CYANIDE STANDARDS

Cyanide Standards

Manufactured with high-purity starting materials and reagents. Products can be used for calibration of analytical instruments, validation of analytical methods, or for other applications deemed fit for purpose by the end-user. Certificate of Analysis includes lot specific trace metal impurity analysis.

Custom cyanide standards are available upon request.

1,000 µg/mL

ANALYTE	µg/mL	MATRIX	VOLUME	CATALOG #
Copper, Cu	1,000	NaCN	125 mL 500 mL	AACUCN-125ML AACUCN-500ML
Gold, Au	1,000	NaCN	125 mL 500 mL	AAAUCN-125ML AAAUCN-500ML
Silver, Ag	1,000	NaCN	125 mL 500 mL	AAAGCN-125ML AAAGCN-500ML
Zinc, Zn	1,000	NaCN	125 mL 500 mL	AAZNCN-125ML AAZNCN-500ML

Instrument Cross-Reference Table

Cross-Reference Table Symbols

Inorganic Ventures is not affiliated with the companies and brands referenced on the following pages (other than Inorganic Ventures), and their names and marks are owned by the respective company and/or brand. The names appear solely for the purpose of permitting cross-referencing and comparison of products and standards.

- AV Agilent/Varian
- JY HORIBA Jobin Yvon
- M Merck/MilliporeSigma
- N NIST
- PE Perkin Elmer
- S Spectro
- T Thermo Scientific
- C Common Multi-Element Standards
- I Common Multi-Ion Standards
- U USP Method <232>

Common Multi-Element Standards (C)

Inorganic Ventures#	Page
IV-STOCK-2	p.38
IV-STOCK-3	p.38
IV-STOCK-31	p.42
IV-STOCK-36	p.43
IV-STOCK-56	p.44
IV-STOCK-57	p.44
IV-STOCK-58	p.44
THM-TS-1	p.50

USP Method <232> (U)

Inorganic Ventures#	Page
IV-STOCK-38	p.53
IV-STOCK-40	p.53
IV-STOCK-41	p.53
IV-STOCK-60	p.53
IV-STOCK-65	p.53
IV-STOCK-66	p.53
IV-STOCK-67	p.54
IV-STOCK-68	p.54
IV-STOCK-69	p.54
IV-STOCK-70	p.54
IV-STOCK-78	p.54
IV-STOCK-79	p.54

Instrument Cross-Reference Table

Products in bold are **near identical** formulations due to small differences in matrix percentages or additional elements.

Agilent/Varian AV

Agilent/Varian#	Inorganic Ventures#	Page
5183-4681	**IV-STOCK-53**	p.43
5183-4682	**IV-13676**	*Custom*
5183-4688	**IV-STOCK-50**	p.43
5184-3566	IV-11304	*Custom*
5185-5959	**IV-STOCK-74**	p.44
5185-5959	IV-19645	*Custom*
5188-6524	**IV-STOCK-51**	p.43
5188-6525	**IV-STOCK-75**	p.44
5188-6526	IV-17685	*Custom*
5188-6527	**6020ICS-9B**	p.82
5188-6564	**AGI-TS-1**	p.49
5190-0465	IV-37576	*Custom*
5190-7001	IV-ACID-BLANK	p.108
5190-8338	**MM-MG-10**	p.98
5190-8593	IV-63636	*Custom*
5190-8596	**2008TS**	p.65, 78
5190-8599	**CLPP-ICS-A**	p.60, 64

Agilent/Varian#	Inorganic Ventures#	Page
5190-9409	**IV-STOCK-34**	p.42
5190-9418	IV-12022	*Custom*
5190-9423	IV-36669	*Custom*
5190-9766	**IV-STOCK-65**	p.53, 57
5190-9770	IV-45454	*Custom*
8500-6940	**IV-48812-A**	*Custom*
8500-6942	**IV-STOCK-29**	p.42
8500-6944	IV-STOCK-26	p.41
8500-6948	IV-STOCK-28	p.42
6610030000	IV-STOCK-24	p.41
6610030100	IV-8628	*Custom*
6610030400	**VAR-IS-1**	p.52
6610030500	**VAR-CAL-1**	p.51
6610030600	**VAR-CAL-2**	p.51
6610030700	**IV-STOCK-33**	p.42
G1820-60259	IV-DI-BLANK	p.108
ICM-240A	WW-IPC-1	p.71

HORIBA Jobin Yvon JY

Jobin Yvon#	Inorganic Ventures#	Page
JYICP-MIX7	IV-7	p.68, 74
JYICP-MIX7HSI	**IV-21575**	*Custom*
JYICP-MIX21	IV-21	p.69, 74
JYICP-MIX23	**IV-STOCK-4**	p.38
JYICP-MIXHM	IV-56240	*Custom*
JYICP-MIXMAJ	**IV-STOCK-34**	p.42
JYICP-QC1	IV-43846	*Custom*
JYICP-QCACT	IV-73264	*Custom*

Thermo Scientific T

Thermo Scientific#	Inorganic Ventures#	Page
12956213	**IV-41701**	*Custom*
1323760	THERMO-5A	p.50
1323770	THERMO-4AREV	p.50
ZG22950	TUNE F-X-SERIES	p.51
BRE0009578	IV-45981	*Custom*
4301 228 21401	**IV-STOCK-31**	p.42
4301 228 21411	IV-25579	*Custom*

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INSTRUMENT CROSS-REFERENCE TABLE

Instrument Cross-Reference Table

Products in bold are **near identical** formulations due to small differences in matrix percentages or additional elements.

Perkin Elmer (PE)

Perkin Elmer#	Inorganic Ventures#	Page
N0582152	IV-32705	*Custom*
N0681470	**IV-STOCK-14**	p.40
N0691579	IV-32706	*Custom*
N0691580	IV-37123	*Custom*
N0691581	**CGCA10**	p.30
N8122017	IV-57490	*Custom*
N8125030	IV-12922	*Custom*
N8125032	**IV-STOCK-22**	p.41
N8125035	IV-9442	*Custom*
N8125040	IV-48130	*Custom*
N8125041	IV-9443	*Custom*
N8145051	IV-STOCK-77	p.44
N8145052	IV-152	*Custom*
N8145053	IV-56364	*Custom*
N8145054	IV-4628	*Custom*
N8145059	IV-162	*Custom*
N8145060	IV-13373	*Custom*
N8145289	IV-66502	*Custom*
N9300200	IV-56238	*Custom*
N9300205	**2007ICS-3**	p.67
N9300208	IV-STOCK-54	p.43
N9300211	IV-56263	*Custom*
N9300215	IV-41880	*Custom*
N9300216	**IV-56261-A**	*Custom*
N9300217	IV-56262	*Custom*
N9300218	**IV-32395**	p.42
N9300220	IV-35380	*Custom*
N9300221	IV-35377	*Custom*
N9300223	**MSHGN-100PPM**	p. 21, 48, 55
N9300224	**IV-13160**	*Custom*
N9300225	**IV-9752**	*Custom*
N9300226	**CLPP-ICA-A**	p.60, 62, 64
N9300227	**CLPP-ICS-B4**	p.62, 64
N9300231	**IV-STOCK-30**	p.42
N9300232	IV-STOCK-26	p.41
N9300233	**IV-48**	*Custom*
N9300234	IV-STOCK-28	p.42
N9300235	**IV-STOCK-29**	p.42
N9300241	IV-46289	*Custom*
N9300244	IV-STOCK-18	p.40
N9300253	**MSHGN-10PPM**	p. 20, 48, 55
N9300281	**IV-21**	p. 69, 75
N9301720	IV-STOCK-21	p.40
N9301721	**IV-14208**	*Custom*
N9302946	IV-STOCK-55	p.44
N9303813 N9303814	IV-DI-BLANK	p.108
N9303816	IV-1868	*Custom*
N9303818	**IV-STOCK-35**	p.42
N9303821	**PE-CHK-1**	p.49
N9303822	**IV-15473**	p.49
N9303827	**60201CS-9A**	p.81
N9303828	**6020ICS-0A**	p.83
N9303832 N9303833	IV-STOCK-53 **IV-STOCK-53**	p.43
N9303834	IV-13360	*Custom*
N9303835	IV-56512	*Custom*
N9303839	**IV-9633**	*Custom*
N9303940	IV-STOCK-1	*Custom*
N9303941	**IV-STOCK-4**	p.53
N9303942	IV-STOCK-8	p.39
N9303843	**PE-TS-1**	p.50
N9303944	**IV-STOCK-10**	p.39
N9303946	IV-STOCK-13	p.39
N9303948	IV-56292	*Custom*
N9303949	**WW-MSCAL-1**	p.76

Products in bold are **near identical** formulations due to small differences in matrix percentages or additional elements.

Perkin Elmer (PE)

Perkin Elmer#	Inorganic Ventures#	Page
N9303952	IV-41880	*Custom*
N9303953	IV-66459	*Custom*
N9303954	IV-56291	*Custom*
N9307113	IV-25755	*Custom*
N9307114	IV-18652	*Custom*
N9307115	IV-33350	*Custom*
N9307116	IV-18653	*Custom*
N9307741	**IV-STOCK-6**	p.54
N9307805	**IV-34160**	*Custom*
N9307806	IV-44364	*Custom*
N9307809 N9308571	IV-ACID-BLANK	p.108
N9308543	IV-63920	*Custom*
N93078058	IV-12490-A	*Custom*

Spectro (S)

Spectro#	Inorganic Ventures#	Page
USA00875	CIROS-OES-TS	p.49
USA00888	**GENESIS-ICAL**	p.49

NIST Multi-Element Standards (N)

NIST#	Inorganic Ventures#	Page
SRM1643f	IV-STOCK-1643	p.49

Merck/MilliporeSigma (M)

Merck#	Inorganic Ventures#	Page
109410	IV-STOCK-23	p.41
109411	**IV-STOCK-24**	p.41
109480	IV-8217	*Custom*
109481	**IV-STOCK-14**	p.40
109482	IV-STOCK-55	p.44
109487	**IV-21**	p.69, 75
109490	**IV-19770**	*Custom*
109491	IV-73446	*Custom*
109492	**IV-STOCK-8**	p.39
109493	IV-STOCK-10	p.39
109494	IV-72380	*Custom*
109495	IV-STOCK-17	p.40
109497	**IV-16603**	*Custom*
109498	IV-STOCK-21	p.40
109500	IV-STOCK-18	p.40
110322	IV-STOCK-7	p.39
110580	IV-STOCK-6	p.38
110714	**IV-STOCK-5**	p.38
111355	**IV-STOCK-4**	p.38
115626	IV-STOCK-16	p.40

IONS

Common Multi-Ion Standards (I)

Inorganic Ventures#	Page
IC-FAS-1A	p.89
IC-SCS1	p.89
IV-STOCK-7	p.39, 89
IV-STOCK-59	p.89

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Manufactured with high-purity starting materials and reagents. Products can be used for calibration of analytical instruments, validation of analytical methods, or for other applications deemed fit for purpose by the end-user. Can be diluted with other multi-element standards to working concentrations. Certificate of Analysis includes lot specific trace metal impurity analysis.

ICP Calibration Standard			
IV-STOCK-2 (C)		Matrix: HNO_3	
IV-STOCK-2-125ML **IV-STOCK-2-500ML**		Volume: 125 mL Volume: 500 mL	
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Ca	10,000	Mg	10,000
K	10,000	Na	10,000

ICP Calibration Standard			
IV-STOCK-3 (C)		Matrix: HNO_3	
IV-STOCK-3-125ML **IV-STOCK-3-500ML**		Volume: 125 mL Volume: 500 mL	
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Ca	1,000	Mg	1,000
K	1,000	Na	1,000

ICP Calibration Standard			
IV-STOCK-4 (JY)		Matrix: HNO_3	
IV-STOCK-4-125ML **IV-STOCK-4-500ML**		Volume: 125 mL Volume: 500 mL	
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Ag	1,000	In	1,000
Al	1,000	K	1,000
B	1,000	Li	1,000
Ba	1,000	Mg	1,000
Bi	1,000	Mn	1,000
Ca	1,000	Na	1,000
Cd	1,000	Ni	1,000
Co	1,000	Pb	1,000
Cr	1,000	Sr	1,000
Cu	1,000	Tl	1,000
Fe	1,000	Zn	1,000
Ga	1,000		

(C) Common Multi-Element Standards
(JY) HORIBA Jobin Yvon
(M) Merck/MilliporeSigma

Wavelength Calibration Standard			
IV-STOCK-5 (M)		Matrix: HCl / HF	
IV-STOCK-5-125ML		Volume: 125 mL	
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Al	20	Mg	1
As	20	Mn	1
B	2	Na	20
Ba	2	Ni	5
Be	1	P	10
Ca	10	Pb	20
Cd	2	Sc	1
Cr	2	Se	20
Cu	2	Sr	1
Fe	2	Te	20
Hg	5	Ti	2
K	100	Y	1
Li	2	Zn	2

ICP Calibration Standard			
IV-STOCK-6		Matrix: HNO_3	
IV-STOCK-6-125ML		Volume: 125 mL	
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Ag	10	Li	10
Al	10	Mg	10
As	100	Mn	10
B	100	Mo	10
Ba	10	Na	10
Be	100	Ni	10
Bi	10	Pb	10
Ca	1,000	Rb	10
Cd	10	Se	100
Co	10	Sr	10
Cr	10	Te	10
Cu	10	Tl	10
Fe	100	U	10
Ga	10	V	10
K	10	Zn	100

Identical or **near identical** formulations | Multi-Element Standards

Manufactured with high-purity starting materials and reagents. Products can be used for calibration of analytical instruments, validation of analytical methods, or for other applications deemed fit for purpose by the end-user. Can be diluted with other multi-element standards to working concentrations. Certificate of Analysis includes lot specific trace metal impurity analysis.

Cation Calibration Standard

IV-STOCK-7 (M) (I) — Matrix: HNO_3

IV-STOCK-7-125ML — Volume: 125 mL
IV-STOCK-7-500ML — Volume: 500 mL

Analyte	µg/mL	Analyte	µg/mL
Ba^{+2}	100	Mn^{+2}	100
Ca^{+2}	100	Na^{+}	100
K^{+}	100	NH_4^{+}	100
Li^{+}	100	Sr^{+2}	100
Mg^{+2}	100		

ICP Calibration Standard

IV-STOCK-8 (M) — Matrix: HNO_3

IV-STOCK-8-125ML — Volume: 125 mL
IV-STOCK-8-500ML — Volume: 500 mL

Analyte	µg/mL	Analyte	µg/mL
Al	100	K	100
B	100	Li	100
Ba	100	Mg	100
Be	100	Mn	100
Bi	100	Na	100
Ca	100	Ni	100
Cd	100	Pb	100
Co	100	Se	100
Cr	100	Sr	100
Cu	100	Te	100
Fe	100	Tl	100
Ga	100	Zn	100

ICP Calibration Standard – Toxic Elements

IV-STOCK-9 — Matrix: HNO_3

IV-STOCK-9-125ML — Volume: 125 mL

Analyte	µg/mL	Analyte	µg/mL
As	100	Pb	100
Be	100	Se	100
Cd	100	Tl	100
Ni	100		

(I) Common Multi-Ion Standards

(M) Merck/MilliporeSigma

ICP Calibration Standard – Surface Water

IV-STOCK-10 (M) — Matrix: HNO_3

IV-STOCK-10-125ML — Volume: 125 mL

Analyte	µg/L*	Analyte	µg/L*
As	50	Mg	15,000
B	100	Mn	30
Ba	50	Mo	100
Be	20	Na	8,000
Bi	10	Ni	50
Ca	35,000	Pb	25
Cd	20	Se	10
Co	25	Sr	100
Cr	20	Tl	10
Cu	20	V	50
Fe	100	Zn	50
K	3,000		

*Parts per billion

ICP-MS Calibration Standard

IV-STOCK-12 — Matrix: HNO_3

IV-STOCK-12-125ML — Volume: 125 mL

Analyte	µg/mL	Analyte	µg/mL
Ba	10	In	10
Be	10	Li	10
Bi	10	Ni	10
Ce	10	Pb	10
Co	10	U	10

ICP Calibration Standard – Trace Metals

IV-STOCK-13 (M) — Matrix: HNO_3

IV-STOCK-13-125ML — Volume: 125 mL

Analyte	µg/mL	Analyte	µg/mL
Al	500	Fe	100
As	100	Mn	100
Be	100	Ni	100
Cd	25	Pb	100
Co	100	Se	25
Cr	100	V	250
Cu	100	Zn	100

MULTI-ELEMENT STANDARDS

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Wavelength Calibration Standard

IV-STOCK-14 (M) (PE)	Matrix: HCl / HNO_3 / HF		
IV-STOCK-14-500ML	Volume: 500 mL		
Analyte	**µg/mL**	**Analyte**	**µg/mL**
As	20	Na	20
K	100	Ni	20
La	20	P	100
Li	20	S	100
Mn	20	Sc	20
Mo	20		

ICP-MS Calibration Standard

IV-STOCK-15	Matrix: HNO_3		
IV-STOCK-15-125ML	Volume: 125 mL		
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Ca	10	Li	10
Fe	10	Na	10
K	10		

ICP Calibration Standard – Alkaline Earth Element

IV-STOCK-16	Matrix: HNO_3		
IV-STOCK-16-125ML	Volume: 125 mL		
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Ba	1,000	Mg	1,000
Ca	1,000	Sr	1,000

ICP Calibration Standard – HCl Soluble Elements

IV-STOCK-17 (M)	Matrix: HCl/HNO_3/HF		
IV-STOCK-17-125ML	Volume: 125 mL		
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Hf	100	Ta	100
Ir	100	Ti	100
Sb	100	Zr	100
Sn	100		

GFAA Calibration Standard

IV-STOCK-18 (M)	Matrix: HNO_3		
IV-STOCK-18-125ML	Volume: 125 mL		
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Ag	10	Cu	50
Al	100	Fe	20
As	100	Mn	20
Ba	50	Ni	50
Be	5	Pb	100
Cd	5	Sb	100
Co	50	Se	100
Cr	20	Tl	100

ICP Calibration Standard

IV-STOCK-21 (M) (PE)	Matrix: HNO_3		
IV-STOCK-21-125ML	Volume: 125 mL		
IV-STOCK-21-500ML	Volume: 500 mL		
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Ag	10	K	10
Al	10	Li	10
As	10	Mg	10
Ba	10	Mn	10
Be	10	Na	10
Bi	10	Ni	10
Ca	10	Pb	10
Cd	10	Rb	10
Co	10	Se	10
Cr	10	Sr	10
Cs	10	Tl	10
Cu	10	U	10
Fe	10	V	10
Ga	10	Zn	10
In	10		

(M) Merck/MilliporeSigma

(PE) Perkin Elmer

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ICP Calibration Standard

IV-STOCK-22 (PE)	Matrix: HNO_3		
IV-STOCK-22-125ML	Volume: 125 mL		
Analyte	**µg/L***	**Analyte**	**µg/L***
Cd	200	Pb	200
Cu	200	Rh	200
Mg	200		

*Parts per billion

ICP Calibration Standard

IV-STOCK-23 (M)	Matrix: HNO_3		
IV-STOCK-23-500ML	Volume: 500 mL		
Analyte	**µg/L***	**Analyte**	**µg/L***
B	1	Lu	1
Ba	1	Na	1
Co	1	Rh	1
Fe	1	Sc	1
Ga	1	Tl	1
In	1	U	1
K	1	Y	1
Li	1		

*Parts per billion

Tuning Solution

IV-STOCK-24 (AV) (M)	Matrix: HNO_3		
IV-STOCK-24-125ML **IV-STOCK-24-500ML**	Volume: 125 mL Volume: 500 mL		
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Al	50	Mn	50
As	50	Mo	50
Ba	50	Ni	50
Cd	50	Pb	50
Co	50	Se	50
Cr	50	Sr	50
Cu	50	Zn	50
K	500		

ICP Calibration Standard

IV-STOCK-26 (AV) (PE)	Matrix: HNO_3		
IV-STOCK-26-125ML	Volume: 125 mL		
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Ce	10	Pr	10
Dy	10	Sc	10
Er	10	Sm	10
Eu	10	Tb	10
Gd	10	Th	10
Ho	10	Tm	10
La	10	Y	10
Lu	10	Yb	10
Nd	10		

ICP Calibration Standard

IV-STOCK-27 (AV)	Matrix: HNO_3		
IV-STOCK-27-125ML	Volume: 125 mL		
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Ag	10	Li	10
Al	10	Mg	10
As	10	Mn	10
Ba	10	Na	10
Be	10	Ni	10
Ca	10	Pb	10
Cd	10	Rb	10
Co	10	Se	10
Cr	10	Sr	10
Cs	10	Tl	10
Cu	10	U	10
Fe	10	V	10
Ga	10	Zn	10
K	10		

(AV) Agilent/Varian
(M) Merck/MilliporeSigma
(PE) Perkin Elmer

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ICP Calibration Standard

IV-STOCK-28 (AV, PE)	Matrix: HCl / HNO_3		
IV-STOCK-28-125ML	Volume: 125 mL		
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Au	10	Rh	10
Hf	10	Ru	10
Ir	10	Sb	10
Pd	10	Sn	10
Pt	10	Te	10

ICP Calibration Standard

IV-STOCK-31 (C)	Matrix: HNO_3		
IV-STOCK-31-125ML	Volume: 125 mL		
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Al	1	Mg	0.2
Ba	0.2	Mn	1
Ca	0.2	Ni	5
Cu	1	P	10
K	5	Zn	0.2

ICP Calibration Standard

IV-STOCK-29 (PE)	Matrix: HNO_3 / HF		
IV-STOCK-29-125ML	Volume: 125 mL		
Analyte	**µg/mL**	**Analyte**	**µg/mL**
B	10	S	10
Ge	10	Si	10
Mo	10	Ta	10
Nb	10	Ti	10
P	10	W	10
Re	10	Zr	10

Calibration Standard – Mix Majors

IV-STOCK-33 (AV)	Matrix: HNO_3		
IV-STOCK-33-125ML **IV-STOCK-33-500ML**	Volume: 125 mL Volume: 500 mL		
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Ca	500	Mg	500
Fe	500	Na	500
K	500		

ICP Calibration Standard

IV-STOCK-30 (PE)	Matrix: HNO_3		
IV-STOCK-30-125ML	Volume: 125 mL		
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Be	10	Mg	10
Bi	10	Ni	10
Ce	10	Pb	10
Co	10	U	10
In	10		

ICP Calibration Standard

IV-STOCK-34 (PE, JY)	Matrix: HNO_3		
IV-STOCK-34-125ML **IV-STOCK-34-500ML**	Volume: 125 mL Volume: 500 mL		
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Ca	5,000	Mg	5,000
K	5,000	Na	5,000

ICP Calibration Standard

IV-STOCK-35 (PE)	Matrix: HNO_3		
IV-STOCK-35-125ML	Volume: 125 mL		
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Ca	1,000	Mg	1,000
Fe	1,000	Na	1,000
K	1,000		

(AV) Agilent/Varian
(C) Common Multi-Element Standards
(JY) HORIBA Jobin Yvon
(PE) Perkin Elmer

Manufactured with high-purity starting materials and reagents. Products can be used for calibration of analytical instruments, validation of analytical methods, or for other applications deemed fit for purpose by the end-user. Can be diluted with other multi-element standards to working concentrations. Certificate of Analysis includes lot specific trace metal impurity analysis.

ICP Calibration Standard

IV-STOCK-36 (C)	Matrix: HCl		
IV-STOCK-36-125ML IV-STOCK-36-500ML	Volume: 125 mL Volume: 500 mL		
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Au	100	Pt	100
Pd	100		

Environmental Calibration Standard

IV-STOCK-50 (AV)	Matrix: HNO_3 / HF		
IV-STOCK-50-125ML	Volume: 125 mL		
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Ag	10	Mn	10
Al	10	Mo	10
As	10	Na	1,000
Ba	10	Ni	10
Be	10	Pb	10
Ca	1,000	Sb	10
Cd	10	Se	10
Co	10	Th	10
Cr	10	Tl	10
Cu	10	U	10
Fe	1,000	V	10
K	1,000	Zn	10
Mg	1,000		

Internal Standard

IV-STOCK-53 (AV) (PE)	Matrix: HNO_3 / HF		
IV-STOCK-53-125ML	Volume: 125 mL		
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Bi	10	Sc	10
Ge	10	Tb	10
In	10	Y	10
^{6}Li	10		

7500 Series PA Tuning Solution 1
(commonly used with IV-Stock-52)

IV-STOCK-51 (AV)	Matrix: HNO_3		
IV-STOCK-51-125ML	Volume: 125 mL		
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Al	5	Mn	5
As	20	Na	5
Ba	5	Ni	10
Be	20	Pb	10
Bi	5	Sc	5
Cd	20	Sr	5
Co	5	Th	5
Cr	5	Tl	5
Cu	5	U	5
In	5	V	5
^{6}Li	5	Y	2.5
Lu	5	Yb	2.5
Mg	10	Zn	20

7500 Series PA Tuning Solution 2
(commonly used with IV-Stock-51)

IV-STOCK-52	Matrix: HCl		
IV-STOCK-52-125ML	Volume: 125 mL		
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Ge	10	Ru	10
Ir	5	Sb	10
Mo	10	Sn	10
Pd	10	Ti	5

Interference Check Standard

IV-STOCK-54 (PE)	Matrix: HNO_3		
IV-STOCK-54-125ML	Volume: 125 mL		
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Al	1,200	Mg	3,000
Ca	6,000	Na	1,000
Fe	5,000		

(AV) Agilent/Varian
(C) Common Multi-Element Standards
(PE) Perkin Elmer

MULTI-ELEMENT STANDARDS

Manufactured with high-purity starting materials and reagents. Products can be used for calibration of analytical instruments, validation of analytical methods, or for other applications deemed fit for purpose by the end-user. Can be diluted with other multi-element standards to working concentrations. Certificate of Analysis includes lot specific trace metal impurity analysis.

Wavecal Standard

IV-STOCK-55 (PE)	Matrix: HNO_3		
IV-STOCK-55-125ML	Volume: 125 mL		
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Ba	1	Li	10
Ca	1	Mn	10
K	50	Na	10
La	10	Sr	10

ICP Calibration Standard

IV-STOCK-56 (C)	Matrix: HNO_3 / HF		
IV-STOCK-56-125ML	Volume: 125 mL		
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Mo	100	Sn	100
Sb	100	Ti	100
Si	100		

ICP Calibration Standard

IV-STOCK-57 (C)	Matrix: HNO_3 / HF		
IV-STOCK-57-125ML	Volume: 125 mL		
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Mo	10	Sn	10
Sb	10	Ti	10

ICP Calibration Standard

IV-STOCK-58 (C)	Matrix: HCl		
IV-STOCK-58-125ML	Volume: 125 mL		
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Au	100	Pt	100
Ir	100	Re	100
Os	100	Rh	100
Pd	100	Ru	100

ICP-MS Tuning Solution

IV-STOCK-74 (AV)	Matrix: HNO_3		
IV-STOCK-74-500ML	Volume: 500 mL		
Analyte	**µg/L***	**Analyte**	**µg/L***
Ce	1	Mg	1
Co	1	Tl	1
Li	1	Y	1

*Parts per billion

ICP-MS Internal Standard

IV-STOCK-75 (AV)	Matrix: HNO_3 / HF		
IV-STOCK-75-125ML	Volume: 125 mL		
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Bi	100	Lu	100
Ge	100	Rh	100
In	100	Sc	100
^6Li	100	Tb	100

ICP-MS Tuning Solution

IV-STOCK-77 (PE)	Matrix: HNO_3		
IV-STOCK-77-500ML	Volume: 500 mL		
Analyte	**µg/L***	**Analyte**	**µg/L***
Be	1	Li	1
Ce	1	Mg	1
Fe	1	Pb	1
In	1	U	1

*Parts per billion

AV Agilent/Varian

C Common Multi-Element Standards

PE Perkin Elmer

These elements are grouped for ease of use. Intended for ICP-MS and ICP-OES, they can be used individually or in any combination upon dilution into 1% HNO_3. Custom ICP-MS/OES calibration standards are available upon request.

65–Element Group

Rare Earth ICP-MS Standard			
CMS-1 C		Matrix: HNO_3	
CMS-1-125ML		Volume: 125 mL	
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Ce	10	Pr	10
Dy	10	Sc	10
Er	10	Sm	10
Eu	10	Tb	10
Gd	10	Th	10
Ho	10	Tm	10
La	10	U	10
Lu	10	Y	10
Nd	10	Yb	10

For ICP analysis of all rare earth elements plus U and Th.

Precious Metals ICP-MS Standard			
CMS-2 C		Matrix: HCl	
CMS-2-125ML **CMS-2-500ML**		Volume: 125 mL Volume: 500 mL	
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Au	10	Re	10
Ir	10	Rh	10
Pd	10	Ru	10
Pt	10	Te	10

For ICP analysis of precious metals plus Re and Te.

Fluoride Soluble ICP-MS Standard			
CMS-3 C		Matrix: HNO_3/HF	
CMS-3-125ML		Volume: 125 mL	
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Ge	10	Ta	10
Hf	10	Ti	10
Mo	10	W	10
Nb	10	Zr	10
Sn	10		

For ICP analysis of elements that tolerate or require HF for stability

Hot Plasma ICP-MS Complete Standard			
CMS-4 C		Matrix: HNO_3	
CMS-4-125ML **CMS-4-500ML**		Volume: 125 mL Volume: 500 mL	
Analyte	**µg/mL**	**Analyte**	**µg/mL**
As	10	In	10
B	10	Pb	10
Ba	10	Sb	10
Be	10	Se	10
Bi	10	Tl	10
Cd	10	V	10
Ga	10		

For direct use in ICP analysis or as stock concentrate.

Cool Plasma ICP-MS Complete Standard			
CMS-5 C		Matrix: HNO_3	
CMS-5-125ML **CMS-5-500ML**		Volume: 125 mL Volume: 500 mL	
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Ag	10	Li	10
Al	10	Mg	10
Ca	10	Mn	10
Co	10	Na	10
Cr	10	Ni	10
Cs	10	Rb	10
Cu	10	Sr	10
Fe	10	Zn	10
K	10		

For direct use in ICP analysis or as stock concentrate.

C Common Multi-Element Standard

These elements are grouped for ease of use. Intended for ICP-MS and ICP-OES, they can be used individually or in any combination upon dilution into 1% HNO_3. Custom ICP-MS/OES calibration standards are available upon request.

69–Element Group

Rare Earth ICP-MS Standard

CCS-1 (C)	Matrix: HNO_3		
CCS-1-125ML CCS-1-500ML	Volume: 125 mL Volume: 500 mL		
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Ce	100	Pr	100
Dy	100	Sc	100
Er	100	Sm	100
Eu	100	Tb	100
Gd	100	Th	100
Ho	100	Tm	100
La	100	U	100
Lu	100	Y	100
Nd	100	Yb	100

For ICP analysis of all rare earth elements plus U and Th. Uranium is isotopically depleted. Can be diluted with CCS-4 and CCS-6 to working concentrations.

Precious Metals ICP-MS Standard

CCS-2 (C)	Matrix: HCl		
CCS-2-125ML	Volume: 125 mL		
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Au	100	Pt	100
Ir	100	Rh	100
Pd	100	Ru	100

For simultaneous ICP analysis of precious metals. Can be diluted with CCS-1 or CCS-5 to working concentrations. For dilution with CCS-6 please see Silver Chemical Stability article for more information about Ag stability in HCl.

Alkali, Alkaline, Non-Transition ICP-MS Standard

CCS-4 (C)	Matrix: HNO_3		
CCS-4-125ML CCS-4-500ML	Volume: 125 mL Volume: 500 mL		
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Al	100	In	100
As	100	K	100
Ba	100	Li	100
Be	100	Mg	100
Bi	100	Na	100
Ca	100	Rb	100
Cs	100	Se	100
Ga	100	Sr	100

For use as stock concentrate for ICP analysis. Can be diluted with CCS-1 and CCS-6 to working concentrations.

Fluoride Soluble ICP-MS Standard

CCS-5 (C)	Matrix: HNO_3/HF		
CCS-5-125ML CCS-5-500ML	Volume: 125 mL Volume: 500 mL		
Analyte	**µg/mL**	**Analyte**	**µg/mL**
B	100	Sb	100
Ge	100	Si	100
Hf	100	Sn	100
Mo	100	Ta	100
Nb	100	Ti	100
P	100	W	100
Re	100	Zr	100
S	100		

For ICP analysis of elements that tolerate or require HF for stability. Can be diluted with CCS-2 and CCS-6 to working concentrations. Can be diluted with CCS-4 to lower working concentrations (<10 ppm recommended).

(C) Common Multi-Element Standard

These elements are grouped for ease of use. Intended for ICP-MS and ICP-OES, they can be used individually or in any combination upon dilution into 1% HNO_3. Custom ICP-MS/OES calibration standards are available upon request.

69–Element Group

Transition ICP-MS Standard			
CCS-6 C		Matrix: HNO_3	
CCS-6-125ML **CCS-6-500ML**		Volume: 125 mL Volume: 500 mL	
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Ag	100	**Mn**	100
Cd	100	**Ni**	100
Co	100	**Pb**	100
Cr	100	**Tl**	100
Cu	100	**V**	100
Fe	100	**Zn**	100
Hg	100		

For use as stock concentrate for ICP analysis. Can be diluted with CCS-1 and CCS-4 to working concentrations. Contains mercury (Hg); please see the Mercury Chemical Stability article for more information regarding accurate Hg analyses in multi-element solutions.

ICP-MS Refractory Elements Standard			
IV-ICPMS-71B C		Matrix: HNO_3 / HF	
IV-ICPMS-71B-125ML **IV-ICPMS-71B-500ML**		Volume: 125 mL Volume: 500 mL	
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Ge	10	**Sn**	10
Hf	10	**Ta**	10
Mo	10	**Te**	10
Nb	10	**Ti**	10
Sb	10	**W**	10
Si	10	**Zr**	10

Can be diluted to working concentrations without additional HF for stability.

71–Element Group

ICP-MS Complete Standard			
IV-ICPMS-71A C		Matrix: HNO_3	
IV-ICPMS-71A-125ML **IV-ICPMS-71A-500ML**		Volume: 125 mL Volume: 500 mL	
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Ag	10	**Lu**	10
Al	10	**Mg**	10
As	10	**Mn**	10
B	10	**Na**	10
Ba	10	**Nd**	10
Be	10	**Ni**	10
Ca	10	**P**	10
Cd	10	**Pb**	10
Ce	10	**Pr**	10
Co	10	**Rb**	10
Cr	10	**S**	10
Cs	10	**Se**	10
Cu	10	**Sm**	10
Dy	10	**Sr**	10
Er	10	**Th**	10
Eu	10	**Tl**	10
Fe	10	**Tm**	10
Ga	10	**U**	10
Gd	10	**V**	10
Ho	10	**Yb**	10
K	10	**Zn**	10
La	10		

Uranium is isotopically depleted. Can be diluted with other multi-element standards to working concentrations.

C Common Multi-Element Standard

These elements are grouped for ease of use. Intended for ICP-MS and ICP-OES, they can be used individually or in any combination upon dilution into 1% HNO_3. Custom ICP-MS/OES calibration standards are available upon request.

71–Element Group

ICP-MS Precious Metals Standard			
IV-ICPMS-71C C		Matrix: HCl	
IV-ICPMS-71C-125ML **IV-ICPMS-71C-500ML**		Volume: 125 mL Volume: 500 mL	
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Au	10	**Pt**	10
Ir	10	**Re**	10
Os	10	**Rh**	10
Pd	10	**Ru**	10

Contains osmium (Os); avoid dilutions with oxidizing acids such as concentrated HNO3. For dilutions including Ag please see Silver Chemical Stability article for more information about Ag stability in HCl.

ICP-MS Internal Standard			
IV-ICPMS-71D C		Matrix: HNO_3	
IV-ICPMS-71D-125ML **IV-ICPMS-71D-500ML**		Volume: 125 mL Volume: 500 mL	
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Bi	10	**Sc**	10
In	10	**Tb**	10
^{6}Li	10	**Y**	10

Covers mass range from 6-Li to 209-Bi. Certified reference material that may also be used for calibration. Can be diluted with other multi-element standards to working concentrations.

Lithium ICP-MS Standard	
MSLI-10PPM C	Matrix: HNO_3
MSLI-10PPM-125ML	Volume: 125 mL
Analyte	**µg/mL**
Li	10

Mercury ICP-MS Standard	
MSHG-10PPM C	Matrix: HCl
MSHG-10PPM-125ML **MSHG-10PPM-500ML**	Volume: 125 mL Volume: 500 mL
Analyte	**µg/mL**
Hg	10

Tellurium ICP-MS Standard	
MSTEN-100PPM C	Matrix: HNO_3
MSTEN-100PPM-125ML	Volume: 125 mL
Analyte	**µg/mL**
Te	100

C Common Multi-Element Standard

AGI Tuning Solution

AGI-TS-1 (AV)	Matrix: HNO_3
AGI-TS-1-125ML AGI-TS-1-500ML	Volume: 125 mL Volume: 500 mL

Analyte	µg/mL	Analyte	µg/mL
Ce	10	Tl	10
Co	10	Y	10
Li	10		

ICP-MS stock tuning solution designed for dilution to working concentrations. Covers mass range from Li to Tl. Certified reference material that may also be used for calibration. Agilent P/N 5188-6564.

CIROS Tuning Solution

CIROS-OES-TS (S)	Matrix: HCl / HNO_3
CIROS-OES-TS-125ML	Volume: 125 mL

Analyte	µg/mL	Analyte	µg/mL
Fe	10	P	10
K	10	S	50
La	10	Sc	10
Mg	5	Ti	10
Mn	5		

For reprofiling optics of Spectro Ciros ICP-OES.

GENESIS Calibration Standard

GENESIS-ICAL (S)	Matrix: HNO_3 / HCl / HF
GENESIS-ICAL-125ML GENESIS-ICAL-500ML	Volume: 125 mL Volume: 500 mL

Analyte	µg/mL	Analyte	µg/mL
Be	2	Na	5
Ca	1	Ni	10
Ce	10	P	10
Cu	10	S	50
Eu	10	Sc	5
Fe	10	Si	10
In	10	Sr	2
K	10	Ti	10
Li	2	V	10
Mn	5	Y	10
Mo	5	Zr	10

For reprofiling optics of Spectro Ciros ICP-OES.

Trace Metals in Water– SRM1643

IV-STOCK-1643 (N)	Matrix: HNO_3
IV-STOCK-1643-125ML IV-STOCK-1643-500ML	Volume: 125 mL Volume: 500 mL

Analyte	µg/L*	Analyte	µg/L*
Ag	1	Mg	8,000
Al	142	Mn	39
As	60	Mo	121
B	158	Na	21,000
Ba	544	Ni	62
Be	14	Pb	20
Bi	14	Rb	14
Ca	32,000	Re	113
Cd	7	Sb	58
Co	27	Se	12
Cr	20	Sr	323
Cu	23	Te	1
Fe	98	Tl	7
K	2,000	V	38
Li	17	Zn	79

*Parts per billion

For quality control and method evaluation of fresh water trace element analyses. Ready to use without dilution.

Instrument Check Standard

PE-CHK-1 (PE)	Matrix: HNO_3 / HF
PE-CHK-1-125ML	Volume: 125 mL

Analyte	µg/mL	Analyte	µg/mL
Ag	10	Mn	10
Al	10	Ni	10
As	10	Pb	10
Ba	10	Sb	10
Be	10	Se	10
Cd	10	Tl	10
Co	10	V	10
Cr	10	Zn	10
Cu	10		

For daily instrument calibration.

(AV) Agilent/Varian
(N) NIST
(PE) Perkin Elmer
(S) Spectro

Tuning Solution

PE-TS-1 (PE)	Matrix: HNO_3
PE-TS-1-125ML PE-TS-1-500ML	Volume: 125 mL Volume: 500 mL

Analyte	µg/mL	Analyte	µg/mL
Ba	10	Mg	10
Be	10	Pb	10
Ce	10	Rh	10
Co	10	Tl	10
In	10	U	10
Li	10	Y	10

For instrument set-up and calibration. Covers mass range from Li to U (isotopically depleted).

ICP-MS Tuning Solution – Tune B iCAP

THERMO-4AREV (T)	Matrix: HNO_3/HCl
THERMO-4AREV-500ML THERMO-4AREV-1L	Volume: 500 mL Volume: 1 L

Analyte	µg/L*	Analyte	µg/L*
Ba	1	In	1
Bi	1	Li	1
Ce	1	U	1
Co	1		

*Parts per billion

Tuning solution for Thermo iCAP Q ICP-MS. Equivalent to Thermo P/N 1323770.

ICP-MS Tuning Solution – iCAP Q

THERMO-5A (T)	Matrix: HNO_3
THERMO-5A-125ML THERMO-5A-250ML	Volume: 125 mL Volume: 250 mL

Analyte	µg/L*	Analyte	µg/L*
Ag	6	Mg	10
Al	10	Mn	6
Ba	4	Ni	15
Be	35	Rh	3
Bi	3	Sc	8
Ce	3	Sr	5
Co	8	Ta	3
Cs	3	Tb	3
Cu	15	Tl	4
Ga	10	U	3
Ho	3	Y	3
In	3	Zn	20
Li	8		

*Parts per billion

Calibration standard for Thermo iCAP Q ICP-MS. Equivalent to Thermo P/N 1323760.

Tuning Solution

THM-TS-1 (C)	Matrix: HNO_3
THM-TS-1-125ML	Volume: 125 mL

Analyte	µg/mL	Analyte	µg/mL
B	10	Lu	10
Ba	10	Na	10
Co	10	Rh	10
Fe	10	Sc	10
Ga	10	Th	10
In	10	U	10
K	10	Y	10
Li	10		

A general tuning solution suitable for numerous ICP-MS designs and models.

(C) Common Multi-Element Standard
(PE) Perkin Elmer
(T) Thermo Scientific

Identical or **near identical** formulations | **Multi-Element Standards**

Tune F-X-Series Tuning Solution

TUNE F-X-SERIES (T)	Matrix: HNO_3/HF
TUNE F-X-SERIES-125ML	Volume: 125 mL

Analyte	ng/mL*	Analyte	ng/mL*
Ag	40	Na	40
Al	50	Nb	20
As	250	Nd	45
B	200	Ni	150
Ba	50	P	1000
Be	500	Pb	10
Bi	5	Pd	100
Ca	1000	Pr	10
Cd	100	Rb	30
Ce	10	Re	15
Co	35	Sb	40
Cr	40	Sc	30
Cs	15	Se	1250
Cu	150	Si	1000
Dy	25	Sm	45
Er	15	Sn	45
Eu	10	Sr	20
Fe	20	Ta	5
Ga	45	Tb	5
Gd	45	Te	500
Ge	150	Th	5
Hf	15	Ti	500
Ho	5	Tl	10
In	10	Tm	5
K	35	U	5
La	10	V	40
Li	100	W	25
Lu	5	Y	15
Mg	50	Yb	25
Mn	20	Zn	150
Mo	100	Zr	35

*Parts per billion

For detector cross-calibration on Thermo X-Series ICP-MS.

Calibration Standard

VAR-CAL-1 (AV)	Matrix: HNO_3 / HF
VAR-CAL-1-125ML VAR-CAL-1-500ML	Volume: 125 mL Volume: 500 mL

Analyte	µg/mL	Analyte	µg/mL
Mo	100	Sn	100
Sb	100	Ti	100

General ICP-OES calibration standard. Designed to be mixed with VAR-CAL-2 at working concentrations.

Calibration Standard

VAR-CAL-2 (AV)	Matrix: HNO_3
VAR-CAL-2-125ML	Volume: 125 mL

Analyte	µg/mL	Analyte	µg/mL
Ag	100	Mn	100
Al	100	Ni	100
As	100	Pb	100
Ba	100	Se	100
Be	100	Th	100
Cd	100	Tl	100
Co	100	U	100
Cr	100	V	100
Cu	100	Zn	100

General ICP-OES calibration standard. Designed to be mixed with VAR-CAL-1 at working concentrations.

Calibration Standard

VAR-CAL-7 (AV)	Matrix: HNO_3/HF
VAR-CAL-7-125ML VAR-CAL-7-500ML	Volume: 125 mL Volume: 500 mL

Analyte	µg/mL	Analyte	µg/mL
Al	5	Mn	5
As	5	Mo	5
Ba	5	Ni	5
Cd	5	Pb	5
Co	5	Se	5
Cr	5	Sr	5
Cu	5	Zn	5
K	50		

ICP-OES calibration standard.

(AV) Agilent/Varian
(T) Thermo Scientific

MULTI-ELEMENT STANDARDS

Multi-Element Standards

Identical or **near identical** formulations

ICP Internal Standard			
VAR-IS-1 (AV)		Matrix: HNO_3	
VAR-IS-1-125ML		Volume: 125 mL	
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Bi	100	**Sc**	100
In	100	**Tb**	100
^{6}Li	100	**Y**	100

For use as ICP-MS multi-element internal standard. Covers mass range from 6-Li to 209-Bi

Tuning Solution			
VAR-TS-MS (AV)		Matrix: HNO_3	
VAR-TS-MS-125ML		Volume: 125 mL	
Analyte	**µg/mL**	**Analyte**	**µg/mL**
Ba	10	**Mg**	10
Be	10	**Pb**	10
Ce	10	**Th**	10
Co	10	**Tl**	10
In	10		

For use as ICP-MS tuning solution. Covers mass range from 9-Be to 232-Th. Certified reference material that may also be used for calibration.

(AV) Agilent/Varian

HIGH-PURITY IONIZATION BUFFERS

Ionization Buffers

Ionization buffers are 99.999+% pure. They are analyzed using both axial-view ICP-OES and ICP-MS for 70+ impurities. Custom ionization buffers are available upon request.

1% Cesium Ionization Buffer	
CSN-ISB	Matrix: HNO_3
CSN-ISB-500ML	Volume: 500 mL
Analyte	**µg/mL**
Cs	10,000
High Purity buffer; ideal for Axial View ICP-OES	

For stabilizing the degree of ionization in flame AA and ICP-OES analysis.

2% Lithium Ionization Buffer	
LINB2	Matrix: HNO_3
LINB2-125ML	Volume: 125 mL
Analyte	**µg/mL**
Li	20,000

For stabilizing the degree of ionization in flame AA and ICP-OES analysis. Not to be used as a calibration standard, for analytical reagent use only.

5% Cesium Ionization Buffer	
CSN-ISB5	Matrix: HNO_3
CSN-ISB5-500ML	Volume: 500 mL
Analyte	**µg/mL**
Cs	50,000

For stabilizing the degree of ionization in flame AA and ICP-OES analysis.

USP Method <232> — Elemental Impurities Compliance Standards

Manufactured with high-purity starting materials and reagents. Products can be used for calibration of analytical instruments, validation of analytical methods, or for other applications deemed fit for purpose by the end-user. Can be diluted with other multi-element standards to working concentrations. Certificate of Analysis includes lot specific trace metal impurity analysis.

For the pharmaceutical industry, Inorganic Ventures has developed CRMs to comply with the United States Pharmacopeia (USP) general chapters on elemental impurity USP <232> limits and USP <233> procedures.

These methods are for testing inorganic impurities in pharmaceutical products by ICP. The International Conference on Harmonization (ICH) Working Group on Elemental Impurities is in the process of developing a harmonized approach for controlling these impurities as well.

USP <232> Precious Metals Elemental Impurities			
IV-STOCK-38 (U)		Matrix: HCl	
IV-STOCK-38-125ML		Volume: 125 mL	
Analyte	µg/mL	Analyte	µg/mL
Ir	100	Pt	100
Os	100	Rh	100
Pd	100	Ru	100

USP <232> Oral Elemental Impurities			
IV-STOCK-40 (U)		Matrix: HNO_3	
IV-STOCK-40-125ML		Volume: 125 mL	
Analyte	µg/mL	Analyte	µg/mL
As	1.5	Mo	100
Cd	25	Ni	500
Cu	1000	Pb	5
Hg	15	V	100

USP <232> Parenteral Elemental Impurities			
IV-STOCK-41 (U)		Matrix: HNO_3	
IV-STOCK-41-125ML		Volume: 125 mL	
Analyte	µg/mL	Analyte	µg/mL
As	1.5	Mo	10
Cd	2.5	Ni	50
Cu	100	Pb	5
Hg	1.5	V	10

USP <232> Drug Substance and Excipients			
IV-STOCK-60 (U)		Matrix: HCl	
IV-STOCK-60-125ML		Volume: 125 mL	
Analyte	µg/mL	Analyte	µg/mL
As	1.5	Os	10
Cd	0.5	Pb	0.5
Cr	1100	Pd	10
Cu	300	Pt	10
Hg	3	Rh	10
Ir	10	Ru	10
Mo	300	V	10
Ni	20		

USP <232> / ICH Q3D Class 1 Oral Elemental Impurities			
IV-STOCK-65 (U)		Matrix: HNO_3	
IV-STOCK-65-125ML		Volume: 125 mL	
Analyte	µg/mL	Analyte	µg/mL
As	15	Hg	30
Cd	5	Pb	5

USP <232> / ICH Q3D Class 2A Oral Elemental Impurities			
IV-STOCK-66 (U)		Matrix: HNO_3	
IV-STOCK-66-125ML		Volume: 125 mL	
Analyte	µg/mL	Analyte	µg/mL
Co	50	V	100
Ni	200		

(U) USP Method <232>