



# ICP Standards

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## Multi-element Standards for ICP

### Instrument Check Standards

Ref. Number	Description	Volume	Msr. Unit	Shelf-life (months)	ISO 17034 ISO 17025
1ED8.K2.2N.L1	Spiking Standard 4R - 1 component; Sb 200mg/l in HNO <sub>3</sub> 2%	100	ml	12	Yes
91C8.10K.2N.L1	Spiking Standard 2R - 4 components; 10 000mg/l each of Ca ; Mg ; K ; Na in HNO <sub>3</sub> 2%	100	ml	12	Yes
4554.50.5N.L1	Spiking Standard 3 - 12 components; Al 2000mg/l ; Ba 2000mg/l ; Fe 1000mg/l ; Co 500mg/l ; Mn 500mg/l ; Ni 500mg/l ; V 500mg/l ; Zn 500mg/l ; Cu 250mg/l ; Cr 200mg/l ; Be 50mg/l ; Ag 50mg/l in HNO <sub>3</sub> 5%	100	ml	6	Yes

### EPA and ISO Methods

Ref. Number	Description	Volume	Msr. Unit	Shelf-life (months)	ISO 17034 ISO 17025
AE93.20.5N.L1	EPA 200.7 - Mixed Calibration Standard 3 - 4 components; P 100mg/l ; Ce 20mg/l ; Co 20mg/l ; V 20mg/l in HNO <sub>3</sub> 5%	100	ml	6	Yes
AE93.K2.5N.L1	EPA 200.7 Calibration - CAL 3 - 4 components; P 1000mg/l ; Ce 200mg/l ; Co 200mg/l ; V 200mg/l in HNO <sub>3</sub> 5%	100	ml	12	Yes
58DA.K1.5N.L1	EPA 200.7 - Mixed Calibration Standard 4 - 5 components; Al 100mg/l ; Si 100mg/l ; Cr 50mg/l ; Zn 50mg/l ; Sn 40mg/l in HNO <sub>3</sub> 5%	100	ml	6	Yes
FE99.10.5N.L1	EPA 200.7 - Mixed Calibration Standard 5 - 6 components; Fe 100mg/l ; Pb 100mg/l ; Mg 100mg/l ; Tl 50mg/l ; Ni 20mg/l ; Be 10mg/l in HNO <sub>3</sub> 5%	100	ml	6	Yes
87EA.5.5N.L1	EPA 200.7 - Mixed Calibration Standard 1 - 10 components; As 100mg/l ; Ca 100mg/l ; Sb 50mg/l ; Se 50mg/l ; B 20mg/l ; Cd 20mg/l ; Cu 20mg/l ; Mn 20mg/l ; Ba 10mg/l ; Ag 5mg/l in HNO <sub>3</sub> 5%	100	ml	6	Yes
0F81.5.5N.L1	EPA 200.7 - Laboratory Performance Check Standard - 29 components; P 100mg/l ; K 100mg/l ; Si 100mg/l ; Al 20mg/l ; Sb 20mg/l ; As 20mg/l ; Ba 20mg/l ; Be 20mg/l ; B 20mg/l ; Cd 20mg/l ; Ca 20mg/l ; Cr 20mg/l ; Co 20mg/l ; Cu 20mg/l ; Fe 20mg/l ; Pb 20mg/l ; Li 20mg/l ; Mg 20mg/l ; Mn 20mg/l ; Mo 20mg/l ; Ni 20mg/l ; Se 20mg/l ; Na 20mg/l ; Sr 20mg/l ; Tl 20mg/l ; Sn 20mg/l ; V 20mg/l ; Zn 20mg/l ; Ag 5mg/l in HNO <sub>3</sub> 5% ; HF tr%	100	ml	6	Yes
1ED8.K5.2N.L1	EPA 6010 - Interference Check Standard 3 - 1 component; Sb 500mg/l in HNO <sub>3</sub> 2% ; HF tr%	100	ml	12	Yes
7CF2.5.5N.L1	EPA 6010 - Laboratory Performance Check Standard - 30 components; P 100mg/l ; K 100mg/l ; Si 100mg/l ; Al 20mg/l ; Sb 20mg/l ; As 20mg/l ; Ba 20mg/l ; Be 20mg/l ; B 20mg/l ; Cd 20mg/l ; Ca 20mg/l ; Cr 20mg/l ; Co 20mg/l ; Cu 20mg/l ; Fe 20mg/l ; Pb 20mg/l ; Li 20mg/l ; Mg 20mg/l ; Mn 20mg/l ; Mo 20mg/l ; Ni 20mg/l ; Se 20mg/l ; Na 20mg/l ; Sr 20mg/l ; Tl 20mg/l ; Sn 20mg/l ; Ti 20mg/l ; V 20mg/l ; Zn 20mg/l ; Ag 5mg/l in HNO <sub>3</sub> 5% ; HF tr%	100	ml	6	Yes

Ref. Number	Description	Volume	Msr. Unit	Shelf-life (months)	ISO 17034 ISO 17025
FDA4.15.7N.L1	ICP standard according to USP 232 dietary supplements - 4 components; Cd 5mg/l ; Pb 10mg/l ; As 15mg/l ; Hg 15mg/l in HNO3 7%	100	ml	6	Yes
7F97.10.15C.L1	ICP standard according to USP 232 parenteral dose 10 mg/l - 6 components each of Ir ; Pt ; Os ; Rh ; Pd ; Ru in HCl 15%	100	ml	6	Yes
121E.1D5.7N.L1	ICP standard according to USP 232 Parenteral Elemental Impurities: - 8 components; Cd 2.5mg/l ; Pb 5mg/l ; As 1.5mg/l ; Hg 1.5mg/l ; Mo 10mg/l ; Ni 50mg/l ; V 10mg/l ; Cu 100mg/l in HNO3 7%	100	ml	6	Yes
E13C.1D5.7N.L1	ICP standard according to USP 232 Parenteral Elemental Impurities - 8 components; Cd 25mg/l ; Pb 5mg/l ; As 1.5mg/l ; Hg 15mg/l ; Mo 100mg/l ; Ni 500mg/l ; V 100mg/l ; Cu 1000mg/l in HNO3 7%	100	ml	6	Yes

## Standards for Water Quality

Ref. Number	Description	Volume	Msr. Unit	Shelf-life (months)	ISO 17034 ISO 17025
SSW.L1	ICP Water Quality standard - Synthetic Sea Water acc. to ASTM D665 : 10 components; NaCl 24.54g/l ; MgCl2x-6H2O 5.2g/l ; Na2SO4 4.09g/l ; CaCl2 1.16g/l ; KCl 0.69g/l ; NaHCO3 0.20g/l ; KBr 0.1g/l ; H3BO3 0.03g/l ; SrCl2 0.024g/l ; NaF 0.003g/l in H2O	100	ml	12	No
SSW.L5	ICP Water Quality standard - Synthetic Sea Water acc. to ASTM D665 : 10 components; NaCl 24.54g/l ; MgCl2x-6H2O 5.2g/l ; Na2SO4 4.09g/l ; CaCl2 1.16g/l ; KCl 0.69g/l ; NaHCO3 0.20g/l ; KBr 0.1g/l ; H3BO3 0.03g/l ; SrCl2 0.024g/l ; NaF 0.003g/l in H2O	500	ml	12	No
QCCPAWater1.4L1	ICP Water Quality standard 1 - 31 elements (supplied in two different solutions) - Ca 1mg/l ; Mg 0.2mg/l ; Na 0.5mg/l ; K 0.5mg/l ; P 0.5mg/l ; S 2mg/l ; Si 1mg/l ; Al 0.005mg/l ; Ag 0.005mg/l ; As 0.01mg/l ; B 0.05mg/l ; Ba 0.005mg/l ; Be 0.002mg/l ; Bi 0.01mg/l ; Cd 0.0005mg/l ; Co 0.002mg/l ; Cr 0.002mg/l ; Cu 0.005mg/l ; Fe 0.01mg/l ; Li 0.05mg/l ; Mn 0.002mg/l ; Mo 0.005mg/l ; Ni 0.005mg/l ; Pb 0.005mg/l ; Sb 0.01mg/l ; Se 0.01mg/l ; Sr 0.005mg/l ; Ti 0.002mg/l ; Tl 0.01mg/l ; V 0.005mg/l ; Zn 0.01mg/l in H2O/ tr. HNO3	800	ml	6	Yes
QCCPAWater1.L1	ICP Water Quality standard 1 - 31 elements (supplied in two different solutions) - Ca 1mg/l ; Mg 0.2mg/l ; Na 0.5mg/l ; K 0.5mg/l ; P 0.5mg/l ; S 2mg/l ; Si 1mg/l ; Al 0.005mg/l ; Ag 0.005mg/l ; As 0.01mg/l ; B 0.05mg/l ; Ba 0.005mg/l ; Be 0.002mg/l ; Bi 0.01mg/l ; Cd 0.0005mg/l ; Co 0.002mg/l ; Cr 0.002mg/l ; Cu 0.005mg/l ; Fe 0.01mg/l ; Li 0.05mg/l ; Mn 0.002mg/l ; Mo 0.005mg/l ; Ni 0.005mg/l ; Pb 0.005mg/l ; Sb 0.01mg/l ; Se 0.01mg/l ; Sr 0.005mg/l ; Ti 0.002mg/l ; Tl 0.01mg/l ; V 0.005mg/l ; Zn 0.01mg/l in H2O/ tr. HNO3	200	ml	6	Yes
WCEBF.D005.005N.L1	ICP Water Quality standard 1 - 31 elements (supplied in two different solutions) - Ca 1mg/l ; Mg 0.2mg/l ; Na 0.5mg/l ; K 0.5mg/l ; P 0.5mg/l ; S 2mg/l ; Si 1mg/l ; Al 0.005mg/l ; Ag 0.005mg/l ; As 0.01mg/l ; B 0.05mg/l ; Ba 0.005mg/l ; Be 0.002mg/l ; Bi 0.01mg/l ; Cd 0.0005mg/l ; Co 0.002mg/l ; Cr 0.002mg/l ; Cu 0.005mg/l ; Fe 0.01mg/l ; Li 0.05mg/l ; Mn 0.002mg/l ; Mo 0.005mg/l ; Ni 0.005mg/l ; Pb 0.005mg/l ; Sb 0.01mg/l ; Se 0.01mg/l ; Sr 0.005mg/l ; Ti 0.002mg/l ; Tl 0.01mg/l ; V 0.005mg/l ; Zn 0.01mg/l in HNO3 0.05%	200	ml	6	Yes

Ref. Number	Description	Volume	Msr. Unit	Shelf-life (months)	ISO 17034 ISO 17025
WCEBF.D05.05N.L1	ICP Water Quality standard 2 - 31 elements (supplied in two different solutions) - (Ca 10 000 $\mu\text{g/l}$ ; Ca 10mg/l ; Mg 2mg/l; Na 5mg/l; K 5mg/l; P 5mg/l; S 20mg/l ; Si 10mg/l; Al 0.05mg/l; Ag 0.05mg/l; As 0.1mg/l; B 0.5mg/l; Ba 0.05mg/l; Be 0.02mg/l; Bi 0.1mg/l; Cd 0.005mg/l; Co 0.02mg/l; Cr 0.02mg/l; Cu 0.05mg/l ; Fe 0.1mg/l; Li 0.5mg/l; Mn 0.02mg/l; Mo 0.05mg/l ; Ni 0.05mg/l; Pb 0.05mg/l; Sb 0.1mg/l; Se 0.1mg/l; Sr 0.05mg/l; Ti 0.02mg/l; Tl 0.1mg/l; V 0.05mg/l; Zn 0.1mg/l in HNO <sub>3</sub> 0.5%	200	ml	6	Yes
WCEBF.D5.5N.L1	ICP Water Quality standard 2 - 31 elements (supplied in two different solutions) - Ca 100mg/l; Mg 20mg/l ; Na 50mg/l; K 50mg/l; P 50mg/l; S 200mg/l; Si 100mg/l; Al 0.5mg/l; Ag 0.5mg/l; As 1mg/l; B 5mg/l ; Ba 0.5mg/l; Be 0.2mg/l; Bi 1mg/l; Cd 0.05mg/l; Co 0.2mg/l; Cr 0.2mg/l; Cu 0.5mg/l; Fe 1mg/l; Li 5mg/l; Mn 0.2mg/l; Mo 0.5mg/l; Ni 0.5mg/l; Pb 0.5mg/l; Sb 1mg/l; Se 1mg/l; Sr 0.5mg/l; Ti 0.2mg/l; Tl 1mg/l; V 0.5mg/l; Zn 1mg/l in HNO <sub>3</sub> 5%	200	ml	6	Yes
QCCPAWater2.4L1	ICP Water Quality standard 2 - 31 elements (supplied in two different solutions) - Ca 10mg/l; Mg 2mg/l; Na 5mg/l; K 5mg/l; P 5mg/l; S 20mg/l; Si 10mg/l; Al 0.05mg/l; Ag 0.05mg/l; As 0.1mg/l; B 0.5mg/l; Ba 0.05mg/l; Be 0.02mg/l; Bi 0.1mg/l; Cd 0.005mg/l; Co 0.02mg/l; Cr 0.02mg/l; Cu 0.05mg/l; Fe 0.1mg/l; Li 0.5mg/l; Mn 0.02mg/l; Mo 0.05mg/l; Ni 0.05mg/l; Pb 0.05mg/l; Sb 0.1mg/l; Se 0.1mg/l; Sr 0.05mg/l; Ti 0.02mg/l; Tl 0.1mg/l; V 0.05mg/l; Zn 0.1mg/l in H <sub>2</sub> O/tr. HNO <sub>3</sub>	800	ml	6	Yes
QCCPAWater2.L1	ICP Water Quality standard 2 - 31 elements (supplied in two different solutions) - Ca 10mg/l; Mg 2mg/l; Na 5mg/l; K 5mg/l; P 5mg/l; S 20mg/l; Si 10mg/l; Al 0.05mg/l; Ag 0.05mg/l; As 0.1mg/l; B 0.5mg/l; Ba 0.05mg/l; Be 0.02mg/l; Bi 0.1mg/l; Cd 0.005mg/l; Co 0.02mg/l; Cr 0.02mg/l; Cu 0.05mg/l; Fe 0.1mg/l; Li 0.5mg/l; Mn 0.02mg/l; Mo 0.05mg/l; Ni 0.05mg/l; Pb 0.05mg/l; Sb 0.1mg/l; Se 0.1mg/l; Sr 0.05mg/l; Ti 0.02mg/l; Tl 0.1mg/l; V 0.05mg/l; Zn 0.1mg/l in H <sub>2</sub> O/tr. HNO <sub>3</sub>	200	ml	6	Yes
CPAWater3.L1	ICP Water Quality standard 3 - 31 elements (supplied in two different solutions) - Ca 100mg/l; Mg 20mg/l; Na 5mg/l; K 5mg/l; P 5mg/l; S 20mg/l; Si 10mg/l; Al 0.05mg/l; Ag 0.05mg/l; As 0.1mg/l; B 0.5mg/l; Ba 0.05mg/l; Be 0.02mg/l; Bi 0.1mg/l; Cd 0.005mg/l; Co 0.02mg/l; Cr 0.02mg/l; Cu 0.05mg/l; Fe 0.1mg/l; Li 0.5mg/l; Mn 0.02mg/l; Mo 0.05mg/l; Ni 0.05mg/l; Pb 0.05mg/l; Sb 0.1mg/l; Se 0.1mg/l; Sr 0.05mg/l; Ti 0.02mg/l; Tl 0.1mg/l; V 0.05mg/l; Zn 0.1mg/l in HNO <sub>3</sub> 2%	200	ml	6	Yes
WCEBF.5.5N.L1	ICP Water Quality standard 4 - 31 elements (supplied in two different solutions) - Ca 1000mg/l; Mg 200mg/l; Na 500mg/l; K 500mg/l; P 500mg/l; S 2000mg/l; Si 1000mg/l; Al 5mg/l; Ag 5mg/l; As 10mg/l; B 50mg/l; Ba 5mg/l; Be 2mg/l; Bi 10mg/l; Cd 0.5mg/l; Co 2mg/l ; Cr 2mg/l; Cu 5mg/l; Fe 10mg/l; Li 50mg/l; Mn 2mg/l; Mo 5mg/l; Ni 5mg/l; Pb 5mg/l; Sb 10mg/l; Se 10mg/l; Sr 5mg/l; Ti 2mg/l; Tl 10mg/l; V 5mg/l; Zn 10mg/l in HNO <sub>3</sub> 5%	200	ml	6	Yes
CPAWater4.L1	ICP Water Quality standard 4 - 31 elements (supplied in two different solutions) - Ca 1000mg/l; Mg 200mg/l ; Na 50mg/l; K 50mg/l; P 50mg/l; S 200mg/l; Si 100mg/l; Al 0.5mg/l; Ag 0.5mg/l; As 1mg/l; B 5mg/l ; Ba 0.5mg/l; Be 0.2mg/l; Bi 1mg/l; Cd 0.05mg/l; Co 0.2mg/l; Cr 0.2mg/l; Cu 0.5mg/l; Fe 1mg/l; Li 5mg/l; Mn 0.2mg/l; Mo 0.5mg/l; Ni 0.5mg/l; Pb 0.5mg/l; Sb 1mg/l; Se 1mg/l; Sr 0.5mg/l; Ti 0.2mg/l; Tl 1mg/l; V 0.5mg/l; Zn 1mg/l in HNO <sub>3</sub> 2%	200	ml	6	Yes

Ref. Number	Description	Volume	Msr. Unit	Shelf-life (months)	ISO 17034 ISO 17025
CPAWater5.L1	ICP Water Quality standard 5 - 31 elements (supplied in two different solutions) - Ca 2000mg/l ; Mg 400mg/l ; Na 100mg/l ; K 100mg/l ; P 100mg/l ; S 400mg/l ; Si 200mg/l ; Al 1mg/l ; Ag 1mg/l ; As 2mg/l ; B 10mg/l ; Ba 1mg/l ; Be 0.4mg/l ; Bi 2mg/l ; Cd 0.1mg/l ; Co 0.4mg/l ; Cr 0.4mg/l ; Cu 1mg/l ; Fe 2mg/l ; Li 10mg/l ; Mn 0.4mg/l ; Mo 1mg/l ; Ni 1mg/l ; Pb 1mg/l ; Sb 2mg/l ; Se 2mg/l ; Sr 1mg/l ; Ti 0.4mg/l ; Tl 2mg/l ; V 1mg/l ; Zn 2mg/l in HNO3 5%	200	ml	6	Yes
WCEBF.10.5N.L1	ICP Water Quality standard 5 - 31 elements (supplied in two different solutions) - Ca 2000mg/l ; Mg 400mg/l ; Na 1000mg/l ; K 1000mg/l ; P 1000mg/l ; S 4000mg/l ; Si 2000mg/l ; Al 10mg/l ; Ag 10mg/l ; As 20mg/l ; B 100mg/l ; Ba 10mg/l ; Be 4mg/l ; Bi 20mg/l ; Cd 1mg/l ; Co 4mg/l ; Cr 4mg/l ; Cu 10mg/l ; Fe 20mg/l ; Li 100mg/l ; Mn 4mg/l ; Mo 10mg/l ; Ni 10mg/l ; Pb 10mg/l ; Sb 20mg/l ; Se 20mg/l ; Sr 10mg/l ; Ti 4mg/l ; Tl 20mg/l ; V 10mg/l ; Zn 20mg/l in HNO3 5%	200	ml	6	Yes
D0BC.20.5N.L1	TCLP Standard 2 - 1 component; Hg 20mg/l in HNO3 5%	100	ml	6	Yes

## ICP Calibration Standards

Ref. Number	Description	Volume	Msr. Unit	Shelf-life (months)	ISO 17034 ISO 17025
F4AD.1K.W.L1	ICP Calibration Standard - 2 components; 1000mg/l each of P ; S in H2O	100	ml	12	Yes
F4AD.1K.W.L5	ICP Calibration Standard - 2 components; 1000mg/l each of P ; S in H2O	500	ml	12	Yes
F4AD.K1.W.L1	ICP Calibration Standard - 2 components; 100mg/l each of P ; S in H2O	100	ml	12	Yes
F4AD.K1.W.L5	ICP Calibration Standard - 2 components; 100mg/l each of P ; S in H2O	500	ml	12	Yes
1B92.D2.2N.L1	ICP Calibration Standard - 2 components; 200ug/l each of Cd ; Pb in HNO3 2%	100	ml	4	Yes
1B92.D2.2N.L5	ICP Calibration Standard - 2 components; 200ug/l each of Cd ; Pb in HNO3 2%	500	ml	4	Yes
C56D.K1.5C.L1	ICP Calibration Standard - 3 components; 100mg/l each of Au ; Pd ; Pt in HCl 5%	100	ml	12	Yes
91C8.1K.2N.L1	ICP Calibration Standard - 4 components; 1000mg/l each of Ca ; Mg ; K ; Na in HNO3 2%	100	ml	12	Yes
91C8.1K.2N.L5	ICP Calibration Standard - 4 components; 1000mg/l each of Ca ; Mg ; K ; Na in HNO3 2%	500	ml	12	Yes
M591930.L1	ICP Calibration Standard - 4 components; K 200mg/l ; Mg 400mg/l ; Na 1000mg/l ; Ca 2000mg/l in HNO3 5%	100	ml	12	Yes
8E66.K1.5N.L1	ICP Calibration Standard - Toxic Elements - 7 components; 100mg/l each of As ; Be ; Cd ; Ni ; Pb ; Se ; Tl in HNO3 5%	100	ml	12	Yes
A2E5.K1.5C.L1	ICP Calibration Standard - 8 components; 100mg/l each of Au ; Ir ; Os ; Pd ; Pt ; Re ; Rh ; Ru in HCl 5%	100	ml	12	Yes
1E1E.1.2N.L1	ICP Calibration Standard - 10 components; P 10mg/l ; Ni 5mg/l ; K 5mg/l ; Al 1mg/l ; Cu 1mg/l ; Mn 1mg/l ; Ba 0.2mg/l ; Ca 0.2mg/l ; Mg 0.2mg/l ; Zn 0.2mg/l in HNO3 2%	100	ml	6	Yes
F8AA.30.2N.L1	ICP Calibration Standard - 12 components; Ca 3000mg/l ; Mg 450mg/l ; K 1200mg/l ; Na 3000mg/l ; SO42- 3000mg/l ; P 234.8mg/l ; Fe 30mg/l ; Mn 30mg/l ; Cu 15mg/l ; Zn 15mg/l ; B 30mg/l ; Mo 6mg/l in HNO3 2%	100	ml	6	Yes

Ref. Number	Description	Volume	Msr. Unit	Shelf-life (months)	ISO 17034 ISO 17025
F8AA.30.2N.L5	ICP Calibration Standard - 12 components; Ca 3000mg/l ; Mg 450mg/l ; K 1200mg/l ; Na 3000mg/l ; SO42- 3000mg/l ; P 234.8mg/l ; Fe 30mg/l ; Mn 30mg/l ; Cu 15mg/l ; Zn 15mg/l ; B 30mg/l ; Mo 6mg/l in HNO3 2%	500	ml	6	Yes
9C24.30.2N.L1	ICP Calibration Standard - 12 components; Ca 3000mg/l ; Mg 450mg/l ; K 1200mg/l ; Na 150mg/l ; SO42- 3000mg/l ; P 234.8mg/l ; Fe 30mg/l ; Mn 30mg/l ; Cu 15mg/l ; Zn 15mg/l ; B 30mg/l ; Mo 6mg/l in HNO3 2%	100	ml	6	Yes
9C24.30.2N.L5	ICP Calibration Standard - 12 components; Ca 3000mg/l ; Mg 450mg/l ; K 1200mg/l ; Na 150mg/l ; SO42- 3000mg/l ; P 234.8mg/l ; Fe 30mg/l ; Mn 30mg/l ; Cu 15mg/l ; Zn 15mg/l ; B 30mg/l ; Mo 6mg/l in HNO3 2%	500	ml	6	Yes
9E24.D02.5N.L1	ICP Calibration Standard - 13 components; Ca 100mg/l ; Mg 25mg/l ; Cu 0.2mg/l ; Zn 0.2mg/l ; Mn 0.2mg/l ; Fe 0.1mg/l ; Na 50mg/l ; K 25mg/l ; Al 0.02mg/l ; Ba 0.2mg/l ; V 0.2mg/l ; Mo 0.2mg/l ; Be 0.2mg/l in HNO3 5%	100	ml	4	Yes
9E24.D02.5N.L5	ICP Calibration Standard - 13 components; Ca 100mg/l ; Mg 25mg/l ; Cu 0.2mg/l ; Zn 0.2mg/l ; Mn 0.2mg/l ; Fe 0.1mg/l ; Na 50mg/l ; K 25mg/l ; Al 0.02mg/l ; Ba 0.2mg/l ; V 0.2mg/l ; Mo 0.2mg/l ; Be 0.2mg/l in HNO3 5%	500	ml	4	Yes
MU01060100	ICP Calibration Standard - 16 components; Al 100mg/l ; Ba 5mg/l ; Be 2mg/l ; B 20mg/l ; Cd 20mg/l ; Cr 20mg/l ; Co 50mg/l ; Cu 20mg/l ; Fe 20mg/l ; Pb 200mg/l ; Mn 10mg/l ; Ni 50mg/l ; Se 5mg/l ; Tl 100mg/l ; V 50mg/l ; Zn 50mg/l in HNO3 10%	100	ml	6	Yes
006B.2.2N.L1	ICP Calibration Standard - 17 components; Ag 2mg/l ; Al 20mg/l ; As 2mg/l ; Ba 5mg/l ; Cd 0.2mg/l ; Cr 3mg/l ; Cu 4mg/l ; Fe 20mg/l ; Mn 10mg/l ; Mo 1mg/l ; Ni 2mg/l ; Pb 5mg/l ; Se 0.5mg/l ; Sb 2mg/l ; Sn 5mg/l ; Tl 2mg/l ; Zn 10mg/l in HNO3 2%	100	ml	4	Yes
006B.2.2N.L5	ICP Calibration Standard - 17 components; Ag 2mg/l ; Al 20mg/l ; As 2mg/l ; Ba 5mg/l ; Cd 0.2mg/l ; Cr 3mg/l ; Cu 4mg/l ; Fe 20mg/l ; Mn 10mg/l ; Mo 1mg/l ; Ni 2mg/l ; Pb 5mg/l ; Se 0.5mg/l ; Sb 2mg/l ; Sn 5mg/l ; Tl 2mg/l ; Zn 10mg/l in HNO3 2%	500	ml	4	Yes
M592020.L1	ICP Calibration Standard - 17 components; Be 10mg/l ; Cd 10mg/l ; Co 10mg/l ; Mn 10mg/l ; Cr 20mg/l ; Cu 20mg/l ; Ni 20mg/l ; Al 40mg/l ; As 40mg/l ; Ba 40mg/l ; Pb 40mg/l ; V 40mg/l ; B 100mg/l ; Fe 100mg/l ; Se 100mg/l ; Tl 100mg/l ; Zn 100mg/l in HNO3 10%	100	ml	12	Yes
B09A.1K.4N.L1	ICP Calibration Standard - 21 components; 1000mg/l each of Ag ; As ; Al ; B ; Ba ; Bi ; Cd ; Co ; Cr ; Cu ; Fe ; Ga ; In ; Li ; Mn ; Ni ; Pb ; Sr ; Tl ; Zn ; Si in HNO3 4%	100	ml	12	Yes
B09A.1K.4N.L5	ICP Calibration Standard - 21 components; 1000mg/l each of Ag ; As ; Al ; B ; Ba ; Bi ; Cd ; Co ; Cr ; Cu ; Fe ; Ga ; In ; Li ; Mn ; Ni ; Pb ; Sr ; Tl ; Zn ; Si in HNO3 4%	500	ml	12	Yes
BE89.K1.5N.L1	ICP Calibration Standard - 21 components; 100mg/l each of Al ; As ; B ; Ca ; Cd ; Cr ; Co ; Cu ; Fe ; K ; Mg ; Mn ; Mo ; Na ; Ni ; Pb ; P ; Ti ; Zn ; Si ; S in HNO3 5%	100	ml	12	Yes
BE89.K1.5N.L5	ICP Calibration Standard - 21 components; 100mg/l each of Al ; As ; B ; Ca ; Cd ; Cr ; Co ; Cu ; Fe ; K ; Mg ; Mn ; Mo ; Na ; Ni ; Pb ; P ; Ti ; Zn ; Si ; S in HNO3 5%	500	ml	12	Yes
M52B5.K1.5N.L05	ICP Calibration Standard - 22 components - 100 mg/l each of As, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sr, Ti, Tl, V, Zn, all in 5% HNO3	50	ml	12	Yes
M52B5.K1.5N.L1	ICP Calibration Standard - 22 components - 100 mg/l each of As, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sr, Ti, Tl, V, Zn, all in 5% HNO3	100	ml	12	Yes
M52B5.K1.5N.L5	ICP Calibration Standard - 22 components - 100 mg/l each of As, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sr, Ti, Tl, V, Zn, all in 5% HNO3	500	ml	12	Yes

Ref. Number	Description	Volume	Msr. Unit	Shelf-life (months)	ISO 17034 ISO 17025
MU01100100	ICP Calibration Standard - 26 components; 100ppm each of Al ; As ; Ba ; Be ; Bi ; B ; Cd ; Ca ; Cr ; Co ; Cu ; Fe ; Pb ; Li ; Mg ; Mn ; Mo ; Ni ; K ; Se ; Na ; Sr ; Tl ; Ti ; V ; Zn in HNO3 5%	100	ml	12	Yes
0D7B.K1.5NtrF.L1	ICP Calibration Standard - 26 components; Al 100ug/ml ; Sb 100ug/ml ; As 100ug/ml ; Ba 100ug/ml ; Be 100ug/ml ; B 100ug/ml ; Cd 100ug/ml ; Ca 100ug/ml ; Cr 100ug/ml ; Co 100ug/ml ; Cu 100ug/ml ; Fe 100ug/ml ; Pb 100ug/ml ; Mg 100ug/ml ; Mn 100ug/ml ; Mo 100ug/ml ; Ni 100ug/ml ; K 1000ug/ml ; Se 100ug/ml ; Si 50ug/ml ; Ag 100ug/ml ; Na 100ug/ml ; Tl 100ug/ml ; Ti 100ug/ml ; V 100ug/ml ; Zn 100ug/ml in HNO3 5% ; HF tr	100	ml	6	Yes
0D7B.K1.5NtrF.L25	ICP Calibration Standard - 26 components; Al 100ug/ml ; Sb 100ug/ml ; As 100ug/ml ; Ba 100ug/ml ; Be 100ug/ml ; B 100ug/ml ; Cd 100ug/ml ; Ca 100ug/ml ; Cr 100ug/ml ; Co 100ug/ml ; Cu 100ug/ml ; Fe 100ug/ml ; Pb 100ug/ml ; Mg 100ug/ml ; Mn 100ug/ml ; Mo 100ug/ml ; Ni 100ug/ml ; K 1000ug/ml ; Se 100ug/ml ; Si 50ug/ml ; Ag 100ug/ml ; Na 100ug/ml ; Tl 100ug/ml ; Ti 100ug/ml ; V 100ug/ml ; Zn 100ug/ml in HNO3 5% ; HF tr	250	ml	6	Yes
0D7B.K1.5NtrF.L5	ICP Calibration Standard - 26 components; Al 100ug/ml ; Sb 100ug/ml ; As 100ug/ml ; Ba 100ug/ml ; Be 100ug/ml ; B 100ug/ml ; Cd 100ug/ml ; Ca 100ug/ml ; Cr 100ug/ml ; Co 100ug/ml ; Cu 100ug/ml ; Fe 100ug/ml ; Pb 100ug/ml ; Mg 100ug/ml ; Mn 100ug/ml ; Mo 100ug/ml ; Ni 100ug/ml ; K 1000ug/ml ; Se 100ug/ml ; Si 50ug/ml ; Ag 100ug/ml ; Na 100ug/ml ; Tl 100ug/ml ; Ti 100ug/ml ; V 100ug/ml ; Zn 100ug/ml in HNO3 5% ; HF tr	500	ml	6	Yes
M592090.L1	ICP Calibration Standard - 27 components; Al 10mg/l ; Ba 10mg/l ; Be 10mg/l ; Bi 10mg/l ; Cd 10mg/l ; Ca 100mg/l ; Cs 10mg/l ; Cr 10mg/l ; Co 10mg/l ; Cu 10mg/l ; Ga 10mg/l ; In 10mg/l ; Fe 100mg/l ; Pb 10mg/l ; Li 10mg/l ; Mg 10mg/l ; Mn 10mg/l ; Mo 10mg/l ; Ni 10mg/l ; K 100mg/l ; Rb 10mg/l ; Ag 10mg/l ; Na 100mg/l ; Sr 10mg/l ; Tl 10mg/l ; V 10mg/l ; Zn 10mg/l in HNO3 2%	100	ml	6	Yes
MB56A.K1.5N.L05	ICP Calibration Standard - 28 components - 100 mg/l Al, Ag, As, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sr, Ti, Tl, V, Zn, in HNO3 5%	50	ml	12	Yes
MB56A.K1.5N.L1	ICP Calibration Standard - 28 components - 100 mg/l Al, Ag, As, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sr, Ti, Tl, V, Zn, in HNO3 5%	100	ml	12	Yes
MB56A.K1.5N.L5	ICP Calibration Standard - 28 components - 100 mg/l Al, Ag, As, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sr, Ti, Tl, V, Zn, in HNO3 5%	500	ml	12	Yes
0C6A.K1.5N.L1	ICP Calibration Standard - 32 components; 100mg/l each of Ag ; Al ; Ba ; Bi ; Ca ; Cd ; Co ; Cr ; Cu ; Fe ; Ga ; Ge ; In ; K ; Li ; Mg ; Mn ; Mo ; Na ; Nb ; Ni ; P ; Pb ; Re ; Sb ; Si ; Sn ; Ta ; Ti ; V ; W ; Zn in HNO3 5%	100	ml	12	Yes
0C6A.K1.5N.L5	ICP Calibration Standard - 32 components; 100mg/l each of Ag ; Al ; Ba ; Bi ; Ca ; Cd ; Co ; Cr ; Cu ; Fe ; Ga ; Ge ; In ; K ; Li ; Mg ; Mn ; Mo ; Na ; Nb ; Ni ; P ; Pb ; Re ; Sb ; Si ; Sn ; Ta ; Ti ; V ; W ; Zn in HNO3 5%	500	ml	12	Yes
M8A96.K1.5N.L05	ICP Calibration Standard - 33 components - 100 mg/l Al, Ag, As, B, Ba, Be, Bi, Ca, Cd, Cs, Co, Cr, Cu, Fe, In, K, Li, Mg, Mn, Mo, Na, Ni, Nb, Pb, Rb, Sb, Se, Sr, Ti, Tl, V, U, Zn in HNO3 5%	50	ml	12	Yes
M8A96.K1.5N.L1	ICP Calibration Standard - 33 components - 100 mg/l Al, Ag, As, B, Ba, Be, Bi, Ca, Cd, Cs, Co, Cr, Cu, Fe, In, K, Li, Mg, Mn, Mo, Na, Ni, Nb, Pb, Rb, Sb, Se, Sr, Ti, Tl, V, U, Zn in HNO3 5%	100	ml	12	Yes
M8A96.K1.5N.L5	ICP Calibration Standard - 33 components - 100 mg/l Al, Ag, As, B, Ba, Be, Bi, Ca, Cd, Cs, Co, Cr, Cu, Fe, In, K, Li, Mg, Mn, Mo, Na, Ni, Nb, Pb, Rb, Sb, Se, Sr, Ti, Tl, V, U, Zn in HNO3 5%	500	ml	12	Yes

Ref. Number	Description	Volume	Msr. Unit	Shelf-life (months)	ISO 17034 ISO 17025
3256.10.2N.L1	ICP Calibration Standard - 36 components; 10mg/l each of Ag ; Al ; As ; Ba ; B ; Ca ; Cd ; Ce ; Co ; Cr ; Cu ; Dy ; Er ; Eu ; Fe ; Gd ; Ho ; K ; La ; Li ; Lu ; Mg ; Mn ; Na ; Nd ; Ni ; P ; Pb ; Rb ; Se ; Sm ; Sr ; Tl ; Tm ; V ; Zn in HNO3 2%	100	ml	6	Yes
3256.10.2N.L5	ICP Calibration Standard - 36 components; 10mg/l each of Ag ; Al ; As ; Ba ; B ; Ca ; Cd ; Ce ; Co ; Cr ; Cu ; Dy ; Er ; Eu ; Fe ; Gd ; Ho ; K ; La ; Li ; Lu ; Mg ; Mn ; Na ; Nd ; Ni ; P ; Pb ; Rb ; Se ; Sm ; Sr ; Tl ; Tm ; V ; Zn in HNO3 2%	500	ml	6	Yes
7027.K1.5N.L1	MISA Standard 1 - Rare Earth Metals - 18 components; 100mg/l each of Ce ; Dy ; Er ; Eu ; Gd ; Ho ; La ; Lu ; Nd ; Pr ; Sc ; Sm ; Tb ; Th ; Tm ; U ; Y ; Yb in HNO3 5%	100	ml	12	Yes
397C.K1.10C.L1	MISA Standard 2 - Precious Metals - 6 components; 100mg/l each of Au ; Ir ; Pd ; Pt ; Rh ; Ru in HCl 10%	100	ml	12	Yes
AA6C.K1.10C.L1	MISA Standard 3 - Tellurium - 1 component; Te 100mg/l in HCl 10%	100	ml	12	Yes
E579.K1.10N.L1	MISA Standard 6 - Transition Metals - 13 components; 100mg/l each of Cd ; Co ; Cu ; Cr ; Fe ; Pb ; Mn ; Hg ; Ni ; Ag ; Tl ; V ; Zn in HNO3 10%	100	ml	12	Yes
32D7.K1.5NF.L1	MISA Standard 5 - Fluoride Soluble Group 15 components; 100mg/l each of Sb ; B ; Ge ; Hf ; Mo ; Nb ; P ; Re ; Si ; S ; Ta ; Sn ; Ti ; W ; Zr in HNO3 5% ; HF tr%	100	ml	12	Yes
942A.K1.10N.L1	MISA Standard 4 - Alkali, Alkaline Earth, Non-Transition Group - 16 components; 100mg/l each of Al ; As ; Ba ; Bi ; Be ; Ca ; Cs ; Ga ; In ; Li ; Mg ; K ; Rb ; Se ; Na ; Sr in HNO3 10%	100	ml	12	Yes
FC4C.5K.5N.L1	Solids 1B CCV Solution for ICP-OES - 6 components; Al 5000mg/l ; Ca 5000mg/l ; Fe 5000mg/l ; Mg 5000mg/l ; Na 5000mg/l ; K 2000mg/l in HNO3 5%	100	ml	12	Yes
F679.1K.5N.L1	Solids Mix 3A solution for ICP-OES - 11 components; Mn 2500mg/l ; Zn 2500mg/l ; As 1000mg/l ; Co 1000mg/l ; Cr 1000mg/l ; Cu 1000mg/l ; Ni 1000mg/l ; Pb 1000mg/l ; V 1000mg/l ; Be 100mg/l ; Cd 100mg/l in HNO3 5%	100	ml	12	Yes

## Quality Control Standards for ICP

Ref. Number	Description	Volume	Msr. Unit	Shelf-life (months)	ISO 17034 ISO 17025
F9B8.1K.2N.L1	ICP QC standard 6 - 4 components; 1000mg/l each of Ba ; Ca ; Mg ; Sr in HNO3 2%	100	ml	12	Yes
M397C.1.2C.L1	ICP QC standard - 6 components - 1 mg/l each of: Au, Ir, Pd, Pt, Rh, Ru all in 2% HCl	100	ml	6	Yes
M397C.1.2C.L5	ICP QC standard - 6 components - 1 mg/l each of: Au, Ir, Pd, Pt, Rh, Ru all in 2% HCl	500	ml	6	Yes
01EC.K1.5N.L1	ICP QC standard 2R - 7 components - 100mg/l each of Al ; Ba ; B ; K ; Si ; Ag ; Na in HNO3 5% ; HF tr%	100	ml	12	Yes
CF34.K1.5N.L1	ICP QC standard 3 - 15 components - 100mg/l each of Al ; Ba ; Cd ; Ca ; Cr ; Co ; Cu ; Fe ; Pb ; Mg ; Mn ; Ni ; Na ; Ti ; Zn in HNO3 5% ; HF tr%	100	ml	12	Yes
M52B5.1.5N.L1	ICP QC standard - 22 components - 1 mg/l each of: As, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sr, Ti, Tl, V, Zn 1mg/l; all in 5% HNO3	100	ml	6	Yes



Ref. Number	Description	Volume	Msr. Unit	Shelf-life (months)	ISO 17034 ISO 17025
M52B5.1.5N.L5	ICP QC standard - 22 components - 1 mg/l each of: As, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sr, Ti, Tl, V, Zn 1mg/l; all in 5% HNO3	500	ml	6	Yes
B0D3.K1.5N.L1	ICP QC standard 1 - 23 components - 100mg/l each of Sb ; As ; Be ; Cd ; Ca ; Cr ; Co ; Cu ; Fe ; Pb ; Li ; Mg ; Mn ; Mo ; Ni ; P ; Se ; Sr ; Sn ; Tl ; Ti ; V ; Zn in HNO3 5% ; HF tr%	100	ml	12	Yes
64F7.10.2N.L1	ICP QC standard - 25 components -10mg/l each of Ag ; Al ; As ; Ba ; Be ; Ca ; Cd ; Co ; Cr ; Cu ; Fe ; K ; Mg ; Mn ; Mo ; Na ; Ni ; Pb ; Sb ; Se ; Th ; Tl ; U ; V ; Zn in HNO3 2%	100	ml	6	Yes
MB56A.1.2N.L1	ICP QC standard - 28 components - 1mg/l each of Al ; Ag ; As ; B ; Ba ; Be ; Bi ; Ca ; Cd ; Co ; Cr ; Cu ; Fe ; K ; Li ; Mg ; Mn ; Mo ; Na ; Ni ; Pb ; Sb ; Se ; Sr ; Ti ; Tl ; V ; Zn in HNO3 2%	100	ml	6	Yes
MB56A.1.2N.L5	ICP QC standard - 28 components - 1mg/l each of Al ; Ag ; As ; B ; Ba ; Be ; Bi ; Ca ; Cd ; Co ; Cr ; Cu ; Fe ; K ; Li ; Mg ; Mn ; Mo ; Na ; Ni ; Pb ; Sb ; Se ; Sr ; Ti ; Tl ; V ; Zn in HNO3 2%	500	ml	6	Yes
M8A96.1.5N.L1	ICP QC standard - 33 components - 1 mg/l each of Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Cs, Co, Cr, Cu, Fe, In, K, Li, Mg, Mn, Mo, Na, Ni, Nb, Pb, Rb, Sb, Se, Sr, Ti, Tl, V, U, Zn, in HNO3 5%	100	ml	6	Yes
M8A96.1.5N.L5	ICP QC standard - 33 components - 1 mg/l each of Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Cs, Co, Cr, Cu, Fe, In, K, Li, Mg, Mn, Mo, Na, Ni, Nb, Pb, Rb, Sb, Se, Sr, Ti, Tl, V, U, Zn, in HNO3 5%	500	ml	6	Yes

## Elemental Impurities acc to ICH

Ref. Number	Description	Volume	Msr. Unit	Shelf-life (months)	ISO 17034 ISO 17025
RM006928L1	USP 232/ ICH Q3D Elemental Impurities Standard 1 - 4 components; Cd 5ug/ml ; Pb 5ug/ml ; As 15ug/ml ; Hg 30ug/ml in HNO3 2%	100	ml	12	Yes
RM015155L1	USP 232/ ICH Q3D Elemental Impurities Standard 2-1: 6 components; Co 50ug/ml ; V 100ug/ml ; Ni 200ug/ml ; Tl 8ug/ml ; Se 150ug/ml ; Ag 150ug/ml in HNO3 2%	100	ml	12	Yes
RM009107L1	ICH/USP Oral Target Elements Standard C - 7 components; 100mg/l each of Au ; Ir ; Os ; Pd ; Pt ; Rh ; Ru in HCl 15%	100	ml	12	Yes
RM016220L1	USP 232/ ICH Q3D Elemental Impurities Standard 3 - 7 components; Li 550ug/ml ; Sb 1200ug/ml ; Ba 1400ug/ml ; Mo 3000ug/ml ; Cu 3000ug/ml ; Sn 6000ug/ml ; Cr 11000ug/ml in HNO3 5% ; HF 0.1%	100	ml	12	Yes
RM000168L1	Elemental Impurities acc. to ICH - Q3D - Oral Concentrations Standard 3:7 components; 10ug/g each of Au ; Pd ; Ir ; Os ; Rh ; Ru ; Pt in HCl 5%	100	ml	6	Yes
RM000174L1	ICH - Q3D - Inhalation Concentrations Standard 3: 7 components; 0.1ug/g each of Au ; Pd ; Ir ; Os ; Rh ; Ru ; Pt in HCl 5%	100	ml	6	Yes
RM000765L1	ICH Q3D parenteral, Standard 2 - 7 components; Au 100mg/l ; Ir 10mg/l ; Os 10mg/l ; Pd 10mg/l ; Pt 10mg/l ; Rh 10mg/l ; Ru 10mg/l in HCl 10%	100	ml	6	Yes
RM009912L1	ICH Q3D parenteral, Standard 3 - 7 components; Ba 70mg/l ; Cr 110mg/l ; Cu 30mg/l ; Li 25mg/l ; Mo 150mg/l ; Sb 9mg/l ; Sn 60mg/l in HNO3 5% ; HF 0.2%	100	ml	6	Yes
RM000172L1	ICH - Q3D - Inhalation Concentrations Standard 1: 10 components; Cd 0.2ug/g ; Pb 0.5ug/g ; As 0.2ug/g ; Hg 0.1ug/g ; Co 0.3ug/g ; V 0.1ug/g ; Ni 0.5ug/g ; Tl 0.8ug/g ; Se 13ug/g ; Ag 0.7ug/g in HNO3 2%	100	ml	6	Yes

Ref. Number	Description	Volume	Msr. Unit	Shelf-life (months)	ISO 17034 ISO 17025
RM000165L1	ICH - Q3D - Oral Concentrations Standard 1: 10 components; Cd 0.5ug/g ; Pb 0.5ug/g ; As 1.5ug/g ; Hg 3ug/g ; Co 5ug/g ; V 10ug/g ; Ni 20ug/g ; Tl 0.8ug/g ; Se 15ug/g ; Ag 15ug/g in HNO3 2%	100	ml	6	Yes
RM000169L1	ICH - Q3D - Parenteral Concentrations Standard 1:10 components; Cd 0.2ug/g ; Pb 0.5ug/g ; As 1.5ug/g ; Hg 0.3ug/g ; Co 0.5ug/g ; V 1ug/g ; Ni 2ug/g ; Tl 0.8ug/g ; Se 8ug/g ; Ag 1ug/g in HNO3 2%	100	ml	6	Yes
RM009830L1	ICH Q3D parenteral, Standard 1 - 10 components; Ag 10mg/l ; As 15mg/l ; Cd 2mg/l ; Co 5mg/l ; Hg 3mg/l ; Ni 20mg/l ; Pb 5mg/l ; Se 80mg/l ; Tl 8mg/l ; V 10mg/l in HNO3 12%	100	ml	6	Yes