284	.0025698	.04966	.0039127	.0011776
%RSD	.4420606	.4032491	.5121934	.2666784	1.120742	.3457514
#1	12.24395	.5261488	.5039911	18.59522	.3532668	.3416469
#2	12.22824	.5270896	.4989335	18.67909	.3485835	.3408171
#3	12.14364	.5302146	.5022543	18.59109	.3454958	.3393231

Sample Name: Q3054-05MS Acquired: 9/10/2025 16:00:13 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.7077727	3.031743	F 28.31860	9.532750	.6527659	.2706557
Stddev	.0018283	.013270	.14608	.033888	.0071668	.0002573
%RSD	.2583166	.4376892	.5158473	.3554909	1.097905	.0950762
#1	.7098683	3.045910	28.24983	9.571761	.6593329	.2706398
#2	.7065034	3.029712	28.48637	9.510604	.6451214	.2704067
#3	.7069465	3.019605	28.21959	9.515884	.6538433	.2709206

Elem	Sr4077
Units	ppm
Avg	.0507704
Stddev	.0006049
%RSD	1.191508

#1	.0500977
#2	.0509438
#3	.0512697

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7042.251	121942.6	12927.83	5618.087	6901.774
Stddev	10.644	631.5	47.00	26.622	16.273
%RSD	.1511468	.5178774	.3635602	.4738539	.2357813
#1	7030.023	121490.3	12904.07	5591.627	6883.116
#2	7047.293	121673.4	12897.46	5644.867	6913.031
#3	7049.439	122664.1	12981.97	5617.768	6909.176

Sample Name: Q3054-05MSD Acquired: 9/10/2025 16:04:10 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.7076190	1.938735	1.080077	1.625287	.3551245	141.1780
Stddev	.0018382	.031601	.001160	.002101	.0011384	.1444
%RSD	.2597735	1.629978	.1074016	.1292986	.3205707	.1023005
#1	.7086421	1.974144	1.079692	1.627101	.3545455	141.3323
#2	.7054968	1.913397	1.081381	1.625776	.3543919	141.0461
#3	.7087180	1.928663	1.079159	1.622984	.3564360	141.1554
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6365828	.1812077	.1936421	30.90545	.5149339	.2848700
Stddev	.0023967	.0013320	.0003386	.04051	.0030319	.0003832
%RSD	.3764956	.7350599	.1748439	.1310912	.5887984	.1345122
#1	.6392492	.1826434	.1939941	30.88794	.5161469	.2850544
#2	.6346078	.1800121	.1933188	30.87663	.5171715	.2844295
#3	.6358914	.1809677	.1936134	30.95177	.5114832	.2851263
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3814612	213.3495	6.430160	24.56941	.6252311	.0678825
Stddev	.0019548	1.2696	.017147	.04104	.0002894	.0003503
%RSD	.5124472	.5950595	.2666624	.1670473	.0462896	.5159744
#1	.3833942	212.5402	6.449394	24.61475	.6253019	.0681881
#2	.3794853	214.8127	6.416475	24.55866	.6249128	.0679591
#3	.3815040	212.6955	6.424610	24.53481	.6254785	.0675003
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.97447	.5056312	.4652119	18.45561	.3347506	.3518320
Stddev	.09315	.0015677	.0018369	.12261	.0051676	.0009039
%RSD	.7779310	.3100490	.3948435	.6643644	1.543715	.2569227
#1	11.91693	.5066058	.4670172	18.38564	.3287836	.3524253
#2	12.08194	.5064650	.4633450	18.59718	.3377506	.3507917
#3	11.92454	.5038228	.4652737	18.38400	.3377176	.3522791

Sample Name: Q3054-05MSD Acquired: 9/10/2025 16:04:10 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.6802497	3.020216	F 33.36316	8.983856	.5665253	.2613746
Stddev	.0029680	.029832	.47272	.032051	.0038853	.0020504
%RSD	.4363028	.9877304	1.416902	.3567654	.6858090	.7844751
#1	.6836764	2.986183	33.57621	9.020685	.5707897	.2628125
#2	.6785861	3.032628	33.69186	8.968598	.5656001	.2590267
#3	.6784868	3.041838	32.82140	8.962284	.5631861	.2622846
Elem	Sr4077					
Units	ppm					
Avg	.0730813					
Stddev	.0017775					
%RSD	2.432188					
#1	.0744514					
#2	.0710728					
#3	.0737196					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	6993.943	119295.2	12437.88	5456.184	6977.750	
Stddev	15.518	763.7	85.75	24.175	14.086	
%RSD	.2218781	.6401599	.6894386	.4430724	.2018654	
#1	6978.299	119093.2	12341.61	5444.900	6962.646	
#2	7009.332	118652.9	12465.97	5439.715	6990.528	
#3	6994.197	120139.6	12506.07	5483.938	6980.074	

Sample Name: Q3054-05A Acquired: 9/10/2025 16:08:06 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.8258648	2.296741	1.238482	1.956520	.6562264	120.6949
Stddev	.0047693	.003533	.005221	.014194	.0055984	.3961
%RSD	.5774867	.1538438	.4215882	.7254942	.8531252	.3281911

#1	.8310158	2.293679	1.244343	1.972408	.6626715	120.6295
#2	.8249763	2.300607	1.234329	1.945088	.6525700	121.1196
#3	.8216022	2.295938	1.236773	1.952065	.6534378	120.3356

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6290599	.2033468	.2247898	24.87856	.5253812	.3231576
Stddev	.0024016	.0009693	.0015176	.07982	.0045634	.0019934
%RSD	.3817810	.4766535	.6751395	.3208349	.8685884	.6168461

#1	.6262911	.2025383	.2265001	24.82248	.5268278	.3253923
#2	.6305780	.2030810	.2236038	24.96995	.5290460	.3215624
#3	.6303108	.2044213	.2242655	24.84326	.5202698	.3225181

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4356690	203.7667	6.577576	25.13007	.6968789	.0758879
Stddev	.0039730	1.9675	.024005	.09804	.0041785	.0009853
%RSD	.9119288	.9655810	.3649536	.3901404	.5996030	1.298403

#1	.4389675	204.2284	6.549956	25.04304	.7015122	.0756949
#2	.4312585	205.4623	6.593409	25.23629	.6933965	.0769555
#3	.4367811	201.6093	6.589363	25.11089	.6957280	.0750134

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.54620	.5281031	.4554108	17.34461	.3848633	.3551994
Stddev	.09977	.0035048	.0036530	.18824	.0043805	.0019334
%RSD	.8641281	.6636500	.8021389	1.085279	1.138196	.5443211

#1	11.59448	.5240935	.4569588	17.47180	.3860164	.3566544
#2	11.61265	.5305832	.4580349	17.43367	.3885519	.3530055
#3	11.43147	.5296325	.4512387	17.12837	.3800216	.3559383

Sample Name: Q3054-05A Acquired: 9/10/2025 16:08:06 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.7094133	2.683072	F 19.80989	9.756915	.4351819	.2826234
Stddev	.0059645	.014114	.53625	.060135	.0025562	.0006833
%RSD	.8407632	.5260498	2.706990	.6163298	.5873960	.2417747

#1	.7160675	2.698383	20.21143	9.824085	.4374917	.2818361
#2	.7045479	2.670580	20.01734	9.708089	.4324355	.2829724
#3	.7076246	2.680254	19.20090	9.738570	.4356186	.2830618

Elem	Sr4077
Units	ppm
Avg	.0836483
Stddev	.0022692
%RSD	2.712839

#1	.0822808
#2	.0823963
#3	.0862677

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6849.678	123400.4	12527.56	5667.089	6898.663
Stddev	41.528	699.8	73.24	41.992	45.534
%RSD	.6062805	.5671017	.5846269	.7409826	.6600425

#1	6803.391	123042.5	12584.33	5671.417	6846.771
#2	6883.671	122952.0	12553.47	5623.100	6931.938
#3	6861.973	124206.8	12444.89	5706.749	6917.281

Sample Name: Q3068-01 Acquired: 9/10/2025 16:12:03 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.1013072	-.019058	.9939747	.0013295	-.001400	245.4054
Stddev	.0003208	.003455	.0020266	.0014326	.001644	.9789
%RSD	.3166955	18.12980	.2038922	107.7569	117.4151	.3988798
#1	.1014180	-.022328	.9916855	.0020405	.000337	245.3118
#2	.1009456	-.019401	.9955399	-.000320	-.001605	244.4767
#3	.1015579	-.015443	.9946987	.002267	-.002931	246.4277
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.482214	.0184838	.0146563	225.0111	.4303153	.2412217
Stddev	.002297	.0001069	.0001206	.1865	.0017389	.0002059
%RSD	.1549454	.5782696	.8228596	.0828714	.4040990	.0853502
#1	1.484853	.0186023	.0147617	225.2140	.4309390	.2409880
#2	1.481113	.0184546	.0145248	224.9721	.4316563	.2413764
#3	1.480675	.0183946	.0146825	224.8472	.4283506	.2413006
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6639995	378.8594	5.444284	124.8619	.3511391	.0032036
Stddev	.0031250	1.7666	.008944	.1643	.0009239	.0000673
%RSD	.4706287	.4663028	.1642816	.1315678	.2631264	2.100666
#1	.6636941	377.6383	5.451863	124.9809	.3502787	.0032334
#2	.6610384	380.8851	5.434419	124.9304	.3521156	.0031266
#3	.6672660	378.0547	5.446570	124.6745	.3510230	.0032509
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.381567	.7430585	1.728983	54.20175	.3022211	.0111548
Stddev	.051247	.0043543	.001681	.33247	.0090419	.0003479
%RSD	.6942627	.5860012	.0972497	.6133892	2.991819	3.118406
#1	7.393436	.7400355	1.727080	54.00295	.2948280	.0108111
#2	7.425838	.7410906	1.729597	54.58557	.3123022	.0111466
#3	7.325426	.7480495	1.730270	54.01674	.2995330	.0115067

Sample Name: Q3068-01 Acquired: 9/10/2025 16:12:03 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.1073862	F 11.98498	9.850070	F 10.76428	9.227884	.2497255
Stddev	.0014027	.00727	.393646	.05360	.055379	.0008148
%RSD	1.306203	.0606415	3.996373	.4979571	.6001266	.3262934

#1	.1087576	11.97685	9.663351	10.80844	9.239346	.2499884
#2	.1074468	11.98723	10.30233	10.70464	9.167670	.2503764
#3	.1059542	11.99085	9.58453	10.77976	9.276634	.2488117

Elem	Sr4077
Units	ppm
Avg	.4630013
Stddev	.0018728
%RSD	.4045016

#1	.4648676
#2	.4611219
#3	.4630144

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7011.124	118580.2	13452.62	5470.474	6295.238
Stddev	2.867	362.0	85.83	14.017	9.388
%RSD	.0408903	.3052734	.6380360	.2562285	.1491272

#1	7010.750	118367.1	13358.32	5462.330	6294.878
#2	7008.463	118375.4	13526.18	5462.432	6286.034
#3	7014.160	118998.2	13473.37	5486.659	6304.800

Sample Name: CCV05 Acquired: 9/10/2025 16:16:11 Type: Unk
Method: 6010-200.7 NEW(v160) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV05 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.895397	5.007609	4.815998	4.933451	4.867332	9.773686	9.469342
Stddev	.012915	.078290	.013631	.011680	.012863	.025419	.062365
%RSD	.2638283	1.563414	.2830374	.2367517	.2642775	.2600770	.6586036

#1	4.907594	5.096653	4.814765	4.940847	4.880155	9.800639	9.404556
#2	4.896732	4.976603	4.830203	4.939520	4.867414	9.770275	9.474505
#3	4.881867	4.949572	4.803025	4.919985	4.854428	9.750145	9.528966

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2463640	2.415440	24.08109	.9983845	2.404163	1.212030	4.870834
Stddev	.0007141	.004770	.01535	.0046348	.003857	.001507	.012052
%RSD	.2898365	.1974632	.0637299	.4642334	.1604339	.1242979	.2474347

#1	.2466443	2.416091	24.08951	.9945614	2.404460	1.213104	4.859128
#2	.2455523	2.419850	24.06338	1.003539	2.407863	1.212678	4.883205
#3	.2468953	2.410378	24.09039	.997053	2.400166	1.210308	4.870167

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.377578	24.33599	2.397604	1.242155	23.25411	2.423407	2.503165
Stddev	.006991	.03071	.003493	.000901	.04903	.005716	.008282
%RSD	.2940312	.1262061	.1457016	.0725632	.2108631	.2358493	.3308613

#1	2.385025	24.37118	2.396873	1.241193	23.19796	2.430005	2.499685
#2	2.371156	24.32220	2.401405	1.242979	23.28848	2.420198	2.512619
#3	2.376552	24.31459	2.394534	1.242294	23.27589	2.420016	2.497190

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	23.98575	4.865278	4.932490	4.954081	4.822413	4.975604	4.940090
Stddev	.07544	.019122	.013360	.012774	.007776	.030867	.011120
%RSD	.3145308	.3930347	.2708659	.2578503	.1612382	.6203755	.2250891

#1	23.90088	4.868978	4.940944	4.956612	4.831305	4.945315	4.949813
#2	24.04518	4.844576	4.939439	4.965400	4.816890	5.007019	4.927966
#3	24.01120	4.882280	4.917087	4.940230	4.819043	4.974476	4.942490

Sample Name: CCV05 Acquired: 9/10/2025 16:16:11 Type: Unk
Method: 6010-200.7 NEW(v160) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV05 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.877009	4.602951	4.852675
Stddev	.014783	.010776	.018463
%RSD	.3031094	.2341171	.3804749
#1	4.893105	4.615392	4.835098
#2	4.873883	4.596523	4.871912
#3	4.864039	4.596938	4.851014

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6154.823	104843.5	11015.48	4842.023	7054.382
Stddev	14.327	323.8	39.49	21.493	19.995
%RSD	.2327745	.3088778	.3585270	.4438848	.2834442
#1	6167.013	105200.1	10995.61	4848.624	7074.897
#2	6139.042	104567.8	11060.97	4818.003	7034.950
#3	6158.412	104762.5	10989.88	4859.441	7053.299

Sample Name: CCB05 Acquired: 9/10/2025 16:20:26 Type: Unk
Method: 6010-200.7 NEW(v160) 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	-.002755	.0064850	.0014200	-.000218	.0014691	.0086317	.0036461
Stddev	.001398	.0008800	.0009959	.001478	.0009739	.0133335	.0008989
%RSD	50.74744	13.56930	70.13731	678.4379	66.29325	154.4710	24.65296
#1	-.003495	.0054720	.0011630	.001344	.0004622	.0177653	.0036868
#2	-.001143	.0069234	.0005777	-.001595	.0024064	-.006669	.0027276
#3	-.003628	.0070598	.0025192	-.000403	.0015388	.014799	.0045240
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000150	.0001072	-.005306	.0007145	.0000262	-.000087	.0064811
Stddev	.0000741	.0000459	.002941	.0002627	.0000564	.000138	.0017039
%RSD	492.9797	42.78488	55.43373	36.77096	215.2450	158.8246	26.28996
#1	.0000721	.0000549	-.008354	.0008370	.0000461	.000050	.0082886
#2	.0000416	.0001404	-.002484	.0008936	-.000037	-.000085	.0049044
#3	-.000069	.0001264	-.005082	.0004129	.000070	-.000227	.0062502
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003053	.0021767	.0004303	-.000730	-.244497	-.001051	.0001734
Stddev	.0001622	.0071347	.0003707	.000369	.013222	.000841	.0001537
%RSD	53.11029	327.7741	86.15494	50.55794	5.408042	80.03520	88.66095
#1	.0001635	.0081181	.0005042	-.000653	-.253520	-.001418	.0002958
#2	.0004821	-.005737	.0000282	-.001131	-.250652	-.001647	.0002234
#3	.0002703	.004149	.0007584	-.000405	-.229319	-.000089	.0000009
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.459319	.0027378	.0004907	-.015539	.0005200	.0139343	.0009293
Stddev	.049519	.0009377	.0000290	.000214	.0013396	.0041518	.0002862
%RSD	10.78104	34.25139	5.913099	1.379820	257.5923	29.79540	30.79766
#1	-.457483	.0020623	.0005050	-.015428	.0003161	.0099437	.0012303
#2	-.509731	.0038084	.0005097	-.015786	-.000706	.0182304	.0008967
#3	-.410743	.0023426	.0004573	-.015403	.001950	.0136289	.0006607

Sample Name: CCB05 Acquired: 9/10/2025 16:20:26 Type: Unk
Method: 6010-200.7 NEW(v160) 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	-.002085	-.003084	.0003052
Stddev	.001317	.001813	.0000822
%RSD	63.13974	58.77227	26.93817

#1	-.000575	-.004364	.0003680
#2	-.002689	-.001010	.0002121
#3	-.002992	-.003879	.0003353

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6126.588	104434.6	10699.30	4844.480	7400.738
Stddev	46.315	393.4	413.60	14.000	50.677
%RSD	.7559644	.3766723	3.865644	.2889929	.6847518

#1	6082.263	104862.9	11145.53	4841.746	7350.496
#2	6122.836	104089.4	10328.81	4832.049	7399.881
#3	6174.665	104351.7	10623.57	4859.646	7451.838

Sample Name: Q3054-01 Acquired: 9/10/2025 16:24:46 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0615765	-.011675	.2364429	.0005169	-.008988	132.3182
Stddev	.0016849	.000758	.0032905	.0016017	.001483	.3663
%RSD	2.736349	6.492120	1.391657	309.8942	16.50007	.2768108

#1	.0599992	-.010928	.2327034	.0023662	-.010235	132.0100
#2	.0613789	-.012444	.2377300	-.000388	-.009379	132.2215
#3	.0633516	-.011654	.2388952	-.000428	-.007348	132.7231

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6492865	.0097391	.0027600	11.49619	.1653264	.0909953
Stddev	.0047836	.0001996	.0003820	.03482	.0027869	.0016199
%RSD	.7367451	2.049876	13.84035	.3029207	1.685688	1.780215

#1	.6439361	.0098956	.0025888	11.47388	.1672614	.0894067
#2	.6507733	.0098074	.0024936	11.47837	.1665856	.0909345
#3	.6531502	.0095143	.0031977	11.53632	.1621321	.0926448

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1500898	218.0206	4.934252	21.85418	.1616599	.0006728
Stddev	.0028364	1.2704	.027310	.09670	.0023672	.0007138
%RSD	1.889821	.5826890	.5534772	.4424938	1.464298	106.1044

#1	.1482210	217.6824	4.906117	21.74391	.1596379	-.000013
#2	.1486948	219.4259	4.935983	21.92455	.1610781	.000619
#3	.1533536	216.9536	4.960655	21.89407	.1642637	.001412

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.54779	.2891386	.4395668	7.887577	.1385984	.0028206
Stddev	.10777	.0036393	.0047893	.046546	.0057850	.0001560
%RSD	.7954724	1.258658	1.089548	.5901183	4.173963	5.531910

#1	13.52148	.2849391	.4437871	7.857152	.1343557	.0026965
#2	13.66628	.2911061	.4405516	7.941160	.1451881	.0029958
#3	13.45562	.2913706	.4343616	7.864420	.1362513	.0027695

Sample Name: Q3054-01 Acquired: 9/10/2025 16:24:46 Type: Unk
Method: 6010-200.7 NEW(v160) 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	.0682108	2.921609	F 16.00877	6.749025	.8655190	.1139280
Stddev	.0009263	.021436	.10829	.118752	.0186748	.0012362
%RSD	1.357947	.7337148	.6764263	1.759542	2.157637	1.085071

#1	.0683153	2.897203	15.93585	6.627685	.8496691	.1152765
#2	.0672368	2.930239	16.13320	6.754384	.8607817	.1128483
#3	.0690804	2.937386	15.95727	6.865007	.8861061	.1136592

Elem	Sr4077
Units	ppm
Avg	-.121723
Stddev	.001695
%RSD	1.392837

#1	-.121719
#2	-.123421
#3	-.120030

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6798.023	114460.3	12118.70	5286.485	6791.288
Stddev	75.799	1409.5	44.95	29.099	87.890
%RSD	1.115011	1.231429	.3708806	.5504328	1.294162

#1	6864.857	113980.7	12125.61	5284.333	6874.814
#2	6813.549	113353.1	12070.70	5258.523	6799.449
#3	6715.664	116047.0	12159.79	5316.600	6699.603

Sample Name: CCV06 Acquired: 9/10/2025 16:43:03 Type: Unk
Method: 6010-200.7 NEW(v160) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV06 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.944477	5.399308	4.864799	4.989730	4.925965	9.937986	9.588038
Stddev	.013946	.038217	.008711	.023042	.007743	.026632	.094282
%RSD	.2820437	.7078068	.1790702	.4617904	.1571969	.2679820	.9833277
#1	4.931980	5.431525	4.855418	4.969992	4.917047	9.913719	9.483430
#2	4.959520	5.409317	4.866345	5.015050	4.930984	9.966478	9.614226
#3	4.941931	5.357083	4.872634	4.984146	4.929863	9.933760	9.666457
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2532064	2.437456	24.42820	1.016858	2.433337	1.222961	4.896237
Stddev	.0036562	.004165	.07328	.002814	.004439	.003219	.072501
%RSD	1.443947	.1708862	.2999972	.2767214	.1824399	.2631758	1.480749
#1	.2499404	2.432680	24.36684	1.016095	2.428250	1.219306	4.924525
#2	.2571562	2.439352	24.50934	1.014504	2.435332	1.224202	4.813856
#3	.2525226	2.440336	24.40841	1.019974	2.436429	1.225374	4.950330
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.414295	24.84599	2.420652	1.261364	23.38391	2.462986	2.551161
Stddev	.011224	.19756	.005491	.001358	.35521	.008463	.005484
%RSD	.4649016	.7951547	.2268572	.1076620	1.519023	.3435943	.2149696
#1	2.401994	24.66502	2.414444	1.262316	23.64050	2.457230	2.555143
#2	2.416910	25.05676	2.422634	1.259809	22.97850	2.459026	2.544905
#3	2.423980	24.81617	2.424877	1.261966	23.53272	2.472703	2.553434
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.09381	4.991275	5.030176	4.974852	4.886186	5.022105	5.048807
Stddev	.28191	.067538	.007000	.001600	.003655	.048416	.012598
%RSD	1.170071	1.353129	.1391613	.0321663	.0748083	.9640628	.2495276
#1	24.30740	4.935267	5.025435	4.973651	4.882162	5.057164	5.053021
#2	23.77427	5.066277	5.038216	4.976669	4.889300	4.966862	5.058758
#3	24.19977	4.972282	5.026876	4.974237	4.887095	5.042289	5.034642

Sample Name: CCV06 Acquired: 9/10/2025 16:43:03 Type: Unk
Method: 6010-200.7 NEW(v160) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV06 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	4.949577	4.675299	4.922499
Stddev	.019078	.003047	.038990
%RSD	.3854477	.0651773	.7920727
#1	4.932400	4.672139	4.892677
#2	4.970111	4.678220	4.966620
#3	4.946221	4.675538	4.908201

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6132.941	102063.1	10626.18	4721.974	7048.752
Stddev	7.535	90.5	157.16	4.696	4.586
%RSD	.1228643	.0886636	1.479010	.0994600	.0650549
#1	6138.601	102144.1	10758.73	4721.300	7054.041
#2	6124.388	102079.9	10452.56	4726.971	7046.321
#3	6135.833	101965.4	10667.24	4717.650	7045.894

Sample Name: CCB06 Acquired: 9/10/2025 16:48:48 Type: Unk
Method: 6010-200.7 NEW(v160) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB06 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001136	-.001868	.0001818	-.001767	.0008351	.0113960	.0050249
Stddev	.000302	.002438	.0002387	.000784	.0003457	.0178363	.0008306
%RSD	26.55953	130.4833	131.2753	44.39381	41.38978	156.5136	16.52930

#1	-.001044	.000943	.0001631	-.002397	.0004437	-.006883	.0041284
#2	-.000891	-.003157	.0004294	-.002015	.0009630	.028753	.0051779
#3	-.001473	-.003392	-.000047	-.000888	.0010986	.012318	.0057683

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000002	.0000500	-.005495	.0002529	-.000127	.0001142	.0008921
Stddev	.000045	.0000901	.006894	.0002318	.000093	.0003036	.0028033
%RSD	2289.867	180.2277	125.4510	91.63697	72.97858	265.8570	314.2449

#1	-.000049	.0000783	.001169	.0001691	-.000228	.0003423	-.002343
#2	.000042	.0001225	-.012598	.0000747	-.000044	-.000230	.002614
#3	.000001	-.000051	-.005057	.0005149	-.000111	.000231	.002405

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000092	.0128834	.0003214	-.000775	-.280957	-.001691	.0000184
Stddev	.000122	.0149136	.0002702	.000510	.013884	.001919	.0000771
%RSD	132.8114	115.7579	84.07411	65.80038	4.941782	113.5177	419.1006

#1	-.000198	.0017795	.0001148	-.000490	-.269943	-.001816	.0000967
#2	-.000120	.0298346	.0006271	-.001364	-.296553	.000288	.0000158
#3	.000042	.0070362	.0002221	-.000472	-.276375	-.003544	-.000057

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.459787	.0018858	.0003213	-.015478	.0011515	.0037272	.0018165
Stddev	.007412	.0001260	.0001212	.000273	.0014664	.0055553	.0011168
%RSD	1.612059	6.680950	37.72263	1.762314	127.3485	149.0486	61.47936

#1	-.461220	.0017404	.0002768	-.015202	.0018930	-.002608	.0008003
#2	-.451763	.0019542	.0004584	-.015747	.0020990	.007767	.0030121
#3	-.466377	.0019628	.0002286	-.015484	-.000538	.006023	.0016371

Sample Name: CCB06 Acquired: 9/10/2025 16:48:48 Type: Unk
Method: 6010-200.7 NEW(v160) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB06 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.004641	-.004865	.0000763
Stddev	.002497	.002209	.0000865
%RSD	53.81068	45.40233	113.2349
#1	-.001768	-.007191	.0000493
#2	-.005856	-.002797	.0000066
#3	-.006298	-.004606	.0001731

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6204.176	108030.7	10544.31	4873.987	7546.393
Stddev	56.285	842.1	59.48	49.869	69.153
%RSD	.9072185	.7794958	.5640719	1.023158	.9163673
#1	6197.827	107130.2	10597.46	4819.067	7539.004
#2	6263.367	108163.3	10480.06	4886.457	7618.943
#3	6151.334	108798.7	10555.40	4916.437	7481.231

SOP ID : M3050B-Digestion-20

SDG No : N/A

Matrix : SOIL

Pipette ID : ICP A

Balance ID : M SC-2

Filter paper ID : N/A

pH Strip ID : N/A

Hood ID : #3

Block ID: 1. HOT BLOCK #2 2. N/A

Start Digest Date: 09/10/2025 Time : 14:10 Temp : 96 °C

End Digest Date: 09/10/2025 Time : ~~16:15~~ Temp : 96 °C

Digestion tube ID: M6054 15:10 SJ
09/16/2025

Block thermometer ID: MET-DIG. #2

Dig Technician Signature: *[Signature]*

Supervisor Signature: *[Signature]*

Temp : 1. 96°C 2. N/A

Standard Name	MLS USED	STD REF. # FROM LOG
LFS-1	1.00	M6180
LFS-2	1.00	M6181
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	5.00	M6158
1:1 HNO3	10.00	MP86978
30% H2O2	3.00	M6170
Conc. HCL	10.00	M6151
PTFE Boiling Stones	N/A	M5581
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#2 CELL#50 96C

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
09/10/25 16:15 15:15	<i>[Signature]</i> met dig Preparation Group	<i>[Signature]</i> Analysis Group

Lab Sample ID	Client Sample ID	pH	Initial Weight (g)	Final Vol (ml)	Color Before	Color After	Texture	Artifact	Comment	Prep Pos
PB169634BL	PBS634	N/A	2.00	100	Colorless	Colorless	Fine	No	N/A	1
PB169634BS	LCS634	N/A	2.00	100	Colorless	Colorless	Fine	No	M6180,M6181	2
Q3054-01	MH-385	N/A	2.18	100	Brown	Yellow	Medium	No	N/A	3
Q3054-05	MH-384	N/A	2.30	100	Brown	Yellow	Medium	No	N/A	4
Q3054-05MS	MH-384MS	N/A	2.23	100	Brown	Yellow	Medium	No	M6180,M6181	6
Q3054-05MSD	MH-384MSD	N/A	2.18	100	Brown	Yellow	Medium	No	M6180,M6181	7
Q3054-05DUP	MH-384DUP	N/A	2.21	100	Brown	Yellow	Medium	No	N/A	5
Q3055-01	OR-03-090925	N/A	2.22	100	Brown	Yellow	Medium	No	N/A	8
Q3056-01	OK-02-090925	N/A	2.18	100	Brown	Yellow	Medium	No	N/A	9
Q3059-01	TR-06-09092025	N/A	2.40	100	Brown	Yellow	Medium	No	N/A	10
Q3068-01	AMBRIC-TECH-9-9	N/A	2.14	100	Brown	Yellow	Medium	No	N/A	11

WORKLIST(Hardcopy Internal Chain)

Worklist Name : PB169634

Worklist ID : 191779

Department : Digestion

Date : 09-10-2025 09:43:28

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q3054-01	MH-385	Solid	Metals ICP-TAL	Cool 4 deg C	PSEG03	D31	09/08/2025	6010D
Q3054-05	MH-384	Solid	Metals ICP-TAL	Cool 4 deg C	PSEG03	D31	09/09/2025	6010D
Q3055-01	OR-03-090925	Solid	Metals ICP-TAL	Cool 4 deg C	PSEG05	D31	09/09/2025	6010D
Q3056-01	OK-02-090925	Solid	Metals ICP-TAL	Cool 4 deg C	PSEG05	D21	09/09/2025	6010D
Q3059-01	TR-06-09092025	Solid	Metals ICP-TAL	Cool 4 deg C	PSEG05	D31	09/09/2025	6010D
Q3068-01	AMBRIC-TECH-9-9	Solid	Metals Group4	Cool 4 deg C	AMBR01	D31	09/09/2025	6010D

214 of 388

Date/Time 09/10/25 10:05

Raw Sample Received by: SLK9.mctd19

Raw Sample Relinquished by: CPren

Date/Time 09/10/25 11:05

Raw Sample Received by: CPren

Raw Sample Relinquished by: SLK9.mctd19

PERCENT SOLID

Supervisor: Iwona
Analyst: JIGNESH
Date: 9/11/2025

OVENTEMP IN Celsius(°C): 107
Time IN: 17:35
In Date: 09/10/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 104
Time OUT: 08:37
Out Date: 09/11/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % SOLID-OVEN

QC:LB137131

Lab ID	Client SampleID	Dish #	Dish Wt (g) (A)	Sample Wt (g)	Dish + Sample Wt (g) (B)	Dish+Dry Sample Wt (g) (C)	% Solid	Comments
Q3064-01	905-A	1	1.00	1.00	2.00	2.00	100.0	WIPE SAMPLE
Q3064-02	905-B-FRONT	2	1.00	1.00	2.00	2.00	100.0	WIPE SAMPLE
Q3064-03	905-B-BACK	3	1.00	1.00	2.00	2.00	100.0	WIPE SAMPLE
Q3065-01	VNJ-204	4	1.18	10.85	12.03	10.24	83.5	
Q3065-02	VNJ-204-E2	5	1.16	10.61	11.77	10.15	84.7	
Q3066-01	354	6	1.13	10.53	11.66	11.18	95.4	
Q3066-02	354-EPH-2	7	1.14	10.16	11.3	10.8	95.1	
Q3066-03	VNJ-242	8	1.13	10.84	11.97	11.05	91.5	
Q3066-04	VNJ-242-EPH-2	9	1.16	10.56	11.72	10.71	90.4	
Q3068-01	AMBRIC-TECH-9-9	10	1.18	10.42	11.6	10.45	89.0	
Q3072-01	30-GARFIELD-PL-COMP	11	1.14	10.30	11.44	10.62	92.0	
Q3072-01D	30-GARFIELD-PL-COMPDUP	12	1.16	10.30	11.46	10.65	92.1	
Q3073-01	BEL-25-0022	13	1.00	1.00	2.00	2.00	100.0	oil sample
Q3073-02	BEL-25-0023	14	1.00	1.00	2.00	2.00	100.0	oily-debris
Q3074-01	MOO-25-0141	15	1.00	1.00	2.00	2.00	100.0	oily-debris
Q3075-01	MOO-25-0254	16	1.12	10.76	11.88	9.93	81.9	
Q3075-02	MOO-25-0254-0256	17	1.19	10.70	11.89	9.77	80.2	
Q3075-04	MOO-25-0258	18	1.00	1.00	2.00	2.00	100.0	debris
Q3075-06	MOO-25-0259	19	1.00	1.00	2.00	2.00	100.0	debris
Q3075-08	MOO-25-0260	20	1.13	10.83	11.96	11.56	96.3	
Q3075-09	MOO-25-0260	21	1.13	10.83	11.96	11.56	96.3	
Q3075-10	MOO-25-02563	22	1.14	10.51	11.65	10.36	87.7	
Q3075-11	MOO-25-02561-0263	23	1.15	10.35	11.5	10.22	87.6	
Q3076-01	L18A	24	1.00	1.00	2.00	2.00	100.0	PILC
Q3076-02	L18B	25	1.00	1.00	2.00	2.00	100.0	PILC
Q3076-03	L19A	26	1.00	1.00	2.00	2.00	100.0	PILC
Q3076-04	L20A	27	1.00	1.00	2.00	2.00	100.0	PILC
Q3076-05	L20B	28	1.00	1.00	2.00	2.00	100.0	PILC

PERCENT SOLID

Supervisor: Iwona
Analyst: JIGNESH
Date: 9/11/2025

OVENTEMP IN Celsius(°C): 107
Time IN: 17:35
In Date: 09/10/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 104
Time OUT: 08:37
Out Date: 09/11/2025
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % SOLID-OVEN

QC:LB137131

Lab ID	Client SampleID	Dish #	Dish Wt (g) (A)	Sample Wt (g)	Dish + Sample Wt (g) (B)	Dish+Dry Sample Wt (g) (C)	% Solid	Comments
Q3076-06	L21A	29	1.00	1.00	2.00	2.00	100.0	PILC
Q3076-07	L21B	30	1.00	1.00	2.00	2.00	100.0	PILC
Q3076-08	L22A	31	1.00	1.00	2.00	2.00	100.0	PILC
Q3076-09	L22B	32	1.00	1.00	2.00	2.00	100.0	PILC
Q3076-10	245F75-1-1	33	1.00	1.00	2.00	2.00	100.0	PILC
Q3076-11	245F75-1-2	34	1.00	1.00	2.00	2.00	100.0	PILC
Q3076-12	JEB978E-1-1	35	1.00	1.00	2.00	2.00	100.0	PILC
Q3076-13	JEB978E-1-2	36	1.00	1.00	2.00	2.00	100.0	PILC
Q3076-14	JEB978E-2-1	37	1.00	1.00	2.00	2.00	100.0	PILC
Q3076-15	JEB978E-2-2	38	1.00	1.00	2.00	2.00	100.0	PILC
Q3077-01	LAW-25-0137	39	1.00	1.00	2.00	2.00	100.0	debris
Q3077-02	LAW-25-0137	40	1.16	10.46	11.62	10.2	86.4	
Q3077-03	LAW-25-0139	41	1.16	10.46	11.62	10.2	86.4	

$$\% \text{ Solid} = \frac{(C-A) * 100}{(B-A)}$$

WORKLIST(Hardcopy Internal Chain)

137131

WorkList Name : %1-091025 WorkList ID : 191784 Department : Wet-Chemistry Date : 09-10-2025 10:40:17

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q3064-01	905-A	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3064-02	905-B-FRONT	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3064-03	905-B-BACK	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3065-01	VNJ-204	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3065-02	VNJ-204-E2	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3066-01	354	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3066-02	354-EPH-2	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3066-03	VNJ-242	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3066-04	VNJ-242-EPH-2	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3068-01	AMBRIC-TECH-9-9	Solid	Percent Solids	Cool 4 deg C	AMBR01	D31	09/10/2025	Chemtech -SO
Q3072-01	30-GARFIELD-PL-COMP	Solid	Percent Solids	Cool 4 deg C	PSEG03	D21	09/10/2025	Chemtech -SO
Q3073-01	BEL-25-0022	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3073-02	BEL-25-0023	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3074-01	MOO-25-0141	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3075-01	MOO-25-0254	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3075-02	MOO-25-0254-0256	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3075-04	MOO-25-0258	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3075-06	MOO-25-0259	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3075-08	MOO-25-0260	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3075-09	MOO-25-0260	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3075-10	MOO-25-02563	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO

Date/Time 09-10-25 16:10

Raw Sample Received by: 80 WWC

Raw Sample Relinquished by: JWSH

Date/Time 09-10-25

Raw Sample Received by: JWSH

Raw Sample Relinquished by: JWSH

WORKLIST(Hardcopy Internal Chain)

JF 3431

WorkList Name : %1-091025

WorkList ID : 191784

Department : Wet-Chemistry

Date : 09-10-2025 10:40:17

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q3075-11	MOO-25-02561-0263	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3076-01	L18A	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3076-02	L18B	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3076-03	L19A	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3076-04	L20A	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3076-05	L20B	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3076-06	L21A	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3076-07	L21B	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3076-08	L22A	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3076-09	L22B	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3076-10	245F75-1-1	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3076-11	245F75-1-2	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3076-12	JEB978E-1-1	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3076-13	JEB978E-1-2	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3076-14	JEB978E-2-1	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3076-15	JEB978E-2-2	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3077-01	LAW-25-0137	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3077-02	LAW-25-0137	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO
Q3077-03	LAW-25-0139	Solid	Percent Solids	Cool 4 deg C	PSEG03	D31	09/10/2025	Chemtech -SO

Date/Time 09-10-25 10:40

Raw Sample Received by: JF WCC

Raw Sample Relinquished by: JF WCC

Date/Time 09-10-25

Raw Sample Received by: JF WCC

Raw Sample Relinquished by: JF WCC

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB137144

Review By	Janvi	Review On	9/11/2025 12:28:20 PM
Supervise By	jaswal	Supervise On	9/12/2025 10:24:55 PM
STD. NAME	STD REF.#		
ICAL Standard	MP87031,MP87038,MP87035,MP87034,MP87033,MP87032		
ICV Standard	MP87047,MP87038		
CCV Standard	MP87042		
ICSA Standard	MP87040,MP87048		
CRI Standard	MP87038		
LCS Standard			
Chk Standard	MP87043,MP87044,MP87045,MP87046,MP87049		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	09/10/25 11:06		Jaswal	OK
2	S1	S1	CAL2	09/10/25 11:10		Jaswal	OK
3	S2	S2	CAL3	09/10/25 11:14		Jaswal	OK
4	S3	S3	CAL4	09/10/25 11:19		Jaswal	OK
5	S4	S4	CAL5	09/10/25 11:23		Jaswal	OK
6	S5	S5	CAL6	09/10/25 11:27		Jaswal	OK
7	ICV01	ICV01	ICV	09/10/25 11:31		Jaswal	OK
8	LLICV01	LLICV01	LLICV	09/10/25 11:39		Jaswal	OK
9	ICB01	ICB01	ICB	09/10/25 11:43		Jaswal	OK
10	CRI01	CRI01	CRDL	09/10/25 11:48		Jaswal	OK
11	ICSA01	ICSA01	ICSA	09/10/25 11:52		Jaswal	OK
12	ICSAB01	ICSAB01	ICSAB	09/10/25 11:56		Jaswal	OK
13	ICSADL	ICSADL	ICSA	09/10/25 12:00		Jaswal	OK
14	ICSABDL	ICSABDL	ICSAB	09/10/25 12:04		Jaswal	OK
15	CCV01	CCV01	CCV	09/10/25 12:09		Jaswal	OK
16	CCB01	CCB01	CCB	09/10/25 12:13		Jaswal	OK
17	LR-1	LR-1	HIGH STD	09/10/25 12:17		Jaswal	OK
18	LR-2	LR-2	HIGH STD	09/10/25 12:22		Jaswal	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB137144

Review By	Janvi	Review On	9/11/2025 12:28:20 PM
Supervise By	jaswal	Supervise On	9/12/2025 10:24:55 PM

STD. NAME	STD REF.#
ICAL Standard	MP87031,MP87038,MP87035,MP87034,MP87033,MP87032
ICV Standard	MP87047,MP87038
CCV Standard	MP87042
ICSA Standard	MP87040,MP87048
CRI Standard	MP87038
LCS Standard	
Chk Standard	MP87043,MP87044,MP87045,MP87046,MP87049

19	PB169620BS	PB169620BS	LCS	09/10/25 12:35		Jaswal	OK
20	PB169596BL	PB169596BL	MB	09/10/25 12:39		Jaswal	OK
21	PB169596BS	PB169596BS	LCS	09/10/25 12:43		Jaswal	OK
22	PB169620BL	PB169620BL	MB	09/10/25 12:52		Jaswal	OK
23	Q3046-01	IRV-CONCRETE	SAM	09/10/25 12:57		Jaswal	OK
24	LR-3	LR-3	HIGH STD	09/10/25 13:01		Jaswal	OK
25	Q3048-01	VNJ-258	SAM	09/10/25 13:06		Jaswal	OK
26	Q3048-01DUP	VNJ-258DUP	DUP	09/10/25 13:10		Jaswal	OK
27	CCV02	CCV02	CCV	09/10/25 13:14		Jaswal	OK
28	CCB02	CCB02	CCB	09/10/25 13:18		Jaswal	OK
29	Q3048-01L	VNJ-258L	SD	09/10/25 13:22		Jaswal	OK
30	Q3048-01MS	VNJ-258MS	MS	09/10/25 13:26		Jaswal	OK
31	Q3048-01MSD	VNJ-258MSD	MSD	09/10/25 13:30		Jaswal	OK
32	Q3048-01A	VNJ-258A	PS	09/10/25 13:34	0.1 ML OF EACH OF M6008 AND M6017 IN 10ML OF SAMPLE.	Jaswal	OK
33	Q3033-01	BUR-25-0077	SAM	09/10/25 13:38		Jaswal	OK
34	Q3036-03DL	EGR-2DL	SAM	09/10/25 13:42	Straight 5x Dilution for all elements	Jaswal	OK
35	Q3045-02	DNAPL	SAM	09/10/25 13:47	Na high	Jaswal	Dilution
36	Q3045-02DUP	DNAPLDUP	DUP	09/10/25 13:51	Na high	Jaswal	Dilution
37	Q3045-02L	DNAPLL	SD	09/10/25 13:55		Jaswal	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB137144

Review By	Janvi	Review On	9/11/2025 12:28:20 PM
Supervise By	jaswal	Supervise On	9/12/2025 10:24:55 PM

STD. NAME	STD REF.#
ICAL Standard	MP87031,MP87038,MP87035,MP87034,MP87033,MP87032
ICV Standard	MP87047,MP87038
CCV Standard	MP87042
ICSA Standard	MP87040,MP87048
CRI Standard	MP87038
LCS Standard	
Chk Standard	MP87043,MP87044,MP87045,MP87046,MP87049

38	Q3045-02MS	DNAPLMS	MS	09/10/25 14:00	Na high	Jaswal	Dilution
39	CCV03	CCV03	CCV	09/10/25 14:04		Jaswal	OK
40	CCB03	CCB03	CCB	09/10/25 14:25		Jaswal	OK
41	Q3045-02MSD	DNAPLMSD	MSD	09/10/25 14:29	Na high	Jaswal	Dilution
42	Q3045-02A	DNAPLA	PS	09/10/25 14:33	0.1 ML OF EACH OF M6008 AND M6017 IN 10ML OF SAMPLE.	Jaswal	OK
43	Q3045-02DL	DNAPLDL	SAM	09/10/25 14:41	5x for Na	Jaswal	Confirms
44	Q3045-02DUPDL	DNAPLDUPDL	DUP	09/10/25 14:46	5x for Na	Jaswal	Confirms
45	Q3045-02LDL	DNAPLLDL	SD	09/10/25 14:50	NOT REQUIRED	Jaswal	Not Ok
46	Q3045-02MSDL	DNAPLMSDL	MS	09/10/25 14:54	5x for Na	Jaswal	Confirms
47	Q3045-02MSDDL	DNAPLMSDDL	MSD	09/10/25 14:59	5x for Na	Jaswal	Confirms
48	Q3045-02ADL	DNAPLADL	PS	09/10/25 15:03	NOT REQUIRED	Jaswal	Not Ok
49	PB169634BS	PB169634BS	LCS	09/10/25 15:17		Jaswal	OK
50	PB169634BL	PB169634BL	MB	09/10/25 15:23		Jaswal	OK
51	CCV04	CCV04	CCV	09/10/25 15:27		Jaswal	OK
52	CCB04	CCB04	CCB	09/10/25 15:31		Jaswal	OK
53	Q3055-01	OR-03-090925	SAM	09/10/25 15:35		Jaswal	OK
54	Q3056-01	OK-02-090925	SAM	09/10/25 15:39		Jaswal	OK
55	Q3059-01	TR-06-09092025	SAM	09/10/25 15:43		Jaswal	OK
56	Q3054-05	MH-384	SAM	09/10/25 15:47		Jaswal	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB137144

Review By	Janvi	Review On	9/11/2025 12:28:20 PM
Supervise By	jaswal	Supervise On	9/12/2025 10:24:55 PM

STD. NAME	STD REF.#
ICAL Standard	MP87031,MP87038,MP87035,MP87034,MP87033,MP87032
ICV Standard	MP87047,MP87038
CCV Standard	MP87042
ICSA Standard	MP87040,MP87048
CRI Standard	MP87038
LCS Standard	
Chk Standard	MP87043,MP87044,MP87045,MP87046,MP87049

57	Q3054-05DUP	MH-384DUP	DUP	09/10/25 15:51		Jaswal	OK
58	Q3054-05L	MH-384L	SD	09/10/25 15:56		Jaswal	OK
59	Q3054-05MS	MH-384MS	MS	09/10/25 16:00		Jaswal	OK
60	Q3054-05MSD	MH-384MSD	MSD	09/10/25 16:04		Jaswal	OK
61	Q3054-05A	MH-384A	PS	09/10/25 16:08	0.1 ML OF EACH OF M6008 AND M6017 IN 10ML OF SAMPLE.	Jaswal	OK
62	Q3068-01	AMBRIC-TECH-9-9	SAM	09/10/25 16:12		Jaswal	OK
63	CCV05	CCV05	CCV	09/10/25 16:16		Jaswal	OK
64	CCB05	CCB05	CCB	09/10/25 16:20		Jaswal	OK
65	Q3054-01	MH-385	SAM	09/10/25 16:24		Jaswal	OK
66	CCV06	CCV06	CCV	09/10/25 16:43		Jaswal	OK
67	CCB06	CCB06	CCB	09/10/25 16:48		Jaswal	OK

Prep Standard - Chemical Standard Summary

Order ID : Q3068

Test : Metals Group4

Prepbatch ID : PB169634,

Sequence ID/Qc Batch ID: LB137144, LB137144,

Standard ID :

MP86978, MP87031, MP87032, MP87033, MP87034, MP87035, MP87036, MP87038, MP87040, MP87042, MP87043, MP87044, MP87045, MP87046, MP87047, MP87048, MP87049,

Chemical ID :

M5467, M5581, M5658, M5748, M5751, M5798, M5799, M5800, M5801, M5814, M5820, M5962, M5969, M5971, M5979, M5985, M5998, M6021, M6023, M6026, M6027, M6028, M6030, M6032, M6058, M6076, M6077, M6128, M6137, M6138, M6140, M6142, M6144, M6145, M6151, M6158, M6159, M6160, M6162, M6163, M6164, M6165, M6170, M6171, M6174, M6176, M6177, M6178, M6179, M6180, M6181, M6182, M6184, M6187, W3112,

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
169	1:1HNO3	MP86978	08/28/2025	11/27/2025	Sagar Kanani	None	None	Sarabjit Jaswal
								08/28/2025

FROM 1250.00000ml of M6162 + 1250.00000ml of W3112 = Final Quantity: 2500.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
902	ICP AES CAL BLK (SO/ICB/CCB)	MP87031	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel
								09/04/2025

FROM 125.00000ml of M6151 + 2350.00000ml of W3112 + 25.00000ml of M6187 = Final Quantity: 2500.000 ml

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
907	ICP AES STD S (S5)	MP87032	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel
								09/04/2025

FROM 5.00000ml of M5467 + 5.00000ml of M5820 + 5.00000ml of M5969 + 5.00000ml of M5971 + 5.00000ml of M5998 + 5.00000ml of M6077 + 5.00000ml of M6160 + 5.00000ml of M6174 + 5.00000ml of M6176 + 455.00000ml of MP87031 = Final Quantity: 500.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
910	ICP AES STD S4	MP87033	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel
								09/04/2025

FROM 50.00000ml of MP87031 + 50.00000ml of MP87032 = Final Quantity: 100.000 ml

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
909	ICP AES STD S3	MP87034	09/02/2025	10/03/2025	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Janvi Patel 09/04/2025

FROM 25.00000ml of MP87032 + 75.00000ml of MP87031 = Final Quantity: 100.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3913	ICP AES STD S2	MP87035	09/02/2025	10/03/2025	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Janvi Patel 09/04/2025

FROM 16.00000ml of MP87032 + 184.00000ml of MP87031 = Final Quantity: 200.000 ml

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
2950	ICP AES S1/CRI STOCK STD	MP87036	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel
								09/04/2025

FROM 0.03000ml of M5798 + 0.03000ml of M6028 + 0.04000ml of M6137 + 0.05000ml of M5658 + 0.05000ml of M6030 + 0.05000ml of M6140 + 0.05000ml of M6159 + 0.06000ml of M6177 + 0.10000ml of M5751 + 0.10000ml of M5801 + 0.10000ml of M5820 + 0.10000ml of M5962 + 0.10000ml of M5971 + 0.10000ml of M6128 + 0.10000ml of M6176 + 0.15000ml of M5800 + 0.20000ml of M5799 + 0.20000ml of M6021 + 0.20000ml of M6023 + 0.20000ml of M6027 + 0.20000ml of M6145 + 0.25000ml of M5467 + 0.25000ml of M6160 + 0.50000ml of M5814 + 0.50000ml of M6032 + 1.00000ml of M5979 + 1.00000ml of M6138 + 1.00000ml of M6142 + 1.00000ml of M6144 + 1.00000ml of M6171 + 1.00000ml of M6178 + 2.00000ml of M5969 + 88.29000ml of MP87031 = Final Quantity: 100.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
2951	ICP AES S1/CRI WORK STD	MP87038	09/02/2025	10/03/2025	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Janvi Patel
								09/04/2025

FROM 2.00000ml of MP87036 + 98.00000ml of MP87031 = Final Quantity: 100.000 ml

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
904	ICP AES ICSA SOLN	MP87040	09/02/2025	10/03/2025	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Janvi Patel 09/04/2025

FROM 25.00000ml of M6182 + 225.00000ml of MP87031 = Final Quantity: 250.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
911	ICP AES CCV SOLN	MP87042	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel 09/04/2025

FROM 50.00000ml of MP87031 + 50.00000ml of MP87032 = Final Quantity: 100.000 ml

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
919	ICP AES INTERNAL STD	MP87043	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel
								09/04/2025

FROM 1.00000ml of M6179 + 10.00000ml of M5985 + 1969.00000ml of W3112 + 20.00000ml of M6187 = Final Quantity: 2000.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
903	ICP AES RINSE SOLN	MP87044	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel
								09/04/2025

FROM 200.00000ml of M6187 + 9800.00000ml of W3112 = Final Quantity: 10000.000 ml

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
4225	LR-1	MP87045	09/02/2025	10/03/2025	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Janvi Patel 09/04/2025

FROM 11.50000ml of M6138 + 11.50000ml of M6144 + 11.50000ml of M6171 + 15.50000ml of MP87031 = Final Quantity: 50.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
4226	LR-2	MP87046	09/02/2025	10/03/2025	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	Janvi Patel 09/04/2025

FROM 13.50000ml of M6140 + 9.00000ml of M6142 + 9.50000ml of M6159 + 18.00000ml of MP87031 = Final Quantity: 50.000 ml

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
4163	NEW ICV-060925	MP87047	09/02/2025	10/03/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 09/04/2025

FROM 0.20000ml of M6058 + 0.40000ml of M6163 + 0.40000ml of M6164 + 0.40000ml of M6165 + 48.60000ml of MP87031 = Final Quantity: 50.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3494	ICP AES ICSAB SOLN-1	MP87048	09/02/2025	10/03/2025	Janvi Patel	None	METALS_PIPETTE_1 (ICP A)	Sarabjit Jaswal 09/04/2025

FROM 0.05000ml of M6076 + 5.00000ml of M6182 + 5.00000ml of M6184 + 39.95000ml of MP87031 = Final Quantity: 100.000 ml

Metals STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
4227	LR-3	MP87049	09/02/2025	10/03/2025	Sarabjit Jaswal	None	None	Janvi Patel
FROM 1.15000ml of M6026 + 1.25000ml of M5658 + 1.25000ml of M5748 + 1.50000ml of M6145 + 2.50000ml of M5751 + 2.50000ml of M6128 + 39.85000ml of MP87031 = Final Quantity: 50.000 ml								

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18

CHEMICAL RECEIPT LOG BOOK

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	26397-103 / PTFE BOILING STONES	W126678	03/20/2026	03/20/2025 / Jaswal	06/12/2023 / jaswal	M5581

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	/ 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.	58029 / Cu, 1000 PPM, 500 ml	071723	07/17/2026	10/01/2024 / Jaswal	08/25/2023 / jaswal	M5751

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

CHEMICAL RECEIPT LOG BOOK

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

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

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

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

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	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	06/06/2025 / Janvi	07/01/2024 / Jaswal	M5971

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 #
Absolute Standards, Inc.	57023 / V, 1000 PPM, 125 ml	062424	06/24/2027	09/28/2024 / jaswal	08/05/2024 / Jaswal	M6021

CHEMICAL RECEIPT LOG BOOK

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57182 / Pb, 10000 PPM, 125 ml	110923	11/09/2026	12/05/2024 / janvi	08/05/2024 / Jaswal	M6026

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

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

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CHEM-QC-4 / CHEM-QC-4, Second Source, 1000 ug/ml, B, Mo, Si, Sn, Ti	V2-MEB746173	01/29/2026	01/29/2025 / JANVI	08/22/2024 / Jaswal	M6058

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	01/01/2026	01/01/2025 / kareem	09/19/2024 / kareem	M6076

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.	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

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	121824	12/18/2027	04/17/2025 / Janvi	01/13/2025 / Jaswal	M6138

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 / Jaswal	01/13/2025 / Jaswal	M6145

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	02/17/2026	02/18/2025 / Sagar	01/15/2025 / Sagar	M6151

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	10/09/2025	03/10/2025 / Eman	02/02/2025 / Sagar	M6158

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58113 / Al, 10000 PPM, 500 ml	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 #
Absolute Standards, Inc.	57051 / Sb, 1000 PPM, 125 ml	071724	07/17/2027	03/24/2025 / kareem	10/18/2024 / kareem	M6160

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

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-2186-03 / Hydrogen Peroxide (cs/4x4L)	24D1961001	10/16/2025	06/25/2025 / Sagar	05/20/2025 / Sagar	M6170

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 / Janvi	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

CHEMICAL RECEIPT LOG BOOK

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

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	W2-MEB752149	02/05/2026	08/06/2025 / Janvi	07/22/2025 / Janvi	M6180

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	V2-MEB7433480	02/05/2026	08/06/2025 / Janvi	07/22/2025 / Janvi	M6181

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	BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L)	24H0162012	01/28/2026	08/29/2025 / Sagar	08/08/2025 / Sagar	M6187

CHEMICAL RECEIPT LOG BOOK

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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18



M6032

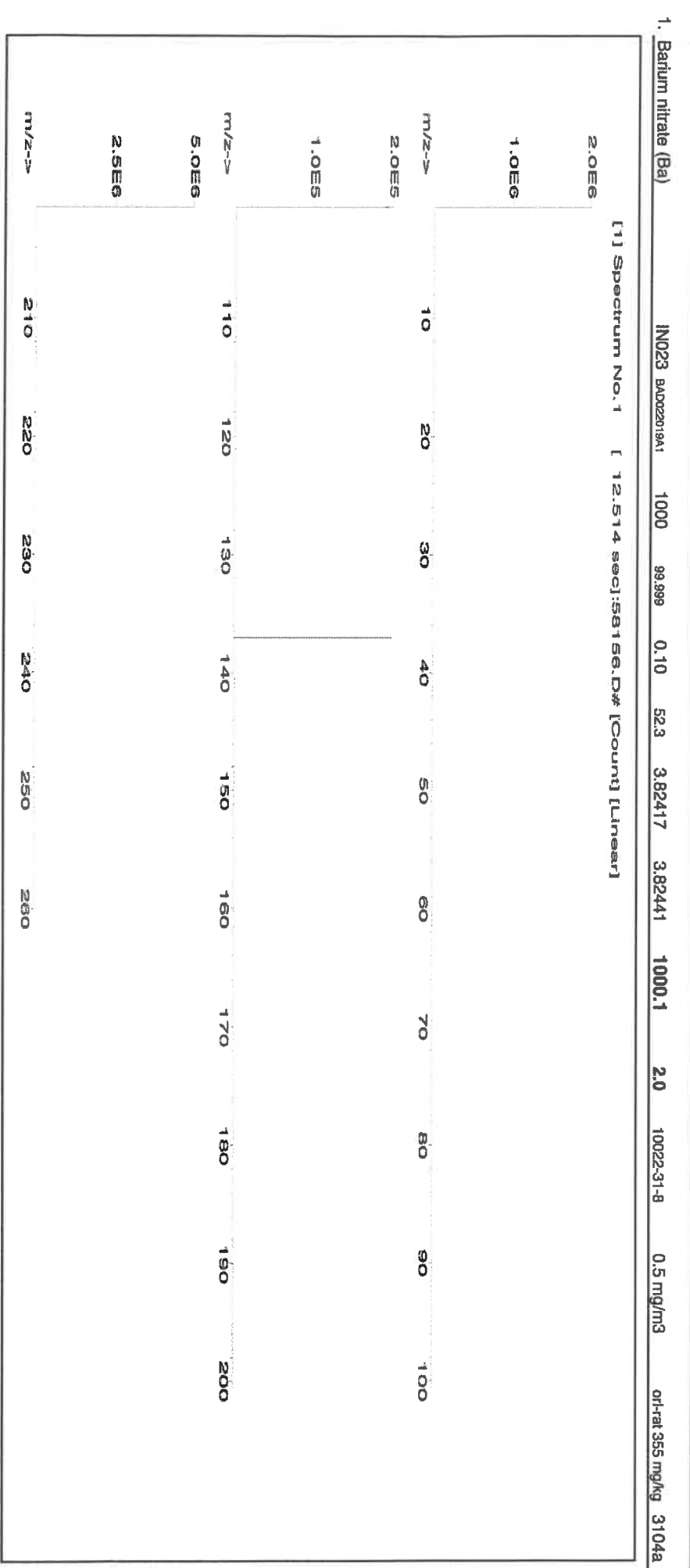


CERTIFIED WEIGHT REPORT:

Part Number: 57056
Lot Number: 010924
Description: Barium (Ba)
Solvent: Nitric Acid
Lot #
Expiration Date: 010927
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.02
Balance Uncertainty: 5E-05
Flask Uncertainty: 0.058

Giovanni Caporale	
Formulated By:	Giovanni Esposito
	010924
Reviewed By:	Pedro L. Renteria
	010924

SDS Information									
Compound	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)
1. Barium nitrate (Ba)	IN023	BA0022019A1	1000	99.999	0.10	52.3	3.82417	3.82441	1000.1





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 certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



M6028



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57048
070124
Cadmium (Cd)

Lot #
Solvent: 24002546 Nitric Acid

Expiration Date:

070127

2% 40.0 (mL) Nitric Acid

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6UTB

Weight shown below was diluted to (mL):

2000.07

SE-05 Balance Uncertainty
0.100 Flask Uncertainty

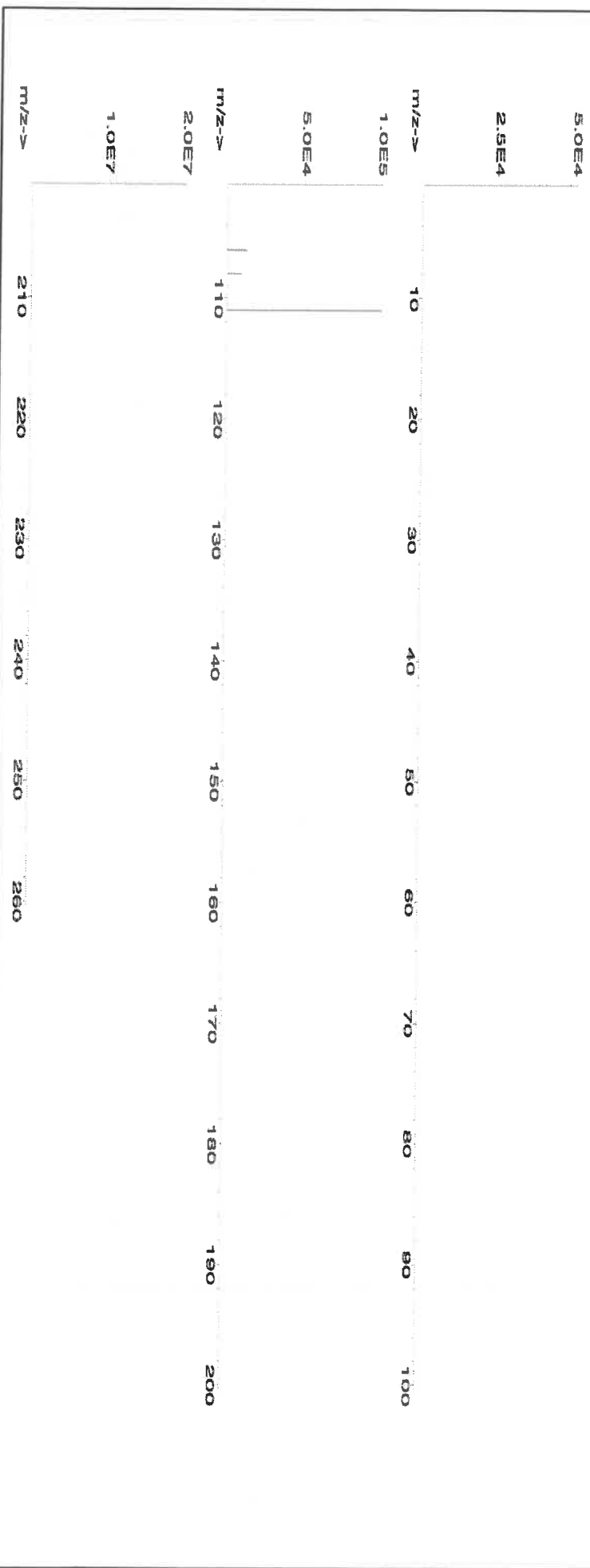
<i>Aleah O'Brady</i>	
Formulated By:	Aleah O'Brady
	070124
<i>Pedro L. Rentas</i>	
Reviewed By:	Pedro L. Rentas
	070124

Compound

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

1. Cadmium nitrate tetrahydrate (Cd) IN024 CDM09221A1 1000 99.999 0.10 36.5 5.4797 5.4804 1000.1 2.0 10022-68-1 0.01 mg/m3 ref rat 60.2mg/kg 3108

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





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

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



Certified Reference Material CRM

MC026



CERTIFIED WEIGHT REPORT:

Part Number: **57182**
Lot Number: **110923**
Description: **Lead (Pb)**

Lot #
Solvent: **24002546 Nitric Acid**

Expiration Date: **110926**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **10000**
NIST Test Number: **6UTB**

2% **40.0** **Nitric Acid**
(mL)

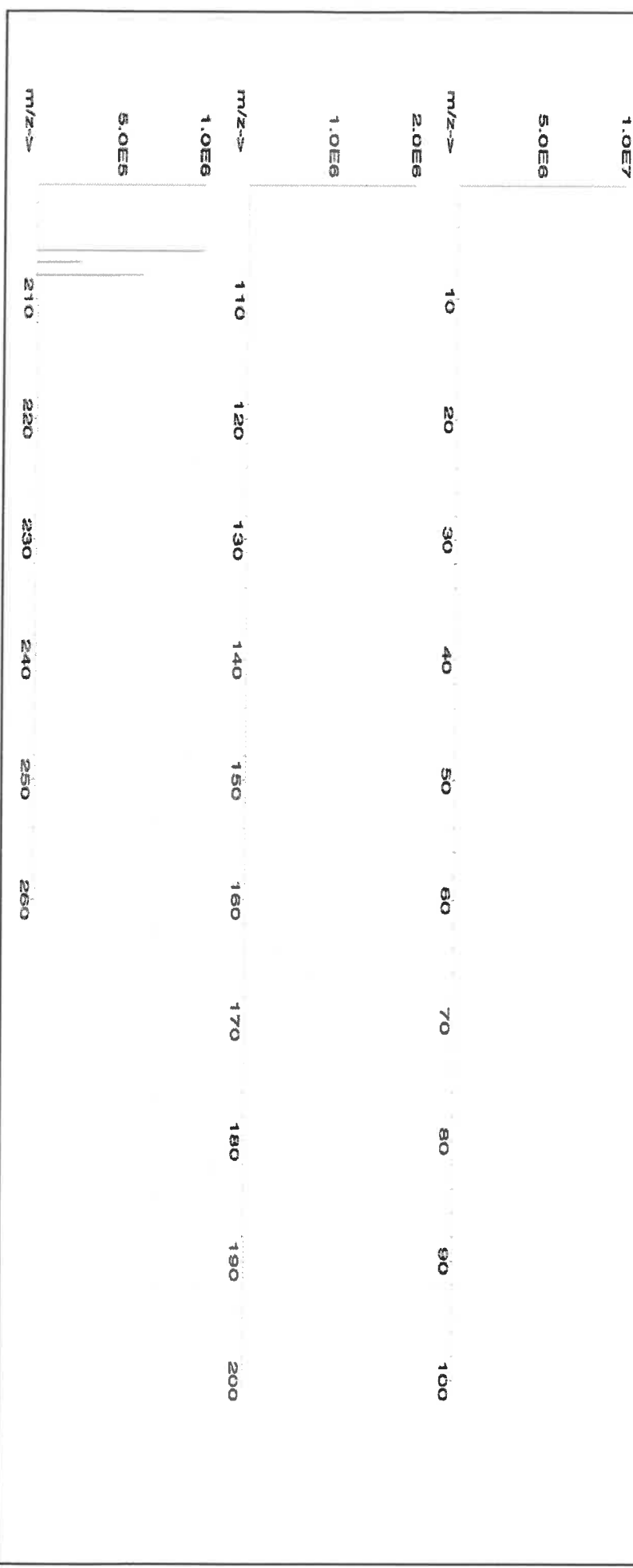
Weight shown below was diluted to (mL): **2000.02** **0.058** **Flask Uncertainty**

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

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

1. **Lead(II) nitrate (Pb)** IN029 PED122016A1 10000 99.999 0.10 62.5 32.0006 32.0040 10001.1 20.0 10099-74-8 0.05 mg/m3 Inverse rat 83 mg/kg 3128

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





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

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

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

Physical Characterization:

(T)= Target analyte

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

Certified by:

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



Certified Reference Material CRM



N5467 R: 03/01/23 (14)

CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57058
020623
Cerium (Ce)

Expiration Date:
Recommended Storage:
Nominal Concentration (µg/mL):
NIST Test Number:

020626
Ambient (20 °C)
1000
6UTB

Weight shown below was diluted to (mL):

1000.12 0.058 Balance Uncertainty
0.058 Flask Uncertainty

Solvent: 21110221 Nitric Acid

2% 20.0 Nitric Acid (mL)

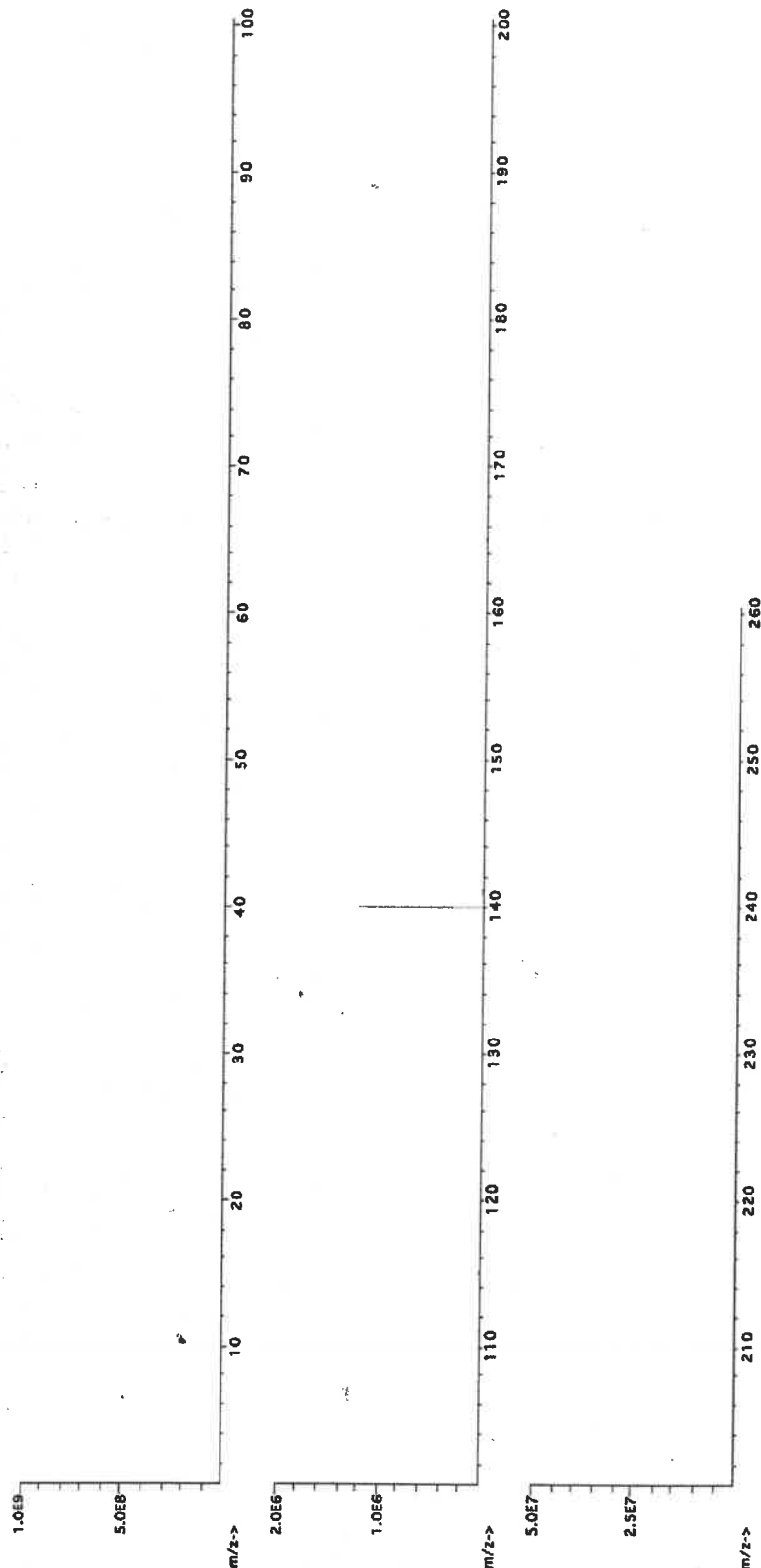
Formulated By:	Lawrence Barry 020623
Reviewed By:	Pedro L. Rentas 020623

SDS Information

Expanded Uncertainty +/- (µg/mL) CAS# OSHA PEL (TWA) LD50 SRM

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	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

[1] Spectrum No.1 [43.472 sec]58158.D# [Count] [Linear]





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

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

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

(T)= Target analyte

Physical Characterization:

Certified by:

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

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



MATERIAL CERTIFICATE OF COMPLIANCE

DATE: JUNE 12, 2023

CUSTOMER: PCI SCIENTIFIC SUPPLY, INC

PURCHASE ORDER NO. 6054931

CATALOG NO. BOI5021-450L

PRODUCT DESCRIPTION: BOILING STONES, TFE, 454GMS

QUANTITY: 10 EACH

LOT NO. W126678

SPECIFICATION (S): Made from Virgin PTFE Resin

We certify that we have complied with the terms and conditions of the above Purchase Order and the Part Specifications in the manufacturing of the above product.



Laura Valencia
Quality Assurance Inspector

F:\J:\A\CF\PCISCI\COC-55118-BOI5021-061223



CERTIFIED WEIGHT REPORT:

Part Number: 58024
Lot Number: 060523
Description: Chromium (Cr)

Lot # 2110221 **Solvent:** Nitric Acid

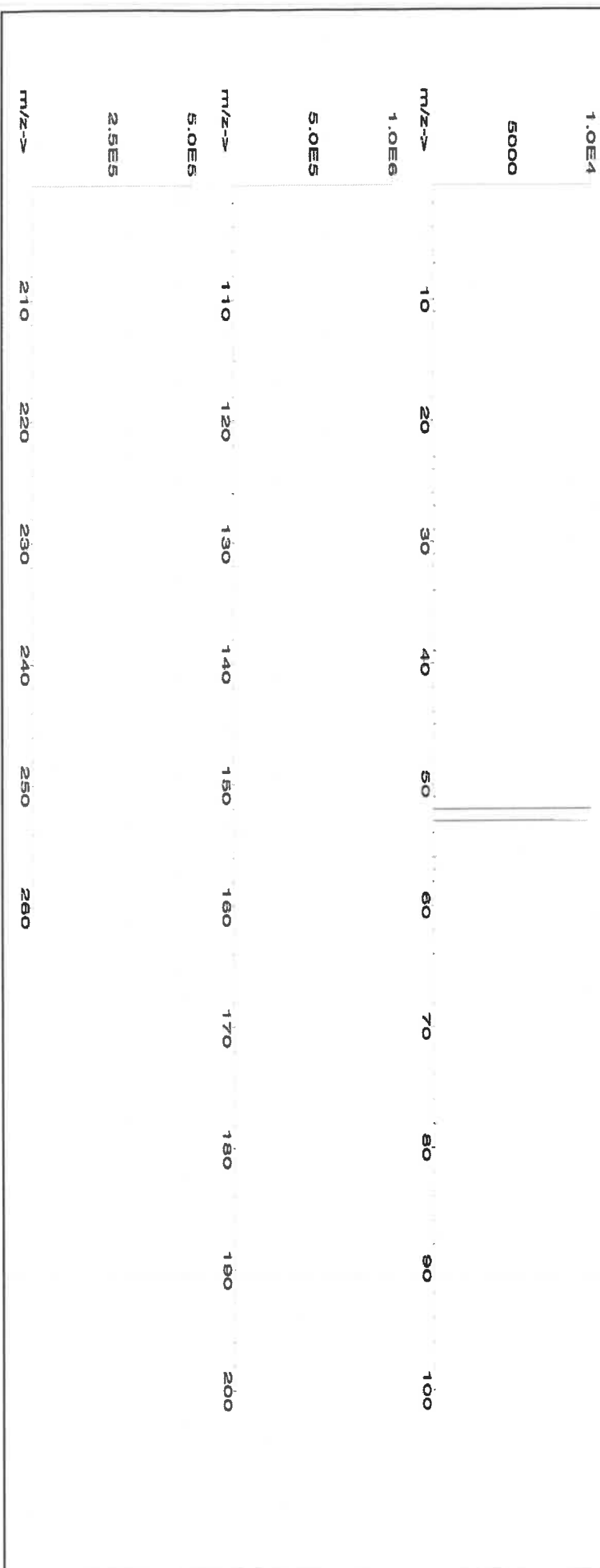
Formulated By:	Lawrence Barry
	060523
Reviewed By:	Pedro L. Ruelas
	060523

Expiration Date: 060526
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Volume shown below was diluted to (mL): 2000.02 0.058 Balance Uncertainty
Flask Uncertainty

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
----------	-------------	------------	-----------------	-------------------	------------------	-----------------------	-----------------------	---------------------	----------------------------------	------	----------------	------	----------

1. Chromium(III) nitrate nonahydrate (Cr) 58124 071122 0.1000 200.0 0.084 1000 10000.1 1000.0 2.2 7789-02-8 0.5 mg(Cr)/m3 or rat 3250 mg/kg 3112a

[1] Spectrum No.1 [31.393 sec]:57024.D# [Count] [Linear]





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

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



CERTIFIED WEIGHT REPORT:

Part Number: **57028**
Lot Number: **091223**
Description: **Nickel (NI)**

Lot # **24002546**
Solvent: **Nitric Acid**

Expiration Date: **091226**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**
NIST Test Number: **6U7B**

2.0% **40.0** **Nitric Acid**
(mL)

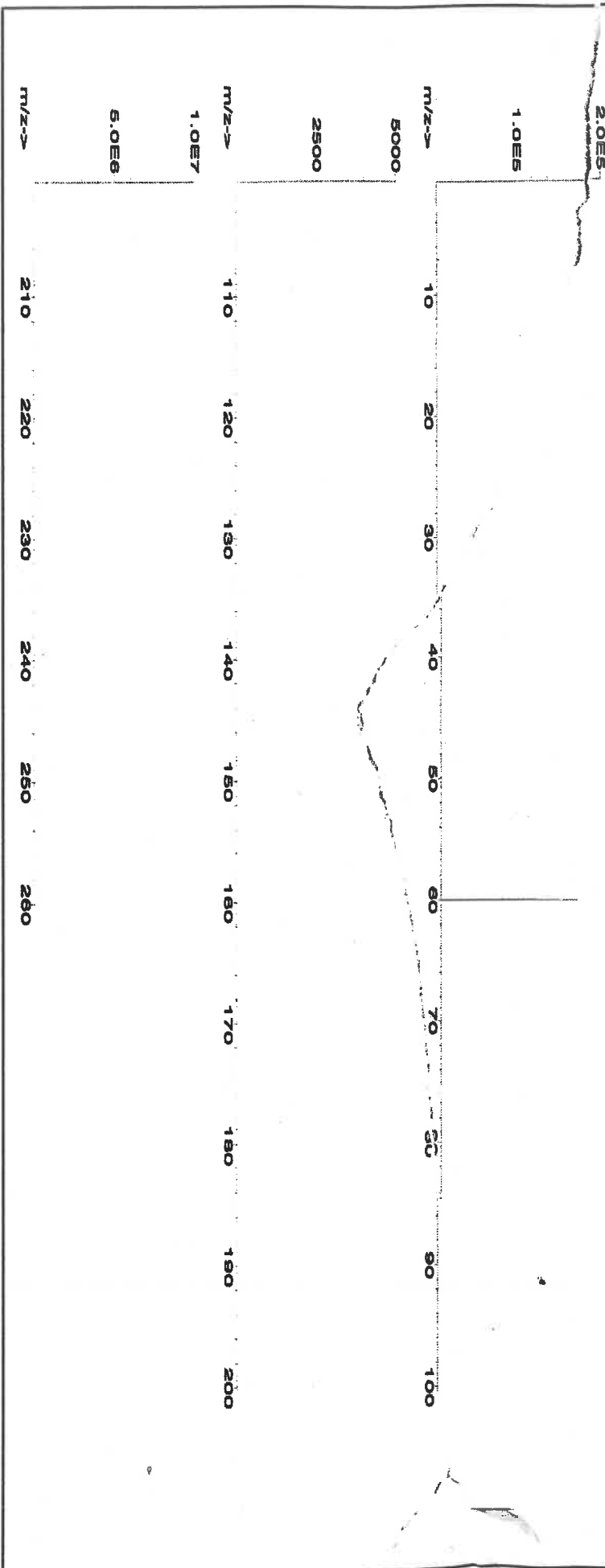
Volume shown below was diluted to (mL): **2000.02** **5E-05** **Balance Uncertainty**
0.056 **Flask Uncertainty**

Formulated By:	<i>Lawrence Barry</i>	091223
Reviewed By:	<i>Pedro L. Renteria</i>	091223

Compound	Part Number	Lot Number	Dilution Factor	Initial Vd. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
----------	-------------	------------	-----------------	------------------	--------------------------	-----------------------	-----------------------	---------------------	----------------------------------	------	----------------	------	----------

1. Nickel(II) nitrate hexahydrate (NI) 58128 062023 0.1000 200.0 0.084 1000 10000.4 1000.0 2.2 13478-00-7 1 mg/m3 or-rel 1620 mg/kg 3136

[1] Spectrum No.1 [9.135 sec]:56028.D# [Count] [Linear]





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

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



Certified Reference Material CRM

R: 8/25/23

M5751



CERTIFIED WEIGHT REPORT:

Part Number: **58029**
Lot Number: **071723**
Description: **Copper (Cu)**

Lot #: **2110221**
Solvent: **Nitric Acid**

Expiration Date: **071726**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**

2.0%
40.0 (mL)
Nitric Acid

NIST Test Number: **6L7B**
Volume shown below was diluted to (mL): **2000.02**
Balance Uncertainty: **5E-05**
Flask Uncertainty: **0.058**

Formulated By:	Benson Chan	071723
Reviewed By:	Pedro L. Ruelas	071723

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.)	NIST SRM
----------	-------------	------------	-----------------	-------------------	------------------	-----------------------	-----------------------	---------------------	----------------------------------	--	----------

1. Copper(II) nitrate trihydrate (Cu) 58129 022723 0.1000 200.0 0.084 1000 10000.5 1000.0 2.2 10031-43-3 1 mg/m3 or rat 794 mg/kg 3114

[1] Spectrum No. 1 [33.422 sec]: 58029.D# [Count] [Linear]

1.0E6	m/z ->	10	20	30	40	50	60	70	80	90	100
5.0E5	m/z ->	110	120	130	140	150	160	170	180	190	200
2.5E7	m/z ->	210	220	230	240	250	260				

Absolute Standards, Inc.

800-368-1131
www.absolutestandards.com



Certified Reference Material CRM



ANAB ISO 17034 Accredited
AR-1539 Certificate Number
<https://AbsoluteStandards.com>

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

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



CERTIFIED WEIGHT REPORT:

Part Number: 57004
Lot Number: 102523
Description: Beryllium (Be)

Lot # 24002546
Solvent: Nitric Acid

Expiration Date:

102526

2.0%

40.0 (mL)

Nitric Acid

Recommended Storage:

Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6UTB

Volume shown below was diluted to (mL): 2000.02

5E-05 Balance Uncertainty

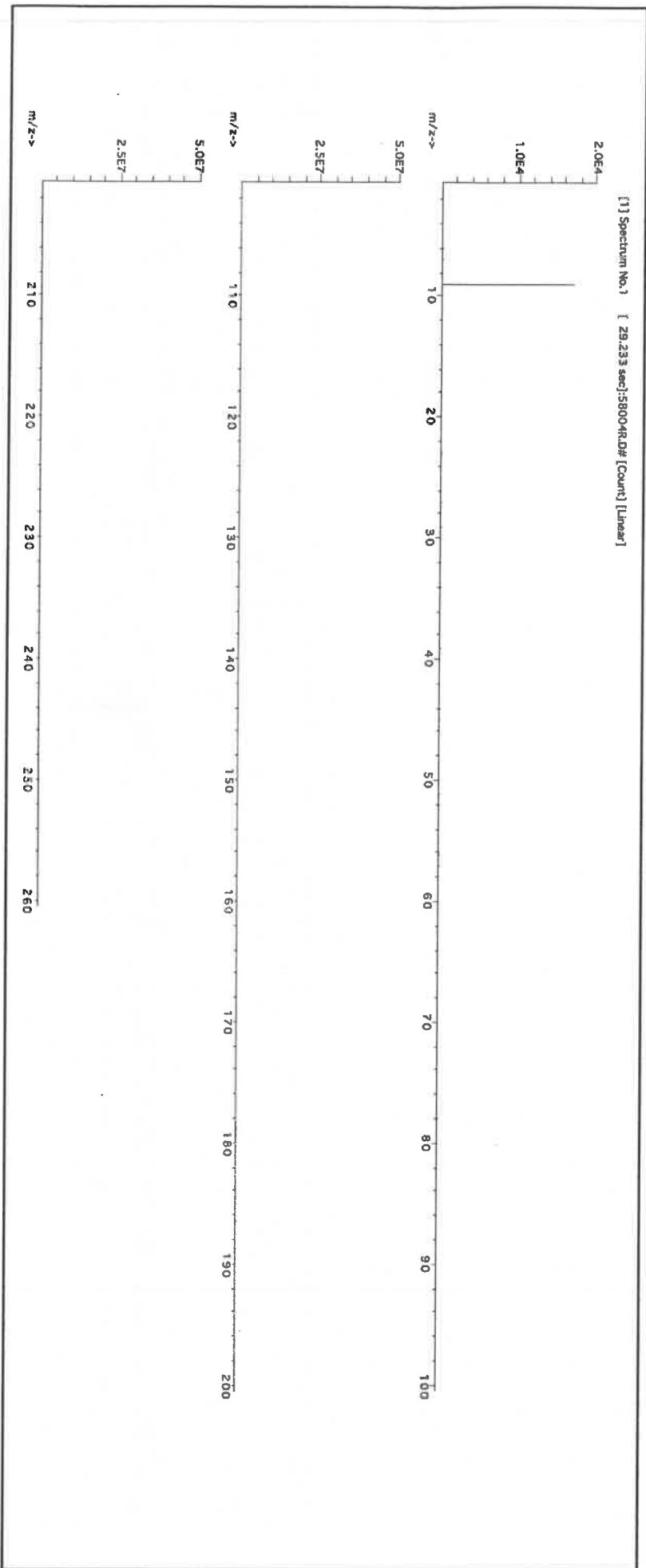
0.058 Flask Uncertainty

Formulated By:	Benson Chan	102523
Reviewed By:	Pedro L. Rentas	102523

SDS Information

Compound	Part Number	Lot	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
----------	-------------	-----	-----------------	-------------------	--------------------------	-----------------------	-----------------------	---------------------	----------------------------------	------	----------------	------	----------

1. Beryllium nitrate (Be)	58104	091423	0.1000	200.0	0.084	1000	10001.5	1000.0	2.2	13597-99-4	0.2µg/m3	intrinsc-rat 3.16mg/kg	NA
---------------------------	-------	--------	--------	-------	-------	------	---------	--------	-----	------------	----------	------------------------	----





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

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



Certified Reference Material CRM

CERTIFIED WEIGHT REPORT:

Part Number: 57050
Lot Number: 071123
Description: Tin (Sn)

Solvents: 21110221 Nitric Acid
22D0562008 Hydrochloric acid

Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

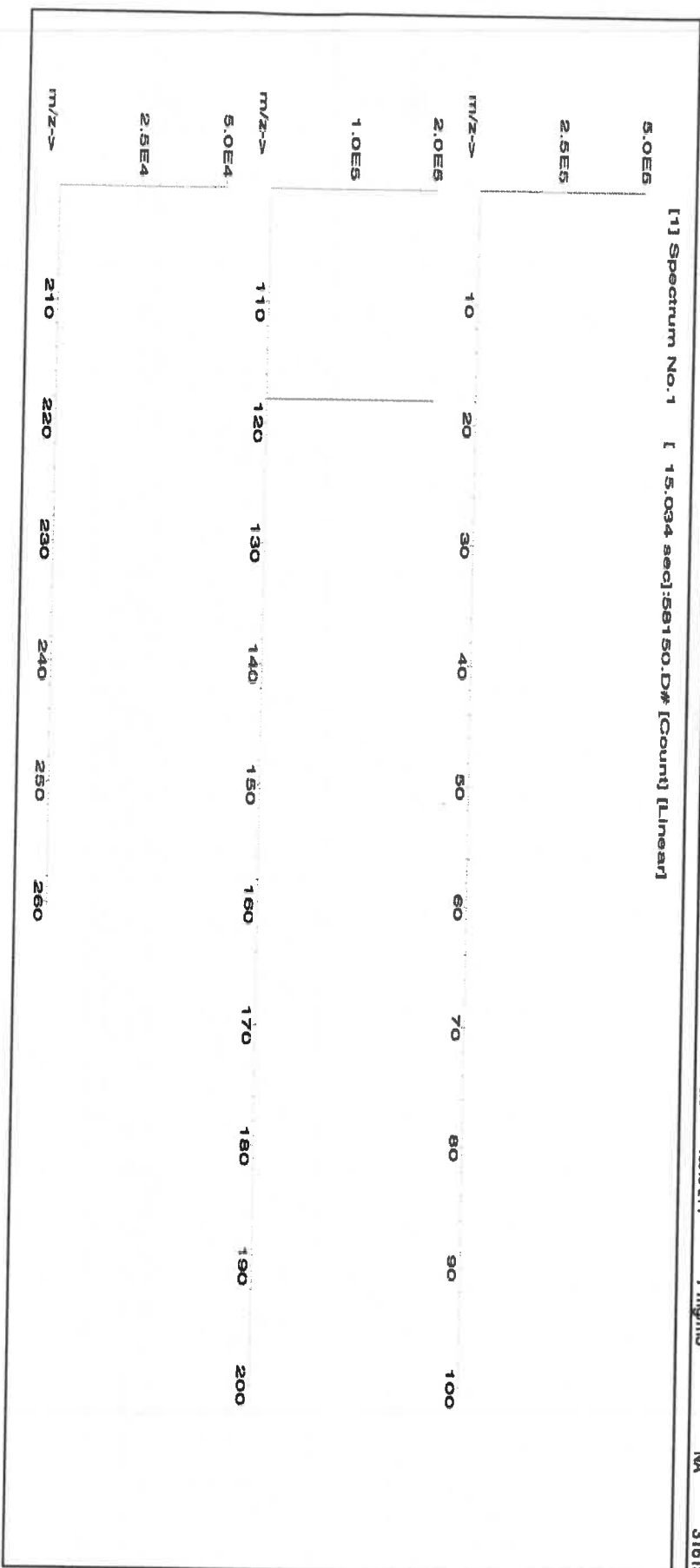
Weight shown below was diluted to (mL): 499.93
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

<i>[Signature]</i>	
Formulated By:	Benson Chan
	071123
Reviewed By:	Pedro L. Rentas
	071123

Compound		Lot		Nominal		Purity		Assay		Target		Actual		Actual		Expanded		SDS Information		NIST	
RM#	Number	Conc. (µg/mL)	(%)	Purity (%)	(%)	Weight (g)	Weight (g)	Conc. (µg/mL)	+/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	SRM								

1. Ammonium hexafluoroantimonate(V) (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
--	-------	-------------	------	--------	------	------	---------	---------	--------	-----	------------	---------	----	-------

[1] Spectrum No. 1 [15.034 sec] :56150.D# [Count] [Linear]





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Ti	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<500	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Ta	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



R: 02/09/24 115800 (54)

CERTIFIED WEIGHT REPORT:

Part Number: 57027
Lot Number: 091923
Description: Cobalt (Co)

Expiration Date: 091926
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Volume shown below was diluted to (mL): 2000.02

Lot # 24002546
Solvent: Nitric Acid

2.0% Nitric Acid
40.0 (mL)

Formulated By: Lawrence Barry 091923
Reviewed By: Pedro L. Rentas 091923

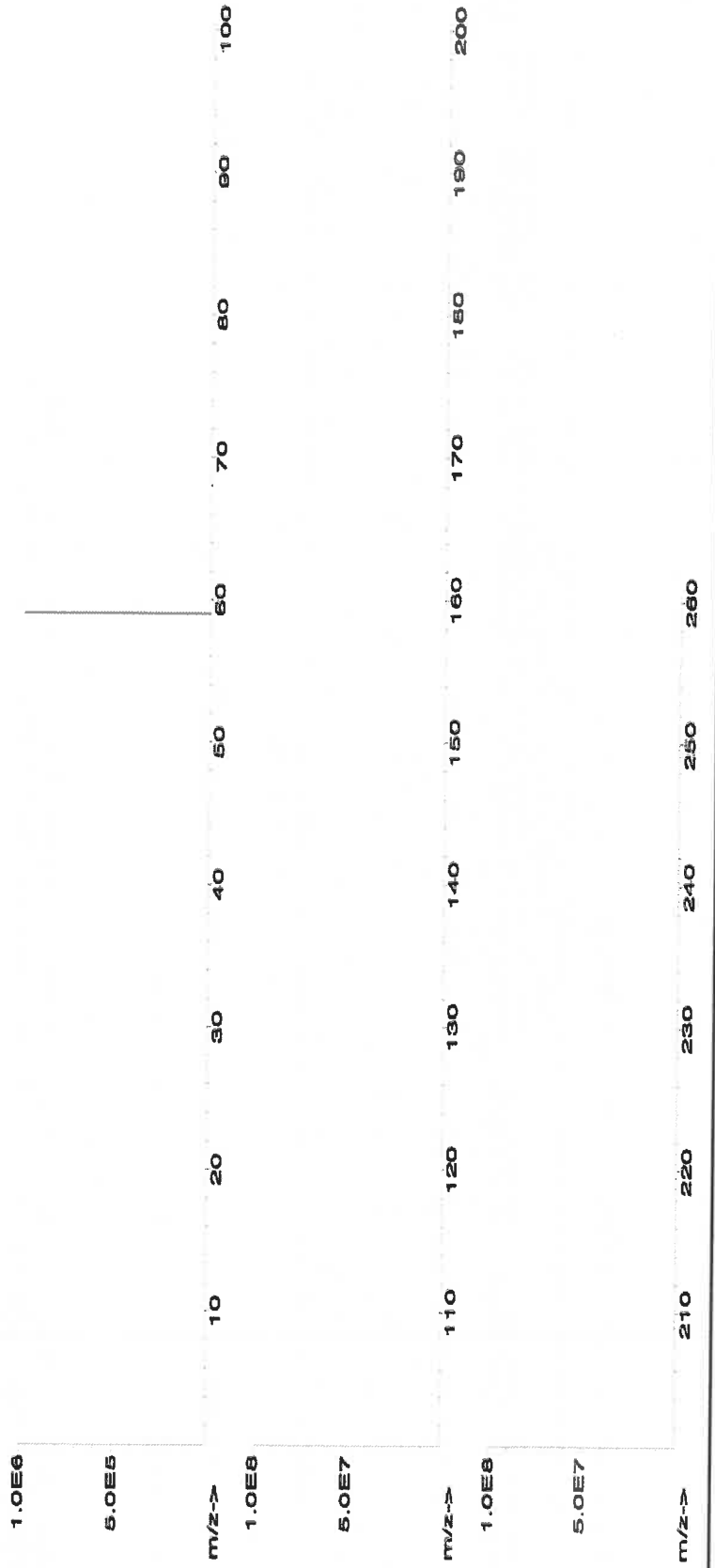
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

SDS Information

Expanded Uncertainty (Solvent Safety Info. On Attached pg.)
+/- (µg/mL) 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

[1] Spectrum No.1 [34.243 sec]:58027.D# [Count] [Linear]





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

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

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

(T)= Target analyte

Physical Characterization:

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

Certified by:

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



Certified Reference Material CRM

AR: 02/09/24

M5801

BA



CERTIFIED WEIGHT REPORT:

Part Number: 57033
Lot Number: 111323
Description: Arsenic (As)

Lot # 24002546
Solvent: Nitric Acid

Expiration Date: 111326

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 1000

NIST Test Number: 6LUTB

Volume shown below was diluted to (mL): 4000.0

Balance Uncertainty: 5E-05
Flask Uncertainty: 0.06

2.0%

80.0 (mL)

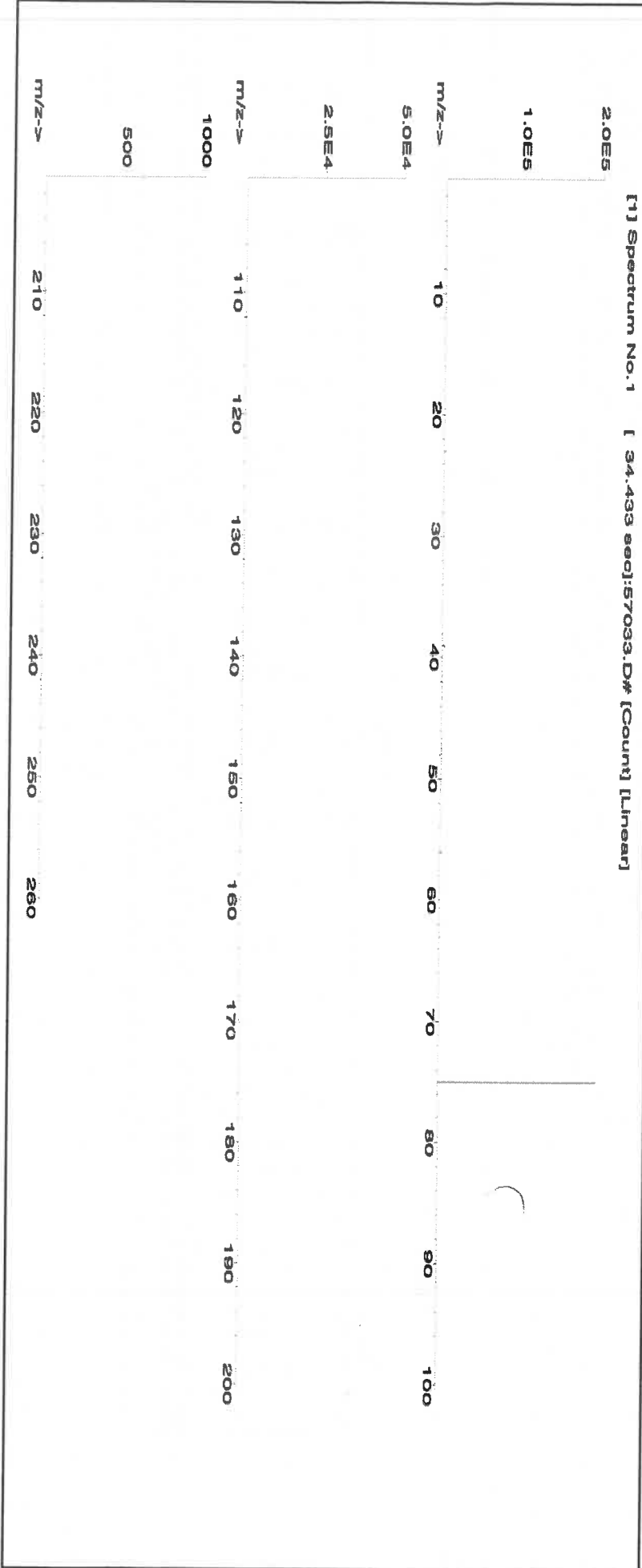
Nitric Acid

Formulated By:	Lawrence Barry
Reviewed By:	
	Pedro L. Rendas
	111323

SDS Information

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Arsenic (As)	58133	020522	0.1000	400.0	0.084	1000	10001.0	1000.0	2.0	7440-38-2	0.5 mg/m3	or-rat 500 mg/kg	3103a

[1] Spectrum No. 1 [34.433 sec]:57033.D# [Count] [Linear]





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	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	Tl _h	<0.02	Yb	<0.02
Bc	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge [*]	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sa	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



Certified Reference Material CRM



CERTIFIED WEIGHT REPORT:

Part Number: **57005**
Lot Number: **071123**
Description: **Boron (B)**

Solvent: MKB0857V Ammonium hydroxide

Lot #

AI: 021009124 M5814

Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

2.0% 40.0 Ammonium hydroxide (mL)

Weight shown below was diluted to (mL): 1999.48 0.058 Balance Uncertainty Flask Uncertainty

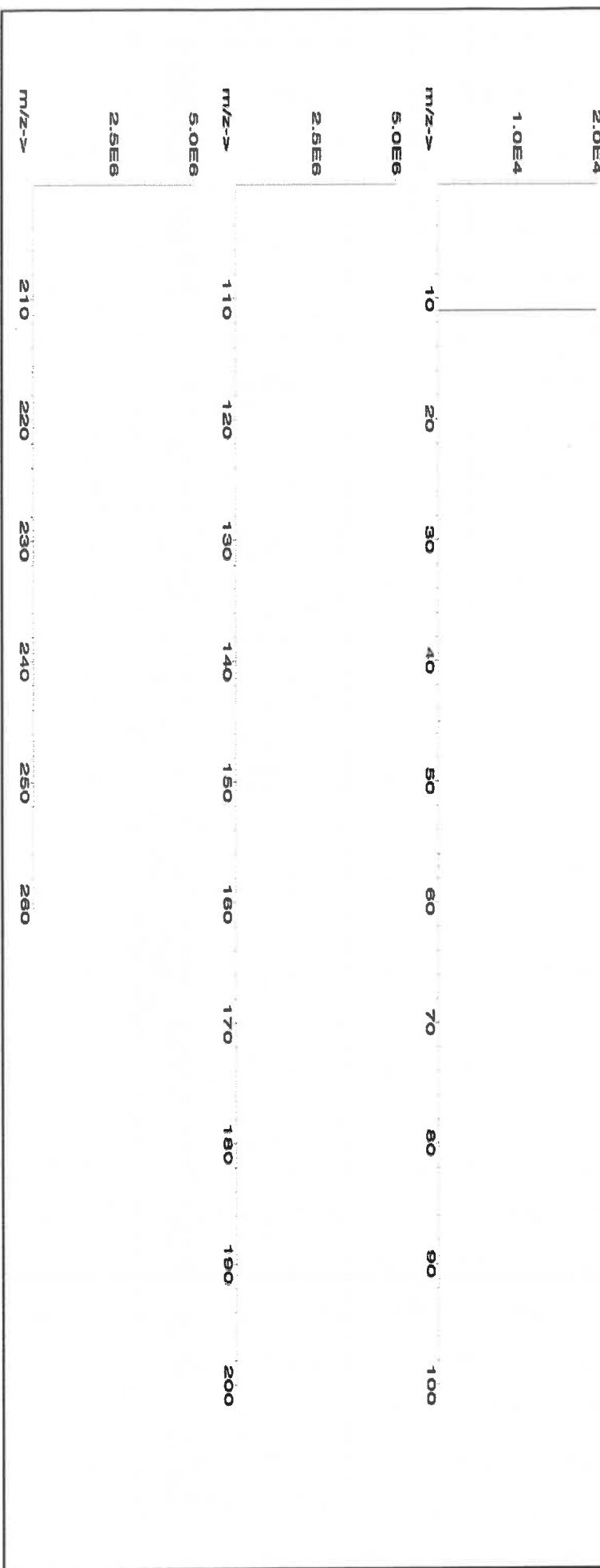
Formulated By:	Benson Chan
071123	
Reviewed By:	Pedro L. Rientas
071123	

SDS Information

Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
----------	-----	------------	-----------------------	------------	------------------------	-----------	-------------------	-------------------	----------------------	----------------------------------	------	----------------	------	----------

1. Boric acid (B) IN018 BV082018A1 1000 99.999 0.10 17.3 11.55772 11.56201 1000.4 2.0 10043-35-3 2 mg/m3 or-nat 2660 mg/kg 3107

[1] Spectrum No. 1 [12.275 sec]:56105.D# [Count] [Linear]





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

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



Certified Reference Material CRM



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57015
091123
Phosphorous (P)

Solvent: 24002546 Nitric Acid

Lot #

R: 02109124 M5820

Formulated By:	Lawrence Barry	091123
Reviewed By:	Pedro L. Rentas	091123

Expiration Date:
Recommended Storage:
Nominal Concentration (µg/mL):
NIST Test Number:

091126
Ambient (20 °C)
1000
6LJB

2% 40.0 (mL) Nitric Acid

Weight shown below was diluted to (mL): 2000.02 0.058 Flask Uncertainty

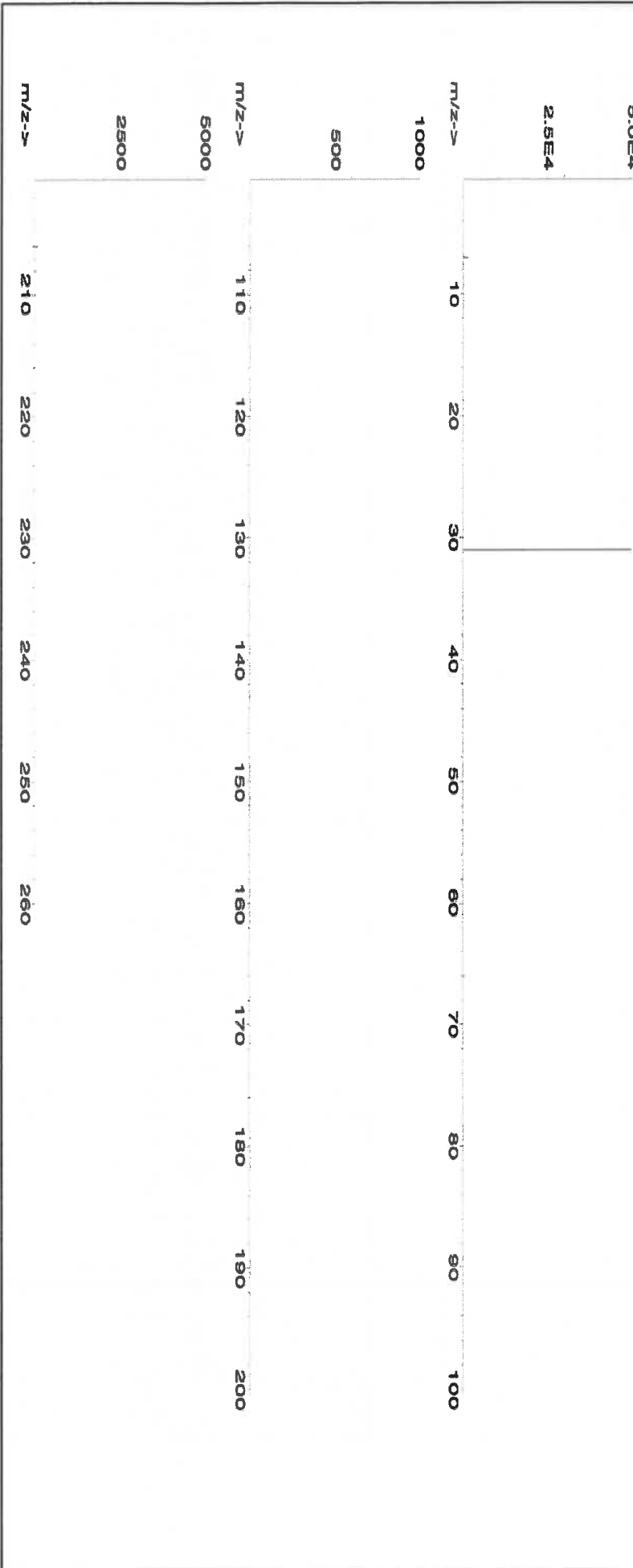
Compound

RM# **Lot** **Nominal** **Purity** **Uncertainty** **Assay** **Target** **Actual** **Actual**

Expanded **Uncertainty** **(Solvent Safety Info. On Attached pg.)** **NIST**

1. Ammonium dihydrogen phosphate (P) IN008 PVO62019A1 1000 99.999 0.10 27.5 7.2729 7.2730 1000.0 2.0 7722-76-1 5 mg/mL 3186

[1] Spectrum No.1 [12.074 sec]:58115.D# [Count] [Linear]





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

Trace Metals Verification by ICP-MS (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	Tc	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	T	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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

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:

57034

Lot Number:

060624

Description:

Selenium (Se)

Lot #

24002546

Solvent:

Nitric Acid

2.0%

40.0

(mL)

Nitric Acid

(mL)

Formulated By:

Benson Chan

060624

Expiration Date:

060627

Recommended Storage:

Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6UTB

Volume shown below was diluted to (mL):

2000.07

SE-05

Balance Uncertainty

0.100

Flask Uncertainty

SDS Information

Compound

Part Number

Lot Number

Dilution Factor

Initial Vol. (mL)

Pipette (mL)

Uncertainty

Nominal Conc. (µg/mL)

Initial Conc. (µg/mL)

Final Conc. (µg/mL)

Expanded Uncertainty

± (µg/mL)

(Solvent Safety Info. On Attached pg.)

CAS#

OSHA PEL (TWA)

LDSO

NIST SRM

1. Selenium (Se)

58134

071223

0.1000

200.0

0.084

1000

10002.5

1000.0

2.2

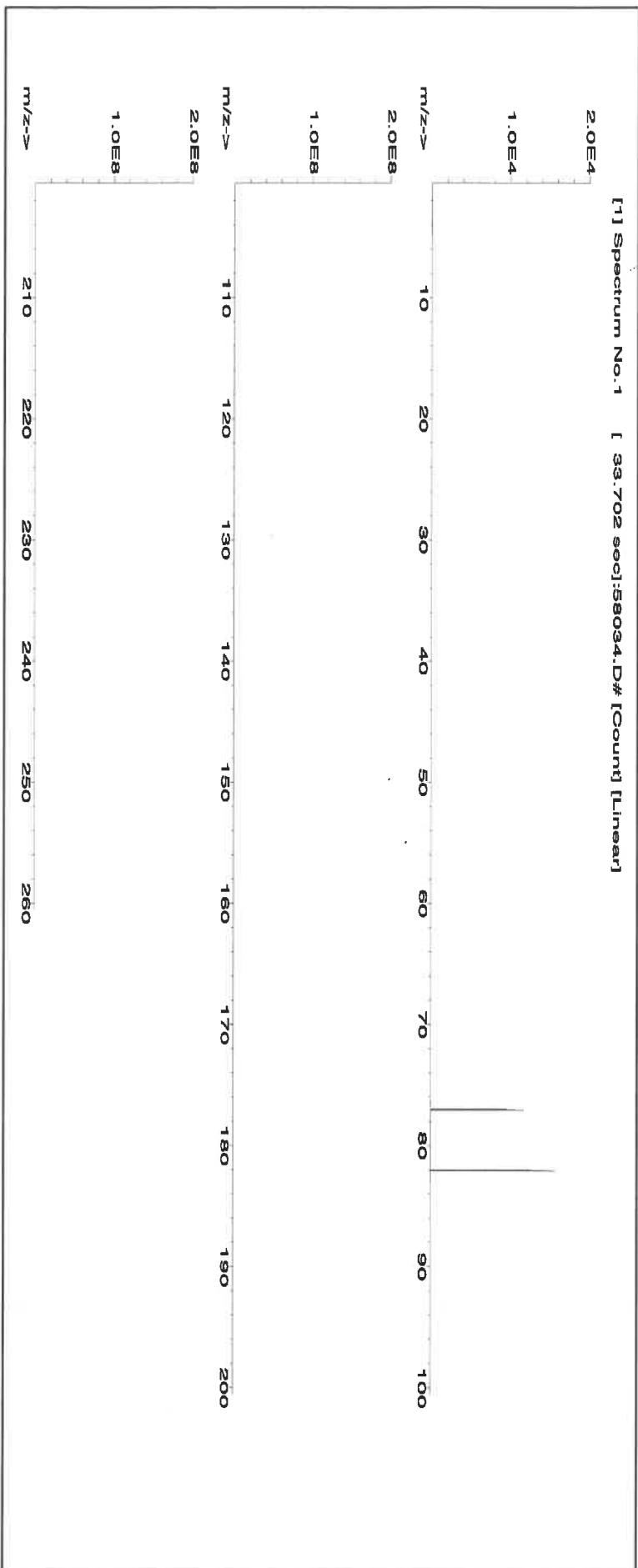
7782-49-2

0.2 mg/m3

or-tral 6700 mg/kg

3149

[1] Spectrum No.1 [33.702 sec]:58034.D# [Count] [Linear]





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	T	Tb	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	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	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	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	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	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	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



Certified Reference Material CRM



ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT:

Part Number: **57016**
Lot Number: **122923**
Description: **Sulfur (S)**

Expiration Date: **122926**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**
NIST Test Number: **6UTB**

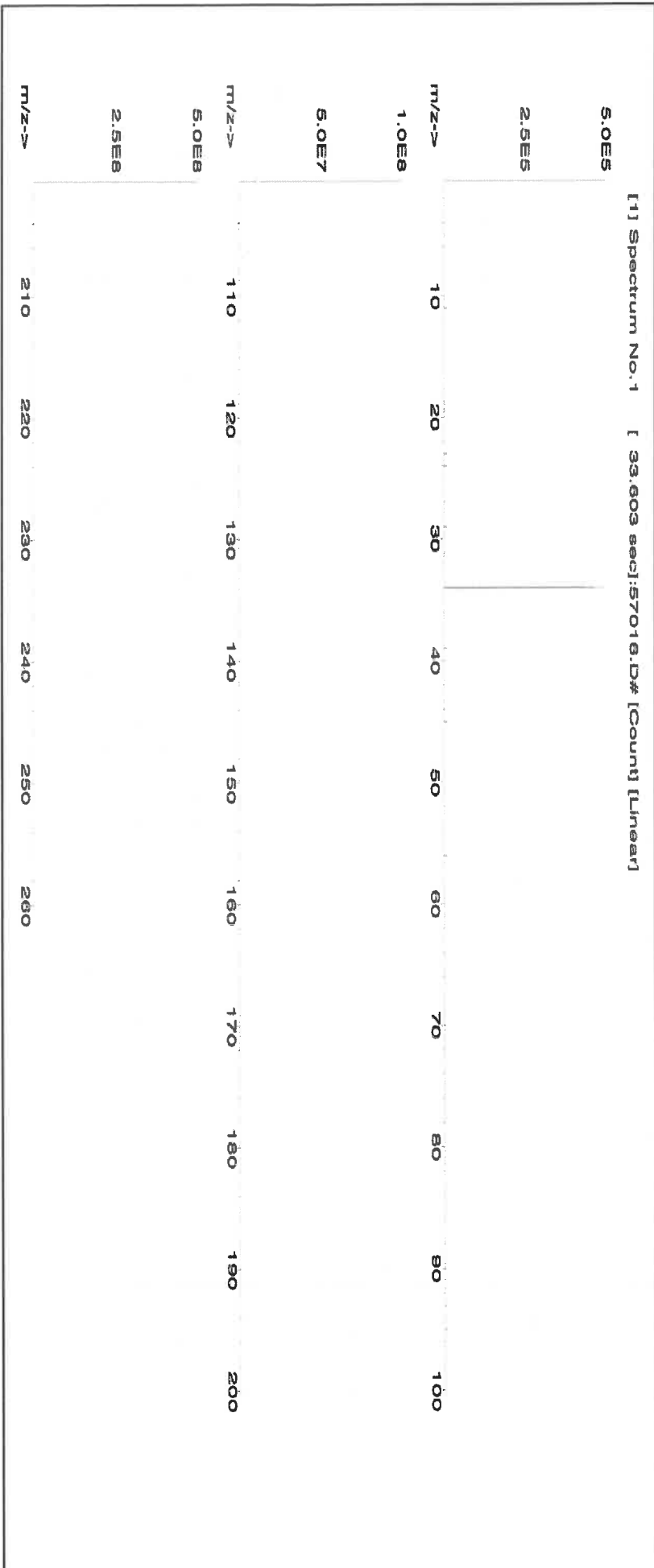
Lot # **M5969 R: 06/11/24**
Solvent: **122923** ASTM Type 1 Water

Weight shown below was diluted to (mL): **4000.0** **5E-05** Balance Uncertainty
0.06 Flask Uncertainty

Formulated By:	Benson Chan	122923
Reviewed By:	Pedro L. Rentas	122923

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

1. Ammonium sulfate (S) IN117 SLBR725V 1000 99.9 0.10 24.3 16.4979 16.4980 1000.0 2.0 7783-20-2 NA or-rel 4250mg/kg 3181



Absolute Standards, Inc.
800-368-1131
www.absolute-standards.com



Certified Reference Material CRM
M5970 M5971 R1 710124



ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT:

Part Number: 57003
Lot Number: 062124
Description: Lithium (Li)
Expiration Date: 06/27
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Volume shown below was diluted to (mL): 250.11
SE-05 Balance Uncertainty: 0.016
Fisk Uncertainty:

Lot # 24002546
Solvent: Nitric Acid

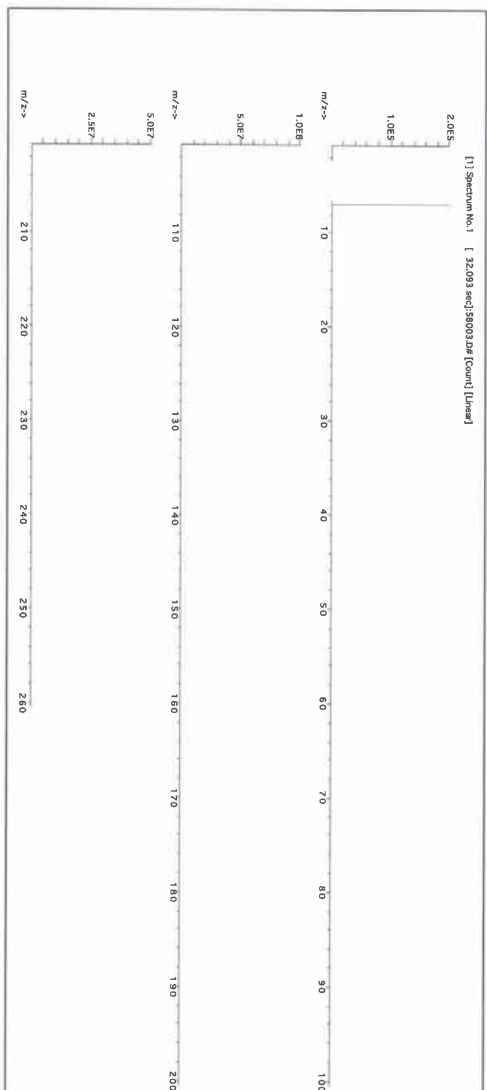
2.0% 5.0 (mL)
Nitric Acid

Microvite Capable	
Formulated By:	062124
Reviewed By: <i>[Signature]</i>	
Petro L. Parias	062124

Compound		SDS Information												NEST	
		(Solvent Safety Info. On Attachment pg.)													
Part	Lot	Dilution	Initial	Uncertainty	Nominal	Initial	Final	Expanded	Uncertainty	CAS#	OSHA PEL (TWA)	LD50	SM		
Number	Number	Factor	Vol. (mL)	Pipette (mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)		

1. Lithium nitrate (Li)	58103	070622	0.1000	25.0	0.004	1000	10000.4	1000.0	2.0	7790-68-4	5 mg/m3	or-hal 1428 mg/kg	NA
-------------------------	-------	--------	--------	------	-------	------	---------	--------	-----	-----------	---------	-------------------	----

[1] Spectrum No. 1 [32.093 sec; 15000.0Hz [Count [Time]]



Part # 57003 Lot # 062124

1 of 2

Printed: 6/24/2024, 11:20:08 PM

Absolute Standards, Inc.
800-368-1131
www.absolute-standards.com



Certified Reference Material CRM



ANAB ISO 17034 Accredited
AR-1539 Certificate Number
<https://AbsoluteStandards.com>

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

Trace Metals Verification by ICP-MS (µg/mL)															
Al	<0.02	Ca	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.02
Sb	<0.02	Ce	<0.2	Er	<0.02	In	<0.02	Mg	<0.02	Nb	<0.02	Rb	<0.02	Si	<0.2
As	<0.2	Ce	<0.02	Ba	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rh	<0.02	Ag	<0.02
Ba	<0.02	Cr	<0.02	Ga	<0.02	Te	<0.2	Hg	<0.2	P	<0.02	Sn	<0.02	Nd	<0.2
Be	<0.01	Co	<0.02	Ge	<0.02	Ta	<0.02	K	<0.02	Fe	<0.02	Sr	<0.02	Sc	<0.02
Bi	<0.02	Cu	<0.02	Au	<0.02	Tb	<0.02	Na	<0.02	K	<0.2	Sm	<0.02	Ta	<0.02
B	<0.02	Ca	<0.02												

(T) = Target analyte

Physical Characterization:

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

Certified by:

[Signature]

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



Redefine your results. Redefine your industry.

Certificate of Analysis

MS978, MS979

P: 800-669-679/540-585-3030
F: 540-585-3012
info@inorganicventures.com



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).

1.0 ACCREDITATION / REGISTRATION

2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution

Catalog Number: CGT1

Lot Number: T2-T1719972

Matrix: 2% (v/v) HNO₃

Value / Analyte(s): tr. HF

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 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:

$X_{CRM/RM} = (k_p) / (k_p + 1)$
 k_p = mean of Assay Method A with

$U_{char A}$ = the standard uncertainty of characterization Method A

$U_{char A} = (k_p) / (k_p + 1)$

$U_{char A} = (k_p) / (k_p + 1)$

$U_{char A} = (k_p) / (k_p + 1)$

$U_{char A} = (k_p) / (k_p + 1)$

$U_{char A} = (k_p) / (k_p + 1)$

$U_{char A} = (k_p) / (k_p + 1)$

$U_{char A} = (k_p) / (k_p + 1)$

$U_{char A} = (k_p) / (k_p + 1)$

$U_{char A} = (k_p) / (k_p + 1)$

$U_{char A} = (k_p) / (k_p + 1)$

$U_{char A} = (k_p) / (k_p + 1)$

$U_{char A} = (k_p) / (k_p + 1)$

$U_{char A} = (k_p) / (k_p + 1)$

$U_{char A} = (k_p) / (k_p + 1)$

$U_{char A} = (k_p) / (k_p + 1)$

$U_{char A} = (k_p) / (k_p + 1)$

$U_{char A} = (k_p) / (k_p + 1)$

$U_{char A} = (k_p) / (k_p + 1)$

$U_{char A} = (k_p) / (k_p + 1)$

$U_{char A} = (k_p) / (k_p + 1)$

$U_{char A} = (k_p) / (k_p + 1)$

$U_{char A} = (k_p) / (k_p + 1)$

$U_{char A} = (k_p) / (k_p + 1)$

$U_{char A} = (k_p) / (k_p + 1)$

$U_{char A} = (k_p) / (k_p + 1)$

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

5.0

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

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an UHPA-filtered Clean Room. An UHPA-filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000536	M	Eu	<	0.000268	O	Na	<	0.032670	M	Se	<	0.001204	O	Zn	<	0.003267
M	Al	<	0.000872	O	Fe	<	0.003225	O	Nb	<	0.043560	O	Si	<	0.004735	O	Zr	<	0.043560
M	As	<	0.008586	M	Ga	<	0.000268	M	Nd	<	0.000268	M	Sm	<	0.000268				
M	Au	<	0.004577	M	Gd	<	0.000268	O	Ni	<	0.010890	M	Sn	<	0.000986				
O	B	<	0.008929	M	Ge	<	0.002146	M	Os	<	0.000269	O	Sr	<	0.000986				
M	Ba	<	0.002683	M	Hf	<	0.002161	O	P	<	0.054450	M	Ta	<	0.010560				
M	Be	<	0.005366	M	Hg	<	0.003231	M	Pb	<	0.001073	M	Tb	<	0.000268				
M	Bi	<	0.001609	M	Ho	<	0.000268	M	Pd	<	0.000268	M	Td	<	0.001341				
O	Ca	<	0.00676	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	<	0.000268				
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	<	0.006976	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				

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

- 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: 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 forming the hydrated oxide in all dilute acids except HF. Stable with most inorganic anions with a tendency to hydrolyze forming the hydrated oxide in all dilute acids except HF.

Stability: 2-100 ppb levels stable (Alone or mixed with all other metals) as the Ti(F)₆-2 for months in 1% HNO₃ / LDPE container. 1-10,000 ppm single element solutions as the Ti(F)₆-2 chemically stable for years in 2-5% HNO₃ / trace HF in an LDPE container.

Ti Containing Samples (Preparation and Solution) - Metal (Soluble in H₂O / HF caution - powder reacts violently): Oxide - low temperature history anatase or rutile (Dissolved by heating in 1:1:1 H₂O / HF / H₂SO₄); K₂SiO₇ - no KF if silica not present); Organic Matrices (Dry ash at 450EC in P10 and dissolve by heating with 1:1:1 H₂O / HF / H₂SO₄ or fuse ash with pyrosulfate if oxide is as plastic pigment and likely in brookite crystaline form).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 48 amu	14 ppt	N/A	32S16O, 32S14N,
ICP-OES 323.452 nm	0.0054 / 0.00092 µg/mL	1	14N17N2, 36Ar12C,
ICP-OES 334.941 nm	0.0038 / 0.00028 µg/mL	1	48Ca, 196X=2
ICP-OES 336.121 nm	0.0053 / 0.00034 µg/mL	1	W, Mo, Co
			Nb, Ta, Cr, U
			Ce, Ar, Ni
			Ru]]
			(where X = Zr, Mo,

8.0

HAZARDOUS INFORMATION

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

9.0

HOMOGENEITY

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

10.0

QUALITY STANDARD DOCUMENTATION

- 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.

10.1 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"

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY
Inorganic Ventures, 300 Technology Drive, Chesapeake, VA 24073, USA; Telephone: 800.868.6786; 540.565.3030; Fax: 540.565.3012; info@inorganicventures.com
- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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: _____

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS
- 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.

Certificate Approved By:

Thomas Kozlikowski
Manager, Quality Control

TD978L

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Paul Gaines

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

M5985
R: 6/14/24

1.0 ACCREDITATION / REGISTRATION

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



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
Catalog Number: 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:

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

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 PtO 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



Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

R: 2/22/24
MS997

P: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

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



2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution
Catalog Number: 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, $X_{\text{CRM/RM}}$, where two or more methods of characterization are used is the weighted mean of the results:

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

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



Certificate of Analysis

R: 08/22/24 M6058, M6059

1.0 ACCREDITATION / REGISTRATION

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



2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution
Catalog Number: CHEM-CLP-4
Lot Number: V2-MEB746172
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: 1.032 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, $X_{\text{CRM/RM}}$, where two or more methods of characterization are used is the weighted mean of the results:

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

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).

<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

August 12, 2024

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

11.2 Lot Expiration Date

- **August 12, 2029**

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Joseph Burns
Custom VS Manager



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

Certificate of Analysis

M6074
M6075
M6076
M6077

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).



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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

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



300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

Certificate of Analysis

M6074
M6075
M6076
M6077

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).



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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

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





CERTIFIED WEIGHT REPORT:

Part Number: **58025**
Lot Number: **101124**
Description: **Manganese (Mn)**

R-71113128

Lot #: **24002546**
Solvent: **Nitric Acid**

Expiration Date: **101127**

Recommended Storage: **Ambient (20 °C)**

Nominal Concentration (µg/mL): **1000**

NIST Test Number: **6UTB**

Weight shown below was diluted to (mL): **4000.2**

0.10 Flask Uncertainty

2% **80.0** Nitric Acid (mL)

<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	<i>Pedro L. Renteria</i>
	Pedro L. Renteria
	101124

SDS Information

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

1. Manganese(II) nitrate hydrate (Mn) IN031 MMN02020A1 1000 99.999 0.10 20.8 19.2322 19.2344 **1000.1** **2.0** 15710-66-4 5 mg/m3 or-rel >300mg/kg 3132

[1] Spectrum No.1 [34.243 sec]:57025.D# [Count] [Linear]

5.0E6													
2.5E6													
m/z->	10	20	30	40	50	60	70	80	90	100			
1.0E6													
5.0E7													
m/z->	110	120	130	140	150	160	170	180	190	200			
1.0E6													
5.0E7													
m/z->	210	220	230	240	250	260							



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 certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

Certificate of Analysis

300 Technology Drive
 Christiansburg, VA 24073 USA
 inorganicventures.com

P: 800-669-6799/540-585-3030
 F: 540-585-3012
 info@inorganicventures.com

M6137
 R-71013124

1.0 ACCREDITATION / REGISTRATION

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



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
 Catalog Number: 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:

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000310	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, amorphous (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





Certified Reference Material CRM

M6138

R → 11/13/25

CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

58120
121824
Calcium (Ca)

Solvent: Nitric Acid

Lot #

24012496

Formulated By: Giovanni Esposito
Reviewed By: Pedro L. Rentas

121824
121824

Expiration Date:
Recommended Storage:
Nominal Concentration (µg/mL):
NIST Test Number:

121827
Ambient (20 °C)
10000
6UTB

5E-05 Balance Uncertainty
0.15 Flask Uncertainty

Weight shown below was diluted to (mL):

4000.1

2% (mL)

80.0 Nitric Acid

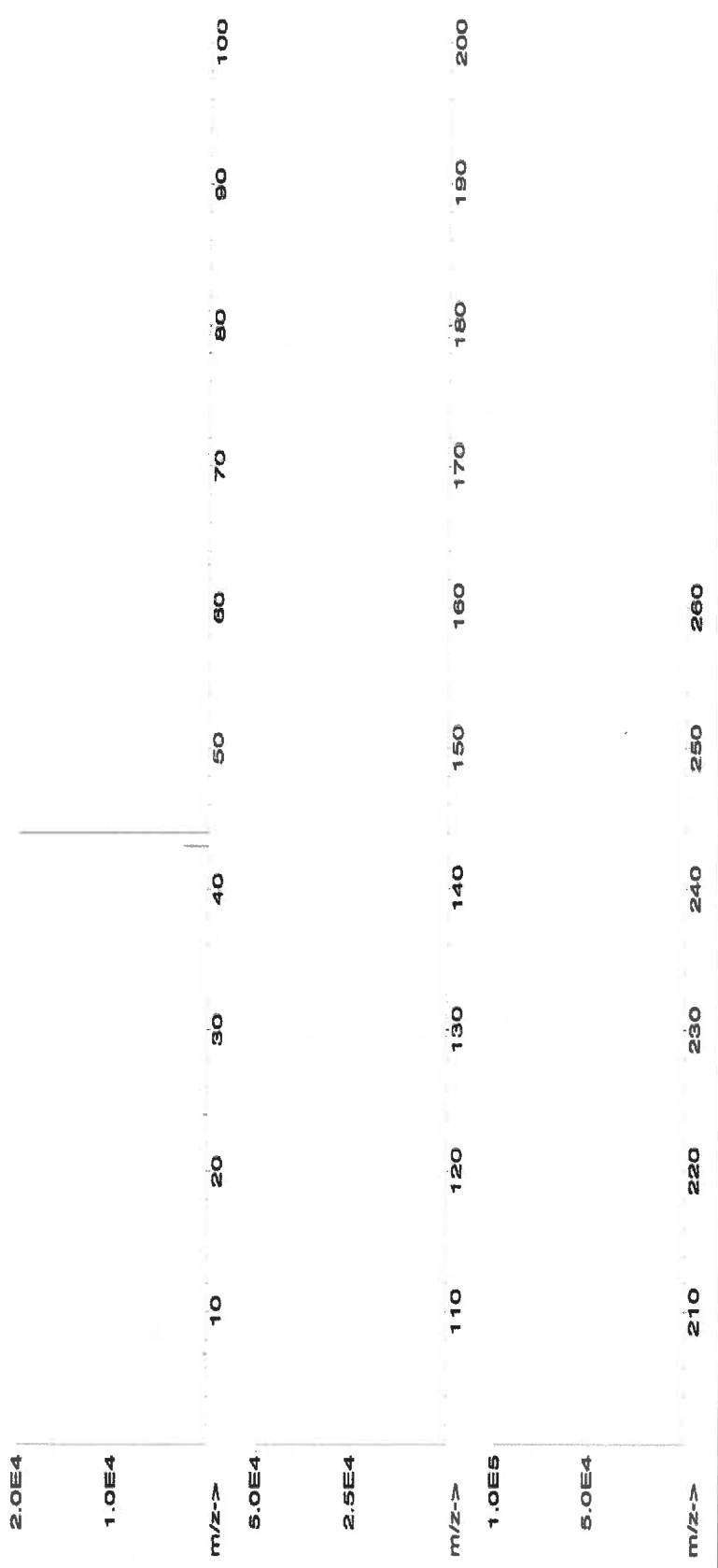
SDS Information

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

(Solvent Safety Info. On Attached pg.)
CAS#
OSHA PEL (TWA)
LD50
NIST
SRM

1. Calcium carbonate (Ca) IN014 CAD032028B3 10000 99.999 0.10 39.9 100.2537 100.2677 10001.4 20.0 471-34-1 5 mg/m3 otl-rat >2000mg/kg 3109a

[1] Spectrum No. 1 [12.514 sec]:58120.D# [Count] [Linear]





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.02	Er	<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	<0.02	Hg	30	P	<0.2	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

Ben. J. D.

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



CERTIFIED WEIGHT REPORT:

Part Number: 58126
Lot Number: 011025
Description: Iron (Fe)
Lot # R-113125
Solvent: 24012496 Nitric Acid

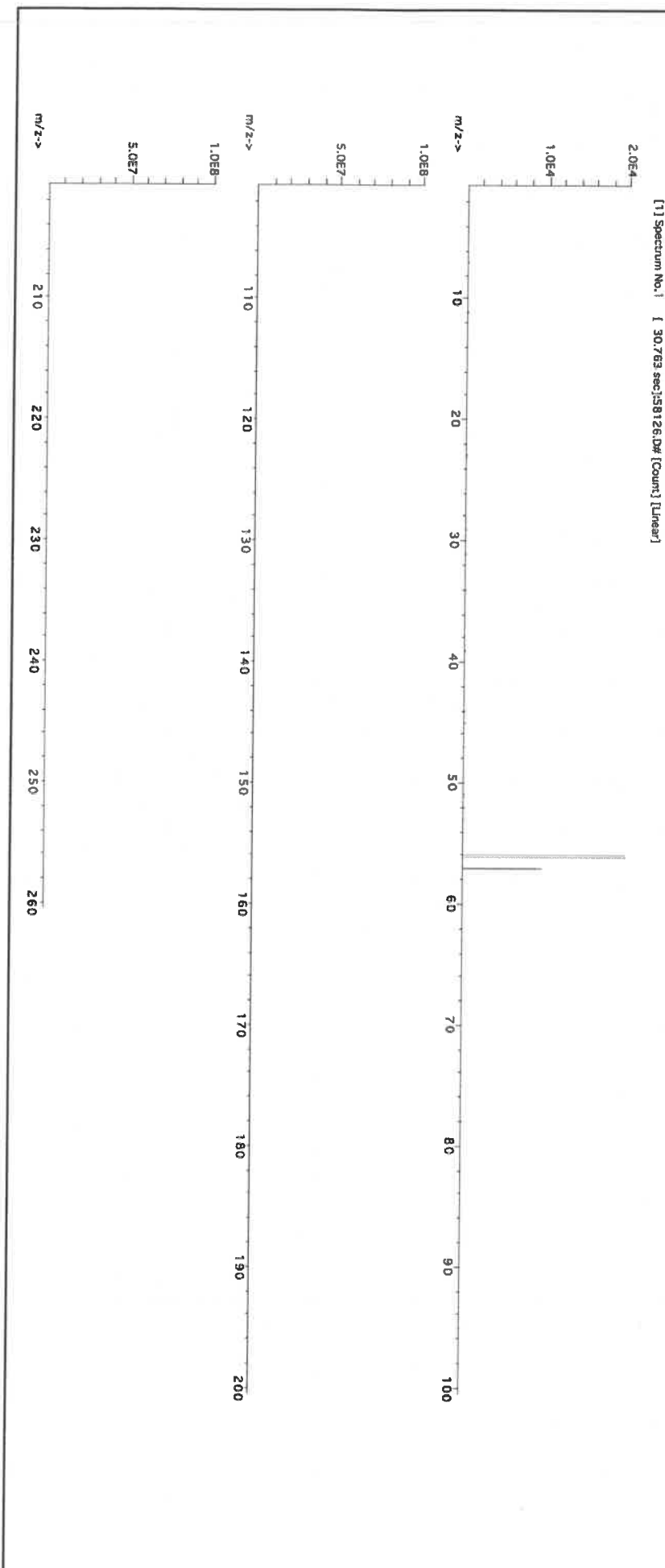
Expiration Date: 011028
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6U7B
Weight shown below was diluted to (mL): 2000.07
5E-05 Balance Uncertainty
0.100 Flask Uncertainty

2%
40.0 (mL)
Nitric Acid

Formulated By:	Benson Chan	011025
Reviewed By:	Pedro L. Renteria	011025

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

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 or-rel 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	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Bu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	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:

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

[Signature]

Certified by:

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



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57119
103024
Potassium (K)

R-21113125

Lot #
Solvent: 24002546
Nitric Acid

Expiration Date:
Recommended Storage:
Nominal Concentration (µg/mL):

103027
Ambient (20 °C)
10000

M6141
M6142
M6143

2%
80.0 (mL)
Nitric Acid

Weight shown below was diluted to (mL):

4000.1
0.15
Flask Uncertainty

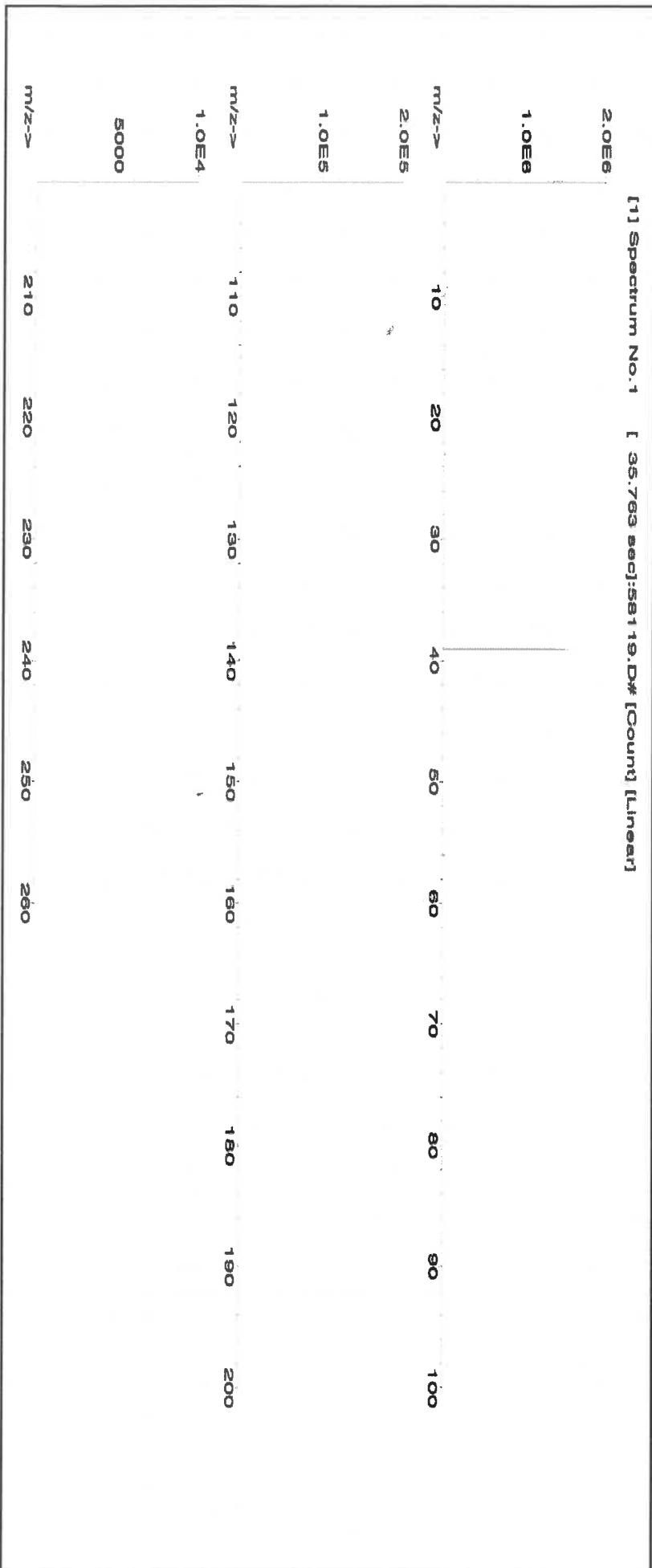
<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	Pedro L. Renteria
	103024

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)	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

[1] Spectrum No. 1 [35.763 sec]:58119.D# [Count] [Linear]





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

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



CERTIFIED WEIGHT REPORT:

Part Number: 58111
Lot Number: 072424
Description: Sodium (Na)

Lot #

R-1113/25 Solvent: 24002546 Nitric Acid

Expiration Date: 072427
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB

146144 2% 80.0 Nitric Acid (mL)

Weight shown below was diluted to (mL): 4000.2 0.10 Flask Uncertainty

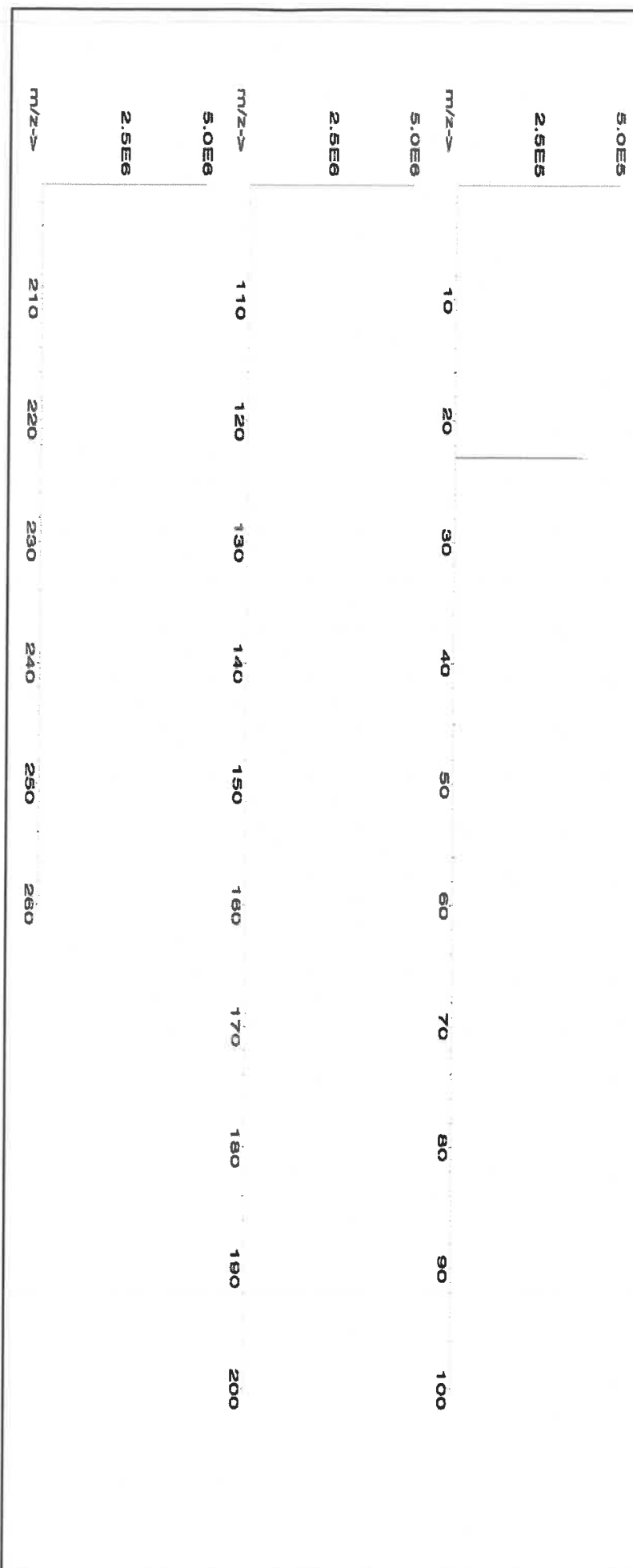
Formulated By:	Benson Chan	072424
Reviewed By:	Pedro L. Renteria	072424

SDS Information

Compound	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
----------	------------	-----------------------	------------	------------------------	-----------	-------------------	-------------------	----------------------	----------------------------------	------	----------------	------	----------

1. Sodium nitrate (Na) IN036 NAV01201511 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

[1] Spectrum No. 1 [8.935 sec]: 58111.D# [Count] [Linear]





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rb	<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:

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

Certified by:

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



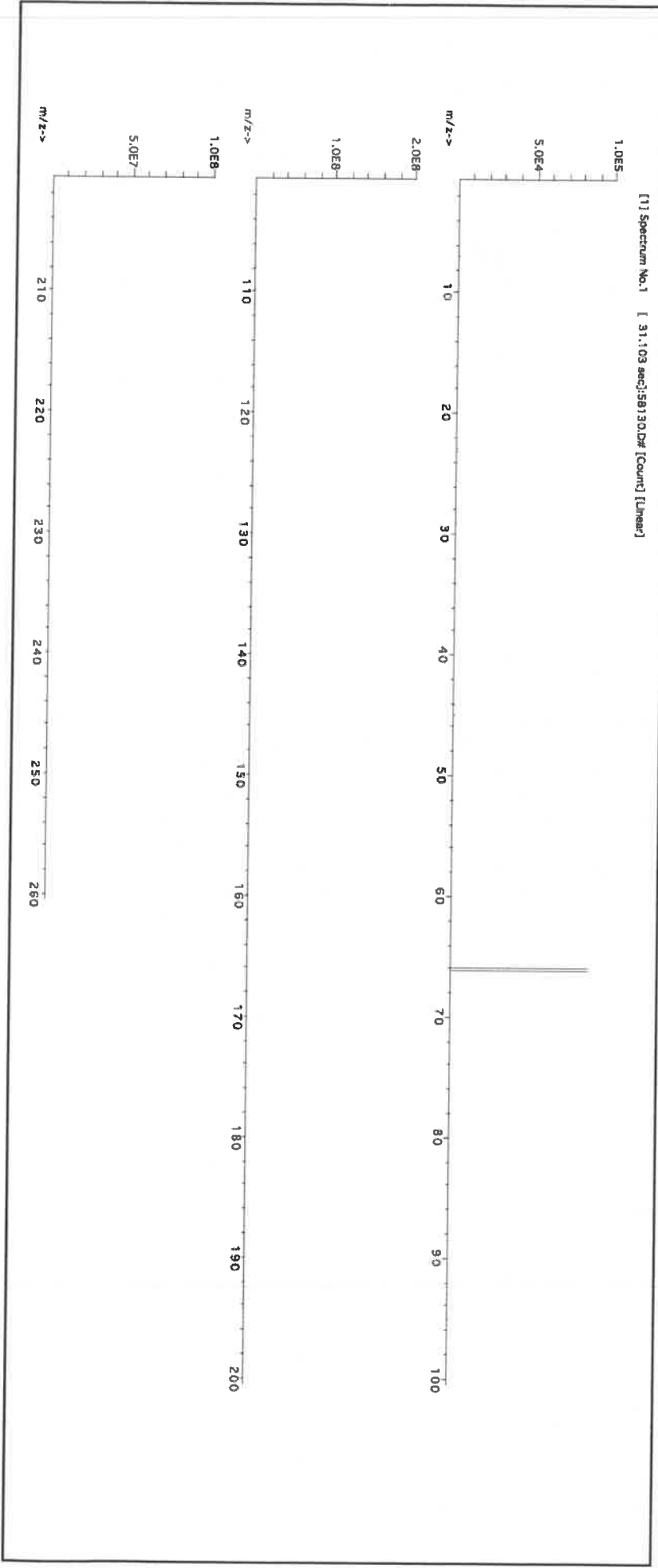
CERTIFIED WEIGHT REPORT:

Part Number: 58030
Lot Number: 121724
Description: Zinc (Zn)
Expiration Date: 12/17/27
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.1
Balance Uncertainty: 5E-05
Flask Uncertainty: 0.10

Lot # R → 11/13/25
Solvent: Nitric Acid
Target (mL): 40.0
Actual (mL): Nitric Acid
Formulated By: Aleah O'Brady
Reviewed By: Pedro L. Renteria

Compound	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	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 or-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	Pt	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Bu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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

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

avantor™



M6151

R → 11/15/25

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

 **avantorsm**



Material No.: 9530-33
Batch No.: 22G2862015

Test	Specification	Result
Trace Impurities – Lead (Pb)	≤ 1.0 ppb	< 0.5 ppb
Trace Impurities – Lithium (Li)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Magnesium (Mg)	≤ 10.0 ppb	2.9 ppb
Trace Impurities – Manganese (Mn)	≤ 1.0 ppb	< 0.4 ppb
Trace Impurities – Mercury (Hg)	≤ 0.5 ppb	0.1 ppb
Trace Impurities – Molybdenum (Mo)	≤ 10.0 ppb	< 3.0 ppb
Trace Impurities – Nickel (Ni)	≤ 4.0 ppb	< 0.3 ppb
Trace Impurities – Niobium (Nb)	≤ 1.0 ppb	0.8 ppb
Trace Impurities – Potassium (K)	≤ 9.0 ppb	< 2.0 ppb
Trace Impurities – Selenium (Se), For Information Only		< 1.0 ppb
Trace Impurities – Silicon (Si)	≤ 100.0 ppb	< 10.0 ppb
Trace Impurities – Silver (Ag)	≤ 1.0 ppb	0.5 ppb
Trace Impurities – Sodium (Na)	≤ 100.0 ppb	2.3 ppb
Trace Impurities – Strontium (Sr)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Tantalum (Ta)	≤ 1.0 ppb	1.6 ppb
Trace Impurities – Thallium (Tl)	≤ 5.0 ppb	< 2.0 ppb
Trace Impurities – Tin (Sn)	≤ 5.0 ppb	4.0 ppb
Trace Impurities – Titanium (Ti)	≤ 1.0 ppb	1.5 ppb
Trace Impurities – Vanadium (V)	≤ 1.0 ppb	< 0.2 ppb
Trace Impurities – Zinc (Zn)	≤ 5.0 ppb	0.8 ppb
Trace Impurities – Zirconium (Zr)	≤ 1.0 ppb	0.3 ppb

>>> Continued on page 3 >>>

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

 **avantor**™

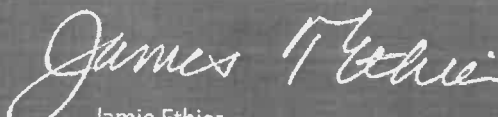


Material No.: 9530-33
Batch No.: 22G2862015

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


Jamie Ethier
Vice President Global Quality

Nitric Acid 69%
CMOS

avantor™



R- 0210212025

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

 **avantorsTM**



Material No.: 9606-03
Batch No.: 24D1062002

Test	Specification	Result
Trace Impurities – Niobium (Nb)	≤ 50.0 ppb	< 1.0 ppb
Trace Impurities – Potassium (K)	≤ 50 ppb	16 ppb
Trace Impurities – Silicon (Si)	≤ 50 ppb	< 10 ppb
Trace Impurities – Silver (Ag)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Sodium (Na)	≤ 150.0 ppb	< 5.0 ppb
Trace Impurities – Strontium (Sr)	≤ 30.0 ppb	< 1.0 ppb
Trace Impurities – Tantalum (Ta)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Thallium (Tl)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Tin (Sn)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities – Titanium (Ti)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Vanadium (V)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Zinc (Zn)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Zirconium (Zr)	≤ 10.0 ppb	< 1.0 ppb
Particle Count – 0.5 µm and greater	≤ 60 par/ml	10 par/ml
Particle Count – 1.0 µm and greater	≤ 10 par/ml	3 par/ml

>>> Continued on page 3 >>>

Nitric Acid 69%
CMOS

 **avantor™**



Material No.: 9606-03
Batch No.: 24D1062002

Test	Specification	Result
------	---------------	--------

For Microelectronic Use

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



Jamie Croak
Director Quality Operations, Bioscience Division

Nitric Acid 69%
CMOS



m-6162

Material No.: 9606-03
Batch No.: 24H0162012
Manufactured Date: 2024-06-28
Retest Date: 2029-06-27
Revision No.: 0

R. Date :- 04/27/2025

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™



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 >>>



300 Technology Drive
 Christiansburg, VA 24073 USA
 inorganicventures.com

P: 800-669-6799/540-585-3030
 F: 540-585-3012
 info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

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



2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution		
Catalog Number:	QCP-CICV-1		
Lot Number:	V2-MEB744107		
Matrix:	7% (v/v) HNO ₃		
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 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
Ba	ICP Assay	3104a	140909
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Be	Calculated		See Sec. 4.2
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Cr	ICP Assay	3112a	170630
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, $X_{\text{CRM/RM}}$, where two or more methods of characterization are used is the weighted mean of the results:

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

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), <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



300 Technology Drive
 Christiansburg, VA 24073 USA
 inorganicventures.com

 P: 800-669-6799/540-585-3030
 F: 540-585-3012
 info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

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



2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution
 Catalog Number: 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 °C)

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:

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

X_i = mean of Assay Method i with standard uncertainty $u_{char i}$
 w_i = the weighting factors for each method calculated using the inverse square of the variance:
 $w_i = (1/u_{char i}^2) / (\sum(1/u_{char i}^2))$

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with
 $u_{char a}$ = the standard uncertainty of characterization Method A

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

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). <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



300 Technology Drive
 Christiansburg, VA 24073 USA
 inorganicventures.com

P: 800-669-6799/540-585-3030
 F: 540-585-3012
 info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

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



2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution
 Catalog Number: 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 °C)

Assay Information:

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

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

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), <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



Hydrogen Peroxide, 30%

CMOS

(Stabilized)

M-6170

avantor™



R.Date . 8-05/20/2025

Material No.: 2190-03

Batch No.: 24D1961001

Test	Specification	Result
Trace Impurities - Manganese (Mn)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Molybdenum (Mo)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Nickel (Ni)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Niobium (Nb)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Potassium (K)	≤ 600.0 ppb	176.7 ppb
Trace Impurities - Silicon (Si)	≤ 100.0 ppb	< 10.0 ppb
Trace Impurities - Silver (Ag)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Sodium (Na)	≤ 100.0 ppb	< 5.0 ppb
Trace Impurities - Strontium (Sr)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Tantalum (Ta)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Thallium (Tl)	≤ 50.0 ppb	< 5.0 ppb
Trace Impurities - Tin (Sn)	190.0 - 500.0 ppb	272.3 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)	≤ 50 ppb	< 1 ppb
Trace Impurities - Zirconium (Zr)	≤ 10.0 ppb	< 1.0 ppb
Particle Count - 0.2 µm and greater	≤ 1175 par/ml	202 par/ml
Particle Count - 0.5 µm and greater	≤ 100 par/ml	33 par/ml

>>> Continued on page 3 >>>

Hydrogen Peroxide, 30%

CMOS

(Stabilized)

avantor™



Material No.: 2190-03
Batch No.: 24D1961001

Test	Specification	Result
------	---------------	--------

For Microelectronic Use

Country of Origin: USA

Packaging Site: Paris Mfg Ctr & DC

Michelle Bales

Michelle Bales
Sr. Manager, Quality Assurance

Hydrogen Peroxide, 30%
CMOS
(Stabilized)

avantor™



Material No.: 2190-03
Batch No.: 24D1961001
Manufactured Date: 2024-04-17
Expiration Date: 2025-10-16
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (H ₂ O ₂)	30.0 – 32.0 %	31.6 %
Color (APHA)	≤ 10	< 5
Free Acid (μeq/g)	≤ 0.2	0.1
Residue after Evaporation	≤ 10 ppm	2 ppm
Ammonium (NH ₄)	≤ 3 ppm	< 3 ppm
Chloride (Cl)	≤ 0.2 ppm	< 0.2 ppm
Nitrate (NO ₃)	≤ 2 ppm	< 2 ppm
Phosphate (PO ₄)	≤ 1 ppm	1 ppm
Sulfate (SO ₄)	≤ 3 ppm	< 3 ppm
Trace Impurities – Aluminum (Al)	≤ 70.0 ppb	< 5.0 ppb
Arsenic and Antimony (as As)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities – Barium (Ba)	≤ 20.0 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)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Calcium (Ca)	≤ 50.0 ppb	< 1.0 ppb
Trace Impurities – Chromium (Cr)	≤ 20.0 ppb	1.5 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)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Germanium (Ge)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities – Gold (Au)	≤ 10.0 ppb	< 5.0 ppb
Heavy Metals (as Pb)	≤ 500.0 ppb	< 250.0 ppb
Trace Impurities – Iron (Fe)	≤ 50.0 ppb	4.6 ppb
Trace Impurities – Lead (Pb)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities – Lithium (Li)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Magnesium (Mg)	≤ 10.0 ppb	< 1.0 ppb

>>> Continued on page 2 >>>



Certified Reference Material CRM



ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://AbsoluteStandards.com

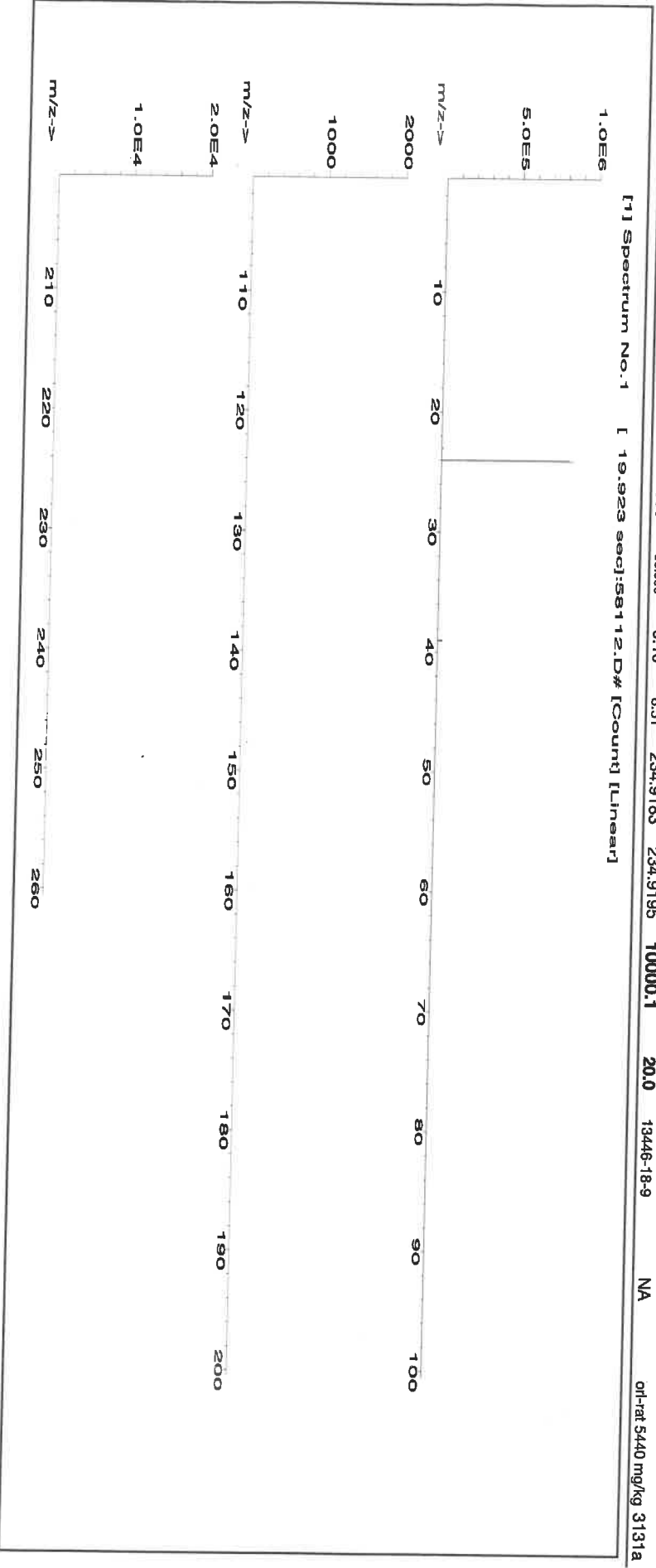
CERTIFIED WEIGHT REPORT:

Part Number: 58112 **Lot #** M 6171
Lot Number: 011525 **Solvent:** 24012496 Nitric Acid
Description: Magnesium (Mg)
Expiration Date: 011528
Recommended Storage: Ambient (20 °C) 2% 40.0 Nitric Acid (mL)
Nominal Concentration (µg/mL): 10000
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	011525
Reviewed By:	Pedro L. Rentas	011525

Compound

Compound	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LDSO	NIST SRM
1. Magnesium nitrate hexahydrate (Mg) IN030 MGD05023A1	10000	99.999	0.10	8.51	234.9183	234.9195	10000.1	20.0	13446-18-9	NA		off-ret 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	Ku	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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

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 → S1/S124

1.0 ACCREDITATION / REGISTRATION

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



2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution	
Catalog Number:	CLPP-CAL-1	
Lot Number:	V2-MEB742428	
Matrix:	5% (v/v) HNO ₃	
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, $X_{\text{CRM/RM}}$, where two or more methods of characterization are used is the weighted mean of the results:

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

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). <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; 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





Certified Reference Material CRM



ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number: **57038** Lot # **24002546** Nitric Acid
Lot Number: **092724**
Description: **Strontium (Sr)**

Expiration Date: **092727** 2% 40.0 Nitric Acid (mL)

Recommended Storage: **Ambient (20 °C)**

Nominal Concentration (µg/mL): **1000**

NIST Test Number: **8UTB** 5E-05 Balance Uncertainty 0.100 Flask Uncertainty

Weight shown below was diluted to (mL): **2000.07**

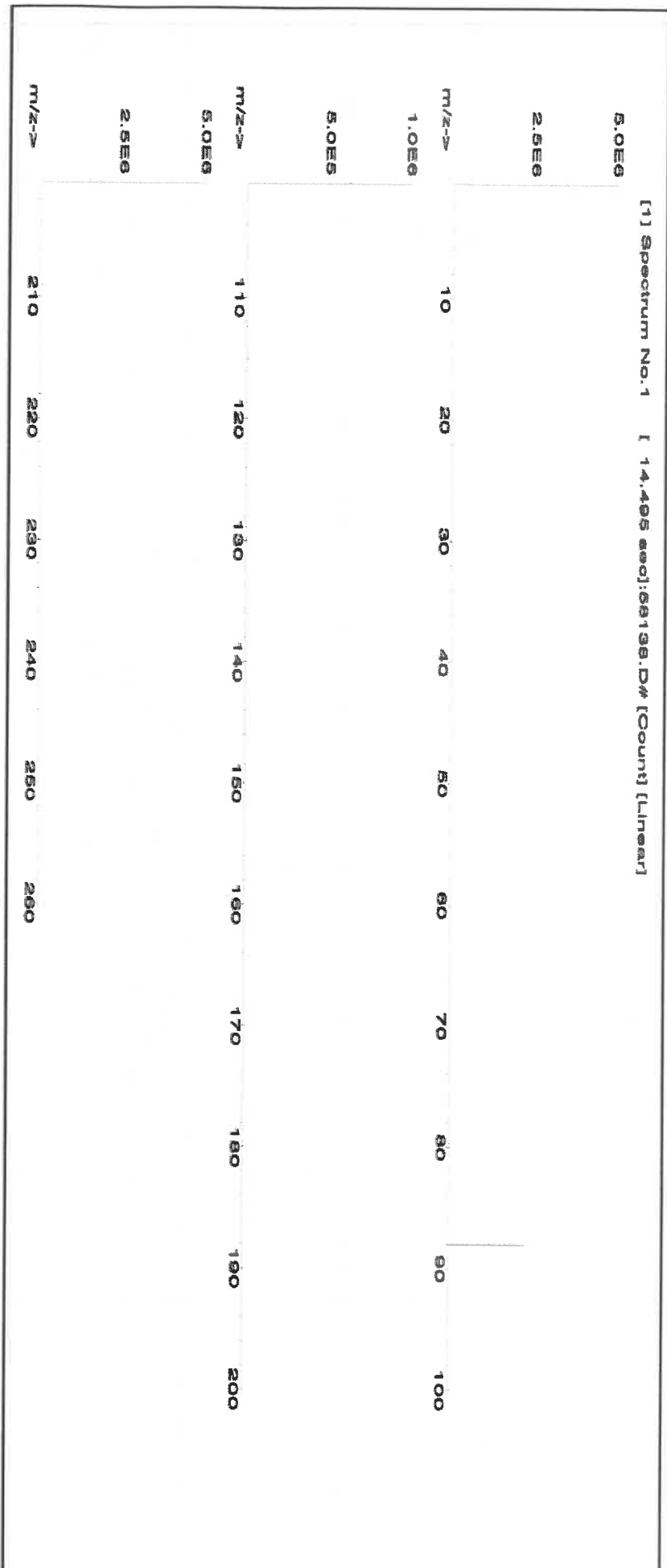
<i>[Signature]</i>	
Formulated By:	Benson Chan
Reviewed By:	Pedro L. Rentas
	092724

SDS Information

Compound	Lot	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
----------	-----	-----------------------	------------	------------------------	-----------	-------------------	-------------------	----------------------	----------------------------------	------	----------------	------	----------

1. Strontium nitrate (Sr) IN017 SR2022018A1 1000 99.997 0.10 41.2 4.85470 4.85481 1000.0 2.0 10042-76-9 NA or-rel >2000mg/kg 3153a

[1] Spectrum No.1 [14.465 sec]:68138.D# [Count] [Linear]





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

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



Certified Reference Material CRM



ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57042
080525
Molybdenum (Mo)

US#
MKP08697V
080525
Solvent
Ammonium hydroxide
ASTM Type 1 Water

Expiration Date:

080528

Recommended Storage:

Ambient (15 - 30 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6UTB

Volume shown below was diluted to (mL):

1999.41

5E-05

Balance Uncertainty
Flesh Uncertainty

R → 8/6/25
M6177

0.5%

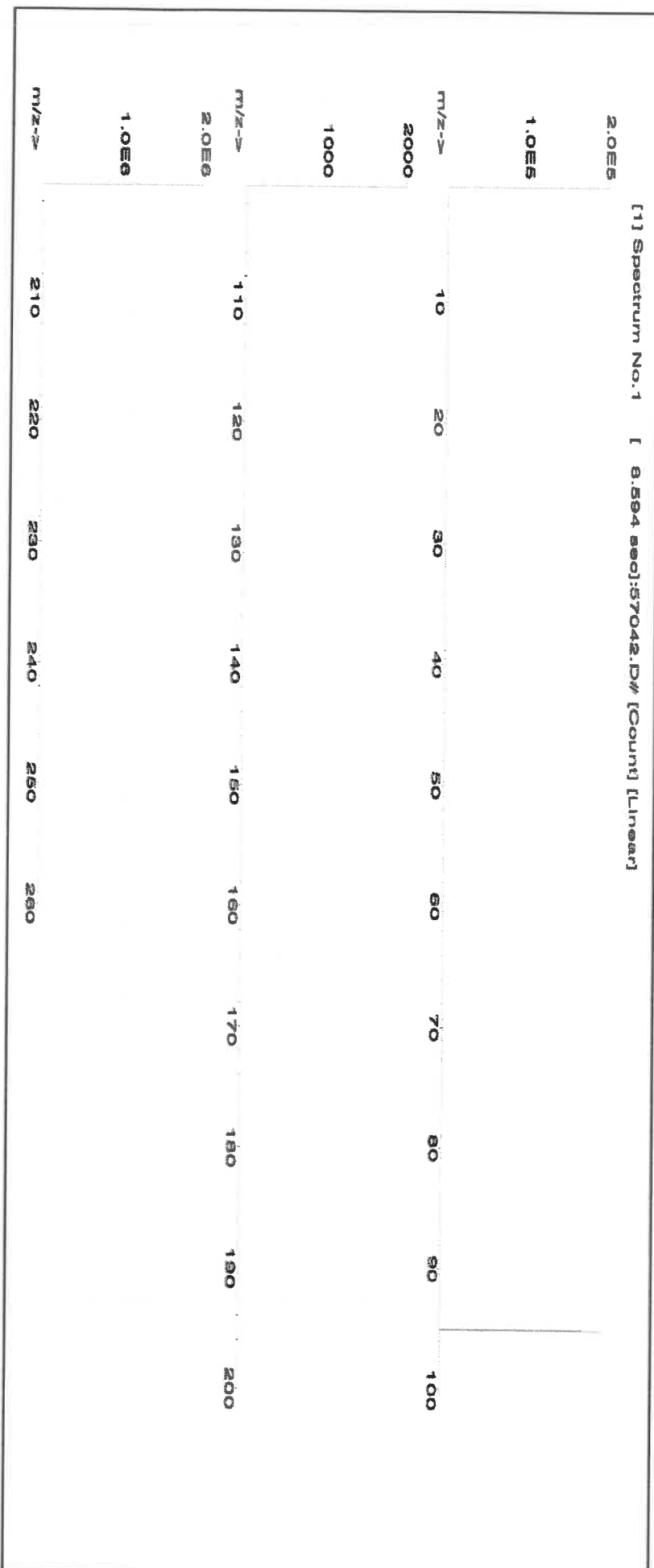
10.0 (mL)

Ammonium hydroxide

Formulated By:	Benson Chan	080525
Reviewed By:	Pedro L. Rentes	080525

SDS Information									
Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)
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)/mL 3134

[1] Spectrum No. 1 [8.594 sec]:57042.D# [Count] [Linear]





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

Trace Metals Verification by ICP-MS (µg/mL)															
Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<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
Ba	<0.02	Ce	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<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
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Te	<0.02
														Tb	<0.02
														Ti	<0.02
														Th	<0.02
														Tm	<0.02
														Sn	<0.02
														Tl	<0.02
														U	<0.02
														V	<0.02
														Yb	<0.02
														Y	<0.02
														Zn	<0.02
														Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

[Signature]

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware, and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated by an ISO17025 certified organization with weights traceable through NIST to the SI kilogram (see above).
- * Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).
- Rev 1.0, 2/25/2025



Certified Reference Material CRM



ANAB ISO 17034 Accredited
AFR-1539 Certificate Number
https://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57082
031525
Lead (Pb)

Lot #

Nitric Acid

Expiration Date:

031528

Recommended Storage:

Ambient (20 °C)

Nominal Concentration (µg/mL):

1000

NIST Test Number:

6UTB

SE-05 Balance Uncertainty
0.10 Flask Uncertainty

Weight shown below was diluted to (mL):

2000.07

0.10

SDS Information

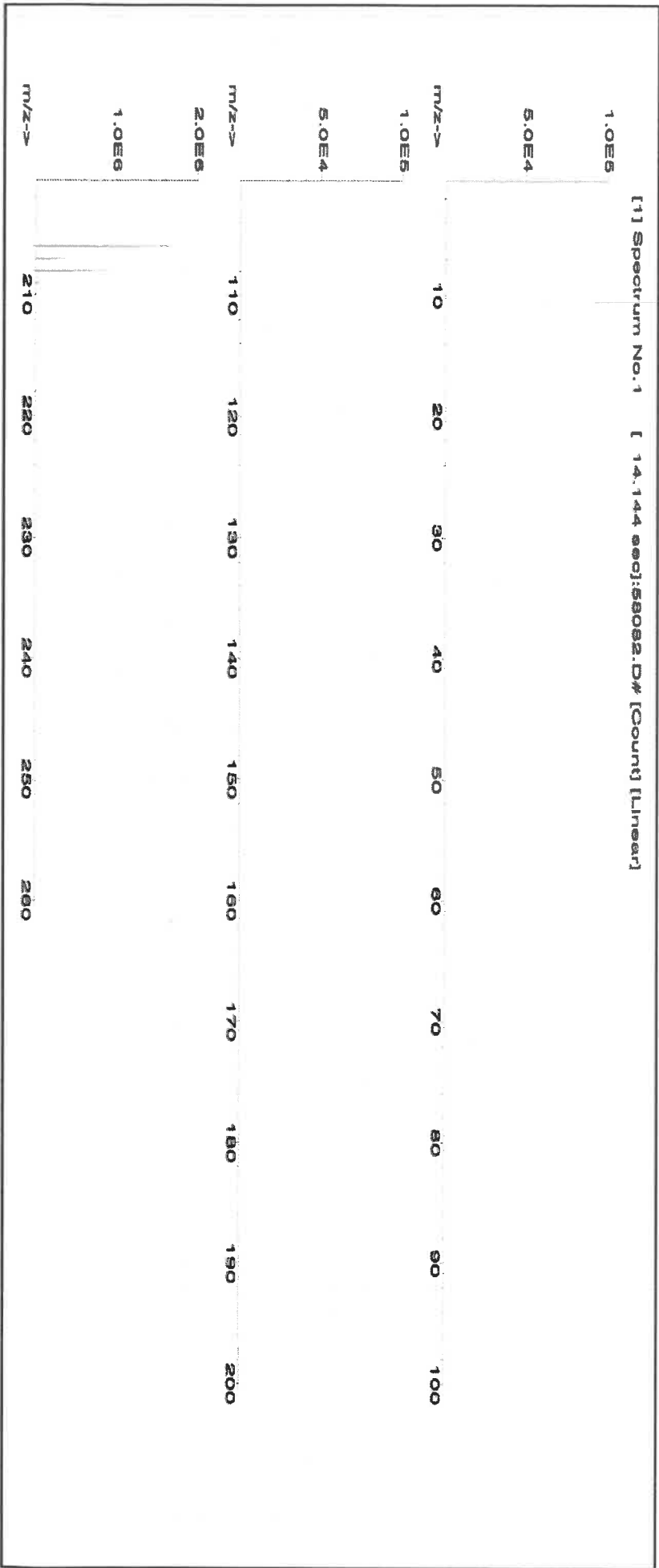
Compound

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

1. Lead(II) nitrate (Pb)

IN028	PBD122016A1	1000	99.999	0.10	62.5	3.20015	3.20067	1000.2	2.0	10099-74-8	0.05 mg/m3	Intrins-ral 93 mg/kg 3128
-------	-------------	------	--------	------	------	---------	---------	--------	-----	------------	------------	---------------------------

[1] Spectrum No. 1 [14.144 sec]:58082.D# [Count] [Linear]





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

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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

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 → 612/24

1.0 ACCREDITATION / REGISTRATION

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



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
Catalog Number: CGY10
Lot Number: V2-Y740548
Matrix: 2% (v/v) HNO₃
Value / Analyte(s): 10 000 µg/mL ea:
Yttrium
Starting Material: Yttrium Oxide
Starting Material Lot#: 2661 and 06230520YL
Starting Material Purity: 99.9984%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10000 ± 30 µg/mL
Density: 1.032 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	10011 ± 25 µg/mL EDTA NIST SRM 928 Lot Number: 928
Assay Method #2	9997 ± 50 µg/mL ICP Assay NIST SRM 3167a Lot Number: 190730
Assay Method #3	9984 ± 31 µg/mL Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

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

Characterization of CRM/RM by Two or More Methods

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

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.004600	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). <https://www.inorganicventures.com/terms-and-conditions-sale>. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

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

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

Atomic Weight; Valence; Coordination Number; Chemical Form In Solution - 88.91 +3 6 Y(OH)(H₂O)_{x+2}

Chemical Compatibility -Soluble in HCl, H₂SO₄ and HNO₃. Avoid HF, H₃PO₄ and neutral to basic media. Stable with most metals and inorganic anions forming an insoluble carbonate, oxide, oxalate, and fluoride. Avoid mixing with elements / solutions containing moderate amounts of fluoride.

Stability - 2-100 ppb levels stable for months in 1% HNO₃ / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO₃ / LDPE container.

Y Containing Samples (Preparation and Solution) - Metal (Soluble in acids); Oxide (Dissolve by heating in H₂O / HNO₃); Ores (Carbonate fusion in PtO followed by HCl dissolution); Organic Matrices (Dry ash and dissolve in 1:1 H₂O / HCl or HNO₃).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 89 amu	0.8 ppt	N/A	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



300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

P: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

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



2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	WW-LFS-1
Lot Number:	W2-MEB752149
Matrix:	5% (v/v) HNO ₃

M6180
R-37/22/23

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,	Aluminum,
	Cerium,	Selenium,
	Thallium,	
	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,	Boron,
	Vanadium,	
	20 µg/mL ea:	
	Zinc,	Strontium,
	Barium,	Beryllium,
	Cadmium,	Cobalt,
	Manganese,	Lithium,
	7.5 µg/mL ea:	
	Silver	

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	200.2 ± 0.7 µg/mL	Arsenic, As	80.1 ± 0.5 µg/mL
Barium, Ba	20.02 ± 0.12 µg/mL	Beryllium, Be	20.02 ± 0.11 µg/mL
Boron, B	30.02 ± 0.15 µg/mL	Cadmium, Cd	20.04 ± 0.09 µg/mL
Calcium, Ca	100.1 ± 0.3 µg/mL	Cerium, Ce	200.2 ± 1.0 µg/mL
Chromium, Cr	40.02 ± 0.26 µg/mL	Cobalt, Co	20.03 ± 0.09 µg/mL
Copper, Cu	30.03 ± 0.13 µg/mL	Iron, Fe	300.3 ± 1.3 µg/mL
Lead, Pb	100.1 ± 0.5 µg/mL	Lithium, Li	20.03 ± 0.09 µg/mL
Magnesium, Mg	200.2 ± 0.9 µg/mL	Manganese, Mn	19.99 ± 0.09 µg/mL
Mercury, Hg	70.0 ± 0.3 µg/mL	Nickel, Ni	50.05 ± 0.22 µg/mL
Phosphorus, P	600.5 ± 2.9 µg/mL	Potassium, K	1 001 ± 4 µg/mL
Selenium, Se	200.2 ± 1.1 µg/mL	Silver, Ag	7.52 ± 0.03 µg/mL
Sodium, Na	300.3 ± 1.3 µg/mL	Strontium, Sr	20.02 ± 0.10 µg/mL
Thallium, Tl	200.2 ± 1.0 µg/mL	Vanadium, V	30.02 ± 0.13 µg/mL
Zinc, Zn	20.05 ± 0.09 µg/mL		

Density: 1.037 g/mL (measured at 20 ± 5 °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
As	ICP Assay	3103a	100818
B	ICP Assay	3107	190605
B	Calculated		See Sec. 4.2
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	160830
Ce	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
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	3152a	200413
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	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, $X_{\text{CRM/RM}}$, where two or more methods of characterization are used is the weighted mean of the results:

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{TS} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{TS} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

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). <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° - 25° C to minimize the effects of transpiration. Use at 20° ± 5° 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; Info@inorganicventures.com;

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 08, 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

- April 08, 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



300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

Certificate of Analysis

P: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com

M6181
R → 7/22/28

1.0 ACCREDITATION / REGISTRATION

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



2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution
Catalog Number: WW-LFS-2
Lot Number: V2-MEB743480
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 ± 0.5 µg/mL	Molybdenum, Mo	40.05 ± 0.22 µg/mL
Silica, SiO ₂	200.3 ± 1.4 µg/mL	Tin, Sn	70.1 ± 0.4 µg/mL
Titanium, Ti	20.03 ± 0.12 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
Sb	ICP Assay	3102a	140911
SiO ₂	Calculated		See Sec. 4.2
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, $X_{\text{CRM/RM}}$, where two or more methods of characterization are used is the weighted mean of the results:

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

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

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

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

N/A

6.0 INTENDED USE

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

May 07, 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 07, 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:

Thomas Kozikowski
Stock VS Manager



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director





Instructions for QATS Reference Material: ICP-AES ICS

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

NOTE: These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the analytical protocol or your contract, disregard these instructions.

APPLICATION: For use with the CLP SFAM01.0 SOW and revisions.

CAUTION: Read instructions carefully before opening bottle(s) and proceeding with the analyses.



M6182

(A) **SAMPLE DESCRIPTION**

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

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

(B) **BREAKAGE OR MISSING ITEMS**

Check the contents of the shipment carefully for any broken, leaking, or missing items. Check that the seal is intact on each bottle. Refer to the enclosed chain of custody record. Report any problems to Mr. Keith Strout, APTIM Federal Services, LLC, at (702) 895-8722. If requested, return the chain-of-custody record with appropriate annotations and signatures to the address provided below.

QUALITY ASSURANCE TECHNICAL SUPPORT LABORATORY
APTIM Federal Services, LLC
2700 Chandler Avenue - Building C
Las Vegas, NV 89120

(C) **ANALYSIS OF SAMPLES**

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





Instructions for QATS Reference Material: ICP-AES ICS

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

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

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

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

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

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

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

Element	CRQL	Part A (µg/L)	Low Limit (µg/L)	High Limit (µg/L)	Part A +Part B (µg/L)	Low Limit (µg/L)	High Limit (µg/L)
Al	200	255000	216000	294000	247000	209000	285000
Sb	60	(0.0)	-60.0	60.0	618	525	711
As	10	(0.0)	-10.0	10.0	104	88.4	120
Ba	200	(6.0)	-194	206	(537)	337	737
Be	5.0	(0.0)	-5.0	5.0	495	420	570
Cd	5.0	(1.0)	-4.0	6.0	972	826	1120
Ca	5000	245000	208000	282000	235000	199000	271000
Cr	10	(52.0)	42.0	62.0	542	460	624
Co	50	(0.0)	-50.0	50.0	476	404	548
Cu	25	(2.0)	-23.0	27.0	511	434	588
Fe	100	101000	85600	116500	99300	84400	114500
Pb	10	(0.0)	-10.0	10.0	(49.0)	39.0	59.0
Mg	5000	255000	216000	294000	248000	210000	286000
Mn	15	(7.0)	-8.0	22.0	507	430	584
Ni	40	(2.0)	-38.0	42.0	954	810	1100
Se	35	(0.0)	-35.0	35.0	(46.0)	11.0	81.0
Ag	10	(0.0)	-10.0	10.0	201	170	232
Tl	25	(0.0)	-25.0	25.0	(108)	83.0	133
V	50	(0.0)	-50.0	50.0	491	417	565
Zn	60	(0.0)	-60.0	60.0	952	809	1095

The acceptance ranges for all analytes in parentheses in the above table were determined using the listed certified value ± 1 times the associated CLP SOW CRQL. The acceptance ranges for all other analytes were determined using the certified value ± 15 percent of the listed certified value.



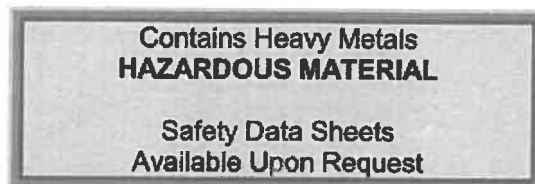
Instructions for QATS Reference Material: ICP-AES ICS

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

NOTE: These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the analytical protocol or your contract, disregard these instructions.

APPLICATION: For use with the CLP SFAM01.0 SOW and revisions.

CAUTION: Read instructions carefully before opening bottle(s) and proceeding with the analyses.



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,





Instructions for QATS Reference Material: ICP-AES ICS

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

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

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

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

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

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

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

Element	CRQL	Part A (µg/L)	Low Limit (µg/L)	High Limit (µg/L)	Part A +Part B (µg/L)	Low Limit (µg/L)	High Limit (µg/L)
Al	200	255000	216000	294000	247000	209000	285000
Sb	60	(0.0)	-60.0	60.0	618	525	711
As	10	(0.0)	-10.0	10.0	104	88.4	120
Ba	200	(6.0)	-194	206	(537)	337	737
Be	5.0	(0.0)	-5.0	5.0	495	420	570
Cd	5.0	(1.0)	-4.0	6.0	972	826	1120
Ca	5000	245000	208000	282000	235000	199000	271000
Cr	10	(52.0)	42.0	62.0	542	460	624
Co	50	(0.0)	-50.0	50.0	476	404	548
Cu	25	(2.0)	-23.0	27.0	511	434	588
Fe	100	101000	85600	116500	99300	84400	114500
Pb	10	(0.0)	-10.0	10.0	(49.0)	39.0	59.0
Mg	5000	255000	216000	294000	248000	210000	286000
Mn	15	(7.0)	-8.0	22.0	507	430	584
Ni	40	(2.0)	-38.0	42.0	954	810	1100
Se	35	(0.0)	-35.0	35.0	(46.0)	11.0	81.0
Ag	10	(0.0)	-10.0	10.0	201	170	232
Tl	25	(0.0)	-25.0	25.0	(108)	83.0	133
V	50	(0.0)	-50.0	50.0	491	417	565
Zn	60	(0.0)	-60.0	60.0	952	809	1095

The acceptance ranges for all analytes in parentheses in the above table were determined using the listed certified value ± 1 times the associated CLP SOW CRQL. The acceptance ranges for all other analytes were determined using the certified value ± 15 percent of the listed certified value.

Nitric Acid 69%
CMOS



M6187

R.D :- 08/08/25

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



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 >>>



Certified Reference Material CRM

M6027



ANAB ISO 17034 Accredited
AFR-1539 Certificate Number
https://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT:

Part Number: **57028**
Lot Number: **062024**
Description: **Nickel (NI)**

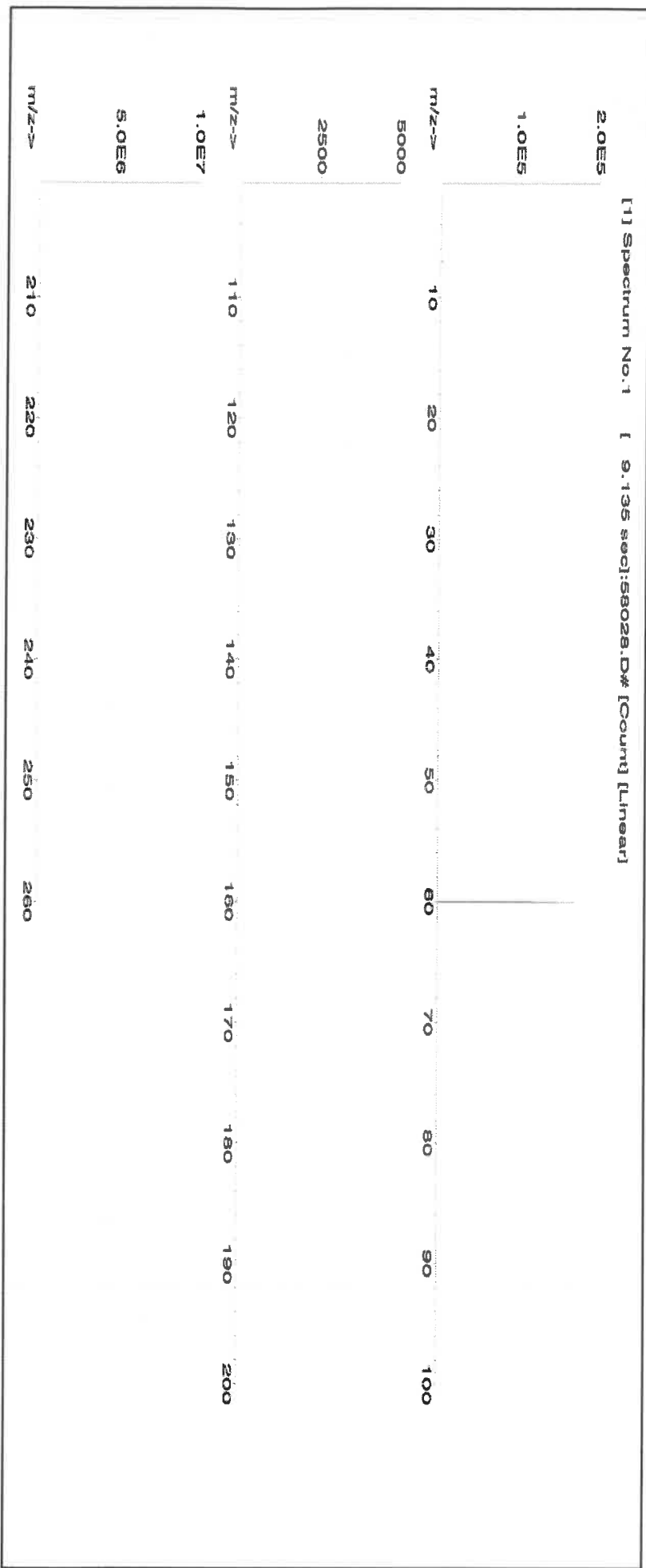
Lot # **24002546**
Solvent: **Nitric Acid**

Formulated By:	Benson Chan
062024	
Reviewed By:	Pedro L. Rentes
062024	

Expiration Date: **062027**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**
NIST Test Number: **6UTB**
Volume shown below was diluted to (mL): **2000.07**
5E-05 Balance Uncertainty
0.100 Flask Uncertainty

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pippet (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM

1. 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:

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

Certified by:

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



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

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

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

Physical Characterization:

(T)= Target analyte

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

Certified by:

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

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18



Certified Reference Material CRM



CERTIFIED WEIGHT REPORT:

Part Number: 57051
Lot Number: 071724
Description: Antimony (Sb)

NG160

Lot # 24002546
Solvent: Nitric Acid

Expiration Date: 071727

Recommended Storage: Ambient (20 °C)

Nominal Concentration (µg/mL): 1000

NIST Test Number: 6UTB

Volume shown below was diluted to (mL): 2000.26

5E-05 Balance Uncertainty

0.058 Flask Uncertainty

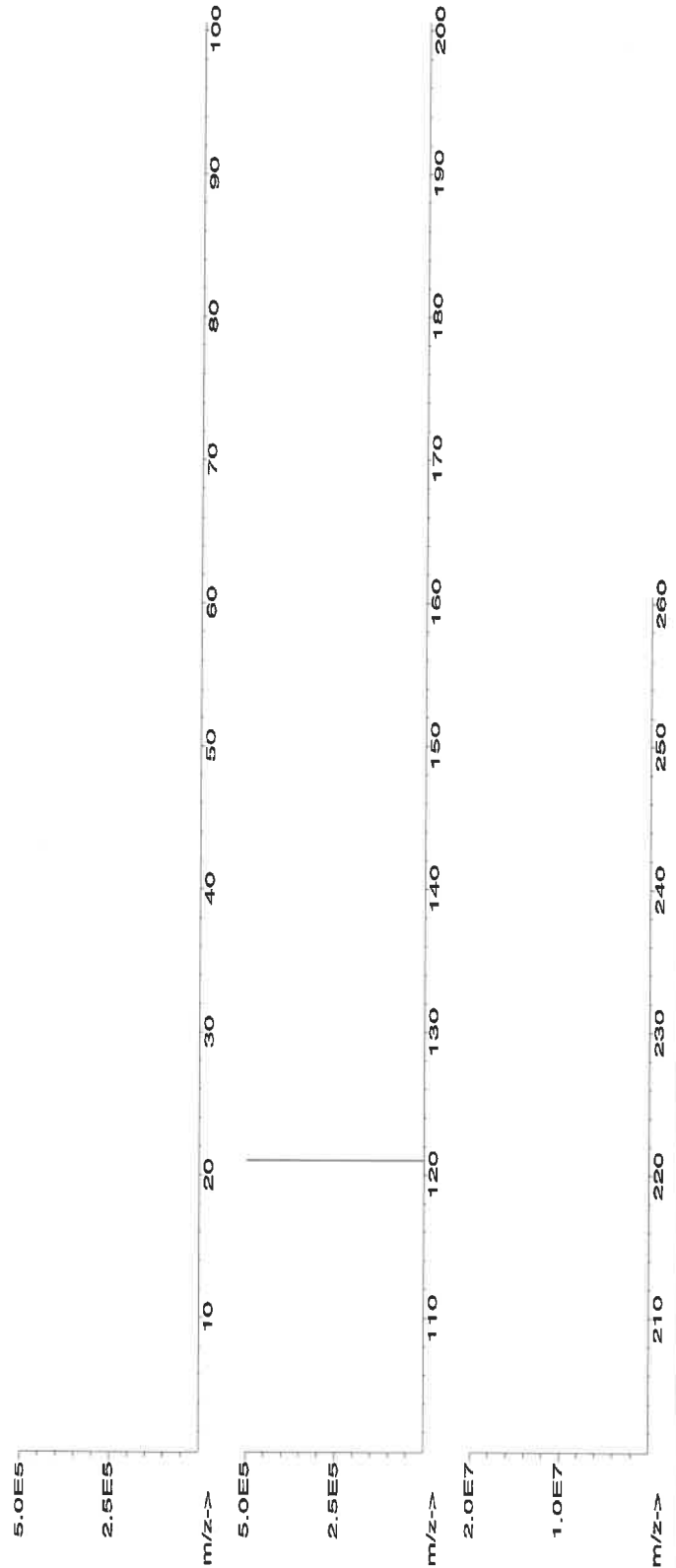
<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
<i>Pedro L. Rentas</i>	
Reviewed By:	Pedro L. Rentas
071724	

SDS Information

Expanded	Uncertainty	(Solvent Safety Info, On Attached pg.)	NIST
Conc. (µg/mL)	+/- (µg/mL)	CAS#	OSHA PEL (TWA)
Final	Initial		
Conc. (µg/mL)	Conc. (µg/mL)		
1000.0	10001.4	7440-36-0	0.5 mg/m3
or-rat 7000 mg/kg	3102a		

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)	OSHA PEL (TWA)	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 or-rat 7000 mg/kg 3102a

[1] Spectrum No.1 [17.964 sec]:58051.D# [Count] [Linear]





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

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

Bar P. R.

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



Certified Reference Material CRM

M6023



ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT:

Part Number: 57081
Lot Number: 062724
Description: Thallium (TI)

Solvent: 24002546 Nitric Acid

Lot #

Aliah O'Brady
Formulated By: Aliah O'Brady 062724

Expiration Date:

062727

2%

40.0

Nitric Acid

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

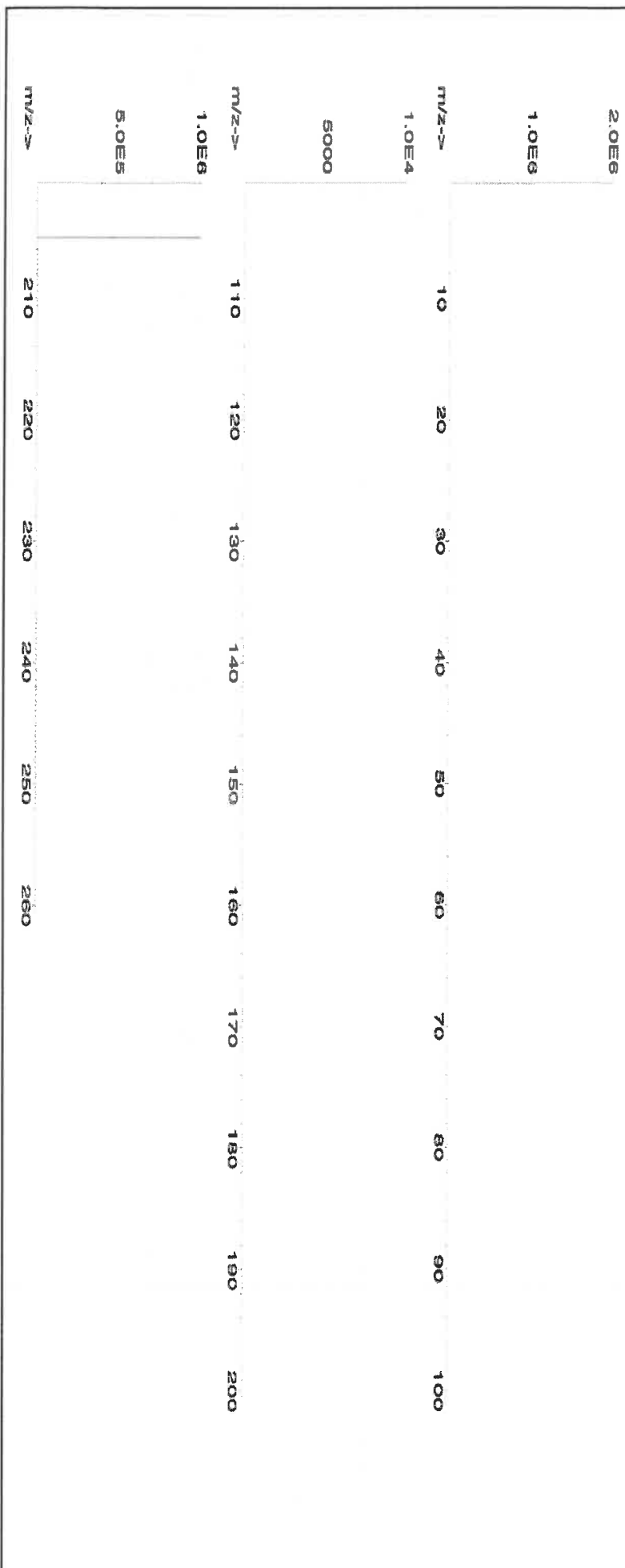
Pedro L. Renteria
Reviewed By: Pedro L. Renterias 062724

SDS Information

Compound	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
----------	------------	-----------------------	------------	-----------------	-----------	-------------------	-------------------	----------------------	----------------------------------	------	----------------	------	----------

1. Thallium nitrate (TI) IN037 BCCF4399 1000 99.999 0.10 77.0 2.5975 2.5977 1000.1 2.0 10102-45-1 0.1 mg/m3 or-mus 15mg/kg 3158

[1] Spectrum No.1 [14.044 sec]:57081.D# [Count] [Linear]





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pt	<0.02	Sc	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	T	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	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	Se	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



Certified Reference Material CRM

M6021



ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://absolutestandards.com

CERTIFIED WEIGHT REPORT:

Part Number: 57023
Lot Number: 062424
Description: Vanadium (V)

Lot # 24002546
Solvent: Nitric Acid

Aleah O'Brady	
Formulated By:	Aleah O'Brady
Reviewed By:	Pedro L. Rantas
	062424

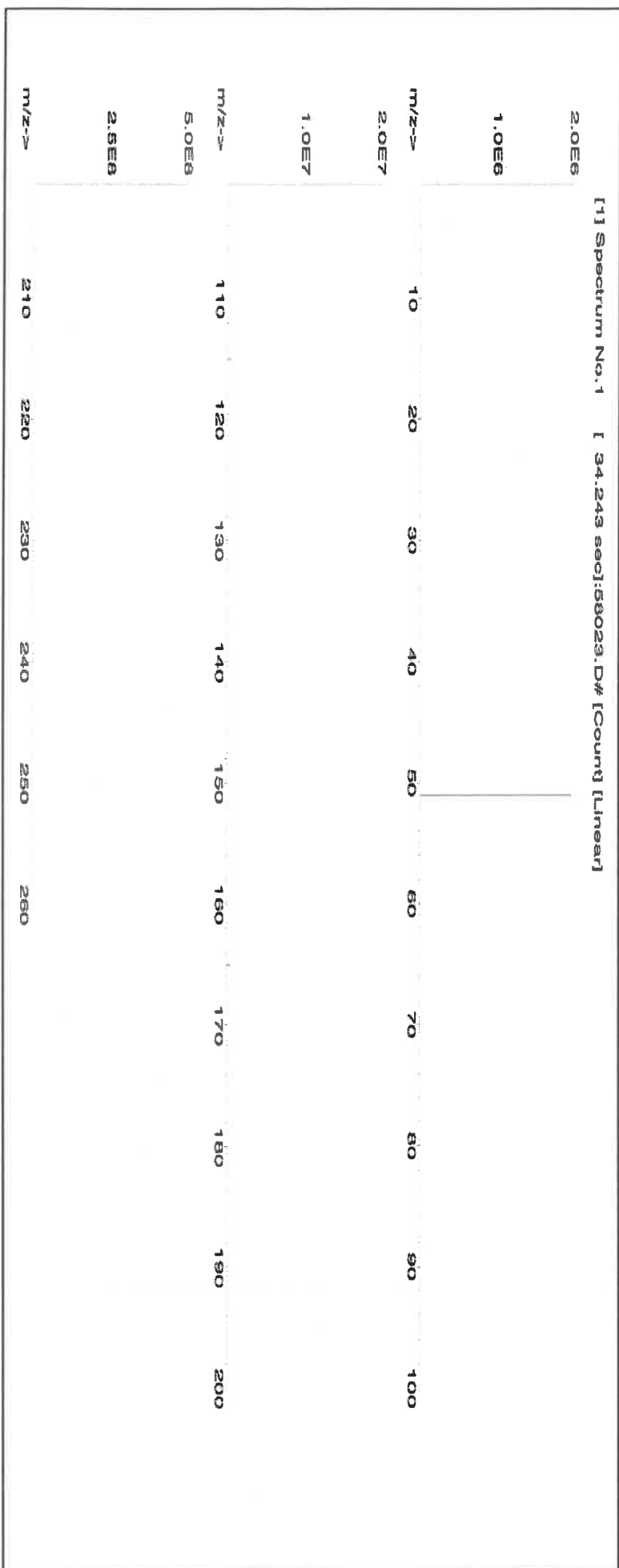
Expiration Date: 062427
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

Volume shown below was diluted to (mL): 2000.3
5E-05 Balance Uncertainty
0.06 Flask Uncertainty

2.0% 40.0 (mL) Nitric Acid

Compound		Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Ammonium metavanadate (V)		58123	021224	0.1000	200.0	0.084	1000	10000.3	1000.0	2.2	7803-55-6	0.05 mg/m3	or-at 58.1mg/kg	3165

[1] Spectrum No.1 [34.243 sec]:58023.D# [Count] [Linear]





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

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

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

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



SHIPPING DOCUMENTS

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18

www.chemtech.net

CHAIN OF CUSTODY RECORD

2009

WHITE - ALLIANCE COPY FOR RETURN TO CLIENT **YELLOW** - ALLIANCE COPY **PINK** - SAMPLER COPY

Laboratory Certification

Certified By	License No.
Connecticut	PH-0830
DOD ELAP (ANAB)	L2219
Maine	2024021
Maryland	296
New Hampshire	255425
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	525-24-234-08441
Texas	TX-C25-00189
Virginia	460312