

DATA PACKAGE METALS

PROJECT NAME : NWIRP BETHPAGE 112G08005-WE13

TETRA TECH NUS, INC.

661 Andersen Drive

Suite 200

Pittsburgh, PA - 15220-2745

Phone No: 412-921-7090

ORDER ID : Q3292

ATTENTION : Ernie Wu



Laboratory Certification ID # 20012



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Cover Page

Order ID : Q3292

Project ID : NWIRP Bethpage 112G08005-WE13

Client : Tetra Tech NUS, Inc.

Lab Sample Number

Q3292-01
Q3292-02

Client Sample Number

RW8-SP100-20251003
RW8-SP303-20251003

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 :

APPROVED

By Nimisha Pandya, QA/QC Supervisor at 2:18 pm, Oct 16, 2025

Date: 10/14/2025

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012



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

CASE NARRATIVE

Tetra Tech NUS, Inc.

Project Name: NWIRP Bethpage 112G08005-WE13

Project Manager : Ernie Wu

Order ID # Q3292

Test Name: Metals Group4

A. Number of Samples and Date of Receipt:

2 Water samples were received on 10/06/2025.

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 3010 (waters).

D. QA/ QC Samples:

The Holding Times were met for all analysis.

The Blank Spike met requirements for all compounds.

The Duplicate analysis met criteria for all compounds.

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 laboratory certifies that the all-electronic diskette deliverable exactly match the data summary forms (i.e. Form Is).

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.

APPROVED

By Nimisha Pandya, QA/QC Supervisor at 2:19 pm, Oct 16, 2025

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: Q3292

MATRIX: Water

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.			✓
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 laboratory certifies that the all-electronic diskette deliverable exactly match the data summary forms (i.e. Form Is).

QA REVIEW

REVIEWED

By *Sohil Jodhani, QA/QC Director* at 11:51 am, Oct 16, 2025

APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: Q3292

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: 10/14/2025

LAB CHRONICLE

OrderID:	Q3292	OrderDate:	10/6/2025 10:37:00 AM
Client:	Tetra Tech NUS, Inc.	Project:	NWIRP Bethpage 112G08005-WE13
Contact:	Ernie Wu	Location:	D31

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
Q3292-01	RW8-SP100-2025100 3	Water			10/03/25			10/06/25
			Metals Group4	6010D		10/07/25	10/09/25	
Q3292-02	RW8-SP303-2025100 3	Water			10/03/25			10/06/25
			Metals Group4	6010D		10/07/25	10/09/25	

Hit Summary Sheet
SW-846

SDG No.:	Q3292	Order ID:	Q3292
Client:	Tetra Tech NUS, Inc.	Project ID:	NWIRP Bethpage 112G08005-WE13

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	LOD	RDL	Units
Client ID : RW8-SP100-20251003									
Q3292-01	RW8-SP100-20251003	Water	Iron	704		11.7	40.0	50.0	ug/L
Client ID : RW8-SP303-20251003									
Q3292-02	RW8-SP303-20251003	Water	Iron	49.0	J	11.7	40.0	50.0	ug/L



SAMPLE DATA

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Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	10/03/25
Project:	NWIRP Bethpage 112G08005-WE13	Date Received:	10/06/25
Client Sample ID:	RW8-SP100-20251003	SDG No.:	Q3292
Lab Sample ID:	Q3292-01	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7439-89-6	Iron	704		1	11.7	40.0	50.0	ug/L	10/07/25 09:40	10/09/25 16:45	6010D	SW3010

Color Before:	Colorless	Clarity Before:	Clear	Texture:
Color After:	Colorless	Clarity After:	Clear	Artifacts:
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

Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	10/03/25
Project:	NWIRP Bethpage 112G08005-WE13	Date Received:	10/06/25
Client Sample ID:	RW8-SP303-20251003	SDG No.:	Q3292
Lab Sample ID:	Q3292-02	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7439-89-6	Iron	49.0	J	1	11.7	40.0	50.0	ug/L	10/07/25 09:40	10/09/25 16:50	6010D	SW3010

Color Before:	Colorless	Clarity Before:	Clear	Texture:
Color After:	Colorless	Clarity After:	Clear	Artifacts:
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

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Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Tetra Tech NUS, Inc.SDG No.: Q3292Contract: TETR06Lab Code: ACEInitial Calibration Source: EPAContinuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV01	Iron	4110	4000	103	90 - 110	P	10/09/2025	11:44	LB137484

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Tetra Tech NUS, Inc.

SDG No.: Q3292

Contract: TETR06

Lab Code: ACE

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLICV01	Iron	105	100	105	80 - 120	P	10/09/2025	11:49	LB137484

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Tetra Tech NUS, Inc.

SDG No.: Q3292

Contract: TETR06

Lab Code: ACE

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV01	Iron	5060	5000	101	90 - 110	P	10/09/2025	12:34	LB137484
CCV02	Iron	4790	5000	96	90 - 110	P	10/09/2025	14:16	LB137484
CCV03	Iron	4910	5000	98	90 - 110	P	10/09/2025	15:26	LB137484
CCV04	Iron	4790	5000	96	90 - 110	P	10/09/2025	16:26	LB137484
CCV05	Iron	4660	5000	93	90 - 110	P	10/09/2025	17:27	LB137484
CCV06	Iron	4910	5000	98	90 - 110	P	10/09/2025	18:16	LB137484
CCV07	Iron	5090	5000	102	90 - 110	P	10/09/2025	18:28	LB137484



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

Metals

- 2b -

CRDL STANDARD FOR AA & ICP

Client: Tetra Tech NUS, Inc.

SDG No.: Q3292

Contract: TETR06

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	Iron	112	100	112	65 - 135	P	10/09/2025	12:04	LB137484



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

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Tetra Tech NUS, Inc. **SDG No.:** Q3292
Contract: TETR06 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Iron	23.4	+/-50	U	80.0	100	P	10/09/2025	11:59	LB137484

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Tetra Tech NUS, Inc. **SDG No.:** Q3292
Contract: TETR06 **Lab Code:** ACE

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Iron	23.4	+/-50	U	80.0	100	P	10/09/2025	12:46	LB137484
CCB02	Iron	23.4	+/-50	U	80.0	100	P	10/09/2025	14:20	LB137484
CCB03	Iron	23.4	+/-50	U	80.0	100	P	10/09/2025	15:30	LB137484
CCB04	Iron	23.4	+/-50	U	80.0	100	P	10/09/2025	16:41	LB137484
CCB05	Iron	23.4	+/-50	U	80.0	100	P	10/09/2025	17:31	LB137484
CCB06	Iron	23.4	+/-50	U	80.0	100	P	10/09/2025	18:20	LB137484
CCB07	Iron	23.4	+/-50	U	80.0	100	P	10/09/2025	18:33	LB137484

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: Tetra Tech NUS, Inc.

SDG No.: Q3292

Instrument: P4

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	LOD ug/L	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB170009BL		WATER		Batch Number:		PB170009		Prep Date:	10/07/2025	
	Iron	11.7	<25	U	40.0	50.0	P	10/09/2025	18:11	LB137484

Metals
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INTERFERENCE CHECK SAMPLE

Client: <u>Tetra Tech NUS, Inc.</u>	SDG No.: <u>Q3292</u>
Contract: <u>TETR06</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	Iron	98600	101000	98	85600	116500	10/09/2025	12:09	LB137484
ICSAB01	Iron	92400	99300	93	84400	114500	10/09/2025	12:19	LB137484



METAL QC DATA

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metals
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MATRIX SPIKE SUMMARY

client: <u>Tetra Tech NUS, Inc.</u>	level: <u>low</u>	sdg no.: <u>Q3292</u>
contract: <u>TETR06</u>		lab code: <u>ACE</u>
matrix: <u>Water</u>	sample id: <u>Q3292-02</u>	client id: <u>RW8-SP303-20251003MS</u>
Percent Solids for Sample: <u>NA</u>	Spiked ID: <u>Q3292-02MS</u>	Percent Solids for Spike Sample: <u>NA</u>

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Iron	ug/L	87 - 115	1500		49.0	J	1500	96		P

metals
- 5a -
MATRIX SPIKE DUPLICATE SUMMARY

client:	Tetra Tech NUS, Inc.		level:	low		sdg no.:	Q3292				
contract:	TETR06					lab code:	ACE				
matrix:	Water		sample id:	Q3292-02		client id:	RW8-SP303-20251003MSD				
Percent Solids for Sample:		NA		Spiked ID:		Q3292-02MSD		Percent Solids for Spike Sample:		NA	
Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M	
Iron	ug/L	87 - 115	1500		49.0	J	1500	97		P	

Metals
- 5b -

Client:

Tetra Tech NUS, Inc.

Contract:

TETR06

Matrix:

Sample ID:

SDG No.:

Q3292

Lab Code:

ACE

Client ID:

Level:

LOW

Spiked ID:

Analyte	Units	Acceptance Limit %R	C	Sample Result	C	Spike Added	% Recovery	Qual	M
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Metals

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DUPLICATE SAMPLE SUMMARY

Client:	<u>Tetra Tech NUS, Inc.</u>	Level:	<u>LOW</u>	SDG No.:	<u>Q3292</u>
Contract:	<u>TETR06</u>			Lab Code:	<u>ACE</u>
Matrix:	<u>Water</u>	Sample ID:	<u>Q3292-02</u>	Client ID:	<u>RW8-SP303-20251003DUP</u>
Percent Solids for Sample:	NA	Duplicate ID	Q3292-02DUP	Percent Solids for Spike Sample:	NA

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Iron	ug/L	20	49.0	J	46.2	J	6		P

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

Metals

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DUPLICATE SAMPLE SUMMARY

Client:	<u>Tetra Tech NUS, Inc.</u>	Level:	<u>LOW</u>	SDG No.:	<u>Q3292</u>
Contract:	<u>TETR06</u>			Lab Code:	<u>ACE</u>
Matrix:	<u>Water</u>	Sample ID:	<u>Q3292-02MS</u>	Client ID:	<u>RW8-SP303-20251003MSD</u>
Percent Solids for Sample:	NA	Duplicate ID	Q3292-02MSD	Percent Solids for Spike Sample:	NA

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Iron	ug/L	20	1500		1500		0		P

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

Metals

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LABORATORY CONTROL SAMPLE SUMMARY

Client: Tetra Tech NUS, Inc.

SDG No.: Q3292

Contract: TETR06

Lab Code: ACE

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB170009BS Iron	ug/L	1500	1540		103	87 - 115	P

Metals
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ICP SERIAL DILUTIONS

SAMPLE NO.

RW8-SP303-20251003L

Lab Name: Alliance **Contract:** TETR06
Lab Code: ACE **Lb No.:** lb137484 **Lab Sample ID :** Q3292-02L **SDG No.:** Q3292
Matrix (soil/water): Water **Level (low/med):** LOW
Concentration Units: ug/L

Analyte	Initial Sample Result (I) C	Serial Dilution Result (S) C	% Differ- ence	Q	M
Iron	49.0 J	250 U	100.0		P



METAL PREPARATION & INSTRUMENT DATA

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Metals

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ICP INTERELEMENT CORRECTION FACTORS

Client: Tetra Tech NUS, Inc.

SDG No.: Q3292

Contract: TETR06

Lab Code: ACE

Instrument ID:

Date:

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave- Length (nm)	ICP Interement Correction Factors For:				
		Al	Ca	Fe	Mg	Ag
Iron	240.488	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Metals

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ICP INTERELEMENT CORRECTION FACTORS

Client: Tetra Tech NUS, Inc.

SDG No.: Q3292

Contract: TETR06

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
Iron	240.488	0.0000000	0.0000000	0.0000000	0.0000000	-0.0039600

Metals

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ICP INTERELEMENT CORRECTION FACTORS

Client: Tetra Tech NUS, Inc.

SDG No.: Q3292

Contract: TETR06

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
Iron	240.488	0.0000000	0.0000000	0.0000730	0.0000000	-0.0015250

Metals

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ICP INTERELEMENT CORRECTION FACTORS

Client: Tetra Tech NUS, Inc.

SDG No.: Q3292

Contract: TETR06

Lab Code: ACE

Instrument ID:

Date:

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave- Length (nm)	ICP Interement Correction Factors For:				
		Na	Ni	Pb	Sb	Se
Iron	240.488	0.0000000	-0.0017000	0.0000000	0.0000000	0.0000000

Metals

- 11 -

ICP INTERELEMENT CORRECTION FACTORS

Client: Tetra Tech NUS, Inc.

SDG No.: Q3292

Contract: TETR06

Lab Code: ACE

Instrument ID:

Date:

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave- Length (nm)	ICP Interement Correction Factors For:				
		Sn	Ti	Tl	V	Zn
Iron	240.488	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

METAL PREPARATION & ANALYICAL SUMMARY

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Metals
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SAMPLE PREPARATION SUMMARY

Client: Tetra Tech NUS, Inc.

SDG No.: Q3292

Contract: TETR06

Lab Code: ACE

Method: _____

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(mL)	Final Sample Volume (mL)	Percent Solids
Batch Number: PB170009							
PB170009BL	PB170009BL	MB	WATER	10/07/2025	50.0	25.0	
PB170009BS	PB170009BS	LCS	WATER	10/07/2025	50.0	25.0	
Q3292-01	RW8-SP100-20251003	SAM	WATER	10/07/2025	50.0	25.0	
Q3292-02	RW8-SP303-20251003	SAM	WATER	10/07/2025	50.0	25.0	
Q3292-02DUP	RW8-SP303-20251003DUP	DUP	WATER	10/07/2025	50.0	25.0	
Q3292-02MS	RW8-SP303-20251003MS	MS	WATER	10/07/2025	50.0	25.0	
Q3292-02MSD	RW8-SP303-20251003MSD	MSD	WATER	10/07/2025	50.0	25.0	

metals
- 14 -
ANALYSIS RUN LOG

Client: Tetra Tech NUS, Inc.

Contract: TETR06

Lab code: ACE

Sdg no.: Q3292

Instrument id number: _____

Method: _____

Run number: LB137484

Start date: 10/09/2025

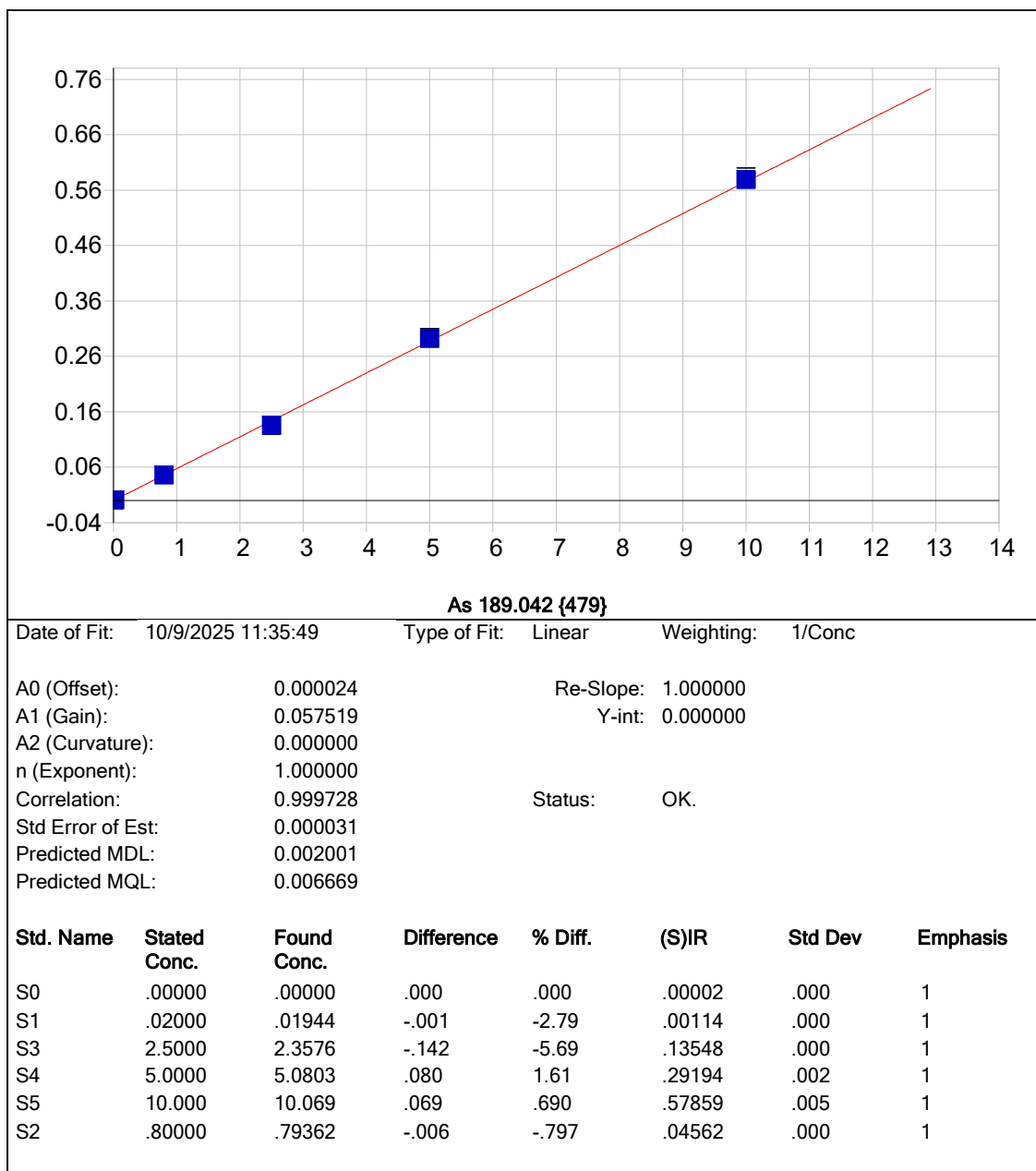
End date: 10/09/2025

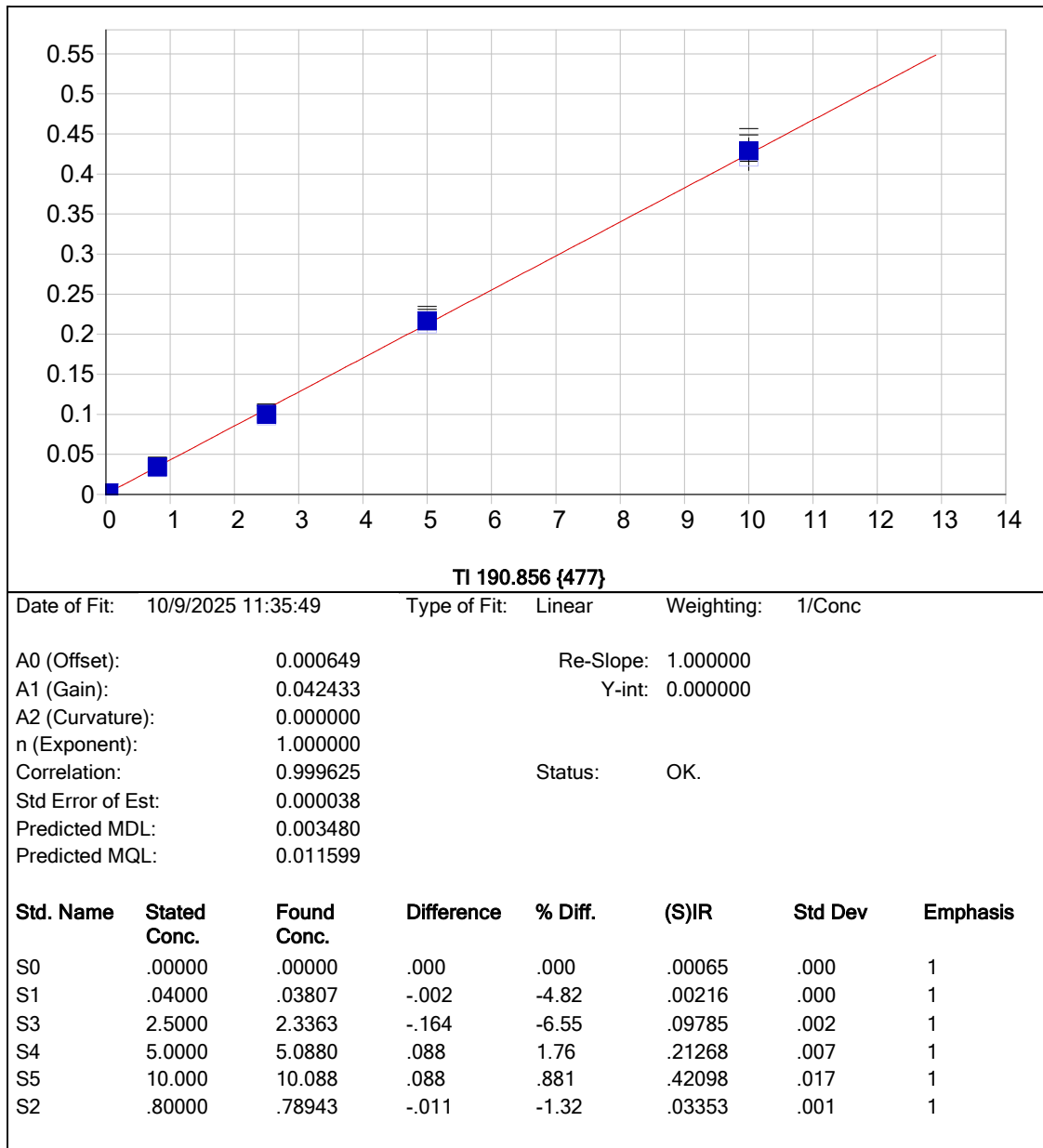
Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1110	Fe
S1	S1	1	1115	Fe
S2	S2	1	1119	Fe
S3	S3	1	1123	Fe
S4	S4	1	1127	Fe
S5	S5	1	1131	Fe
ICV01	ICV01	1	1144	Fe
LLICV01	LLICV01	1	1149	Fe
ICB01	ICB01	1	1159	Fe
CRI01	CRI01	1	1204	Fe
ICSA01	ICSA01	1	1209	Fe
ICSAB01	ICSAB01	1	1219	Fe
CCV01	CCV01	1	1234	Fe
CCB01	CCB01	1	1246	Fe
CCV02	CCV02	1	1416	Fe
CCB02	CCB02	1	1420	Fe
PB170009BS	PB170009BS	1	1518	Fe
CCV03	CCV03	1	1526	Fe
CCB03	CCB03	1	1530	Fe
CCV04	CCV04	1	1626	Fe
CCB04	CCB04	1	1641	Fe
Q3292-01	RW8-SP100-20251003	1	1645	Fe
Q3292-02	RW8-SP303-20251003	1	1650	Fe
Q3292-02DUP	RW8-SP303-20251003DUP	1	1654	Fe
Q3292-02L	RW8-SP303-20251003L	5	1658	Fe
Q3292-02MS	RW8-SP303-20251003MS	1	1702	Fe
Q3292-02MSD	RW8-SP303-20251003MSD	1	1706	Fe
CCV05	CCV05	1	1727	Fe
CCB05	CCB05	1	1731	Fe
PB170009BL	PB170009BL	1	1811	Fe
CCV06	CCV06	1	1816	Fe
CCB06	CCB06	1	1820	Fe
CCV07	CCV07	1	1828	Fe
CCB07	CCB07	1	1833	Fe

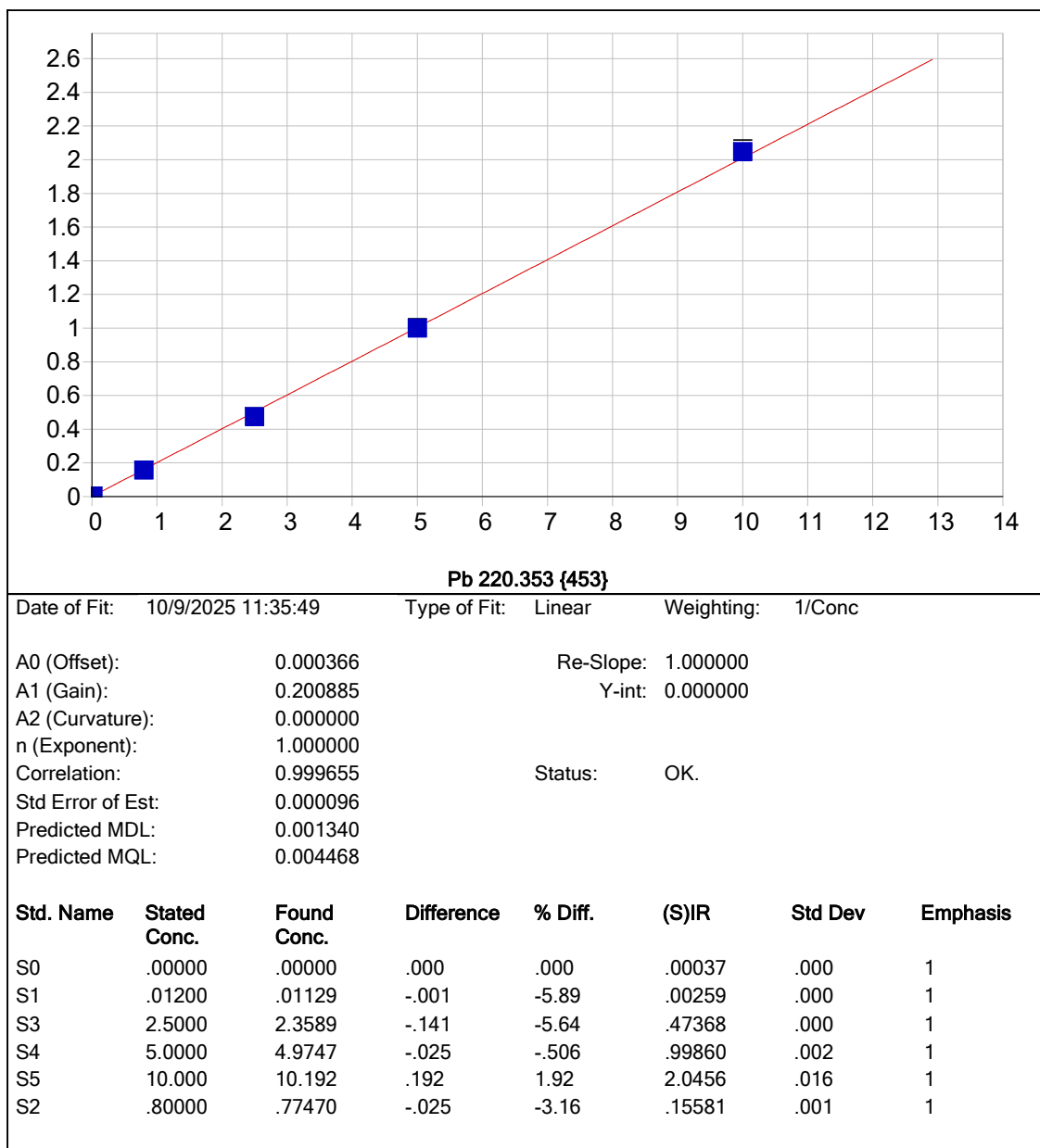


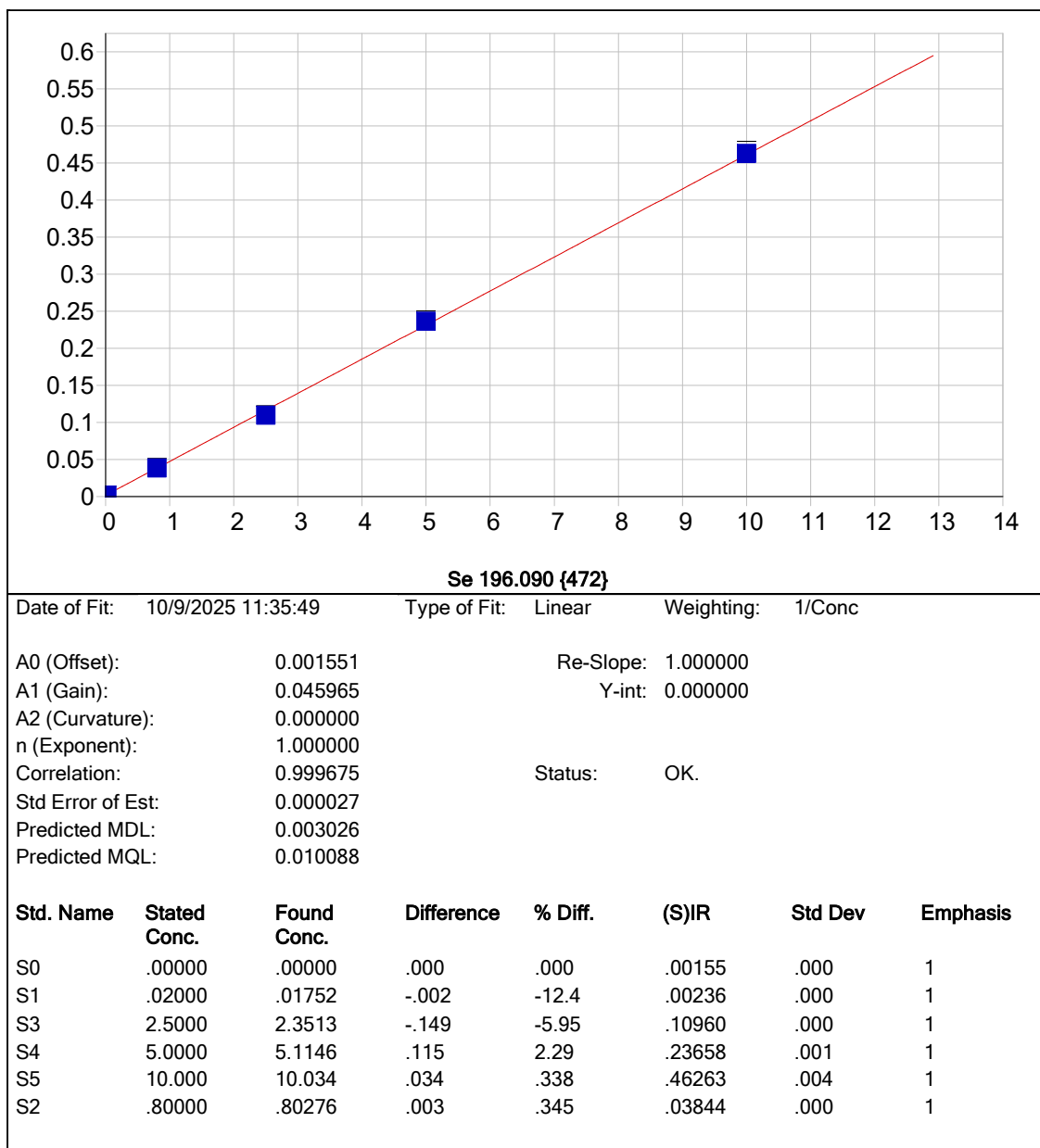
METAL RAW DATA

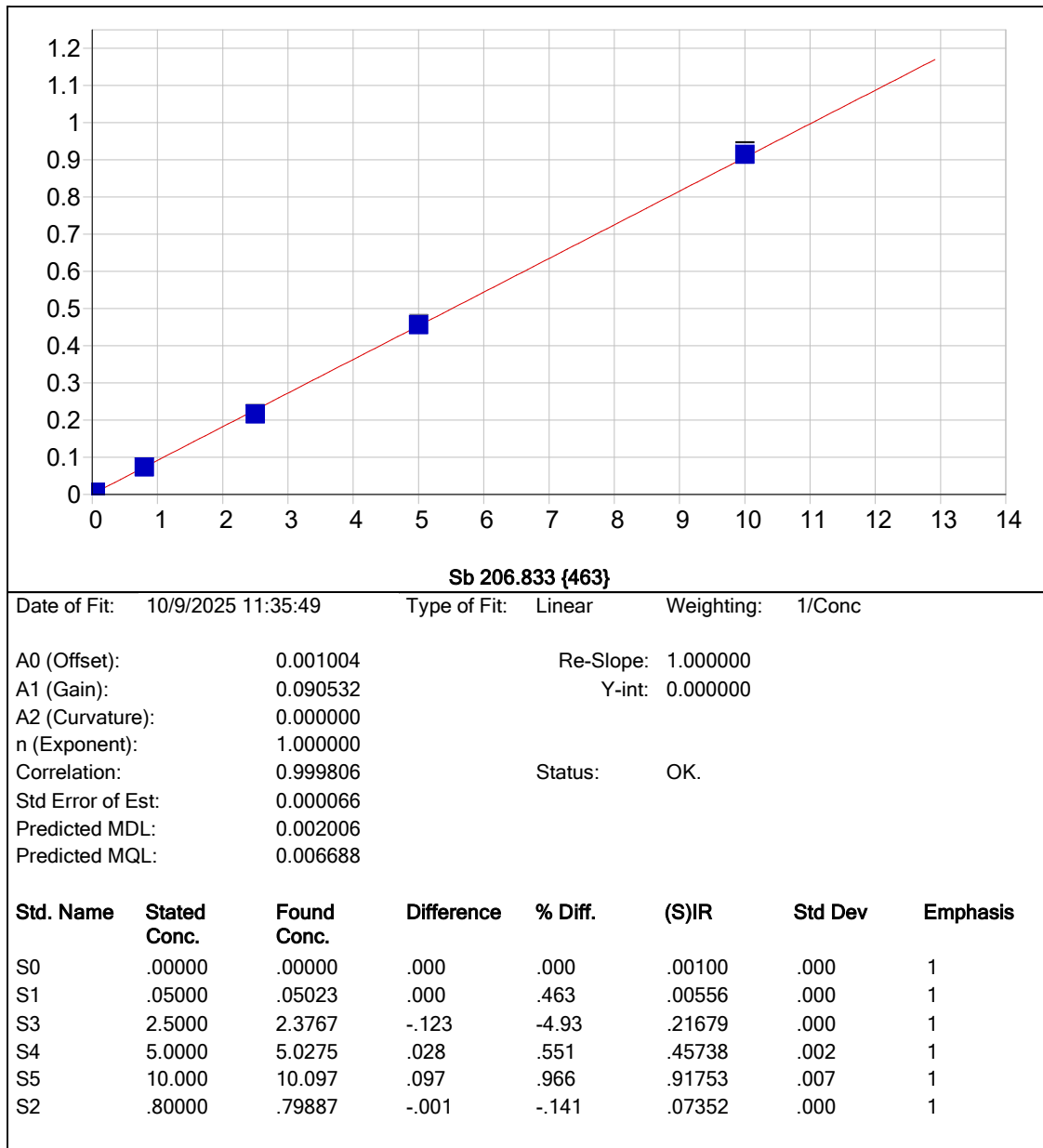
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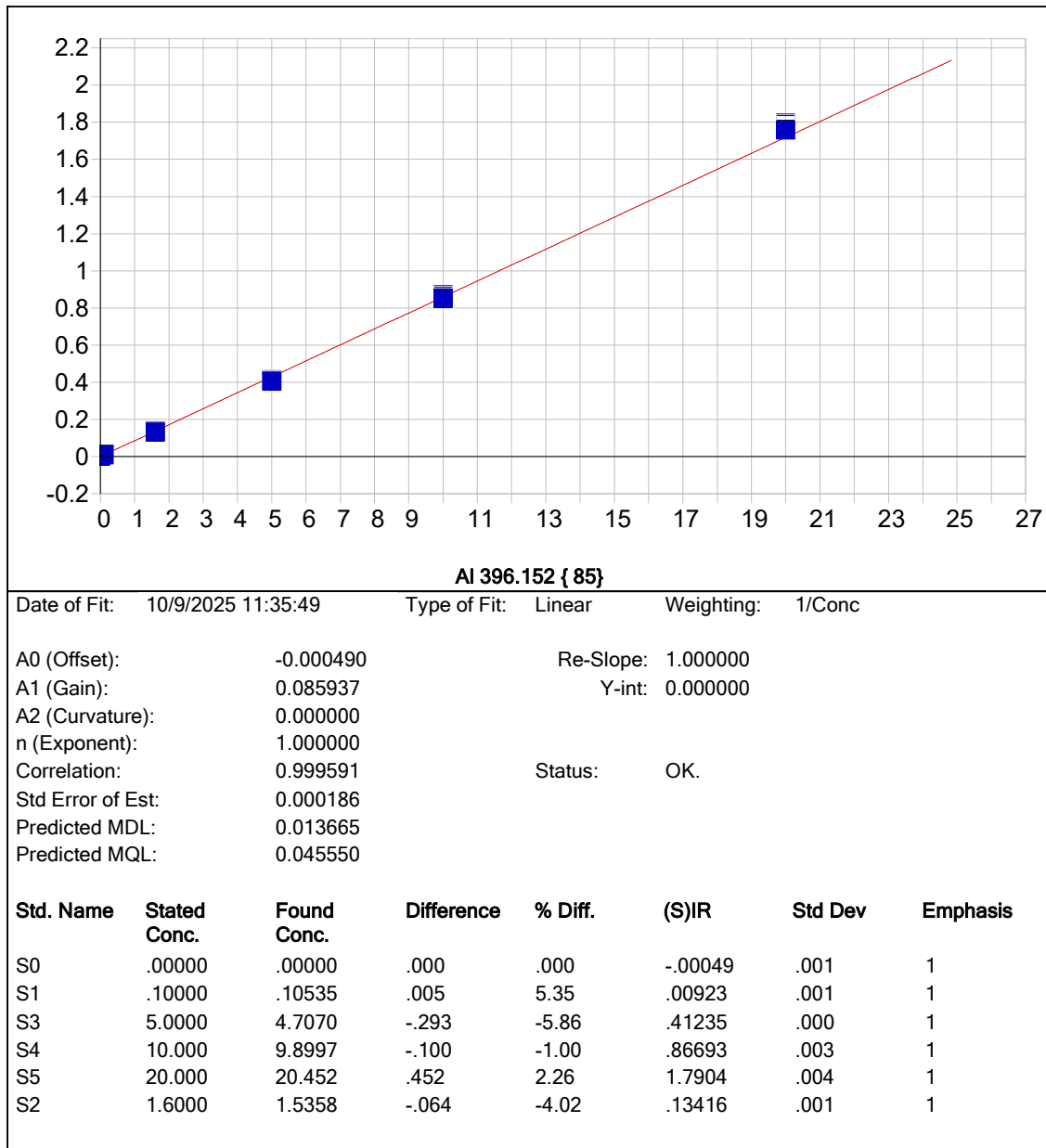




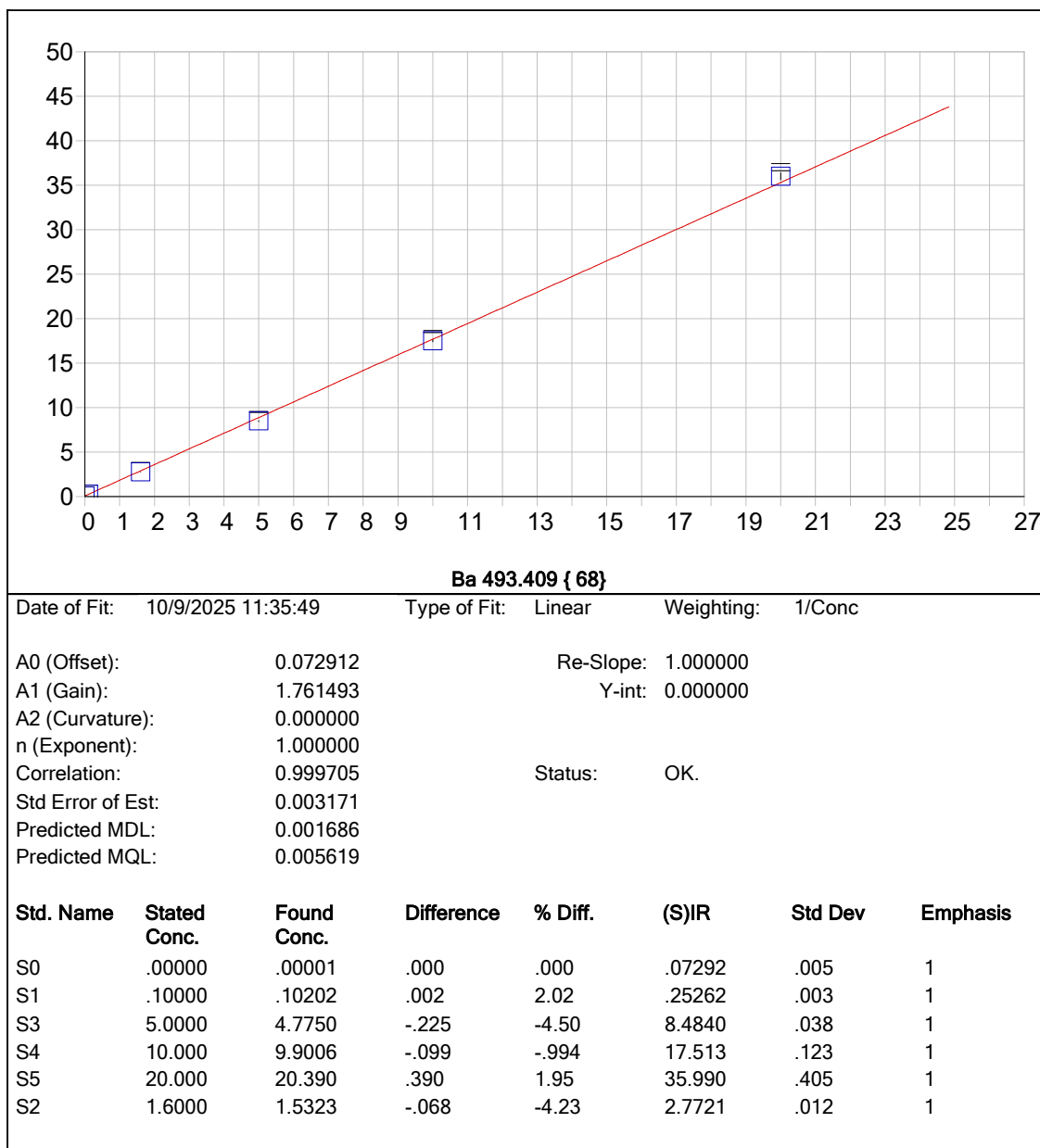


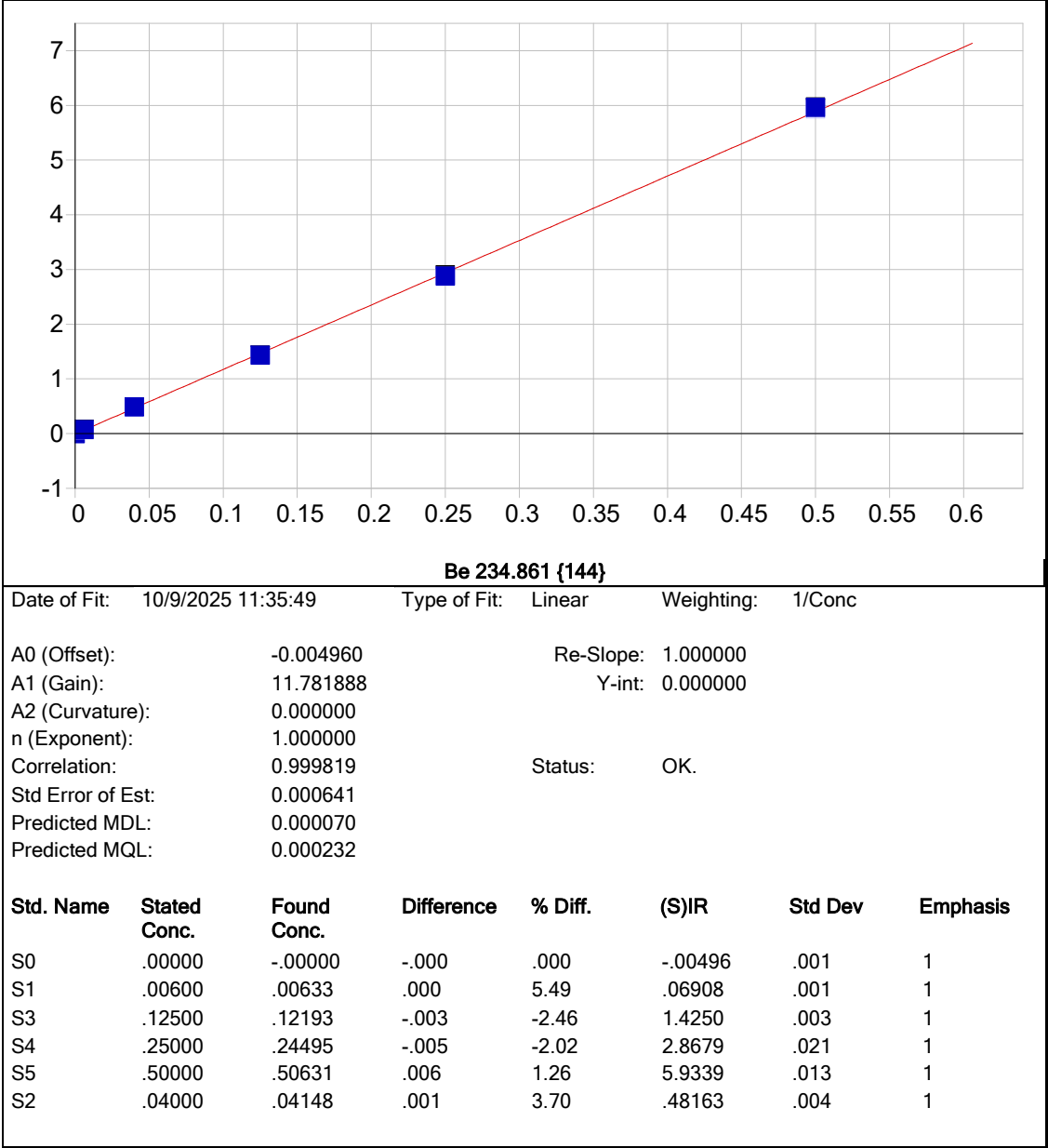


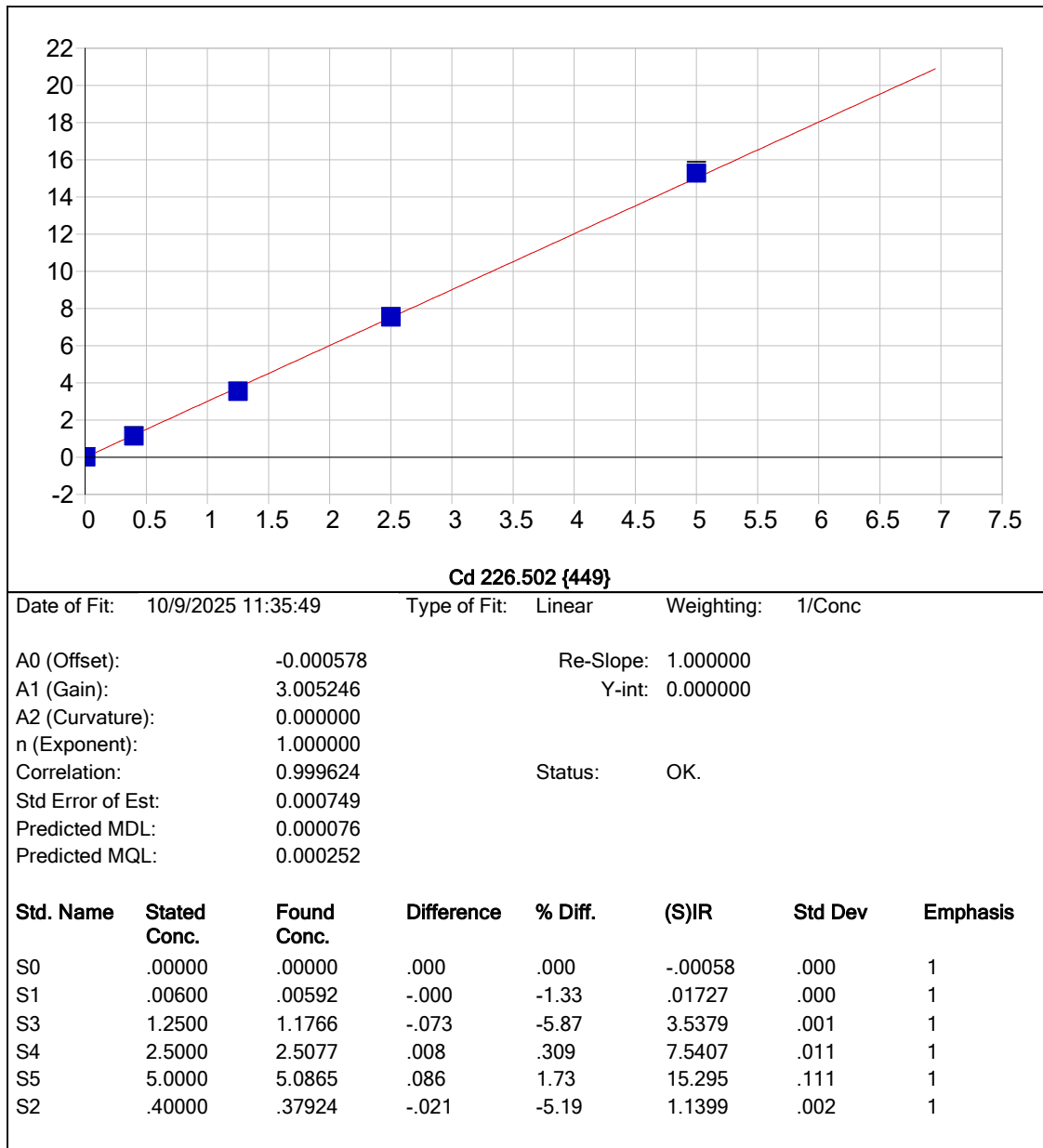


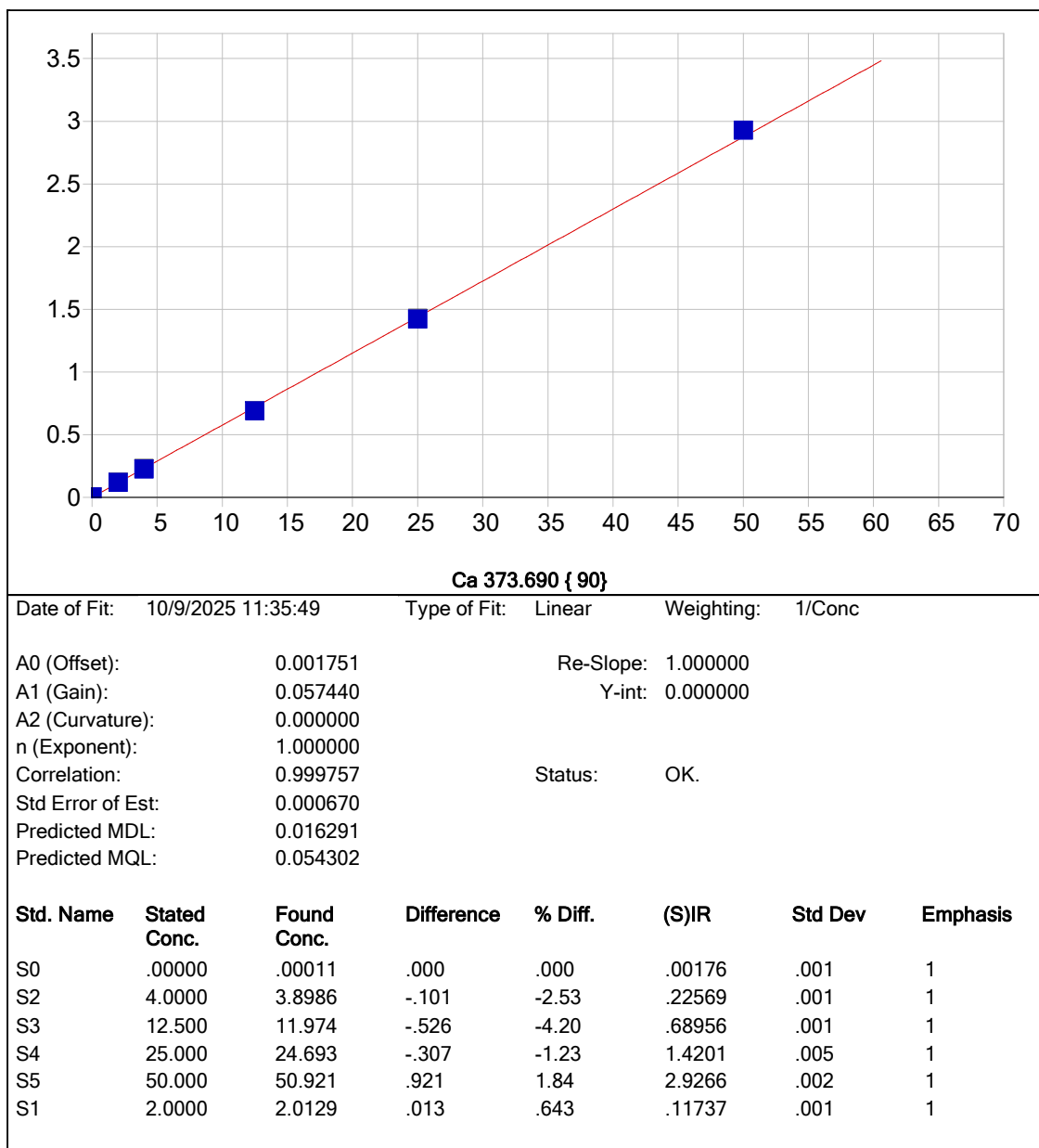


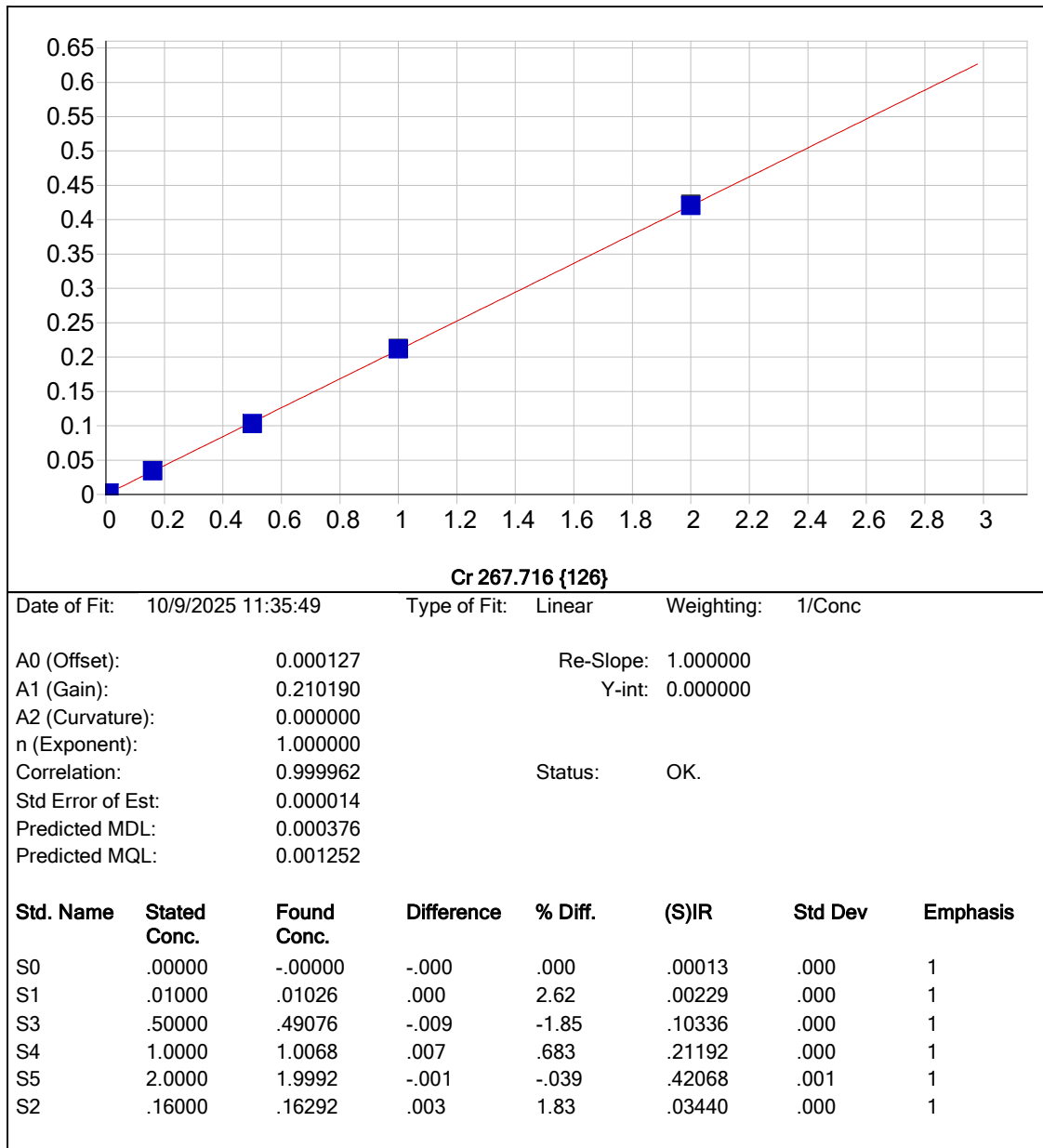
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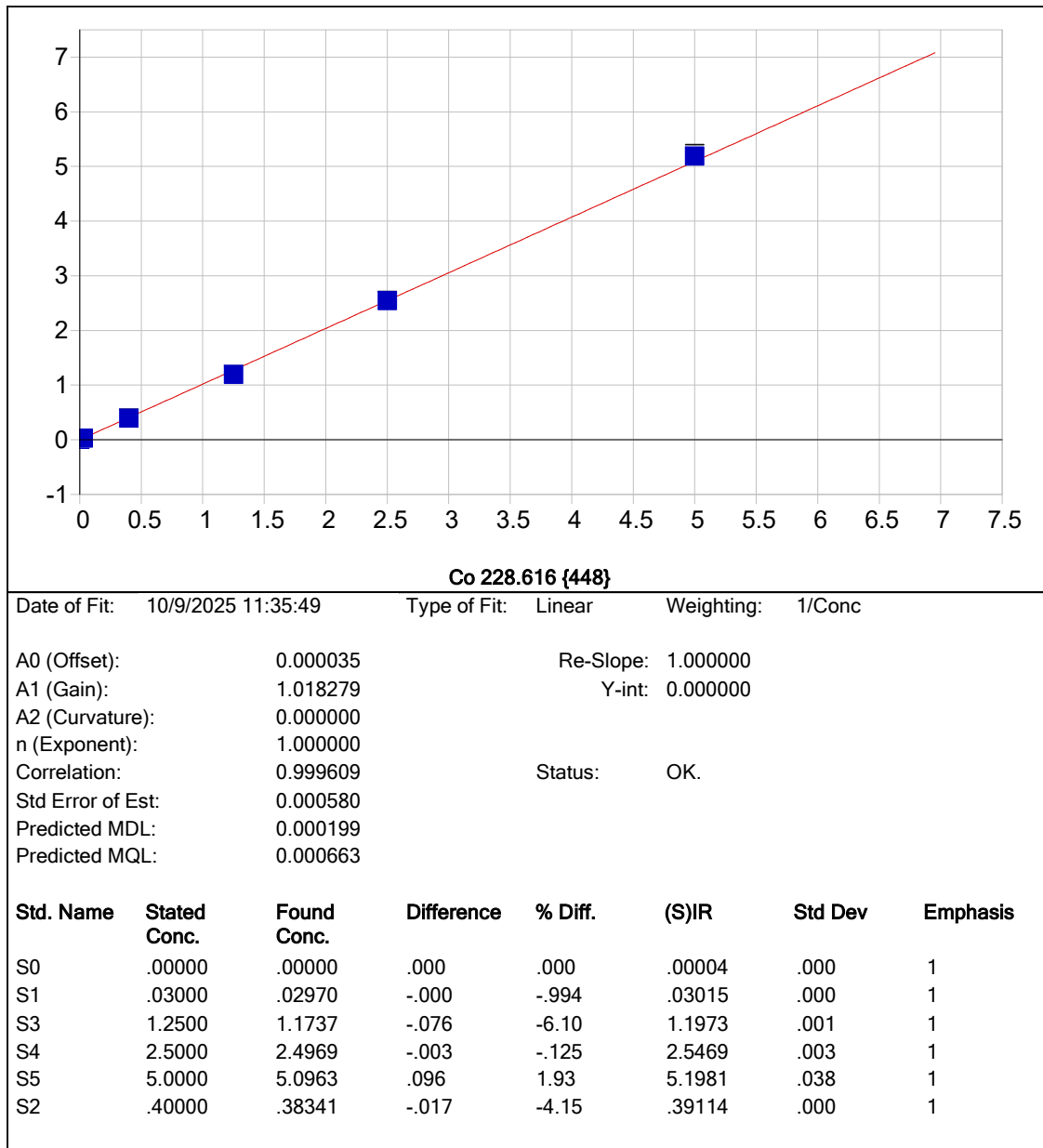


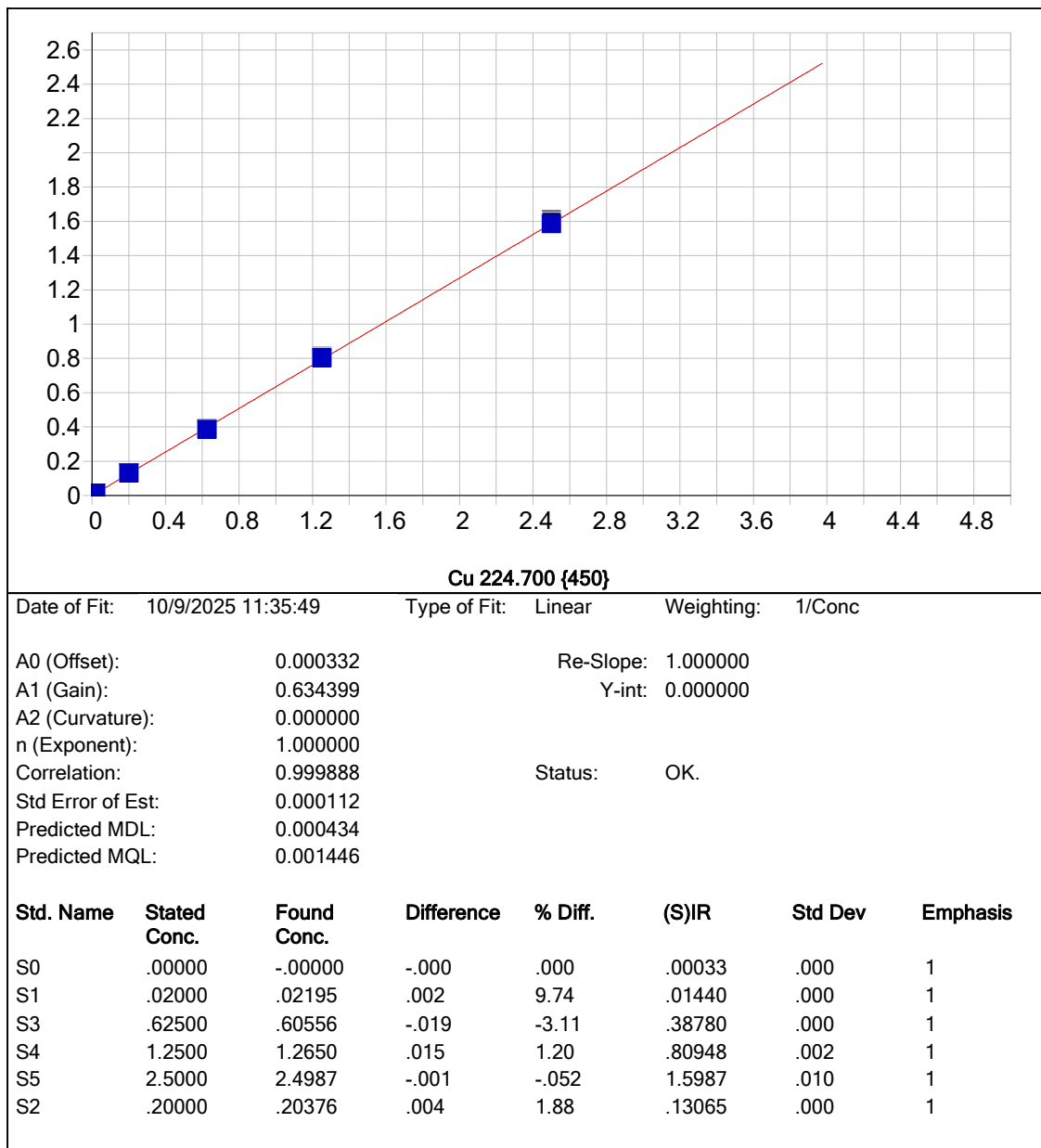




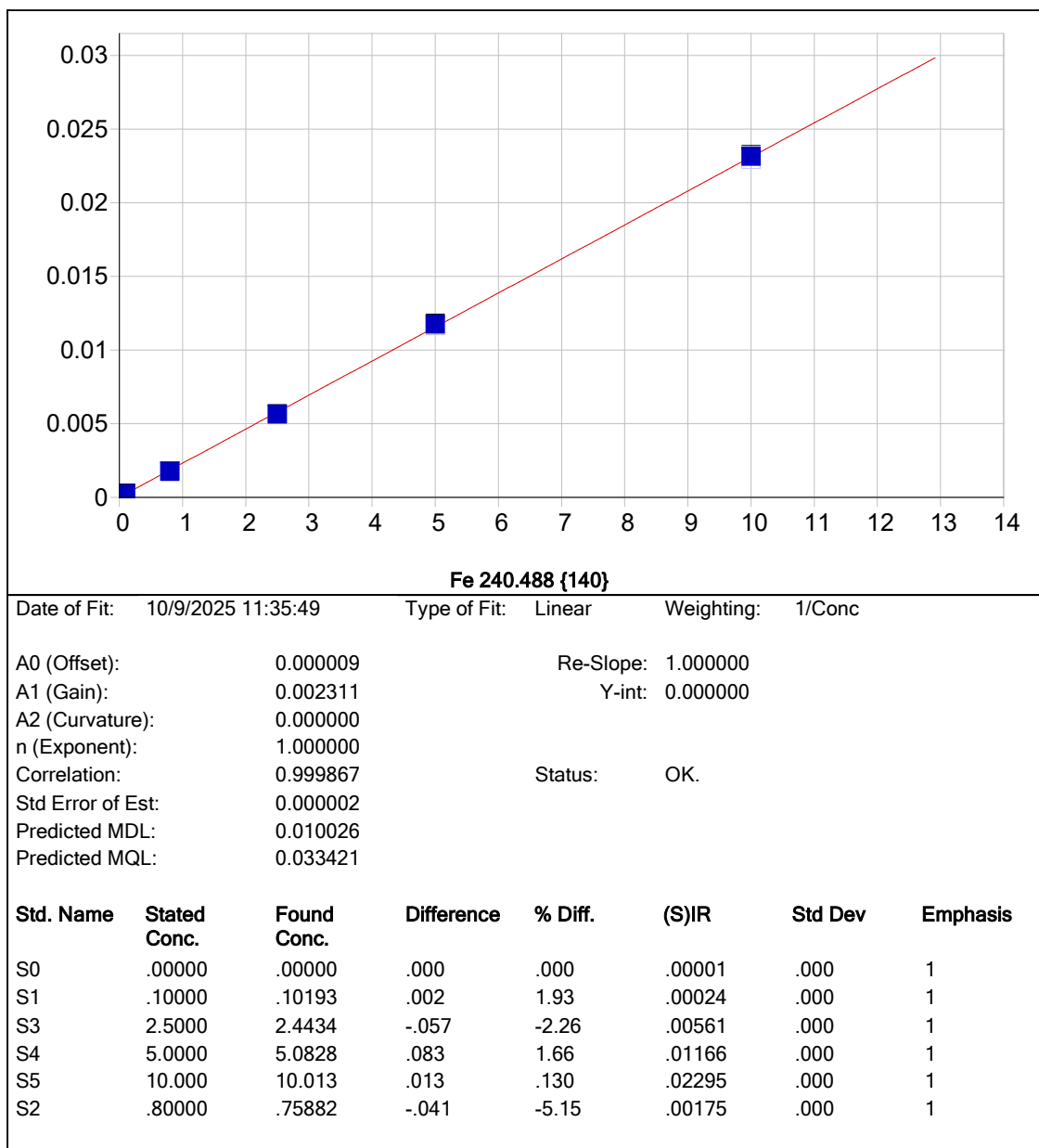


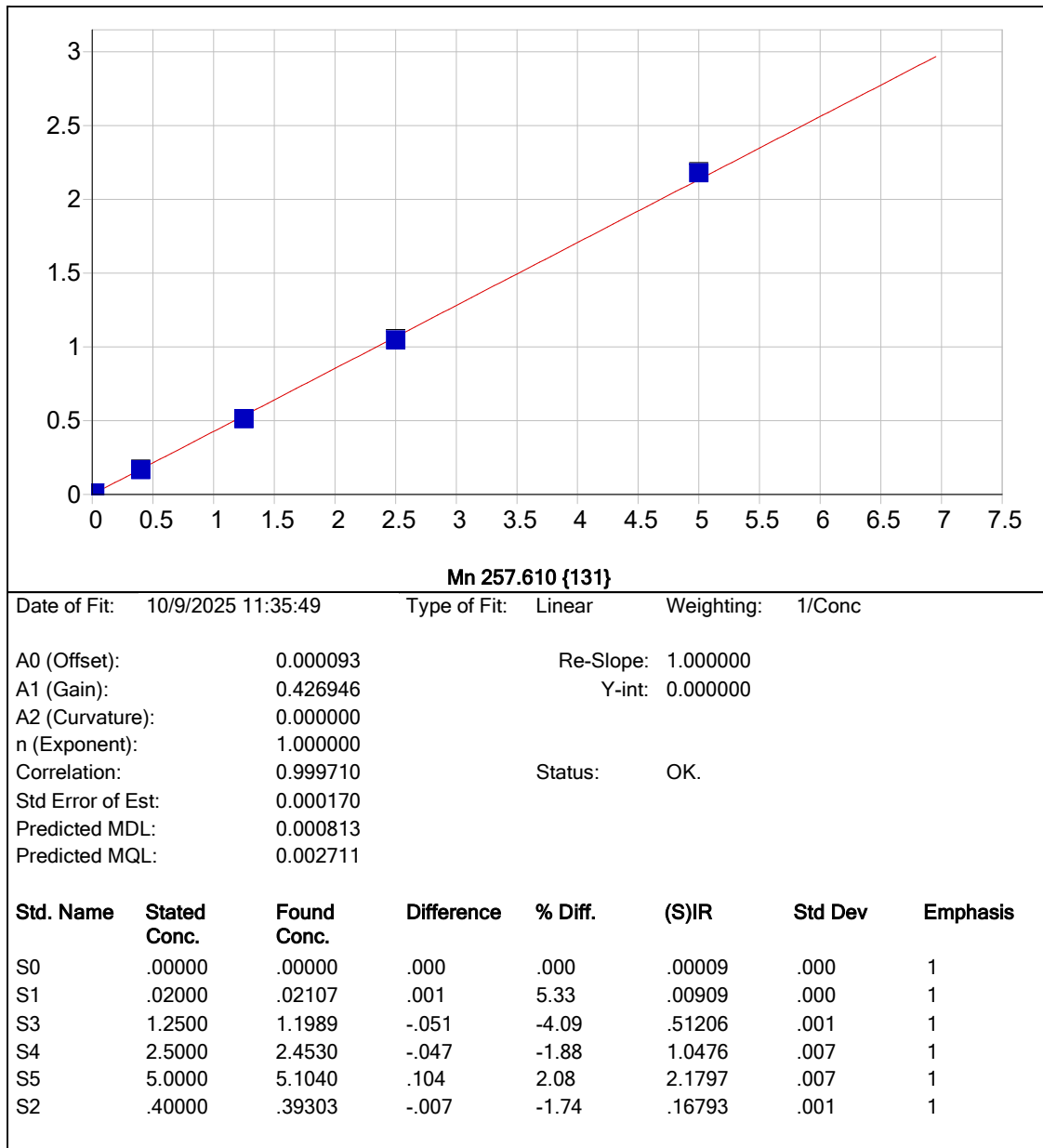


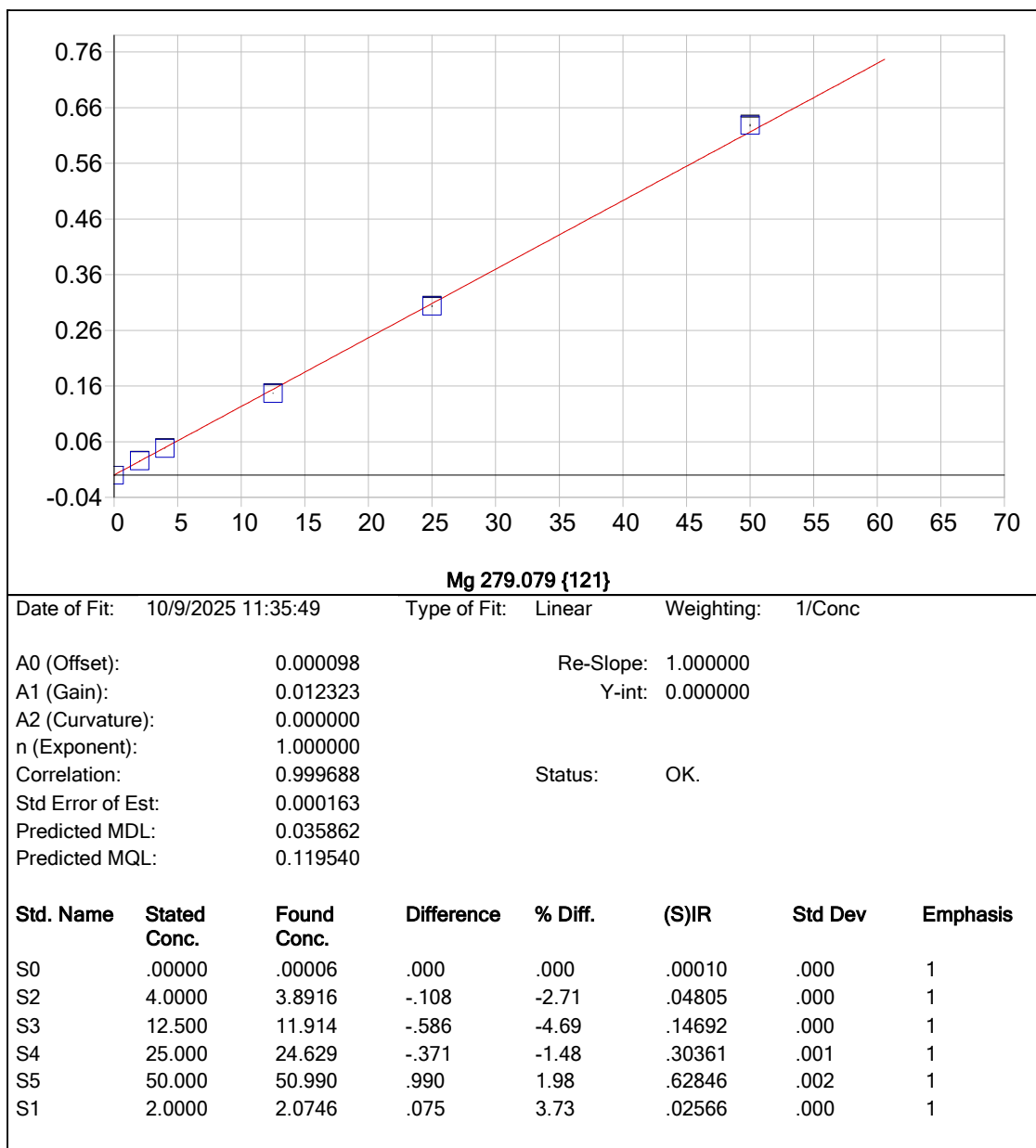


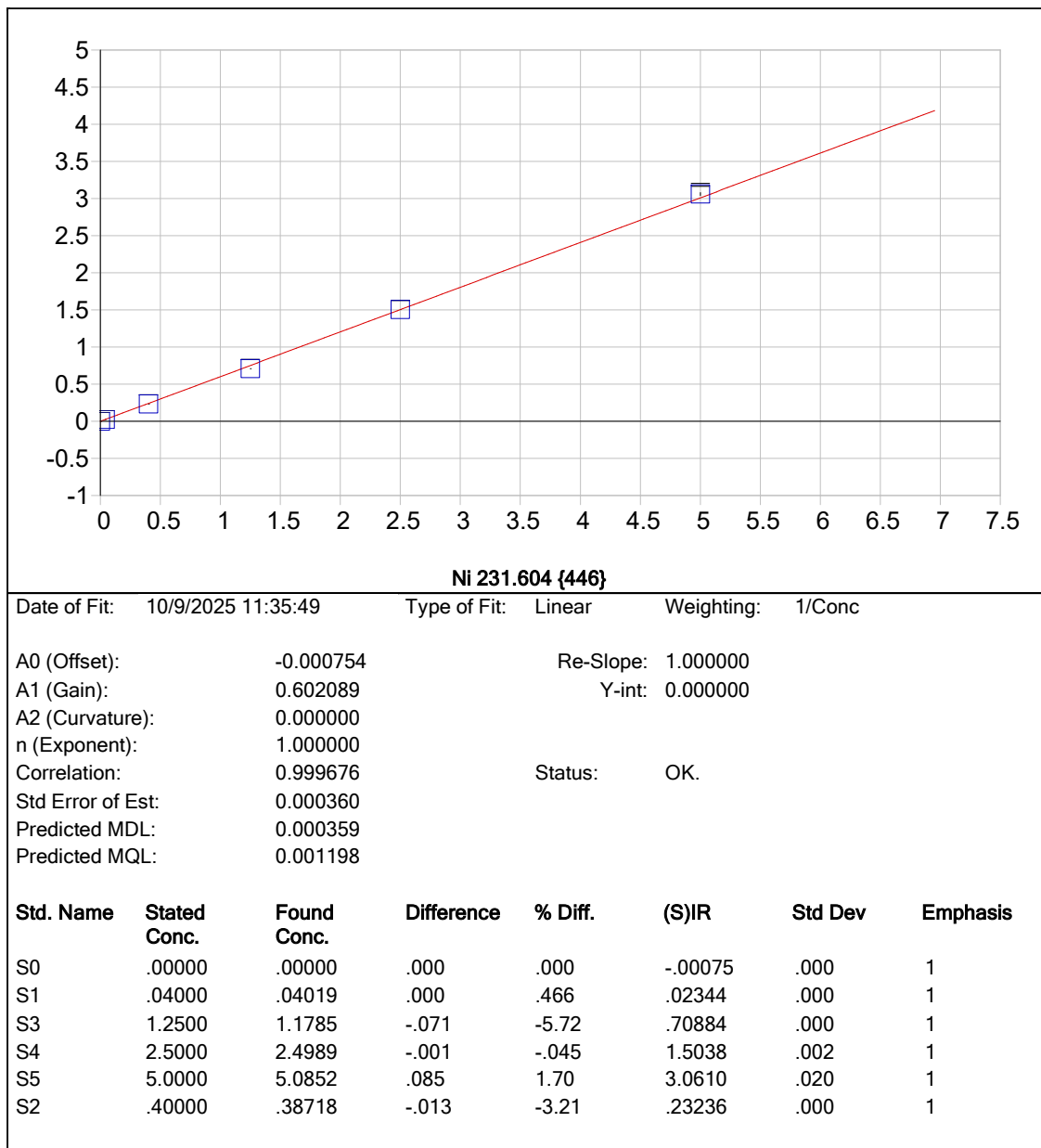


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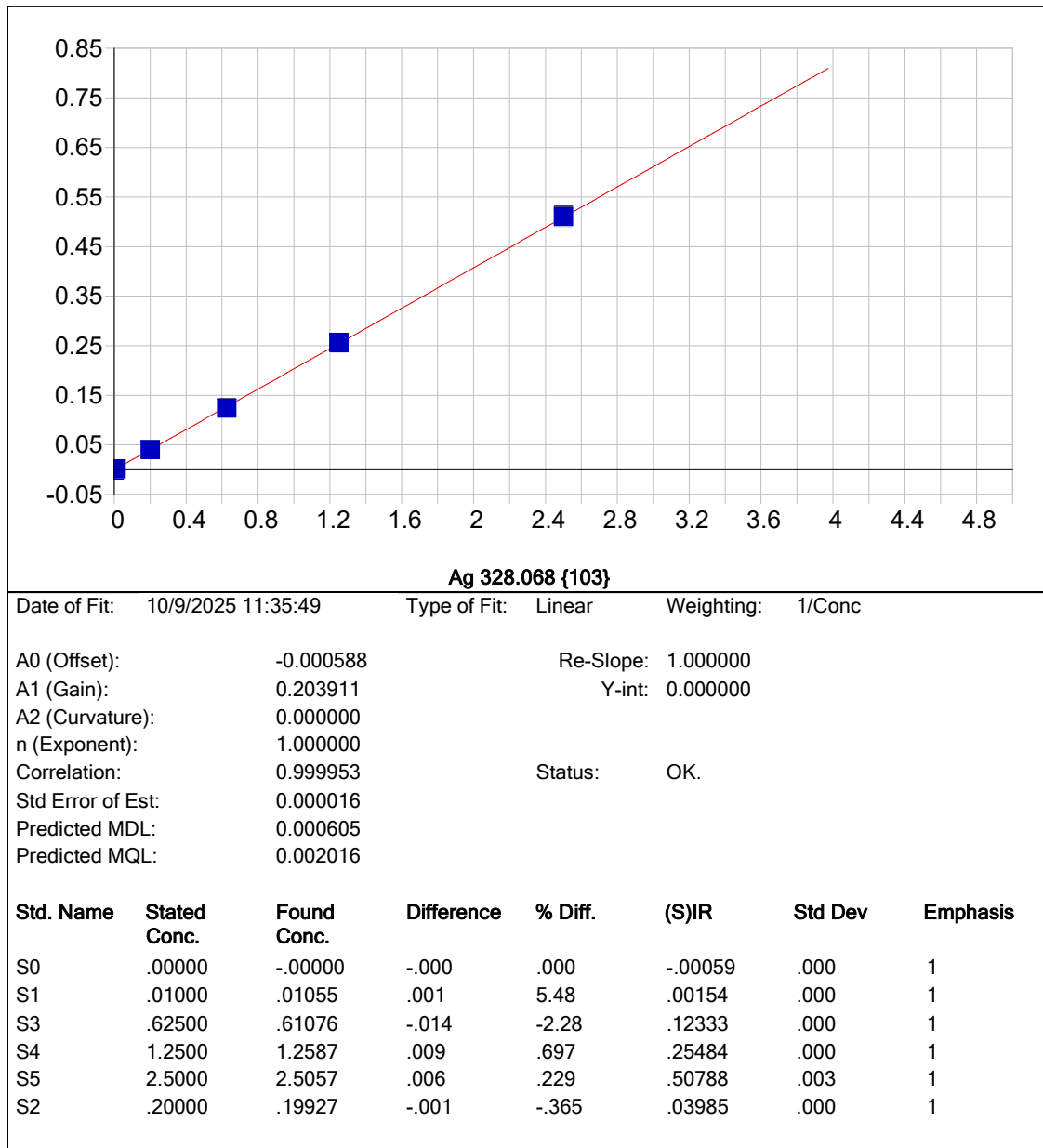


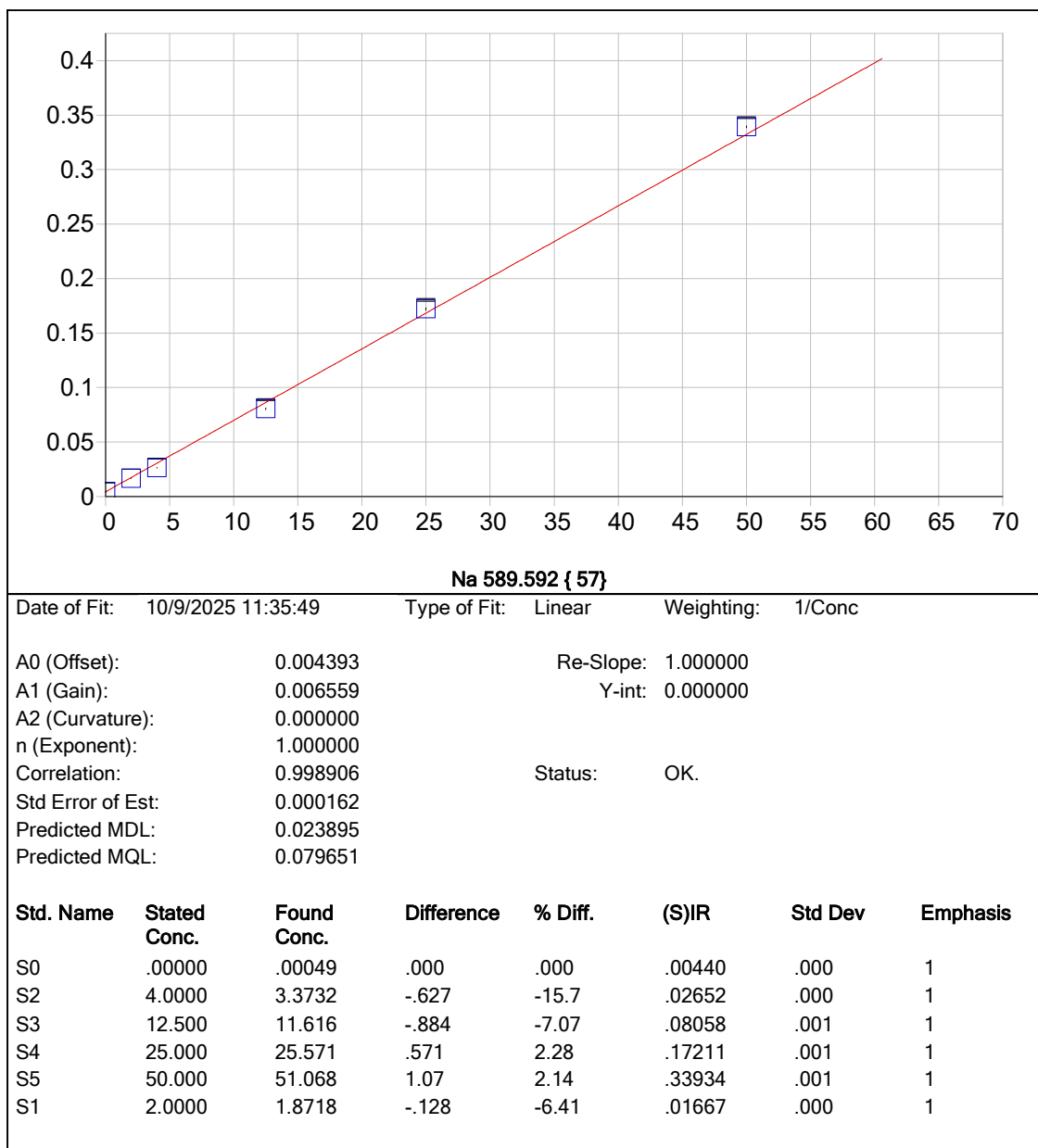


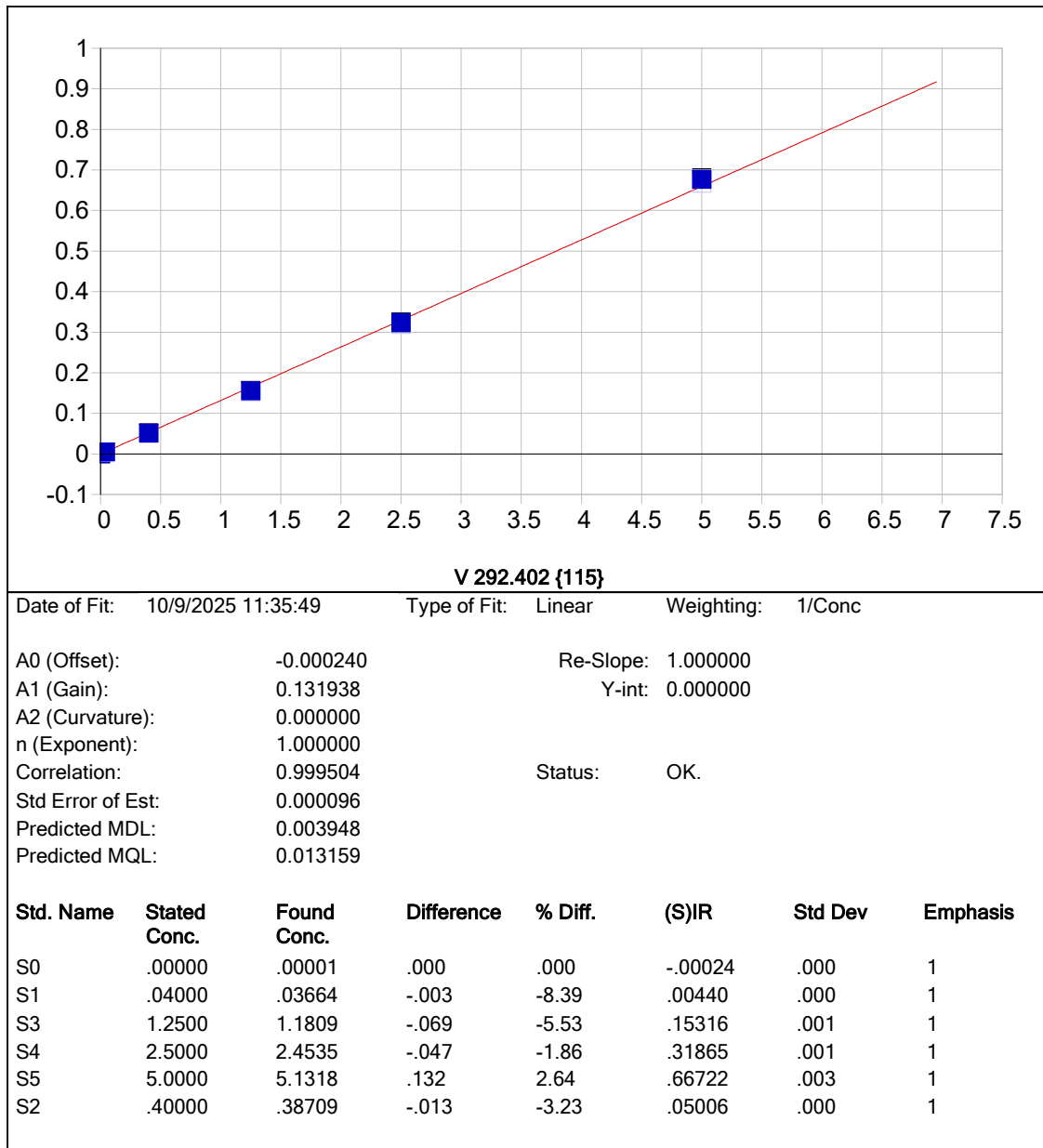


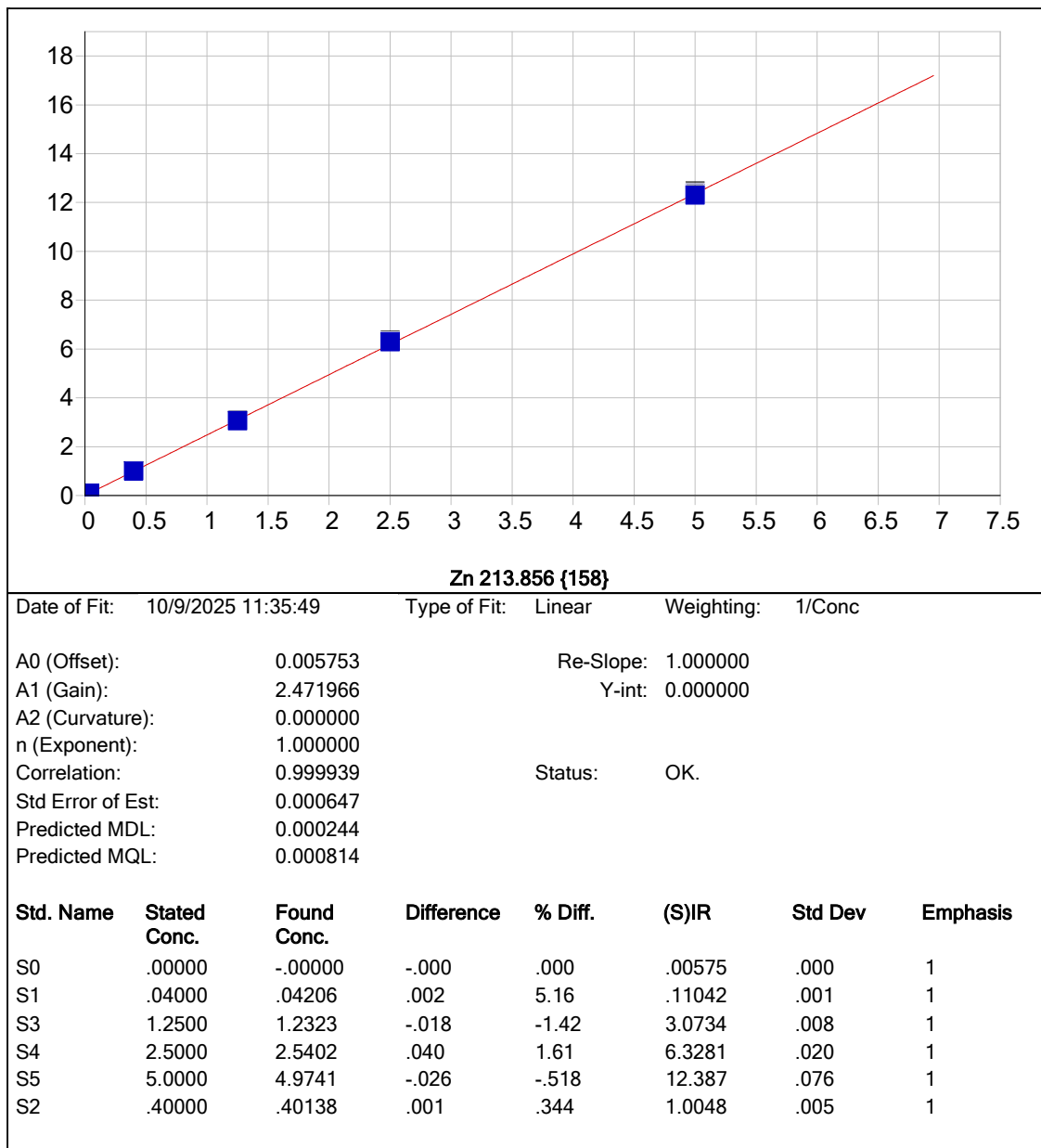


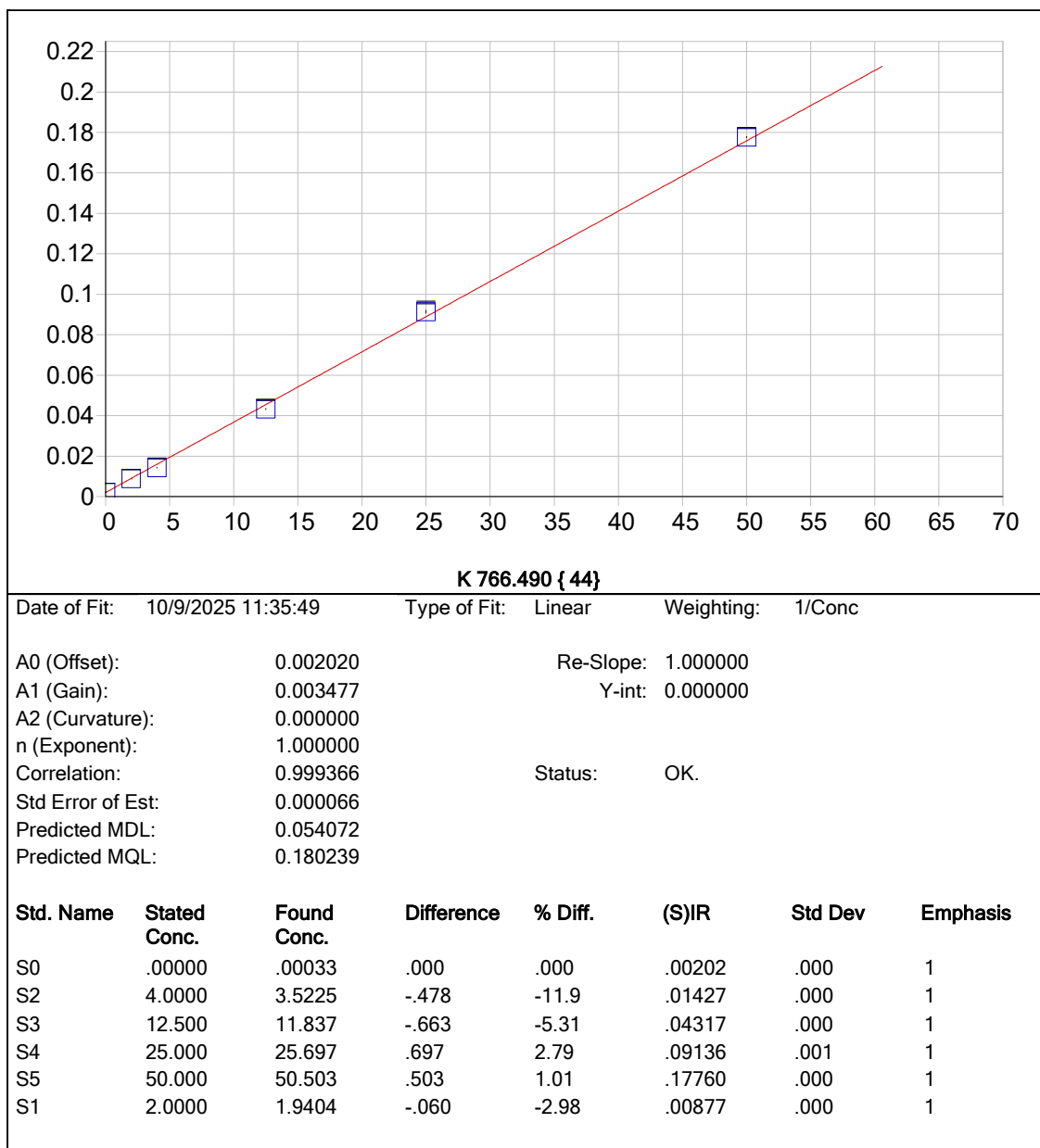
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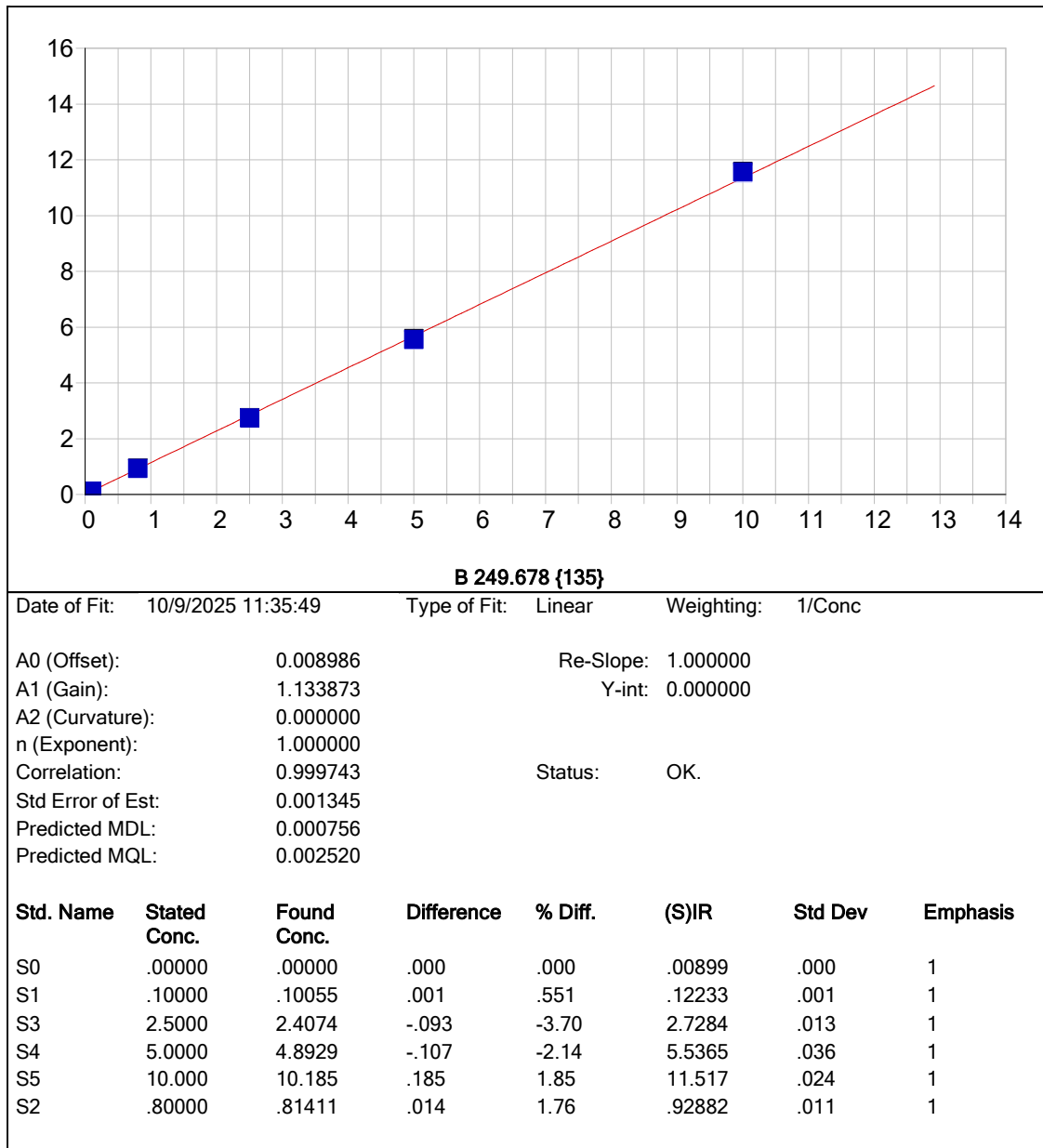




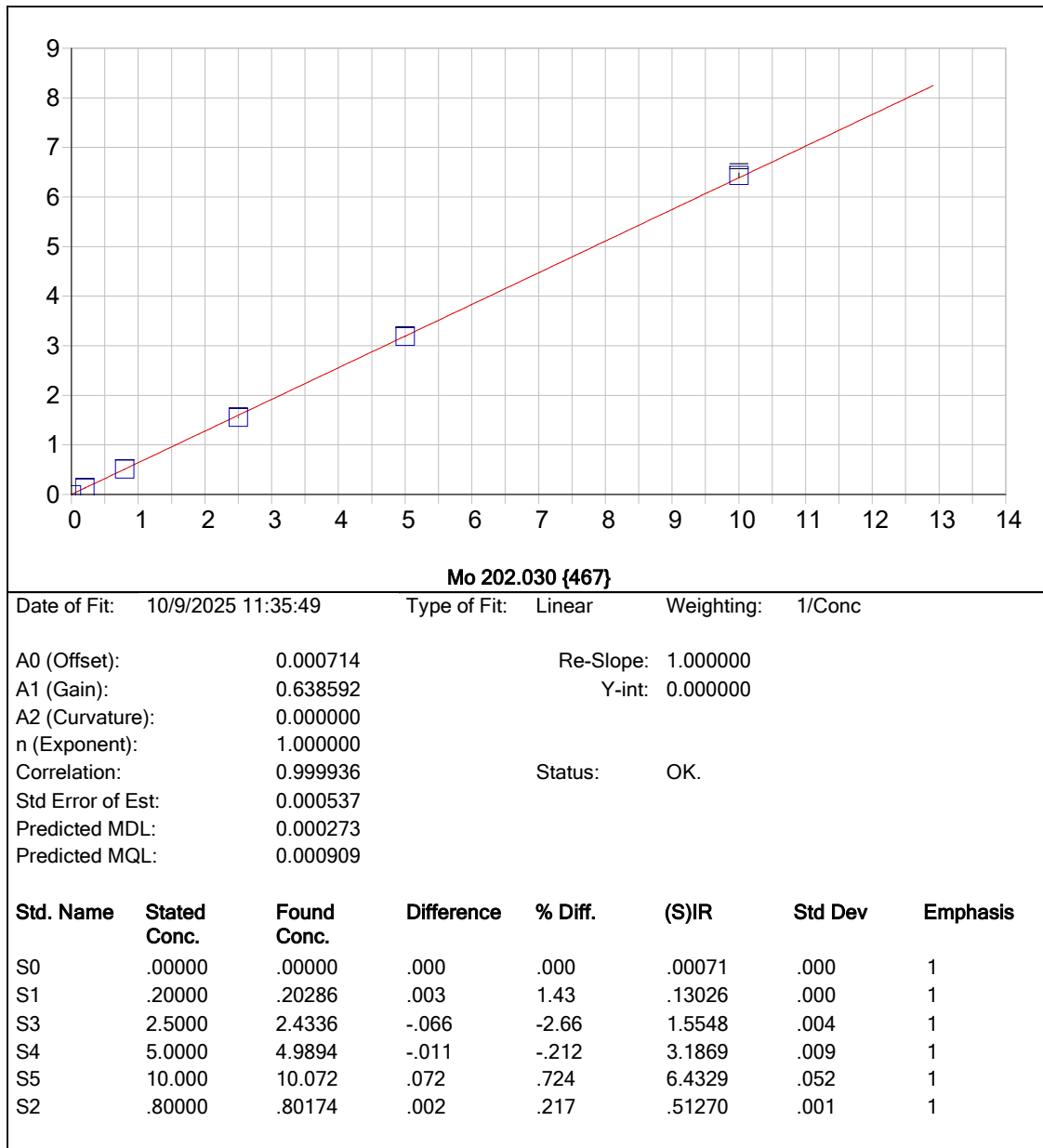




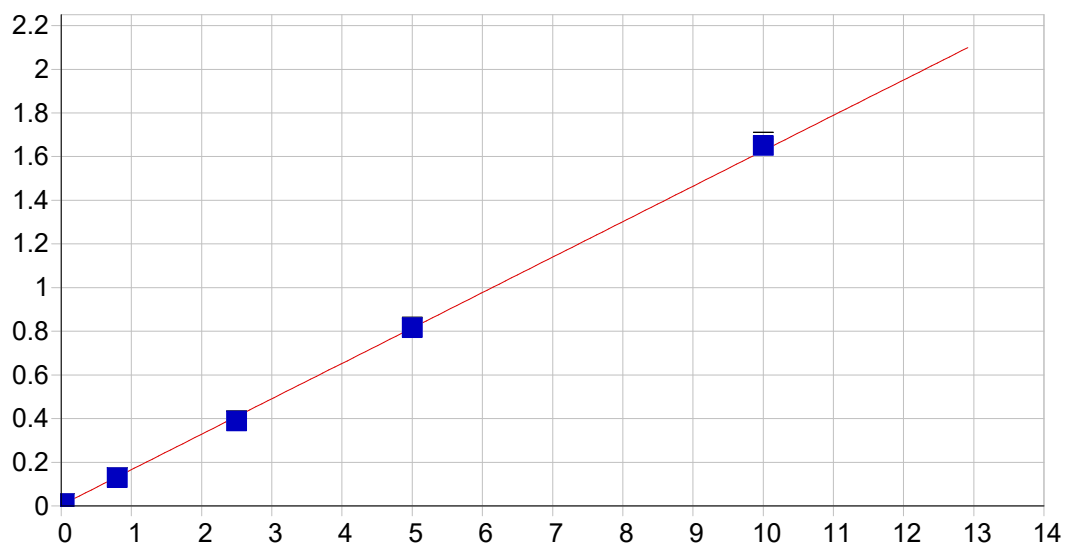




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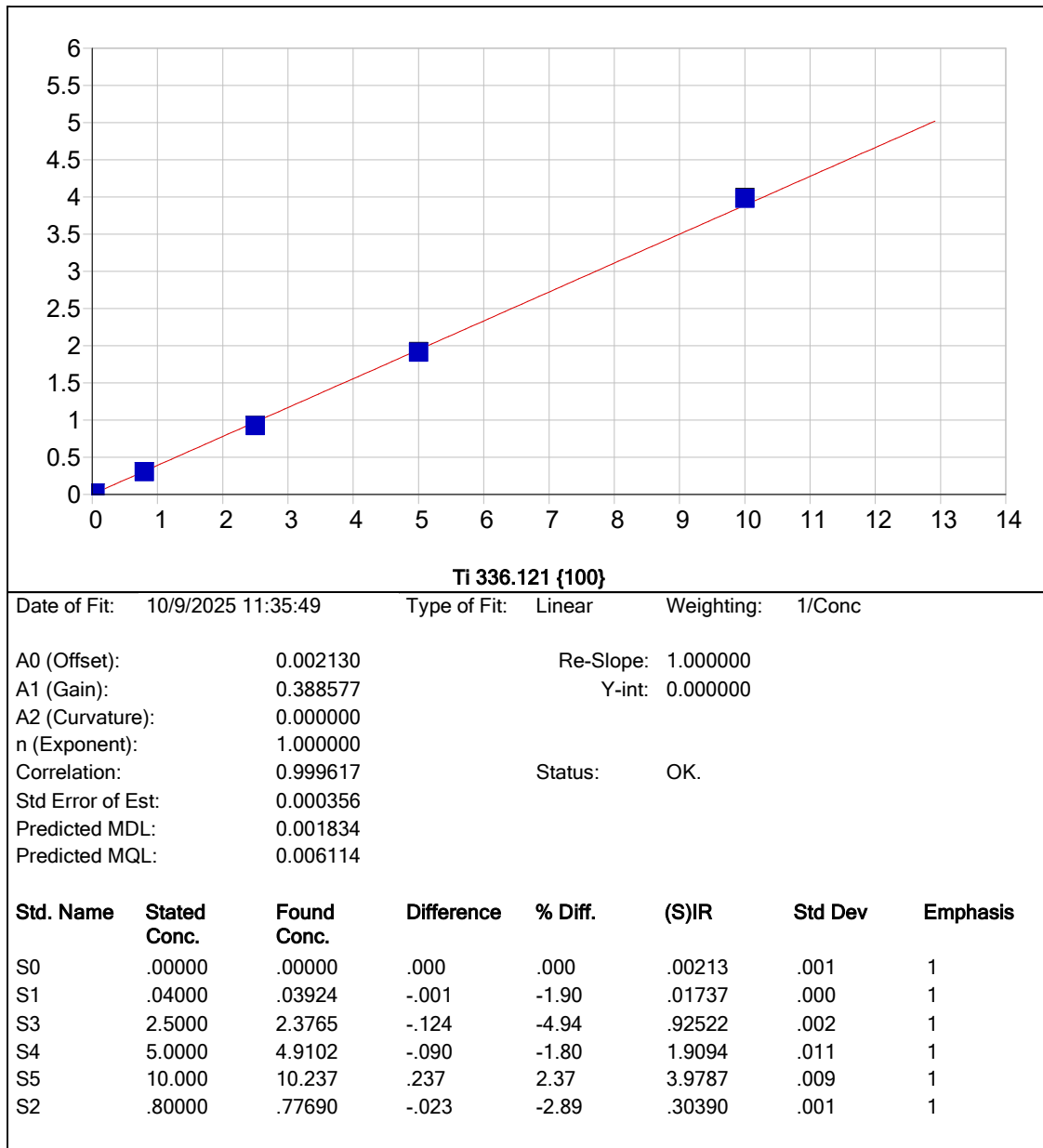


Sn 189.989 {478}

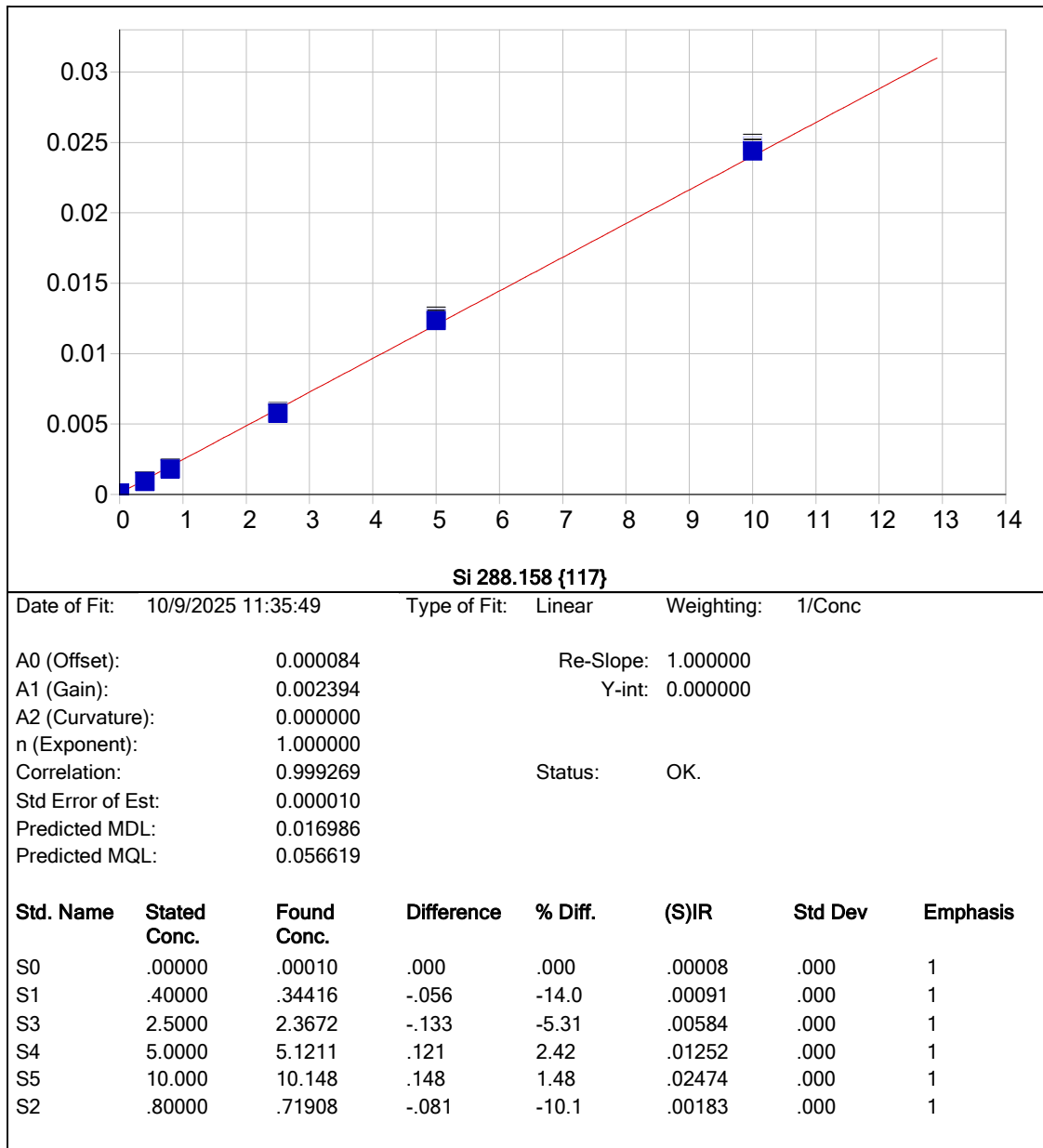
Date of Fit: 10/9/2025 11:35:49 Type of Fit: Linear Weighting: 1/Conc

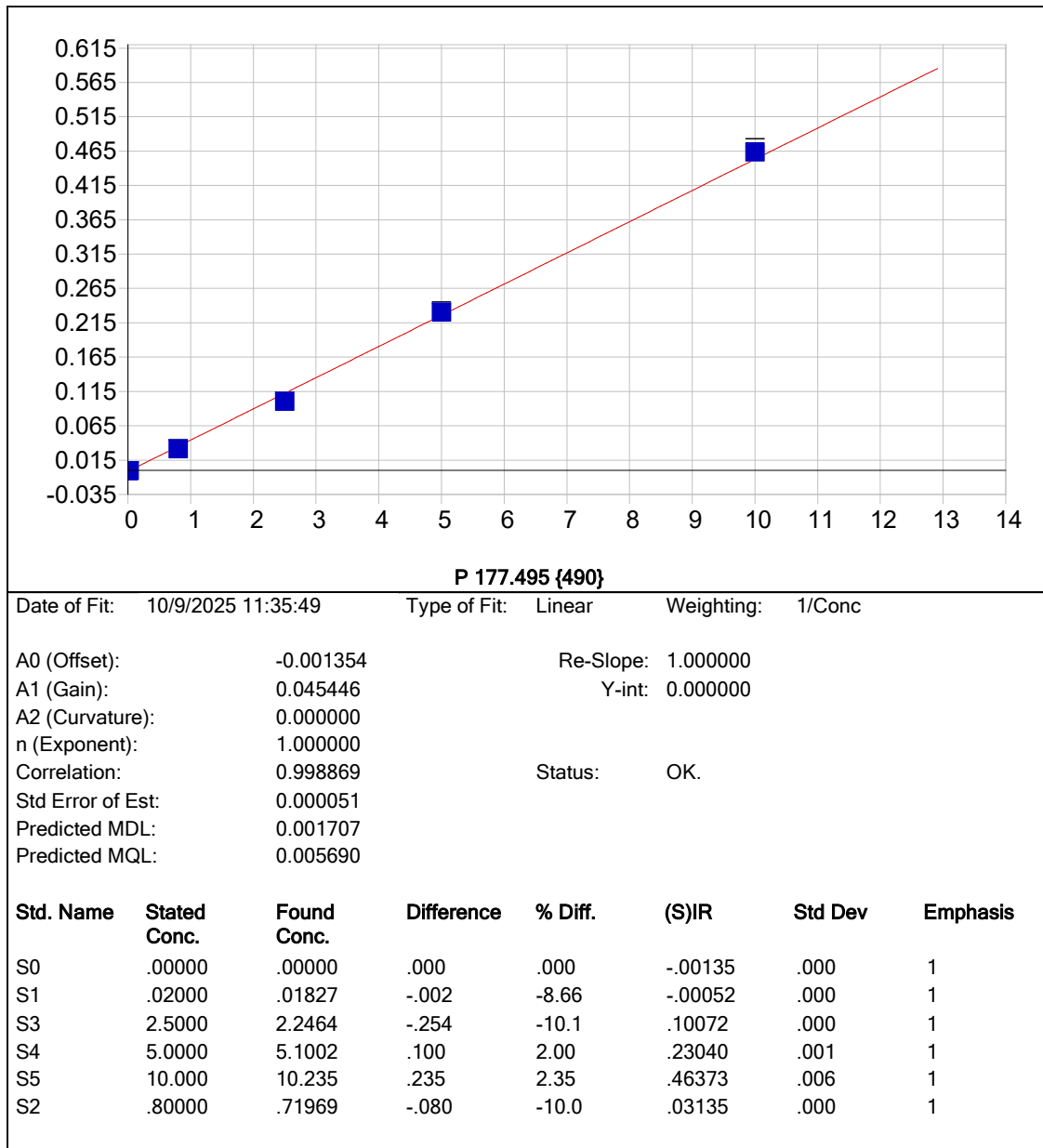
A0 (Offset): 0.003610 Re-Slope: 1.000000
A1 (Gain): 0.162292 Y-int: 0.000000
A2 (Curvature): 0.000000
n (Exponent): 1.000000
Correlation: 0.999733 Status: OK.
Std Error of Est: 0.000124
Predicted MDL: 0.000600
Predicted MQL: 0.001999

Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis
S0	.00000	.00000	.000	.000	.00361	.000	1
S1	.04000	.03874	-.001	-3.14	.00989	.000	1
S3	2.5000	2.3731	-.127	-5.08	.38833	.001	1
S4	5.0000	5.0069	.007	.139	.81537	.003	1
S5	10.000	10.150	.150	1.50	1.6492	.015	1
S2	.80000	.77105	-.029	-3.62	.12861	.000	1

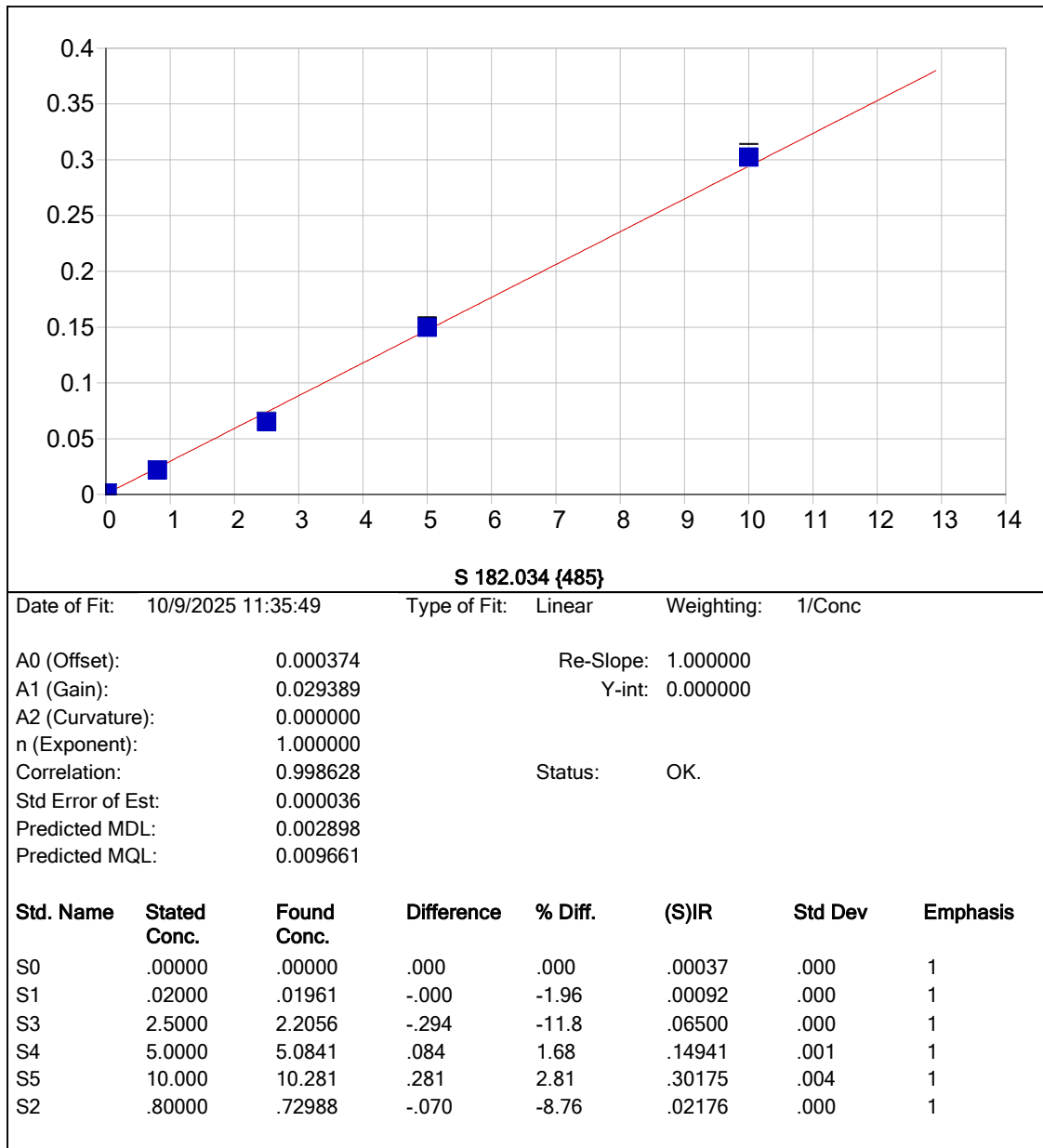


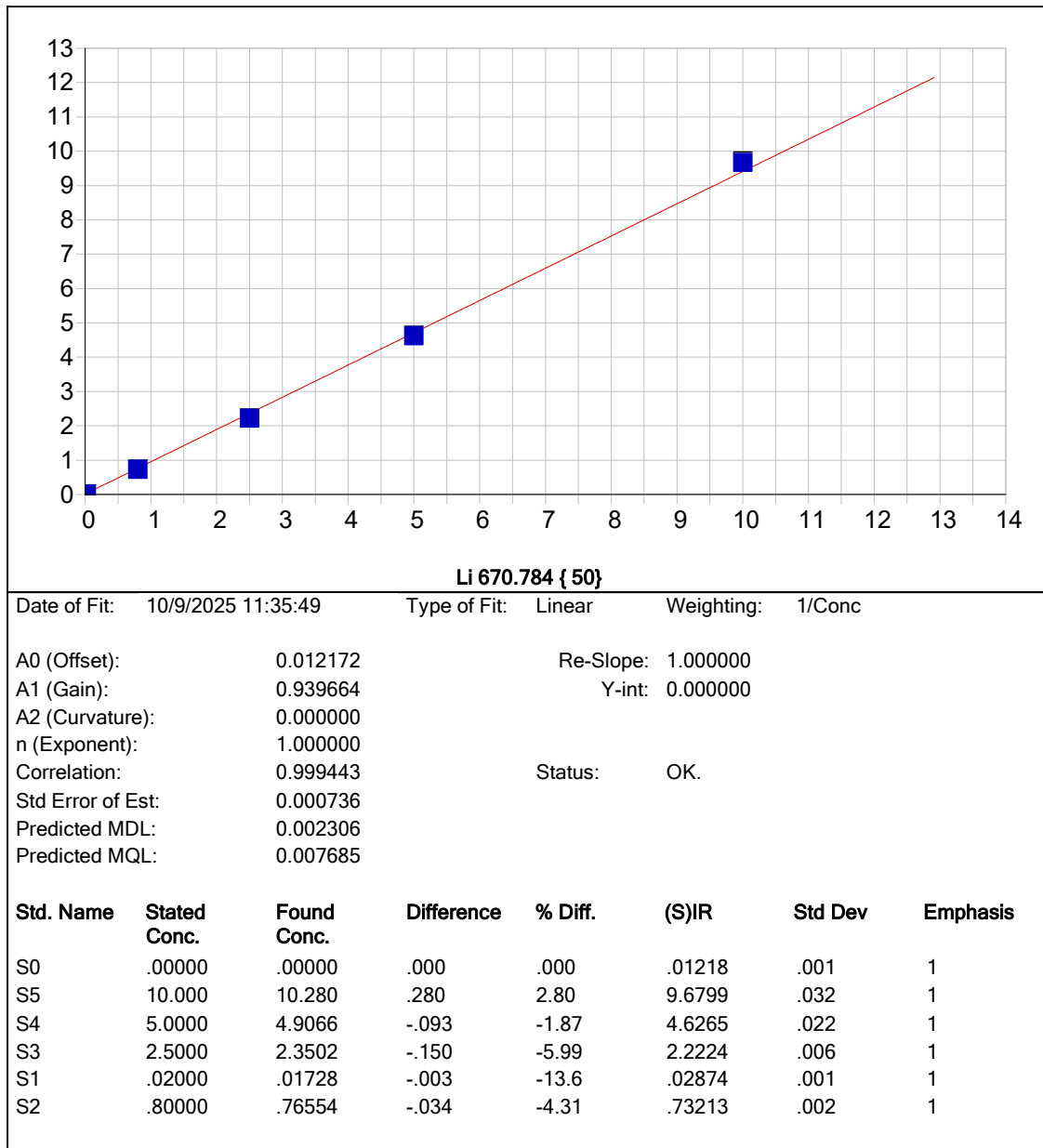
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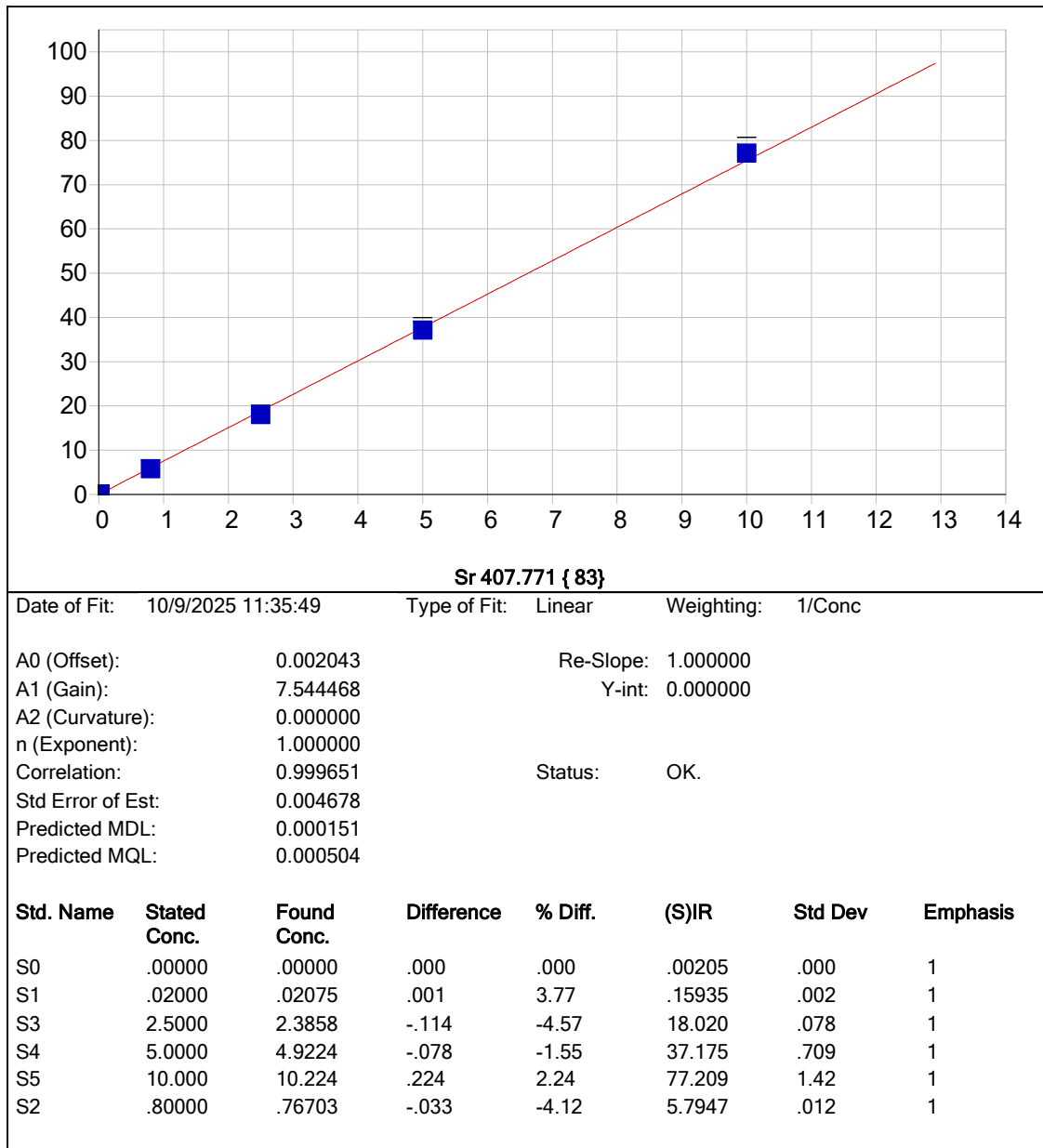


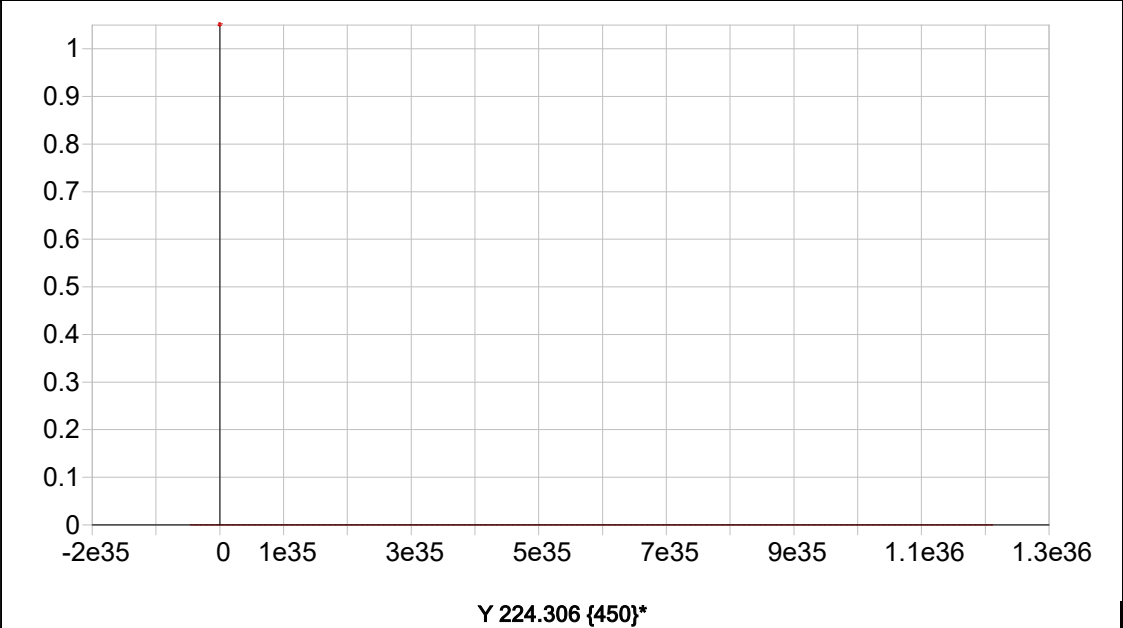


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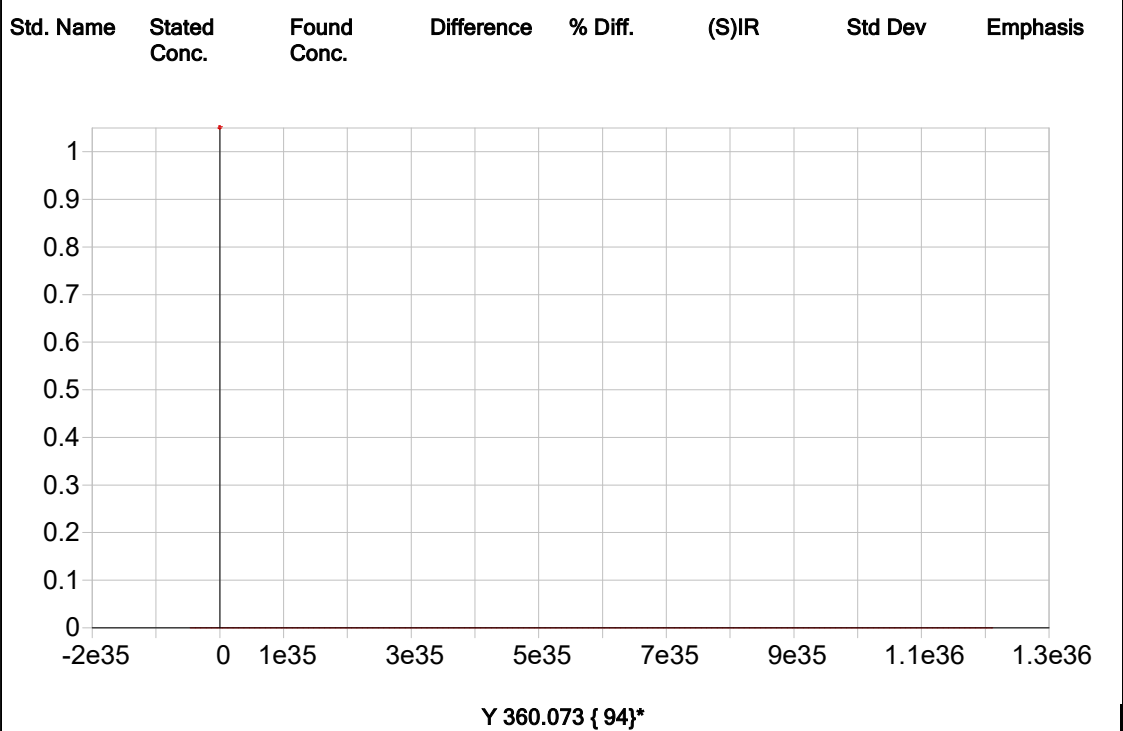




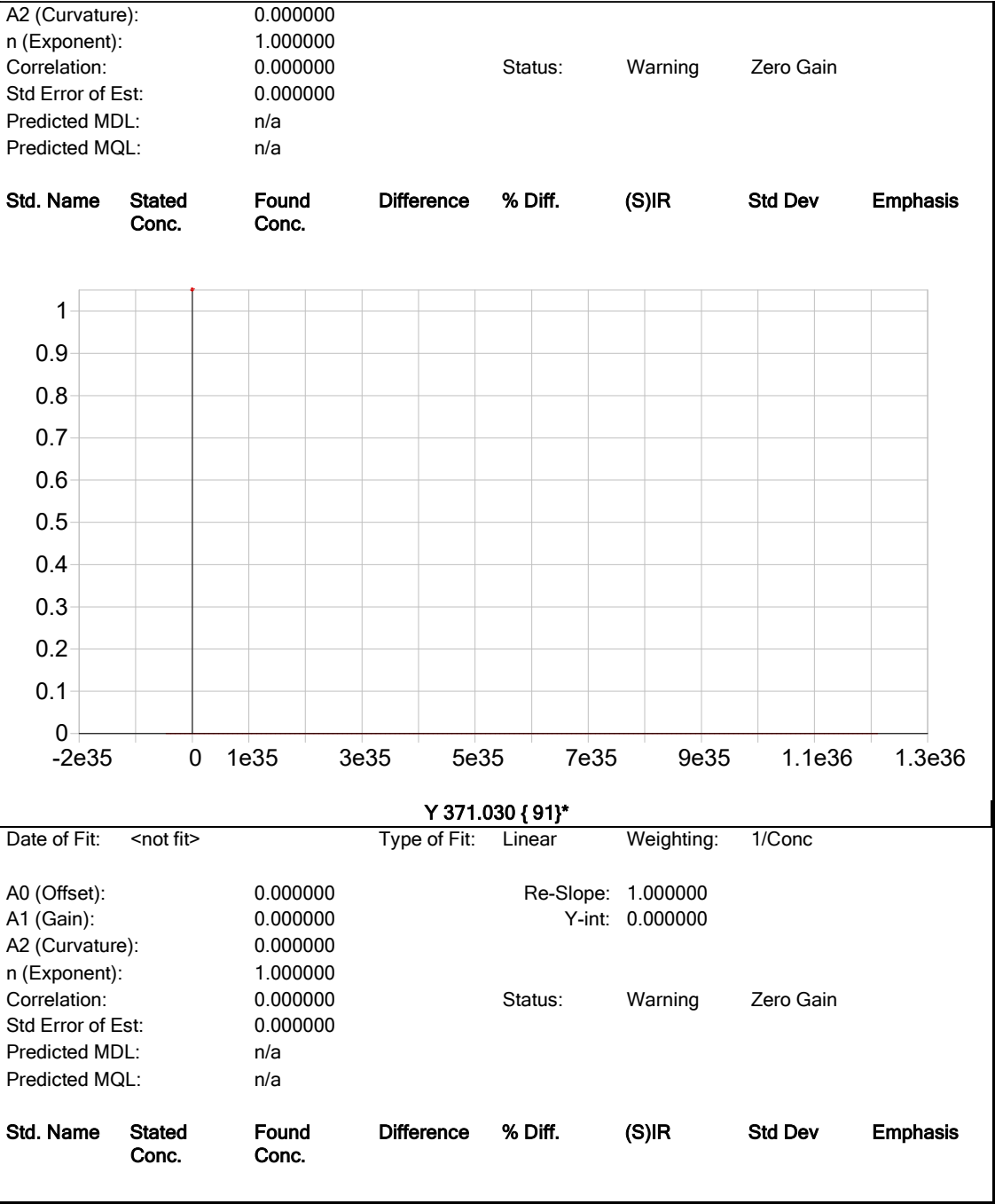


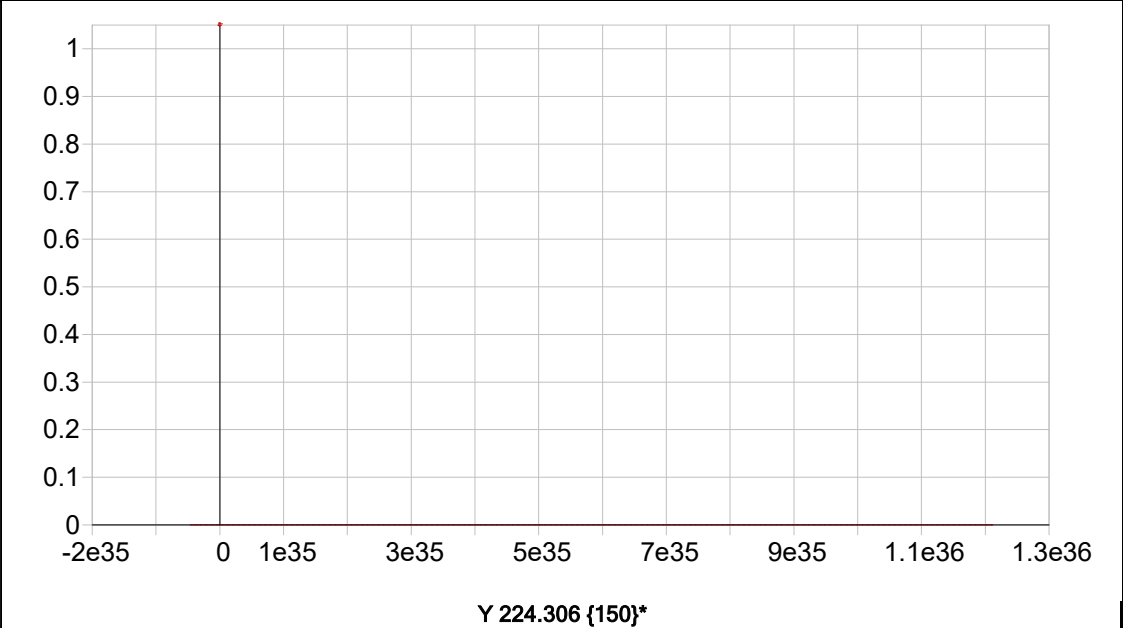


Date of Fit:	10/9/2025 11:01:24	Type of Fit:	Linear	Weighting:	1/Conc
A0 (Offset):	0.000000	Re-Slope:	1.000000		
A1 (Gain):	0.000000	Y-int:	0.000000		
A2 (Curvature):	0.000000				
n (Exponent):	1.000000				
Correlation:	0.000000	Status:	Warning	Zero Gain	
Std Error of Est:	0.000000				
Predicted MDL:	n/a				
Predicted MQL:	n/a				



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





A2 (Curvature):		0.000000					
n (Exponent):		1.000000					
Correlation:		0.000000		Status:	Warning	Zero Gain	
Std Error of Est:		0.000000					
Predicted MDL:		n/a					
Predicted MQL:		n/a					
Std. Name	Stated Conc.	Found Conc.	Difference	% Diff.	(S)IR	Std Dev	Emphasis

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Sample Name: S0 Acquired: 10/9/2025 11:10:52 Type: Cal
Method: 6010-200.7 NEW(v276) 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	.00002	.00065	.00037	.00155	.00100	-.00049	.07292	-.00496
Stddev	.00007	.00003	.00025	.00007	.00010	.00127	.00512	.00072
%RSD	290.86	5.1877	69.377	4.2678	9.8845	259.88	7.0147	14.577
#1	-.00001	.00067	.00041	.00163	.00106	-.00151	.07778	-.00414
#2	.00011	.00067	.00060	.00151	.00089	-.00089	.06759	-.00526
#3	-.00003	.00061	.00009	.00152	.00106	.00093	.07340	-.00549
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	-.00058	.00176	.00013	.00004	.00033	.00001	.00009	.00010
Stddev	.00025	.00058	.00007	.00007	.00021	.00001	.00005	.00012
%RSD	43.648	33.066	53.246	195.14	64.160	68.805	57.555	117.11
#1	-.00058	.00122	.00011	-.00005	.00058	.00002	.00010	.00010
#2	-.00032	.00168	.00007	.00007	.00021	.00000	.00014	.00022
#3	-.00082	.00237	.00020	.00009	.00020	.00001	.00004	-.00002
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	-.00059	.00462	-.00024	.00575	.00226	.00899	.00071
Stddev	.00014	.00013	.00003	.00030	.00035	.00012	.00042	.00008
%RSD	18.833	22.447	.64892	123.65	6.0576	5.1721	4.6476	11.496
#1	-.00066	-.00071	.00460	.00004	.00611	.00219	.00947	.00077
#2	-.00069	-.00045	.00462	-.00022	.00541	.00240	.00880	.00062
#3	-.00091	-.00060	.00465	-.00055	.00573	.00220	.00870	.00076
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	.00361	.00213	.00008	-.00135	.00037	.01218	.00205	
Stddev	.00005	.00050	.00002	.00002	.00004	.00106	.00050	
%RSD	1.4672	23.482	25.209	1.5205	10.136	8.6967	24.381	
#1	.00359	.00155	.00009	-.00133	.00034	.01293	.00245	
#2	.00367	.00239	.00010	-.00136	.00042	.01096	.00220	
#3	.00357	.00245	.00006	-.00137	.00036	.01264	.00149	

Sample Name: S0 Acquired: 10/9/2025 11:10:52 Type: Cal
Method: 6010-200.7 NEW(v276) 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	6407.5	92738.	6548.3	4930.4	7945.1
Stddev	16.8	93.	34.7	22.2	27.0
%RSD	.26220	.10042	.53021	.44952	.34027
#1	6389.0	92681.	6524.4	4955.5	7929.3
#2	6421.8	92845.	6588.2	4922.5	7976.3
#3	6411.6	92687.	6532.4	4913.3	7929.8

Sample Name: S1 Acquired: 10/9/2025 11:15:16 Type: Cal
Method: 6010-200.7 NEW(v276) 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	.00114	.00216	.00259	.00236	.00556	.00923	.25262	.06908
Stddev	.00017	.00014	.00007	.00023	.00008	.00116	.00273	.00120
%RSD	15.018	6.3359	2.6989	9.7761	1.4941	12.561	1.0816	1.7357
#1	.00109	.00202	.00261	.00250	.00566	.00870	.25022	.06770
#2	.00099	.00230	.00264	.00209	.00552	.00843	.25205	.06986
#3	.00133	.00215	.00251	.00248	.00551	.01056	.25559	.06968
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	.01727	.11737	.00229	.03015	.01440	.00024	.00909	.02566
Stddev	.00019	.00091	.00009	.00009	.00017	.00002	.00035	.00028
%RSD	1.1031	.77274	3.8095	.31005	1.1863	7.4104	3.8461	1.1085
#1	.01745	.11750	.00232	.03005	.01456	.00024	.00945	.02534
#2	.01730	.11641	.00236	.03023	.01442	.00022	.00907	.02584
#3	.01707	.11821	.00219	.03017	.01422	.00026	.00875	.02582
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	.02344	.00154	.01696	.00440	.11042	.00892	.12233	.13026
Stddev	.00023	.00000	.00013	.00013	.00070	.00004	.00089	.00031
%RSD	.98508	.11320	.74277	2.8562	.63211	.46359	.72471	.23990
#1	.02356	.00155	.01705	.00444	.11040	.00888	.12134	.13010
#2	.02359	.00154	.01702	.00425	.10974	.00895	.12304	.13062
#3	.02318	.00155	.01682	.00449	.11113	.00895	.12261	.13005
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	.00989	.01737	.00091	-.00052	.00092	.02874	.15935	
Stddev	.00012	.00031	.00002	.00006	.00006	.00052	.00187	
%RSD	1.1638	1.8071	2.4046	11.532	5.9954	1.8259	1.1724	
#1	.00978	.01723	.00091	-.00046	.00086	.02873	.16068	
#2	.01001	.01772	.00089	-.00054	.00097	.02926	.16015	
#3	.00988	.01714	.00093	-.00057	.00094	.02821	.15721	

Sample Name: S1 Acquired: 10/9/2025 11:15:16 Type: Cal
Method: 6010-200.7 NEW(v276) 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	6428.2	95566.	6802.9	4997.2	7862.7
Stddev	15.3	94.	51.5	10.2	22.6
%RSD	.23781	.09786	.75750	.20387	.28719
#1	6410.9	95470.	6862.1	4985.5	7844.1
#2	6434.0	95571.	6777.9	5001.9	7856.1
#3	6439.7	95657.	6768.5	5004.2	7887.8

Sample Name: S2 Acquired: 10/9/2025 11:19:31 Type: Cal
Method: 6010-200.7 NEW(v276) 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	.04562	.03353	.15581	.03844	.07352	.13416	2.7721	.48163
Stddev	.00006	.00076	.00057	.00017	.00021	.00068	.0124	.00426
%RSD	.12378	2.2804	.36849	.45262	.28356	.50578	.44701	.88423

#1	.04569	.03436	.15636	.03856	.07329	.13483	2.7826	.47934
#2	.04558	.03337	.15521	.03824	.07370	.13417	2.7751	.48654
#3	.04561	.03285	.15587	.03852	.07358	.13347	2.7584	.47900

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	1.1399	.22569	.03440	.39114	.13065	.00175	.16793	.04805
Stddev	.0018	.00054	.00016	.00023	.00033	.00002	.00073	.00028
%RSD	.15769	.23722	.45477	.05943	.25333	1.3871	.43717	.57725

#1	1.1419	.22553	.03445	.39131	.13043	.00177	.16818	.04778
#2	1.1384	.22628	.03422	.39088	.13103	.00172	.16850	.04833
#3	1.1394	.22525	.03452	.39125	.13049	.00174	.16710	.04805

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	.23236	.03985	.02681	.05006	1.0048	.01436	.92882	.51270
Stddev	.00042	.00012	.00014	.00024	.0053	.00020	.01149	.00084
%RSD	.17881	.30620	.50366	.48235	.52976	1.3938	1.2372	.16297

#1	.23282	.03997	.02693	.05029	1.0068	.01423	.92216	.51341
#2	.23202	.03973	.02666	.05009	.99879	.01425	.94209	.51290
#3	.23225	.03985	.02685	.04981	1.0089	.01459	.92221	.51178

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	.12861	.30390	.00183	.03135	.02176	.73213	5.7947	
Stddev	.00029	.00126	.00002	.00011	.00010	.00242	.0118	
%RSD	.22412	.41582	1.2930	.36298	.46333	.33073	.20405	

#1	.12871	.30531	.00186	.03146	.02186	.72951	5.8064	
#2	.12829	.30286	.00181	.03123	.02166	.73257	5.7948	
#3	.12884	.30354	.00184	.03135	.02178	.73430	5.7828	

Sample Name: S2 Acquired: 10/9/2025 11:19:31 Type: Cal
Method: 6010-200.7 NEW(v276) 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	6578.0	97382.	6691.8	5069.5	7911.7
Stddev	7.0	189.	64.9	34.6	18.3
%RSD	.10647	.19433	.96931	.68271	.23175
#1	6578.9	97343.	6725.1	5058.2	7901.4
#2	6584.5	97587.	6617.0	5108.4	7932.9
#3	6570.6	97215.	6733.2	5042.0	7900.8

Sample Name: S3 Acquired: 10/9/2025 11:23:35 Type: Cal
Method: 6010-200.7 NEW(v276) 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	.13548	.09785	.47368	.10960	.21679	.41235	8.4840	1.4250
Stddev	.00037	.00168	.00009	.00049	.00012	.00045	.0378	.0027
%RSD	.27230	1.7178	.01954	.44480	.05680	.10838	.44522	.18911

#1	.13589	.09648	.47372	.10972	.21680	.41226	8.4983	1.4235
#2	.13517	.09734	.47375	.10906	.21666	.41196	8.5126	1.4234
#3	.13539	.09973	.47357	.11001	.21691	.41284	8.4412	1.4281

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	3.5379	.68956	.10336	1.1973	.38780	.00561	.51206	.14692
Stddev	.0010	.00102	.00028	.0007	.00028	.00002	.00086	.00027
%RSD	.02855	.14860	.27255	.05588	.07112	.27251	.16871	.18624

#1	3.5390	.69061	.10304	1.1969	.38749	.00559	.51256	.14690
#2	3.5371	.68856	.10347	1.1970	.38803	.00562	.51255	.14720
#3	3.5377	.68953	.10358	1.1981	.38788	.00561	.51106	.14666

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	.70884	.12333	.08086	.15316	3.0734	.04334	2.7284	1.5548
Stddev	.00015	.00016	.00066	.00053	.0078	.00029	.0126	.0042
%RSD	.02060	.13209	.81527	.34688	.25348	.65881	.46079	.27281

#1	.70894	.12343	.08121	.15307	3.0799	.04347	2.7203	1.5577
#2	.70890	.12342	.08126	.15268	3.0648	.04355	2.7221	1.5499
#3	.70867	.12315	.08009	.15373	3.0754	.04302	2.7429	1.5566

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	.38833	.92522	.00584	.10072	.06500	2.2224	18.020
Stddev	.00130	.00158	.00003	.00028	.00033	.0059	.078
%RSD	.33451	.17084	.51165	.28019	.50129	.26610	.43024

#1	.38922	.92427	.00581	.10091	.06502	2.2258	18.074
#2	.38684	.92704	.00585	.10040	.06467	2.2258	18.054
#3	.38893	.92434	.00587	.10085	.06532	2.2156	17.931

Sample Name: S3 Acquired: 10/9/2025 11:23:35 Type: Cal
Method: 6010-200.7 NEW(v276) 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	6799.1	95425.	7006.7	4973.2	7948.3
Stddev	12.1	226.	34.2	20.1	9.0
%RSD	.17833	.23662	.48838	.40503	.11316
#1	6788.5	95179.	6985.9	4951.1	7939.6
#2	6812.3	95623.	7046.2	4977.9	7957.5
#3	6796.4	95474.	6987.9	4990.5	7947.8

Sample Name: S4 Acquired: 10/9/2025 11:27:33 Type: Cal
Method: 6010-200.7 NEW(v276) 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	.29194	.21268	.99860	.23658	.45738	.86693	17.513	2.8679
Stddev	.00157	.00661	.00189	.00143	.00162	.00321	.123	.0209
%RSD	.53762	3.1085	.18946	.60266	.35317	.37062	.70404	.72730
#1	.29357	.21684	1.0008	.23822	.45917	.86992	17.524	2.8847
#2	.29044	.20506	.99757	.23570	.45694	.86732	17.630	2.8743
#3	.29182	.21614	.99744	.23581	.45604	.86353	17.384	2.8445
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	7.5407	1.4201	.21192	2.5469	.80948	.01166	1.0476	.30361
Stddev	.0112	.0051	.00037	.0030	.00197	.00007	.0072	.00104
%RSD	.14853	.36054	.17659	.11754	.24336	.56028	.68870	.34286
#1	7.5536	1.4184	.21193	2.5502	.81130	.01163	1.0474	.30400
#2	7.5332	1.4259	.21229	2.5459	.80975	.01173	1.0549	.30440
#3	7.5353	1.4162	.21154	2.5445	.80739	.01161	1.0405	.30243
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	1.5038	.25484	.17233	.31865	6.3281	.09148	5.5365	3.1869
Stddev	.0017	.00036	.00098	.00131	.0200	.00068	.0360	.0091
%RSD	.11528	.14137	.56904	.41146	.31685	.74102	.64977	.28689
#1	1.5058	.25526	.17134	.31842	6.3510	.09078	5.5695	3.1973
#2	1.5028	.25465	.17330	.32007	6.3141	.09213	5.5420	3.1799
#3	1.5028	.25461	.17235	.31747	6.3190	.09152	5.4981	3.1836
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	.81537	1.9094	.01252	.23040	.14941	4.6265	37.175	
Stddev	.00303	.0111	.00013	.00138	.00109	.0219	.709	
%RSD	.37217	.58363	1.0029	.59949	.72936	.47423	1.9069	
#1	.81831	1.9086	.01239	.23100	.15026	4.6305	37.990	
#2	.81225	1.9209	.01263	.22881	.14818	4.6461	36.838	
#3	.81553	1.8987	.01255	.23137	.14978	4.6028	36.698	

Sample Name: S4 Acquired: 10/9/2025 11:27:33 Type: Cal
Method: 6010-200.7 NEW(v276) 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	6096.6	89555.	6734.3	4699.8	6926.8
Stddev	8.9	389.	31.4	10.2	14.7
%RSD	.14646	.43486	.46696	.21750	.21171
#1	6103.2	90003.	6712.8	4689.1	6940.6
#2	6100.2	89296.	6719.7	4709.5	6928.6
#3	6086.4	89366.	6770.4	4700.7	6911.4

Sample Name: S5 Acquired: 10/9/2025 11:31:39 Type: Cal
Method: 6010-200.7 NEW(v276) 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	.57859	.42098	2.0456	.46263	.91753	1.7904	35.990	5.9339
Stddev	.00474	.01652	.0157	.00413	.00713	.0041	.405	.0128
%RSD	.81979	3.9231	.76842	.89310	.77703	.22735	1.1262	.21540
#1	.58316	.43374	2.0614	.46612	.92462	1.7943	35.627	5.9481
#2	.57892	.42687	2.0455	.46371	.91762	1.7908	35.915	5.9232
#3	.57369	.40232	2.0300	.45807	.91036	1.7862	36.427	5.9305
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	15.295	2.9266	.42068	5.1981	1.5987	.02295	2.1797	.62846
Stddev	.111	.0022	.00138	.0376	.0101	.00012	.0072	.00162
%RSD	.72630	.07372	.32847	.72388	.63370	.50850	.32922	.25720
#1	15.406	2.9290	.42111	5.2360	1.6088	.02292	2.1840	.63020
#2	15.297	2.9263	.42180	5.1976	1.5989	.02308	2.1714	.62816
#3	15.184	2.9247	.41913	5.1608	1.5885	.02285	2.1836	.62701
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	3.0610	.50788	.33961	.66722	12.387	.17760	11.517	6.4329
Stddev	.0198	.00277	.00079	.00309	.076	.00034	.024	.0518
%RSD	.64805	.54456	.23363	.46320	.61377	.18878	.20452	.80499
#1	3.0810	.50950	.34004	.66858	12.460	.17779	11.542	6.4828
#2	3.0607	.50946	.34009	.66941	12.395	.17779	11.512	6.4365
#3	3.0413	.50469	.33869	.66369	12.308	.17721	11.496	6.3794
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	1.6492	3.9787	.02474	.46373	.30175	9.6799	77.209	
Stddev	.0152	.0088	.00019	.00588	.00386	.0317	1.424	
%RSD	.92312	.22009	.77955	1.2670	1.2779	.32789	1.8450	
#1	1.6633	3.9833	.02463	.46894	.30508	9.6874	78.821	
#2	1.6513	3.9686	.02496	.46490	.30265	9.6451	76.685	
#3	1.6331	3.9841	.02462	.45736	.29752	9.7072	76.121	

Sample Name: S5 Acquired: 10/9/2025 11:31:39 Type: Cal
Method: 6010-200.7 NEW(v276) 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	6101.0	90897.	6398.2	4725.0	6779.5
Stddev	47.6	100.	29.4	15.6	52.8
%RSD	.77943	.11044	.45959	.32976	.77839
#1	6049.6	90884.	6390.3	4710.9	6722.5
#2	6109.9	90804.	6430.8	4741.7	6789.7
#3	6143.5	91003.	6373.6	4722.2	6826.5

Sample Name: ICV01 Acquired: 10/9/2025 11:44:34 Type: Unk
Method: 6010-200.7 NEW(v276) 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	3.911036	3.838550	3.822162	3.948229	4.071551	7.727221
Stddev	.003108	.146220	.010165	.010204	.002494	.011199
%RSD	.0794710	3.809244	.2659408	.2584350	.0612514	.1449228

#1	3.914444	3.934636	3.818929	3.953779	4.071640	7.734160
#2	3.910305	3.670275	3.814007	3.936454	4.069014	7.733200
#3	3.908358	3.910739	3.833550	3.954455	4.074000	7.714302

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.710755	.1944182	1.937045	19.29558	.8150237	1.956765
Stddev	.039733	.0004141	.004713	.06420	.0028157	.002819
%RSD	.5152982	.2130060	.2433132	.3326976	.3454785	.1440733

#1	7.746083	.1948338	1.937519	19.32564	.8170786	1.955402
#2	7.718444	.1944154	1.932113	19.33923	.8161782	1.954887
#3	7.667740	.1940055	1.941503	19.22187	.8118142	1.960007

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9999972	4.109905	1.903907	19.28645	1.959297	.9886371
Stddev	.0023439	.026651	.003762	.09016	.002057	.0064462
%RSD	.2343942	.6484571	.1976097	.4674785	.1049612	.6520270

#1	.9982120	4.094533	1.908250	19.28636	1.958426	.9959905
#2	.9991279	4.140679	1.901826	19.37666	1.957819	.9859598
#3	1.002652	4.094502	1.901644	19.19634	1.961645	.9839610

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	19.61826	1.930436	2.041688	20.05257	3.855196	4.080919
Stddev	.11073	.011466	.009326	.10265	.005305	.003176
%RSD	.5644063	.5939806	.4567904	.5119042	.1376032	.0778236

#1	19.71729	1.918985	2.050712	20.03410	3.859536	4.081320
#2	19.63877	1.930407	2.042265	20.16321	3.856771	4.077562
#3	19.49871	1.941918	2.032086	19.96042	3.849282	4.083876

Sample Name: ICV01 Acquired: 10/9/2025 11:44:34 Type: Unk
Method: 6010-200.7 NEW(v276) 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	3.996308	3.916570	F 3.782907	F .0024305	F .0229178	F -.009265
Stddev	.013306	.011421	.019238	.0022554	.0045899	.000717
%RSD	.3329482	.2916144	.5085467	92.79882	20.02794	7.742098
#1	4.006106	3.922274	3.769135	.0042890	.0185486	-.009874
#2	3.981160	3.924016	3.804888	-.000079	.0225042	-.009447
#3	4.001658	3.903420	3.774699	.003081	.0277005	-.008474
Elem	Sr4077					
Units	ppm					
Avg	F -.003528					
Stddev	.000155					
%RSD	4.395698					
#1	-.003462					
#2	-.003705					
#3	-.003416					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	6470.239	90078.89	6943.337	4636.261	7498.762	
Stddev	13.907	188.93	16.675	32.840	16.865	
%RSD	.2149323	.2097334	.2401610	.7083379	.2248974	
#1	6479.127	90006.50	6932.128	4612.548	7498.196	
#2	6477.377	89936.87	6935.383	4622.490	7515.902	
#3	6454.213	90293.31	6962.500	4673.744	7482.187	

Sample Name: LLICV01 Acquired: 10/9/2025 11:49:14 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.0191870	.0392494	.0117752	.0186864	.0511748	.1138062	.0969432
Stddev	.0011083	.0028689	.0005753	.0038892	.0010747	.0012633	.0007297
%RSD	5.776209	7.309378	4.885598	20.81295	2.100029	1.110072	.7527493
#1	.0203990	.0421989	.0111527	.0171515	.0508392	.1150065	.0963332
#2	.0182251	.0390806	.0122872	.0157988	.0523772	.1139240	.0977516
#3	.0189370	.0364686	.0118857	.0231088	.0503079	.1124881	.0967448
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0063415	.0058130	2.010551	.0099975	.0293903	.0217727	.1052379
Stddev	.0000533	.0000511	.014465	.0002059	.0001126	.0002335	.0059292
%RSD	.8400275	.8781448	.7194485	2.059296	.3830068	1.072204	5.634090
#1	.0063024	.0058126	2.003588	.0098253	.0292685	.0215394	.1120227
#2	.0064022	.0057621	2.000884	.0102256	.0294905	.0220063	.1010515
#3	.0063201	.0058642	2.027180	.0099417	.0294117	.0217724	.1026395
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0216191	2.101247	.0399837	.0108204	1.607373	.0381838	.0417776
Stddev	.0002267	.053636	.0001007	.0003683	.028306	.0026217	.0003158
%RSD	1.048488	2.552602	.2518445	3.403924	1.761034	6.865930	.7559000
#1	.0213663	2.080586	.0399667	.0106129	1.596471	.0353750	.0421349
#2	.0216866	2.061014	.0400918	.0106027	1.586139	.0405660	.0415359
#3	.0218044	2.162142	.0398925	.0112457	1.639510	.0386103	.0416620
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.650815	.1121411	.2025809	.0382971	.0377137	.3333617	.0184739
Stddev	.047342	.0010736	.0004317	.0007161	.0006465	.0045942	.0010871
%RSD	2.867801	.9573480	.2131198	1.869916	1.714218	1.378135	5.884360
#1	1.635029	.1124474	.2030148	.0389234	.0384601	.3384188	.0195197
#2	1.613383	.1130283	.2021514	.0375163	.0373518	.3294455	.0185524
#3	1.704033	.1109477	.2025765	.0384515	.0373293	.3322206	.0173498

Sample Name: LLICV01 Acquired: 10/9/2025 11:49:14 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.0165026	.0160142	.0206347
Stddev	.0006614	.0013748	.0002636
%RSD	4.007723	8.584732	1.277461

#1	.0168745	.0172749	.0208327
#2	.0168943	.0162194	.0207358
#3	.0157390	.0145484	.0203355

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6515.418	97450.87	6755.766	5040.591	8007.064
Stddev	12.527	301.55	69.664	21.254	13.373
%RSD	.1922604	.3094335	1.031185	.4216581	.1670208

#1	6509.289	97206.10	6801.441	5021.722	8008.323
#2	6529.829	97787.72	6675.583	5036.436	8019.764
#3	6507.137	97358.80	6790.274	5063.616	7993.106

Sample Name: ICB01 Acquired: 10/9/2025 11:59:54 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.000726	.0045060	-.001224	-.007217	-.001884	.0081569	-.001562
Stddev	.001167	.0011858	.001669	.002146	.001008	.0066702	.000948
%RSD	160.8055	26.31647	136.3479	29.73445	53.46785	81.77370	60.68824
#1	.000574	.0058394	.000694	-.007141	-.002017	.0012195	-.000479
#2	-.001066	.0035695	-.002347	-.005110	-.000817	.0145231	-.001967
#3	-.001685	.0041091	-.002019	-.009400	-.002819	.0087281	-.002241
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000057	.0000073	-.018994	.0004478	.0000041	-.000170	-.001663
Stddev	.0000599	.0000274	.017195	.0004045	.0000880	.000144	.005029
%RSD	1056.921	372.8270	90.52853	90.32388	2135.182	84.83250	302.4861
#1	-.000059	-.000011	-.035595	.0008773	.0000136	-.000313	.000170
#2	.000060	-.000006	-.020124	.0003922	.0000870	-.000172	.002193
#3	.000016	.000039	-.001262	.0000740	-.000088	-.000025	-.007351
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0008202	-.008963	.0003896	.0011195	-.334566	-.002217	-.000013
Stddev	.0012039	.029240	.0000978	.0000636	.011180	.004800	.000107
%RSD	146.7815	326.2374	25.11327	5.681195	3.341778	216.4613	819.7892
#1	.0022104	.011530	.0002786	.0010608	-.326788	-.003213	.000108
#2	.0001187	.004028	.0004635	.0011871	-.329530	.003002	-.000053
#3	.0001316	-.042447	.0004267	.0011106	-.347378	-.006441	-.000094
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.315017	.0036871	-.000237	-.000086	-.000094	.0041314	.0013691
Stddev	.013224	.0002108	.000256	.000416	.000345	.0050328	.0021520
%RSD	4.197737	5.717551	108.1336	483.1527	367.3557	121.8173	157.1861
#1	-.318058	.0037533	-.000514	-.000438	-.000309	.0046597	-.000414
#2	-.300537	.0038569	-.000188	-.000193	.000304	-.001145	.000762
#3	-.326455	.0034512	-.000009	.000373	-.000276	.008879	.003759

Sample Name: ICB01 Acquired: 10/9/2025 11:59:54 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.001106	-.008274	.0000126
Stddev	.001676	.001586	.0001061
%RSD	151.4531	19.16526	838.6896

#1	.000810	-.008436	-.000000
#2	-.001833	-.006613	-.000086
#3	-.002296	-.009772	.000125

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6626.913	88917.15	6753.504	4537.852	8263.690
Stddev	9.702	65.65	12.620	32.828	11.785
%RSD	.1464005	.0738380	.1868594	.7234166	.1426108

#1	6615.929	88992.32	6761.466	4512.639	8251.022
#2	6630.500	88888.11	6760.092	4525.947	8274.329
#3	6634.311	88871.03	6738.953	4574.972	8265.718

Sample Name: CRI01 Acquired: 10/9/2025 12:04:13 Type: Unk
Method: 6010-200.7 NEW(v276) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0207028	.0410444	.0100411	.0145990	.0493159	.1167678
Stddev	.0023210	.0047334	.0009846	.0019731	.0011307	.0114986
%RSD	11.21092	11.53248	9.805193	13.51547	2.292771	9.847364

#1	.0223845	.0356009	.0089228	.0139179	.0489331	.1298891
#2	.0216691	.0433401	.0104230	.0168224	.0505883	.1119651
#3	.0180548	.0441922	.0107775	.0130566	.0484263	.1084493

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0968916	.0062305	.0058865	1.994822	.0104215	.0294381
Stddev	.0017213	.0000622	.0000520	.019200	.0002562	.0002406
%RSD	1.776524	.9981860	.8831458	.9625042	2.458538	.8172742

#1	.0987713	.0061663	.0058595	2.001689	.0102397	.0293016
#2	.0965112	.0062348	.0058535	2.009645	.0103103	.0292968
#3	.0953923	.0062905	.0059464	1.973133	.0107146	.0297159

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0216930	.1124907	.0210915	2.088439	.0397051	.0111170
Stddev	.0002461	.0038854	.0003246	.046988	.0001712	.0001486
%RSD	1.134359	3.453945	1.539108	2.249909	.4311331	1.337017

#1	.0217096	.1167985	.0210081	2.069898	.0395481	.0112829
#2	.0219304	.1092514	.0214497	2.141869	.0396795	.0109961
#3	.0214391	.1114222	.0208167	2.053551	.0398876	.0110720

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.606647	.0339747	.0434129	1.629226	.1022596	.2045776
Stddev	.042942	.0021695	.0003725	.013949	.0010812	.0003613
%RSD	2.672778	6.385645	.8579649	.8561427	1.057352	.1766326

#1	1.649016	.0326992	.0436660	1.640997	.1011817	.2043973
#2	1.563154	.0327452	.0435875	1.632861	.1033441	.2043419
#3	1.607771	.0364797	.0429852	1.613820	.1022531	.2049936

Sample Name: CRI01 Acquired: 10/9/2025 12:04:13 Type: Unk
Method: 6010-200.7 NEW(v276) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CRI01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0384952	.0387386	.3664886	.0177144	.0177484	F .0130067
Stddev	.0001893	.0012746	.0060871	.0008656	.0011886	.0008918
%RSD	.4916914	3.290288	1.660923	4.886239	6.696728	6.856337
#1	.0382807	.0373191	.3608697	.0168279	.0181762	.0126465
#2	.0386387	.0397851	.3656412	.0185574	.0164051	.0140223
#3	.0385662	.0391116	.3729551	.0177579	.0186638	.0123513
Elem	Sr4077					
Units	ppm					
Avg	.0203649					
Stddev	.0000310					
%RSD	.1523092					
#1	.0203996					
#2	.0203549					
#3	.0203401					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	6575.346	93240.96	7018.379	4746.245	8114.239	
Stddev	13.231	226.00	21.628	28.655	19.163	
%RSD	.2012182	.2423787	.3081653	.6037500	.2361600	
#1	6563.512	92984.33	7036.096	4716.172	8102.650	
#2	6589.631	93410.24	6994.277	4773.233	8136.358	
#3	6572.894	93328.32	7024.765	4749.331	8103.709	

Sample Name: ICSA01 Acquired: 10/9/2025 12:09:32 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.0048838	.0241062	-.000131	.0162869	-.003848	245.3688
Stddev	.0024363	.0006083	.000567	.0012043	.002201	.2510
%RSD	49.88498	2.523455	433.3322	7.394463	57.18789	.1022809
#1	.0075202	.0241542	-.000361	.0163713	-.005725	245.2162
#2	.0027156	.0246890	-.000546	.0150426	-.001426	245.6584
#3	.0044156	.0234753	.000515	.0174468	-.004393	245.2317
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007877	.0014428	.0016961	232.7741	.0478988	.0014915
Stddev	.0010083	.0001029	.0001235	.1498	.0002789	.0001032
%RSD	128.0088	7.130267	7.279019	.0643660	.5822092	6.918800
#1	.0013530	.0014211	.0017899	232.8893	.0479485	.0014996
#2	-.000376	.0015548	.0015562	232.8283	.0475984	.0013845
#3	.001387	.0013525	.0017421	232.6047	.0481495	.0015904
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.007217	98.57409	-.001370	246.0780	.0039788	.0017911
Stddev	.000341	.19244	.001204	.4862	.0002057	.0000587
%RSD	4.724294	.1952272	87.88744	.1975997	5.171169	3.279911
#1	-.006979	98.65907	-.002404	246.2954	.0042144	.0018309
#2	-.007607	98.70942	-.000048	246.4175	.0038872	.0017236
#3	-.007064	98.35379	-.001659	245.5209	.0038347	.0018188
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.178106	.0033908	.0025250	-.081336	.0058198	-.000098
Stddev	.029291	.0014653	.0002059	.035722	.0025762	.000026
%RSD	16.44598	43.21438	8.155217	43.91907	44.26551	26.31754
#1	-.211851	.0049960	.0027561	-.122051	.0062505	-.000127
#2	-.163219	.0021250	.0023611	-.066709	.0081536	-.000088
#3	-.159248	.0030513	.0024576	-.055250	.0030555	-.000078

Sample Name: ICSA01 Acquired: 10/9/2025 12:09:32 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.004717	-.003754	.0240986	.0029080	-.008888	F -.034932
Stddev	.000650	.001395	.0106982	.0010970	.001779	.002550
%RSD	13.77459	37.16358	44.39347	37.72372	20.01855	7.299547

#1	-.005363	-.003783	.0211039	.0041608	-.007605	-.037874
#2	-.004064	-.005134	.0152169	.0024438	-.010919	-.033554
#3	-.004725	-.002344	.0359751	.0021195	-.008139	-.033368

Elem	Sr4077
Units	ppm
Avg	.0036734
Stddev	.0002104
%RSD	5.728994

#1	.0034481
#2	.0037069
#3	.0038650

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6109.429	86158.12	6666.979	4460.902	6676.132
Stddev	7.657	268.77	16.917	5.033	8.833
%RSD	.1253334	.3119479	.2537430	.1128187	.1323123

#1	6107.500	86305.51	6654.048	4466.676	6676.970
#2	6102.921	85847.90	6660.764	4457.441	6666.909
#3	6117.866	86320.95	6686.124	4458.590	6684.516

Sample Name: ICSAB01 Acquired: 10/9/2025 12:19:38 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.1009539	.1051676	.0435103	.0594646	.5638104	227.9033
Stddev	.0015704	.0060493	.0014731	.0040592	.0014862	.7453
%RSD	1.555530	5.752078	3.385547	6.826251	.2635904	.3270161
#1	.1003592	.0984216	.0450593	.0610028	.5621999	227.4963
#2	.0997677	.1101100	.0421273	.0625298	.5641025	227.4500
#3	.1027347	.1069713	.0433444	.0548611	.5651288	228.7634
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4493374	.4758524	.9330343	216.4253	.5219574	.4646800
Stddev	.0010219	.0078043	.0011660	.4943	.0010440	.0012708
%RSD	.2274246	1.640064	.1249655	.2284158	.2000205	.2734829
#1	.4505121	.4726071	.9317650	216.2895	.5221084	.4635883
#2	.4486532	.4701944	.9332800	216.0130	.5208460	.4643765
#3	.4488469	.4847557	.9340578	216.9733	.5229176	.4660750
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4401760	92.39807	.4412557	229.2904	.9272464	.1978301
Stddev	.0016031	.85015	.0008835	1.2474	.0008578	.0006542
%RSD	.3641962	.9200976	.2002240	.5440300	.0925065	.3306600
#1	.4384081	92.88606	.4404559	229.1489	.9263306	.1984387
#2	.4405849	92.89174	.4411072	228.1199	.9273777	.1979134
#3	.4415351	91.41640	.4422041	230.6026	.9280310	.1971384
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.301503	.4436653	.9861861	-.491623	.9080526	.9750679
Stddev	.024031	.0026414	.0017428	.048758	.0065051	.0050665
%RSD	7.970363	.5953674	.1767177	9.917809	.7163834	.5196066
#1	-.329131	.4415162	.9841773	-.470414	.9091041	.9693367
#2	-.289918	.4428655	.9870874	-.457062	.9010858	.9769162
#3	-.285459	.4466142	.9872938	-.547394	.9139680	.9789507

Sample Name: ICSAB01 Acquired: 10/9/2025 12:19:38 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.9630343	.9180685	.9275441	F .0055572	F -.003138	F -.036152
Stddev	.0057700	.0024397	.0144806	.0007497	.002662	.002355
%RSD	.5991432	.2657385	1.561180	13.49034	84.82115	6.512989

#1	.9563750	.9188268	.9131903	.0055597	-.000066	-.038565
#2	.9661833	.9153398	.9421483	.0048062	-.004767	-.036029
#3	.9665446	.9200391	.9272939	.0063056	-.004581	-.033861

Elem	Sr4077
Units	ppm
Avg	F .0017848
Stddev	.0011207
%RSD	62.79185

#1	.0011507
#2	.0011250
#3	.0030788

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6520.805	90415.45	7068.817	4587.916	7191.935
Stddev	9.408	153.60	114.520	13.589	4.601
%RSD	.1442796	.1698851	1.620073	.2961908	.0639677

#1	6531.261	90559.08	7123.289	4593.381	7195.668
#2	6513.023	90433.75	7145.932	4597.921	7186.795
#3	6518.133	90253.52	6937.228	4572.445	7193.341

Sample Name: ICSA01DLX20 Acquired: 10/9/2025 12:23:39 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.000006	.0043740	-.000139	-.007512	-.001843	12.27849	-.004406
Stddev	.001226	.0010396	.000335	.000697	.000523	.00979	.000488
%RSD	20246.58	23.76676	241.9222	9.278005	28.35126	.0797462	11.08121
#1	-.001303	.0052945	.000212	-.008115	-.002239	12.27518	-.004375
#2	.001132	.0045811	-.000171	-.007672	-.001251	12.27079	-.004908
#3	.000153	.0032465	-.000456	-.006749	-.002039	12.28951	-.003933
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001357	.0000633	12.09822	.0022567	.0001714	-.000359	4.674166
Stddev	.0000195	.0000187	.01907	.0002058	.0002615	.000122	.006647
%RSD	14.35673	29.47343	.1576168	9.119013	152.5913	33.88240	.1421967
#1	.0001148	.0000603	12.12012	.0024185	.0002603	-.000470	4.681335
#2	.0001392	.0000834	12.08923	.0023266	-.000123	-.000379	4.668209
#3	.0001533	.0000464	12.08530	.0020251	.000377	-.000229	4.672953
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000353	12.70226	.0002730	.0004737	-.441806	.0001395	-.000120
Stddev	.000688	.04940	.0002616	.0004349	.017158	.0007599	.000097
%RSD	194.7062	.3889296	95.84163	91.80529	3.883647	544.8418	80.93876
#1	-.000829	12.69146	.0000016	.0005163	-.459171	.0006825	-.000031
#2	.000435	12.65915	.0002938	.0008858	-.441385	.0004648	-.000106
#3	-.000666	12.75617	.0005236	.0000191	-.424862	-.000729	-.000224
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.592427	-.002655	-.000097	-.003019	.0005641	.0080261	-.000893
Stddev	.032701	.000946	.000174	.000416	.0017954	.0072439	.000657
%RSD	5.519868	35.65204	178.7499	13.77851	318.2952	90.25444	73.61665
#1	-.628967	-.003331	-.000149	-.002558	.0016440	.0004810	-.000351
#2	-.565912	-.001573	-.000240	-.003366	.0015567	.0149255	-.000704
#3	-.582402	-.003060	.000097	-.003135	-.001508	.0086718	-.001624

Sample Name: ICSA01DLX20 Acquired: 10/9/2025 12:23:39 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.004218	-.010578	.0003729
Stddev	.001036	.000613	.0000602
%RSD	24.57457	5.794811	16.13694

#1	-.003373	-.009936	.0004422
#2	-.003906	-.010642	.0003419
#3	-.005374	-.011157	.0003345

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6600.933	92408.17	6315.330	4708.592	7954.163
Stddev	16.453	186.20	14.060	7.171	14.198
%RSD	.2492461	.2015005	.2226395	.1522877	.1785008

#1	6595.315	92572.49	6299.136	4710.463	7954.129
#2	6619.459	92205.92	6324.432	4700.671	7968.377
#3	6588.025	92446.10	6322.422	4714.641	7939.981

Sample Name: ICSAB01DLX20 Acquired: 10/9/2025 12:30:24 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.0039273	.0101906	.0015789	-.001381	.0285777	12.06030	.0170839
Stddev	.0023227	.0008695	.0006969	.003419	.0004264	.03963	.0010766
%RSD	59.14134	8.532217	44.13835	247.6202	1.492195	.3286377	6.301765
#1	.0012588	.0110482	.0023833	-.005328	.0282596	12.08694	.0183163
#2	.0054938	.0093097	.0011591	.000504	.0290623	12.07920	.0166085
#3	.0050294	.0102139	.0011942	.000681	.0284113	12.01475	.0163268
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0281855	.0479091	11.92313	.0283118	.0239354	.0253189	4.562387
Stddev	.0001266	.0001275	.04252	.0000401	.0000948	.0000655	.054601
%RSD	.4492775	.2661355	.3565839	.1415687	.3959999	.2586485	1.196762
#1	.0281348	.0480227	11.90071	.0283267	.0238486	.0253728	4.585935
#2	.0283296	.0479335	11.89652	.0283424	.0239210	.0253378	4.499963
#3	.0280921	.0477712	11.97217	.0282664	.0240365	.0252460	4.601262
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0247931	12.44638	.0487053	.0105527	-.432144	.0239527	.0518355
Stddev	.0011470	.10065	.0001701	.0002376	.003640	.0023541	.0002826
%RSD	4.626381	.8086662	.3491558	2.251900	.8423930	9.828044	.5451452
#1	.0239030	12.34749	.0485091	.0108038	-.430876	.0212799	.0518648
#2	.0243889	12.44296	.0487972	.0105228	-.436249	.0248608	.0521023
#3	.0260876	12.54870	.0488097	.0103314	-.429307	.0257176	.0515395
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.543062	.0477545	.0492161	.0435656	.0469425	.0434175	-.001497
Stddev	.030444	.0007608	.0000527	.0002037	.0016651	.0117740	.000137
%RSD	5.605959	1.593190	.1069879	.4676624	3.547114	27.11808	9.185288
#1	-.577708	.0468983	.0492441	.0437879	.0486961	.0557426	-.001437
#2	-.530895	.0480122	.0492488	.0435213	.0453829	.0422245	-.001654
#3	-.520584	.0483531	.0491553	.0433877	.0467485	.0322854	-.001399

Sample Name: ICSAB01DLX20 Acquired: 10/9/2025 12:30:24 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.002414	-.008929	.0005159
Stddev	.000781	.001294	.0001826
%RSD	32.36731	14.49180	35.38965

#1	-.001745	-.007435	.0005458
#2	-.002223	-.009642	.0006816
#3	-.003273	-.009709	.0003202

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6510.878	91682.20	6167.370	4742.666	7860.033
Stddev	12.060	128.46	31.423	24.245	17.295
%RSD	.1852268	.1401131	.5095100	.5112025	.2200393

#1	6497.206	91579.57	6178.403	4718.446	7842.554
#2	6515.420	91640.77	6131.918	4742.618	7877.138
#3	6520.006	91826.26	6191.788	4766.935	7860.407

Sample Name: CCV01 Acquired: 10/9/2025 12:34:34 Type: Unk
Method: 6010-200.7 NEW(v276) 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	5.190059	4.790131	5.032330	5.234871	5.134553	9.984650	10.07722
Stddev	.012680	.200366	.007024	.015791	.002435	.033400	.01006
%RSD	.2443205	4.182888	.1395683	.3016573	.0474234	.3345136	.0997941
#1	5.202973	4.988290	5.035549	5.252395	5.135039	9.946122	10.07154
#2	5.177627	4.794474	5.024274	5.230472	5.136708	10.00241	10.08883
#3	5.189576	4.587629	5.037168	5.221745	5.131911	10.00542	10.07129
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2596164	2.532990	25.04175	1.024735	2.520193	1.279774	5.064081
Stddev	.0011080	.003966	.02818	.001041	.003021	.000609	.049309
%RSD	.4267845	.1565638	.1125281	.1015794	.1198724	.0476230	.9737086
#1	.2584969	2.535295	25.01215	1.023578	2.522354	1.279294	5.110139
#2	.2596399	2.528410	25.04485	1.025034	2.516741	1.279567	5.070043
#3	.2607125	2.535264	25.06826	1.025595	2.521485	1.280459	5.012062
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.504259	25.01445	2.530604	1.280356	24.41652	2.509307	2.592209
Stddev	.001991	.09930	.004311	.002708	.10681	.004107	.005400
%RSD	.0795020	.3969795	.1703711	.2115109	.4374571	.1636691	.2083242
#1	2.506548	24.93230	2.533123	1.277250	24.53937	2.504985	2.597287
#2	2.502925	25.12480	2.525626	1.282223	24.36456	2.509778	2.592803
#3	2.503305	24.98625	2.533063	1.281595	24.34563	2.513158	2.586536
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.47412	5.144868	5.122894	5.096426	5.008128	4.972751	5.229281
Stddev	.09327	.033284	.004871	.012759	.005025	.026895	.023466
%RSD	.3810870	.6469402	.0950764	.2503509	.1003373	.5408444	.4487413
#1	24.48739	5.107825	5.128513	5.107406	5.003074	4.942238	5.236416
#2	24.56004	5.154516	5.120283	5.082429	5.008187	4.993013	5.203075
#3	24.37493	5.172262	5.119885	5.099442	5.013123	4.983002	5.248351

Sample Name: CCV01 Acquired: 10/9/2025 12:34:34 Type: Unk
Method: 6010-200.7 NEW(v276) 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	5.178280	4.955966	5.016527
Stddev	.032874	.013059	.058229
%RSD	.6348388	.2634963	1.160751

#1	5.216178	4.942325	4.949847
#2	5.157467	4.957220	5.057348
#3	5.161195	4.968352	5.042387

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6065.045	89517.40	6479.732	4596.202	6931.599
Stddev	5.061	28.74	24.398	19.322	11.459
%RSD	.0834508	.0321034	.3765244	.4203930	.1653106

#1	6069.467	89505.73	6497.918	4593.301	6927.094
#2	6066.143	89550.14	6489.272	4578.494	6944.626
#3	6059.525	89496.33	6452.006	4616.810	6923.078

Sample Name: CCB01 Acquired: 10/9/2025 12:46:33 Type: Unk
Method: 6010-200.7 NEW(v276) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB01 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001926	.0043036	-.000580	-.004758	-.002626	.0017127
Stddev	.001667	.0007809	.000690	.000481	.000803	.0058889
%RSD	86.56215	18.14445	118.7877	10.11625	30.58906	343.8451
#1	-.001049	.0034020	-.000083	-.004649	-.002767	-.005054
#2	-.003848	.0047435	-.001368	-.004340	-.001761	.004518
#3	-.000880	.0047653	-.000291	-.005284	-.003349	.005674
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011104	.0000918	.0000098	-.017330	.0000085	-.000153
Stddev	.0026031	.0000511	.0000686	.009022	.0002622	.000083
%RSD	234.4360	55.65150	699.1222	52.05900	3100.862	54.23250
#1	-.000683	.0001404	.0000886	-.027735	.0003104	-.000201
#2	.004096	.0000964	-.000022	-.012582	-.000124	-.000201
#3	-.000082	.0000386	-.000037	-.011674	-.000161	-.000057
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000172	.0073706	.0003835	.0119103	.0002807	.0006868
Stddev	.000379	.0038009	.0007949	.0369715	.0001923	.0006176
%RSD	220.6006	51.56906	207.2511	310.4150	68.51156	89.92407
#1	.000217	.0036241	.0001564	-.009139	.0001353	.0001182
#2	-.000191	.0072640	.0012672	-.009729	.0002081	.0013439
#3	-.000540	.0112237	-.000273	.054600	.0004988	.0005983
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.454512	-.000768	-.000237	-.642833	.0041070	-.000015
Stddev	.009813	.002005	.000312	.012198	.0011159	.000142
%RSD	2.158997	261.1477	131.7362	1.897489	27.16978	929.4007
#1	-.463537	-.002980	.000050	-.652888	.0031730	-.000117
#2	-.444066	-.000253	-.000192	-.629264	.0053427	.000147
#3	-.455932	.000929	-.000570	-.646347	.0038053	-.000076

Sample Name: CCB01 Acquired: 10/9/2025 12:46:33 Type: Unk
Method: 6010-200.7 NEW(v276) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB01 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002102	-.002099	.0087184	.0001335	-.003443	F -.010095
Stddev	.000159	.000965	.0095999	.0007017	.002755	.003866
%RSD	7.564673	45.98261	110.1105	525.4159	80.02061	38.29294

#1	-.001961	-.001146	.0012721	.0003254	-.000636	-.012362
#2	-.002275	-.003076	.0195530	.0007193	-.006143	-.005631
#3	-.002071	-.002074	.0053301	-.000644	-.003548	-.012291

Elem	Sr4077
Units	ppm
Avg	-.000061
Stddev	.000112
%RSD	182.7937

#1	-.000156
#2	.000062
#3	-.000089

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6566.533	95442.96	6744.669	4856.026	8218.932
Stddev	4.511	531.28	23.330	12.748	7.009
%RSD	.0687032	.5566453	.3459012	.2625240	.0852800

#1	6571.701	94867.89	6724.414	4856.325	8227.020
#2	6564.517	95545.49	6770.178	4843.131	8215.152
#3	6563.381	95915.50	6739.416	4868.622	8214.625

Sample Name: LR-2 Acquired: 10/9/2025 12:56:04 Type: Unk
Method: 6010-200.7 NEW(v276) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: LR-2 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0825458	-.035453	.0756231	-.062363	-.083247	1932.700	.0250770
Stddev	.0016011	.006678	.0052763	.006675	.005806	11.621	.0008455
%RSD	1.939671	18.83656	6.977112	10.70366	6.973868	.6013046	3.371523
#1	.0840402	-.028205	.0811755	-.055199	-.083501	1940.976	.0247521
#2	.0808559	-.036796	.0750187	-.068407	-.088921	1937.709	.0244422
#3	.0827414	-.041357	.0706749	-.063483	-.077318	1919.414	.0260368
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0392298	.0417221	18.25703	-.253259	.0533318	-.208381	2573.591
Stddev	.0001572	.0019461	.26136	.001958	.0004756	.008276	20.185
%RSD	.4007234	4.664345	1.431540	.7730790	.8917406	3.971720	.7843073
#1	.0391738	.0396475	18.45011	-.255338	.0528014	-.217495	2596.331
#2	.0394074	.0420117	18.36135	-.252988	.0534737	-.206311	2566.647
#3	.0391083	.0435071	17.95962	-.251451	.0537202	-.201336	2557.795
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.466384	1.018675	.0463043	^ *****	3.734366	.0342910	.0663976
Stddev	.003922	.015393	.0011520	-----	.025132	.0039598	.0026476
%RSD	.8409361	1.511075	2.487985	-----	.6729819	11.54774	3.987445
#1	-.470187	1.034518	.0473256	^ -----	3.717451	.0307771	.0633412
#2	-.466613	1.017731	.0465317	^ -----	3.763244	.0385817	.0678701
#3	-.462353	1.003775	.0450555	^ -----	3.722402	.0335144	.0679817
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1861.683	^ *****	-.016002	.0133349	.0033034	.4759187	.0692094
Stddev	2.848	-----	.000453	.0013238	.0018483	.0030443	.0047023
%RSD	.1530001	-----	2.831650	9.927503	55.95086	.6396727	6.794264
#1	1861.331	^ -----	-.015667	.0145107	.0047582	.4765843	.0738726
#2	1864.691	^ -----	-.016518	.0119010	.0039284	.4785751	.0692866
#3	1859.028	^ -----	-.015821	.0135929	.0012237	.4725966	.0644690

Sample Name: LR-2 Acquired: 10/9/2025 12:56:04 Type: Unk
Method: 6010-200.7 NEW(v276) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: LR-2 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-419062	.2592587	-2.46701
Stddev	.003328	.0024491	.01929
%RSD	.7942568	.9446455	.7818334

#1	-417861	.2620860	-2.48874
#2	-416502	.2578957	-2.46034
#3	-422825	.2577944	-2.45194

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5403.904	77060.56	6299.035	4124.341	5577.224
Stddev	4.055	368.85	22.531	9.470	10.124
%RSD	.0750362	.4786437	.3576951	.2296217	.1815159

#1	5400.972	76690.00	6278.435	4118.807	5567.516
#2	5402.208	77064.00	6295.574	4118.940	5576.437
#3	5408.531	77427.67	6323.097	4135.276	5587.718

Sample Name: Q3278-01 Acquired: 10/9/2025 13:05:21 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.0345860	.0253285	-.006194	-.009754	-.009091	.4690483
Stddev	.0011821	.0032472	.001083	.002562	.000720	.0205423
%RSD	3.417964	12.82028	17.49065	26.26540	7.921362	4.379579
#1	.0352030	.0237295	-.007197	-.012435	-.009723	.4501154
#2	.0332230	.0290651	-.006341	-.007330	-.008307	.4661395
#3	.0353320	.0231908	-.005045	-.009497	-.009243	.4908900
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3420592	-.001810	.0009290	159.0116	.0176246	.0118577
Stddev	.0028578	.000044	.0001741	.8441	.0005685	.0000948
%RSD	.8354670	2.413456	18.73914	.5308254	3.225740	.7991746
#1	.3391497	-.001855	.0007899	158.7406	.0182301	.0119207
#2	.3421656	-.001807	.0011242	158.3364	.0171021	.0117488
#3	.3448623	-.001767	.0008730	159.9579	.0175417	.0119037
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0506704	122.5409	F 53.64823	62.42962	.0138992	.0060231
Stddev	.0007999	1.2904	.66329	.33452	.0001770	.0013486
%RSD	1.578608	1.053041	1.236368	.5358349	1.273534	22.39111
#1	.0512479	121.9094	54.41030	62.33878	.0137187	.0046369
#2	.0510058	121.6879	53.33341	62.14991	.0140725	.0061017
#3	.0497574	124.0255	53.20097	62.80018	.0139063	.0073307
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	712.7614	-.002569	.3960981	6.137290	.0380760	-.000166
Stddev	3.9882	.001811	.0017415	.087839	.0044924	.000488
%RSD	.5595445	70.49928	.4396738	1.431239	11.79850	295.1244
#1	713.7471	-.000774	.3978467	6.063342	.0383630	-.000350
#2	708.3728	-.004396	.3960837	6.114142	.0334470	-.000535
#3	716.1643	-.002537	.3943638	6.234385	.0424180	.000388

Sample Name: Q3278-01 Acquired: 10/9/2025 13:05:21 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.020801	.0073738	F 15.68584	.2916707	.6936779	-.020410
Stddev	.000627	.0005990	.13657	.0002869	.0028025	.002329
%RSD	3.016392	8.123422	.8706573	.0983464	.4040047	11.41307
#1	-.020260	.0078525	15.74483	.2918841	.6932419	-.021450
#2	-.021488	.0067021	15.52970	.2917835	.6966728	-.017742
#3	-.020653	.0075668	15.78301	.2913446	.6911189	-.022039
Elem	Sr4077					
Units	ppm					
Avg	.5883114					
Stddev	.0070429					
%RSD	1.197139					
#1	.5818126					
#2	.5873269					
#3	.5957948					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	6024.082	83006.46	6308.484	4193.764	6600.371	
Stddev	2.519	622.45	18.390	19.535	9.029	
%RSD	.0418211	.7498765	.2915198	.4658047	.1368003	
#1	6025.744	82428.76	6287.957	4172.043	6609.320	
#2	6021.184	83665.63	6323.460	4209.893	6591.264	
#3	6025.319	82925.00	6314.034	4199.356	6600.530	

Sample Name: Q3275-04 Acquired: 10/9/2025 13:09:46 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.0049086	-.004412	.0127865	-.005651	-.001764	10.44550
Stddev	.0017294	.001242	.0015179	.000956	.001584	.05233
%RSD	35.23098	28.15471	11.87071	16.91403	89.78247	.5009415

#1	.0038212	-.004637	.0111148	-.004554	-.002175	10.39256
#2	.0069028	-.005526	.0140782	-.006306	-.000015	10.44675
#3	.0040019	-.003073	.0131665	-.006093	-.003101	10.49719

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1777726	.0009049	.0014983	129.4981	.0197948	.0098219
Stddev	.0013895	.0000642	.0000121	.4414	.0003862	.0001633
%RSD	.7815914	7.095293	.8104674	.3408570	1.950968	1.662648

#1	.1793219	.0009712	.0015061	129.0730	.0196483	.0097227
#2	.1773591	.0008431	.0014843	129.4670	.0202328	.0097325
#3	.1766369	.0009004	.0015045	129.9542	.0195033	.0100103

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0399599	23.52532	2.794723	32.28619	.0218081	.0007302
Stddev	.0001310	.14942	.011102	.08407	.0001970	.0004323
%RSD	.3278254	.6351343	.3972618	.2603907	.9035135	59.20097

#1	.0400857	23.69222	2.785053	32.18928	.0218596	.0012226
#2	.0399698	23.47972	2.792269	32.33953	.0219743	.0004129
#3	.0398242	23.40401	2.806847	32.32976	.0215904	.0005552

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	689.2052	.0205596	.1211036	6.875463	.0356268	.0045121
Stddev	4.1085	.0037633	.0008267	.051827	.0008844	.0001301
%RSD	.5961222	18.30441	.6826735	.7537894	2.482248	2.884515

#1	692.5717	.0247932	.1201556	6.928379	.0366476	.0045540
#2	690.4168	.0192917	.1216746	6.873212	.0350929	.0046162
#3	684.6272	.0175940	.1214808	6.824799	.0351399	.0043662

Sample Name: Q3275-04 Acquired: 10/9/2025 13:09:46 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.018223	.3420042	F 21.56119	.8318122	F 13.36065	-.015399
Stddev	.000353	.0010763	.18098	.0016025	.10074	.002341
%RSD	1.936309	.3147101	.8393850	.1926562	.7540374	15.20486
#1	-.018114	.3420741	21.74567	.8310626	13.41921	-.013037
#2	-.018617	.3408946	21.55398	.8336522	13.24432	-.017719
#3	-.017937	.3430438	21.38393	.8307219	13.41842	-.015441
Elem	Sr4077					
Units	ppm					
Avg	.3161192					
Stddev	.0018878					
%RSD	.5971827					
#1	.3146171					
#2	.3155021					
#3	.3182383					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	6496.031	92920.77	7314.906	4735.625	6737.759	
Stddev	8.261	415.63	46.264	24.427	13.012	
%RSD	.1271722	.4472913	.6324660	.5158047	.1931245	
#1	6505.523	92502.03	7358.207	4721.141	6748.246	
#2	6490.468	92927.06	7320.351	4721.907	6741.833	
#3	6492.100	93333.21	7266.160	4763.827	6723.197	

Sample Name: Q3278-01DLX2 Acquired: 10/9/2025 13:14:02 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.0141195	.0130660	-.004361	-.007083	-.007968	.5168008	.1765232
Stddev	.0019731	.0031300	.001264	.002263	.002185	.0077457	.0003548
%RSD	13.97431	23.95549	28.97800	31.94365	27.42844	1.498784	.2010021
#1	.0151746	.0131771	-.003187	-.004546	-.005464	.5256949	.1769142
#2	.0118432	.0098819	-.005699	-.008892	-.008945	.5115369	.1762217
#3	.0153408	.0161389	-.004198	-.007811	-.009494	.5131705	.1764338
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000839	-.000029	80.30046	.0082789	.0058479	.0234919	65.37453
Stddev	.000044	.000064	.32056	.0003404	.0001734	.0001546	.56049
%RSD	5.209042	222.8696	.3991964	4.111488	2.965692	.6582094	.8573483
#1	-.000791	-.000067	80.34266	.0080065	.0057573	.0236628	65.94329
#2	-.000849	.000045	80.59783	.0086605	.0057385	.0234512	64.82270
#3	-.000877	-.000065	79.96090	.0081697	.0060479	.0233617	65.35762
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	27.69198	31.16237	.0064728	.0049948	409.3365	-.005907	.1901986
Stddev	.11807	.10683	.0003436	.0002599	.8198	.001027	.0007004
%RSD	.4263648	.3428180	5.308710	5.203166	.2002867	17.37882	.3682549
#1	27.73916	31.04715	.0063459	.0049828	409.2410	-.006106	.1894288
#2	27.77916	31.25814	.0068618	.0047412	410.1999	-.004796	.1903686
#3	27.55762	31.18181	.0062107	.0052606	408.5686	-.006820	.1907984
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.055921	.0429548	-.000126	-.012486	.0159964	8.929264	.1456927
Stddev	.084912	.0038977	.000126	.000091	.0025427	.062248	.0014688
%RSD	2.093532	9.073940	99.94353	.7290107	15.89553	.6971257	1.008165
#1	3.960286	.0470425	.000014	-.012588	.0189212	8.996790	.1455830
#2	4.085017	.0392800	-.000161	-.012455	.0147570	8.874170	.1472133
#3	4.122460	.0425419	-.000230	-.012413	.0143111	8.916833	.1442818

Sample Name: Q3278-01DLX2 Acquired: 10/9/2025 13:14:02 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.3392455	.0030772	.2979435
Stddev	.0016173	.0007492	.0018815
%RSD	.4767389	24.34767	.6314916

#1	.3374283	.0037033	.2987126
#2	.3405269	.0022471	.2993185
#3	.3397813	.0032811	.2957992

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6256.458	86573.49	6952.898	4493.857	6935.849
Stddev	.892	295.31	73.771	13.137	5.598
%RSD	.0142635	.3411033	1.061007	.2923402	.0807147

#1	6255.637	86854.96	7030.614	4505.252	6933.235
#2	6257.408	86599.44	6883.836	4496.831	6932.036
#3	6256.329	86266.06	6944.242	4479.487	6942.276

Sample Name: Q3275-03DLX5 Acquired: 10/9/2025 13:18:20 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.002592	-.001955	.0028742	-.007096	-.002899	2.060702
Stddev	.000358	.001313	.0008990	.001897	.001734	.010430
%RSD	13.80527	67.17865	31.27809	26.73769	59.82007	.5061604
#1	-.002480	-.002996	.0039029	-.007102	-.004891	2.072739
#2	-.002992	-.000479	.0024804	-.008991	-.001719	2.055051
#3	-.002303	-.002391	.0022393	-.005196	-.002088	2.054317
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2791843	.0002661	.0000058	130.2375	.0044149	.0015575
Stddev	.0037243	.0000186	.0000316	.8295	.0002478	.0001129
%RSD	1.333997	6.985092	548.1223	.6369202	5.613041	7.245500
#1	.2824586	.0002508	.0000120	130.6452	.0046914	.0015063
#2	.2799617	.0002868	-.000028	130.7842	.0042127	.0016869
#3	.2751327	.0002607	.000034	129.2830	.0043407	.0014793
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0091532	20.27459	1.514771	24.36446	.0061520	.0014994
Stddev	.0007460	.07755	.006876	.18099	.0003112	.0001539
%RSD	8.149978	.3824876	.4539352	.7428305	5.057827	10.26468
#1	.0098097	20.20898	1.517810	24.45862	.0065101	.0013554
#2	.0093078	20.25462	1.519604	24.47896	.0059980	.0014811
#3	.0083420	20.36017	1.506899	24.15581	.0059479	.0016616
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 3496.148	.0052095	.0495736	40.54092	.0284340	.0004208
Stddev	74.339	.0028925	.0004448	1.95433	.0012841	.0003169
%RSD	2.126314	55.52294	.8973087	4.820633	4.515998	75.32041
#1	3412.015	.0035887	.0500775	38.47597	.0275120	.0002950
#2	3552.965	.0085489	.0494079	40.78512	.0278895	.0001860
#3	3523.464	.0034907	.0492354	42.36167	.0299007	.0007813

Sample Name: Q3275-03DLX5 Acquired: 10/9/2025 13:18:20 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.005818	.0756092	6.180621	.3559092	F 16.82678	.0687325
Stddev	.000294	.0002761	.059127	.0051205	.20509	.0062753
%RSD	5.053443	.3652041	.9566569	1.438723	1.218845	9.130018
#1	-.006091	.0759254	6.121081	.3595605	16.90587	.0621537
#2	-.005855	.0754158	6.181455	.3581110	16.98055	.0693913
#3	-.005507	.0754864	6.239327	.3500560	16.59392	.0746523
Elem	Sr4077					
Units	ppm					
Avg	.7938101					
Stddev	.0036399					
%RSD	.4585302					
#1	.7957178					
#2	.7960995					
#3	.7896129					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	5362.619	75852.84	6798.237	3859.106	5579.875	
Stddev	69.104	678.09	58.117	21.927	84.098	
%RSD	1.288632	.8939511	.8548784	.5682006	1.507165	
#1	5314.111	76629.93	6782.954	3882.625	5510.058	
#2	5332.004	75547.33	6749.289	3839.225	5556.331	
#3	5441.743	75381.25	6862.468	3855.467	5673.236	

Sample Name: Q3302-06 Acquired: 10/9/2025 13:22:41 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.005081	-.010019	.0025166	-.005080	-.002317	.0459174	.1221177
Stddev	.000760	.001520	.0008133	.001599	.000682	.0037821	.0020381
%RSD	14.96039	15.17571	32.31686	31.47643	29.42749	8.236703	1.668920
#1	-.005269	-.011704	.0017249	-.003387	-.002382	.0418534	.1198972
#2	-.004245	-.008750	.0024750	-.006564	-.001605	.0493340	.1239030
#3	-.005730	-.009603	.0033500	-.005288	-.002964	.0465648	.1225529
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000500	.0002220	7.222876	.0009210	-.000198	.0036164	.0173899
Stddev	.0000297	.0000188	.019828	.0002316	.000093	.0003598	.0030919
%RSD	59.46121	8.449890	.2745128	25.14982	46.79217	9.950679	17.77958
#1	.0000438	.0002226	7.201536	.0006542	-.000116	.0037676	.0189029
#2	.0000239	.0002404	7.226364	.0010385	-.000299	.0038759	.0194339
#3	.0000823	.0002029	7.240729	.0010704	-.000179	.0032056	.0138330
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0365934	1.792507	.0016949	.0003781	288.5988	-.001645	.0271931
Stddev	.0000996	.006002	.0003624	.0003287	3.8021	.000393	.0002026
%RSD	.2722628	.3348606	21.38398	86.95037	1.317436	23.89377	.7451598
#1	.0365371	1.799019	.0016196	.0002381	286.9460	-.001356	.0273338
#2	.0367084	1.787196	.0020891	.0001425	285.9029	-.001487	.0269608
#3	.0365345	1.791306	.0013761	.0007536	292.9476	-.002093	.0272847
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5530820	.0091743	.0006279	-.016154	.0003360	.3586509	.0144176
Stddev	.0465527	.0002184	.0001659	.000221	.0001889	.0120101	.0005226
%RSD	8.416967	2.380690	26.41558	1.366898	56.20814	3.348679	3.624760
#1	.6008805	.0089889	.0005228	-.015940	.0005315	.3553798	.0141202
#2	.5078841	.0094150	.0008192	-.016381	.0003219	.3486152	.0150210
#3	.5504815	.0091190	.0005418	-.016140	.0001546	.3719576	.0141115

Sample Name: Q3302-06 Acquired: 10/9/2025 13:22:41 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.2012028	-.012204	.0249208
Stddev	.0023472	.000322	.0000868
%RSD	1.166576	2.639236	.3482792

#1	.2001584	-.011866	.0248988
#2	.1995591	-.012237	.0248472
#3	.2038909	-.012508	.0250165

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6823.718	97706.62	8190.902	4801.444	7958.015
Stddev	13.119	212.00	52.841	44.446	16.228
%RSD	.1922592	.2169730	.6451242	.9256774	.2039153

#1	6827.405	97836.03	8193.295	4825.783	7946.714
#2	6809.150	97461.96	8136.904	4828.405	7950.721
#3	6834.599	97821.86	8242.506	4750.145	7976.610

Sample Name: Q3302-06DUP Acquired: 10/9/2025 13:27:07 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.002981	-.007822	.0022693	-.004301	-.001387	.0550298	.1329116
Stddev	.001113	.000990	.0012194	.004558	.001213	.0081492	.0012813
%RSD	37.34790	12.65181	53.73432	105.9599	87.46188	14.80865	.9640427
#1	-.003522	-.008334	.0036017	-.001328	-.000536	.0487145	.1331414
#2	-.003720	-.008450	.0019977	-.002027	-.002776	.0521462	.1315309
#3	-.001700	-.006681	.0012086	-.009548	-.000849	.0642287	.1340625
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000046	.0002318	7.740912	.0008606	-.000376	.0039970	.0264453
Stddev	.0000513	.0000195	.017337	.0002151	.000039	.0002772	.0073032
%RSD	1118.556	8.411261	.2239595	24.99307	10.43452	6.936430	27.61636
#1	-.000036	.0002197	7.756026	.0010426	-.000332	.0036938	.0180211
#2	.000062	.0002215	7.721987	.0009160	-.000389	.0042375	.0303240
#3	-.000013	.0002543	7.744722	.0006232	-.000407	.0040598	.0309910
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0400666	1.947865	.0017708	.0008361	290.7814	-.000286	.0292227
Stddev	.0005962	.027485	.0001405	.0002642	4.3068	.002572	.0000588
%RSD	1.488019	1.411048	7.935038	31.59733	1.481129	897.8358	.2011475
#1	.0404207	1.945943	.0017239	.0005379	285.8091	.000796	.0292666
#2	.0404008	1.976261	.0019288	.0009292	293.1912	.001567	.0291560
#3	.0393783	1.921391	.0016598	.0010410	293.3440	-.003223	.0292457
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1994172	.0114411	.0005862	-.016410	-.001672	.3578432	.0141188
Stddev	.0574539	.0005279	.0003428	.000589	.000508	.0139632	.0005925
%RSD	28.81090	4.614017	58.46967	3.591287	30.41596	3.902039	4.196373
#1	.2179835	.0119484	.0002886	-.017067	-.001227	.3418272	.0145904
#2	.2452923	.0108947	.0009610	-.016235	-.002226	.3642435	.0134538
#3	.1349760	.0114801	.0005090	-.015928	-.001562	.3674591	.0143123

Sample Name: Q3302-06DUP Acquired: 10/9/2025 13:27:07 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.2216352	-.012722	.0267192
Stddev	.0013446	.001358	.0002532
%RSD	.6066797	10.67087	.9477097

#1	.2226151	-.014289	.0270115
#2	.2221882	-.011921	.0265758
#3	.2201022	-.011955	.0265702

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6353.857	90987.02	7155.055	4502.762	7357.552
Stddev	50.720	413.69	49.280	8.461	51.180
%RSD	.7982486	.4546730	.6887371	.1878988	.6956099

#1	6298.240	91462.22	7145.920	4497.567	7300.755
#2	6365.773	90791.58	7208.263	4498.195	7371.811
#3	6397.558	90707.25	7110.982	4512.525	7400.090

Sample Name: Q3302-06LX5 Acquired: 10/9/2025 13:31:34 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.002783	-.007609	-.000706	-.008033	-.002699	.0124034	.0196511
Stddev	.001107	.002582	.000415	.000683	.001903	.0052978	.0005748
%RSD	39.78113	33.92669	58.73777	8.507914	70.51679	42.71266	2.925075
#1	-.001785	-.005960	-.000865	-.008395	-.002245	.0063280	.0199630
#2	-.002590	-.006284	-.000235	-.007245	-.001064	.0148214	.0200026
#3	-.003973	-.010584	-.001017	-.008459	-.004788	.0160607	.0189878
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000861	.0000867	1.442016	-.000013	-.000189	.0005828	.0050641
Stddev	.0000691	.0000365	.003270	.000198	.000158	.0001715	.0035220
%RSD	80.22112	42.05357	.2267463	1484.230	83.59737	29.42930	69.54918
#1	.0000068	.0001012	1.438253	-.000021	-.000048	.0005375	.0010363
#2	.0001335	.0001137	1.444169	-.000207	-.000361	.0004384	.0065909
#3	.0001181	.0000452	1.443625	.000188	-.000159	.0007724	.0075650
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0076875	.3635526	.0003884	.0004733	56.97645	-.001011	.0050743
Stddev	.0004310	.0084419	.0001120	.0002863	.04428	.001933	.0000724
%RSD	5.607007	2.322043	28.84593	60.48872	.0777117	191.2568	1.427872
#1	.0072625	.3588671	.0003943	.0001640	56.96332	-.000095	.0050978
#2	.0076757	.3584927	.0004973	.0005271	56.94022	-.003231	.0049930
#3	.0081243	.3732980	.0002735	.0007290	57.02580	.000294	.0051320
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.173509	-.001216	-.000105	-.006229	-.001022	.0734127	.0041095
Stddev	.080093	.000354	.000070	.000197	.000811	.0101715	.0009324
%RSD	6.825062	29.10650	66.44050	3.165405	79.29410	13.85521	22.68969
#1	1.111088	-.001226	-.000025	-.006399	-.001958	.0692561	.0051739
#2	1.145621	-.000857	-.000151	-.006012	-.000530	.0850042	.0034368
#3	1.263817	-.001565	-.000140	-.006275	-.000579	.0659777	.0037179

Sample Name: Q3302-06LX5 Acquired: 10/9/2025 13:31:34 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.0371855	.0102053	.0050059
Stddev	.0019268	.0017626	.0001471
%RSD	5.181726	17.27192	2.938103

#1	.0350312	.0120849	.0051566
#2	.0387443	.0099418	.0049984
#3	.0377810	.0085893	.0048627

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7046.965	102618.4	8030.585	5086.138	8436.401
Stddev	8.549	531.1	35.250	36.307	4.793
%RSD	.1213154	.5175909	.4389508	.7138375	.0568139

#1	7037.252	102787.4	8058.998	5092.201	8434.616
#2	7053.348	103044.4	7991.137	5119.031	8432.756
#3	7050.294	102023.3	8041.620	5047.181	8441.830

Sample Name: LR-1 Acquired: 10/9/2025 13:35:51 Type: Unk
Method: 6010-200.7 NEW(v276) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: LR-1 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000282	.0149202	.0144728	.0011972	.0208496	.3654436	.0090666
Stddev	.0038019	.0098513	.0021162	.0025868	.0026958	.0134397	.0005585
%RSD	13506.78	66.02674	14.62205	216.0708	12.92981	3.677649	6.159965
#1	-.004278	.0256571	.0155641	-.001753	.0184536	.3508919	.0095299
#2	.001443	.0128057	.0120337	.003075	.0237686	.3773898	.0084464
#3	.002919	.0062978	.0158206	.002270	.0203266	.3680491	.0092235
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0009518	.0011194	2356.724	.0338522	.0068291	.0085394	.7502545
Stddev	.0000514	.0001328	15.416	.0005607	.0001874	.0004862	.0124009
%RSD	5.400431	11.86474	.6541395	1.656243	2.744641	5.693097	1.652898
#1	.0008955	.0012721	2341.238	.0335576	.0068072	.0079979	.7361438
#2	.0009962	.0010303	2372.070	.0335003	.0070266	.0089384	.7594193
#3	.0009636	.0010560	2356.864	.0344988	.0066536	.0086818	.7552004
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0274355	2141.386	.0288057	.0029070	2419.243	.0143565	.0856752
Stddev	.0004543	13.324	.0002898	.0005163	24.324	.0024193	.0015528
%RSD	1.655820	.6222197	1.006099	17.76070	1.005423	16.85137	1.812415
#1	.0271486	2137.637	.0285260	.0034739	2397.003	.0149397	.0838860
#2	.0279592	2130.339	.0291047	.0024639	2445.218	.0116989	.0866715
#3	.0271986	2156.183	.0287864	.0027831	2415.507	.0164308	.0864680
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	16.94092	.0068101	.0091095	-.013640	-.088932	-.018667	.0163150
Stddev	3.39294	.0006508	.0004669	.000319	.002020	.005540	.0035846
%RSD	20.02810	9.556940	5.125352	2.339853	2.271242	29.67747	21.97113
#1	13.23934	.0074245	.0087837	-.013942	-.088651	-.025064	.0150093
#2	17.68005	.0061281	.0096444	-.013673	-.087067	-.015383	.0203694
#3	19.90338	.0068777	.0089004	-.013306	-.091077	-.015555	.0135663

Sample Name: LR-1 Acquired: 10/9/2025 13:35:51 Type: Unk
Method: 6010-200.7 NEW(v276) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: LR-1 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.2268586	-.369684	.0606306
Stddev	.0050865	.001527	.0002976
%RSD	2.242122	.4131179	.4907839

#1	.2281670	-.369196	.0608091
#2	.2311631	-.371396	.0602871
#3	.2212458	-.368461	.0607955

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4412.119	69431.78	6677.210	3336.481	4655.521
Stddev	46.294	1049.96	51.382	44.809	51.307
%RSD	1.049243	1.512220	.7695061	1.343013	1.102075

#1	4455.462	70635.30	6704.176	3387.803	4703.780
#2	4363.353	68703.28	6709.494	3305.130	4601.630
#3	4417.542	68956.75	6617.959	3316.509	4661.153

Sample Name: CCV02 Acquired: 10/9/2025 14:16:19 Type: Unk
Method: 6010-200.7 NEW(v276) 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	4.804421	5.176368	4.669969	4.846650	4.852351	9.416321	9.293045
Stddev	.025217	.169525	.032812	.020966	.028012	.032728	.072329
%RSD	.5248780	3.274989	.7026160	.4325896	.5772855	.3475652	.7783146
#1	4.825517	4.982718	4.692143	4.866314	4.882509	9.392290	9.274549
#2	4.811254	5.297963	4.685488	4.849050	4.847396	9.403079	9.231759
#3	4.776491	5.248423	4.632277	4.824588	4.827146	9.453595	9.372826
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2316340	2.328832	23.38286	.9588933	2.334380	1.184211	4.792857
Stddev	.0003743	.016965	.07214	.0004922	.018096	.007678	.022219
%RSD	.1615763	.7284785	.3085202	.0513257	.7752156	.6483673	.4635940
#1	.2318466	2.338294	23.30378	.9583997	2.345660	1.190026	4.767898
#2	.2318536	2.338956	23.44508	.9588961	2.343973	1.187100	4.800189
#3	.2312019	2.309247	23.39973	.9593840	2.313506	1.175508	4.810484
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.304061	23.26175	2.335625	1.204513	23.48747	2.351483	2.315234
Stddev	.011216	.07193	.017485	.002227	.14336	.007949	.005321
%RSD	.4868048	.3092361	.7486170	.1849020	.6103705	.3380294	.2298285
#1	2.291409	23.18339	2.347396	1.206799	23.33263	2.345007	2.311398
#2	2.307987	23.32479	2.343946	1.204391	23.51419	2.360354	2.312995
#3	2.312786	23.27705	2.315534	1.202349	23.61559	2.349090	2.321308
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.01678	4.615693	4.852566	4.716000	4.679653	4.827642	4.737865
Stddev	.11209	.005651	.030678	.032340	.021777	.019631	.047218
%RSD	.4667220	.1224222	.6322078	.6857554	.4653543	.4066473	.9966069
#1	23.89432	4.618043	4.877380	4.738593	4.655648	4.805041	4.742900
#2	24.04173	4.619789	4.862053	4.730454	4.698140	4.837430	4.782364
#3	24.11430	4.609247	4.818265	4.678954	4.685173	4.840456	4.688332

Sample Name: CCV02 Acquired: 10/9/2025 14:16:19 Type: Unk
Method: 6010-200.7 NEW(v276) 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	4.678438	4.531746	4.656104
Stddev	.029138	.013759	.063826
%RSD	.6228068	.3036137	1.370792

#1	4.658049	4.515880	4.631785
#2	4.711811	4.540404	4.728515
#3	4.665455	4.538953	4.608014

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6774.047	98622.30	7400.316	4982.801	7826.944
Stddev	59.012	122.19	7.585	6.033	71.423
%RSD	.8711475	.1238988	.1024923	.1210850	.9125286

#1	6725.920	98605.79	7409.055	4981.156	7777.149
#2	6756.334	98751.90	7396.457	4977.761	7794.906
#3	6839.886	98509.20	7395.438	4989.486	7908.777

Sample Name: CCB02 Acquired: 10/9/2025 14:20:25 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.001981	-.003769	-.000488	-.009728	-.002731	-.002610	-.005519
Stddev	.000728	.001672	.001137	.000450	.000512	.001784	.000153
%RSD	36.74643	44.37389	232.9645	4.622969	18.75220	68.35373	2.768542
#1	-.001140	-.003296	-.000725	-.010162	-.002819	-.002302	-.005689
#2	-.002401	-.002384	.000749	-.009264	-.002180	-.001000	-.005476
#3	-.002400	-.005627	-.001488	-.009757	-.003193	-.004527	-.005393
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000434	.0000203	-.024857	.0002415	-.000057	-.000333	.0203152
Stddev	.0000170	.0000462	.014155	.0001248	.000140	.000296	.0045807
%RSD	39.09165	228.2266	56.94509	51.67048	247.7477	88.89811	22.54819
#1	.0000271	.0000586	-.035719	.0002814	.000079	-.000585	.0178680
#2	.0000421	-.000031	-.030003	.0003414	-.000048	-.000007	.0174779
#3	.0000610	.000033	-.008849	.0001016	-.000201	-.000408	.0255998
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004967	-.014204	.0004835	.0004175	-.361229	.0000291	.0002162
Stddev	.0002391	.015463	.0001879	.0003422	.027649	.0037584	.0001319
%RSD	48.14580	108.8573	38.85156	81.97596	7.654195	12939.67	61.00273
#1	.0006848	-.019481	.0002668	.0003830	-.391378	.0033806	.0000967
#2	.0002276	.003206	.0005834	.0000938	-.355250	-.004034	.0001943
#3	.0005778	-.026338	.0006004	.0007757	-.337058	.000741	.0003578
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.498844	-.001308	.0002057	-.009975	-.001624	.0034266	.0001065
Stddev	.027642	.000491	.0001579	.000573	.000305	.0058768	.0012090
%RSD	5.541165	37.52810	76.75415	5.741039	18.76495	171.5028	1135.125
#1	-.530740	-.001179	.0002549	-.010611	-.001384	.0023170	-.000224
#2	-.481860	-.000894	.0000291	-.009499	-.001520	-.001816	-.000903
#3	-.483933	-.001850	.0003332	-.009815	-.001967	.009779	.001447

Sample Name: CCB02 Acquired: 10/9/2025 14:20:25 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.004050	-.009871	-.000057
Stddev	.003259	.001474	.000072
%RSD	80.45338	14.92865	126.0058

#1	-.002187	-.010863	-.000082
#2	-.007813	-.010572	.000024
#3	-.002151	-.008178	-.000114

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7084.684	98698.55	7635.204	4932.107	8911.153
Stddev	29.637	685.61	62.252	29.007	43.858
%RSD	.4183219	.6946491	.8153220	.5881194	.4921665

#1	7118.905	99490.16	7703.445	4960.682	8961.198
#2	7067.693	98311.13	7620.644	4932.952	8879.413
#3	7067.454	98294.36	7581.523	4902.687	8892.848

Sample Name: Q3302-06MS Acquired: 10/9/2025 14:28:24 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.7737347	1.837747	.8840473	1.933946	.7704041	1.883719	.3071775
Stddev	.0029022	.043863	.0049790	.006858	.0054744	.010977	.0019495
%RSD	.3750926	2.386773	.5632099	.3546069	.7105853	.5827436	.6346380
#1	.7705477	1.792134	.8802286	1.926629	.7684664	1.880063	.3058458
#2	.7744309	1.841487	.8822345	1.934983	.7661621	1.896058	.3094151
#3	.7762255	1.879621	.8896787	1.940227	.7765838	1.875036	.3062716
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1864338	.1848166	8.775576	.3863194	.1857317	.2791461	2.795181
Stddev	.0025668	.0011950	.054083	.0015133	.0010972	.0013855	.038539
%RSD	1.376812	.6466015	.6162956	.3917256	.5907291	.4963534	1.378760
#1	.1841264	.1841493	8.731251	.3880610	.1849673	.2788135	2.826304
#2	.1891986	.1841043	8.835837	.3855717	.1852390	.2779571	2.752074
#3	.1859764	.1861963	8.759639	.3853255	.1869889	.2806676	2.807164
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2194039	3.792028	.4659622	.0704908	266.5605	.2756940	.2263949
Stddev	.0014405	.030170	.0022710	.0006278	4.3198	.0024325	.0005870
%RSD	.6565524	.7956164	.4873705	.8906448	1.620558	.8823095	.2592801
#1	.2183461	3.824149	.4650639	.0711687	267.7664	.2728855	.2270218
#2	.2210445	3.787647	.4642778	.0699293	270.1491	.2770649	.2263048
#3	.2188211	3.764288	.4685450	.0703746	261.7659	.2771316	.2258582
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.043973	.2723436	.4134962	.6567835	.1831100	1.124435	5.550676
Stddev	.114248	.0037661	.0016572	.0027791	.0008517	.011870	.048876
%RSD	1.263249	1.382829	.4007728	.4231335	.4651217	1.055670	.8805484
#1	9.165445	.2690164	.4123971	.6556078	.1836807	1.135376	5.500538
#2	8.938672	.2764322	.4126893	.6547855	.1835182	1.126114	5.553307
#3	9.027801	.2715824	.4154023	.6599572	.1821310	1.111814	5.598184

Sample Name: Q3302-06MS Acquired: 10/9/2025 14:28:24 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.2320026	.1623472	.1976932
Stddev	.0039644	.0003984	.0012867
%RSD	1.708788	.2454185	.6508734

#1	.2321104	.1619609	.1964514
#2	.2279853	.1627568	.1990205
#3	.2359120	.1623239	.1976076

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6529.043	93749.65	6841.710	4701.299	7497.384
Stddev	19.534	600.72	88.212	24.935	31.850
%RSD	.2991931	.6407753	1.289332	.5303890	.4248168

#1	6538.474	93064.89	6908.580	4676.807	7513.952
#2	6542.074	93996.17	6741.734	4726.655	7517.534
#3	6506.583	94187.90	6874.816	4700.436	7460.664

Sample Name: Q3302-06MSD Acquired: 10/9/2025 14:32:34 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.8278735	1.840818	.9519515	2.065121	.8242744	2.004205	.3406651
Stddev	.0038618	.037940	.0048840	.003493	.0009543	.026365	.0048875
%RSD	.4664726	2.061015	.5130519	.1691647	.1157759	1.315479	1.434682
#1	.8244668	1.798767	.9463132	2.062762	.8232603	2.023583	.3462168
#2	.8320687	1.872483	.9546688	2.063467	.8251549	1.974181	.3370110
#3	.8270849	1.851204	.9548726	2.069135	.8244080	2.014849	.3387676
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2018120	.1985644	9.719995	.4204276	.2002119	.2999830	3.213336
Stddev	.0030320	.0009694	.101901	.0018724	.0002351	.0012476	.043877
%RSD	1.502391	.4881800	1.048361	.4453463	.1174433	.4158907	1.365479
#1	.2036777	.1975024	9.752738	.4225076	.1999594	.2985436	3.216119
#2	.1983135	.1994016	9.605748	.4198985	.2004245	.3007540	3.255756
#3	.2034447	.1987892	9.801499	.4188768	.2002518	.3006513	3.168134
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2397967	4.130489	.5020597	.0770590	318.8019	.2992039	.2537242
Stddev	.0033317	.071236	.0013356	.0003105	1.9419	.0011766	.0005990
%RSD	1.389377	1.724628	.2660323	.4029558	.6091222	.3932499	.2360651
#1	.2418252	4.181612	.5007276	.0773648	319.8779	.3001397	.2542316
#2	.2359516	4.049121	.5033989	.0770683	316.5602	.2978829	.2530635
#3	.2416134	4.160733	.5020525	.0767440	319.9676	.2995890	.2538775
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.48195	.2978390	.4448689	.7077739	.1961831	1.289493	5.957631
Stddev	.11436	.0043720	.0017559	.0030487	.0015305	.011919	.021038
%RSD	1.091049	1.467891	.3946929	.4307390	.7801537	.9243237	.3531243
#1	10.60451	.2997145	.4428434	.7042730	.1965242	1.293714	5.938200
#2	10.46326	.2928422	.4459603	.7092048	.1945108	1.276038	5.979973
#3	10.37808	.3009603	.4458030	.7098439	.1975143	1.298728	5.954721

Sample Name: Q3302-06MSD Acquired: 10/9/2025 14:32:34 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.2520664	.1778728	.2144308
Stddev	.0032646	.0025941	.0025657
%RSD	1.295145	1.458403	1.196498

#1	.2556768	.1796573	.2167675
#2	.2512000	.1748970	.2116853
#3	.2493223	.1790640	.2148397

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6220.570	84017.80	6467.251	4281.577	7130.673
Stddev	31.277	356.71	115.756	25.354	31.621
%RSD	.5028009	.4245627	1.789878	.5921641	.4434478

#1	6256.593	83607.27	6410.114	4252.718	7167.000
#2	6204.799	84252.04	6600.466	4300.271	7115.691
#3	6200.317	84194.09	6391.172	4291.743	7109.328

Sample Name: Q3302-06A Acquired: 10/9/2025 14:52:23 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.7977318	1.903591	.9152519	2.011171	.7953457	1.951737	.3258226
Stddev	.0099667	.051293	.0087380	.027754	.0120335	.008731	.0022265
%RSD	1.249381	2.694553	.9547142	1.379997	1.512986	.4473319	.6833310
#1	.7983554	1.943721	.9208857	2.015261	.7965938	1.955782	.3282940
#2	.7874680	1.845801	.9051859	1.981599	.7827368	1.957712	.3239735
#3	.8073721	1.921251	.9196839	2.036653	.8067065	1.941718	.3252004
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1943814	.1905100	9.193642	.4007153	.1919915	.2889317	2.960418
Stddev	.0007953	.0014934	.008191	.0014741	.0014757	.0026258	.015114
%RSD	.4091556	.7839150	.0890989	.3678751	.7686467	.9088136	.5105281
#1	.1936426	.1911133	9.192049	.3994230	.1925130	.2890570	2.973455
#2	.1942785	.1888093	9.186364	.4004020	.1903258	.2862454	2.963948
#3	.1952232	.1916075	9.202513	.4023209	.1931357	.2914926	2.943852
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2306060	3.957750	.4809838	.0729185	292.9065	.2886345	.2371505
Stddev	.0019376	.042453	.0037306	.0005741	4.5975	.0043204	.0012215
%RSD	.8402076	1.072646	.7756124	.7873178	1.569618	1.496837	.5150513
#1	.2326853	3.909267	.4819205	.0734287	296.3124	.2932668	.2362056
#2	.2302816	3.988257	.4768742	.0730299	294.7302	.2879222	.2367162
#3	.2288511	3.975727	.4841568	.0722968	287.6770	.2847146	.2385298
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.526365	.2851778	.4225131	.6760275	.1896116	1.182690	5.850598
Stddev	.008498	.0006454	.0052263	.0084973	.0009911	.012587	.074583
%RSD	.0892064	.2263139	1.236957	1.256950	.5226876	1.064287	1.274796
#1	9.534957	.2854078	.4236027	.6795071	.1906745	1.168830	5.908979
#2	9.526174	.2844489	.4168279	.6663426	.1894474	1.185827	5.766577
#3	9.517964	.2856766	.4271088	.6822327	.1887129	1.193411	5.876239

Sample Name: Q3302-06A Acquired: 10/9/2025 14:52:23 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.2486688	.1704382	.2064952
Stddev	.0068410	.0017427	.0008890
%RSD	2.751056	1.022462	.4305383

#1	.2513466	.1690423	.2068289
#2	.2408939	.1723913	.2071692
#3	.2537658	.1698809	.2054876

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6287.526	89776.27	6608.436	4589.863	7193.770
Stddev	37.135	129.56	6.828	2.514	36.994
%RSD	.5906172	.1443178	.1033237	.0547661	.5142510

#1	6263.322	89638.17	6608.473	4587.351	7163.619
#2	6330.282	89895.15	6601.589	4589.860	7235.051
#3	6268.975	89795.48	6615.245	4592.378	7182.641

Sample Name: LR-3 Acquired: 10/9/2025 14:58:29 Type: Unk
Method: 6010-200.7 NEW(v276) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: LR-3 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1023591	.0336625	247.3987	.0107053	.2335487	.0944820	-.008856
Stddev	.0008673	.0019223	.7770	.0011701	.0034057	.0052458	.001263
%RSD	.8473541	5.710492	.3140632	10.93001	1.458216	5.552204	14.25780
#1	.1013642	.0314661	247.6121	.0094904	.2374710	.0904242	-.010024
#2	.1029564	.0350382	246.5372	.0118247	.2313428	.0926160	-.007516
#3	.1027567	.0344832	248.0466	.0108009	.2318323	.1004057	-.009027
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.003333	-.002485	.1654344	23.30720	.0072029	51.23938	.1579754
Stddev	.000040	.000032	.0114386	.16238	.0001678	.15929	.0037699
%RSD	1.187768	1.284986	6.914248	.6966977	2.329140	.3108723	2.386387
#1	-.003369	-.002521	.1616871	23.19597	.0071456	51.29989	.1563532
#2	-.003291	-.002461	.1563396	23.49353	.0073919	51.35955	.1552882
#3	-.003341	-.002474	.1782766	23.23208	.0070714	51.05871	.1622849
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	50.17488	-.177728	24.78370	.0051090	-.162436	-.041935	28.09973
Stddev	.56969	.026218	.07554	.0004406	.008366	.001518	.17643
%RSD	1.135401	14.75195	.3047819	8.623580	5.150548	3.619752	.6278663
#1	49.66813	-.174239	24.81815	.0053213	-.164682	-.043647	28.07692
#2	50.06500	-.205516	24.83587	.0054032	-.169450	-.040753	28.28645
#3	50.79150	-.153429	24.69708	.0046024	-.153176	-.041406	27.93581
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.234594	.0005091	-.016456	-.013623	-.037059	-.031211	.0512226
Stddev	.039607	.0004184	.000274	.000479	.000960	.009577	.0025373
%RSD	16.88319	82.17380	1.663856	3.518504	2.589271	30.68424	4.953530
#1	-.280313	.0009365	-.016736	-.013109	-.037218	-.027668	.0493227
#2	-.212775	.0001004	-.016189	-.014059	-.037930	-.042055	.0502410
#3	-.210695	.0004905	-.016442	-.013700	-.036030	-.023911	.0541041

Sample Name: LR-3 Acquired: 10/9/2025 14:58:29 Type: Unk
Method: 6010-200.7 NEW(v276) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: LR-3 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	.0657609	-.008495	.0002524
Stddev	.0037651	.000935	.0001280
%RSD	5.725411	11.00582	50.73681

#1	.0681190	-.009341	.0002037
#2	.0677450	-.007491	.0003976
#3	.0614187	-.008653	.0001557

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5789.507	101959.0	7372.970	4975.028	8201.607
Stddev	6.119	301.0	66.305	15.397	10.051
%RSD	.1056856	.2952467	.8992930	.3094801	.1225524

#1	5786.244	102302.4	7435.715	4990.216	8191.005
#2	5785.712	101833.8	7379.594	4959.430	8202.819
#3	5796.566	101740.7	7303.603	4975.438	8210.997

Sample Name: PB170010TB Acquired: 10/9/2025 15:05:40 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.004158	-.004667	.0007339	-.000941	.0015476	.0105626	-.007088
Stddev	.001045	.002771	.0006389	.000881	.0013878	.0151232	.000170
%RSD	25.12067	59.37949	87.05333	93.67818	89.67230	143.1777	2.394779
#1	-.003192	-.003489	.0009925	-.000855	.0002856	.0152666	-.007041
#2	-.004017	-.007832	.0000062	-.001862	.0030338	.0227747	-.006948
#3	-.005266	-.002679	.0012029	-.000106	.0013234	-.006354	-.007277
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000104	-.000052	.0427444	.0010375	-.000470	-.000091	.0246755
Stddev	.000038	.000051	.0045974	.0004024	.000121	.000644	.0011585
%RSD	36.75864	98.41941	10.75560	38.78070	25.80429	704.6388	4.695056
#1	-.000143	.000004	.0423850	.0005762	-.000455	-.000665	.0258708
#2	-.000103	-.000064	.0383373	.0013158	-.000598	.000605	.0235576
#3	-.000067	-.000095	.0475110	.0012206	-.000357	-.000215	.0245981
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0066409	-.001687	.0017286	.0004443	441.4913	-.000202	.0040116
Stddev	.0007330	.016702	.0002274	.0002841	6.2938	.003177	.0000683
%RSD	11.03689	990.2309	13.15258	63.94878	1.425588	1573.556	1.702205
#1	.0064241	-.011893	.0017143	.0007669	446.3887	.000248	.0039734
#2	.0060409	-.010755	.0015088	.0002313	443.6927	-.003580	.0040904
#3	.0074579	.017588	.0019628	.0003347	434.3924	.002726	.0039709
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.665514	-.003237	.0004626	-.015094	.0003289	.0300885	.0086366
Stddev	.030506	.000707	.0001332	.000170	.0009580	.0069505	.0011556
%RSD	4.583876	21.82673	28.80172	1.123992	291.2923	23.10032	13.38033
#1	-.652441	-.003066	.0003334	-.015026	-.000758	.0285397	.0075748
#2	-.700378	-.002632	.0004549	-.014968	.001050	.0376828	.0084675
#3	-.643722	-.004014	.0005995	-.015287	.000695	.0240430	.0098674

Sample Name: PB170010TB Acquired: 10/9/2025 15:05:40 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.0858229	-.012014	.0001394
Stddev	.0037520	.001910	.0000206
%RSD	4.371759	15.89922	14.75187

#1	.0814942	-.009884	.0001616
#2	.0878325	-.013574	.0001211
#3	.0881419	-.012583	.0001354

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6312.097	90926.23	7189.503	4590.022	7246.324
Stddev	27.636	390.84	33.641	7.207	33.330
%RSD	.4378197	.4298461	.4679241	.1570216	.4599515

#1	6325.690	91355.92	7155.218	4593.778	7272.621
#2	6330.304	90591.88	7190.830	4581.713	7257.510
#3	6280.298	90830.89	7222.461	4594.576	7208.840

Sample Name: PB170023BL Acquired: 10/9/2025 15:10:07 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.000965	-.003267	-.000819	-.004890	-.002722	.0004851	-.006346
Stddev	.001242	.003334	.000551	.002589	.001159	.0046971	.001746
%RSD	128.7669	102.0391	67.33012	52.94261	42.58634	968.2487	27.51744
#1	-.002398	-.002997	-.001047	-.003396	-.001385	-.004922	-.006329
#2	-.000191	-.000077	-.000190	-.003394	-.003446	.002817	-.008100
#3	-.000306	-.006728	-.001218	-.007879	-.003335	.003560	-.004608
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000001	.0000156	-.017731	-.000269	-.000016	-.000249	.0036457
Stddev	.000055	.0000390	.002732	.000091	.000166	.000102	.0045492
%RSD	4816.656	250.8750	15.40668	33.92591	1039.982	41.13993	124.7820
#1	.000019	.0000118	-.019687	-.000338	.000102	-.000354	.0086967
#2	.000041	.0000563	-.014610	-.000166	-.000205	-.000244	-.000129
#3	-.000063	-.000021	-.018895	-.000304	.000056	-.000149	.002369
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000027	-.005301	.0000755	.0004865	.3473517	-.000307	-.000006
Stddev	.000444	.011165	.0004092	.0001930	.0116206	.003841	.000274
%RSD	1637.355	210.6066	541.7713	39.66850	3.345494	1250.200	4470.767
#1	-.000025	-.005652	.0002224	.0006022	.3597809	-.004517	-.000311
#2	.000416	.006035	-.000387	.0002637	.3367582	.000588	.000220
#3	-.000472	-.016287	.000391	.0005937	.3455159	.003007	.000072
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4754940	-.004485	.0000138	-.001928	-.000789	-.001685	.0003691
Stddev	.0705997	.000845	.0001211	.000509	.000386	.020195	.0011872
%RSD	14.84765	18.84798	877.6998	26.38580	48.90456	1198.318	321.6840
#1	.3992289	-.004701	.0000190	-.001444	-.000765	.017033	.0017205
#2	.4886860	-.005202	.0001322	-.002458	-.000415	.001000	-.000108
#3	.5385673	-.003553	-.000110	-.001883	-.001186	-.023089	-.000506

Sample Name: PB170023BL Acquired: 10/9/2025 15:10:07 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.003686	.0028083	-.000110
Stddev	.003609	.0017076	.000080
%RSD	97.92799	60.80408	72.15266

#1	-.006469	.0044474	-.000178
#2	.000392	.0010396	-.000131
#3	-.004980	.0029380	-.000022

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6694.780	92368.95	7068.603	4640.504	8376.358
Stddev	6.875	235.64	41.813	4.692	8.663
%RSD	.1026976	.2551110	.5915327	.1011142	.1034278

#1	6702.424	92613.76	7076.449	4645.802	8385.939
#2	6689.101	92349.39	7105.936	4636.872	8369.075
#3	6692.816	92143.70	7023.422	4638.840	8374.061

Sample Name: PB170023BS Acquired: 10/9/2025 15:14:26 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.7548691	1.896903	.9084521	1.909609	.7852360	1.890591
Stddev	.0062651	.113491	.0032443	.008635	.0008435	.006664
%RSD	.8299597	5.982977	.3571214	.4521637	.1074184	.3525057
#1	.7482650	1.767418	.9095310	1.901410	.7842908	1.893326
#2	.7607287	1.979126	.9048058	1.918621	.7855049	1.882994
#3	.7556137	1.944165	.9110194	1.908796	.7859122	1.895452
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1796501	.1870814	.1815394	.9621034	.4144877	.1851353
Stddev	.0024055	.0008623	.0002046	.0096649	.0014640	.0002872
%RSD	1.338974	.4609419	.1127307	1.004555	.3532054	.1551001
#1	.1793092	.1860912	.1816391	.9551143	.4135164	.1854362
#2	.1774333	.1874850	.1813040	.9580630	.4137750	.1848642
#3	.1822079	.1876678	.1816752	.9731328	.4161715	.1851056
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2953485	3.244946	.1913786	1.890556	.4752549	.0766923
Stddev	.0003629	.026319	.0007357	.033434	.0010432	.0004509
%RSD	.1228613	.8110792	.3844117	1.768499	.2194993	.5879991
#1	.2949478	3.233504	.1906750	1.894386	.4764398	.0761890
#2	.2954425	3.226286	.1913182	1.855371	.4744746	.0770594
#3	.2956551	3.275050	.1921426	1.921910	.4748504	.0768286
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.064972	.2841296	.2023502	10.44314	.2757819	.4018161
Stddev	.041075	.0017997	.0010683	.09018	.0011717	.0003142
%RSD	1.340131	.6333977	.5279324	.8634911	.4248562	.0781957
#1	3.020712	.2821164	.2011762	10.37717	.2744316	.4015209
#2	3.072339	.2846900	.2032651	10.40636	.2763849	.4021464
#3	3.101864	.2855824	.2026092	10.54590	.2765293	.4017809

Sample Name: PB170023BS Acquired: 10/9/2025 15:14:26 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.6482343	.1858635	.9196526	5.322861	F -.006288	.1837311
Stddev	.0005909	.0006729	.0134996	.027762	.001697	.0021365
%RSD	.0911577	.3620159	1.467897	.5215700	26.98886	1.162848

#1	.6481410	.1852777	.9304021	5.331278	-.007793	.1832885
#2	.6488663	.1857145	.9045017	5.345441	-.004449	.1818505
#3	.6476956	.1865984	.9240542	5.291864	-.006621	.1860542

Elem	Sr4077
Units	ppm
Avg	.1848676
Stddev	.0010389
%RSD	.5619555

#1	.1842135
#2	.1843238
#3	.1860655

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7126.838	95661.92	7710.185	4864.360	8722.804
Stddev	3.401	688.44	40.896	56.487	13.672
%RSD	.0477238	.7196630	.5304102	1.161236	.1567352

#1	7123.758	96339.47	7755.305	4914.923	8708.302
#2	7126.267	95683.20	7699.691	4874.760	8735.458
#3	7130.488	94963.08	7675.559	4803.395	8724.650

Sample Name: PB170009BS Acquired: 10/9/2025 15:18:27 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.8076870	2.056417	.9624345	2.045107	.8368263	1.968775
Stddev	.0006564	.081426	.0013366	.002959	.0022479	.013090
%RSD	.0812654	3.959600	.1388762	.1446869	.2686156	.6648869
#1	.8076313	2.144171	.9619428	2.044032	.8377015	1.981193
#2	.8070603	1.983307	.9639473	2.042835	.8385049	1.970029
#3	.8083695	2.041772	.9614135	2.048453	.8342725	1.955103
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1875725	.2046127	.1922980	.9871871	.4120305	.1961727
Stddev	.0019307	.0002447	.0001862	.0121900	.0009006	.0002474
%RSD	1.029291	.1196040	.0968181	1.234823	.2185796	.1261196
#1	.1864930	.2046912	.1924680	.9731487	.4112070	.1962227
#2	.1864229	.2048086	.1920990	.9933175	.4118922	.1959041
#3	.1898014	.2043384	.1923270	.9950950	.4129923	.1963912
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3120147	3.076302	.1987928	1.947192	.4918846	.0781124
Stddev	.0003770	.021917	.0018993	.019266	.0008839	.0003747
%RSD	.1208289	.7124318	.9554236	.9894379	.1796857	.4797136
#1	.3118030	3.097609	.1999381	1.933971	.4910019	.0780422
#2	.3117910	3.053823	.1966004	1.969297	.4918822	.0785172
#3	.3124499	3.077472	.1998399	1.938307	.4927696	.0777777
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.753078	.2970054	.2058958	9.821934	.3008439	.4244784
Stddev	.033417	.0031842	.0011382	.107746	.0019260	.0009869
%RSD	1.213819	1.072100	.5528007	1.096993	.6401839	.2325013
#1	2.756614	.3006463	.2054251	9.760067	.3010150	.4249013
#2	2.718033	.2947411	.2071939	9.759388	.3026786	.4233505
#3	2.784587	.2956289	.2050685	9.946348	.2988381	.4251835

Sample Name: PB170009BS Acquired: 10/9/2025 15:18:27 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.6914819	.1955597	.8799909	5.586895	F -.008003	.1920605
Stddev	.0019617	.0011835	.0030168	.027394	.001310	.0008305
%RSD	.2836912	.6052045	.3428238	.4903303	16.36479	.4324222

#1	.6926153	.1959257	.8834202	5.609842	-.009514	.1911654
#2	.6892167	.1942364	.8788064	5.556566	-.007190	.1922099
#3	.6926136	.1965171	.8777460	5.594278	-.007305	.1928061

Elem	Sr4077
Units	ppm
Avg	.1913375
Stddev	.0014029
%RSD	.7331951

#1	.1919485
#2	.1897327
#3	.1923313

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6655.572	95157.44	7017.723	4742.390	8150.226
Stddev	7.211	280.40	11.190	14.269	11.744
%RSD	.1083477	.2946722	.1594505	.3008761	.1440890

#1	6660.646	95356.56	7030.282	4746.735	8154.648
#2	6658.752	95278.98	7014.073	4726.453	8159.115
#3	6647.317	94836.77	7008.814	4753.980	8136.913

Sample Name: Q3302-01 Acquired: 10/9/2025 15:22:29 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.0951297	-.022260	.5524133	-.016447	-.007491	296.1580	1.445047
Stddev	.0022672	.006356	.0037899	.004488	.005170	.5424	.002839
%RSD	2.383241	28.55328	.6860596	27.28536	69.02217	.1831548	.1964690
#1	.0944449	-.017645	.5500647	-.021259	-.012672	296.2957	1.447306
#2	.0932839	-.019626	.5503897	-.015708	-.007468	295.5599	1.445976
#3	.0976603	-.029510	.5567855	-.012375	-.002332	296.6183	1.441860
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0193279	.0198413	33.39650	.3693018	.2276037	.2953175	411.2064
Stddev	.0001169	.0003186	.08156	.0012229	.0010340	.0016816	.1463
%RSD	.6049476	1.605583	.2442094	.3311333	.4543187	.5694301	.0355807
#1	.0194575	.0201586	33.49067	.3680406	.2272804	.2953324	411.2336
#2	.0192303	.0198439	33.34986	.3693822	.2267698	.2936285	411.3372
#3	.0192960	.0195215	33.34896	.3704824	.2287607	.2969917	411.0484
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.12513	73.01336	.4742749	.0029716	4.142240	.5826322	1.058882
Stddev	.05229	.37783	.0030291	.0004534	.021761	.0033435	.004187
%RSD	.4700592	.5174848	.6386781	15.25644	.5253444	.5738630	.3954406
#1	11.18526	73.41803	.4735680	.0027807	4.139352	.5794353	1.055790
#2	11.09993	72.66982	.4716618	.0034892	4.165301	.5823561	1.063647
#3	11.09021	72.95222	.4775950	.0026450	4.122068	.5861052	1.057209
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	18.54993	^ *****	.0082491	.2669007	6.116951	6.596028	7.430320
Stddev	.08901	-----	.0003373	.0013321	.008942	.069127	.074295
%RSD	.4798205	-----	4.088692	.4990847	.1461825	1.048014	.9998880
#1	18.44752	^ -----	.0086363	.2666918	6.120249	6.542760	7.451661
#2	18.60864	^ -----	.0080195	.2656854	6.123776	6.674145	7.347690
#3	18.59364	^ -----	.0080915	.2683248	6.106829	6.571178	7.491608

Sample Name: Q3302-01 Acquired: 10/9/2025 15:22:29 Type: Unk
Method: 6010-200.7 NEW(v276) 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	2.840437	.4309056	-.245641
Stddev	.036935	.0018453	.000442
%RSD	1.300311	.4282328	.1799632

#1	2.853203	.4328527	-.245297
#2	2.798812	.4306815	-.246139
#3	2.869294	.4291826	-.245486

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7198.900	110195.2	8302.814	5448.699	6866.124
Stddev	17.039	229.9	24.747	22.095	35.656
%RSD	.2366938	.2086579	.2980586	.4055169	.5193077

#1	7208.805	110455.6	8275.214	5471.503	6882.994
#2	7208.670	110110.0	8323.026	5427.388	6890.215
#3	7179.225	110020.0	8310.202	5447.205	6825.163

Sample Name: CCV03 Acquired: 10/9/2025 15:26:27 Type: Unk
Method: 6010-200.7 NEW(v276) 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	4.808288	4.746479	4.674517	4.822627	4.873575	9.408363	9.359262
Stddev	.023420	.040406	.016085	.023015	.014377	.028635	.148578
%RSD	.4870750	.8512906	.3440998	.4772312	.2949899	.3043619	1.587498
#1	4.832917	4.778294	4.693090	4.845076	4.889259	9.434818	9.519704
#2	4.805644	4.701016	4.665344	4.823720	4.870443	9.377958	9.226418
#3	4.786302	4.760126	4.665116	4.799085	4.861022	9.412312	9.331663
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2343710	2.334028	23.40192	.9683890	2.343829	1.188294	4.910478
Stddev	.0009279	.005602	.08201	.0030650	.006293	.005781	.016430
%RSD	.3959310	.2400055	.3504281	.3165014	.2684899	.4865107	.3345975
#1	.2354221	2.340317	23.49619	.9649998	2.350589	1.194960	4.927294
#2	.2336652	2.332195	23.34704	.9692012	2.342759	1.185270	4.909679
#3	.2340257	2.329573	23.36253	.9709661	2.338140	1.184651	4.894462
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.310371	23.35313	2.343672	1.227045	23.41444	2.374032	2.411703
Stddev	.015630	.13395	.004821	.002142	.07542	.011467	.009295
%RSD	.6765203	.5735897	.2057016	.1745528	.3221092	.4830302	.3854150
#1	2.328417	23.49809	2.349050	1.224912	23.33818	2.384441	2.401174
#2	2.301636	23.23393	2.342230	1.229196	23.48899	2.361740	2.415163
#3	2.301062	23.32737	2.339737	1.227026	23.41615	2.375916	2.418772
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.19305	4.673730	4.891770	4.713413	4.696937	4.915157	4.638082
Stddev	.05812	.022651	.020587	.017976	.019931	.037826	.019447
%RSD	.2402247	.4846536	.4208414	.3813904	.4243359	.7695761	.4192798
#1	24.13558	4.696552	4.914298	4.732527	4.719951	4.871481	4.659818
#2	24.19178	4.651253	4.887078	4.710865	4.685443	4.937314	4.632094
#3	24.25179	4.673386	4.873935	4.696846	4.685417	4.936677	4.622333

Sample Name: CCV03 Acquired: 10/9/2025 15:26:27 Type: Unk
Method: 6010-200.7 NEW(v276) 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	4.585302	4.509394	4.655775
Stddev	.025119	.021749	.091687
%RSD	.5478050	.4822982	1.969325

#1	4.613451	4.533047	4.736039
#2	4.577282	4.490260	4.675432
#3	4.565173	4.504875	4.555853

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6835.866	97225.22	7436.708	4826.988	7928.605
Stddev	22.721	307.25	32.933	20.950	21.959
%RSD	.3323765	.3160172	.4428399	.4340197	.2769586

#1	6809.633	97550.86	7398.711	4851.176	7903.265
#2	6849.319	96940.46	7454.410	4814.615	7940.502
#3	6848.645	97184.34	7457.005	4815.171	7942.050

Sample Name: CCB03 Acquired: 10/9/2025 15:30:37 Type: Unk
Method: 6010-200.7 NEW(v276) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB03 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.001334	-.003681	-.001452	-.006378	-.001760	.0069230
Stddev	.000718	.001633	.001236	.003320	.000804	.0032332
%RSD	53.83885	44.36907	85.09473	52.06044	45.66023	46.70199
#1	-.000927	-.004468	-.000284	-.002893	-.002372	.0065364
#2	-.000911	-.001803	-.001327	-.006735	-.000850	.0039005
#3	-.002163	-.004772	-.002746	-.009505	-.002058	.0103321
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002743	.0000170	.0000335	-.015921	.0001912	-.000155
Stddev	.001750	.0000455	.0000335	.007693	.0003279	.000094
%RSD	63.78061	267.4851	100.0584	48.31965	171.4640	60.64833
#1	-.002679	.0000485	.0000158	-.011935	.0005328	-.000058
#2	-.001027	.0000377	.0000722	-.011039	.0001617	-.000161
#3	-.004525	-.000035	.0000125	-.024789	-.000121	-.000246
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000099	.0052779	.0002715	-.040143	.0004777	.0002822
Stddev	.0001022	.0055196	.0002921	.009636	.0000530	.0003974
%RSD	1036.995	104.5796	107.5988	24.00366	11.09217	140.8053
#1	.0000938	.0116424	.0003066	-.050315	.0004170	.0001517
#2	.0000397	.0018024	.0005445	-.031153	.0005148	-.000033
#3	-.000104	.0023889	-.000037	-.038960	.0005013	.000728
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.403618	.0007634	.0000085	-.568997	-.000500	.0002418
Stddev	.007925	.0017493	.0001105	.028199	.000585	.0003723
%RSD	1.963510	229.1584	1301.215	4.955993	116.9122	153.9413
#1	-.412075	.0021427	.0000030	-.549360	-.000486	.0000367
#2	-.402416	.0013517	-.000099	-.556321	.000077	.0006715
#3	-.396362	-.001204	.000122	-.601310	-.001092	.0000173

Sample Name: CCB03 Acquired: 10/9/2025 15:30:37 Type: Unk
Method: 6010-200.7 NEW(v276) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB03 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.008339	-.001429	.0035172	-.000542	-.003125	F -.010267
Stddev	.001155	.001044	.0042481	.002383	.003132	.000735
%RSD	13.85110	73.04250	120.7799	439.8348	100.2120	7.162424
#1	-.009539	-.000909	-.000877	-.000095	-.000299	-.010575
#2	-.008243	-.002631	.003827	.001586	-.002585	-.010799
#3	-.007235	-.000747	.007602	-.003116	-.006492	-.009428
Elem	Sr4077					
Units	ppm					
Avg	.0000528					
Stddev	.0000346					
%RSD	65.48476					
#1	.0000509					
#2	.0000193					
#3	.0000883					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	6837.039	95145.65	7428.439	4809.648	8571.677	
Stddev	9.807	113.95	25.278	5.613	7.123	
%RSD	.1434413	.1197597	.3402841	.1167053	.0830994	
#1	6830.587	95111.76	7453.082	4805.669	8577.918	
#2	6832.205	95052.50	7402.571	4807.207	8573.197	
#3	6848.325	95272.70	7429.663	4816.069	8563.917	

Sample Name: Q3303-01 Acquired: 10/9/2025 15:34:56 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.0516472	-.028632	.1129169	-.022493	-.011233	130.7759	.2989170
Stddev	.0010699	.002016	.0017152	.001636	.000842	.3848	.0037881
%RSD	2.071524	7.039713	1.518989	7.274095	7.495501	.2942658	1.267279
#1	.0504580	-.028404	.1134070	-.023934	-.010262	130.4543	.2947893
#2	.0519523	-.026740	.1143337	-.020714	-.011684	131.2023	.3022344
#3	.0525315	-.030751	.1110100	-.022830	-.011753	130.6712	.2997273
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0093595	.0065997	28.32538	.2408610	.0878917	.2752073	275.8792
Stddev	.0000592	.0002337	.07778	.0016061	.0003901	.0015935	.9829
%RSD	.6330139	3.540900	.2745879	.6668297	.4438340	.5790285	.3562793
#1	.0094279	.0067487	28.23582	.2395264	.0882085	.2769428	274.8447
#2	.0093255	.0067201	28.36423	.2426436	.0874560	.2738101	275.9922
#3	.0093251	.0063304	28.37607	.2404129	.0880104	.2748689	276.8007
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.329559	27.27051	.1543620	.0056888	3.605864	.3890684	.3204865
Stddev	.009299	.09954	.0009745	.0004261	.053233	.0003038	.0021844
%RSD	.6994403	.3650261	.6313202	7.490355	1.476296	.0780800	.6815918
#1	1.318879	27.22476	.1554872	.0060511	3.545868	.3893896	.3190179
#2	1.335861	27.38471	.1537833	.0052193	3.647445	.3890298	.3229967
#3	1.333938	27.20207	.1538157	.0057959	3.624277	.3887857	.3194448
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.534443	.5417369	.0045936	.1548783	5.249460	8.193392	2.812575
Stddev	.036428	.0067369	.0001839	.0009972	.040351	.061329	.012420
%RSD	.6581985	1.243567	4.003557	.6438433	.7686667	.7485193	.4415742
#1	5.519648	.5413190	.0045581	.1549358	5.202947	8.192241	2.817865
#2	5.575941	.5352187	.0047927	.1538536	5.270352	8.255288	2.798386
#3	5.507741	.5486729	.0044300	.1558455	5.275081	8.132646	2.821473

Sample Name: Q3303-01 Acquired: 10/9/2025 15:34:56 Type: Unk
Method: 6010-200.7 NEW(v276) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.314662	.0889040	-.144492
Stddev	.008757	.0007049	.000578
%RSD	.6660891	.7928746	.3999655

#1	1.315064	.0897079	-.144831
#2	1.305712	.0886124	-.143825
#3	1.323212	.0883917	-.144821

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7341.662	106524.7	7695.480	5351.901	7708.817
Stddev	17.793	368.5	55.264	19.581	27.430
%RSD	.2423511	.3458938	.7181395	.3658731	.3558263

#1	7323.710	106768.3	7741.549	5356.450	7678.425
#2	7359.291	106100.8	7634.204	5330.446	7731.737
#3	7341.986	106704.9	7710.687	5368.808	7716.289

Sample Name: Q3303-03 Acquired: 10/9/2025 15:38:58 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.1340182	-.042987	.2214807	-.041212	-.013444	137.9816	.3065165
Stddev	.0017996	.006781	.0006948	.005664	.001648	.2423	.0004213
%RSD	1.342783	15.77477	.3136986	13.74432	12.25958	.1755773	.1374379
#1	.1339010	-.035725	.2206795	-.035250	-.011779	138.2593	.3060818
#2	.1322801	-.049154	.2219174	-.046523	-.013477	137.8136	.3069229
#3	.1358736	-.044081	.2218452	-.041862	-.015075	137.8718	.3065448
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0167387	.0143059	29.08629	.3759278	.1758100	.2791282	394.5408
Stddev	.0001948	.0002477	.04938	.0013356	.0002824	.0006469	.5325
%RSD	1.163538	1.731803	.1697763	.3552727	.1606291	.2317640	.1349775
#1	.0165619	.0141561	29.08425	.3756354	.1759545	.2784001	394.8081
#2	.0167067	.0141698	29.03796	.3747626	.1754846	.2796369	394.8866
#3	.0169474	.0145919	29.13666	.3773853	.1759909	.2793477	393.9275
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.410058	26.09186	.1915495	.0015941	1.656376	.6383956	.4429871
Stddev	.005203	.03672	.0000385	.0009807	.007545	.0020323	.0018823
%RSD	.2158801	.1407503	.0201108	61.52131	.4555089	.3183504	.4249109
#1	2.404070	26.09575	.1915472	.0017346	1.664946	.6361821	.4423279
#2	2.413466	26.05334	.1915122	.0024971	1.653447	.6401775	.4415230
#3	2.412639	26.12648	.1915892	.0005508	1.650735	.6388272	.4451103
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.452421	^ *****	.0028794	.0391357	5.230452	5.099966	5.359090
Stddev	.016815	-----	.0003147	.0006764	.005262	.059254	.053380
%RSD	.3776547	-----	10.92877	1.728460	.1005953	1.161848	.9960677
#1	4.433344	^ -----	.0028995	.0393572	5.224597	5.168346	5.305411
#2	4.465090	^ -----	.0025551	.0383762	5.234786	5.067816	5.359693
#3	4.458829	^ -----	.0031835	.0396736	5.231973	5.063735	5.412166

Sample Name: Q3303-03 Acquired: 10/9/2025 15:38:58 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.6605464	.1011576	-.267533
Stddev	.0110712	.0009215	.000410
%RSD	1.676070	.9109732	.1532113

#1	.6513849	.1017939	-.267995
#2	.6574056	.1015781	-.267392
#3	.6728487	.1001008	-.267212

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7344.540	108636.1	7935.704	5423.446	7449.697
Stddev	5.268	212.7	27.939	18.162	5.413
%RSD	.0717308	.1957914	.3520706	.3348821	.0726575

#1	7349.783	108581.0	7947.960	5416.618	7450.796
#2	7344.592	108870.9	7955.421	5444.033	7454.476
#3	7339.247	108456.4	7903.732	5409.687	7443.819

Sample Name: Q3304-01 Acquired: 10/9/2025 15:42:59 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.0910402	-.023194	.9500886	-.021283	-.010002	127.9179	.7035979
Stddev	.0020713	.002667	.0022755	.001782	.002743	.2489	.0012604
%RSD	2.275096	11.49994	.2395082	8.372024	27.42231	.1945928	.1791304
#1	.0889665	-.020334	.9525188	-.021538	-.007906	127.6310	.7041964
#2	.0931090	-.025614	.9497387	-.022924	-.008994	128.0462	.7044476
#3	.0910451	-.023635	.9480082	-.019388	-.013107	128.0765	.7021498
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0096726	.0087078	95.32978	.2000629	.1174760	.5375093	286.7791
Stddev	.0000389	.0002855	.13086	.0003849	.0002792	.0022157	1.3049
%RSD	.4025481	3.278660	.1372671	.1924036	.2376299	.4122125	.4550194
#1	.0097047	.0086165	95.24634	.1996713	.1177350	.5380191	286.9225
#2	.0096838	.0084792	95.48059	.2004408	.1175129	.5350832	288.0064
#3	.0096293	.0090278	95.26240	.2000767	.1171803	.5394257	285.4085
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.353731	48.07953	.2254071	.0083960	3.207222	.3862996	1.616591
Stddev	.006399	.17113	.0006648	.0009065	.033683	.0017621	.001922
%RSD	.1908052	.3559274	.2949463	10.79661	1.050233	.4561567	.1188836
#1	3.355835	47.95544	.2259575	.0093839	3.198004	.3883214	1.614631
#2	3.358813	48.00840	.2246684	.0082016	3.244555	.3854875	1.618473
#3	3.346545	48.27475	.2255952	.0076025	3.179108	.3850901	1.616669
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.99675	.0557476	.0056790	.0527526	2.437192	8.544730	4.632770
Stddev	.05025	.0064418	.0002723	.0008750	.008592	.036772	.012868
%RSD	.4569684	11.55530	4.795792	1.658641	.3525397	.4303449	.2777584
#1	11.01009	.0558971	.0055094	.0523387	2.438130	8.521334	4.638259
#2	11.03899	.0621133	.0055344	.0521614	2.445277	8.587114	4.641983
#3	10.94117	.0492323	.0059931	.0537577	2.428170	8.525741	4.618068

Sample Name: Q3304-01 Acquired: 10/9/2025 15:42:59 Type: Unk
Method: 6010-200.7 NEW(v276) 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	3.064117	.2014760	.2174282
Stddev	.017042	.0027886	.0002074
%RSD	.5561742	1.384079	.0953769

#1	3.044830	.1998166	.2173180
#2	3.077141	.2046955	.2176674
#3	3.070380	.1999161	.2172992

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7137.149	103177.8	8173.949	5095.147	7345.116
Stddev	9.490	296.4	21.190	8.630	5.714
%RSD	.1329673	.2872808	.2592412	.1693681	.0777868

#1	7138.813	103487.9	8189.155	5104.867	7341.358
#2	7145.697	102897.2	8182.949	5088.387	7351.691
#3	7126.937	103148.4	8149.745	5092.188	7342.299

Sample Name: Q3304-01DUP Acquired: 10/9/2025 15:47:02 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.0871537	-.019289	.9070691	-.024467	-.008282	121.6888
Stddev	.0005634	.003728	.0024421	.000652	.000554	.2092
%RSD	.6464360	19.32564	.2692280	2.665561	6.684658	.1718790
#1	.0866305	-.023014	.9088698	-.025212	-.007645	121.9299
#2	.0877501	-.015558	.9080482	-.024191	-.008647	121.5564
#3	.0870805	-.019295	.9042894	-.023998	-.008553	121.5801
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6589522	.0097592	.0094057	89.98284	.1906140	.1121601
Stddev	.0020187	.0001164	.0002360	.27351	.0031653	.0004834
%RSD	.3063546	1.192823	2.509295	.3039536	1.660556	.4309436
#1	.6611709	.0097983	.0096716	90.12889	.1869914	.1127071
#2	.6572238	.0096283	.0092212	89.66731	.1928449	.1119828
#3	.6584619	.0098510	.0093242	90.15231	.1920058	.1117905
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5262628	257.0607	3.180829	45.67513	.2141665	.0022482
Stddev	.0027103	2.6409	.007888	.13786	.0006127	.0003208
%RSD	.5150049	1.027339	.2479857	.3018285	.2860714	14.27040
#1	.5293819	254.0133	3.187037	45.75017	.2146248	.0026076
#2	.5244817	258.4864	3.171953	45.51603	.2144041	.0019906
#3	.5249250	258.6822	3.183496	45.75920	.2134706	.0021464
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.651267	.3688834	1.537521	10.00688	-.048060	.0051724
Stddev	.057862	.0034284	.029801	.09945	.002738	.0001380
%RSD	2.182441	.9293994	1.938251	.9938633	5.696754	2.668357
#1	2.584482	.3726240	1.503114	9.89252	-.047559	.0052463
#2	2.686358	.3658906	1.555190	10.07317	-.045607	.0052578
#3	2.682961	.3681356	1.554259	10.05495	-.051014	.0050132

Sample Name: Q3304-01DUP Acquired: 10/9/2025 15:47:02 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.0485432	2.438217	F 12.65381	4.486119	2.909803	.1890578
Stddev	.0003354	.006612	.10638	.004507	.019266	.0001754
%RSD	.6909798	.2711703	.8406647	.1004694	.6620898	.0927846
#1	.0489029	2.443614	12.53286	4.487516	2.913311	.1892244
#2	.0482390	2.430842	12.69574	4.481078	2.889024	.1890740
#3	.0484875	2.440196	12.73283	4.489762	2.927073	.1888748

Elem	Sr4077
Units	ppm
Avg	.2129873
Stddev	.0034761
%RSD	1.632084

#1	.2169338
#2	.2116482
#3	.2103799

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7391.722	106472.6	7853.663	5287.777	7630.233
Stddev	10.742	1253.5	7.383	64.195	8.386
%RSD	.1453280	1.177263	.0940056	1.214027	.1099020

#1	7380.018	107900.7	7851.367	5357.889	7625.730
#2	7394.017	105554.4	7861.921	5231.882	7625.061
#3	7401.131	105962.8	7847.701	5273.561	7639.908

Sample Name: Q3304-01LX5 Acquired: 10/9/2025 15:51:04 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.0143845	-.009246	.1803039	-.013345	-.005637	26.36521	.1393052
Stddev	.0012924	.004556	.0003838	.001429	.001399	.37138	.0035890
%RSD	8.984339	49.27220	.2128900	10.71027	24.81040	1.408604	2.576328
#1	.0156673	-.013269	.1800360	-.014897	-.004173	25.95384	.1352380
#2	.0130828	-.010169	.1801320	-.012083	-.005778	26.46599	.1420275
#3	.0144034	-.004299	.1807437	-.013056	-.006959	26.67580	.1406501
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0020999	.0011104	19.84875	.0413363	.0218776	.1189505	56.50490
Stddev	.0000561	.0001012	.34671	.0004555	.0001538	.0003878	.44881
%RSD	2.673587	9.111520	1.746782	1.102063	.7028004	.3260117	.7942834
#1	.0020653	.0012002	19.45722	.0415498	.0220027	.1193973	56.04975
#2	.0021647	.0011301	19.97212	.0408132	.0217059	.1187534	56.51788
#3	.0020698	.0010008	20.11690	.0416459	.0219242	.1187008	56.94708
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6979104	9.985391	.0420048	.0014015	.4849636	.0773278	.3266266
Stddev	.0114243	.213004	.0002549	.0003620	.0434575	.0017432	.0015231
%RSD	1.636926	2.133160	.6067793	25.82792	8.960981	2.254303	.4662963
#1	.6847511	9.740304	.0417716	.0010308	.4399532	.0785466	.3266657
#2	.7036911	10.09004	.0422769	.0014196	.4882568	.0753310	.3250843
#3	.7052890	10.12583	.0419659	.0017541	.5266809	.0781056	.3281296
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.011380	.0006387	.0008942	.0062180	.4797994	1.132107	.8743042
Stddev	.037159	.0032680	.0002228	.0007184	.0099314	.018719	.0023584
%RSD	1.847416	511.6986	24.91855	11.55291	2.069896	1.653497	.2697419
#1	1.980527	.0002825	.0007089	.0067190	.4691079	1.130195	.8735278
#2	2.000983	-.002437	.0011415	.0065400	.4815534	1.114418	.8769529
#3	2.052630	.004070	.0008322	.0053949	.4887369	1.151710	.8724320

Sample Name: Q3304-01LX5 Acquired: 10/9/2025 15:51:04 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.5596164	.0340128	.0473089
Stddev	.0071580	.0019251	.0012932
%RSD	1.279085	5.659862	2.733476

#1	.5644299	.0336514	.0458189
#2	.5630285	.0322940	.0479680
#3	.5513908	.0360929	.0481397

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6927.449	101533.4	7641.741	5112.748	8139.477
Stddev	11.401	115.5	103.968	7.111	9.585
%RSD	.1645746	.1137558	1.360529	.1390825	.1177584

#1	6914.493	101620.8	7760.471	5108.732	8131.848
#2	6935.948	101577.1	7566.986	5120.958	8136.347
#3	6931.906	101402.5	7597.767	5108.553	8150.235

Sample Name: Q3304-01MS Acquired: 10/9/2025 15:55:11 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.8112208	2.023702	1.800231	1.740982	.4084117	129.6608
Stddev	.0037417	.081764	.006920	.005950	.0004738	.1740
%RSD	.4612371	4.040294	.3843876	.3417420	.1160156	.1341924
#1	.8081264	1.929339	1.792785	1.737836	.4079354	129.7456
#2	.8153792	2.068221	1.806464	1.747844	.4088830	129.4607
#3	.8101569	2.073544	1.801443	1.737265	.4084165	129.7761
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7177081	.2003127	.2021950	91.93912	.5597203	.3048625
Stddev	.0009643	.0021090	.0007867	.29686	.0019002	.0010493
%RSD	.1343538	1.052832	.3890854	.3228917	.3394835	.3441962
#1	.7167387	.1980558	.2013366	91.83325	.5575777	.3038810
#2	.7177184	.2006489	.2028815	91.70970	.5612008	.3059685
#3	.7186672	.2022333	.2023670	92.27440	.5603824	.3047379
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7190304	235.6970	3.050946	46.24925	.6893787	.0768304
Stddev	.0015825	.7044	.013489	.26397	.0014848	.0006069
%RSD	.2200905	.2988703	.4421143	.5707648	.2153835	.7899826
#1	.7180360	236.5051	3.043406	46.11670	.6877994	.0763215
#2	.7208553	235.2125	3.042912	46.07781	.6907463	.0775022
#3	.7182000	235.3733	3.066518	46.55323	.6895904	.0766675
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.219114	.5797533	1.657063	19.08265	.2209777	.3746274
Stddev	.043922	.0033566	.005579	.11844	.0101910	.0008940
%RSD	.8415509	.5789734	.3366577	.6206546	4.611771	.2386453
#1	5.266899	.5758775	1.653867	19.16646	.2325975	.3746676
#2	5.209937	.5817155	1.653817	19.13435	.2167779	.3755007
#3	5.180506	.5816668	1.663505	18.94716	.2135577	.3737140

Sample Name: Q3304-01MS Acquired: 10/9/2025 15:55:11 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.7002146	2.365344	7.270819	F 10.07247	2.655629	.3824874
Stddev	.0020229	.009590	.087989	.06995	.026846	.0022349
%RSD	.2888942	.4054200	1.210172	.6944821	1.010923	.5843141
#1	.6988274	2.365349	7.365226	10.03387	2.628431	.3848980
#2	.6992807	2.355752	7.256135	10.15322	2.682109	.3820800
#3	.7025357	2.374931	7.191095	10.03033	2.656347	.3804842
Elem	Sr4077					
Units	ppm					
Avg	.3920493					
Stddev	.0012359					
%RSD	.3152383					
#1	.3906715					
#2	.3924160					
#3	.3930604					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	7021.504	97218.02	7240.653	4903.405	7236.899	
Stddev	12.315	379.79	76.819	32.889	18.402	
%RSD	.1753905	.3906552	1.060942	.6707289	.2542784	
#1	7018.434	97621.35	7321.619	4917.428	7252.070	
#2	7011.014	97165.46	7231.549	4926.958	7216.429	
#3	7035.064	96867.25	7168.792	4865.830	7242.197	

Sample Name: Q3304-01MSD Acquired: 10/9/2025 15:59:05 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.7911294	1.844773	1.732726	1.686231	.3993174	126.3260	.6784156
Stddev	.0101379	.069084	.015087	.015710	.0043495	1.6023	.0090571
%RSD	1.281447	3.744848	.8707285	.9316708	1.089240	1.268402	1.335042
#1	.7829886	1.894157	1.723936	1.679510	.3976804	126.3441	.6841850
#2	.7879147	1.765827	1.724096	1.674998	.3960239	124.7146	.6679766
#3	.8024849	1.874336	1.750147	1.704183	.4042479	127.9191	.6830852
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1809514	.1928210	78.85825	.5412613	.2910957	.7135913	231.8417
Stddev	.0021980	.0017731	1.05571	.0028894	.0022432	.0060393	.6932
%RSD	1.214704	.9195670	1.338743	.5338269	.7706096	.8463300	.2989985
#1	.1817505	.1920360	79.00500	.5379298	.2897675	.7097838	231.0435
#2	.1784656	.1915759	77.73684	.5427708	.2898339	.7104354	232.2924
#3	.1826380	.1948511	79.83290	.5430833	.2936857	.7205548	232.1893
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.841912	42.57278	.6581605	.0750171	5.045718	.5536988	1.632340
Stddev	.041654	.58444	.0062440	.0003449	.005634	.0074852	.000687
%RSD	1.465714	1.372793	.9487009	.4597232	.1116584	1.351846	.0420999
#1	2.865320	42.60044	.6548970	.0752764	5.051331	.5531670	1.632900
#2	2.793819	41.97501	.6542246	.0751493	5.040063	.5464938	1.631573
#3	2.866597	43.14290	.6653600	.0746257	5.045760	.5614357	1.632547
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	18.72229	.2236907	.3658402	.6941025	2.365186	7.609248	9.594449
Stddev	.08192	.0071903	.0025437	.0074336	.031824	.045662	.075676
%RSD	.4375328	3.214418	.6953082	1.070964	1.345498	.6000872	.7887485
#1	18.63384	.2191179	.3641701	.6909844	2.379348	7.591236	9.570177
#2	18.73748	.2319786	.3645827	.6887357	2.328740	7.661169	9.533886
#3	18.79555	.2199755	.3687678	.7025873	2.387471	7.575338	9.679283

Sample Name: Q3304-01MSD Acquired: 10/9/2025 15:59:05 Type: Unk
Method: 6010-200.7 NEW(v276) 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	2.422758	.3640574	.3375040
Stddev	.036145	.0046113	.0076535
%RSD	1.491903	1.266643	2.267670

#1	2.410029	.3655134	.3421844
#2	2.394699	.3588938	.3286718
#3	2.463545	.3677650	.3416558

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7286.433	105205.4	8079.756	5239.030	7576.807
Stddev	35.341	430.4	109.846	5.197	45.731
%RSD	.4850224	.4091271	1.359526	.0991912	.6035635

#1	7297.204	105695.9	8042.347	5245.017	7586.692
#2	7315.135	104890.5	8203.420	5235.682	7616.787
#3	7246.959	105029.8	7993.500	5236.391	7526.942

Sample Name: Q3304-01A Acquired: 10/9/2025 16:02:59 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.9454819	2.359131	1.975373	2.114145	.9811484	121.5887
Stddev	.0042997	.042567	.003456	.003905	.0038561	.3315
%RSD	.4547623	1.804366	.1749765	.1847243	.3930174	.2726781
#1	.9493846	2.315567	1.973070	2.116878	.9813471	121.3967
#2	.9408727	2.400626	1.979347	2.115884	.9771967	121.3978
#3	.9461883	2.361200	1.973702	2.109672	.9849012	121.9715
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8468046	.2129622	.2322212	90.97208	.6032599	.3374391
Stddev	.0022154	.0015262	.0002187	.32555	.0008726	.0002457
%RSD	.2616127	.7166385	.0941759	.3578601	.1446443	.0728013
#1	.8442520	.2117408	.2320193	90.64588	.6036877	.3372635
#2	.8479349	.2124728	.2321908	90.97338	.6038361	.3377198
#3	.8482267	.2146731	.2324535	91.29698	.6022560	.3373340
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8173324	261.6938	3.359578	47.16341	.7724030	.0877435
Stddev	.0001754	1.3646	.016349	.21384	.0004684	.0003223
%RSD	.0214651	.5214328	.4866302	.4534071	.0606403	.3673580
#1	.8172858	262.2246	3.342482	46.92882	.7718631	.0876519
#2	.8171850	262.7133	3.361192	47.34744	.7727001	.0881017
#3	.8175265	260.1436	3.375060	47.21397	.7726459	.0874769
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.990255	.6707102	1.705029	20.31356	.2873411	.5052004
Stddev	.073210	.0022717	.000408	.11982	.0073792	.0005286
%RSD	1.047313	.3386952	.0239152	.5898630	2.568091	.1046262
#1	7.033224	.6688053	1.704888	20.44641	.2926193	.5053931
#2	7.031818	.6701008	1.704710	20.28060	.2904949	.5046025
#3	6.905724	.6732244	1.705488	20.21366	.2789091	.5056056

Sample Name: Q3304-01A Acquired: 10/9/2025 16:02:59 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.9627687	2.429902	7.048763	F 10.95118	2.921344	.3936305
Stddev	.0015961	.010052	.049772	.02316	.003388	.0009561
%RSD	.1657803	.4136631	.7061099	.2115023	.1159749	.2429032

#1	.9614795	2.424744	7.105477	10.92513	2.919196	.3925486
#2	.9645539	2.423477	7.028460	10.95895	2.925250	.3939809
#3	.9622727	2.441486	7.012352	10.96946	2.919587	.3943620

Elem	Sr4077
Units	ppm
Avg	.4127903
Stddev	.0035714
%RSD	.8651773

#1	.4111889
#2	.4102999
#3	.4168821

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7277.655	109085.5	8231.217	5375.374	7538.950
Stddev	10.817	378.7	51.909	8.533	12.978
%RSD	.1486372	.3471839	.6306338	.1587366	.1721520

#1	7277.690	109045.7	8285.351	5384.867	7552.709
#2	7288.454	108728.3	8226.436	5368.342	7537.215
#3	7266.820	109482.6	8181.864	5372.915	7526.926

Sample Name: Q3304-03 Acquired: 10/9/2025 16:06:54 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.0641000	-.020976	.3525707	-.018833	-.006418	84.25770	.3061462
Stddev	.0026883	.004783	.0004828	.001906	.001838	.18807	.0019736
%RSD	4.193931	22.80495	.1369482	10.12047	28.63223	.2232044	.6446551
#1	.0671967	-.024553	.3525218	-.021011	-.005262	84.33016	.3062904
#2	.0627387	-.015542	.3521141	-.017469	-.005456	84.39876	.3080437
#3	.0623646	-.022831	.3530761	-.018020	-.008537	84.04418	.3041045
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0071111	.0049426	95.01054	.1677106	.0660921	.2113433	190.0239
Stddev	.0001075	.0000435	.29373	.0014947	.0001661	.0002340	.4244
%RSD	1.512197	.8802915	.3091574	.8912613	.2512645	.1107002	.2233645
#1	.0070342	.0049774	95.07819	.1679641	.0661246	.2110731	190.5026
#2	.0070651	.0048938	95.26454	.1661053	.0659121	.2114796	189.6936
#3	.0072340	.0049565	94.68888	.1690624	.0662394	.2114771	189.8755
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.156606	54.14758	.1287520	.0040647	2.164604	.2626035	.7317204
Stddev	.011059	.09605	.0001708	.0002510	.027487	.0006473	.0025154
%RSD	.5127907	.1773835	.1326634	6.175387	1.269818	.2465028	.3437700
#1	2.157484	54.08123	.1288799	.0038729	2.193367	.2621535	.7328660
#2	2.167200	54.25772	.1285580	.0043488	2.138602	.2633454	.7288361
#3	2.145135	54.10379	.1288180	.0039724	2.161845	.2623116	.7334591
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.680363	.0223784	.0042158	.0114119	1.655238	5.395245	3.065016
Stddev	.034518	.0032725	.0001303	.0003223	.011961	.073724	.012376
%RSD	.3976506	14.62361	3.091301	2.824377	.7226024	1.366462	.4037719
#1	8.690388	.0246795	.0043635	.0110642	1.655005	5.395151	3.077761
#2	8.641943	.0186321	.0041670	.0117007	1.667314	5.321568	3.053046
#3	8.708759	.0238237	.0041170	.0114708	1.643396	5.469016	3.064240

Sample Name: Q3304-03 Acquired: 10/9/2025 16:06:54 Type: Unk
Method: 6010-200.7 NEW(v276) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.859803	.1028413	.0121981
Stddev	.006956	.0012943	.0003864
%RSD	.3740010	1.258519	3.167833

#1	1.867193	.1024616	.0122197
#2	1.858833	.1017794	.0125733
#3	1.853383	.1042830	.0118014

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7124.806	104112.6	7875.346	5136.742	7575.860
Stddev	3.910	294.8	20.998	16.421	7.408
%RSD	.0548821	.2831640	.2666269	.3196730	.0977907

#1	7124.360	104076.7	7888.189	5122.724	7582.971
#2	7121.137	104423.8	7851.114	5154.808	7568.186
#3	7128.920	103837.4	7886.734	5132.693	7576.424

Sample Name: Q3305-01 Acquired: 10/9/2025 16:10:56 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.1639430	-.033253	.2562755	-.033881	-.013587	106.0869	.2902552
Stddev	.0017040	.006478	.0027632	.001153	.002513	.6550	.0024255
%RSD	1.039368	19.48029	1.078225	3.401981	18.49415	.6173994	.8356394
#1	.1658576	-.025773	.2578450	-.034851	-.011152	106.6500	.2923198
#2	.1633784	-.036951	.2578965	-.034186	-.013436	105.3681	.2875840
#3	.1625930	-.037034	.2530849	-.032607	-.016171	106.2424	.2908619
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0123229	.0070371	38.87593	.3309094	.0429610	.0930681	367.0073
Stddev	.0000580	.0003548	.20620	.0018781	.0002398	.0031567	3.4636
%RSD	.4707254	5.041972	.5304075	.5675609	.5581114	3.391871	.9437404
#1	.0123347	.0066428	39.02233	.3300890	.0428405	.0897545	370.5550
#2	.0122600	.0073306	38.64011	.3330581	.0432371	.0934095	366.8325
#3	.0123742	.0071379	38.96534	.3295809	.0428054	.0960402	363.6345
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.006105	20.08554	.0833866	.0053201	3.702789	.4945227	.4497519
Stddev	.008069	.13692	.0004711	.0013690	.052247	.0023092	.0004500
%RSD	.8020017	.6816802	.5650090	25.73263	1.411005	.4669605	.1000650
#1	1.012017	20.14063	.0834821	.0067945	3.754787	.4934688	.4497727
#2	.996913	19.92966	.0838026	.0050765	3.703284	.4929284	.4501912
#3	1.009386	20.18633	.0828750	.0040892	3.650297	.4971708	.4492918
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.34772	.0608044	.0213284	.0091804	1.466665	3.692715	3.869993
Stddev	.23882	.0211071	.0001071	.0005975	.009554	.028683	.012106
%RSD	.9421731	34.71311	.5023446	6.508895	.6514056	.7767566	.3128121
#1	25.56468	.0708524	.0213545	.0087020	1.475753	3.725516	3.857219
#2	25.38666	.0750103	.0212107	.0089890	1.456705	3.680297	3.871462
#3	25.09183	.0365505	.0214202	.0098502	1.467536	3.672334	3.881297

Sample Name: Q3305-01 Acquired: 10/9/2025 16:10:56 Type: Unk
Method: 6010-200.7 NEW(v276) 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	2.560697	.0861727	-.129201
Stddev	.014383	.0008794	.003014
%RSD	.5616968	1.020550	2.332687

#1	2.544295	.0869164	-.130885
#2	2.566640	.0863997	-.130997
#3	2.571157	.0852020	-.125722

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7437.468	107517.2	8030.177	5346.514	7943.335
Stddev	10.272	390.9	62.152	11.690	14.408
%RSD	.1381131	.3635792	.7739823	.2186448	.1813816

#1	7430.477	107441.2	8062.718	5346.614	7940.391
#2	7432.664	107169.9	8069.301	5334.774	7930.627
#3	7449.262	107940.6	7958.510	5358.153	7958.988

Sample Name: CCV04 Acquired: 10/9/2025 16:26:32 Type: Unk
Method: 6010-200.7 NEW(v276) 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	4.895121	4.863145	4.731023	4.957124	4.957917	9.466135	9.546164
Stddev	.016556	.118257	.014284	.013707	.019957	.029818	.209186
%RSD	.3382222	2.431703	.3019287	.2765180	.4025207	.3150002	2.191313
#1	4.909090	4.743797	4.744337	4.955596	4.972926	9.464288	9.561062
#2	4.899438	4.865358	4.732798	4.971531	4.965556	9.496834	9.747502
#3	4.876833	4.980280	4.715934	4.944244	4.935270	9.437283	9.329926
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2339539	2.360588	23.66206	.9646658	2.370404	1.203333	4.787955
Stddev	.0027729	.008660	.12409	.0018759	.008669	.005041	.020314
%RSD	1.185238	.3668739	.5244181	.1944634	.3657111	.4189573	.4242755
#1	.2348110	2.369076	23.63039	.9625442	2.378223	1.207632	4.764513
#2	.2361972	2.360923	23.79892	.9661050	2.371907	1.204583	4.800385
#3	.2308537	2.351766	23.55688	.9653481	2.361082	1.197784	4.798969
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.347439	23.49261	2.372291	1.199256	24.31068	2.397188	2.369610
Stddev	.010538	.25776	.009626	.000603	.17474	.009564	.004200
%RSD	.4489096	1.097217	.4057712	.0502461	.7187774	.3989849	.1772366
#1	2.343900	23.44334	2.380921	1.199478	24.26050	2.396838	2.371225
#2	2.359291	23.77146	2.374042	1.199717	24.16652	2.406922	2.372762
#3	2.339127	23.26304	2.361909	1.198574	24.50502	2.387803	2.364842
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	23.49235	4.662772	4.906440	4.768311	4.769866	4.803220	4.808300
Stddev	.17705	.047117	.014053	.015028	.012259	.016910	.020136
%RSD	.7536458	1.010494	.2864183	.3151538	.2570176	.3520514	.4187742
#1	23.37746	4.670628	4.916648	4.778769	4.764489	4.785060	4.791278
#2	23.40334	4.705468	4.912260	4.775072	4.783895	4.818513	4.830528
#3	23.69624	4.612221	4.890412	4.751090	4.761214	4.806088	4.803094

Sample Name: CCV04 Acquired: 10/9/2025 16:26:32 Type: Unk
Method: 6010-200.7 NEW(v276) 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	4.754580	4.572982	4.729900
Stddev	.006900	.003613	.053214
%RSD	.1451192	.0790083	1.125058

#1	4.747863	4.577046	4.714220
#2	4.761649	4.571767	4.789193
#3	4.754227	4.570133	4.686288

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6722.812	101692.1	7451.725	5121.371	7770.603
Stddev	21.665	405.0	87.654	13.400	27.294
%RSD	.3222623	.3982903	1.176287	.2616533	.3512511

#1	6710.162	102045.9	7455.035	5124.899	7752.913
#2	6710.445	101250.3	7362.462	5106.559	7756.859
#3	6747.828	101780.0	7537.676	5132.654	7802.038

Sample Name: CCB04 Acquired: 10/9/2025 16:41:37 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.000979	-.001385	-.001008	-.005082	-.002662	.0113119	-.008806
Stddev	.000289	.002459	.000902	.001531	.002353	.0123685	.001006
%RSD	29.56438	177.5658	89.47225	30.12884	88.41407	109.3403	11.42718

#1	-.001301	.001206	.000029	-.004102	-.004837	.0085655	-.007646
#2	-.000743	-.001674	-.001605	-.004297	-.002983	.0005475	-.009339
#3	-.000892	-.003687	-.001448	-.006846	-.000164	.0248228	-.009435

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000249	.0000057	-.015716	.0001756	-.000087	.0004586	.0002834
Stddev	.0000370	.0000243	.004355	.0001172	.000129	.0001883	.0006153
%RSD	148.4195	428.0512	27.71131	66.77019	148.8652	41.04411	217.0731

#1	.0000532	-.000022	-.020337	.0002032	-.000195	.0005650	.0008663
#2	.0000386	.000020	-.015125	.0002765	.000057	.0002413	.0003438
#3	-.000017	.000019	-.011687	.0000470	-.000122	.0005697	-.000360

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001585	-.005081	.0021104	.0008495	-.275054	-.000272	.0016328
Stddev	.0005151	.017273	.0002801	.0002017	.011556	.002008	.0001642
%RSD	324.9431	339.9495	13.27298	23.73819	4.201226	737.0478	10.05316

#1	-.000048	.003039	.0024266	.0010472	-.287659	-.000330	.0017595
#2	-.000221	-.024918	.0018934	.0006441	-.272541	.001764	.0014474
#3	.000745	.006636	.0020112	.0008570	-.264961	-.002251	.0016915

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.123384	-.000658	-.000014	-.000714	-.000716	-.000283	-.001063
Stddev	.057177	.000751	.000119	.000736	.001411	.001635	.000726
%RSD	46.34119	114.1661	846.2609	103.1848	197.0195	577.6816	68.26433

#1	-.188850	.000042	-.000030	-.001489	.000264	-.002150	-.000261
#2	-.083246	-.001451	-.000124	-.000024	-.002334	.000893	-.001675
#3	-.098054	-.000564	.000112	-.000628	-.000079	.000409	-.001252

Sample Name: CCB04 Acquired: 10/9/2025 16:41:37 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.004085	-.005760	.0000697
Stddev	.000359	.000614	.0001170
%RSD	8.782421	10.66277	167.7841

#1	-.003887	-.006172	.0000534
#2	-.003869	-.005054	.0001940
#3	-.004499	-.006053	-.000038

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6681.913	94201.98	6666.067	4747.223	8369.526
Stddev	24.662	192.41	21.323	12.799	36.351
%RSD	.3690911	.2042494	.3198794	.2696166	.4343199

#1	6658.955	94217.44	6641.926	4761.046	8329.902
#2	6678.802	94002.31	6682.333	4744.843	8377.347
#3	6707.984	94386.19	6673.943	4735.781	8401.330

Sample Name: Q3292-01 Acquired: 10/9/2025 16:45:56 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.004093	-.008539	.0051834	-.004052	-.001711	.0994069	-.000261
Stddev	.000689	.001785	.0013042	.003274	.001943	.0061085	.001894
%RSD	16.83506	20.90322	25.16124	80.79890	113.5525	6.144981	726.1316
#1	-.003642	-.006832	.0060885	-.005821	-.001657	.1039051	.000788
#2	-.003750	-.008392	.0057732	-.000274	-.003680	.1018631	-.002447
#3	-.004886	-.010393	.0036885	-.006061	.000204	.0924526	.000876
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000075	.0000183	4.521263	.0011638	.0073210	.0082950	1.407167
Stddev	.000066	.0000625	.017554	.0004260	.0001468	.0000529	.015538
%RSD	88.63530	341.3134	.3882452	36.60090	2.005532	.6374066	1.104228
#1	-.000022	.0000791	4.501542	.0016386	.0071741	.0082396	1.397181
#2	-.000052	-.000046	4.535178	.0010372	.0074677	.0083006	1.399251
#3	-.000149	.000022	4.527069	.0008154	.0073212	.0083449	1.425070
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0179742	1.787321	.0147380	.0003296	14.24073	-.000748	.0596154
Stddev	.0006434	.052044	.0002404	.0007245	.09999	.002266	.0001557
%RSD	3.579833	2.911854	1.631077	219.8265	.7021300	303.1593	.2612133
#1	.0175809	1.728362	.0146939	.0011657	14.26972	-.003362	.0594941
#2	.0187168	1.806723	.0145228	-.000111	14.12945	.000658	.0597910
#3	.0176250	1.826876	.0149975	-.000066	14.32303	.000461	.0595612
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3659535	.0058975	.0004450	-.018152	-.000632	6.403934	.0087514
Stddev	.0371833	.0010388	.0002970	.000390	.000737	.059321	.0018327
%RSD	10.16067	17.61403	66.74816	2.147961	116.5146	.9263269	20.94233
#1	.3233392	.0056197	.0007848	-.018496	-.001139	6.379118	.0077770
#2	.3827202	.0070469	.0002346	-.018233	-.000971	6.361050	.0076116
#3	.3918012	.0050258	.0003156	-.017729	.000213	6.471633	.0108655

Sample Name: Q3292-01 Acquired: 10/9/2025 16:45:56 Type: Unk
Method: 6010-200.7 NEW(v276) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	5.948101	-.013057	.0232727
Stddev	.035119	.001476	.0001834
%RSD	.5904156	11.30513	.7879213

#1	5.981471	-.013724	.0234556
#2	5.951368	-.011365	.0230889
#3	5.911462	-.014082	.0232736

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6800.432	96481.01	7314.930	4773.520	8420.830
Stddev	15.296	252.10	52.942	22.895	21.108
%RSD	.2249205	.2612938	.7237584	.4796292	.2506661

#1	6785.654	96747.55	7356.848	4764.012	8398.546
#2	6799.445	96449.06	7255.435	4756.911	8423.422
#3	6816.197	96246.40	7332.507	4799.637	8440.523

Sample Name: Q3292-02 Acquired: 10/9/2025 16:50:10 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.006000	-.010317	.0001043	.0000197	.0001989	.0889911	-.003458
Stddev	.001464	.002568	.0012145	.0028232	.0015234	.0007631	.000370
%RSD	24.39943	24.89250	1164.358	14317.69	765.8543	.8574448	10.69542
#1	-.005479	-.012107	.0004476	.0019736	.0013548	.0882796	-.003219
#2	-.004869	-.011468	.0011102	-.003217	-.001527	.0897969	-.003271
#3	-.007654	-.007374	-.001245	.001303	.000769	.0888968	-.003884
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000143	.0000369	4.484947	.0007689	.0074939	.0073789	.0979875
Stddev	.000065	.0000330	.010568	.0001081	.0000847	.0001287	.0150406
%RSD	45.88060	89.20635	.2356333	14.06224	1.130346	1.744670	15.34947
#1	-.000069	.0000508	4.491193	.0006711	.0074279	.0072666	.0824713
#2	-.000193	.0000607	4.490903	.0007507	.0074644	.0073506	.1125024
#3	-.000166	-.000001	4.472745	.0008850	.0075894	.0075194	.0989887
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0196616	1.827070	.0089106	.0006131	12.99569	-.000241	.0308899
Stddev	.0007477	.051826	.0002061	.0004814	.12466	.002362	.0001813
%RSD	3.802787	2.836550	2.312564	78.51047	.9592109	980.0635	.5868694
#1	.0204729	1.784695	.0087181	.0003633	13.07770	.001507	.0309596
#2	.0195117	1.884852	.0091279	.0003080	12.85224	.000697	.0306841
#3	.0190002	1.811662	.0088858	.0011680	13.05714	-.002928	.0310260
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2683334	.0062750	.0004858	-.018323	-.001670	5.800792	.0215581
Stddev	.0628703	.0007882	.0004955	.000389	.001382	.035776	.0028681
%RSD	23.42991	12.56027	101.9873	2.123730	82.75851	.6167351	13.30388
#1	.3336262	.0068928	-.000047	-.018106	-.002995	5.807211	.0182943
#2	.2631697	.0053874	.000934	-.018772	-.001778	5.762241	.0236764
#3	.2082042	.0065449	.000571	-.018090	-.000237	5.832923	.0227037

Sample Name: Q3292-02 Acquired: 10/9/2025 16:50:10 Type: Unk
Method: 6010-200.7 NEW(v276) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	6.444187	-.013680	.0242770
Stddev	.013431	.002273	.0002025
%RSD	.2084239	16.61721	.8343453

#1	6.450619	-.014000	.0241768
#2	6.453193	-.015776	.0245102
#3	6.428750	-.011264	.0241442

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6478.518	98185.77	6857.749	4942.081	7960.014
Stddev	3.892	721.38	19.891	47.674	11.810
%RSD	.0600802	.7347058	.2900472	.9646553	.1483676

#1	6474.888	98302.69	6880.003	4926.391	7946.406
#2	6482.628	98841.54	6841.702	4995.623	7966.041
#3	6478.038	97413.08	6851.542	4904.230	7967.595

Sample Name: Q3292-02DUP Acquired: 10/9/2025 16:54:27 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.005432	-.009538	.0000204	-.002417	.0001111	.1042004	-.004754
Stddev	.000212	.003369	.0007079	.002360	.0018945	.0113829	.000183
%RSD	3.901945	35.32387	3475.778	97.64126	1705.078	10.92406	3.844762
#1	-.005677	-.005723	-.000793	.000215	-.001735	.1130058	-.004547
#2	-.005299	-.010788	.000359	-.004344	.002051	.1082488	-.004892
#3	-.005321	-.012104	.000495	-.003123	.000017	.0913467	-.004823
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000220	.0000210	4.512059	.0008194	.0072607	.0071197	.0924072
Stddev	.000070	.0000369	.014089	.0001112	.0001276	.0002944	.0062207
%RSD	31.61230	175.6379	.3122551	13.57133	1.756772	4.135209	6.731881
#1	-.000194	.0000633	4.508422	.0007236	.0073549	.0073922	.0989421
#2	-.000167	-.000005	4.500145	.0007933	.0073115	.0068074	.0917222
#3	-.000299	.000004	4.527610	.0009414	.0071155	.0071596	.0865573
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0192578	1.813409	.0088222	.0001237	13.21755	-.000669	.0306301
Stddev	.0005498	.013731	.0000702	.0003466	.18894	.000864	.0002664
%RSD	2.854854	.7572188	.7958344	280.2352	1.429448	129.1691	.8696837
#1	.0197261	1.816057	.0088333	.0000794	13.28221	-.000639	.0308434
#2	.0186524	1.798546	.0088861	-.000199	13.00477	-.001547	.0303315
#3	.0193948	1.825623	.0087471	.000490	13.36566	.000180	.0307153
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2475775	.0061022	.0005268	-.018893	-.001774	5.760080	.0210844
Stddev	.0297336	.0001419	.0000432	.000360	.000503	.047773	.0006328
%RSD	12.00983	2.325043	8.202270	1.904921	28.33550	.8293775	3.001376
#1	.2752256	.0059683	.0004811	-.018656	-.001211	5.793152	.0203537
#2	.2513823	.0062509	.0005670	-.018715	-.002177	5.705309	.0214515
#3	.2161247	.0060873	.0005323	-.019307	-.001936	5.781778	.0214480

Sample Name: Q3292-02DUP Acquired: 10/9/2025 16:54:27 Type: Unk
Method: 6010-200.7 NEW(v276) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	6.239480	-.015436	.0246438
Stddev	.061078	.002008	.0001849
%RSD	.9789002	13.00604	.7501427

#1	6.171653	-.015198	.0244309
#2	6.256654	-.017552	.0247370
#3	6.290133	-.013558	.0247635

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6635.523	97814.57	6707.393	4993.936	8192.494
Stddev	21.482	66.72	56.378	20.965	20.544
%RSD	.3237493	.0682112	.8405300	.4198127	.2507719

#1	6622.598	97891.59	6752.672	4989.993	8181.320
#2	6623.649	97774.47	6644.247	4975.223	8179.958
#3	6660.321	97777.64	6725.262	5016.593	8216.204

Sample Name: Q3292-02LX5 Acquired: 10/9/2025 16:58:42 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.002625	-.004654	-.000973	-.004542	-.000002	.0403405	-.007964
Stddev	.000808	.001780	.000436	.002540	.001798	.0062775	.000420
%RSD	30.79558	38.24264	44.86586	55.91952	90967.84	15.56117	5.274580
#1	-.001740	-.006296	-.000941	-.002683	-.001257	.0472973	-.007505
#2	-.003324	-.004903	-.001424	-.007436	.002058	.0386251	-.008330
#3	-.002813	-.002763	-.000553	-.003508	-.000807	.0350990	-.008058
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000142	.0000013	.8638834	.0002404	.0013370	.0011633	.0186973
Stddev	.0000073	.0000568	.0113491	.0003208	.0001525	.0005752	.0057332
%RSD	51.24295	4284.237	1.313727	133.4736	11.40562	49.44516	30.66303
#1	.0000208	.0000172	.8611118	.0000570	.0012046	.0005660	.0122814
#2	.0000155	.0000485	.8541769	.0006108	.0013026	.0012104	.0204923
#3	.0000064	-.000062	.8763615	.0000532	.0015037	.0017135	.0233182
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0032907	.3481993	.0014947	.0001090	2.526640	-.000661	.0057981
Stddev	.0002623	.0197970	.0000883	.0002092	.033775	.000455	.0002263
%RSD	7.971932	5.685532	5.908627	191.8572	1.336738	68.84640	3.902818
#1	.0035929	.3464179	.0013948	.0002947	2.514213	-.000348	.0060471
#2	.0031578	.3688268	.0015623	.0001501	2.500839	-.000452	.0056050
#3	.0031214	.3293532	.0015270	-.000118	2.564867	-.001184	.0057421
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.125439	-.001018	.0000742	-.004843	-.001536	1.155977	.0040222
Stddev	.062469	.000287	.0001224	.000600	.002552	.006344	.0008148
%RSD	49.80005	28.17383	165.0494	12.39152	166.1784	.5487703	20.25648
#1	-.192434	-.000691	-.000057	-.005517	.001287	1.148854	.0031368
#2	-.115094	-.001138	.000095	-.004647	-.002213	1.161017	.0047404
#3	-.068789	-.001225	.000185	-.004366	-.003681	1.158061	.0041893

Sample Name: Q3292-02LX5 Acquired: 10/9/2025 16:58:42 Type: Unk
Method: 6010-200.7 NEW(v276) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	1.271711	-.007690	.0048498
Stddev	.008082	.001172	.0000696
%RSD	.6354941	15.23711	1.435525

#1	1.275624	-.007199	.0047895
#2	1.262417	-.009028	.0049260
#3	1.277091	-.006844	.0048339

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6666.758	98216.70	6953.686	5026.292	8267.365
Stddev	14.239	855.44	26.707	42.840	14.380
%RSD	.2135821	.8709745	.3840649	.8523130	.1739364

#1	6655.859	97785.13	6947.439	5002.557	8251.812
#2	6661.547	99201.96	6930.657	5075.746	8270.106
#3	6682.869	97663.02	6982.962	5000.573	8280.177

Sample Name: Q3292-02MS Acquired: 10/9/2025 17:02:59 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.7872385	1.855094	.9131186	1.936443	.8088885	2.066034	.1892761
Stddev	.0040188	.069551	.0011864	.003000	.0020000	.008585	.0016511
%RSD	.5104883	3.749173	.1299261	.1549247	.2472485	.4155228	.8723440

#1	.7893184	1.882501	.9139494	1.939776	.8067165	2.064539	.1886524
#2	.7897911	1.906766	.9117599	1.933959	.8092951	2.075268	.1911482
#3	.7826061	1.776015	.9136465	1.935594	.8106540	2.058295	.1880276

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2038404	.1832207	5.552515	.4111666	.1978793	.3058778	2.992049
Stddev	.0018223	.0006428	.034136	.0020676	.0006360	.0006117	.005827
%RSD	.8939920	.3508431	.6147914	.5028639	.3214157	.1999994	.1947601

#1	.2020088	.1839459	5.514588	.4134076	.1986131	.3054765	2.993237
#2	.2056533	.1829948	5.580775	.4107593	.1975370	.3065819	2.997190
#3	.2038593	.1827212	5.562184	.4093330	.1974877	.3055750	2.985719

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2328465	3.818465	.4811781	.0589199	15.23706	.3012696	.2370897
Stddev	.0022632	.073679	.0004953	.0013572	.13486	.0038697	.0007286
%RSD	.9719683	1.929555	.1029436	2.303515	.8850595	1.284450	.3072943

#1	.2306401	3.800492	.4816533	.0575442	15.39199	.2970226	.2363196
#2	.2351625	3.899469	.4806648	.0589575	15.14599	.3045959	.2377680
#3	.2327367	3.755436	.4812161	.0602579	15.17321	.3021902	.2371816

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.302129	.2916833	.4421615	.6651295	.1973028	6.537763	5.217905
Stddev	.020092	.0018483	.0002414	.0023901	.0022131	.057522	.043508
%RSD	.2159975	.6336779	.0545860	.3593454	1.121669	.8798387	.8338271

#1	9.325328	.2900067	.4423683	.6676868	.1947890	6.603440	5.251524
#2	9.290735	.2936653	.4418963	.6647496	.1989576	6.513504	5.233427
#3	9.290323	.2913778	.4422198	.6629521	.1981618	6.496345	5.168765

Sample Name: Q3292-02MS Acquired: 10/9/2025 17:02:59 Type: Unk
Method: 6010-200.7 NEW(v276) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	6.308579	.1779320	.2115124
Stddev	.046737	.0032631	.0013022
%RSD	.7408435	1.833898	.6156614

#1	6.347595	.1752781	.2103226
#2	6.321361	.1815753	.2129035
#3	6.256781	.1769426	.2113110

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6984.359	101142.8	6890.025	5090.905	8545.058
Stddev	10.315	459.1	52.395	18.477	22.954
%RSD	.1476807	.4538743	.7604505	.3629324	.2686261

#1	6972.553	100650.4	6933.454	5076.493	8518.934
#2	6988.900	101219.0	6831.832	5084.487	8562.000
#3	6991.624	101559.0	6904.788	5111.735	8554.239

Sample Name: Q3292-02MSD Acquired: 10/9/2025 17:06:58 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.7826674	1.867271	.9123747	1.935815	.8032617	2.022232	.1887938
Stddev	.0020268	.071251	.0018915	.007648	.0003848	.009631	.0026557
%RSD	.2589608	3.815769	.2073116	.3950841	.0479009	.4762652	1.406667
#1	.7811424	1.932452	.9145579	1.943216	.8028407	2.028895	.1902056
#2	.7849673	1.878157	.9112288	1.936287	.8035952	2.011190	.1904454
#3	.7818925	1.791204	.9113374	1.927942	.8033491	2.026613	.1857304
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1952007	.1825060	5.540008	.4087601	.1971496	.3031607	3.006657
Stddev	.0017564	.0006541	.022567	.0006981	.0005275	.0006634	.006187
%RSD	.8998099	.3584084	.4073438	.1707786	.2675848	.2188427	.2057756
#1	.1965942	.1829431	5.562716	.4079749	.1976172	.3037260	3.013577
#2	.1957802	.1828209	5.539724	.4089948	.1972540	.3033257	3.001659
#3	.1932278	.1817540	5.517585	.4093106	.1965777	.3024303	3.004734
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2136738	3.795354	.4784236	.0665237	16.04306	.2968572	.2351433
Stddev	.0006476	.026820	.0006461	.0005619	.06384	.0027094	.0008330
%RSD	.3030606	.7066619	.1350481	.8445957	.3979370	.9127064	.3542425
#1	.2139757	3.817795	.4790498	.0662414	15.96936	.2996062	.2350883
#2	.2141152	3.765650	.4784618	.0661591	16.08117	.2967762	.2360024
#3	.2129303	3.802618	.4777593	.0671708	16.07865	.2941891	.2343392
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.452469	.2776559	.4364080	.6593881	.1916898	6.817085	5.171217
Stddev	.020572	.0025286	.0014034	.0022231	.0008783	.049900	.029197
%RSD	.2176397	.9106919	.3215848	.3371481	.4582065	.7319852	.5646153
#1	9.432849	.2802526	.4375709	.6615507	.1911056	6.761533	5.186781
#2	9.473877	.2775137	.4368040	.6595046	.1926999	6.831615	5.189334
#3	9.450681	.2752014	.4348491	.6571090	.1912640	6.858107	5.137535

Sample Name: Q3292-02MSD Acquired: 10/9/2025 17:06:58 Type: Unk
Method: 6010-200.7 NEW(v276) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	6.281667	.1761680	.2105784
Stddev	.042285	.0023216	.0014826
%RSD	.6731427	1.317824	.7040679

#1	6.326598	.1776172	.2116789
#2	6.275751	.1773965	.2111638
#3	6.242652	.1734903	.2088924

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6848.991	99388.89	7015.427	4951.100	8369.546
Stddev	14.025	127.03	37.959	10.293	12.415
%RSD	.2047698	.1278095	.5410774	.2079006	.1483340

#1	6833.980	99471.25	6982.529	4956.205	8360.214
#2	6851.234	99452.83	7006.794	4939.252	8364.787
#3	6861.760	99242.60	7056.959	4957.843	8383.636

Sample Name: Q3292-02A Acquired: 10/9/2025 17:10:56 Type: Unk
Method: 6010-200.7 NEW(v276) 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	1.135341	2.739195	1.333070	2.823852	1.185423	2.939152	.2827603
Stddev	.003066	.081676	.003098	.000741	.003968	.024643	.0011797
%RSD	.2700248	2.981770	.2323673	.0262291	.3347130	.8384392	.4172161
#1	1.136611	2.751763	1.333441	2.824701	1.181219	2.929286	.2814332
#2	1.131845	2.813858	1.335965	2.823518	1.189103	2.920971	.2831578
#3	1.137568	2.651963	1.329803	2.823337	1.185946	2.967200	.2836899
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2854680	.2669600	5.712434	.5766323	.2848804	.4380307	4.324557
Stddev	.0013529	.0005647	.020626	.0013391	.0000985	.0004875	.015504
%RSD	.4739312	.2115317	.3610791	.2322186	.0345810	.1112879	.3585205
#1	.2849426	.2674926	5.688655	.5781308	.2849531	.4383873	4.341734
#2	.2844565	.2670195	5.725492	.5762132	.2849198	.4382295	4.311599
#3	.2870048	.2663679	5.723154	.5755530	.2847683	.4374752	4.320339
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3118506	4.556278	.6917227	.0370883	16.65535	.4385394	.3215064
Stddev	.0018811	.017120	.0008657	.0018234	.04672	.0035651	.0004294
%RSD	.6032076	.3757425	.1251541	4.916491	.2805302	.8129412	.1335612
#1	.3096794	4.560683	.6926722	.0375759	16.65393	.4344228	.3219713
#2	.3129914	4.570765	.6915186	.0350707	16.70277	.4406169	.3214235
#3	.3128811	4.537386	.6909772	.0386184	16.60936	.4405784	.3211246
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.49671	.4100889	.6327892	.9807367	.2878393	6.692210	7.642010
Stddev	.07920	.0017813	.0005940	.0006858	.0017352	.043110	.019717
%RSD	.5868358	.4343724	.0938666	.0699224	.6028402	.6441857	.2580146
#1	13.43645	.4091870	.6325685	.9799882	.2876448	6.707784	7.637941
#2	13.58642	.4089388	.6334620	.9813347	.2896637	6.725369	7.663444
#3	13.46727	.4121407	.6323372	.9808872	.2862096	6.643477	7.624644

Sample Name: Q3292-02A Acquired: 10/9/2025 17:10:56 Type: Unk
Method: 6010-200.7 NEW(v276) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	5.882652	.2675723	.3022841
Stddev	.007047	.0027287	.0016724
%RSD	.1197916	1.019781	.5532651

#1	5.885067	.2654873	.3004016
#2	5.888174	.2706605	.3028520
#3	5.874715	.2665689	.3035985

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6941.446	102918.2	7109.449	5241.618	8411.285
Stddev	8.425	423.9	32.336	10.210	13.149
%RSD	.1213782	.4118636	.4548369	.1947927	.1563310

#1	6939.938	102441.7	7116.870	5230.153	8403.241
#2	6933.876	103059.6	7137.430	5249.731	8404.154
#3	6950.523	103253.3	7074.048	5244.971	8426.459

Sample Name: Q3275-03DL2X10 Acquired: 10/9/2025 17:14:53 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.000726	.0002039	.0024832	-.003008	-.000900	1.062817	.1530377
Stddev	.001823	.0041411	.0010362	.002942	.000761	.013393	.0017159
%RSD	250.8772	2030.853	41.72585	97.82273	84.47441	1.260111	1.121208

#1	-.002008	-.002617	.0036606	-.006224	-.001005	1.052457	.1510670
#2	-.001531	-.001729	.0020787	-.000452	-.001603	1.058055	.1542005
#3	.001360	.004958	.0017103	-.002347	-.000093	1.077940	.1538457

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001633	-.000060	70.99397	.0022584	.0007325	.0064949	10.72247
Stddev	.0000804	.000040	.22029	.0001401	.0001901	.0004148	.10336
%RSD	49.23458	66.40463	.3102969	6.202339	25.95061	6.385927	.9639809

#1	.0001980	-.000083	71.05347	.0021226	.0006248	.0060736	10.80649
#2	.0002206	-.000082	70.75005	.0022501	.0006206	.0069028	10.75387
#3	.0000714	-.000014	71.17841	.0024024	.0009519	.0065082	10.60705

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8465894	13.17964	.0032504	.0002387	2240.427	.0023775	.0253937
Stddev	.0022969	.12222	.0000947	.0001443	33.557	.0045781	.0006314
%RSD	.2713161	.9273393	2.912169	60.46405	1.497815	192.5574	2.486410

#1	.8472394	13.09676	.0033342	.0000781	2279.159	.0012459	.0261216
#2	.8440375	13.12216	.0032694	.0002804	2222.061	-.001529	.0250657
#3	.8484913	13.32001	.0031477	.0003575	2220.061	.007415	.0249938

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	18.04214	.0137613	.0007676	-.003805	.0407185	3.098023	.2006403
Stddev	.77857	.0012213	.0001326	.000905	.0014097	.035010	.0024450
%RSD	4.315287	8.875129	17.27734	23.77543	3.462113	1.130069	1.218615

#1	17.22679	.0149019	.0007843	-.004642	.0423276	3.135983	.2018607
#2	18.12182	.0139093	.0006274	-.003927	.0397007	3.091086	.1978253
#3	18.77780	.0124727	.0008911	-.002845	.0401273	3.067002	.2022348

Sample Name: Q3275-03DL2X10 Acquired: 10/9/2025 17:14:53 Type: Unk
Method: 6010-200.7 NEW(v276) 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	9.379344	.0240935	.4277501
Stddev	.061239	.0062234	.0004938
%RSD	.6529136	25.83018	.1154455

#1	9.326256	.0172732	.4271885
#2	9.365435	.0255433	.4279450
#3	9.446341	.0294641	.4281166

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5511.013	78847.41	6633.884	4195.648	5776.934
Stddev	25.894	443.57	36.947	21.271	26.762
%RSD	.4698613	.5625712	.5569364	.5069805	.4632624

#1	5535.260	78346.37	6648.597	4172.949	5803.595
#2	5514.040	79005.88	6661.206	4198.871	5777.137
#3	5483.738	79189.99	6591.847	4215.123	5750.071

Sample Name: PB170044BS Acquired: 10/9/2025 17:23:33 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.8132784	2.042050	.9716788	2.054536	.8358345	2.030929
Stddev	.0042325	.026273	.0026526	.004889	.0026471	.008645
%RSD	.5204293	1.286598	.2729889	.2379659	.3166986	.4256576
#1	.8127485	2.016269	.9704516	2.059144	.8370370	2.020959
#2	.8177510	2.041092	.9747228	2.055056	.8376670	2.036354
#3	.8093359	2.068789	.9698621	2.049407	.8327997	2.035473
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1862523	.2102147	.1944553	1.180781	.4152683	.1986516
Stddev	.0016518	.0011249	.0002682	.005491	.0012622	.0002421
%RSD	.8868844	.5351091	.1379306	.4649928	.3039563	.1218636
#1	.1872958	.2094506	.1941821	1.181965	.4142084	.1985550
#2	.1871131	.2096871	.1947182	1.174795	.4149318	.1989271
#3	.1843478	.2115064	.1944655	1.185583	.4166647	.1984728
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3155661	3.027087	.2007586	2.038065	.4968134	.0762216
Stddev	.0007002	.006540	.0014466	.023193	.0009352	.0001960
%RSD	.2218796	.2160565	.7205521	1.138000	.1882363	.2571411
#1	.3153991	3.034262	.2022494	2.060070	.4960823	.0761228
#2	.3163347	3.025539	.1993607	2.040281	.4978672	.0760947
#3	.3149646	3.021459	.2006657	2.013843	.4964907	.0764473
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.036090	.2983090	.2163933	10.08774	.3108191	.4238551
Stddev	.025273	.0048256	.0003945	.06669	.0010590	.0005085
%RSD	.8324277	1.617658	.1822974	.6610828	.3407184	.1199673
#1	3.007469	.3009897	.2159801	10.01086	.3096219	.4236146
#2	3.045463	.3011991	.2167659	10.12993	.3116332	.4244392
#3	3.055337	.2927382	.2164340	10.12243	.3112023	.4235114

Sample Name: PB170044BS Acquired: 10/9/2025 17:23:33 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.6960269	.1949033	.8659680	5.767329	F .0082018	.1933106
Stddev	.0003113	.0012403	.0119167	.016161	.0026460	.0027571
%RSD	.0447198	.6363838	1.376109	.2802123	32.26165	1.426229
#1	.6962205	.1962727	.8797197	5.758879	.0051481	.1937339
#2	.6961923	.1945818	.8595102	5.757145	.0096418	.1903664
#3	.6956678	.1938553	.8586740	5.785963	.0098155	.1958316
Elem	Sr4077					
Units	ppm					
Avg	.1901449					
Stddev	.0004206					
%RSD	.2211795					
#1	.1905856					
#2	.1901012					
#3	.1897479					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	6686.168	96363.09	6891.702	4835.289	8139.453	
Stddev	14.914	369.23	49.527	19.863	17.808	
%RSD	.2230510	.3831700	.7186474	.4107853	.2187812	
#1	6679.234	96504.09	6901.078	4828.425	8141.232	
#2	6675.983	96641.04	6935.872	4857.673	8120.822	
#3	6703.286	95944.13	6838.158	4819.769	8156.304	

Sample Name: CCV05 Acquired: 10/9/2025 17:27:34 Type: Unk
Method: 6010-200.7 NEW(v276) 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	4.917438	4.929509	4.799986	4.937623	4.935369	9.589548	9.495063
Stddev	.032410	.203958	.020113	.045459	.031731	.072243	.021218
%RSD	.6590874	4.137494	.4190199	.9206621	.6429288	.7533507	.2234665

#1	4.945449	4.995383	4.805004	4.972830	4.967024	9.551660	9.480910
#2	4.924924	5.092389	4.817114	4.953736	4.935520	9.544130	9.484818
#3	4.881939	4.700755	4.777839	4.886302	4.903563	9.672853	9.519459

Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2494489	2.413572	23.94149	.9822472	2.419315	1.217207	4.662786
Stddev	.0021089	.008732	.05016	.0024555	.007058	.004582	.024193
%RSD	.8454338	.3617671	.2095169	.2499916	.2917348	.3764772	.5188551

#1	.2514927	2.414674	23.98960	.9849056	2.423111	1.219668	4.674197
#2	.2495735	2.421701	23.94537	.9817720	2.423662	1.220032	4.634998
#3	.2472804	2.404342	23.88950	.9800640	2.411171	1.211919	4.679164

Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.363555	23.80203	2.412120	1.212517	23.12327	2.429460	2.422958
Stddev	.006511	.02263	.009504	.000230	.18514	.005896	.011221
%RSD	.2754542	.0950742	.3940058	.0189754	.8006846	.2426991	.4631162

#1	2.371053	23.81240	2.418584	1.212782	22.95983	2.423248	2.434477
#2	2.359333	23.81761	2.416569	1.212405	23.08565	2.434979	2.412061
#3	2.360279	23.77607	2.401208	1.212365	23.32434	2.430153	2.422337

Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	22.88263	4.936565	4.960816	4.853545	4.788166	4.609387	4.764971
Stddev	.21988	.039769	.026253	.032234	.003466	.025607	.032807
%RSD	.9608964	.8056007	.5292067	.6641355	.0723807	.5555355	.6885086

#1	22.71086	4.974673	4.981846	4.863473	4.787968	4.579907	4.755608
#2	22.80658	4.939699	4.969209	4.879647	4.784803	4.626103	4.801442
#3	23.13043	4.895321	4.931392	4.817514	4.791726	4.622151	4.737864

Sample Name: CCV05 Acquired: 10/9/2025 17:27:34 Type: Unk
Method: 6010-200.7 NEW(v276) 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	4.791000	4.590101	4.715382
Stddev	.053756	.011212	.020166
%RSD	1.122030	.2442660	.4276624

#1	4.816061	4.580369	4.714778
#2	4.827650	4.587573	4.695525
#3	4.729289	4.602361	4.735843

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6784.835	101134.4	7074.653	5063.339	7791.754
Stddev	21.217	281.7	52.432	24.878	24.947
%RSD	.3127053	.2785325	.7411257	.4913261	.3201672

#1	6772.675	100863.7	7027.496	5039.527	7788.441
#2	6772.497	101113.6	7065.347	5089.160	7768.630
#3	6809.334	101425.9	7131.114	5061.329	7818.192

Sample Name: CCB05 Acquired: 10/9/2025 17:31:36 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.001887	-.003316	.0001471	-.003775	-.001314	.0048144	-.006596
Stddev	.000928	.001703	.0006826	.001860	.001303	.0149962	.002715
%RSD	49.14858	51.34748	464.1455	49.26206	99.11084	311.4862	41.15797
#1	-.001359	-.002955	-.000539	-.005922	-.002807	.0078127	-.004784
#2	-.002958	-.005170	.000154	-.002646	-.000407	-.011454	-.005287
#3	-.001344	-.001822	.000826	-.002758	-.000729	.018085	-.009717
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000077	.0000103	-.017775	.0001426	-.000059	.0009083	.0039826
Stddev	.0000322	.0000551	.007733	.0002445	.000213	.0002175	.0063213
%RSD	419.2055	537.7605	43.50691	171.4647	362.1772	23.95016	158.7240
#1	.0000367	-.000014	-.013516	.0002479	.000165	.0011393	-.002822
#2	.0000133	.000073	-.026702	-.000137	-.000259	.0007074	.005098
#3	-.000027	-.000028	-.013107	.000317	-.000082	.0008782	.009672
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004811	-.034880	.0000568	.0005733	-.163489	-.001425	.0013493
Stddev	.0005809	.009315	.0002978	.0002455	.009393	.003480	.0002570
%RSD	120.7547	26.70659	523.9333	42.82217	5.745343	244.2208	19.04516
#1	-.000170	-.045284	.0003866	.0003460	-.174258	-.005163	.0014107
#2	.000947	-.032045	-.000193	.0008337	-.159221	-.000830	.0010671
#3	.000666	-.027312	-.000024	.0005401	-.156988	.001719	.0015699
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0513211	.0002177	.0003135	-.002007	.0003392	.0033525	.0009961
Stddev	.0731130	.0005069	.0002325	.000182	.0007868	.0147471	.0021694
%RSD	142.4619	232.8878	74.16528	9.090763	231.9369	439.8853	217.7959
#1	-.031443	.0007207	.0000803	-.002095	.0012148	-.013450	-.001432
#2	.078278	-.000293	.0005453	-.002129	-.000309	.009357	.001677
#3	.107128	.000225	.0003148	-.001798	.000111	.014150	.002744

Sample Name: CCB05 Acquired: 10/9/2025 17:31:36 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.002226	-.005027	.0001051
Stddev	.001488	.001421	.0001121
%RSD	66.83836	28.27164	106.6206

#1	-.003936	-.006617	.0002245
#2	-.001520	-.003879	.0000020
#3	-.001223	-.004585	.0000889

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6474.039	95682.37	7011.381	4906.738	8056.867
Stddev	14.405	201.09	42.674	9.477	14.163
%RSD	.2225117	.2101642	.6086449	.1931455	.1757857

#1	6488.012	95914.19	6980.867	4914.311	8072.539
#2	6474.869	95577.95	7060.146	4909.792	8053.081
#3	6459.237	95554.97	6993.131	4896.110	8044.983

Sample Name: Q3313-01 Acquired: 10/9/2025 17:35:54 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.0567663	-.043983	.2496881	-.020935	-.007644	186.0158
Stddev	.0019221	.003199	.0014126	.001745	.001755	.8038
%RSD	3.385987	7.273934	.5657444	8.336974	22.95669	.4321278

#1	.0548739	-.047289	.2496841	-.020105	-.006788	186.7188
#2	.0567082	-.043757	.2511028	-.019760	-.009662	185.1394
#3	.0587167	-.040902	.2482776	-.022941	-.006481	186.1892

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6149852	.0113477	.0106717	34.10379	.3299087	.1765216
Stddev	.0030837	.0000828	.0002630	.22741	.0015910	.0003117
%RSD	.5014338	.7293782	2.464428	.6668148	.4822452	.1765911

#1	.6144065	.0114424	.0108890	34.22938	.3280716	.1764199
#2	.6122318	.0112888	.0107468	33.84128	.3308126	.1768715
#3	.6183173	.0113120	.0103793	34.24071	.3308418	.1762735

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2891779	338.7248	4.912012	46.83413	.2733355	.0106747
Stddev	.0020576	3.0449	.032045	.31478	.0010472	.0015085
%RSD	.7115425	.8989444	.6523834	.6721112	.3831111	14.13136

#1	.2901025	336.7901	4.918394	47.10562	.2745445	.0099254
#2	.2906111	337.1497	4.877257	46.48909	.2727514	.0096875
#3	.2868202	342.2347	4.940387	46.90768	.2727108	.0124111

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.413213	.8325138	.9002345	9.200410	.0608957	.0023553
Stddev	.034587	.0051343	.0014474	.064697	.0066398	.0002043
%RSD	.6389331	.6167216	.1607841	.7032012	10.90358	8.673894

#1	5.380020	.8361473	.8988626	9.157154	.0542042	.0025908
#2	5.410577	.8266400	.9017472	9.169289	.0610003	.0022254
#3	5.449043	.8347540	.9000936	9.274787	.0674826	.0022498

Sample Name: Q3313-01 Acquired: 10/9/2025 17:35:54 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.0209612	9.973905	F 13.44133	6.283694	1.036621	.1741175
Stddev	.0006946	.068759	.05209	.023782	.009679	.0027071
%RSD	3.313669	.6893891	.3875143	.3784688	.9337074	1.554737

#1	.0216227	9.987900	13.40267	6.298326	1.046204	.1732971
#2	.0202377	9.899226	13.42077	6.296502	1.036810	.1719156
#3	.0210231	10.03459	13.50056	6.256253	1.026849	.1771399

Elem	Sr4077
Units	ppm
Avg	-.192743
Stddev	.002643
%RSD	1.371382

#1	-.190615
#2	-.191913
#3	-.195702

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	8314.009	115905.5	8811.430	6008.634	7863.258
Stddev	8.027	693.2	3.542	12.040	7.312
%RSD	.0965482	.5980668	.0402003	.2003755	.0929910

#1	8322.192	116701.2	8808.381	6022.360	7854.841
#2	8306.147	115582.5	8810.594	5999.858	7866.893
#3	8313.688	115432.7	8815.316	6003.685	7868.041

Sample Name: Q3315-03 Acquired: 10/9/2025 17:39:56 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.0615168	-.023844	.5093149	-.019524	-.008249	133.8834
Stddev	.0013819	.001992	.0010437	.002384	.000520	.9192
%RSD	2.246390	8.354446	.2049215	12.21179	6.304950	.6865394
#1	.0626105	-.023847	.5083348	-.021371	-.007839	132.8231
#2	.0619762	-.021850	.5091975	-.020368	-.008074	134.4554
#3	.0599637	-.025835	.5104123	-.016832	-.008834	134.3716
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5266601	.0087638	.0052560	19.05156	.2097620	.0998525
Stddev	.0024827	.0000494	.0002324	.11320	.0008541	.0002258
%RSD	.4713968	.5633774	4.420966	.5941732	.4071953	.2261818
#1	.5237943	.0087641	.0049941	18.92148	.2105874	.0995926
#2	.5281539	.0088130	.0054376	19.12776	.2088818	.0999640
#3	.5280323	.0087143	.0053362	19.10542	.2098168	.1000010
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2251492	259.2744	4.123124	31.46553	.1972924	.0083879
Stddev	.0006875	.9204	.021469	.20893	.0003647	.0003815
%RSD	.3053445	.3550089	.5207029	.6639853	.1848604	4.547955
#1	.2244745	260.3251	4.107065	31.23474	.1975188	.0086435
#2	.2251245	258.8878	4.147509	31.52012	.1968717	.0085707
#3	.2258488	258.6103	4.114797	31.64175	.1974868	.0079494
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.281994	.3442358	.8051421	7.482836	.1072565	.0043789
Stddev	.038432	.0046454	.0007998	.056990	.0052480	.0004098
%RSD	.8975156	1.349491	.0993299	.7616100	4.892915	9.357472
#1	4.325744	.3389469	.8043102	7.508283	.1122851	.0048217
#2	4.266554	.3476553	.8052108	7.417556	.1018137	.0043017
#3	4.253683	.3461053	.8059053	7.522670	.1076708	.0040132

Sample Name: Q3315-03 Acquired: 10/9/2025 17:39:56 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.0266103	3.726275	F 11.31363	6.405955	1.582598	.1414034
Stddev	.0004295	.024431	.06940	.009343	.006128	.0012245
%RSD	1.614189	.6556342	.6133765	.1458494	.3872131	.8659595
#1	.0267339	3.702070	11.36185	6.410939	1.575574	.1403909
#2	.0261325	3.750925	11.23410	6.411749	1.585363	.1427644
#3	.0269645	3.725830	11.34495	6.395176	1.586855	.1410549
Elem	Sr4077					
Units	ppm					
Avg	-.148354					
Stddev	.001287					
%RSD	.8675681					
#1	-.149840					
#2	-.147588					
#3	-.147633					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	8092.403	108764.6	8794.451	5603.827	8069.192	
Stddev	6.906	525.2	30.802	23.725	5.865	
%RSD	.0853446	.4828837	.3502489	.4233745	.0726885	
#1	8086.096	108227.9	8829.511	5612.910	8062.498	
#2	8099.783	109277.5	8782.109	5621.670	8073.430	
#3	8091.331	108788.4	8771.734	5576.903	8071.647	

Sample Name: Q3315-03DUP Acquired: 10/9/2025 17:43:58 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.0634249	-.020991	.5340032	-.016057	-.008948	141.7111
Stddev	.0017305	.004803	.0015943	.003591	.001359	1.2561
%RSD	2.728476	22.87911	.2985524	22.36506	15.18891	.8863491

#1	.0652990	-.018847	.5351349	-.015143	-.010481	140.9271
#2	.0630885	-.026493	.5346948	-.013011	-.007893	143.1598
#3	.0618874	-.017635	.5321799	-.020017	-.008469	141.0463

Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5347767	.0087935	.0061143	19.70970	.2224499	.1050667
Stddev	.0051092	.0001644	.0002626	.21263	.0015865	.0003867
%RSD	.9553978	1.869193	4.294603	1.078794	.7132177	.3680676

#1	.5324836	.0086076	.0059736	19.59697	.2234188	.1054743
#2	.5406307	.0088534	.0059520	19.95496	.2206190	.1047050
#3	.5312157	.0089196	.0064172	19.57718	.2233121	.1050208

Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2398786	269.3836	4.136828	33.00741	.2068168	.0081181
Stddev	.0023348	2.4275	.044726	.33656	.0007845	.0010326
%RSD	.9733344	.9011469	1.081162	1.019636	.3793239	12.71925

#1	.2375190	271.5211	4.117595	32.82069	.2060153	.0082232
#2	.2399290	269.8853	4.187953	33.39593	.2075831	.0090942
#3	.2421878	266.7444	4.104936	32.80561	.2068521	.0070371

Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.429042	.3586574	.8415657	8.025362	.1292920	.0045641
Stddev	.036099	.0035400	.0035323	.034747	.0079676	.0003748
%RSD	.8150621	.9870059	.4197290	.4329641	6.162486	8.212422

#1	4.441440	.3566313	.8456188	8.057614	.1370355	.0041387
#2	4.457309	.3627450	.8391436	7.988567	.1297226	.0047078
#3	4.388378	.3565959	.8399347	8.029906	.1211178	.0048458

Sample Name: Q3315-03DUP Acquired: 10/9/2025 17:43:58 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.0286961	3.834930	F 12.83314	6.671443	1.667422	.1444101
Stddev	.0006686	.044683	.21354	.033421	.017883	.0012465
%RSD	2.329925	1.165165	1.663955	.5009520	1.072495	.8631724
#1	.0279323	3.810759	12.98069	6.684452	1.665940	.1441484
#2	.0289805	3.886492	12.93045	6.633474	1.650326	.1457667
#3	.0291754	3.807539	12.58828	6.696403	1.686000	.1433153
Elem	Sr4077					
Units	ppm					
Avg	-.155273					
Stddev	.002325					
%RSD	1.497130					
#1	-.157905					
#2	-.154415					
#3	-.153500					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	7732.987	104667.0	8783.855	5248.715	7692.776	
Stddev	6.427	626.8	58.027	8.073	7.464	
%RSD	.0831126	.5988500	.6606040	.1538046	.0970322	
#1	7725.616	104086.1	8850.190	5245.439	7684.256	
#2	7737.418	105331.3	8758.868	5257.911	7698.165	
#3	7735.928	104583.5	8742.509	5242.796	7695.908	

Sample Name: Q3315-03LX5 Acquired: 10/9/2025 17:48:00 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.0115634	-.005612	.1105184	-.009021	-.003699	31.37837	.1162683
Stddev	.0011777	.001321	.0011253	.002227	.001843	.18028	.0017247
%RSD	10.18506	23.53976	1.018200	24.68399	49.83375	.5745310	1.483344
#1	.0116659	-.006986	.1113752	-.008418	-.003739	31.26059	.1155542
#2	.0126866	-.004351	.1109359	-.007158	-.005521	31.28862	.1150154
#3	.0103378	-.005498	.1092440	-.011487	-.001835	31.58591	.1182354
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0022724	.0013511	4.461067	.0506819	.0211755	.0628855	53.61922
Stddev	.0001419	.0000285	.022403	.0002138	.0001261	.0005758	.17121
%RSD	6.246041	2.112978	.5021845	.4217706	.5952503	.9156900	.3193009
#1	.0021105	.0013548	4.452376	.0504952	.0211352	.0624107	53.79684
#2	.0023309	.0013777	4.444313	.0509151	.0213168	.0635260	53.45524
#3	.0023757	.0013209	4.486514	.0506356	.0210746	.0627197	53.60558
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9710011	7.471534	.0421443	.0000181	.6019890	.0800252	.1829423
Stddev	.0056347	.069984	.0001650	.0002945	.0096337	.0011034	.0002667
%RSD	.5802946	.9366695	.3914827	1627.141	1.600304	1.378856	.1457870
#1	.9659933	7.418014	.0423154	-.000093	.6092755	.0787522	.1826658
#2	.9699076	7.445858	.0421311	-.000205	.6056250	.0807094	.1831980
#3	.9771024	7.550729	.0419863	.000352	.5910665	.0806139	.1829631
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.430925	-.009647	.0007986	.0033529	.8911156	3.065361	1.351679
Stddev	.061384	.003212	.0000341	.0004453	.0067900	.045737	.004533
%RSD	4.289793	33.30097	4.265899	13.28089	.7619697	1.492061	.3353467
#1	1.452369	-.006117	.0008364	.0028519	.8838598	3.097356	1.352331
#2	1.361696	-.010425	.0007702	.0037036	.8973163	3.012975	1.346856
#3	1.478710	-.012398	.0007891	.0035032	.8921707	3.085752	1.355851

Sample Name: Q3315-03LX5 Acquired: 10/9/2025 17:48:00 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.3309611	.0251394	-.028043
Stddev	.0015724	.0012020	.000324
%RSD	.4750999	4.781371	1.154969

#1	.3303825	.0250257	-.028416
#2	.3297600	.0263943	-.027882
#3	.3327408	.0239983	-.027831

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6959.655	103884.4	7315.943	5210.572	8084.239
Stddev	2.233	221.4	56.264	6.108	3.752
%RSD	.0320868	.2131255	.7690560	.1172203	.0464119

#1	6957.597	104102.2	7378.830	5212.726	8084.900
#2	6959.338	103659.5	7298.624	5203.679	8080.200
#3	6962.029	103891.4	7270.375	5215.310	8087.616

Sample Name: Q3315-03MS Acquired: 10/9/2025 17:52:06 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.7852192	1.868072	2.157907	1.695317	.3605756	151.7706
Stddev	.0026280	.019867	.004948	.002435	.0013092	.2863
%RSD	.3346801	1.063522	.2292870	.1436506	.3630895	.1886591
#1	.7821927	1.880375	2.155143	1.692704	.3593276	152.0995
#2	.7869230	1.845152	2.163619	1.697524	.3619384	151.5769
#3	.7865418	1.878689	2.154959	1.695723	.3604608	151.6354
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7654114	.1858834	.2046770	20.85784	2.127212	.3283422
Stddev	.0062889	.0003643	.0002594	.09486	.012697	.0003677
%RSD	.8216357	.1959633	.1267433	.4548085	.5968871	.1119948
#1	.7719891	.1862225	.2044468	20.96506	2.112638	.3279247
#2	.7594578	.1854983	.2049581	20.78480	2.135880	.3286180
#3	.7647871	.1859293	.2046261	20.82368	2.133119	.3284839
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5276223	257.8504	5.117601	34.07101	1.756581	.0767292
Stddev	.0005083	.1197	.034423	.08145	.002879	.0008465
%RSD	.0963335	.0464406	.6726395	.2390577	.1639177	1.103207
#1	.5271792	257.7605	5.149410	34.13503	1.754083	.0757731
#2	.5281772	257.8044	5.081054	33.97933	1.759730	.0770315
#3	.5275106	257.9863	5.122338	34.09866	1.755930	.0773830
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.117974	.6058487	1.052941	16.36062	.2748536	.3817982
Stddev	.036884	.0029826	.002210	.07865	.0036755	.0008624
%RSD	.5181781	.4922958	.2099110	.4807491	1.337256	.2258779
#1	7.160524	.6052806	1.051256	16.40471	.2706376	.3815482
#2	7.095105	.6031910	1.055443	16.40733	.2773838	.3810884
#3	7.098294	.6090744	1.052123	16.26981	.2765393	.3827580

Sample Name: Q3315-03MS Acquired: 10/9/2025 17:52:06 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.6727202	3.209168	F 13.12465	F 12.44413	1.515923	.3388509
Stddev	.0020847	.029421	.26131	.02419	.003304	.0028105
%RSD	.3098899	.9167825	1.990974	.1943497	.2179770	.8294284
#1	.6704371	3.238740	13.29065	12.42370	1.512326	.3408615
#2	.6745225	3.179901	13.25987	12.47084	1.518823	.3356395
#3	.6732010	3.208863	12.82345	12.43786	1.516620	.3400519
Elem	Sr4077					
Units	ppm					
Avg	.0427195					
Stddev	.0028206					
%RSD	6.602520					
#1	.0454642					
#2	.0398287					
#3	.0428657					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	7518.525	108423.1	8200.025	5512.681	7518.631	
Stddev	13.323	637.6	20.623	18.592	14.556	
%RSD	.1772015	.5880454	.2515052	.3372561	.1936012	
#1	7529.665	109159.1	8201.638	5532.635	7535.352	
#2	7522.145	108041.2	8219.795	5495.847	7511.748	
#3	7503.767	108069.0	8178.643	5509.560	7508.793	

Sample Name: Q3315-03MSD Acquired: 10/9/2025 17:56:01 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.7693807	1.880521	2.015067	1.670527	.3511330	145.4062
Stddev	.0015522	.051033	.000371	.006195	.0011400	6.1561
%RSD	.2017436	2.713747	.0184230	.3708285	.3246519	4.233754
#1	.7693281	1.914836	2.015086	1.677357	.3515017	138.3587
#2	.7678554	1.821876	2.015428	1.668953	.3520431	148.1257
#3	.7709584	1.904849	2.014686	1.665271	.3498544	149.7343
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7403665	.1851280	.2024037	20.01663	1.827082	.3207784
Stddev	.0350727	.0042882	.0005983	.85856	.006095	.0004351
%RSD	4.737212	2.316324	.2956155	4.289236	.3335706	.1356313
#1	.7003609	.1801874	.2030585	19.03426	1.832414	.3212538
#2	.7549140	.1878826	.2022672	20.39232	1.828394	.3206812
#3	.7658246	.1873140	.2018854	20.62330	1.820439	.3204000
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5179477	248.1664	4.866163	32.72445	1.547619	.0740186
Stddev	.0036996	4.9634	.217122	1.45121	.002451	.0019632
%RSD	.7142855	2.000033	4.461876	4.434620	.1583573	2.652295
#1	.5217464	242.6175	4.617749	31.05060	1.549066	.0718668
#2	.5177409	249.6988	4.961047	33.49313	1.549002	.0744768
#3	.5143558	252.1829	5.019693	33.62962	1.544790	.0757122
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.836808	.5847506	1.036814	15.76909	.2532074	.3754309
Stddev	.149006	.0227110	.003201	.31520	.0064241	.0006953
%RSD	2.179472	3.883873	.3087751	1.998841	2.537102	.1851897
#1	6.672890	.5587419	1.040161	15.42616	.2547758	.3760210
#2	6.873482	.5948479	1.036501	15.83494	.2461443	.3746644
#3	6.964054	.6006619	1.033781	16.04616	.2587021	.3756072

Sample Name: Q3315-03MSD Acquired: 10/9/2025 17:56:01 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.6679875	3.126251	F 13.34957	F 12.34490	1.495136	.3268905
Stddev	.0009878	.134663	.21700	.06614	.006623	.0156105
%RSD	.1478709	4.307481	1.625531	.5357489	.4429461	4.775436
#1	.6670186	2.975096	13.10168	12.40901	1.502389	.3092987
#2	.6689931	3.170239	13.44184	12.27690	1.493609	.3322832
#3	.6679507	3.233420	13.50519	12.34880	1.489411	.3390897
Elem	Sr4077					
Units	ppm					
Avg	.0433154					
Stddev	.0072835					
%RSD	16.81500					
#1	.0349535					
#2	.0467170					
#3	.0482758					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	7552.082	108072.7	8150.301	5542.449	7539.527	
Stddev	7.948	347.1	171.131	47.348	9.008	
%RSD	.1052433	.3211590	2.099694	.8542754	.1194832	
#1	7547.184	107674.4	8347.895	5487.918	7530.413	
#2	7547.810	108233.7	8049.641	5573.115	7539.743	
#3	7561.252	108310.1	8053.367	5566.315	7548.426	

Sample Name: Q3315-03A Acquired: 10/9/2025 17:59:56 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.6866341	1.705019	1.347519	1.544840	.6442329	132.3415
Stddev	.0025142	.070880	.003432	.002791	.0027573	.4841
%RSD	.3661670	4.157152	.2547251	.1806752	.4279904	.3657614
#1	.6852479	1.693170	1.350787	1.541796	.6432964	131.8006
#2	.6895363	1.781078	1.343943	1.547279	.6473365	132.7340
#3	.6851180	1.640811	1.347826	1.545444	.6420660	132.4899
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6661714	.1728678	.1812416	19.48017	.5214938	.2750623
Stddev	.0013475	.0006171	.0001277	.01438	.0019014	.0002564
%RSD	.2022695	.3569541	.0704774	.0738364	.3645985	.0932169
#1	.6649508	.1727078	.1811216	19.49498	.5224315	.2748871
#2	.6659459	.1723465	.1812272	19.46626	.5193057	.2749432
#3	.6676173	.1735491	.1813759	19.47925	.5227441	.2753566
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4575258	237.7911	4.178896	32.28704	.6313231	.0667645
Stddev	.0016234	.9642	.003273	.11711	.0004668	.0008586
%RSD	.3548165	.4054641	.0783334	.3627042	.0739352	1.286030
#1	.4557306	238.2930	4.178834	32.15223	.6309125	.0670238
#2	.4579563	238.4008	4.182200	32.34534	.6312260	.0674635
#3	.4588906	236.6796	4.175654	32.36356	.6318308	.0658061
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.001136	.5684092	.9403864	14.91395	.2422700	.3363594
Stddev	.036710	.0045877	.0036063	.09225	.0045557	.0006150
%RSD	.6117191	.8071148	.3834871	.6185741	1.880411	.1828495
#1	6.011665	.5642547	.9408857	14.92478	.2453978	.3358904
#2	6.031431	.5733329	.9365565	15.00031	.2443691	.3370557
#3	5.960312	.5676401	.9437170	14.81676	.2370433	.3361320

Sample Name: Q3315-03A Acquired: 10/9/2025 17:59:56 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.6609834	3.877226	F 14.15889	F 11.21210	1.540806	.2908719
Stddev	.0013282	.016043	.03419	.09350	.016580	.0004760
%RSD	.2009466	.4137714	.2414636	.8339161	1.076069	.1636565
#1	.6605271	3.879101	14.17545	11.26679	1.529543	.2913612
#2	.6624796	3.892249	14.11958	11.26537	1.559845	.2904104
#3	.6599435	3.860328	14.18165	11.10414	1.533030	.2908440
Elem	Sr4077					
Units	ppm					
Avg	.0216033					
Stddev	.0011648					
%RSD	5.391937					
#1	.0207819					
#2	.0210916					
#3	.0229364					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	8104.322	112576.7	8397.021	5758.565	8115.566	
Stddev	15.767	128.0	25.703	27.757	19.258	
%RSD	.1945543	.1136987	.3060956	.4820061	.2372911	
#1	8107.097	112544.5	8418.978	5748.663	8108.316	
#2	8087.352	112467.9	8403.336	5789.915	8100.985	
#3	8118.518	112717.8	8368.749	5737.117	8137.396	

Sample Name: Q3318-01 Acquired: 10/9/2025 18:03:50 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.0822143	-.024281	.7830324	-.032133	-.009391	117.8330
Stddev	.0014384	.003302	.0028987	.002307	.001826	1.1372
%RSD	1.749527	13.59942	.3701957	7.180243	19.43779	.9651010
#1	.0838045	-.027191	.7801824	-.029498	-.007367	119.1276
#2	.0818341	-.020692	.7829374	-.033791	-.010912	117.3761
#3	.0810041	-.024961	.7859776	-.033110	-.009896	116.9953
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7067263	.0103321	.0145765	349.8342	.2353037	.1342001
Stddev	.0094327	.0000773	.0001709	3.3991	.0004607	.0001492
%RSD	1.334703	.7481675	1.172680	.9716258	.1958039	.1111752
#1	.7171497	.0103944	.0146268	353.7469	.2356948	.1341877
#2	.6987778	.0102456	.0143860	348.1463	.2354205	.1340576
#3	.7042515	.0103562	.0147166	347.6095	.2347958	.1343552
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3459672	250.6303	4.469374	157.7243	.2560658	-.004386
Stddev	.0009256	.9839	.058659	1.5340	.0001295	.000664
%RSD	.2675253	.3925854	1.312475	.9725587	.0505796	15.14795
#1	.3457934	251.7377	4.536699	159.4913	.2559355	-.003621
#2	.3451409	250.2965	4.429274	156.9470	.2560675	-.004815
#3	.3469673	249.8567	4.442150	156.7347	.2561946	-.004723
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.059157	.4043845	.9907268	13.09809	-.075246	.0050573
Stddev	.019057	.0049682	.0050855	.04024	.008048	.0004619
%RSD	.9254769	1.228584	.5133142	.3071940	10.69613	9.132635
#1	2.081157	.4101183	.9928980	13.09902	-.084513	.0053603
#2	2.048553	.4013580	.9943664	13.05739	-.071218	.0052859
#3	2.047760	.4016771	.9849161	13.13785	-.070007	.0045257

Sample Name: Q3318-01 Acquired: 10/9/2025 18:03:50 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.1422866	5.068613	F 10.43699	7.839663	F 14.01845	.1299741
Stddev	.0011432	.069798	.13338	.043753	.11532	.0018479
%RSD	.8034533	1.377058	1.277962	.5580959	.8226027	1.421765
#1	.1429592	5.148847	10.49852	7.888359	14.10710	.1320637
#2	.1429341	5.035102	10.52849	7.803659	13.88808	.1285551
#3	.1409667	5.021891	10.28395	7.826972	14.06018	.1293034
Elem	Sr4077					
Units	ppm					
Avg	.4129100					
Stddev	.0077429					
%RSD	1.875192					
#1	.4215652					
#2	.4066414					
#3	.4105235					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	7593.777	113190.8	8205.467	5577.968	7018.974	
Stddev	2.231	164.2	83.294	10.705	3.606	
%RSD	.0293763	.1450282	1.015107	.1919169	.0513819	
#1	7592.692	113006.0	8109.354	5587.450	7018.622	
#2	7596.343	113246.7	8256.612	5566.359	7022.743	
#3	7592.297	113319.6	8250.436	5580.095	7015.556	

Sample Name: Q3319-01 Acquired: 10/9/2025 18:07:53 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.0379227	-.036387	.2806989	-.030689	-.008355	130.5575
Stddev	.0006676	.007879	.0022519	.000615	.000816	.3660
%RSD	1.760307	21.65308	.8022425	2.002920	9.767457	.2802995
#1	.0376304	-.037464	.2796642	-.031352	-.007941	130.9750
#2	.0374511	-.043672	.2791504	-.030578	-.009295	130.4049
#3	.0386865	-.028025	.2832822	-.030138	-.007829	130.2925
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5496764	.0091115	.0126866	45.59969	.2676382	.1747902
Stddev	.0041192	.0000659	.0001198	.11108	.0006586	.0011015
%RSD	.7493889	.7229795	.9439187	.2436081	.2460761	.6301961
#1	.5544150	.0090863	.0125547	45.72762	.2680290	.1742281
#2	.5476635	.0091863	.0127168	45.54385	.2680078	.1740831
#3	.5469506	.0090620	.0127884	45.52761	.2668778	.1760594
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5410952	284.6726	3.682356	57.59746	.2896544	.0027422
Stddev	.0025146	.8858	.018886	.08979	.0013758	.0004059
%RSD	.4647289	.3111532	.5128674	.1558916	.4749625	14.80071
#1	.5385810	285.6235	3.703362	57.56917	.2889598	.0027185
#2	.5410943	283.8709	3.676926	57.69799	.2887644	.0023488
#3	.5436103	284.5235	3.666780	57.52522	.2912390	.0031595
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.104351	.5564780	.5800252	21.99487	.0397464	.0422689
Stddev	.064562	.0023461	.0007258	.07980	.0057339	.0001234
%RSD	.7091330	.4215983	.1251296	.3628061	14.42615	.2920451
#1	9.178442	.5542820	.5791884	22.05403	.0458546	.0422006
#2	9.060151	.5589498	.5804836	21.90411	.0344799	.0424114
#3	9.074461	.5562021	.5804037	22.02647	.0389046	.0421947

Sample Name: Q3319-01 Acquired: 10/9/2025 18:07:53 Type: Unk
Method: 6010-200.7 NEW(v276) 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	.0238617	8.490060	F 11.43799	F 11.02838	F 11.14400	.1576893
Stddev	.0007966	.034970	.03188	.03081	.01208	.0008413
%RSD	3.338621	.4118882	.2787157	.2793785	.1083825	.5335098
#1	.0247560	8.527899	11.41986	11.01487	11.13630	.1582558
#2	.0232279	8.483349	11.41931	11.00663	11.15792	.1580896
#3	.0236013	8.458933	11.47480	11.06364	11.13778	.1567226
Elem	Sr4077					
Units	ppm					
Avg	-.157073					
Stddev	.000487					
%RSD	.3097469					
#1	-.156999					
#2	-.156628					
#3	-.157593					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	8503.895	124653.8	9386.768	6213.458	7623.887	
Stddev	17.814	272.4	40.622	20.145	33.295	
%RSD	.2094785	.2185086	.4327622	.3242118	.4367142	
#1	8515.218	124716.7	9380.388	6210.705	7632.350	
#2	8513.104	124355.4	9349.713	6194.832	7652.134	
#3	8483.361	124889.2	9430.202	6234.838	7587.178	

Sample Name: PB170009BL Acquired: 10/9/2025 18:11:54 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.002945	-.006265	-.001113	-.006371	-.002630	.0096979	-.005645
Stddev	.001512	.001195	.000797	.001499	.000811	.0122621	.001127
%RSD	51.35556	19.07942	71.60954	23.53216	30.83942	126.4407	19.96677
#1	-.002472	-.007215	-.000227	-.007388	-.001756	-.004166	-.004749
#2	-.004637	-.006658	-.001771	-.004649	-.002776	.019119	-.005275
#3	-.001725	-.004923	-.001342	-.007074	-.003359	.014141	-.006910
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000577	.0000171	-.007786	.0002179	-.000175	-.000393	.0094920
Stddev	.0000578	.0000293	.010957	.0003039	.000074	.000369	.0041631
%RSD	100.1509	172.1193	140.7199	139.4412	42.32496	94.00518	43.85885
#1	.0001228	.0000455	-.015200	-.000132	-.000102	-.000806	.0139209
#2	.0000379	-.000013	-.012959	.000410	-.000250	-.000094	.0056589
#3	.0000124	.000019	.004799	.000376	-.000173	-.000278	.0088963
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004896	.0064683	.0002732	.0000255	-.279668	-.000043	.0000754
Stddev	.0002318	.0078131	.0002256	.0003887	.018865	.002469	.0001668
%RSD	47.34070	120.7904	82.58636	1524.912	6.745533	5749.427	221.1083
#1	.0004624	.0004826	.0003620	-.000358	-.294260	-.002009	-.000045
#2	.0002726	.0036154	.0000167	.000015	-.286379	.002728	.000005
#3	.0007337	.0153069	.0004408	.000419	-.258365	-.000848	.000266
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.278835	-.003922	-.000133	-.003292	.0004985	.0063626	.0013403
Stddev	.065064	.000564	.000130	.000320	.0004556	.0074914	.0018776
%RSD	23.33428	14.38989	98.26579	9.706258	91.39036	117.7414	140.0835
#1	-.352085	-.004063	-.000150	-.003631	.0010139	.0063987	.0005372
#2	-.256676	-.004404	.000006	-.003249	.0003323	.0138359	-.000002
#3	-.227745	-.003301	-.000253	-.002997	.0001494	-.001147	.003486

Sample Name: PB170009BL Acquired: 10/9/2025 18:11:54 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.002948	-.008355	-.000086
Stddev	.001367	.001733	.000059
%RSD	46.35819	20.73819	68.72526

#1	-.003421	-.010303	-.000041
#2	-.001407	-.006986	-.000064
#3	-.004014	-.007777	-.000153

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7067.313	101424.9	7692.919	5197.162	8873.900
Stddev	19.444	174.5	22.327	34.415	18.369
%RSD	.2751280	.1720478	.2902237	.6621884	.2069979

#1	7057.035	101534.0	7694.753	5191.734	8868.451
#2	7055.164	101223.6	7714.272	5165.784	8858.873
#3	7089.739	101517.1	7669.732	5233.969	8894.378

Sample Name: CCV06 Acquired: 10/9/2025 18:16:12 Type: Unk
Method: 6010-200.7 NEW(v276) 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	4.719608	4.744178	4.664296	4.734202	4.809870	9.378881	9.545540
Stddev	.019816	.172892	.003505	.023736	.009707	.014295	.026126
%RSD	.4198611	3.644306	.0751442	.5013666	.2018199	.1524153	.2736937
#1	4.696727	4.581860	4.662221	4.707074	4.803714	9.381894	9.520108
#2	4.731174	4.724681	4.662325	4.744378	4.804837	9.363319	9.544203
#3	4.730922	4.925992	4.668343	4.751152	4.821060	9.391429	9.572308
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2351357	2.331071	23.51791	.9549249	2.349777	1.182229	4.910229
Stddev	.0013786	.000365	.05529	.0023709	.001247	.000493	.032416
%RSD	.5862983	.0156457	.2350937	.2482773	.0530552	.0416919	.6601793
#1	.2364329	2.331187	23.47386	.9521894	2.351212	1.182558	4.876995
#2	.2336881	2.330663	23.49992	.9562001	2.349152	1.182467	4.911929
#3	.2352862	2.331364	23.57996	.9563853	2.348966	1.181662	4.941761
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.357253	23.28722	2.341759	1.209442	26.57434	2.371175	2.437614
Stddev	.004371	.07007	.002063	.003491	.19561	.014648	.003553
%RSD	.1854272	.3008987	.0880822	.2886640	.7360721	.6177352	.1457758
#1	2.356909	23.24067	2.341660	1.206574	26.34996	2.355836	2.434430
#2	2.353064	23.25319	2.339748	1.208421	26.70895	2.372672	2.441447
#3	2.361786	23.36781	2.343870	1.213329	26.66410	2.385017	2.436965
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	23.80433	4.705907	4.829236	4.700415	4.718867	4.854763	4.707127
Stddev	.27113	.031998	.010915	.014802	.010752	.043374	.029858
%RSD	1.139001	.6799485	.2260270	.3148986	.2278578	.8934393	.6343176
#1	23.49230	4.733306	4.816917	4.684752	4.706854	4.814205	4.673032
#2	23.98246	4.670741	4.837702	4.702323	4.722158	4.849593	4.719741
#3	23.93824	4.713676	4.833089	4.714170	4.727589	4.900491	4.728607

Sample Name: CCV06 Acquired: 10/9/2025 18:16:12 Type: Unk
Method: 6010-200.7 NEW(v276) 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	4.610526	4.562437	4.753113
Stddev	.037067	.008215	.012506
%RSD	.8039673	.1800496	.2631061

#1	4.570519	4.553130	4.755001
#2	4.617355	4.565501	4.739770
#3	4.643704	4.568679	4.764567

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6980.019	99081.59	7409.190	5089.413	8016.235
Stddev	2.965	337.38	30.153	26.051	5.389
%RSD	.0424774	.3405121	.4069721	.5118677	.0672224

#1	6983.345	99448.20	7374.849	5104.567	8016.191
#2	6979.061	98784.15	7431.334	5059.332	8021.646
#3	6977.652	99012.43	7421.388	5104.339	8010.869

Sample Name: CCB06 Acquired: 10/9/2025 18:20:14 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.001734	-.005251	-.000629	-.005690	-.002140	.0359130	-.006081
Stddev	.000804	.000925	.000727	.002146	.000480	.0043880	.000981
%RSD	46.35684	17.60742	115.5788	37.72598	22.41795	12.21837	16.13575
#1	-.001105	-.005918	-.001419	-.003799	-.001628	.0351331	-.007199
#2	-.001458	-.004196	.000014	-.008023	-.002214	.0319672	-.005362
#3	-.002640	-.005639	-.000483	-.005247	-.002579	.0406386	-.005682
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000484	-.000024	-.015254	-.000023	-.000114	.0000499	.0069165
Stddev	.0000986	.000023	.014154	.000395	.000136	.0003350	.0105718
%RSD	203.7463	93.84708	92.78968	1718.850	119.8919	671.0153	152.8475
#1	-.000055	-.000027	-.031248	-.000478	-.000107	.0002552	.0126277
#2	.000059	-.000000	-.010165	.000176	.000019	.0002313	.0134043
#3	.000141	-.000045	-.004348	.000233	-.000253	-.000337	-.005282
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001740	-.000354	.0003403	.0003886	-.291939	.0000711	.0022532
Stddev	.0003378	.005758	.0001173	.0004281	.008813	.0024261	.0001192
%RSD	194.0595	1624.561	34.47820	110.1608	3.018868	3409.851	5.290379
#1	-.000187	.000438	.0004642	.0006837	-.289330	.0024225	.0022102
#2	.000483	.004967	.0002309	-.000102	-.301762	-.002423	.0021615
#3	.000226	-.006468	.0003257	.000585	-.284724	.000214	.0023880
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.241622	.0006513	.0002623	-.001442	-.001605	.0120819	.0002669
Stddev	.008903	.0002657	.0000427	.000438	.000482	.0096557	.0001504
%RSD	3.684801	40.78938	16.28698	30.38051	30.05289	79.91868	56.33354
#1	-.232543	.0008534	.0003022	-.001255	-.001788	.0232028	.0004402
#2	-.250339	.0007501	.0002172	-.001128	-.001058	.0058323	.0001707
#3	-.241984	.0003504	.0002674	-.001942	-.001969	.0072104	.0001899

Sample Name: CCB06 Acquired: 10/9/2025 18:20:14 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.002884	-.007426	-.000040
Stddev	.001814	.002057	.000069
%RSD	62.87069	27.70292	174.8922

#1	-.002373	-.008693	.000040
#2	-.004899	-.005052	-.000084
#3	-.001382	-.008532	-.000075

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6658.189	96973.95	6801.058	4914.252	8363.020
Stddev	14.802	298.33	69.593	28.352	26.686
%RSD	.2223134	.3076366	1.023273	.5769313	.3190940

#1	6653.917	97311.38	6770.198	4932.584	8369.412
#2	6645.992	96745.18	6752.231	4928.577	8333.719
#3	6674.657	96865.28	6880.745	4881.596	8385.930

Sample Name: PB170044BL Acquired: 10/9/2025 18:24:32 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.002920	-.005752	-.001105	-.002254	-.001218	-.001252	-.004815
Stddev	.001882	.003853	.000372	.002673	.001516	.008512	.001066
%RSD	64.44519	66.98751	33.69540	118.6199	124.4102	679.8755	22.14501
#1	-.004878	-.004509	-.000832	.000025	.000424	-.008982	-.003584
#2	-.001125	-.010074	-.000953	-.001590	-.001515	-.002643	-.005467
#3	-.002756	-.002674	-.001529	-.005196	-.002564	.007870	-.005392
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.000073	-.000004	-.021588	.0003434	-.000411	-.000314	.0000578
Stddev	.000051	.000026	.006590	.0001588	.000125	.000223	.0120482
%RSD	69.57236	727.8260	30.52662	46.22844	30.40446	71.11755	20863.57
#1	-.000058	-.000034	-.029167	.0003491	-.000279	-.000070	-.001799
#2	-.000031	.000015	-.018389	.0001819	-.000428	-.000363	.012926
#3	-.000130	.000008	-.017208	.0004993	-.000527	-.000509	-.010954
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001667	-.036622	.0002724	.0001214	-.622049	-.003354	-.000081
Stddev	.0005384	.008792	.0001939	.0001760	.012292	.004131	.000110
%RSD	322.9120	24.00688	71.16841	145.0070	1.976062	123.1538	135.5925
#1	-.000332	-.031447	.0004716	.0003061	-.621625	.001230	-.000099
#2	.000737	-.046773	.0000843	.0001024	-.634547	-.004504	-.000181
#3	.000095	-.031646	.0002614	-.000044	-.609974	-.006789	.000037
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.776735	-.002556	.0003653	-.019995	-.001823	-.002473	.0013537
Stddev	.029527	.000367	.0000977	.000115	.000675	.004632	.0004802
%RSD	3.801383	14.36216	26.74742	.5733473	37.04145	187.3259	35.47293
#1	-.746600	-.002420	.0004694	-.020072	-.001687	-.007360	.0011971
#2	-.777991	-.002972	.0003509	-.020051	-.001226	.001853	.0009713
#3	-.805613	-.002276	.0002756	-.019864	-.002556	-.001911	.0018926

Sample Name: PB170044BL Acquired: 10/9/2025 18:24:32 Type: Unk
Method: 6010-200.7 NEW(v276) 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	-.007485	-.013528	-.000034
Stddev	.000448	.000907	.000119
%RSD	5.986348	6.704010	355.3293

#1	-.007910	-.014572	-.000147
#2	-.007529	-.012935	-.000045
#3	-.007017	-.013076	.000091

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	7045.170	100552.6	7144.639	4968.205	8915.598
Stddev	8.935	26.0	17.547	19.653	4.933
%RSD	.1268289	.0258372	.2455995	.3955782	.0553349

#1	7037.172	100561.3	7135.229	4975.147	8910.043
#2	7043.524	100573.1	7133.805	4946.024	8917.282
#3	7054.814	100523.4	7164.885	4983.446	8919.469

Sample Name: CCV07 Acquired: 10/9/2025 18:28:51 Type: Unk
Method: 6010-200.7 NEW(v276) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV07 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.805484	4.689124	4.741552	4.810152	4.868459	9.449134
Stddev	.019885	.145913	.008482	.032496	.017400	.062889
%RSD	.4137977	3.111736	.1788925	.6755782	.3573953	.6655561
#1	4.815810	4.804448	4.746643	4.835043	4.877525	9.433631
#2	4.818083	4.737839	4.746253	4.822024	4.879453	9.395445
#3	4.782561	4.525086	4.731760	4.773389	4.848398	9.518324
Elem	Ba4934	Be2348	Cd2265	Ca3736	Cr2677	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.331196	.2327926	2.374220	23.46693	.9818565	2.381838
Stddev	.173806	.0033688	.007407	.09488	.0053821	.007414
%RSD	1.862630	1.447141	.3119904	.4043148	.5481522	.3112596
#1	9.325036	.2293593	2.379809	23.43474	.9842088	2.386491
#2	9.160552	.2329255	2.377033	23.39232	.9856620	2.385734
#3	9.507999	.2360930	2.365818	23.57371	.9756987	2.373289
Elem	Cu2247	Fe2404	Mn2576	Mg2790	Ni2316	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.198901	5.090531	2.305765	23.42497	2.371592	1.249386
Stddev	.002569	.088859	.009421	.11100	.005711	.003743
%RSD	.2143157	1.745573	.4085874	.4738514	.2408230	.2995965
#1	1.200233	5.185710	2.297683	23.34168	2.376055	1.250555
#2	1.200531	5.076135	2.303501	23.38225	2.373567	1.252405
#3	1.195939	5.009750	2.316112	23.55099	2.365156	1.245198
Elem	Na5895	V_2924	Zn2138	K_7664	B_2496	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.33663	2.375772	2.509437	24.87847	4.646789	4.907047
Stddev	.31038	.003509	.008933	.26450	.080525	.021330
%RSD	1.178501	.1477068	.3559782	1.063158	1.732908	.4346742
#1	26.67592	2.379819	2.519675	25.14988	4.562672	4.918438
#2	26.26695	2.373571	2.505402	24.86405	4.654534	4.920263
#3	26.06701	2.373926	2.503233	24.62148	4.723162	4.882440

Sample Name: CCV07 Acquired: 10/9/2025 18:28:51 Type: Unk
Method: 6010-200.7 NEW(v276) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCV07 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Ti3361	Si2881	P_1774	S_1820	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.775398	4.677594	5.194340	4.664240	4.625156	F 4.469042
Stddev	.012820	.016976	.089963	.028021	.025838	.029121
%RSD	.2684613	.3629177	1.731935	.6007633	.5586375	.6516064
#1	4.782586	4.667267	5.263897	4.666822	4.648126	4.442868
#2	4.783011	4.668328	5.226379	4.690880	4.630159	4.463849
#3	4.760596	4.697186	5.092743	4.635017	4.597182	4.500410
Elem	Sr4077					
Units	ppm					
Avg	4.655741					
Stddev	.038871					
%RSD	.8348981					
#1	4.641094					
#2	4.626321					
#3	4.699807					
Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306	
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	
Avg	6983.012	95561.40	7581.802	4827.428	8039.004	
Stddev	24.831	684.16	95.562	35.621	21.607	
%RSD	.3555940	.7159406	1.260414	.7378793	.2687753	
#1	6980.856	95046.91	7683.048	4787.570	8032.952	
#2	6959.329	95299.46	7569.181	4838.564	8021.068	
#3	7008.851	96337.83	7493.178	4856.150	8062.991	

Sample Name: CCB07 Acquired: 10/9/2025 18:33:00 Type: Unk
Method: 6010-200.7 NEW(v276) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB07 Custom ID2: Custom ID3:
Comment:

Elem	As1890	Tl1908	Pb2203	Se1960	Sb2068	Al3961	Ba4934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.002158	-.005405	.0000544	-.004692	-.002373	.0025758	-.009871
Stddev	.000173	.003784	.0009363	.001791	.001416	.0064142	.001761
%RSD	8.004755	70.01070	1720.296	38.16300	59.67889	249.0190	17.83712
#1	-.002207	-.007210	-.001008	-.004363	-.002552	.0030468	-.010742
#2	-.001966	-.007948	.000759	-.006624	-.000876	.0087415	-.011026
#3	-.002301	-.001056	.000413	-.003088	-.003690	-.004061	-.007844
Elem	Be2348	Cd2265	Ca3736	Cr2677	Co2286	Cu2247	Fe2404
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000921	.0000452	-.018925	-.000136	-.000116	.0002232	.0059270
Stddev	.0000093	.0000394	.008547	.000307	.000027	.0005750	.0097802
%RSD	10.10925	87.01436	45.16017	225.1907	23.14769	257.6795	165.0117
#1	.0001028	.0000573	-.024441	.000024	-.000146	.0002856	-.004446
#2	.0000854	.0000013	-.023254	.000058	-.000108	-.000381	.014981
#3	.0000882	.0000771	-.009080	-.000491	-.000094	.000764	.007246
Elem	Mn2576	Mg2790	Ni2316	Ag3280	Na5895	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002720	.0002928	.0003021	.0004725	-.311954	-.001408	.0004524
Stddev	.0009193	.0203010	.0002706	.0006683	.007634	.000893	.0000598
%RSD	337.9892	6932.472	89.57499	141.4484	2.447159	63.43102	13.21294
#1	.0013009	-.023141	-.000007	-.000164	-.303154	-.001801	.0004578
#2	-.000469	.012533	.000420	.001169	-.316801	-.002039	.0003901
#3	-.000016	.011486	.000494	.000413	-.315907	-.000386	.0005093
Elem	K_7664	B_2496	Mo2020	Sn1899	Ti3361	Si2881	P_1774
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.310312	.0013519	.0002761	-.002198	-.002170	-.009299	.0006292
Stddev	.045133	.0004910	.0001137	.000497	.000451	.001818	.0010955
%RSD	14.54440	36.31638	41.17267	22.62682	20.77183	19.55276	174.1057
#1	-.357521	.0010421	.0002038	-.001952	-.002334	-.009446	.0009268
#2	-.305824	.0019180	.0004071	-.001872	-.001661	-.011040	-.000584
#3	-.267591	.0010957	.0002174	-.002771	-.002516	-.007412	.001545

Sample Name: CCB07 Acquired: 10/9/2025 18:33:00 Type: Unk
Method: 6010-200.7 NEW(v276) Mode: CONC Corr. Factor: 1.000000
User: Jaswal Custom ID1: CCB07 Custom ID2: Custom ID3:
Comment:

Elem	S_1820	Li6707	Sr4077
Units	ppm	ppm	ppm
Avg	-.004153	-.006013	.0000222
Stddev	.001589	.000758	.0001310
%RSD	38.26569	12.60752	589.9761

#1	-.005460	-.006829	.0001565
#2	-.002384	-.005880	.0000153
#3	-.004615	-.005331	-.000105

Int. Std.	Y_2243	Y_3600	Y_3710	Y_2243	In2306
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	6878.148	100235.4	6907.014	5159.520	8621.562
Stddev	5.120	163.0	32.013	12.387	23.423
%RSD	.0744364	.1625753	.4634850	.2400787	.2716814

#1	6872.412	100407.1	6924.793	5151.246	8609.064
#2	6882.255	100082.9	6926.191	5173.761	8607.039
#3	6879.778	100216.2	6870.057	5153.553	8648.584

SOP ID : M3010A-Digestion-17

SDG No : N/A

Matrix : WATER

Pipette ID: ICP A

Balance ID : N/A

Filter paper ID : N/A

pH Strip ID : M6069

Hood ID : #3

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

Start Digest Date: 10/07/2025 Time : 09:40 Temp : 96 °C

End Digest Date: 10/07/2025 Time : 12:45 Temp : 96 °C

Digestion tube ID: M5595

Block thermometer ID: MET-DIG. #1

Dig Technician Signature: SKG

Supervisor Signature: [Signature]

Temp : 1. 96°C 2. N/A

Standard Name	MLS USED	STD REF. # FROM LOG
LFS-1	0.25	M6180
LFS-2	0.25	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	3.00	M6158
1:1 HCL	5.00	MP87148
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Extraction Conformance/Non-Conformance Comments:

HOT BLOCK#1 CELL#50 96C

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
10/07/25 13:45	SKG met dig	SKG (metals lab)
	Preparation Group	Analysis Group

Lab Sample ID	Client Sample ID	pH	Initial Vol (ml)	Final Vol (ml)	Color Before	Color After	Clarity Before	Clarity After	Comment	Prep Pos
PB170009BL	PBW009	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	1
PB170009BS	LCS009	<2	50	25	Colorless	Colorless	Clear	Clear	M6180,M6181	2
Q3292-01	RW8-SP100-251003	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	3
Q3292-02	RW8-SP303-251003	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	4
Q3292-02MS	RW8-SP303-251003MS	<2	50	25	Colorless	Colorless	Clear	Clear	M6180,M6181	6
Q3292-02MSD	RW8-SP303-251003MSD	<2	50	25	Colorless	Colorless	Clear	Clear	M6180,M6181	7
Q3292-02DUP	RW8-SP303-251003DUP	<2	50	25	Colorless	Colorless	Clear	Clear	N/A	5

WORKLIST(Hardcopy Internal Chain)

Worklist Name : PB170009

Worklist ID : 192317

Department : Digestion

Date : 10-07-2025 09:07:00

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
Q3292-01	RW8-SP100-251003	Water	Metals Group4	1:1 HNO3 to pH < 2	TETR06	D31	10/03/2025	6010D
Q3292-02	RW8-SP303-251003	Water	Metals Group4	1:1 HNO3 to pH < 2	TETR06	D31	10/03/2025	6010D

Date/Time 10/07/2025 09:17
Raw Sample Received by: S/KS met dig
Raw Sample Relinquished by: CPCS m)

Date/Time 10/07/2025 10:17
Raw Sample Received by: CPCS m)
Raw Sample Relinquished by: S/KS met dig

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB137484

Review By	jaswal	Review On	10/10/2025 1:52:59 PM
Supervise By	janvi	Supervise On	10/14/2025 12:28:39 PM

STD. NAME	STD REF.#
ICAL Standard	MP87031,MP87038,MP87035,MP87034,MP87033,MP87032
ICV Standard	MP87047,MP87035
CCV Standard	MP87042
ICSA Standard	MP87041,MP87048
CRI Standard	MP87035
LCS Standard	
Chk Standard	MP87043,MP87044,MP87045,MP87046,MP87049

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	10/09/25 11:10		Jaswal	OK
2	S1	S1	CAL2	10/09/25 11:15		Jaswal	OK
3	S2	S2	CAL3	10/09/25 11:19		Jaswal	OK
4	S3	S3	CAL4	10/09/25 11:23		Jaswal	OK
5	S4	S4	CAL5	10/09/25 11:27		Jaswal	OK
6	S5	S5	CAL6	10/09/25 11:31		Jaswal	OK
7	ICV01	ICV01	ICV	10/09/25 11:44		Jaswal	OK
8	LLICV01	LLICV01	LLICV	10/09/25 11:49		Jaswal	OK
9	ICB01	ICB01	ICB	10/09/25 11:59		Jaswal	OK
10	CRI01	CRI01	CRDL	10/09/25 12:04		Jaswal	OK
11	ICSA01	ICSA01	ICSA	10/09/25 12:09		Jaswal	OK
12	ICSAB01	ICSAB01	ICSAB	10/09/25 12:19		Jaswal	OK
13	ICSADL	ICSADL	ICSA	10/09/25 12:23		Jaswal	OK
14	ICSABDL	ICSABDL	ICSAB	10/09/25 12:30		Jaswal	OK
15	CCV01	CCV01	CCV	10/09/25 12:34		Jaswal	OK
16	CCB01	CCB01	CCB	10/09/25 12:46		Jaswal	OK
17	LR-2	LR-2	HIGH STD	10/09/25 12:56		Jaswal	OK
18	Q3278-01	MW10	SAM	10/09/25 13:05	Mn high	Jaswal	Dilution

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB137484

Review By	jaswal	Review On	10/10/2025 1:52:59 PM
Supervise By	janvi	Supervise On	10/14/2025 12:28:39 PM

STD. NAME	STD REF.#
ICAL Standard	MP87031,MP87038,MP87035,MP87034,MP87033,MP87032
ICV Standard	MP87047,MP87035
CCV Standard	MP87042
ICSA Standard	MP87041,MP87048
CRI Standard	MP87035
LCS Standard	
Chk Standard	MP87043,MP87044,MP87045,MP87046,MP87049

19	Q3275-04	MW1	SAM	10/09/25 13:09		Jaswal	OK
20	Q3278-01DL	MW10DL	SAM	10/09/25 13:14	2x for Mn	Jaswal	Confirms
21	Q3275-03DL	MW5DL	SAM	10/09/25 13:18	NOT USE	Jaswal	Not Ok
22	Q3302-06	OR-658-COMP-01	SAM	10/09/25 13:22		Jaswal	OK
23	Q3302-06DUP	OR-658-COMP-01DU	DUP	10/09/25 13:27		Jaswal	OK
24	Q3302-06L	OR-658-COMP-01L	SD	10/09/25 13:31		Jaswal	OK
25	LR-1	LR-1	HIGH STD	10/09/25 13:35		Jaswal	OK
26	CCV02	CCV02	CCV	10/09/25 14:16		Jaswal	OK
27	CCB02	CCB02	CCB	10/09/25 14:20		Jaswal	OK
28	Q3302-06MS	OR-658-COMP-01MS	MS	10/09/25 14:28		Jaswal	OK
29	Q3302-06MSD	OR-658-COMP-01MS	MSD	10/09/25 14:32		Jaswal	OK
30	Q3302-06A	OR-658-COMP-01A	PS	10/09/25 14:52	0.1ML M6008,M6017-10ML	Jaswal	OK
31	LR-3	LR-3	HIGH STD	10/09/25 14:58		Jaswal	OK
32	PB170010TB	PB170010TB	MB	10/09/25 15:05		Jaswal	OK
33	PB170023BL	PB170023BL	MB	10/09/25 15:10		Jaswal	OK
34	PB170023BS	PB170023BS	LCS	10/09/25 15:14		Jaswal	OK
35	PB170009BS	PB170009BS	LCS	10/09/25 15:18		Jaswal	OK
36	Q3302-01	OR-658-COMP-01	SAM	10/09/25 15:22		Jaswal	OK
37	CCV03	CCV03	CCV	10/09/25 15:26		Jaswal	OK
38	CCB03	CCB03	CCB	10/09/25 15:30		Jaswal	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB137484

Review By	jaswal	Review On	10/10/2025 1:52:59 PM
Supervise By	janvi	Supervise On	10/14/2025 12:28:39 PM
STD. NAME	STD REF.#		
ICAL Standard	MP87031,MP87038,MP87035,MP87034,MP87033,MP87032		
ICV Standard	MP87047,MP87035		
CCV Standard	MP87042		
ICSA Standard	MP87041,MP87048		
CRI Standard	MP87035		
LCS Standard			
Chk Standard	MP87043,MP87044,MP87045,MP87046,MP87049		

39	Q3303-01	HL-WEST	SAM	10/09/25 15:34		Jaswal	OK
40	Q3303-03	HL-EAST	SAM	10/09/25 15:38		Jaswal	OK
41	Q3304-01	TR-04-100725	SAM	10/09/25 15:42		Jaswal	OK
42	Q3304-01DUP	TR-04-100725DUP	DUP	10/09/25 15:47		Jaswal	OK
43	Q3304-01L	TR-04-100725L	SD	10/09/25 15:51		Jaswal	OK
44	Q3304-01MS	TR-04-100725MS	MS	10/09/25 15:55		Jaswal	OK
45	Q3304-01MSD	TR-04-100725MSD	MSD	10/09/25 15:59		Jaswal	OK
46	Q3304-01A	TR-04-100725A	PS	10/09/25 16:02	0.1ML M6008,M6017-10ML	Jaswal	OK
47	Q3304-03	TR-05-100725	SAM	10/09/25 16:06		Jaswal	OK
48	Q3305-01	AU-06-100725	SAM	10/09/25 16:10		Jaswal	OK
49	CCV04	CCV04	CCV	10/09/25 16:26		Jaswal	OK
50	CCB04	CCB04	CCB	10/09/25 16:41		Jaswal	OK
51	Q3292-01	RW8-SP100-2025100	SAM	10/09/25 16:45		Jaswal	OK
52	Q3292-02	RW8-SP303-2025100	SAM	10/09/25 16:50		Jaswal	OK
53	Q3292-02DUP	RW8-SP303-2025100	DUP	10/09/25 16:54		Jaswal	OK
54	Q3292-02L	RW8-SP303-2025100	SD	10/09/25 16:58		Jaswal	OK
55	Q3292-02MS	RW8-SP303-2025100	MS	10/09/25 17:02		Jaswal	OK
56	Q3292-02MSD	RW8-SP303-2025100	MSD	10/09/25 17:06		Jaswal	OK
57	Q3292-02A	RW8-SP303-2025100	PS	10/09/25 17:10	0.1ML M6008,M6017-10ML	Jaswal	OK
58	Q3275-03DL2	MW5DL2	SAM	10/09/25 17:14	10x for Na	Jaswal	Confirms

Instrument ID: P4

Daily Analysis Runlog For Sequence/QC Batch ID # LB137484

Review By	jaswal	Review On	10/10/2025 1:52:59 PM
Supervise By	janvi	Supervise On	10/14/2025 12:28:39 PM

STD. NAME	STD REF.#
ICAL Standard	MP87031,MP87038,MP87035,MP87034,MP87033,MP87032
ICV Standard	MP87047,MP87035
CCV Standard	MP87042
ICSA Standard	MP87041,MP87048
CRI Standard	MP87035
LCS Standard	
Chk Standard	MP87043,MP87044,MP87045,MP87046,MP87049

59	PB170044BS	PB170044BS	LCS	10/09/25 17:23		Jaswal	OK
60	CCV05	CCV05	CCV	10/09/25 17:27		Jaswal	OK
61	CCB05	CCB05	CCB	10/09/25 17:31		Jaswal	OK
62	Q3313-01	ETGI-360	SAM	10/09/25 17:35		Jaswal	OK
63	Q3315-03	72-11989	SAM	10/09/25 17:39		Jaswal	OK
64	Q3315-03DUP	72-11989DUP	DUP	10/09/25 17:43		Jaswal	OK
65	Q3315-03L	72-11989L	SD	10/09/25 17:48		Jaswal	OK
66	Q3315-03MS	72-11989MS	MS	10/09/25 17:52		Jaswal	OK
67	Q3315-03MSD	72-11989MSD	MSD	10/09/25 17:56		Jaswal	OK
68	Q3315-03A	72-11989A	PS	10/09/25 17:59	0.1ML M6008,M6017-10ML	Jaswal	OK
69	Q3318-01	VNJ-207	SAM	10/09/25 18:03		Jaswal	OK
70	Q3319-01	OK-01-100825	SAM	10/09/25 18:07		Jaswal	OK
71	PB170009BL	PB170009BL	MB	10/09/25 18:11		Jaswal	OK
72	CCV06	CCV06	CCV	10/09/25 18:16		Jaswal	OK
73	CCB06	CCB06	CCB	10/09/25 18:20		Jaswal	OK
74	PB170044BL	PB170044BL	MB	10/09/25 18:24		Jaswal	OK
75	CCV07	CCV07	CCV	10/09/25 18:28		Jaswal	OK
76	CCB07	CCB07	CCB	10/09/25 18:33		Jaswal	OK

Prep Standard - Chemical Standard Summary

Order ID : Q3292
Test : Metals Group4
Prepbatch ID : PB170009,
Sequence ID/Qc Batch ID: LB137484,

Standard ID :
MP87031,MP87032,MP87033,MP87034,MP87035,MP87036,MP87038,MP87041,MP87042,MP87043,MP87044,MP87045,MP87046,MP87047,MP87048,MP87049,MP87148,

Chemical ID :
M5467,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,M6163,M6164,M6165,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>
902	ICP AES CAL BLK (SO/ICB/CCB)	MP87031	09/02/2025	10/17/2025	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

<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	10/17/2025	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

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>
910	ICP AES STD S4	MP87033	09/02/2025	10/17/2025	Sarabjit Jaswal	None	None	Janvi Patel
								09/04/2025

FROM 50.00000ml of MP87031 + 50.00000ml of MP87032 = 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>
909	ICP AES STD S3	MP87034	09/02/2025	10/17/2025	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

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>
3913	ICP AES STD S2	MP87035	09/02/2025	10/17/2025	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

<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	10/17/2025	Sarabjit Jaswal	None	METALS_PIPETTE_3 (A)	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 + 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>
2951	ICP AES S1/CRI WORK STD	MP87038	09/02/2025	10/17/2025	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

<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	MP87041	09/02/2025	10/17/2025	Sarabjit Jaswal	None	None	Janvi Patel 09/04/2025

FROM 10.00000ml of M6182 + 10.00000ml of M6184 + 80.00000ml of MP87031 = 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>
911	ICP AES CCV SOLN	MP87042	09/02/2025	10/17/2025	Sarabjit Jaswal	None	None	Janvi Patel
								09/04/2025

FROM 50.00000ml of MP87031 + 50.00000ml of MP87032 = 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>
919	ICP AES INTERNAL STD	MP87043	09/02/2025	10/17/2025	Sarabjit Jaswal	None	None	Janvi Patel
								09/04/2025

FROM 1.00000ml of M6179 + 10.00000ml of M5985 + 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>
903	ICP AES RINSE SOLN	MP87044	09/02/2025	10/17/2025	Sarabjit Jaswal	None	None	Janvi Patel
								09/04/2025

FROM 200.00000ml of M6187 + 9800.00000ml of W3112 = Final Quantity: 10000.000 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>
4225	LR-1	MP87045	09/02/2025	10/17/2025	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

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>
4226	LR-2	MP87046	09/02/2025	10/17/2025	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

<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	10/17/2025	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

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>
3494	ICP AES ICSAB SOLN-1	MP87048	09/02/2025	10/17/2025	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

<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	10/17/2025	Sarabjit Jaswal	None	None	Janvi Patel 09/04/2025

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

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>
170	1:1HCL	MP87148	09/09/2025	02/17/2026	Sagar Kanani	None	None	Sarabjit Jaswal
FROM 1250.00000ml of M6151 + 1250.00000ml of W3112 = Final Quantity: 2500.000 ml								

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CHEMICAL RECEIPT LOG BOOK

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	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

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

CHEMICAL RECEIPT LOG BOOK

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

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

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57003 / Li, 1000 PPM, 125 ml	061224	06/21/2027	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	CGT11-1 / 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

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

CHEMICAL RECEIPT LOG BOOK

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

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

CHEMICAL RECEIPT LOG BOOK

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

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

CHEMICAL RECEIPT LOG BOOK

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	10/30/2025	03/10/2025 / Eman	02/02/2025 / Sagar	M6158

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	58113 / Al, 10000 PPM, 500 ml	011325	03/18/2026	03/18/2025 / kareem	02/09/2025 / kareem	M6159

CHEMICAL RECEIPT LOG BOOK

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 #
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

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

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57038 / Sr, 1000 PPM, 125 ml	092724	09/27/2027	08/06/2025 / Janvi	08/06/2025 / Janvi	M6176

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	/ Lead (Pb) 1000PPM	031525	03/15/2028	08/06/2025 / Janvi	08/06/2025 / Janvi	M6177

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	57042 / Mo, 1000 PPM, 125 ml	080528	08/05/2028	08/06/2025 / Janvi	08/06/2025 / Janvi	M6178

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	CGY10-1 / YTTRIUM 125mL 10,000ug/mL	V2-Y740548	08/05/2026	08/06/2025 / Janvi	06/02/2024 / Janvi	M6179

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

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	PART A / ICSA (ICP) STOCK SOLN	ICSA-1211	02/05/2026	08/06/2025 / Janvi	03/06/2024 / Janvi	M6182

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
EPA	PART B / ICSAB (ICP) STOCK SOLN	ICSB-0710	02/05/2026	08/06/2025 / Janvi	03/06/2024 / Janvi	M6184

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L)	24H0162012	01/28/2026	08/29/2025 / Sagar	08/08/2025 / Sagar	M6187

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



M6032

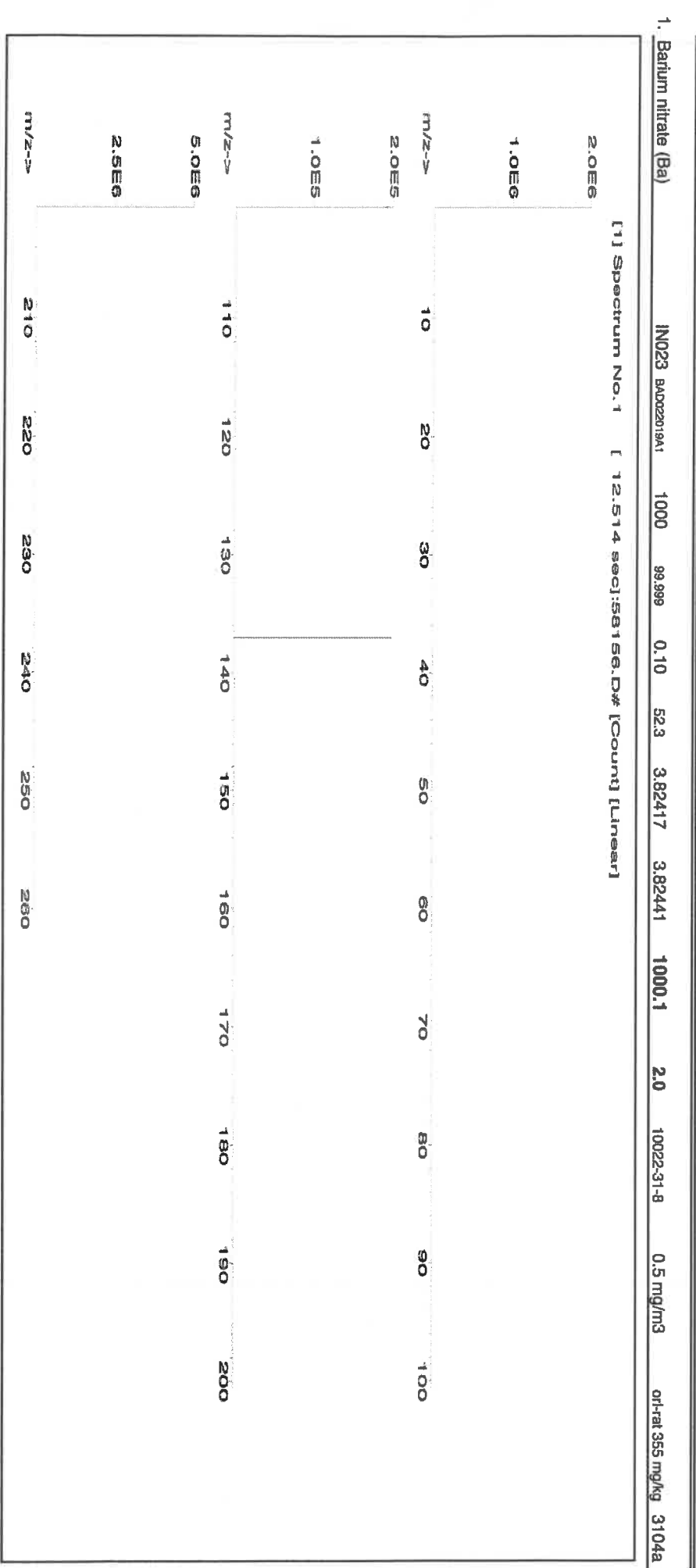


CERTIFIED WEIGHT REPORT:

Part Number:	57056	Lot #	
Lot Number:	010924	Solvent:	Nitric Acid
Description:	Barium (Ba)		
Expiration Date:	010927	2%	40.0 (mL)
Recommended Storage:	Ambient (20 °C)		Nitric Acid
Nominal Concentration (µg/mL):	1000		
NIST Test Number:	6UTB	5E-05	Balance Uncertainty
Weight shown below was diluted to (mL):	2000.02	0.058	Flask Uncertainty

Formulated By:	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	2.0





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: 57048
Lot Number: 070124
Description: Cadmium (Cd)

Solvent: 24002546 Nitric Acid
Lot #

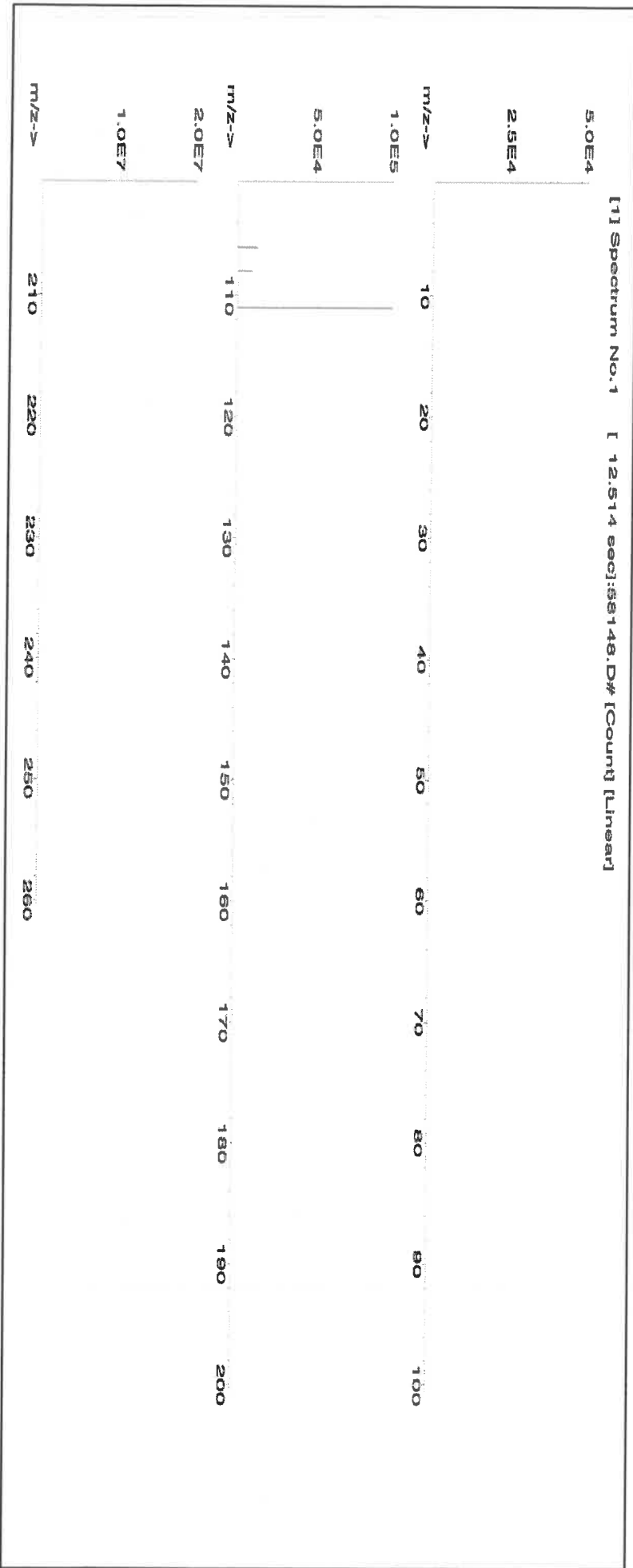
Expiration Date: 070127
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.07
SE-05 Balance Uncertainty 0.100
Flask Uncertainty

2% 40.0 (mL)
Nitric Acid

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

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

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





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).



MC026



CERTIFIED WEIGHT REPORT:

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

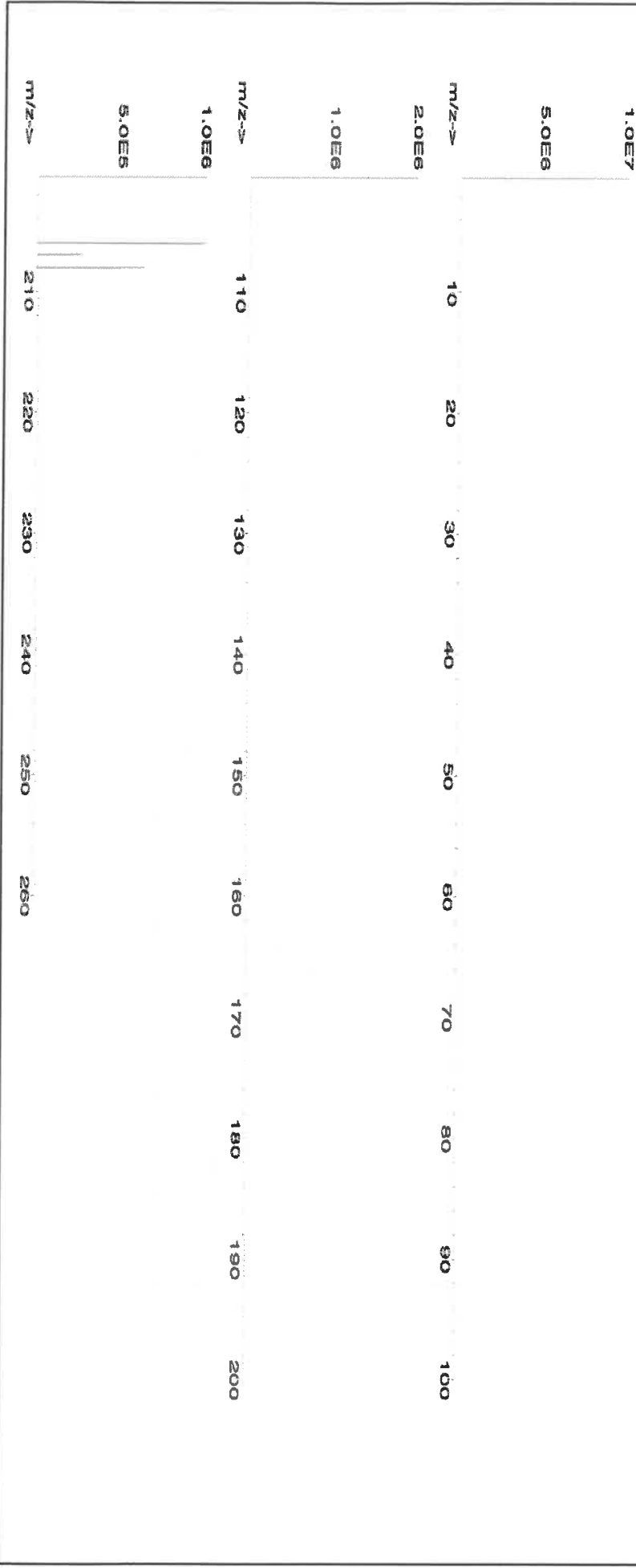
Solvent: 24002546 Nitric Acid
Lot #

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

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

SDS Information									
Compound	Lot	Nominal	Purity	Uncertainty	Assay	Target	Actual	Actual	Expanded
	Number	Conc. (µg/mL)	(%)	Purity (%)	(%)	Weight (g)	Weight (g)	Conc. (µg/mL)	+/- (µg/mL)
1. Lead(II) nitrate (Pb)	IN029	PED12016A1	10000	99.999	0.10	62.5	32.0006	32.0040	10001.1
									20.0
									10099-74-8
									0.05 mg/m3
									intrinsic 83 mg/kg
									3128

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





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

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

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



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

5E-05 Balance Uncertainty

0.058 Flask Uncertainty

Lot #

Solvent: 21110221 Nitric Acid

2% 20.0 Nitric Acid (mL)

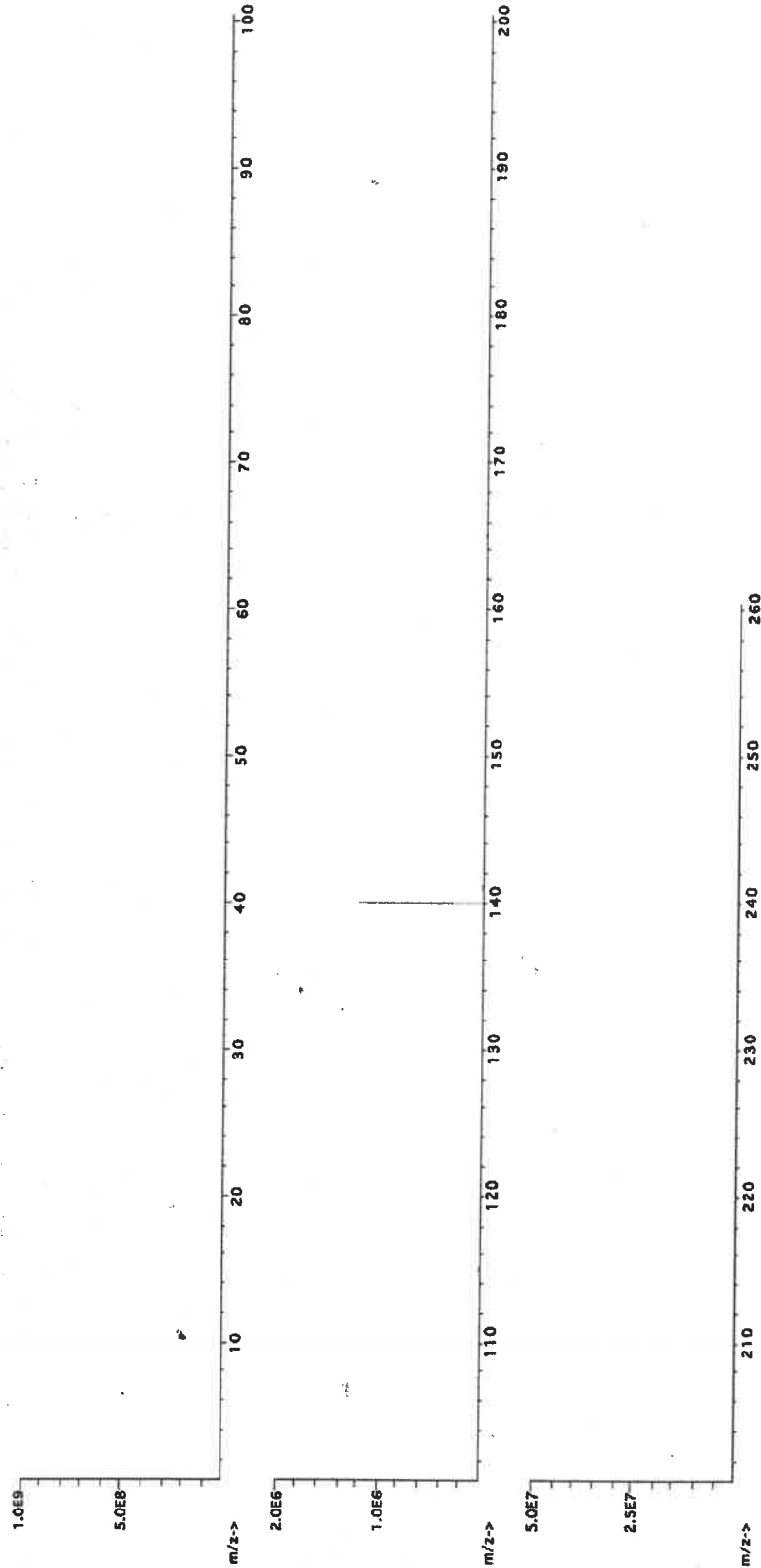
Formulated By:	Lawrence Barry
Reviewed By:	Pedro L. Rentas

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

(T) = Target analyte

Physical Characterization:

Certified by:

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

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



CERTIFIED WEIGHT REPORT:

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

Lot # 2110221
Solvent: Nitric Acid

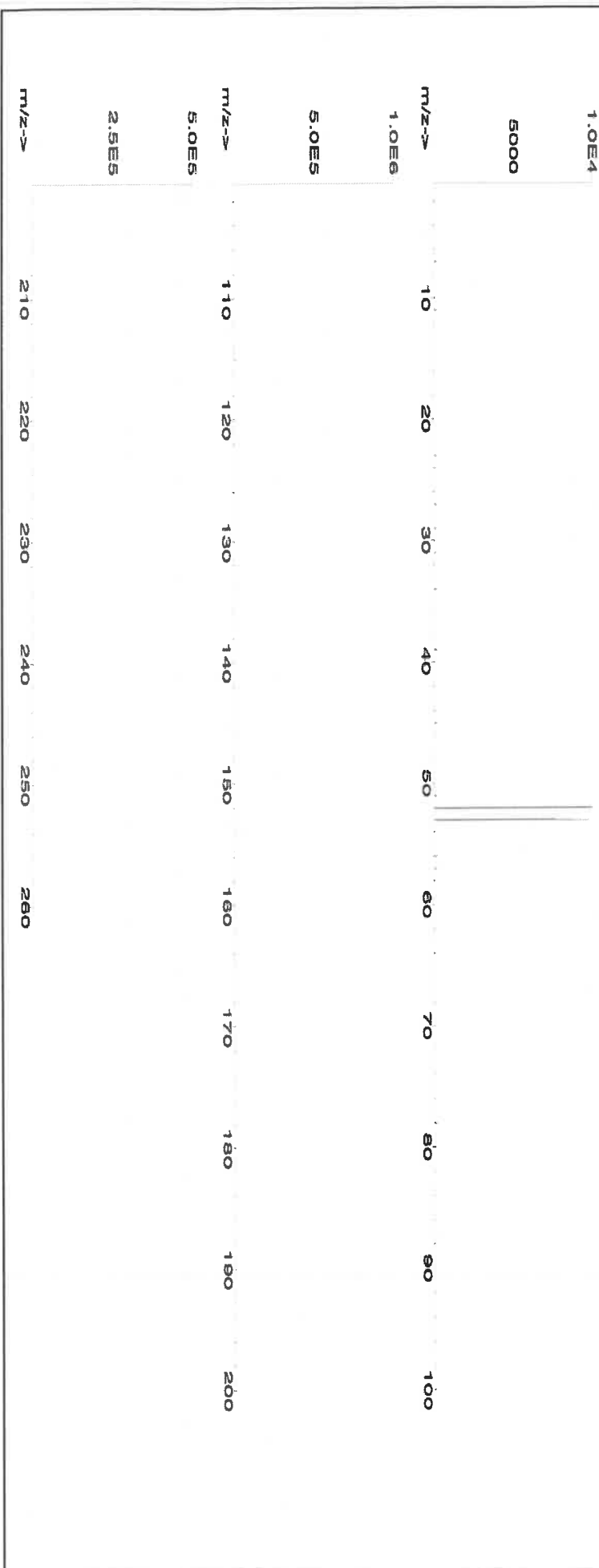
Formulated By:	Lawrence Barry
	060523
Reviewed By:	Pedro L. Ruelas
	060523

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
5E-05 Balance Uncertainty
0.058 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
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1. Chromium(III) nitrate nonahydrate (Cr) 58124 071122 0.1000 200.0 0.084 1000 10000.1 1000.0 2.2 7789-02-8 0.5 mg(Cr)/m3 or rat 3250 mg/kg 3112a

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





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	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 (mL) Nitric Acid

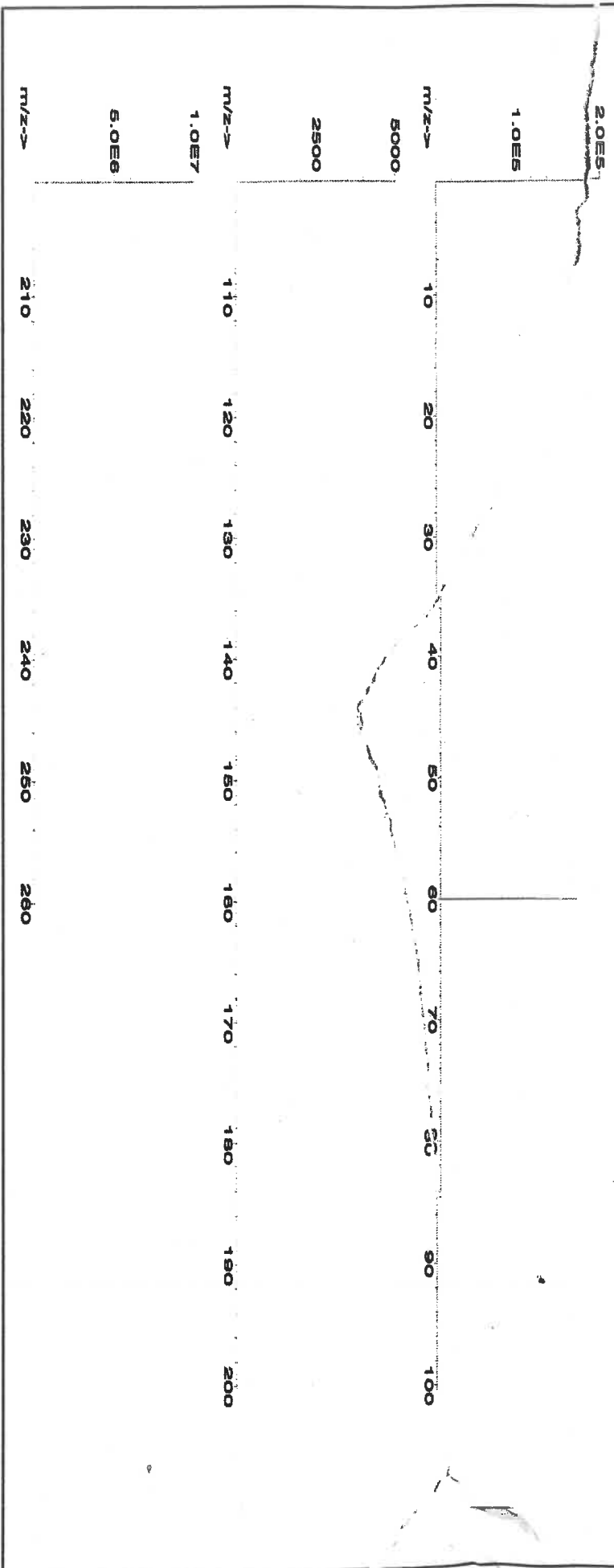
Volume shown below was diluted to (mL): 2000.02
5E-05 Balance Uncertainty
0.056 Flask Uncertainty

Formulated By:	Lawrence Barry	091223
Reviewed By:	Pedro L. Renteria	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
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1. Nickel(II) nitrate hexahydrate (NI) 58128 062023 0.1000 200.0 0.084 1000 10000.4 1000.0 2.2 13478-00-7 1 mg/m3 or-rel 1620 mg/kg 3136

[1] Spectrum No.1 [9.135 sec]:56026.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	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	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	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.
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- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



Certified Reference Material CRM

R: 8/25/23 M5751



CERTIFIED WEIGHT REPORT:

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

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

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

Expiration Date: 071726
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6LUTB
Volume shown below was diluted to (mL): 2000.02
Balance Uncertainty: 5E-05
Flask Uncertainty: 0.058

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
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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											
5.0E7	m/z-->	110	120	130	140	150	160	170	180	190	200
2.0E7											
1.0E7	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	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	T	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
- * All standard containers are meticulously cleaned prior to use.
- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- * Standards are 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

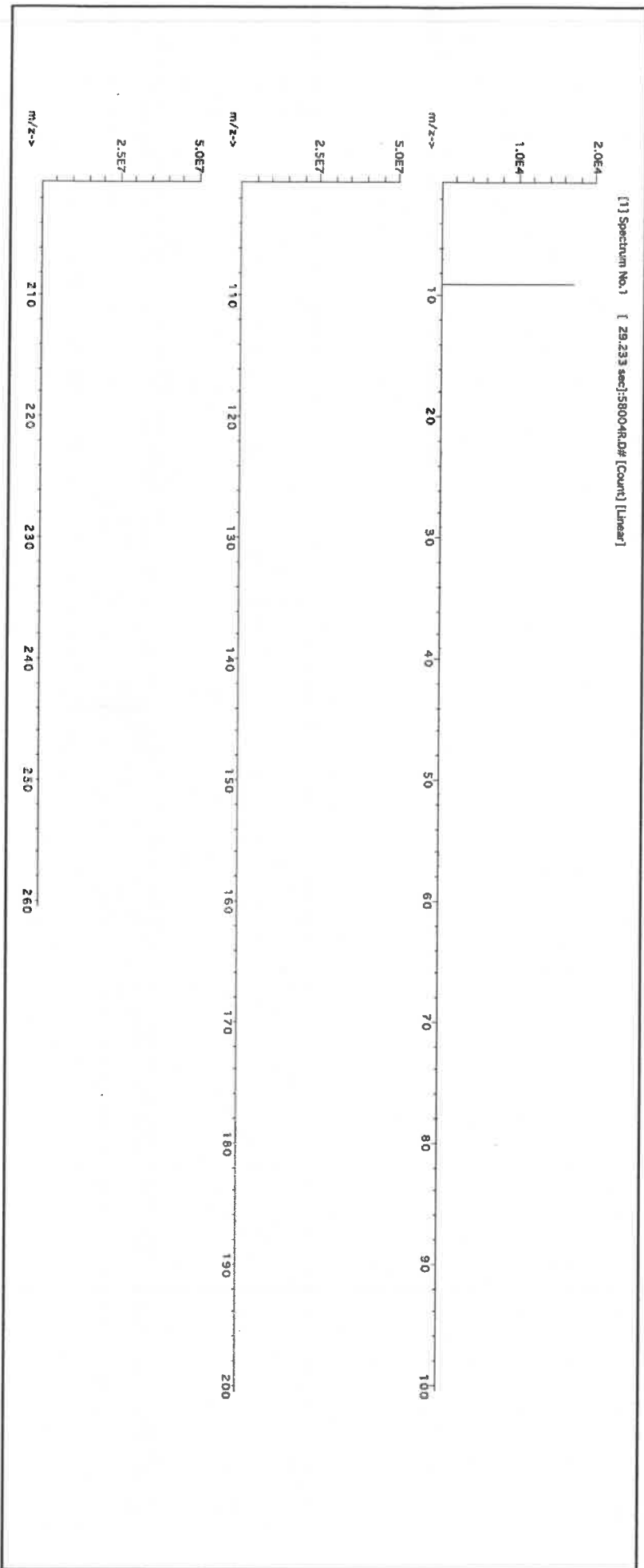
0.058 Flask Uncertainty

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
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1. Beryllium nitrate (Be)	58104	091423	0.1000	200.0	0.084	1000	10001.5	1000.0	2.2	13597-99-4	0.2µg/m3	intrinsc-rat 3.16mg/kg	NA
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Instrumental Analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS):

Trace Metals Verification by ICP-MS (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	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Ta	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Tl	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



Certified Reference Material CRM

CERTIFIED WEIGHT REPORT:

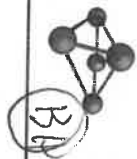
Part Number: 57050
Lot Number: 071123
Description: Tin (Sn)

Solvents: 21110221 Nitric Acid
22D0562008 Hydrochloric acid

Lot #

R-02509124

M599



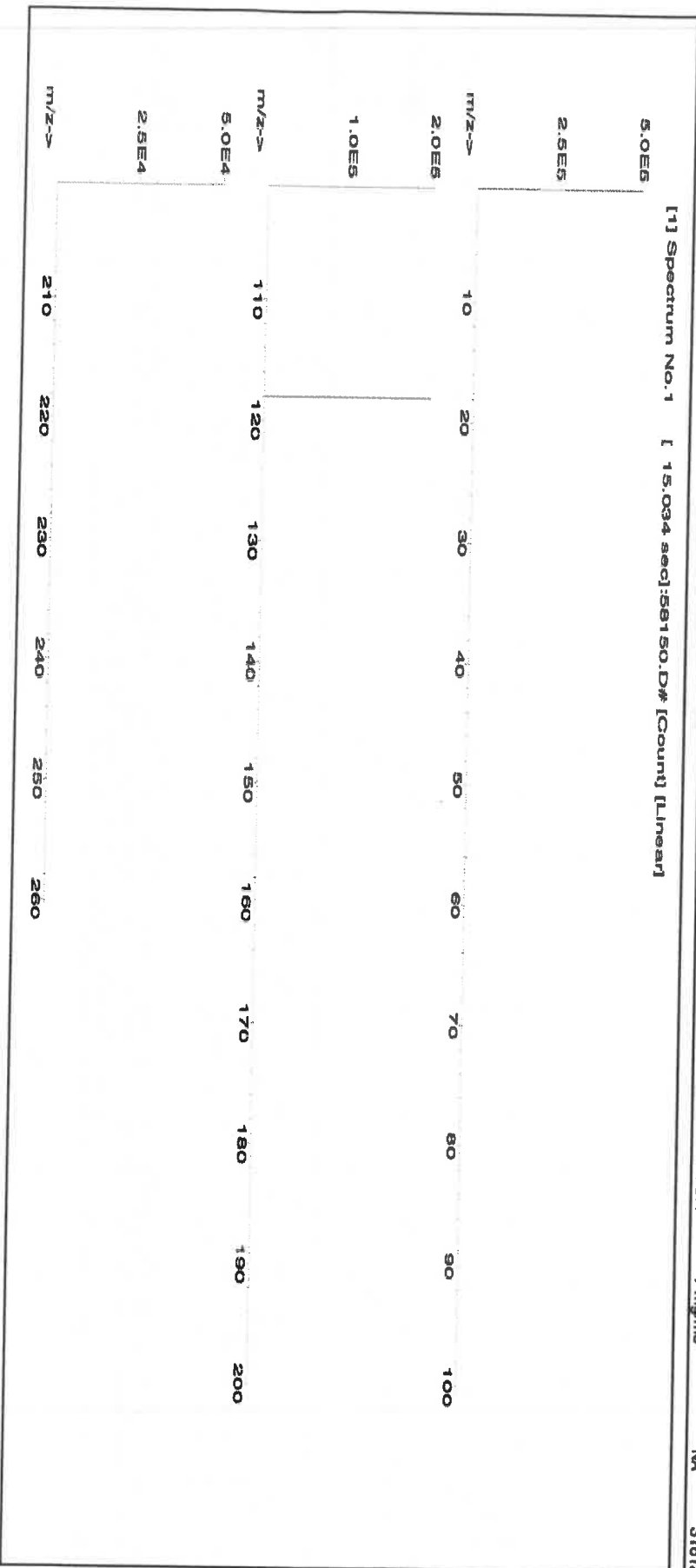
Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 499.93
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Formulated By: Benson Chan	
071123	
Reviewed By: Pedro L. Rientas	
071123	

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

1. Ammonium hexafluoroantimonate(V) (Sn) IN010 SMD042023A1 1000 99.999 0.10 44.2 1.13107 1.13286 1001.6 2.0 16919-24-7 7 mg/m3 NA 3161a

[1] Spectrum No. 1 [15.034 sec]:56150.D# [Count] [Linear]





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02	U	<0.02
As	<0.2	Ce	<0.02	Eu	<0.02	In	<0.02	Mg	<0.01	Os	<0.02	Rh	<0.02	Ag	<0.02	Ti	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<500	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Ta	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	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)

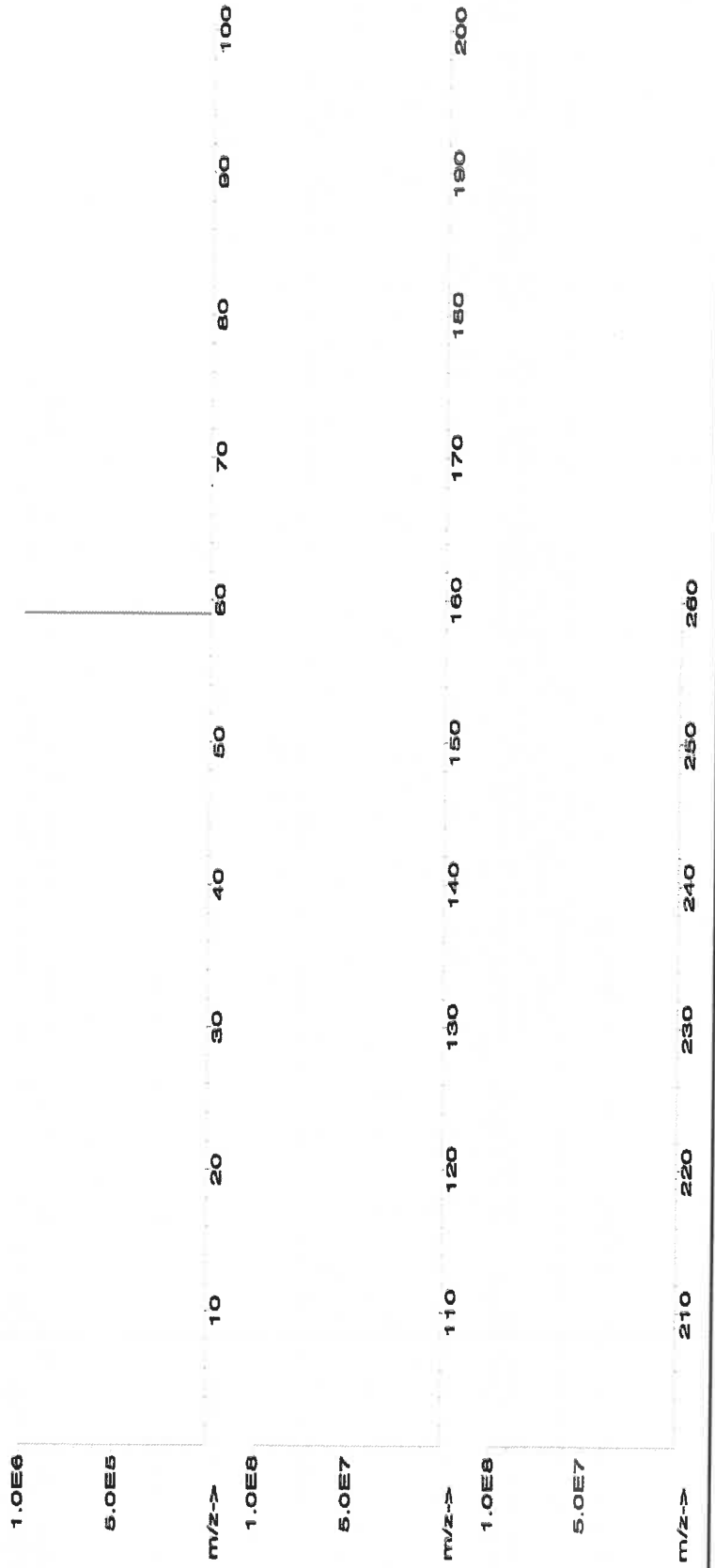
Formulated By: Lawrence Barry 091923
Reviewed By: Pedro L. Rentas 091923

SDS Information

Expanded Uncertainty +/- (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	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T)= Target analyte

Physical Characterization:

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

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
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- * Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
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- * 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: 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

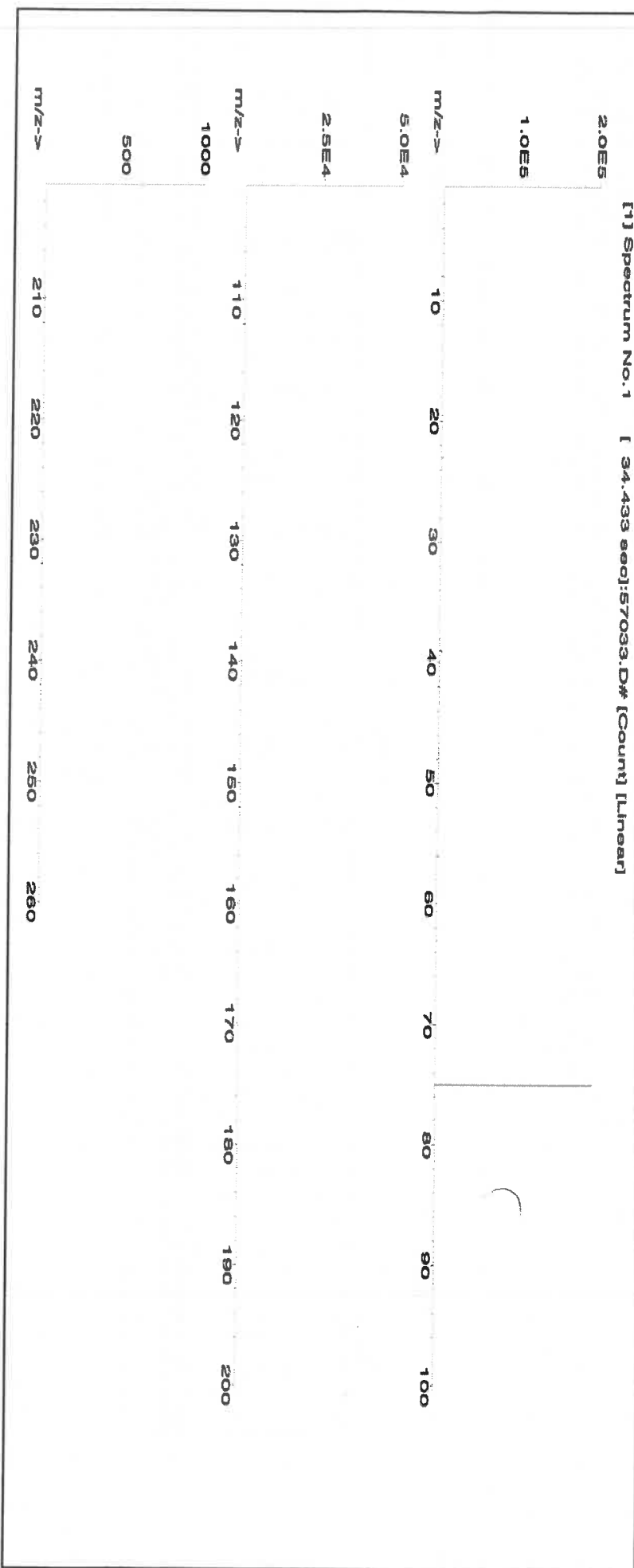
Balance Uncertainty: 5E-05
Flask Uncertainty: 0.06

Formulated By:	Lawrence Barry	111323
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)
1. Arsenic (As)	57033	020522	0.1000	400.0	0.084	1000	10001.0	1000.0	2.0

(Solvent Safety Info. On Attached pg.) CAS# OSHA PEL (TWA) LD50 NIST SRM

[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	Ru	<0.02	Na	<0.2	Tl ₂	<0.02	Yb	<0.02
Bc	<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	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			Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: **57005**
Lot Number: **071123**
Description: **Boron (B)**

Solvent: MKB8697V Ammonium hydroxide

Lot #

AI 021009124 M5814

Expiration Date: 071126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

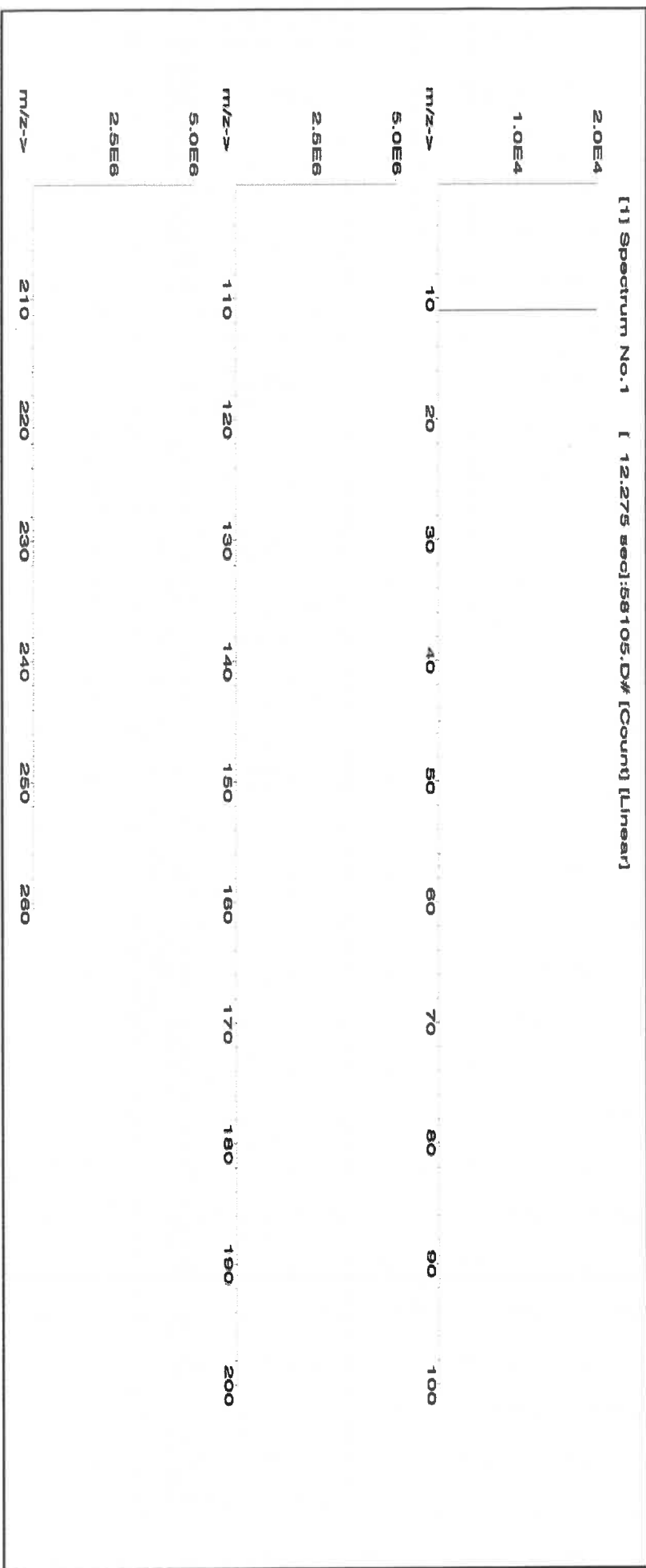
2.0% 40.0 (mL) Ammonium hydroxide

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	Lot	Nominal	Purity	Uncertainty	Assay	Target	Actual	Actual	Expanded
	Number	Conc. (µg/mL)	(%)	Purity (%)	(%)	Weight (g)	Weight (g)	Conc. (µg/mL)	+/- (µg/mL)
									(Solvent Safety Info. On Attached pg.)
									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	ort-nat 2660 mg/kg	3107
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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:

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CERTIFIED WEIGHT REPORT:

Part Number: 57015
Lot Number: 091123
Description: Phosphorous (P)

Solvent: 24002546 Nitric Acid

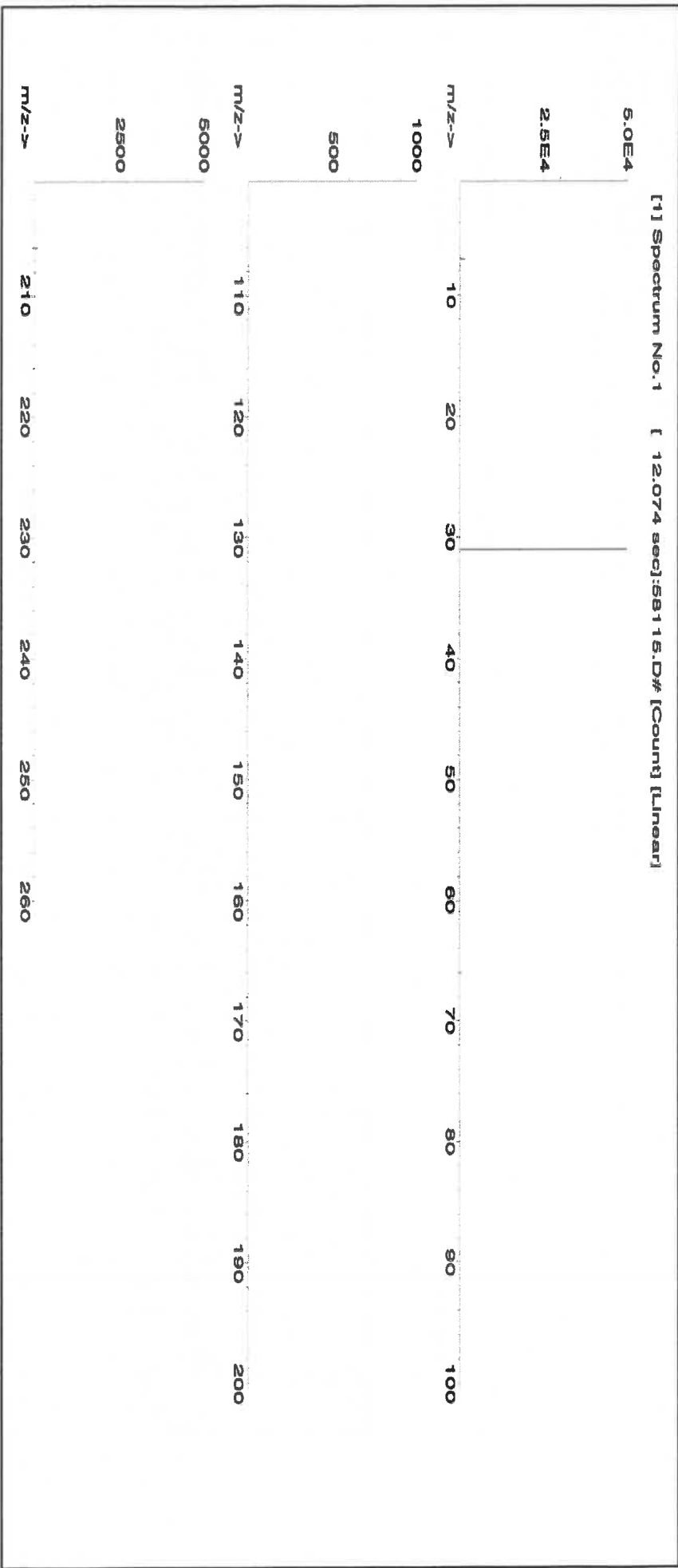
Lot #

Formulated By:	Lawrence Barry
	091123
Reviewed By:	Pedro L. Rentas
	091123

Expiration Date: 091126
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6LUTB
Weight shown below was diluted to (mL): 2000.02
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

SDS Information									
Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)
Ammonium dihydrogen phosphate (P)	IN008	PV082019A1	1000	99.999	0.10	27.5	7.2729	7.2730	1000.0

1. Ammonium dihydrogen phosphate (P) IN008 PV082019A1 1000 99.999 0.10 27.5 7.2729 7.2730 1000.0 2.0 7722-76-1 5 mg/m3 xH-rat >2000mg/kg 3186





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	Pr	<0.02	Se	<0.2	Tb	<0.02	W	<0.02
Sb	<0.02	Ca	<0.2	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	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:

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Absolute Standards, Inc.

800-368-1131
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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)

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

Compound

Part Number

58134

Lot Number

071223

Dilution Factor

0.1000

Initial Vol. (mL)

200.0

Uncertainty Pipette (mL)

0.084

Nominal Conc. (µg/mL)

1000

Initial Conc. (µg/mL)

10002.5

Final Conc. (µg/mL)

1000.0

Expanded

SDS Information

Uncertainty

+/- (µg/mL)

2.2

CAS#

7782-49-2

OSHA PEL (TWA)

0.2 mg/m3

LD50

3149

NIST SRM

1. Selenium (Se)

58134

071223

0.1000

200.0

0.084

1000

10002.5

1000.0

2.2

7782-49-2

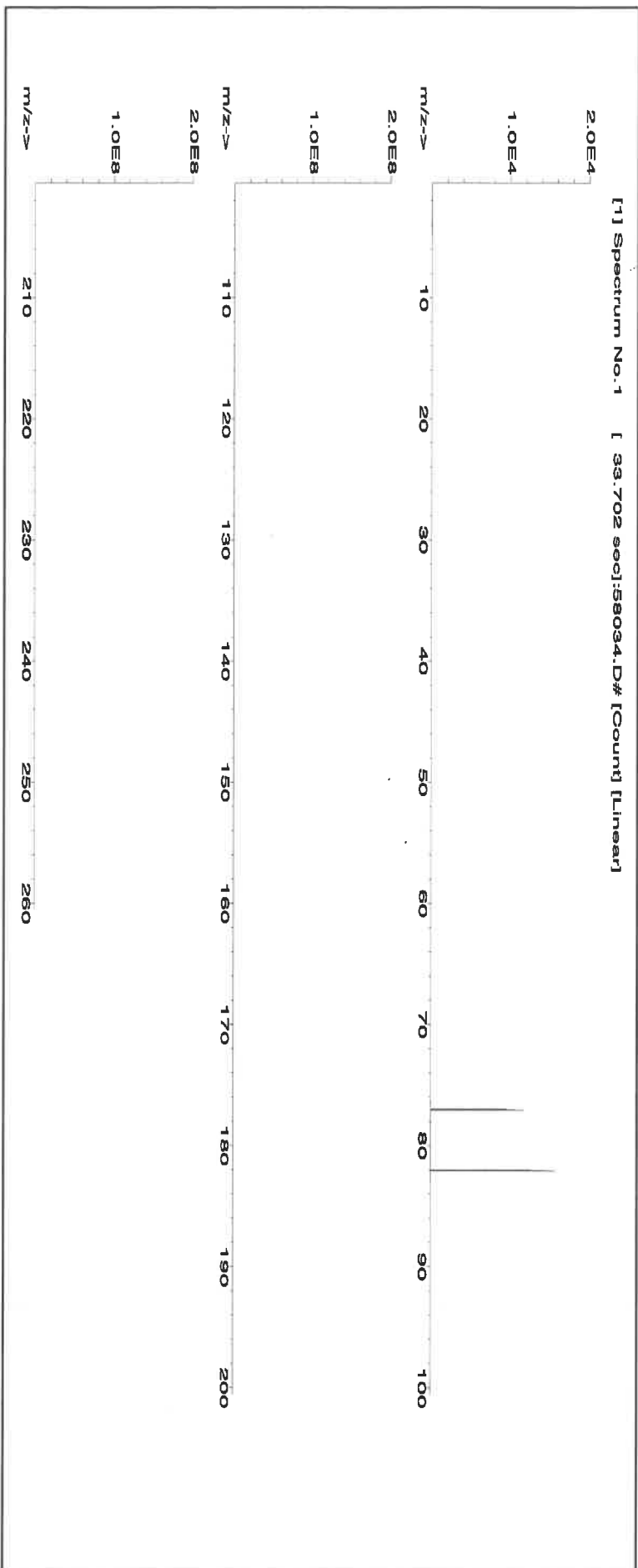
0.2 mg/m3

LD50

3149

NIST SRM

[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	Ru	<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	Sr	<0.02	S	<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	Ta	<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			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)**

Lot #
Solvent: **122923** ASTM Type 1 Water

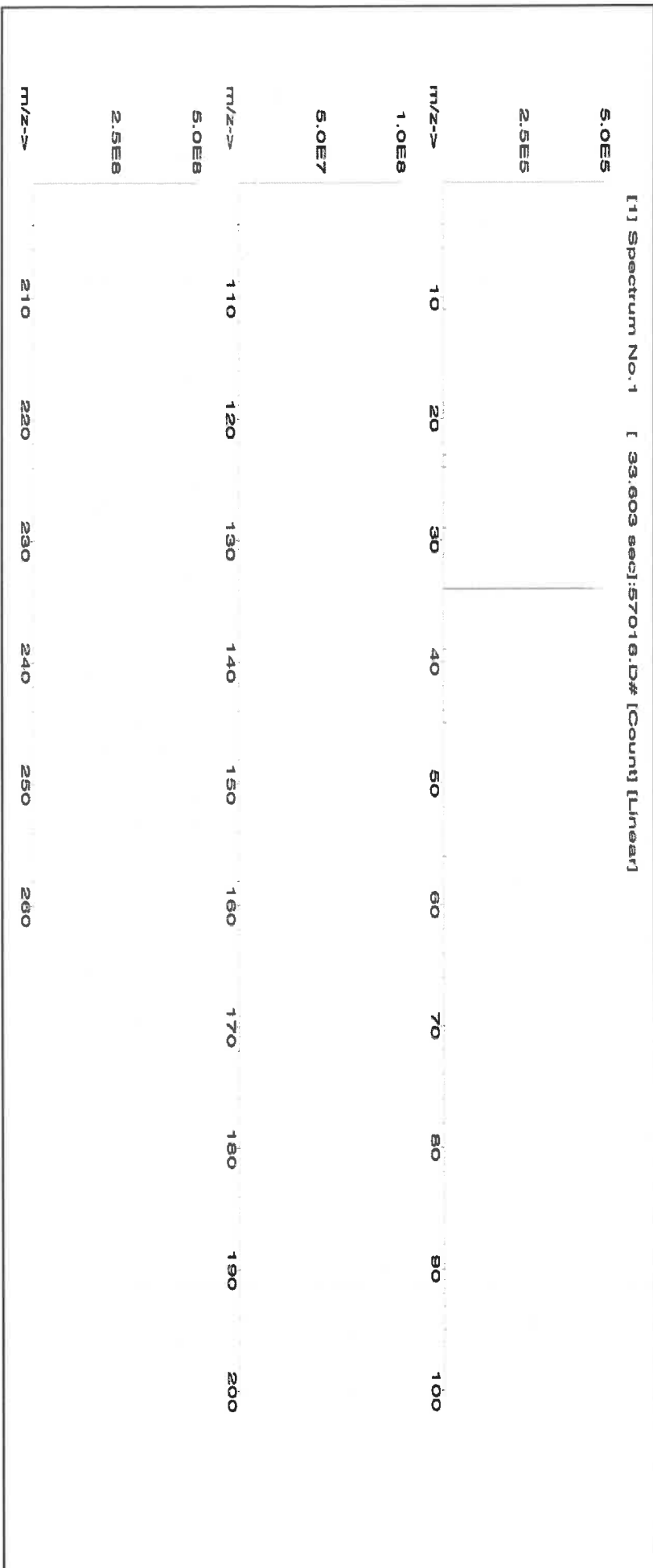
Formulated By:	Benson Chan
122923	
Reviewed By:	Pedro L. Rentas
122923	

Expiration Date: **122926**
Recommended Storage: **Ambient (20 °C)**
Nominal Concentration (µg/mL): **1000**
NIST Test Number: **6UTB**
Weight shown below was diluted to (mL): **4000.0** **5E-05** Balance Uncertainty
0.06 Flask Uncertainty

Compound	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty		NIST SRM
									±	(µg/mL)	

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

[1] Spectrum No. 1 [33.603 sec]:57016.D# [Count] [Linear]



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:

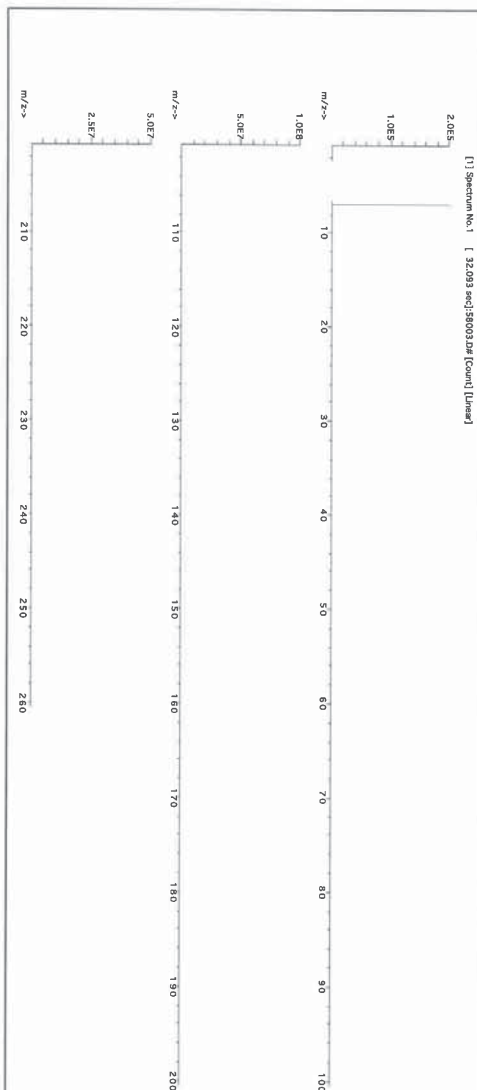
Part Number: 57003
Lot Number: 062124
Description: Lithium (Li)
Expiration Date: 06/21/27
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Volume shown below was diluted to (mL): 250.11

Lot # 24002546
Solvent: Nitric Acid
Conc. (µg/mL): 2.0%
Initial Vol. (mL): 5.0
Final Vol. (mL): 5.0
Balance Uncertainty: SE-05
Flask Uncertainty: 0.016

Microvite Capable	
Formulated By:	062124
Reviewed By: <i>[Signature]</i>	
Petro L. Parias	

Compound		Part		Lot		Dilution		Initial		Uncertainty		Nominal		Initial		Final		Expanded		SDS Information		NIST	
Number	Factor	Number	Factor	Number	Factor	Vol. (mL)	Pipette (mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Conc. (µg/mL)	Uncertainty	± (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	SM

1. Lithium nitrate (Li) 58103 070622 0.1000 25.0 0.004 1000 10000.4 1000.0 2.0 7790-68-4 5 mg/m3 or-hal 1428 mg/kg NA



Part # 57003 Lot # 062124

1 of 2

Printed: 6/24/2024, 11:20:08 PM

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 Define your results. Redefine your industry.

Certificate of Analysis

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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

Starting Material: 1 000 µg/mL ea.

Starting Material: Titanium

Starting Material Lot#: T1 Metal

Starting Material Purity: 2094

Certified Value: 99.9975%

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:

$X_{CRM/RM} = (k_p) / (k_{p,av})$
 k_p = mean of Assay Method A with

$k_{p,av}$ = the standard uncertainty of characterization Method A with

$k = \text{coverage factor} = 2$
 $k_{CRM/RM} = [(2/(n-1)) \sum (u_{CRM/RM,i}^2)]^{1/2}$ where $u_{CRM/RM,i}$ are the errors from each characterization method

$u_{CRM/RM} = [(2/(n-1)) \sum (u_{CRM/RM,i}^2)]^{1/2}$ where $u_{CRM/RM,i}$ are the errors from each characterization method

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$u_{CRM/RM} = [(2/(n-1)) \sum (u_{CRM/RM,i}^2)]^{1/2}$ where $u_{CRM/RM,i}$ are the errors from each characterization method

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	<	0.00096				
O	B	<	0.008929	M	Ge	<	0.002146	M	Os	<	0.000269	O	Sr	<	0.00096				
M	Ba	<	0.002683	M	Hf	<	0.002161	O	P	<	0.054450	M	Ta	<	0.010560				
M	Be	<	0.005366	M	Hg	<	0.003231	M	Pb	<	0.001073	M	Tb	<	0.000268				
M	Bi	<	0.001609	M	Ho	<	0.000268	M	Pd	<	0.000268	M	Te	<	0.001341				
O	Ca	<	0.000676	M	In	<	0.002683	M	Pr	<	0.000268	M	Th	<	0.053663				
M	Cd	<	0.000268	M	Ir	<	0.000269	M	Pt	<	0.000536	s	Ti	<	<				
M	Ce	<	0.000268	M	K	<	0.001172	M	Rb	<	0.000268	M	Tl	<	0.000268				
M	Co	<	0.004293	M	La	<	0.000268	M	Re	<	0.000268	M	Tm	<	0.000268				
M	Cr	<	0.000752	O	Li	<	0.027225	M	Rh	<	0.000268	M	U	<	0.000268				
M	Cs	<	0.000268	M	Lu	<	0.000268	M	Ru	<	0.000269	M	V	<	0.019855				
O	Cu	<	0.010890	O	Mg	<	0.005445	I	S	<	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 crystalline form).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	14 ppt	N/A	Order	Interferences (underlined indicates severe)
ICP-MS 48 amu					32S16O, 32S14N, 14N16O18O, 14N17N2, 36Ar12C, 48Ca, [96X=2 (where X = Zr, Mo, Ru)]
ICP-OES 323.452 nm	0.0054 / 0.00092 µg/mL	1			
ICP-OES 334.941 nm	0.0038 / 0.00028 µg/mL	1			Ce, Ar, Ni
ICP-OES 336.121 nm	0.0053 / 0.00034 µg/mL	1			Nb, Ta, Cr, U
HF Note: This standard should not be prepared or stored in glass.					W, Mo, Co

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: 800.868.6786; 540.565.3030; Fax: 540.565.3012; info@inorganicventures.com

11.0

CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 17, 2022

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

11.2 Lot Expiration Date

- June 17, 2027

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date:

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

Certificate Approved By:

Thomas Kozlowski
Manager, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Paul Gaines

80978

Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
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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:

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

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

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

X_a = mean of Assay Method A with

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

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

k = coverage factor = 2

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

u_{bb} = bottle to bottle homogeneity standard uncertainty

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

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

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

4.1 Thermometer Calibration

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

4.2 Balance Calibration

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

4.3 Glassware Calibration

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

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

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

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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

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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

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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 Reference Material CRM



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

58025
101124
Manganese (Mn)

R-71113128

Lot #
Solvent: 24002546 Nitric Acid

Expiration Date:

101127

2% 80.0 (mL) Nitric Acid

Recommended Storage:
Nominal Concentration (µg/mL):

Ambient (20 °C)
1000

NIST Test Number:

6UTB

SE-05 Balance Uncertainty

Weight shown below was diluted to (mL):

4000.2 0.10 Flask Uncertainty

<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	<i>Pedro L. Renteria</i>
	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#

1. Manganese(II) nitrate hydrate (Mn) IN031 MNM02020A1 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

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M6137
 R-71013124

1.0 ACCREDITATION / REGISTRATION

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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

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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





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
Sb	<0.02	Ca	T	Er	<0.02	Ho	<0.02	Lu	<0.02	Nb	<0.02	Re	<0.02	Si	<0.02	Te	<0.02
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
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02
Be	<0.01	Cr	<0.02	Ga	30	Fe	<0.02	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02
																W	<0.02
																U	<0.02
																V	<0.02
																Yb	<0.02
																Y	<0.02
																Zn	<0.02
																Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 megohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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- * All standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

58126
011025
Iron (Fe)
M6140

Lot #
Solvent: 24012496 Nitric Acid

Expiration Date:

011028

2%

40.0 (mL)
Nitric Acid

Recommended Storage:

Ambient (20 °C)

Nominal Concentration (µg/mL):

10000

NIST Test Number:

6U7B

5E-05 Balance Uncertainty

Weight shown below was diluted to (mL):

2000.07

0.100 Flask Uncertainty

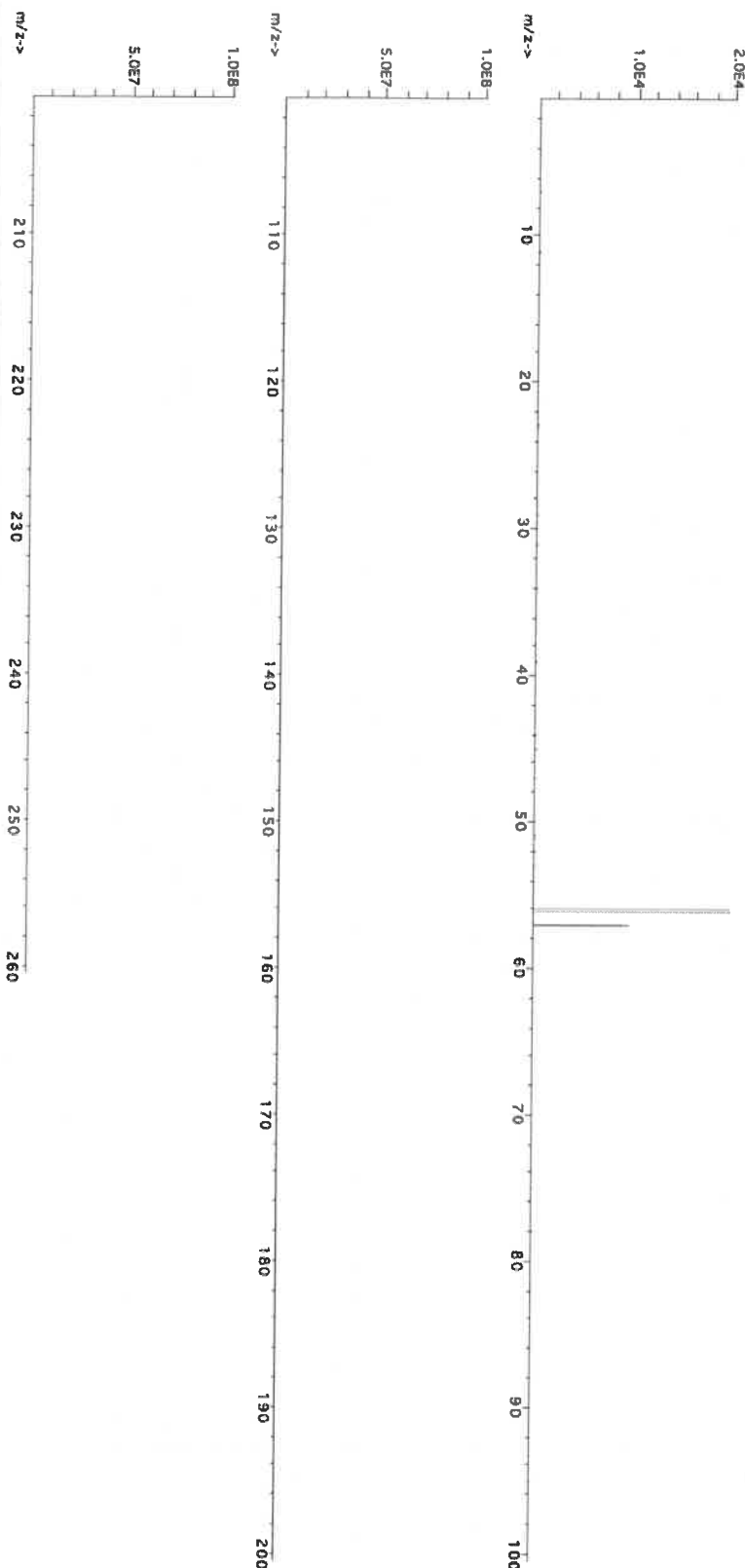
Formulated By:	Benson Chan	011025
Reviewed By:	Pedro L. Renteria	011025

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.)	SFM

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

[1] Spectrum No.1 [30.763 sec]58126.D# [Count] [Linear]





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

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

Al	<0.02	Cd	<0.02	Dy	<0.02	Hf	<0.02	Li	<0.02	Ni	<0.02	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.
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- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number:
Lot Number:
Description:

57119
103024
Potassium (K)

R-21113125

Solvent: 24002546 Nitric Acid
Lot #

<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	Pedro L. Renteria
	103024

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):

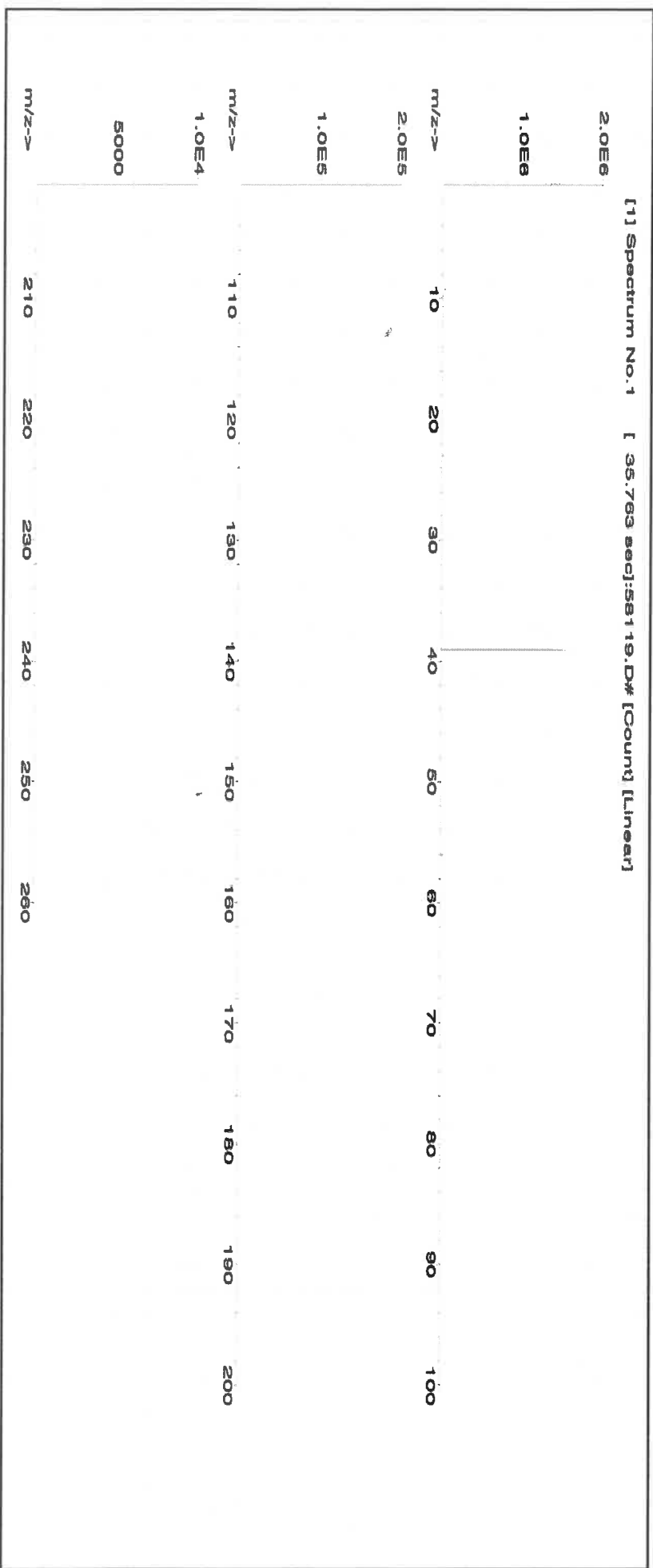
4000.1
0.15
Flask Uncertainty

Compound

RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. 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.
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- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

Part Number: 58111 **Lot #** R-1113/25
Lot Number: 072424 **Solvent:** Nitric Acid
Description: Sodium (Na)

Expiration Date: 072427 **2%** **80.0** **Nitric Acid**
Recommended Storage: Ambient (20 °C) (mL)

Nominal Concentration (µg/mL): 10000

NIST Test Number: 6UTB **5E-05** **Balance Uncertainty**

Weight shown below was diluted to (mL): 4000.2 **0.10** **Flask Uncertainty**

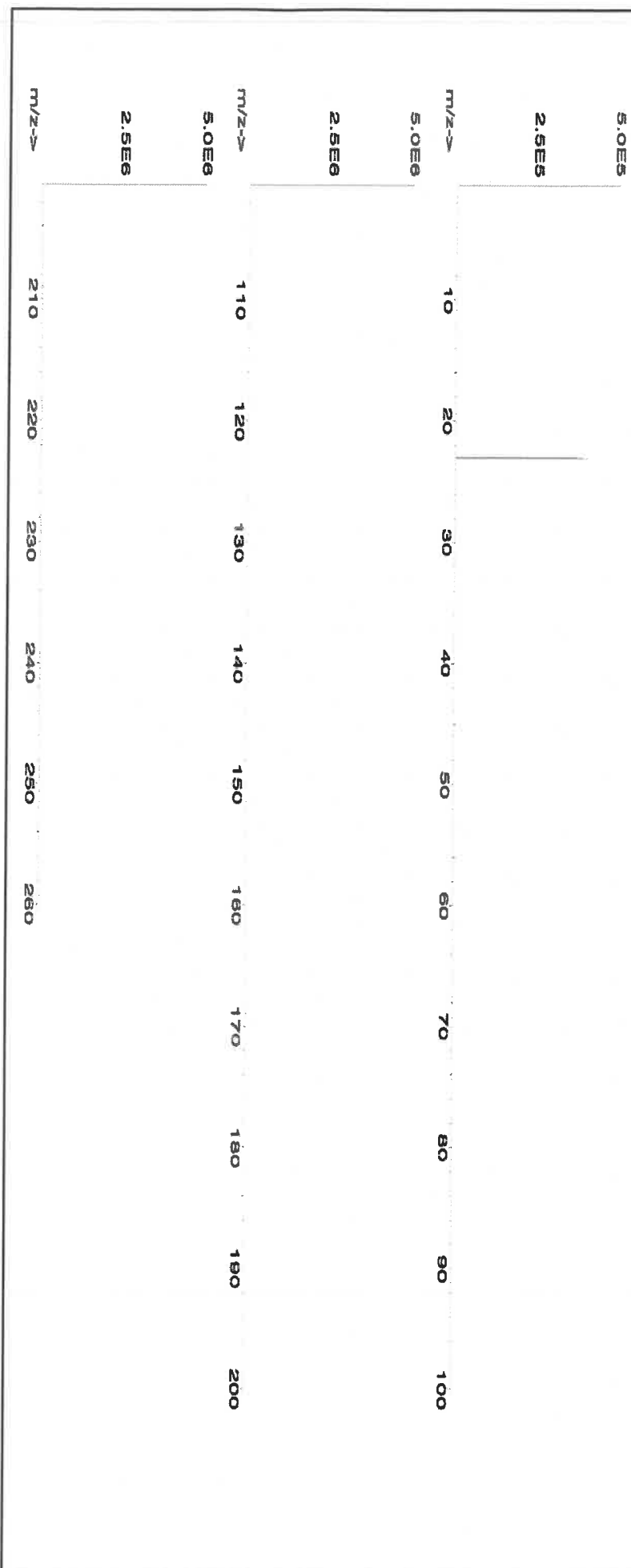
Formulated By:	Benson Chan	072424
Reviewed By:	Pedro L. Renteria	072424

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
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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	<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	<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.
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- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).



CERTIFIED WEIGHT REPORT:

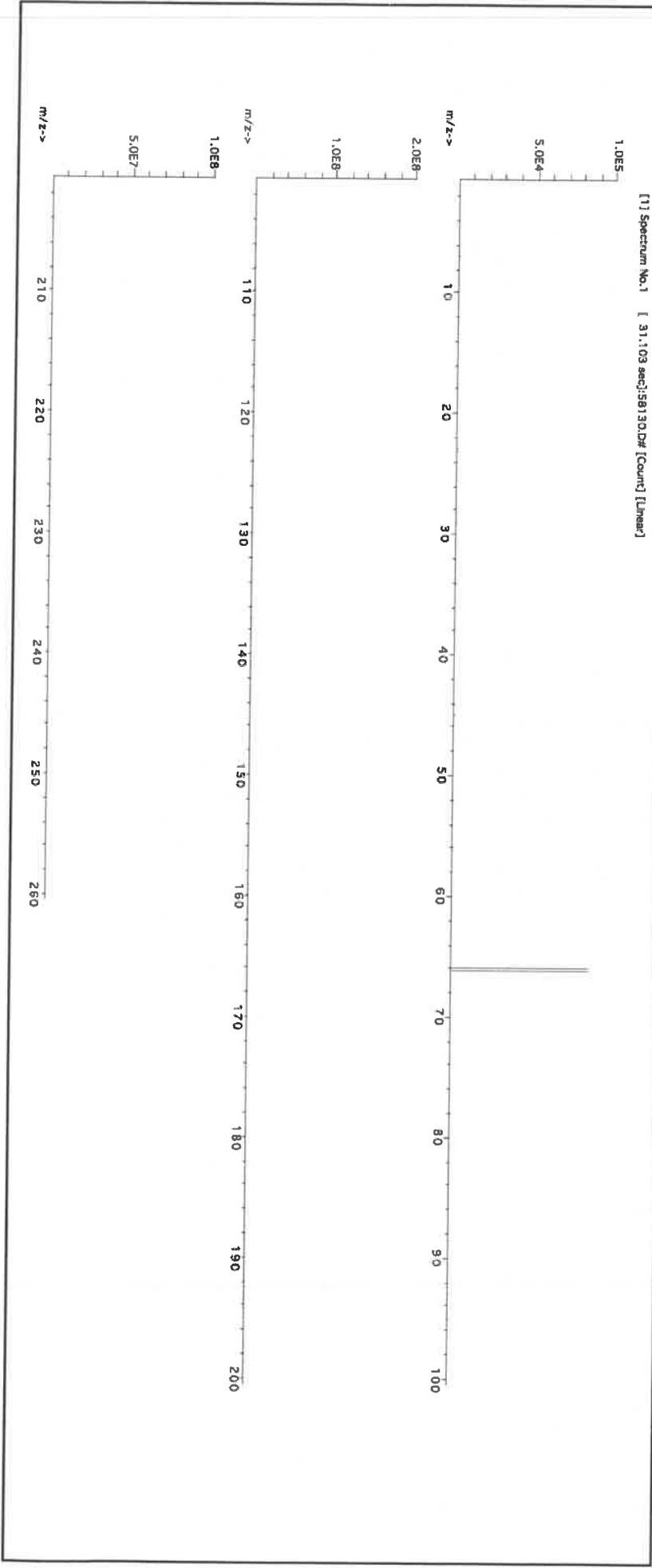
Part Number: 58030
Lot Number: 121724
Description: Zinc (Zn)
Expiration Date: 121727
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB
Weight shown below was diluted to (mL): 2000.1
Balance Uncertainty: 5E-05
Flask Uncertainty: 0.10

Lot # 24012496
Solvent: Nitric Acid
2% 40.0 (mL)
Nitric Acid

Aleah O'Brady
Formulated By: Aleah O'Brady
Reviewed By: Pedro L. Renteria
121724

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

1. Zinc nitrate hexahydrate (Zn) IN016 ZNE0302021A1 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:

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- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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 >>>

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**™

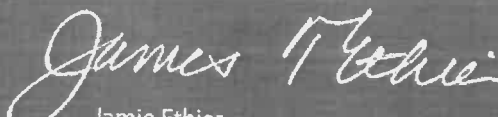


Material No.: 9530-33
Batch No.: 22G2862015

Test	Specification	Result
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For Laboratory, Research, or Manufacturing Use
Product Information (not specifications):
Appearance (clear, fuming liquid)
Meets ACS Specifications
Storage Condition: Store below 25 °C.

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


Jamie 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 >>>

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 inorganicventures.com

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1.0 ACCREDITATION / REGISTRATION

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



2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution		
Catalog Number:	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

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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



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1.0 ACCREDITATION / REGISTRATION

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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

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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



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1.0 ACCREDITATION / REGISTRATION

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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

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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





Certified Reference Material CRM



ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT:

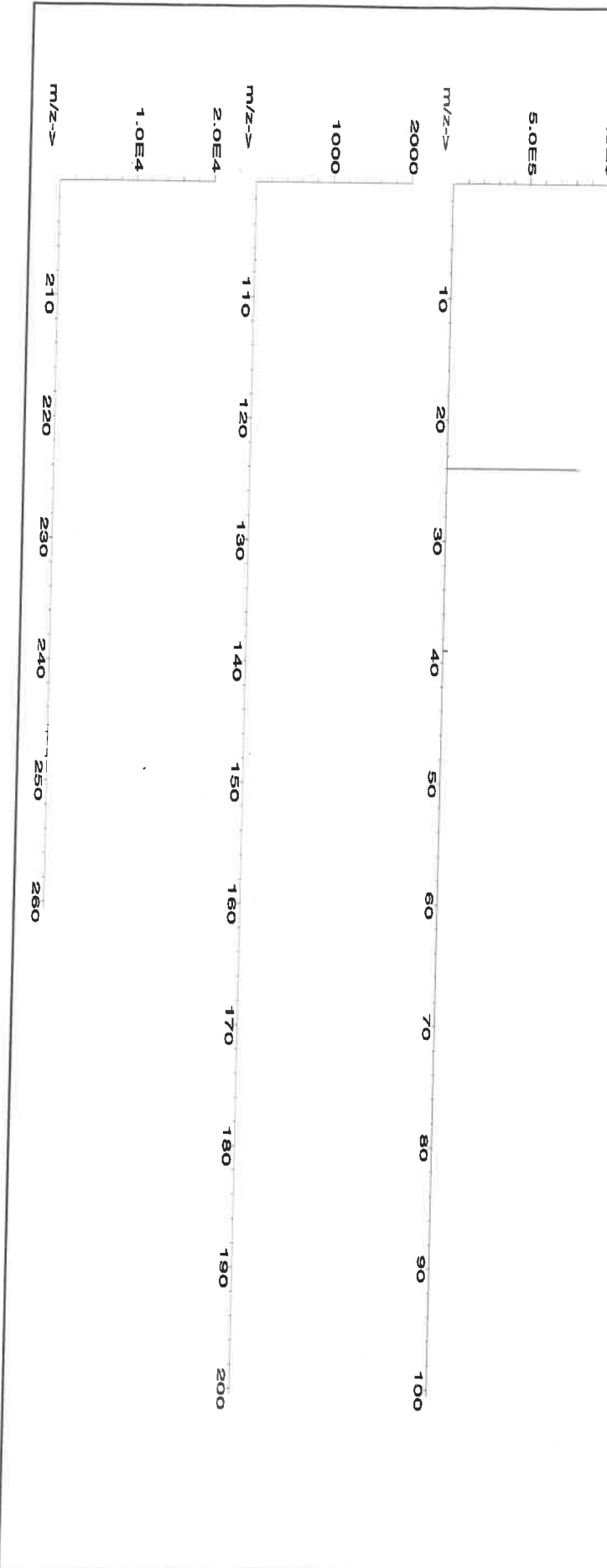
Part Number: 58112 **Lot #** 24012496 **Nitric Acid**
Lot Number: 011525
Description: Magnesium (Mg) **M 6171**
Expiration Date: 011528 **Solvent:** 2% 40.0 Nitric Acid
Recommended Storage: Ambient (20 °C) (mL)
Nominal Concentration (µg/mL): 10000
NIST Test Number: 6UTB 5E-05 Balance Uncertainty
Weight 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	Nominal	Purity	Uncertainty	Assay	Target	Actual	Actual	Expanded	SDS Information	NIST
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	SRM

[1] Spectrum No. 1 [19.923 sec]: 58112.D# [Count] [Linear]





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

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

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	T	Os	<0.02	Rh	<0.02	Ag	<0.02	Tl	<0.02	V	<0.02
Ba	<0.02	Cs	<0.02	Gd	<0.02	Ir	<0.02	Mn	<0.02	Pd	<0.02	Rb	<0.02	Na	<0.2	Th	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Tm	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Sn	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Sc	<0.02	Ta	<0.02	Ti	<0.02	Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

Har P. [Signature]

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

Certificate of Analysis

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 WEIGHT REPORT:

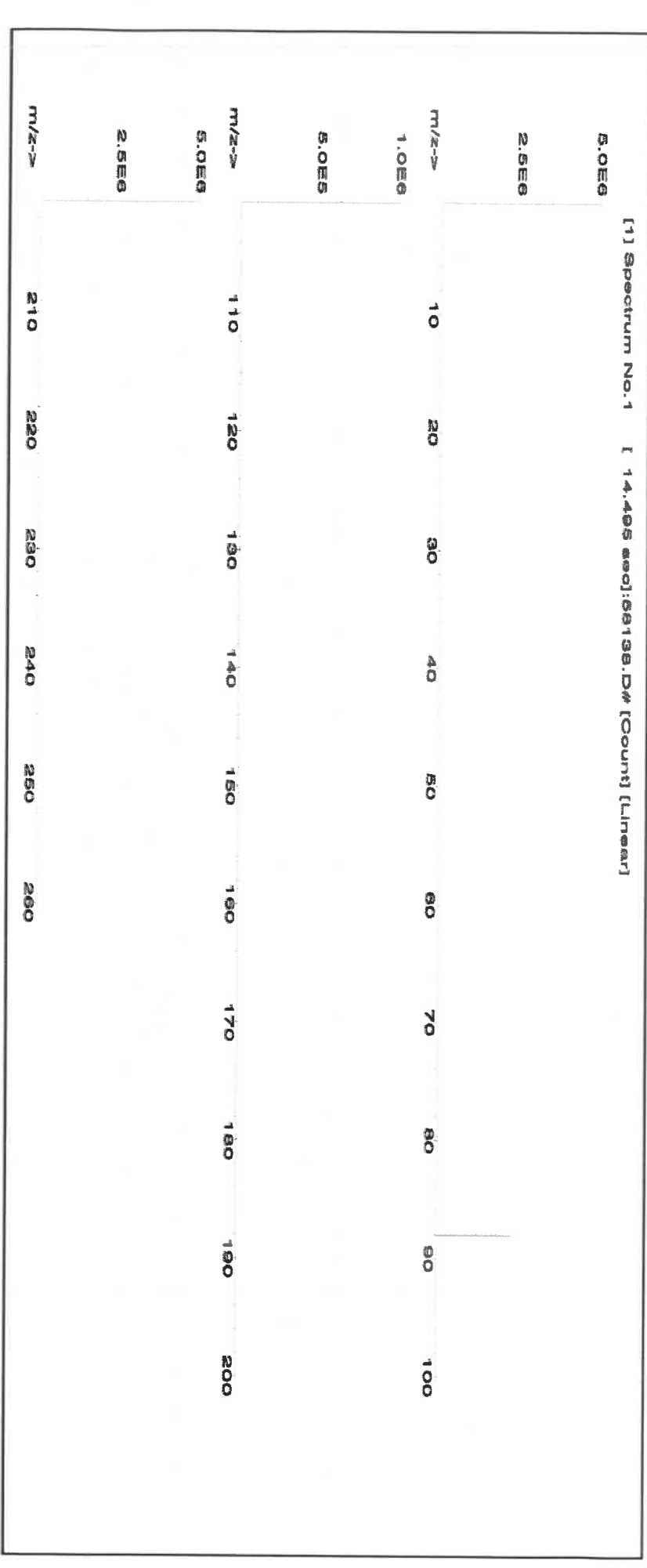
Part Number: 57038 **Lot #** 24002546 **Solvent:** Nitric Acid
Lot Number: 092724
Description: Strontium (Sr)
Expiration Date: 092727
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 8UTB
Weight shown below was diluted to (mL): 2000.07
5E-05 Balance Uncertainty
0.100 Flask Uncertainty

R-5816125
M 6/76

Formulated By:	Benson Chan	092724
Reviewed By:	Pedro L. Rentas	092724

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. 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





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

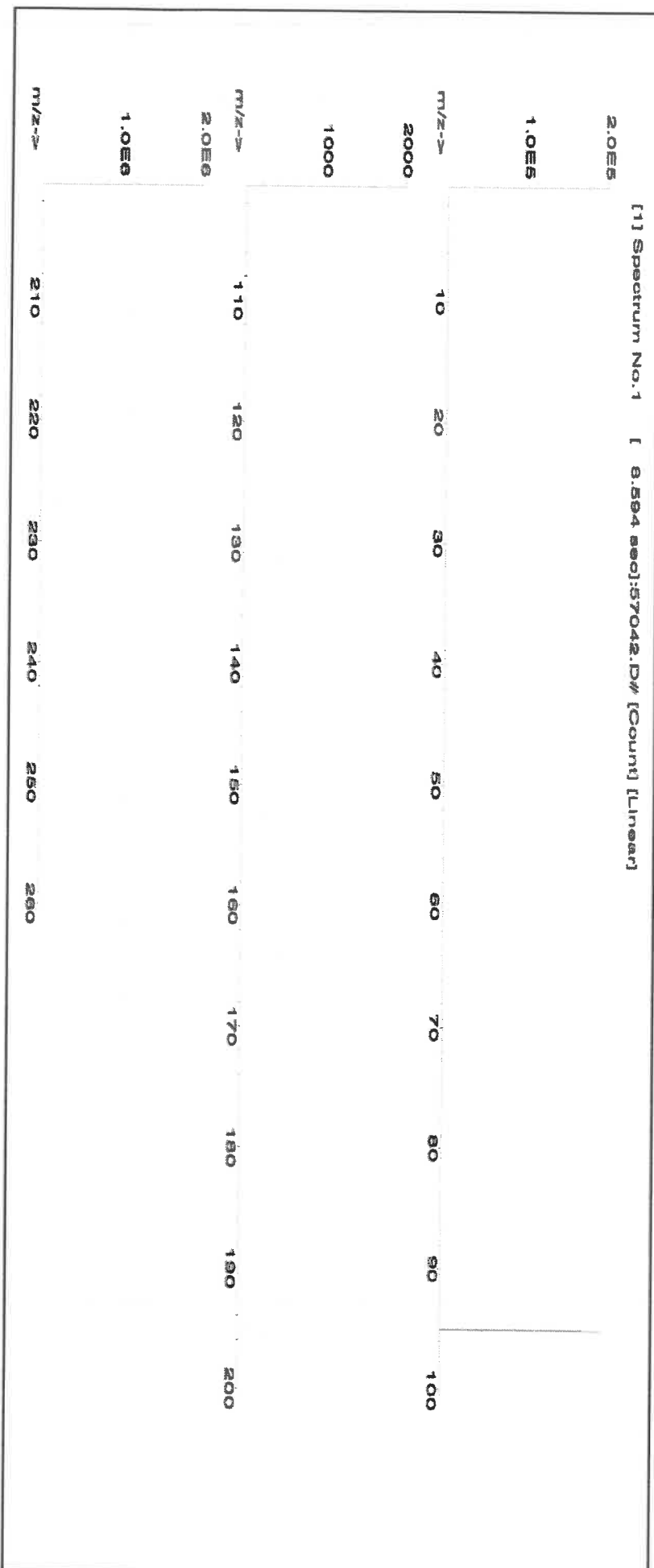
Ammonium hydroxide

Formulated By:	Benson Chan	080525
Reviewed By:	Pedro L. Renteria	080525

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty (mL)	Pipette (mL)	Nominal Conc. (µg/mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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1. 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 0.1-0.3 333 mg/kg 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:

03/15/28

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

0.10 Flask Uncertainty

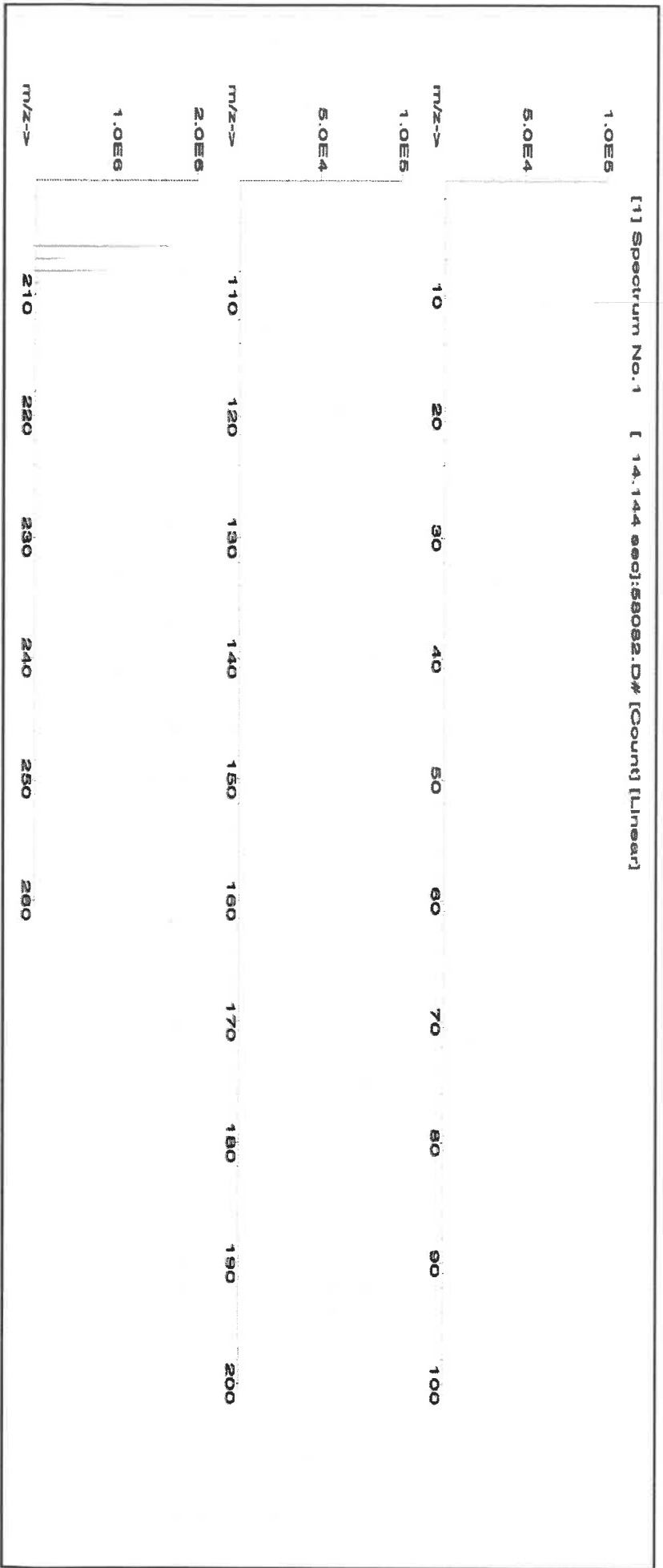
<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
Reviewed By:	Pedro L. Renteria
	031525

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
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1. Lead(II) nitrate (Pb)	IN029 PBD122016A1	1000	99.999	0.10	62.5	3.20015	3.20067	1000.2	2.0	10099-74-8	0.05 mg/m3	Intrins-ral 93 mg/kg	3128
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[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).

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M6179
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1.0 ACCREDITATION / REGISTRATION

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



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
Catalog Number: 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	<u>73Ge16O</u> , <u>178Hf+2</u>
ICP-OES 360.073 nm	0.005 / 0.000036 µg/mL	1	Ce, Th
ICP-OES 371.030 nm	0.004 / 0.00007 µg/mL	1	Ce
ICP-OES 377.433 nm	0.005 / 0.0009 µg/mL	1	Ta, Th

8.0 HAZARDOUS INFORMATION

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

9.0 HOMOGENEITY

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

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

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

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

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

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 20, 2024

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

11.2 Lot Expiration Date

- February 20, 2029

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

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

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

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

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Uyen Truong
Custom Processing Supervisor



Certificate Approved By:

Muzzammil Khan
Stock Laboratory Supervisor



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



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1.0 ACCREDITATION / REGISTRATION

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



2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution
Catalog Number: WW-LFS-1
Lot Number: W2-MEB752149
Matrix: 5% (v/v) HNO₃

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

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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



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Christiansburg, VA 24073 USA
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Certificate of Analysis

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M6181
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1.0 ACCREDITATION / REGISTRATION

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



2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution
Catalog Number: 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.



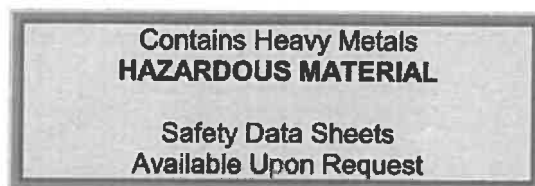
Instructions for QATS Reference Material: ICP-AES ICS

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



CERTIFIED WEIGHT REPORT:

Part Number: **57028**
Lot Number: **062024**
Description: **Nickel (NI)**

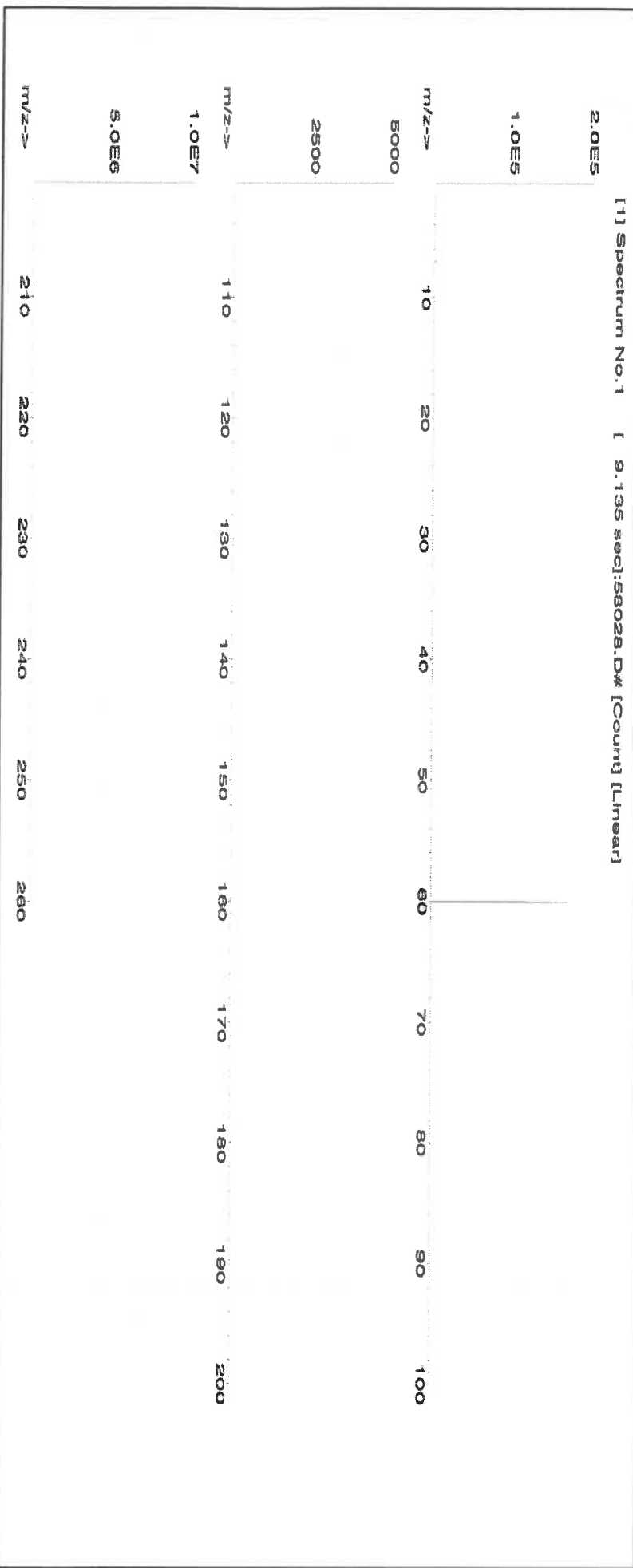
Lot # **24002546**
Solvent: **Nitric Acid**

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).



Certified Reference Material CRM

M6030



CERTIFIED WEIGHT REPORT:

Part Number: **57047**
Lot Number: **122823**
Description: **Silver (Ag)**

Solvent: 24002546 Nitric Acid
Lot #

Expiration Date: 122826
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

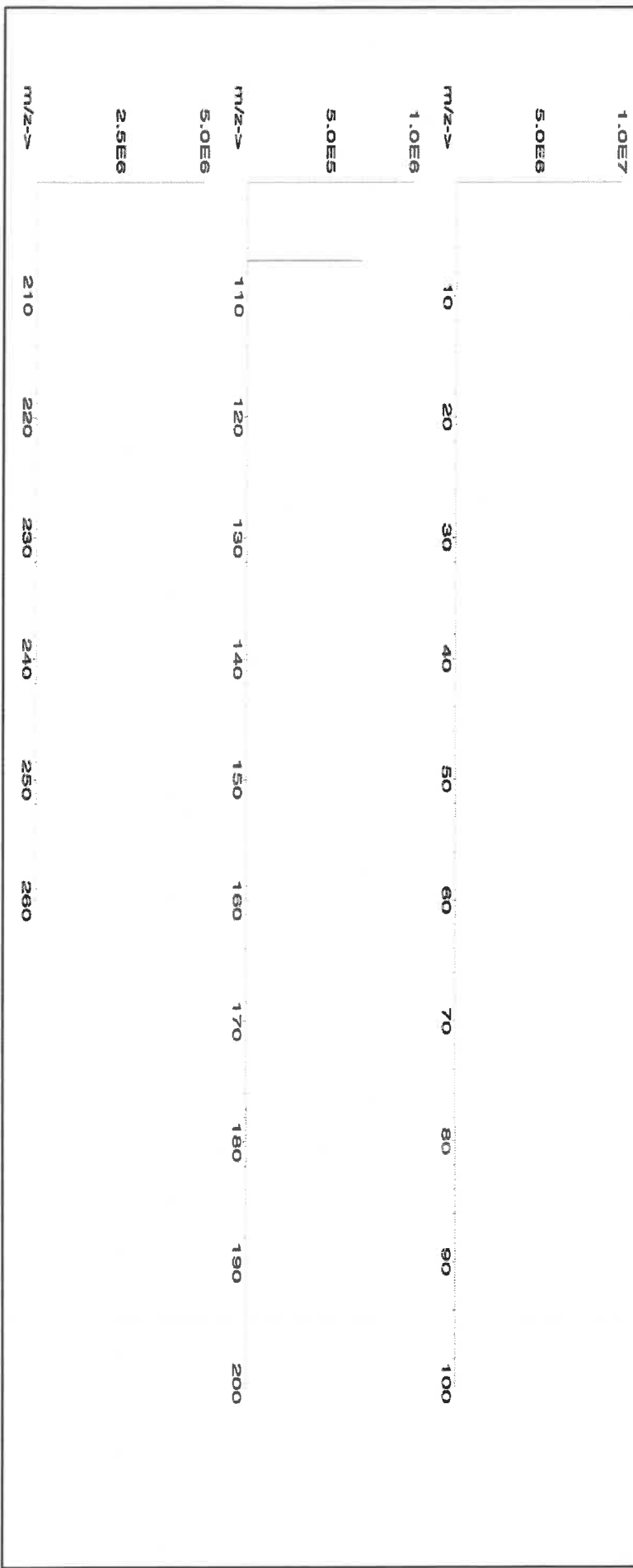
2% 80.0 (mL) Nitric Acid

Weight shown below was diluted to (mL): 4000.30 0.058 Balance Uncertainty
Flask Uncertainty

Formulated By:	Benson Chan
122823	
Reviewed By:	Pedro L. Rentas
122823	

SDS Information									
Compound	RM#	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty Purity (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)
1. Silver nitrate (Ag)	IN035	J0612AGA1	1000.0	99.999	0.10	63.7	6.27992	6.27998	1000.0
							2.0	7761-88-8	10 µg/mL
									NA
									3151

[1] Spectrum No. 1 [14.044 sec]:58147.D# [Count] [Linear]





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

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

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

(T)= Target analyte

Physical Characterization:

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

Certified by:

- * The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- * Purified acids, 18.2 meqohm deionized water, calibrated Class A glassware and the highest purity raw materials are used in the preparation of all standards.
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- * All Standards should be stored with caps tight and under appropriate laboratory conditions.
- * Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, D.C. (1994).

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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

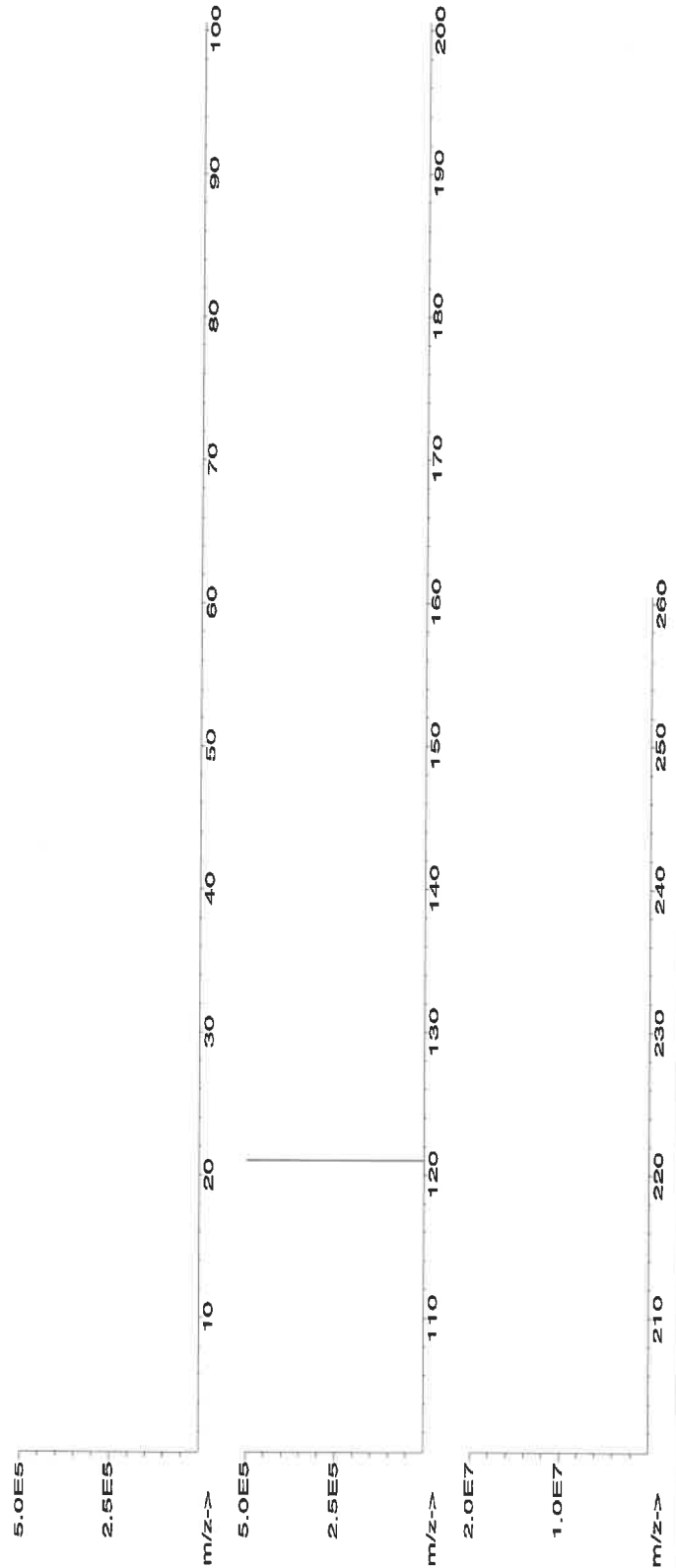
<i>Giovanni Esposito</i>	
Formulated By:	Giovanni Esposito
<i>Pedro L. Rentas</i>	
Reviewed By:	Pedro L. Rentas
071724	

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]





CERTIFIED WEIGHT REPORT:

Part Number: 57081
Lot Number: 062724
Description: Thallium (TI)

Lot #

Solvent: 24002546 Nitric Acid

Aleah O'Brady
Formulated By: Aleah O'Brady 062724

Expiration Date:

062727

2% 40.0 Nitric Acid (mL)

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

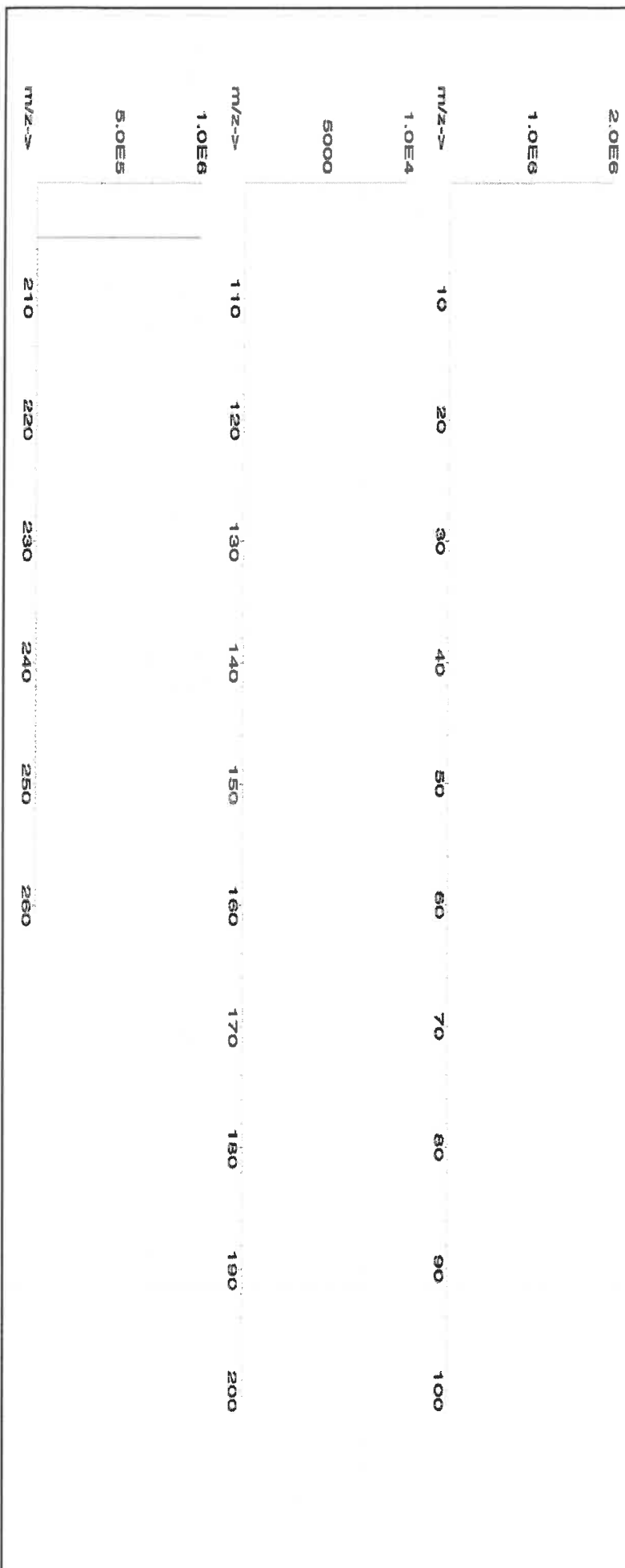
Pedro L. Renias
Reviewed By: Pedro L. Renias 062724

SDS Information

Compound	Lot Number	Nominal Conc. (µg/mL)	Purity (%)	Uncertainty (%)	Assay (%)	Target Weight (g)	Actual Weight (g)	Actual Conc. (µg/mL)	Expanded Uncertainty +/- (µg/mL)	CAS#	OSHA PEL (TWA)	LD50	NIST SRM
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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	Tm	<0.02	Yb	<0.02
Be	<0.01	Cr	<0.02	Ga	<0.02	Fe	<0.2	Hg	<0.2	P	<0.02	Ru	<0.02	Sr	<0.02	Sn	<0.02	Y	<0.02
Bi	<0.02	Co	<0.02	Ge	<0.02	La	<0.02	Mo	<0.02	Pt	<0.02	Sm	<0.02	S	<0.02	Ti	<0.02	Zn	<0.02
B	<0.02	Cu	<0.02	Au	<0.02	Pb	<0.02	Nd	<0.02	K	<0.2	Se	<0.02	Ta	<0.02			Zr	<0.02

(T) = Target analyte

Physical Characterization:

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

Certified by:

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



Certified Reference Material CRM

M6021



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

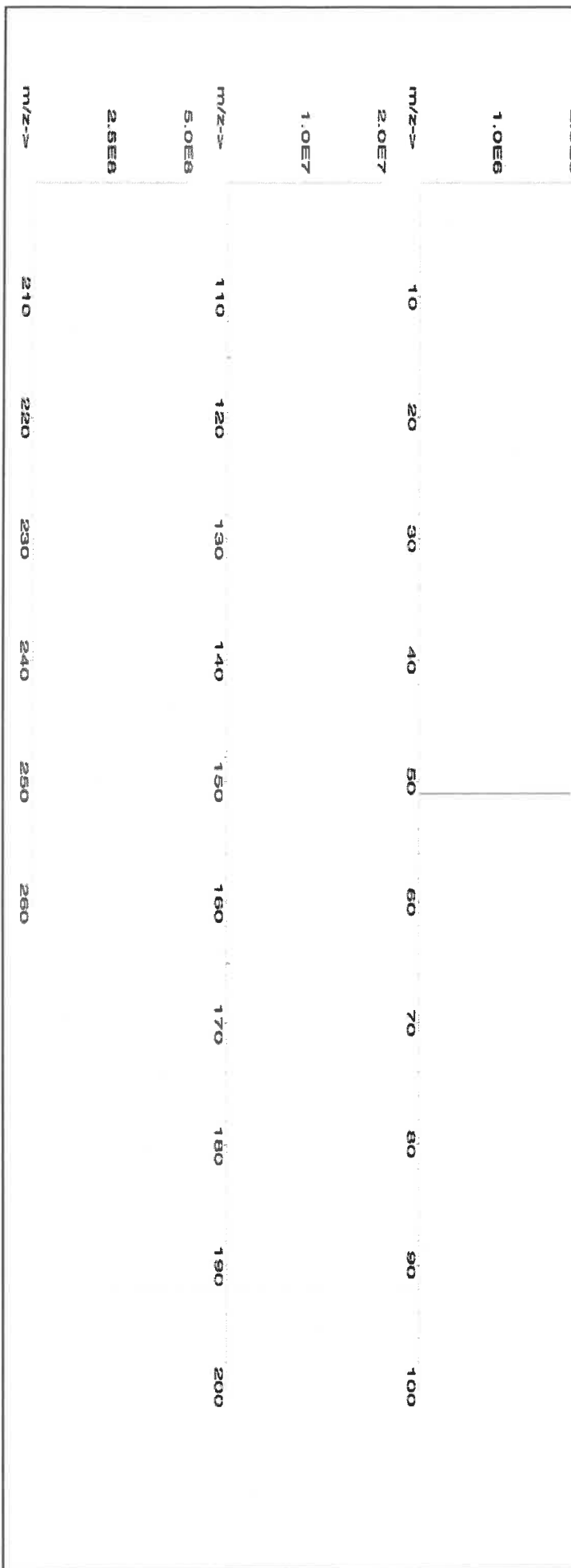
Expiration Date: 062427
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test Number: 6UTB

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-rat 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.
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SHIPPING DOCUMENTS

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CHEMTECH

CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 Fax: (908) 78-8922
www.chemtech.net

Chemtech Project Number: Q3292

COC Number:

CLIENT INFORMATION

COMPANY: Tetra Tech
ADDRESS: 4433 Corporation Ln, Suite 300
CITY: Virginia Beach STATE: VA ZIP: 23462
ATTENTION: Ernie Wu
PHONE: 757-466-4901 FAX: 757-461-4148

PROJECT INFORMATION

PROJECT NAME: NWIRP Bethpage
PROJECT #: 112G08005-WE13 LOCATION: RW8
PROJECT MANAGER: Ernie Wu
E-MAIL: ernie.wu@tetratech.com
PHONE: 757-466-4901 FAX: 757-461-4148

BILLING INFORMATION

BILL TO: PO#
ADDRESS:
CITY: STATE: ZIP:
ATTENTION: PHONE:

DATA TURNAROUND INFORMATION

FAX: 10 DAYS*
HARD COPY: 10 DAYS*
EDD: 10 DAYS*
* TO BE APPROVED BY CHEMTECH
STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION

☐ RESULTS ONLY
☐ RESULTS + QC
☐ New Jersey REDUCED
☐ New Jersey CLP
☐ EDD Format
☐ USEPA CLP
☐ New York State ASP "B"
☐ New York State ASP "A"
☐ Other

ANALYSIS

1,4-Dioxane SW846 8270									
SIM	1	2	3	4	5	6	7	8	9
Iron, Total									
TSS									
TDS									

PRESERVATIVES

COMMENTS

<-- Specify Preservatives
A-HCl B-HNO3
C-H2SO4 D-NaOH
E-ICE F-Other

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# of Bottles	PRESERVATIVES									COMMENTS
			COMP	LAB	DATE	TIME		B									
1.	RW8-SP100-20251003	GW		X	10/3/25	13:05	4	X	X	X	X						ph 0.3
2.	RW8-SP303-20251003	GW		X	10/3/25	13:13	4	X	X	X	X						ph 1.0
3.																	
4.																	
5.																	
6.																	
7.																	
8.																	
9.																	
10.																	

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER	DATE/TIME	RECEIVED BY	DATE/TIME	RECEIVED BY	COMMENTS
1. <i>[Signature]</i>	10/3/25 1:46	1. <i>[Signature]</i>	10.00	1. <i>[Signature]</i>	Conditions of bottles or coolers at receipt: ☐ Compliant ☐ Non Compliant ☐ Cooler Temp 3.4°C MeOH extraction requires an additional 4oz. Jar for percent solid ☐ Ice in Cooler? <i>yes</i>
2. RELINQUISHED BY	10/6/25	2. <i>[Signature]</i>	2.	2. <i>[Signature]</i>	
3. RELINQUISHED BY	10/6/25	3. <i>[Signature]</i>	3.	3. <i>[Signature]</i>	

WHITE - CHEMTECH COPY FOR RETURN TO CLIENT YELLOW - CHEMTECH COPY PINK - SAMPLER COPY

SHIPPED VIA: CLIENT: ☐ Hand Delivered ☐ Overnight
CHEMTECH: ☐ Picked Up ☐ Overnight
Shipment Complete ☐ YES ☐ NO

IR-Gun #1

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