Inorganic Standards

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3 Year Minimum Shelf Life on Single Element ICP, ICP/MS and AA Standards

TRACEABLE AccuTrace™ Reference Standards CERTIFIED

AccuTrace™ Documentation

- ✔ Traceability to NIST SRM by Wet Chemical / Gravimetric Assay
- ✔ Traceability to NIST SRM by Instrumental Analysis
- ✔ Reference to NIST Traceability during product preparation

Certificate of Analysis

Sample: Single Element ICP

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AccuStandard® Inc.

CERTIFICATE OF ANALYSIS

AccuTrace™ Reference Standard

Catalog No: ICP-15N-10X-5
Description: Copper ICP Standard
Element: Copper (Cu)
SRM: 3114
Lot: 213085107
Matrix: 2-5% Nitric acid
Hazards: CORROSIVE - *Refer to SDS for safety info*

Date Certified: Oct 8, 2013
Expiration: Oct 8, 2018
Concentration: 10000 µg/mL
Density: 1.040g/mL
Sample Size: 500 mL
Storage Condition: Ambient

[X] Included on ISO/IEC 17025 Scope of Accreditation
[X] Included on ISO Guide 34 Scope of Accreditation

Danger 1

Elements in µg/mL

Ag	nd<0.02	Ce	nd<0.2	Gd	nd<0.02	Lu	nd<0.02	Pb	N/A	Sc	nd<0.02	Tl	nd<0.02
Al	nd<0.02	Co	nd<0.02	Ge	nd<0.2	Mg	nd<0.02	Pd	N/A	Se	nd<0.2	Tl	nd<0.2
As	nd<0.2	Cr	nd<0.02	Hf	nd<0.02	Mn	nd<0.02	Pr	nd<0.2	Si	N/A	Tm	nd<0.02
Au	nd<0.02	Cs	N/A	Hg	nd<0.2	Mo	nd<0.02	Pt	nd<0.2	Sm	nd<0.2	U	nd<0.2
B	nd<0.2	Cu	*	Ho	nd<0.02	Na	0.02	Rb	N/A	Sn	N/A	V	nd<0.02
Ba	nd<0.02	Dy	nd<0.02	In	nd<0.2	Nb	nd<0.2	Re	nd<0.2	Sr	nd<0.02	W	nd<0.2
Be	nd<0.02	Er	nd<0.02	Ir	nd<0.2	Nd	nd<0.02	Rh	nd<0.2	Ta	nd<0.2	Y	nd<0.02
Bi	N/A	Eu	nd<0.02	K	nd<0.2	Ni	N/A	Ru	nd<0.02	Tb	nd<0.02	Yb	nd<0.02
Ca	0.04	Fe	N/A	La	nd<0.02	Os	N/A	S	N/A	Te	nd<0.2	Zn	nd<0.02
Cd	nd<0.02	Ga	nd<0.02	Li	nd<0.02	P	N/A	Sb	nd<0.2	Th	nd<0.02	Zr	nd<0.02

This solution was assayed titrimetrically using EDTA which was standardized against NIST SRM 3129 (lead nitrate.)
In order to verify the concentration(s), the final solution was checked by plasma emission spectroscopy (ICP) against material traceable to the above listed NIST SRM(s).
All trace level elemental impurities were determined via plasma emission spectroscopy on the concentrate.
All bottles are acid leached and triple rinsed with deionized water prior to use.
The gravimetric uncertainty for this product is ±0.24%. The CRM uncertainty is ±5%. See reverse side for details.
We use the highest purity raw materials available to minimize impurity levels in the final solution. Typically 99.999%+ pure starting materials are used as well as high purity acids and ASTM Type I 18 megohm deionized water.
Balances used during preparation are calibrated regularly using NIST traceable weights.
All glassware used in preparation is Class A and calibrated regularly.
Use good laboratory procedure when diluting this product. Shake bottle prior to use and do not pipette directly out of the bottle. Use only cleaned Class A volumetric glassware.
We certify the accuracy of this standard to be ±0.5% of the stated value until its expiration date provided it is kept tightly capped and stored under the conditions stated above.

Certified By: Lydia Snyder
Lydia Snyder, Inorganic QC Manager

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For use in routine laboratory analysis.

AccuStandard is accredited to ISO Guide 34, ISO/IEC 17025 and certified to ISO 9001

Directly traceable to NIST SRM's - where available

GHS safety information

Most Single element standards have a minumum 3 Year expiration period.

Density included for easy conversion to weight/ weight applications.

Impurity Scan for 68 elements in final solution.

Concentration verified by two independent methods for added assurance.

Uncertainty reported for statistical confidence.

Highest purity starting materials & matrices used.

QC management approval

Accreditations

Inorganic products containing acid generally require a hazardous shipping fee.

Inorganic products in water generally do not.

ICP
Single Element

- Traceable to NIST Reference Materials
- Formulated from Ultra High Purity Starting Materials and Acids
- 18 Megohm de-ionized Water
- Concentration verified by Wet Chemical and Instrumental Analysis
- Packaged in specially prepared Acid leached bottles

3 Year Minimum Shelf Life on Single Element ICP Standards

Save with NoHaz Option on ICP Single Elements

- No Hazardous Shipping Fees
- Lower Shipping Costs (less weight)
- Yields More - 200 mL from 20 mL concentrate

Includes empty pre-washed, pre-labeled HDPE 250 mL bottle

TRACEABLE AccuTrace™ Reference Standards CERTIFIED

Single Element ICP						NoHaz 20 mL Size	
Element Starting Material Matrix	**Unit**	**1000 µg/mL Cat. No.**	**Price**	**10,000 µg/mL Cat. No.**	**Price**	**20 mL (NoHaz) 10,000 µg/mL Cat. No.**	**Price**
Aluminum	50 mL	---------	--	ICP-01N-10X-0.5	$ 34	ICP-01N-10X-20ML	$ 37
$Al(NO_3)_3 \cdot 9H_2O$	100 mL	ICP-01N-1	34	ICP-01N-10X-1	59		
2-5% Nitric acid	500 mL	ICP-01N-5	67	ICP-01N-10X-5	175		
Antimony	50 mL	---------	--	ICP-02N-10X-0.5	36	ICP-02N-10X-20ML	37
Sb Dilute HNO_3 tr	100 mL	ICP-02N-1	34	ICP-02N-10X-1	65		
Tartaric acid	500 mL	ICP-02N-5	67	ICP-02N-10X-5	165		
Arsenic	50 mL	---------	--	ICP-03N-10X-0.5	32	ICP-03N-10X-20ML	37
As	100 mL	ICP-03N-1	34	ICP-03N-10X-1	54		
2-5% Nitric acid	500 mL	ICP-03N-5	67	ICP-03N-10X-5	138		
Barium	50 mL	---------	--	ICP-04N-10X-0.5	32	ICP-04N-10X-20ML	37
$Ba(NO_3)_2$	100 mL	ICP-04N-1	34	ICP-04N-10X-1	54		
2-5% Nitric acid	500 mL	ICP-04N-5	67	ICP-04N-10X-5	138		
Beryllium	50 mL	---------	--	ICP-05N-10X-0.5	57	ICP-05N-10X-20ML	37
$BeO(C_2H_3O_2)_6$	100 mL	ICP-05N-1	42	ICP-05N-10X-1	110		
2-5% Nitric acid	500 mL	ICP-05N-5	82	ICP-05N-10X-5	555		
Bismuth	50 mL	---------	--	ICP-06N-10X-0.5	36	ICP-06N-10X-20ML	37
Bi	100 mL	ICP-06N-1	34	ICP-06N-10X-1	65		
2-10% Nitric acid	500 mL	ICP-06N-5	67	ICP-06N-10X-5	135		
Boron	50 mL	---------	--	ICP-07W-10X-0.5 ▼	32	ICP-07W-10X-20ML	37
H_3BO_3	100 mL	ICP-07W-1 ▼	34	ICP-07W-10X-1 ▼	54		
Water tr. NH_4OH	500 mL	ICP-07W-5 ▼	67	ICP-07W-10X-5 ▼	138		
Cadmium	50 mL	---------	--	ICP-08N-10X-0.5	32	ICP-08N-10X-20ML	37
Cd	100 mL	ICP-08N-1	34	ICP-08N-10X-1	54		
2-5% Nitric acid	500 mL	ICP-08N-5	67	ICP-08N-10X-5	138		
Calcium	50 mL	---------	--	ICP-09N-10X-0.5	32	ICP-09N-10X-20ML	37
$CaCO_3$	100 mL	ICP-09N-1	34	ICP-09N-10X-1	54		
2-5% Nitric acid	500 mL	ICP-09N-5	67	ICP-09N-10X-5	138		
Cerium	50 mL	---------	--	ICP-11N-10X-0.5	32	ICP-11N-10X-20ML	37
$Ce(NO_3)_3$	100 mL	ICP-11N-1	34	ICP-11N-10X-1	54		
2-5% Nitric acid	500 mL	ICP-11N-5	67	ICP-11N-10X-5	168		
Cesium	50 mL	---------	--	ICP-12N-10X-0.5	45	ICP-12N-10X-20ML	55
$CsNO_3$	100 mL	ICP-12N-1	42	ICP-12N-10X-1	75		
2-5% Nitric acid	500 mL	ICP-12N-5	82	ICP-12N-10X-5	231		
Chromium reduced to (+3) state	50 mL	---------	--	ICP-13N-10X-0.5	34	ICP-13N-10X-20ML	37
$(NH_4)_2Cr_2O_7$	100 mL	ICP-13N-1	34	ICP-13N-10X-1	59		
2-5% Nitric acid	500 mL	ICP-13N-5	67	ICP-13N-10X-5	144		
Cobalt	50 mL	---------	--	ICP-14N-10X-0.5	32	ICP-14N-10X-20ML	37
Co	100 mL	ICP-14N-1	34	ICP-14N-10X-1	54		
2-5% Nitric acid	500 mL	ICP-14N-5	67	ICP-14N-10X-5	168		
Copper	50 mL	---------	--	ICP-15N-10X-0.5	32	ICP-15N-10X-20ML	37
Cu	100 mL	ICP-15N-1	34	ICP-15N-10X-1	54		
2-5% Nitric acid	500 mL	ICP-15N-5	67	ICP-15N-10X-5	138		
Dysprosium	50 mL	---------	--	ICP-16N-10X-0.5	45	ICP-16N-10X-20ML	55
Dy_2O_3	100 mL	ICP-16N-1	42	ICP-16N-10X-1	75		
2-5% Nitric acid	500 mL	ICP-16N-5	82	ICP-16N-10X-5	231		
Erbium	50 mL	---------	--	ICP-17N-10X-0.5	52	ICP-17N-10X-20ML	55
Er_2O_3	100 mL	ICP-17N-1	42	ICP-17N-10X-1	85		
2-5% Nitric acid	500 mL	ICP-17N-5	82	ICP-17N-10X-5	259		
Europium	50 mL	---------	--	ICP-18N-10X-0.5	52	ICP-18N-10X-20ML	55
Eu_2O_3	100 mL	ICP-18N-1	42	ICP-18N-10X-1	85		
2-5% Nitric acid	500 mL	ICP-18N-5	82	ICP-18N-10X-5	225		

▼ Hazardous fee not required.

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- Formulated from Ultra High Purity Starting Materials and Acids
- 18 Megohm de-ionized Water
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3 Year Minimum Shelf Life on Single Element ICP Standards

Save with NoHaz Option on ICP Single Elements

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Includes empty pre-washed, pre-labeled HDPE 250 mL bottle

Single Element ICP

Element Starting Material Matrix	Unit	1000 µg/mL Cat. No.	Price	10,000 µg/mL Cat. No.	Price	NoHaz 20 mL Size 20 mL (NoHaz) 10,000 µg/mL Cat. No.	Price
Gadolinium	50 mL	---------	--	ICP-19N-10X-0.5	69	ICP-19N-10X-20ML	55
Gd_2O_3	100 mL	ICP-19N-1	42	ICP-19N-10X-1	115		
2-5% Nitric acid	500 mL	ICP-19N-5	82	ICP-19N-10X-5	315		
Gallium	50 mL	---------	--	ICP-20N-10X-0.5	45	ICP-20N-10X-20ML	55
Ga	100 mL	ICP-20N-1	42	ICP-20N-10X-1	75		
2-5% Nitric acid	500 mL	ICP-20N-5	82	ICP-20N-10X-5	165		
Germanium	50 mL	---------	--	ICP-21W-10X-0.5 ▼	52	ICP-21W-10X-20ML	55
$(NH_4)_2GeF_6$	100 mL	ICP-21W-1 ▼	42	ICP-21W-10X-1 ▼	85		
Water tr. HF	500 mL	ICP-21W-5 ▼	82	ICP-21W-10X-5 ▼	231		
Gold	50 mL	---------	--	ICP-22H-10X-0.5	175	ICP-22H-10X-20ML	95
Au	100 mL	ICP-22H-1	78	ICP-22H-10X-1	295		
10% HCl (min.)	500 mL	ICP-22H-5	152	----------	--		
Hafnium	50 mL	---------	--	ICP-23N-10X-0.5	80	ICP-23N-10X-20ML	75
HfO_2	100 mL	ICP-23N-1	60	ICP-23N-10X-1	135		
2-5% Nitric acid tr. HF	500 mL	ICP-23N-5	118	ICP-23N-10X-5	445		
Holmium	50 mL	---------	--	ICP-24N-10X-0.5	52	ICP-24N-10X-20ML	55
Ho_2O_3	100 mL	ICP-24N-1	42	ICP-24N-10X-1	85		
2-5% Nitric acid	500 mL	ICP-24N-5	82	ICP-24N-10X-5	259		
Indium	50 mL	---------	--	ICP-25N-10X-0.5	52	ICP-25N-10X-20ML	55
In	100 mL	ICP-25N-1	42	ICP-25N-10X-1	85		
2-5% Nitric acid	500 mL	ICP-25N-5	82	ICP-25N-10X-5	185		
Iridium	50 mL	---------	--	ICP-26H-10X-0.5	175	ICP-26H-10X-20ML	95
$IrCl_3 \bullet 3H_20$	100 mL	ICP-26H-1	78	ICP-26H-10X-1	295		
10% HCl (min.)	500 mL	ICP-26H-5	152	----------	--		
Iron	50 mL	---------	--	ICP-27N-10X-0.5	32	ICP-27N-10X-20ML	37
Fe	100 mL	ICP-27N-1	34	ICP-27N-10X-1	54		
2-5% Nitric acid	500 mL	ICP-27N-5	67	ICP-27N-10X-5	168		
Lanthanum	50 mL	---------	--	ICP-28N-10X-0.5	32	ICP-28N-10X-20ML	37
La_2O_3	100 mL	ICP-28N-1	34	ICP-28N-10X-1	54		
2-5% Nitric acid	500 mL	ICP-28N-5	67	ICP-28N-10X-5	168		
Lead	50 mL	---------	--	ICP-29N-10X-0.5	32	ICP-29N-10X-20ML	37
$Pb(NO_3)_2$	100 mL	ICP-29N-1	34	ICP-29N-10X-1	54		
2-5% Nitric acid	500 mL	ICP-29N-5	67	ICP-29N-10X-5	138		
Lithium	50 mL	---------	--	ICP-30N-10X-0.5	32	ICP-30N-10X-20ML	37
Li_2CO_3	100 mL	ICP-30N-1	34	ICP-30N-10X-1	54		
2-5% Nitric acid	500 mL	ICP-30N-5	67	ICP-30N-10X-5	138		
Lutetium	50 mL	---------	--	ICP-31N-10X-0.5	175	ICP-31N-10X-20ML	132
Lu_2O_3	100 mL	ICP-31N-1	121	ICP-31N-10X-1	295		
2-5% Nitric acid	500 mL	ICP-31N-5	236	ICP-31N-10X-5	842		
Magnesium	50 mL	---------	--	ICP-32N-10X-0.5	32	ICP-32N-10X-20ML	37
MgO	100 mL	ICP-32N-1	34	ICP-32N-10X-1	54		
2-5% Nitric acid	500 mL	ICP-32N-5	67	ICP-32N-10X-5	138		
Manganese	50 mL	---------	--	ICP-33N-10X-0.5	32	ICP-33N-10X-20ML	37
$Mn(C_2H_3O_2)_2$	100 mL	ICP-33N-1	34	ICP-33N-10X-1	54		
2-5% Nitric acid	500 mL	ICP-33N-5	67	ICP-33N-10X-5	168		
Mercury	50 mL	---------	--	ICP-34N-10X-0.5	32	ICP-34N-10X-20ML	37
Hg	100 mL	ICP-34N-1	34	ICP-34N-10X-1	54		
10% Nitric acid	500 mL	ICP-34N-5	67	ICP-34N-10X-5	138		
Molybdenum	50 mL	---------	--	ICP-35W-10X-0.5 ▼	32	ICP-35W-10X-20ML	37
$(NH_4)_2MoO_4$	100 mL	ICP-35W-1 ▼	34	ICP-35W-10X-1 ▼	54		
Water tr. NH_4OH	500 mL	ICP-35W-5 ▼	67	ICP-35W-10X-5 ▼	138		

▼ Hazardous fee not required.

Single Element ICP

Element Starting Material Matrix	Unit	1000 µg/mL Cat. No.	Price	10,000 µg/mL Cat. No.	Price	NoHaz 20 mL Size 20 mL (NoHaz) 10,000 µg/mL Cat. No.	Price
Neodymium	50 mL	---------	--	ICP-36N-10X-0.5	45	ICP-36N-10X-20ML	37
Nd_2O_3	100 mL	ICP-36N-1	34	ICP-36N-10X-1	75		
2-5% Nitric acid	500 mL	ICP-36N-5	67	ICP-36N-10X-5	203		
Nickel	50 mL	---------	--	ICP-37N-10X-0.5	32	ICP-37N-10X-20ML	37
Ni	100 mL	ICP-37N-1	34	ICP-37N-10X-1	54		
2-5% Nitric acid	500 mL	ICP-37N-5	67	ICP-37N-10X-5	138		
Niobium	50 mL	---------	--	ICP-38W-10X-0.5 ▼	38	ICP-38W-10X-20ML	37
Nb_2O_5	100 mL	ICP-38W-1 ▼	34	ICP-38W-10X-1 ▼	64		
Water tr. HF	500 mL	ICP-38W-5 ▼	67	ICP-38W-10X-5 ▼	175		
Palladium	50 mL	---------	--	ICP-40H-10X-0.5	175	ICP-40H-10X-20ML	95
Pd	100 mL	ICP-40H-1	78	ICP-40H-10X-1	295		
10% HCl (min.)	500 mL	ICP-40H-5	152	----------	--		
Phosphorus	50 mL	---------	--	ICP-41W-10X-0.5 ▼	32	ICP-41W-10X-20ML	37
$NH_4H_2PO_4$	100 mL	ICP-41W-1 ▼	34	ICP-41W-10X-1 ▼	54		
Water	500 mL	ICP-41W-5 ▼	67	ICP-41W-10X-5 ▼	138		
Platinum	50 mL	---------	--	ICP-42H-10X-0.5	175	ICP-42H-10X-20ML	95
Pt	100 mL	ICP-42H-1	78	ICP-42H-10X-1	295		
10% HCl (min.)	500 mL	ICP-42H-5	152	----------	--		
Potassium	50 mL	---------	--	ICP-43N-10X-0.5	32	ICP-43N-10X-20ML	37
KNO_3	100 mL	ICP-43N-1	34	ICP-43N-10X-1	54		
2-5% Nitric acid	500 mL	ICP-43N-5	67	ICP-43N-10X-5	138		
Praseodymium	50 mL	---------	--	ICP-44N-10X-0.5	72	ICP-44N-10X-20ML	55
Pr_6O_{11}	100 mL	ICP-44N-1	42	ICP-44N-10X-1	120		
2-5% Nitric acid	500 mL	ICP-44N-5	82	ICP-44N-10X-5	329		
Rhenium	50 mL	---------	--	ICP-45W-10X-0.5 ▼	132	ICP-45W-10X-20ML	67
Re	100 mL	ICP-45W-1 ▼	55	ICP-45W-10X-1 ▼	222		
Water tr. Nitric acid	500 mL	ICP-45W-5 ▼	108	ICP-45W-10X-5 ▼	495		
Rhodium	50 mL	---------	--	ICP-46H-10X-0.5	444	ICP-46H-10X-20ML	290
$RhCl_3 \bullet 3H_2O$	100 mL	ICP-46H-1	220	ICP-46H-10X-1	750		
10% HCl (min.)	500 mL	ICP-46H-5	490	----------	--		
Rubidium	50 mL	---------	--	ICP-47N-10X-0.5	52	ICP-47N-10X-20ML	37
$RbNO_3$	100 mL	ICP-47N-1	36	ICP-47N-10X-1	85		
2-5% Nitric acid	500 mL	ICP-47N-5	70	ICP-47N-10X-5	265		
Ruthenium	50 mL	---------	--	ICP-48H-10X-0.5	175	ICP-48H-10X-20ML	95
$RuCl_3 \bullet 3H_2O$	100 mL	ICP-48H-1	78	ICP-48H-10X-1	295		
10% HCl	500 mL	ICP-48H-5	152	----------	--		
Samarium	50 mL	---------	--	ICP-49N-10X-0.5	45	ICP-49N-10X-20ML	55
Sm_2O_3	100 mL	ICP-49N-1	42	ICP-49N-10X-1	75		
2-5% Nitric acid	500 mL	ICP-49N-5	82	ICP-49N-10X-5	231		
Scandium	50 mL	---------	--	ICP-50N-10X-0.5	175	ICP-50N-10X-20ML	95
Sc_2O_3	100 mL	ICP-50N-1	78	ICP-50N-10X-1	295		
2-5% Nitric acid	500 mL	ICP-50N-5	152	ICP-50N-10X-5	795		
Selenium	50 mL	---------	--	ICP-51N-10X-0.5	32	ICP-51N-10X-20ML	37
Se	100 mL	ICP-51N-1	34	ICP-51N-10X-1	54		
2-5% Nitric acid	500 mL	ICP-51N-5	67	ICP-51N-10X-5	138		
Silicon	50 mL	---------	--	ICP-52W-10X-0.5 ▼	32	ICP-52W-10X-20ML	37
$(NH_4)2SiF_6$	100 mL	ICP-52W-1 ▼	34	ICP-52W-10X-1 ▼	54		
Water tr. HF	500 mL	ICP-52W-5 ▼	67	ICP-52W-10X-5 ▼	168		
Silver	50 mL	---------	--	ICP-53N-10X-0.5	42	ICP-53N-10X-20ML	37
$AgNO_3$	100 mL	ICP-53N-1	34	ICP-53N-10X-1	70		
2-5% Nitric acid	500 mL	ICP-53N-5	67	ICP-53N-10X-5	145		
Sodium	50 mL	---------	--	ICP-54N-10X-0.5	34	ICP-54N-10X-20ML	37
$NaNO_3$	100 mL	ICP-54N-1	34	ICP-54N-10X-1	59		
2-5% Nitric acid	500 mL	ICP-54N-5	67	ICP-54N-10X-5	175		
Strontium	50 mL	---------	--	ICP-55N-10X-0.5	42	ICP-55N-10X-20ML	37
$Sr(NO_3)_2$	100 mL	ICP-55N-1	34	ICP-55N-10X-1	70		
2-5% Nitric acid	500 mL	ICP-55N-5	67	ICP-55N-10X-5	203		
Sulfur	50 mL	---------	--	ICP-56W-10X-0.5 ▼	32	ICP-56W-10X-20ML	37
$(NH_4)_2SO_4$	100 mL	ICP-56W-1 ▼	34	ICP-56W-10X-1 ▼	54		
Water	500 mL	ICP-56W-5 ▼	67	ICP-56W-10X-5 ▼	138		
Tantalum	50 mL	---------	--	ICP-57W-10X-0.5 ▼	52	ICP-57W-10X-20ML	55
Ta	100 mL	ICP-57W-1 ▼	42	ICP-57W-10X-1 ▼	85		
Water tr. HF	500 mL	ICP-57W-5 ▼	82	ICP-57W-10X-5 ▼	224		

3 Year Minimum Shelf Life on Single Element ICP Standards

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- Traceable to NIST Reference Materials
- Formulated from Ultra High Purity Starting Materials and Acids
- 18 Megohm de-ionized Water
- Concentration verified by Wet Chemical and Instrumental Analysis
- Packaged in specially prepared Acid leached bottles

3 Year Minimum Shelf Life on Single Element ICP Standards

Save with NoHaz Option on ICP Single Elements

- No Hazardous Shipping Fees
- Lower Shipping Costs (less weight)
- Yields More - 200 mL from 20 mL concentrate

Includes empty pre-washed, pre-labeled HDPE 250 mL bottle

Single Element ICP

Element Starting Material Matrix	Unit	1000 µg/mL Cat. No.	Price	10,000 µg/mL Cat. No.	Price	NoHaz 20 mL Size 20 mL (NoHaz) 10,000 µg/mL Cat. No.	Price
Tellurium	50 mL	---------	--	ICP-58H-10X-0.5	46	ICP-58H-10X-20ML	37
Te	100 mL	ICP-58H-1	34	ICP-58H-10X-1	78		
20% HCl (min.)	500 mL	ICP-58H-5	67	ICP-58H-10X-5	210		
Terbium	50 mL	---------	--	ICP-59N-10X-0.5	69	ICP-59N-10X-20ML	55
Tb_4O_7	100 mL	ICP-59N-1	42	ICP-59N-10X-1	115		
2-5% Nitric acid	500 mL	ICP-59N-5	82	ICP-59N-10X-5	315		
Thallium	50 mL	---------	--	ICP-60N-10X-0.5	32	ICP-60N-10X-20ML	37
Tl	100 mL	ICP-60N-1	34	ICP-60N-10X-1	54		
2-5% Nitric acid	500 mL	ICP-60N-5	67	ICP-60N-10X-5	144		
Thorium		---------	--	----------	--	----------	--
$Th(NO_3)4 \bullet 4H_2O$	100 mL	ICP-61N-1	34				
2-5% Nitric acid	500 mL	ICP-61N-5	67				
Thulium	50 mL	---------	--	ICP-62N-10X-0.5	78	ICP-62N-10X-20ML	75
Tm_2O_3	100 mL	ICP-62N-1	58	ICP-62N-10X-1	130		
2-5% Nitric acid	500 mL	ICP-62N-5	120	----------	--		
Tin	50 mL	---------	--	ICP-63N-10X-0.5	42	ICP-63N-10X-20ML	37
Sn	100 mL	ICP-63N-1	34	ICP-63N-10X-1	70		
2-5% Nitric acid tr. HF	500 mL	ICP-63N-5	67	ICP-63N-10X-5	179		
Titanium	50 mL	---------	--	ICP-64W-10X-0.5 ▼	32	----------	--
$(NH_4)_2TiF_6$	100 mL	ICP-64W-1 ▼	34	ICP-64W-10X-1 ▼	54		
Water tr. HF	500 mL	ICP-64W-5 ▼	67	ICP-64W-10X-5 ▼	138		
Tungsten	50 mL	---------	--	ICP-65W-10X-0.5 ▼	32	ICP-65W-10X-20ML	37
$(NH_4)_2WO_4$	100 mL	ICP-65W-1 ▼	34	ICP-65W-10X-1 ▼	54		
Water tr. NH_4OH	500 mL	ICP-65W-5 ▼	67	ICP-65W-10X-5 ▼	168		
Uranium	-----	---------	--	----------	--	----------	--
U_3O_8	100 mL	ICP-66N-1	42				
2-5% Nitric acid	500 mL	ICP-66N-5	82				
Vanadium	50 mL	---------	--	ICP-67N-10X-0.5	36	ICP-67N-10X-20ML	37
NH_4VO_3	100 mL	ICP-67N-1	34	ICP-67N-10X-1	65		
2-5% Nitric acid	500 mL	ICP-67N-5	67	ICP-67N-10X-5	135		
Ytterbium	50 mL	---------	--	ICP-68N-10X-0.5	60	ICP-68N-10X-20ML	55
Yb_2O_3	100 mL	ICP-68N-1	42	ICP-68N-10X-1	100		
2-5% Nitric acid	500 mL	ICP-68N-5	82	ICP-68N-10X-5	273		
Yttrium	50 mL	---------	--	ICP-69N-10X-0.5	32	ICP-69N-10X-20ML	37
Y_2O_3	100 mL	ICP-69N-1	34	ICP-69N-10X-1	54		
2-5% Nitric acid	500 mL	ICP-69N-5	67	ICP-69N-10X-5	138		
Zinc	50 mL	---------	--	ICP-70N-10X-0.5	32	ICP-70N-10X-20ML	37
Zn	100 mL	ICP-70N-1	34	ICP-70N-10X-1	54		
2-5% Nitric acid	500 mL	ICP-70N-5	67	ICP-70N-10X-5	138		
Zirconium	50 mL	---------	--	ICP-71N-10X-0.5	42	ICP-71N-10X-20ML	37
$ZrO(NO_3)_2$	100 mL	ICP-71N-1	34	ICP-71N-10X-1	70		
2-5% Nitric acid	500 mL	ICP-71N-5	67	ICP-71N-10X-5	203		

▼ Hazardous fee not required.

Calibration and Matrix Blanks

Nitric Acid Blank

CLP-BLN-5	**$ 30 / 500 mL**
CLP-BLN-L-VAP	**$ 45 / 1L (2 x 500 mL)**

5% HNO_3 in 18 Megohm ASTM Type I deionized Water

Hydrochloric Acid Blank

CLP-BLH-5	**$ 30 / 500 mL**
CLP-BLH-L-VAP	**$ 45 / 1L (2 x 500 mL)**

5% HCl in 18 Megohm ASTM Type I deionized Water

Mixed Acid Blank

CLP-BLMA-5	**$ 30 / 500 mL**
CLP-BLMA-L-VAP	**$ 45 / 1L (2 x 500 mL)**

5% HCl + 1% HNO_3 in 18 Megohm ASTM Type I deionized Water

Water Blank

CLP-BLW-5 ▼	**$ 30 / 500 mL**
CLP-BLW-L-VAP ▼	**$ 40 / 1L (2 x 500 mL)**

18 Megohm ASTM Type I deionized Water

▼ Hazardous fee not required.

ICP/MS
Single Element

AccuStandard's ICP/MS Standards are formulated to meet the needs of this very special instrument. As matrix effect is of utmost concern, each standard is formulated in specially purified 18 megohm de-ionized water and ultra pure acids.

- Traceable to NIST Reference Materials
- Formulated from Ultra High Purity Starting Materials and Acids
- 18 Megohm de-ionized Water
- Concentration verified by Wet Chemical and Instrumental Analysis

3 Year Minimum Shelf Life on Single Element ICP/MS Standards

Single Element ICP/MS

Element	Matrix	Unit	100 µg/mL Cat. No.	100 µg/mL Price	1,000 µg/mL Cat. No.	1,000 µg/mL Price	10,000 µg/mL Cat. No.	10,000 µg/mL Price
Al (Aluminum)	2-5% HNO_3	100 mL	ICP-MS-01N-0.01X-1	$ 34	ICP-MS-01N-0.1X-1	$ 45	ICP-MS-01N-1	$ 76
Sb (Antimony)	2-5% HNO_3	100 mL	ICP-MS-02N-0.01X-1	34	ICP-MS-02N-0.1X-1	45	ICP-MS-02N-1	76
As (Arsenic)	2-5% HNO_3	100 mL	ICP-MS-03N-0.01X-1	34	ICP-MS-03N-0.1X-1	45	ICP-MS-03N-1	76
Ba (Barium)	2-5% HNO_3	100 mL	ICP-MS-04N-0.01X-1	34	ICP-MS-04N-0.1X-1	45	ICP-MS-04N-1	76
Be (Beryllium)	2-5% HNO_3	100 mL	ICP-MS-05N-0.01X-1	42	ICP-MS-05N-0.1X-1	53	ICP-MS-05N-1	123
Bi (Bismuth)	2-10% HNO_3	100 mL	ICP-MS-06N-0.01X-1	34	ICP-MS-06N-0.1X-1	45	ICP-MS-06N-1	76
B (Boron) ▼	H_2O tr. NH_4OH	100 mL	ICP-MS-07W-0.01X-1	34	ICP-MS-07W-0.1X-1	45	ICP-MS-07W-1	76
Cd (Cadmium)	2-5% HNO_3	100 mL	ICP-MS-08N-0.01X-1	34	ICP-MS-08N-0.1X-1	45	ICP-MS-08N-1	76
Ca (Calcium)	2-5% HNO_3	100 mL	ICP-MS-09N-0.01X-1	34	ICP-MS-09N-0.1X-1	45	ICP-MS-09N-1	76
Ce (Cerium)	2-5% HNO_3	100 mL	ICP-MS-11N-0.01X-1	34	ICP-MS-11N-0.1X-1	45	ICP-MS-11N-1	76
Cs (Cesium)	2-5% HNO_3	100 mL	ICP-MS-12N-0.01X-1	42	ICP-MS-12N-0.1X-1	53	ICP-MS-12N-1	84
Cr (Chromium)	2-5% HNO_3	100 mL	ICP-MS-13N-0.01X-1	34	ICP-MS-13N-0.1X-1	45	ICP-MS-13N-1	76
Co (Cobalt)	2-5% HNO_3	100 mL	ICP-MS-14N-0.01X-1	34	ICP-MS-14N-0.1X-1	45	ICP-MS-14N-1	76
Cu (Copper)	2-5% HNO_3	100 mL	ICP-MS-15N-0.01X-1	34	ICP-MS-15N-0.1X-1	45	ICP-MS-15N-1	76
Dy (Dysprosium)	2-5% HNO_3	100 mL	ICP-MS-16N-0.01X-1	42	ICP-MS-16N-0.1X-1	53	ICP-MS-16N-1	84
Er (Erbium)	2-5% HNO_3	100 mL	ICP-MS-17N-0.01X-1	42	ICP-MS-17N-0.1X-1	53	ICP-MS-17N-1	84
Eu (Europium)	2-5% HNO_3	100 mL	ICP-MS-18N-0.01X-1	42	ICP-MS-18N-0.1X-1	53	ICP-MS-18N-1	84
Gd (Gadolinium)	2-5% HNO_3	100 mL	ICP-MS-19N-0.01X-1	42	ICP-MS-19N-0.1X-1	53	ICP-MS-19N-1	84
Ga (Gallium)	2-5% HNO_3	100 mL	ICP-MS-20N-0.01X-1	42	ICP-MS-20N-0.1X-1	53	ICP-MS-20N-1	84
Ge (Germanium) ▼	H_2O tr. HF	100 mL	ICP-MS-21W-0.01X-1	42	ICP-MS-21W-0.1X-1	53	ICP-MS-21W-1	84
Au (Gold)	10% HCl	100 mL	ICP-MS-22H-0.01X-1	78	ICP-MS-22H-0.1X-1	89	ICP-MS-22H-1	330
Hf (Hafnium)	2-5% HNO_3 tr. HF	100 mL	ICP-MS-23N-0.01X-1	60	ICP-MS-23N-0.1X-1	72	ICP-MS-23N-1	111
Ho (Holmium)	2-5% HNO_3	100 mL	ICP-MS-24N-0.01X-1	42	ICP-MS-24N-0.1X-1	53	ICP-MS-24N-1	84
In (Indium)	2-5% HNO_3	100 mL	ICP-MS-25N-0.01X-1	42	ICP-MS-25N-0.1X-1	53	ICP-MS-25N-1	84
Ir (Iridium)	10% HCl	100 mL	ICP-MS-26H-0.01X-1	78	ICP-MS-26H-0.1X-1	89	ICP-MS-26H-1	120
Fe (Iron)	2-5% HNO_3	100 mL	ICP-MS-27N-0.01X-1	34	ICP-MS-27N-0.1X-1	45	ICP-MS-27N-1	76
La (Lanthanum)	2-5% HNO_3	100 mL	ICP-MS-28N-0.01X-1	34	ICP-MS-28N-0.1X-1	45	ICP-MS-28N-1	76
Pb (Lead)	2-5% HNO_3	100 mL	ICP-MS-29N-0.01X-1	34	ICP-MS-29N-0.1X-1	45	ICP-MS-29N-1	76
Li (Lithium)	2-5% HNO_3	100 mL	ICP-MS-30N-0.01X-1	34	ICP-MS-30N-0.1X-1	45	ICP-MS-30N-1	76
Lu (Lutetium)	2-5% HNO_3	100 mL	ICP-MS-31N-0.01X-1	121	ICP-MS-31N-0.1X-1	138	ICP-MS-31N-1	354
Mg (Magnesium)	2-5% HNO_3	100 mL	ICP-MS-32N-0.01X-1	34	ICP-MS-32N-0.1X-1	45	ICP-MS-32N-1	76
Mn (Manganese)	2-5% HNO_3	100 mL	ICP-MS-33N-0.01X-1	34	ICP-MS-33N-0.1X-1	45	ICP-MS-33N-1	76
Hg (Mercury)	10% HNO_3	100 mL	ICP-MS-34N-0.01X-1	34	ICP-MS-34N-0.1X-1	45	ICP-MS-34N-1	76
Mo (Molybdenum) ▼	H_2O tr. NH_4OH	100 mL	ICP-MS-35W-0.01X-1	34	ICP-MS-35W-0.1X-1	45	ICP-MS-35W-1	76
Nd (Neodymium) ▼	2-5% HNO_3	100 mL	ICP-MS-36N-0.01X-1	34	ICP-MS-36N-0.1X-1	45	ICP-MS-36N-1	76

▼ Hazardous fee not required.

3 Year Minimum Shelf Life on Single Element ICP/MS Standards

Single Element ICP/MS (Continued)

Element	Matrix	Unit	100 µg/mL Cat. No.	100 µg/mL Price	1,000 µg/mL Cat. No.	1,000 µg/mL Price	10,000 µg/mL Cat. No.	10,000 µg/mL Price
Ni (Nickel)	2-5% HNO_3	100 mL	ICP-MS-37N-0.01X-1	34	ICP-MS-37N-0.1X-1	45	ICP-MS-37N-1	$ 76
Nb (Niobium)	H_2O tr. HF	100 mL	ICP-MS-38W-0.01X-1	34	ICP-MS-38W-0.1X-1	45	ICP-MS-38W-1	76
Pd (Palladium)	10% HCl	100 mL	ICP-MS-40H-0.01X-1	78	ICP-MS-40H-0.1X-1	89	ICP-MS-40H-1	120
P (Phosphorous) ▼	H_2O	100 mL	ICP-MS-41W-0.01X-1	34	ICP-MS-41W-0.1X-1	45	ICP-MS-41W-1	76
Pt (Platinum)	10% HCl	100 mL	ICP-MS-42H-0.01X-1	78	ICP-MS-42H-0.1X-1	89	ICP-MS-42H-1	120
K (Potassium)	2-5% HNO_3	100 mL	ICP-MS-43N-0.01X-1	34	ICP-MS-43N-0.1X-1	45	ICP-MS-43N-1	76
Pr (Praseodymium)	2-5% HNO_3	100 mL	ICP-MS-44N-0.01X-1	42	ICP-MS-44N-0.1X-1	53	ICP-MS-44N-1	84
Re (Rhenium) ▼	H_2O tr. HNO_3	100 mL	ICP-MS-45W-0.01X-1	55	ICP-MS-45W-0.1X-1	63	ICP-MS-45W-1	248
Rh (Rhodium)	10% HCl	100 mL	ICP-MS-46H-0.01X-1	220	ICP-MS-46H-0.1X-1	251	ICP-MS-46H-1	838
Rb (Rubidium)	2-5% HNO_3	100 mL	ICP-MS-47N-0.01X-1	36	ICP-MS-47N-0.1X-1	48	ICP-MS-47N-1	96
Ru (Ruthenium)	10% HCl	100 mL	ICP-MS-48H-0.01X-1	78	ICP-MS-48H-0.1X-1	89	ICP-MS-48H-1	120
Sm (Samarium)	2-5% HNO_3	100 mL	ICP-MS-49N-0.01X-1	42	ICP-MS-49N-0.1X-1	53	ICP-MS-49N-1	84
Sc (Scandium)	2-5% HNO_3	100 mL	ICP-MS-50N-0.01X-1	78	ICP-MS-50N-0.1X-1	89	ICP-MS-50N-1	330
Se (Selenium)	2-5% HNO_3	100 mL	ICP-MS-51N-0.01X-1	34	ICP-MS-51N-0.1X-1	45	ICP-MS-51N-1	76
Si (Silicon) ▼	H_2O tr. HF	100 mL	ICP-MS-52W-0.01X-1	34	ICP-MS-52W-0.1X-1	45	ICP-MS-52W-1	76
Ag (Silver)	2-5% HNO_3	100 mL	ICP-MS-53N-0.01X-1	34	ICP-MS-53N-0.1X-1	45	ICP-MS-53N-1	76
Na (Sodium)	2-5% HNO_3	100 mL	ICP-MS-54N-0.01X-1	34	ICP-MS-54N-0.1X-1	45	ICP-MS-54N-1	76
Sr (Strontium)	2-5% HNO_3	100 mL	ICP-MS-55N-0.01X-1	34	ICP-MS-55N-0.1X-1	45	ICP-MS-55N-1	76
S (Sulfur) ▼	H_2O	100 mL	ICP-MS-56W-0.01X-1	34	ICP-MS-56W-0.1X-1	45	ICP-MS-56W-1	76
Ta (Tantalum) ▼	H_2O tr. HF	100 mL	ICP-MS-57W-0.01X-1	42	ICP-MS-57W-0.1X-1	53	ICP-MS-57W-1	84
Te (Tellurium)	10% HCl (min.)	100 mL	ICP-MS-58H-0.01X-1	34	ICP-MS-58H-0.1X-1	45	ICP-MS-58H-1	76
Tb (Terbium)	2-5% HNO_3	100 mL	ICP-MS-59N-0.01X-1	42	ICP-MS-59N-0.1X-1	53	ICP-MS-59N-1	129
Tl (Thallium)	2-5% HNO_3	100 mL	ICP-MS-60N-0.01X-1	34	ICP-MS-60N-0.1X-1	45	ICP-MS-60N-1	76
Th (Thorium)	2-5% HNO_3	100 mL	ICP-MS-61N-0.01X-1	34	ICP-MS-61N-0.1X-1	45	----------	--
Tm (Thulium)	2-5% HNO_3	100 mL	ICP-MS-62N-0.01X-1	58	ICP-MS-62N-0.1X-1	70	ICP-MS-62N-1	108
Sn (Tin)	2-5% HNO_3 tr. HF	100 mL	ICP-MS-63N-0.01X-1	34	ICP-MS-63N-0.1X-1	45	ICP-MS-63N-1	76
Ti (Titanium) ▼	H_2O tr. HF	100 mL	ICP-MS-64W-0.01X-1	34	ICP-MS-64W-0.1X-1	45	ICP-MS-64W-1	76
W (Tungsten) ▼	H_2O tr. NH_4OH	100 mL	ICP-MS-65W-0.01X-1	34	ICP-MS-65W-0.1X-1	45	ICP-MS-65W-1	76
U (Uranium)	2-5% HNO_3	100 mL	ICP-MS-66N-0.01X-1	42	ICP-MS-66N-0.1X-1	53	----------	--
V (Vanadium)	2-5% HNO_3	100 mL	ICP-MS-67N-0.01X-1	34	ICP-MS-67N-0.1X-1	45	ICP-MS-67N-1	76
Yb (Ytterbium)	2-5% HNO_3	100 mL	ICP-MS-68N-0.01X-1	42	ICP-MS-68N-0.1X-1	53	ICP-MS-68N-1	84
Y (Yttrium)	2-5% HNO_3	100 mL	ICP-MS-69N-0.01X-1	34	ICP-MS-69N-0.1X-1	45	ICP-MS-69N-1	76
Zn (Zinc)	2-5% HNO_3	100 mL	ICP-MS-70N-0.01X-1	34	ICP-MS-70N-0.1X-1	45	ICP-MS-70N-1	76
Zr (Zirconium)	2-5% HNO_3	100 mL	ICP-MS-71N-0.01X-1	34	ICP-MS-71N-0.1X-1	45	ICP-MS-71N-1	76

▼ Hazardous fee not required.

AA
Single Element

Each standard is prepared from high purity starting materials, 18 megohm de-ionized water and high purity acids. Every standard is instrumentally assayed to verify concentration of specified element. Actual Lot Analysis is provided on the label and a Certificate of Analysis is included for ease of record keeping and availability at audits.

- Traceable to NIST Reference Materials
- Certificate of Analysis included
- 18 megohm de-ionized Water
- 36 Month Shelf Life

3 Year Minimum Shelf Life on Single Element ICP/MS Standards

Single Element AA

Element Starting Material Matrix	Unit	1000 µg/mL Cat. No.	Price	Element Starting Material Matrix	Unit	1000 µg/mL Cat. No.	Price
Aluminum	100 mL	AA01N-1	$ 13	**Molybdenum**	100 mL	AA35W-1 ▼	13
2-5% Nitric acid	500 mL	AA01N-5	33	Water tr. NH_4OH	500 mL	AA35W-5 ▼	33
Antimony	100 mL	AA02N-1	13	**Nickel**	100 mL	AA37N-1	12
2-5% HNO_3 tr.Tartaric acid	500 mL	AA02N-5	33	2-5% Nitric acid	500 mL	AA37N-5	30
Arsenic	100 mL	AA03N-1	13	**Phosphorus**	100 mL	AA41W-1 ▼	13
2-5% Nitric acid	500 mL	AA03N-5	33	Water	500 mL	AA41W-5 ▼	33
Barium	100 mL	AA04N-1	12	**Platinum**	100 mL	AA42H-1	62
2-5% Nitric acid	500 mL	AA04N-5	30	2% HCl (min.)	500 mL	AA42H-5	145
Boron	100 mL	AA07W-1 ▼	13	**Potassium**	100 mL	AA43N-1	12
Water tr. NH_4OH	500 mL	AA07W-5 ▼	33	2-5% Nitric acid	500 mL	AA43N-5	30
Cadmium	100 mL	AA08N-1	13	**Selenium**	100 mL	AA51N-1	19
2-5% Nitric acid	500 mL	AA08N-5	33	2-5% Nitric acid	500 mL	AA51N-5	46
Calcium	100 mL	AA09N-1	12	**Silicon**	100 mL	AA52W-1 ▼	13
2-5% Nitric acid	500 mL	AA09N-5	30	Water tr. HF	500 mL	AA52W-5 ▼	33
Chromium	100 mL	AA13N-1	12	**Silver**	100 mL	AA53N-1	16
2-5% Nitric acid	500 mL	AA13N-5	30	2-5% Nitric acid	500 mL	AA53N-5	40
Cobalt	100 mL	AA14N-1	12	**Sodium**	100 mL	AA54N-1	13
2-5% Nitric acid	500 mL	AA14N-5	30	2-5% Nitric acid	500 mL	AA54N-5	33
Copper	100 mL	AA15N-1	12	**Strontium**	100 mL	AA55N-1	120
2-5% Nitric acid	500 mL	AA15N-5	30	2-5% Nitric acid	500 mL	AA55N-5	30
Gold	100 mL	AA22H-1	66	**Sulfur**	100 mL	AA56W-1 ▼	15
5% HCl (min.)	500 mL	AA22H-5	179	Water	500 mL	AA56W-5 ▼	35
Iron	100 mL	AA27N-1	12	**Thallium**	100 mL	AA60N-1	15
2-5% Nitric acid	500 mL	AA27N-5	30	2-5% Nitric acid	500 mL	AA60N-5	35
Lead	100 mL	AA29N-1	12	**Tin**	100 mL	AA63N-1	19
2-5% Nitric acid	500 mL	AA29N-5	30	2-5% Nitric acid tr. HF	500 mL	AA63N-5	46
Lithium	100 mL	AA30N-1	12	**Titanium**	100 mL	AA64W-1 ▼	13
2-5% Nitric acid	500 mL	AA30N-5	30	Water tr. HF	500 mL	AA64W-5 ▼	33
Magnesium	100 mL	AA32N-1	12	**Vanadium**	100 mL	AA67N-1	13
2-5% Nitric acid	500 mL	AA32N-5	30	5-10% Nitric acid	500 mL	AA67N-5	33
Manganese	100 mL	AA33N-1	11	**Yttrium**	100 mL	AA69N-1	15
2-5% Nitric acid	500 mL	AA33N-5	28	2-5% Nitric acid	500 mL	AA69N-5	35
Mercury	100 mL	AA34N-1	13	**Zinc**	100 mL	AA70N-1	13
2-5% Nitric acid	500 mL	AA34N-5	33	2-5% Nitric acid	500 mL	AA70N-5	33

▼ Hazardous fee not required.

Matrix Modifier Solutions for Graphite Furnace AA

These Matrix Modifiers enhance sensitivity and suppress background interferences observed in trace metal analysis.

Modifier Description	Modifier Source	Unit	Cat. No.	Price
Ammonium dihydrogen phosphate 40% in H_2O	$NH_4H_2PO_4$	50 mL	MOD-02-0.5 ▼	$ 225
		100 mL	MOD-02-1 ▼	375
		500 mL	MOD-02-5 ▼	535
Ammonium nitrate 5% in H_2O	NH_4NO_3	50 mL	MOD-03-0.5 ▼	165
		100 mL	MOD-03-1 ▼	270
		500 mL	MOD-03-5 ▼	385
Calcium nitrate 2% Calcium in 5% in HNO_3	$Ca(NO_3)_2 \bullet 4H_2O$	50 mL	MOD-04-0.5	140
		100 mL	MOD-04-1	235
		500 mL	MOD-04-5	340
Lanthanum chloride 5% Lanthanum in 5% HCl	LaCl	50 mL	MOD-05-0.5	165
		100 mL	MOD-05-1	270
		500 mL	MOD-05-5	385
Lanthanum nitrate 5% Lanthanum in 5% HNO_3	$LaNO_3$	50 mL	MOD-06-0.5	165
		100 mL	MOD-06-1	270
		500 mL	MOD-06-5	385
Magnesium nitrate 2% Magnesium in 5% HNO_3	$Mg(NO_3)_2$	50 mL	MOD-07-0.5	90
		100 mL	MOD-07-1	150
		500 mL	MOD-07-5	210
Nickel nitrate 5% Nickel in 5% HNO_3	$Ni(NO_3)_2$	50 mL	MOD-08-0.5	160
		100 mL	MOD-08-1	265
		500 mL	MOD-08-5	375
Palladium nitrate 0.2% Palladium in 5% HNO_3	$Pd(NO_3)_2$	50 mL	MOD-09A-0.5	60
		100 mL	MOD-09A-1	95
		500 mL	MOD-09A-5	135
Palladium nitrate 0.5% Palladium in 5% HNO_3	$Pd(NO_3)_2$	50 mL	MOD-09B-0.5	120
		100 mL	MOD-09B-1	200
		500 mL	MOD-09B-5	285
Palladium nitrate 1.0% Palladium in 10% HNO_3	$Pd(NO_3)_2$	50 mL	MOD-09C-0.5	225
		100 mL	MOD-09C-1	375
		500 mL	MOD-09C-5	890

Calibration and Matrix Blanks

Nitric Acid Blank

CLP-BLN-5 **$ 30 / 500 mL**
CLP-BLN-L-VAP **$ 45 / 1L (2 x 500 mL)**

5% HNO_3 in 18 Megohm ASTM Type I deionized Water

Hydrochloric Acid Blank

CLP-BLH-5 **$ 30 / 500 mL**
CLP-BLH-L-VAP **$ 45 / 1L (2 x 500 mL)**

5% HCl in 18 Megohm ASTM Type I deionized Water

Mixed Acid Blank

CLP-BLMA-5 **$ 30 / 500 mL**
CLP-BLMA-L-VAP **$ 45 / 1L (2 x 500 mL)**

5% HCl + 1% HNO_3 in 18 Megohm ASTM Type I deionized Water

Water Blank

CLP-BLW-5 ▼ **$ 30 / 500 mL**
CLP-BLW-L-VAP ▼ **$ 40 / 1L (2 x 500 mL)**

18 Megohm ASTM Type I deionized Water

Multi-Element Graphite Furnace AA Calibration & Spiking Standards

GFAA Instrument Calibration Standard

CLP-CAL-AA **$ 44 / 50 mL**
At stated conc. (µg/mL) in 5% HNO_3 6 comps.

Sb (Antimony)	100
As (Arsenic)	50
Cd (Cadmium)	10
Pb (Lead)	50
Se (Selenium)	100
Tl (Thallium)	50

GFAA Mercury Standard

for Calibration or Spiking
CLP-HG-AA **$ 44 / 50 mL**
100 µg/mL in 5% HNO_3

Hg (Mercury)

GFAA Predigestion Spike Solution

CLP-SP1-AA **$ 44 / 50 mL**
At stated conc. (µg/mL) in 5% HNO_3 6 comps.

Sb (Antimony)	100
As (Arsenic)	40
Cd (Cadmium)	5
Pb (Lead)	20
Se (Selenium)	10
Tl (Thallium)	50

GFAA Postdigestion Spike Solution

(2 x CRDL except for Lead)
CLP-SP2-AA **$ 44 / 50 mL**
At stated conc. (µg/mL) in 5% HNO_3 6 comps.

Sb (Antimony)	120
As (Arsenic)	20
Cd (Cadmium)	10
Pb (Lead)	20
Se (Selenium)	10
Tl (Thallium)	20

GFAA Initial Calibration Verification

(Meets CLP Second Source Requirements)
CLP-ICV-AA **$ 44 / 50 mL**
At stated conc. (µg/mL) in 5% HNO_3 6 comps.

Sb (Antimony)	50
As (Arsenic)	25
Cd (Cadmium)	5
Pb (Lead)	25
Se (Selenium)	50
Tl (Thallium)	25

GFAA Set

CLP-AA-SET **$ 175 / 5 x 50 mL**

CLP-CAL-AA
CLP-SPI-AA
CLP-ICV-AA
CLP-HG-AA
CLP-SP2-AA

▼ Hazardous fee not required.

Ion Chromatography

- 99.99% High Purity Starting Materials
- 18 Megohm, ASTM type I de-ionized Water
- Packaged in pre-cleaned high quality HDPE bottles.
- Each Standard is Supplied with a Certificate of Analysis, stating traceability to NIST, certified value and expiration date.
- Final Solution is filtered through a 0.2 µm filter to eliminate contaminants (such as suspended solids and microbes). This extends shelf life and protects your column.
- Ready-To-Use Mixes and Calibration Sets.
- Standards may be used for other "Classical or Wet" methods.

Anions

		100 µg/mL		200 µg/mL		1000 µg/mL	
Water Matrix	**Unit**	**Cat. No.**	**Price**	**Cat. No.**	**Price**	**Cat. No.**	**Price**
Acetate	100 mL	IC-ACET-1X-1	$ 15	----------	--	IC-ACET-10X-1	$ 45
	500 mL	IC-ACET-1X-5	55	----------	--	IC-ACET-10X-5	70
Br (Bromate)	100 mL	----------	--	----------	--	IC-BROM-10X-1	45
	500 mL	----------	--	----------	--	IC-BROM-10X-5	70
Br (Bromide)	100 mL	IC-BR-1X-1	15	IC-BR-2X-1	$ 25	IC-BR-10X-1	45
	500 mL	IC-BR-1X-5	55	IC-BR-2X-5	60	IC-BR-10X-5	70
Citrate	100 mL	----------	--	----------	--	IC-CITR-10X-1	45
Chlorate	100 mL	IC-CHLR-1X-1	15	----------	--	IC-CHLR-10X-1	45
	500 mL	IC-CHLR-1X-5	55	----------	--	IC-CHLR-10X-5	70
Cl (Chloride)	100 mL	IC-Cl-1X-1	15	IC-Cl-2X-1	25	IC-Cl-10X-1	45
	500 mL	IC-Cl-1X-5	55	IC-Cl-2X-5	60	IC-Cl-10X-5	70
Chlorite	100 mL	IC-CHLT-1X-1	--	----------	--	IC-CHLT-10X-1	--
Call for availability	500 mL	IC-CHLT-1X-5	--	----------	--	IC-CHLT-10X-5	--
Chromate	100 mL	IC-CHRM-1X-1	15	----------	--	IC-CHRM-10X-1	45
	500 mL	IC-CHRM-1X-5	55	----------	--	IC-CHRM-10X-5	70
F (Fluoride)	100 mL	IC-F-1X-1	15	IC-F-2X-1	25	IC-F-10X-1	45
	500 mL	IC-F-1X-5	55	IC-F-2X-5	60	IC-F-10X-5	70
Formate	100 mL	IC-FORM-1X-1	15	----------	--	IC-FORM-10X-1	45
	500 mL	IC-FORM-1X-5	55	----------	--	IC-FORM-10X-5	70
Glycolate	100 mL	----------	--	----------	--	IC-GLYC-10X-1	45
Iodide	100 mL	----------	--	----------	--	IC-I-10X-1	45
Lactate	100 mL	----------	--	----------	--	IC-LACT-10X-1	45
Malate	100 mL	----------	--	----------	--	IC-MALA-10X-1	45
Maleate	100 mL	----------	--	----------	--	IC-MALE-10X-1	45
NO_2 (Nitrite)	100 mL	IC-NO2-1X-1	15	IC-NO2-2X-1	25	IC-NO2-10X-1	45
	500 mL	IC-NO2-1X-5	55	IC-NO2-2X-5	60	IC-NO2-10X-5	70
NO_3 (Nitrate)	100 mL	IC-NO3-1X-1	15	IC-NO3-2X-1	25	IC-NO3-10X-1	45
	500 mL	IC-NO3-1X-5	55	IC-NO3-2X-5	60	IC-NO3-10X-5	70
Oxalate	100 mL	IC-OXAL-1X-1	15	----------	--	IC-OXAL-10X-1	45
	500 mL	IC-OXAL-1X-5	55	----------	--	IC-OXAL-10X-5	70
Perchlorate	100 mL	----------	--	----------	--	IC-PER-10X-1	55
Phthalate	100 mL	----------	--	----------	--	IC-PHTH-10X-1	45
PO_4 (Phosphate)	100 mL	IC-PO4-1X-1	15	IC-PO4-2X-1	25	IC-PO4-10X-1	45
	500 mL	IC-PO4-1X-5	55	IC-PO4-2X-5	60	IC-PO4-10X-5	70
Propionate	100 mL	----------	--	----------	--	IC-PROP-10X-1	45
Succinate	100 mL	----------	--	----------	--	IC-SUCC-10X-1	45
SO_4 (Sulfate)	100 mL	IC-SO4-1X-1	15	IC-SO4-2X-1	25	IC-SO4-10X-1	45
	500 mL	IC-SO4-1X-5	55	IC-SO4-2X-5	60	IC-SO4-10X-5	70
Sulfide	20 mL	----------	--	----------	--	IC-SULF-10X-20ML	55
Dilute NaOH, stabilizer	5 x 20 mL	----------	--	----------	--	IC-SULF-10X-20ML-VAP	195
Tartrate	100 mL	----------	--	----------	--	IC-TART-10X-1	45

TRACEABLE AccuTrace™ Reference Standards CERTIFIED

Anion Kits

IC-AN-1X-1-SET **$ 75 / 7 x 100 mL**
IC-AN-1X-5-SET **$ 285 / 7 x 500 mL**
Each at 100 µg/mL in Water
IC-AN-2X-1-SET **$ 130 / 7 x 100 mL**
IC-AN-2X-5-SET **$ 315 / 7 x 500 mL**
Each at 200 µg/mL in Water
IC-AN-10X-1-SET **$ 235 / 7 x 100 mL**
IC-AN-10X-5-SET **$ 365 / 7 x 500 mL**
Each at 1000 µg/mL in Water

Fluoride	Bromide
Chloride	Phosphate
Nitrite	Sulfate
Nitrate	

Inorganic products containing acid generally require a hazardous shipping fee.

Inorganic products in water generally do not.

Ion Chrom - Ion Singles as the Element

	Unit	100 µg/mL	Price	1000 µg/mL	Price
NO_2-N (Nitrite-Nitrogen)	100 mL	IC-NO2-N-1X-1	$ 15	IC-NO2-N-10X-1	$ 45
Water Matrix	500 mL	IC-NO2-N-1X-5	55	IC-NO2-N-10X-5	70
NO_3-N (Nitrate-Nitrogen)	100 mL	IC-NO3-N-1X-1	15	IC-NO3-N-10X-1	45
Water Matrix	500 mL	IC-NO3-N-1X-5	55	IC-NO3-N-10X-5	70
PO_4-P (Phosphate-Phosphorous)	100 mL	IC-PO4-P-1X-1	15	IC-PO4-P-10X-1	45
Water Matrix	500 mL	IC-PO4-P-1X-5	55	IC-PO4-P-10X-5	70
SO_4-S (Sulfate-Sulfur)	100 mL	IC-SO4-S-1X-1	15	IC-SO4-S-10X-1	45
Water Matrix	500 mL	IC-SO4-S-1X-5	55	IC-SO4-S-10X-5	70
NH_4-N (Ammonium-Nitrogen)	100 mL	IC-NH4-N-1X-1	15	IC-NH4-N-10X-1	45
Water Matrix	500 mL	IC-NH4-N-1X-5	55	IC-NH4-N-10X-5	70

Anion Single Kits

IC-AN-R-10X-1-SET **$ 235 / 7 x 100 mL**
IC-AN-R-10X-5-SET **$ 365 / 7 x 500 mL**
Each at 1000 µg/mL

- Fluoride
- Chloride
- Nitrite-Nitrogen
- Nitrate-Nitrogen
- Bromide
- Phosphate-Phosphorous
- Sulfate-Sulfur

Organic Acid Salt Standard

	Unit	100 µg/mL	Price	1000 µg/mL	Price
Formate	100 mL	IC-FORM-1X-1	$ 15	IC-FORM-10X-1	$ 45
Water Matrix	500 mL	IC-FORM-1X-5	55	IC-FORM-10X-5	70
Acetate	100 mL	IC-ACET-1X-1	15	IC-ACET-10X-1	45
Water Matrix	500 mL	IC-ACET-1X-5	55	IC-ACET-10X-5	70
Oxalate	100 mL	IC-OXAL-1X-1	15	IC-OXAL-10X-1	45
Water Matrix	500 mL	IC-OXAL-1X-5	55	IC-OXAL-10X-5	70
Chromate	100 mL	IC-CHRM-1X-1	15	IC-CHRM-10X-1	45
Water Matrix	500 mL	IC-CHRM-1X-5	55	IC-CHRM-10X-5	70

Method 314.0 Perchlorate in Drinking Water by IC

Perchlorate has become an analyte of environmental interest since being detected in a number of drinking and groundwater supplies located in Midwestern states. EPA method 314.0 was released as an approved method to achieve the required sensitivity.

Perchlorate Standard

IC-PER-10X-1 **$ 45 / 100 mL**
1000 µg/mL in Water

- Perchlorate

Conductivity Meter Calibration Standard

M-314.0-CMCS-1 **$ 35 / 100 mL**
1410 µs/cm @ 25˚C in Water

Mixed Common Anion Stock

M-314.0-MCA-250X-1
$ 150 / 100 mL
25 mg/mL in Water 3 comps.

- Chloride
- Sulfate
- Carbonate

Method 314.0 Perchlorate Calibration Set

M-314.0-SET **$ 205 / 3 x 100 mL**

- IC-PER-10X-1
- M-314.0-MCA-250X-1
- M-314.0-CMCS-1

Ion Chrom Eluents

0.5 M Sodium bicarbonate (100X concentrate)	**50 mL** $ 45 IC-ELU-01-0.5	**100 mL** $ 60 IC-ELU-01-1	**5 x 50 mL** $ 180 IC-ELU-01-0.5-PAK	**5 x 100 mL** $ 240 IC-ELU-01-1-PAK
0.5 M Sodium carbonate (100X concentrate)	**50 mL** $ 45 IC-ELU-02-0.5	**100 mL** $ 60 IC-ELU-02-1	**5 x 50 mL** $ 180 IC-ELU-02-0.5-PAK	**5 x 100 mL** $ 240 IC-ELU-02-1-PAK
0.18 M Sodium carbonate/ 0.17 M Sodium bicarbonate (100X concentrate)	**50 mL** $ 25 IC-ELU-03-0.5	**100 mL** $ 30 IC-ELU-03-1	**5 x 50 mL** $ 100 IC-ELU-03-0.5-PAK	**5 x 100 mL** $ 120 IC-ELU-03-1-PAK

Technical Note

Ready to dilute concentrates. Open a fresh bottle and dilute the volume (50 mL to 5 L or 100 mL to 10 L) and be assured of a fresh uncontaminated mobile phase

Anion Mixes

Anion Mix #1
IC-MAN-01-1 **$ 100 / 100 mL**
Water Matrix 5 comps.

F (Fluoride)	20 µg/mL
Cl (Chloride)	30 µg/mL
NO_3 (Nitrate)	100 µg/mL
PO_4 (Phosphate)	150 µg/mL
SO_4 (Sulfate)	150 µg/mL

Anion Mix #2
IC-MAN-02-1 **$ 115 / 100 mL**
Water Matrix 6 comps.

F (Fluoride)	100 µg/mL
Cl (Chloride)	200 µg/mL
Br (Bromide)	400 µg/mL
NO_3 (Nitrate)	400 µg/mL
PO_4 (Phosphate)	600 µg/mL
SO_4 (Sulfate)	400 µg/mL

Anion Mix #3
IC-MAN-03-1 **$ 75 / 100 mL**
Water Matrix 3 comps.

F (Fluoride)	100 µg/mL
Cl (Chloride)	100 µg/mL
SO_4 (Sulfate)	100 µg/mL

Anion Mix #4
IC-MAN-04-1 **$ 115 / 100 mL**
Water Matrix 6 comps.

F (Fluoride)	100 µg/mL
Cl (Chloride)	100 µg/mL
Br (Bromide)	100 µg/mL
NO_3 (Nitrate)	100 µg/mL
PO_4 (Phosphate)	100 µg/mL
SO_4 (Sulfate)	100 µg/mL

Anion Mix #5
IC-MAN-05-R1-1 **$ 85 / 100 mL**
Water Matrix 6 comps.

F (Fluoride)	10 µg/mL
Cl (Chloride)	20 µg/mL
Br (Bromide)	20 µg/mL
NO_3 (Nitrate)	20 µg/mL
PO_4 (Phosphate)	5 µg/mL
SO_4 (Sulfate)	30 µg/mL

Anion Mix #6
IC-MAN-06-R1-1 **$ 85 / 100 mL**
Water Matrix 6 comps.

F (Fluoride)	1 µg/mL
Cl (Chloride)	5 µg/mL
Br (Bromide)	5 µg/mL
NO_3 (Nitrate)	5 µg/mL
PO_4 (Phosphate)	5 µg/mL
SO_4 (Sulfate)	10 µg/mL

Anion Mix #7
IC-MAN-07-R1-1 **$ 85 / 100 mL**
Water Matrix 6 comps.

F (Fluoride)	1 µg/mL
Cl (Chloride)	10 µg/mL
Br (Bromide)	10 µg/mL
NO_3 (Nitrate)	10 µg/mL
PO_4 (Phosphate)	10 µg/mL
SO_4 (Sulfate)	10 µg/mL

Anion Mix #8
IC-MAN-08-R1-1 **$ 85 / 100 mL**
Water Matrix 6 comps.

F (Fluoride)	10 µg/mL
Cl (Chloride)	20 µg/mL
Br (Bromide)	20 µg/mL
NO_3 (Nitrate)	20 µg/mL
PO_4 (Phosphate)	20 µg/mL
SO_4 (Sulfate)	20 µg/mL

Anion Mix #9
IC-MAN-09-R1-1 **$ 85 / 100 mL**
Water Matrix 6 comps.

F (Fluoride)	20 µg/mL
Cl (Chloride)	40 µg/mL
Br (Bromide)	40 µg/mL
NO_3 (Nitrate)	40 µg/mL
PO_4 (Phosphate)	40 µg/mL
SO_4 (Sulfate)	40 µg/mL

Anion Mix #10
IC-MAN-10-R1-1 **$ 85 / 100 mL**
Water Matrix 6 comps.

F (Fluoride)	25 µg/mL
Cl (Chloride)	50 µg/mL
Br (Bromide)	50 µg/mL
NO_3 (Nitrate)	50 µg/mL
PO_4 (Phosphate)	50 µg/mL
SO_4 (Sulfate)	50 µg/mL

Anion Mix #11
IC-MAN-11-1 **$ 175 / 100 mL**
Water Matrix 5 comps.

Cl (Chloride)	1000 µg/mL
Br (Bromide)	1000 µg/mL
NO_3 (Nitrate)	1000 µg/mL
PO_4 (Phosphate)	1000 µg/mL
SO_4 (Sulfate)	1000 µg/mL

Anion Mix #12
IC-MAN-12-1 **$ 100 / 100 mL**
Water Matrix 5 comps.

Cl (Chloride)	15 µg/mL
Br (Bromide)	15 µg/mL
NO_3 (Nitrate)	15 µg/mL
PO_4 (Phosphate)	15 µg/mL
SO_4 (Sulfate)	15 µg/mL

Anion Mix #13
IC-MAN-13-1 **$ 75 / 100 mL**
Water Matrix 3 comps.

F (Fluoride)	25 µg/mL
Cl (Chloride)	50 µg/mL
SO_4 (Sulfate)	100 µg/mL

Anion Mix #14
IC-MAN-14-R3-1 **$ 100 / 100 mL**
Water Matrix 6 comps.

F (Fluoride)	20 µg/mL
Cl (Chloride)	30 µg/mL
Br (Bromide)	100 µg/mL
NO_3 (Nitrate)	100 µg/mL
PO_4 (Phosphate)	150 µg/mL
SO_4 (Sulfate)	150 µg/mL

Anion Mix #14 Revised
IC-MAN-14-R2-1 **$ 100 / 100 mL**
Water Matrix 6 comps.

F (Fluoride)	20 µg/mL
Cl (Chloride)	30 µg/mL
Br (Bromide)	100 µg/mL
N-NO_3 (Nitrogen-Nitrate)	100 µg/mL
P-PO_4 (Phosphorus-Phosphate)	150 µg/mL
SO_4 (Sulfate)	150 µg/mL

Anion Mix #14-R2 plus IC-NO2-N-1X is perfect for Method 300.1

Nitrite
IC-NO2-N-1X-1 **$ 15 / 100 mL**
NO_2 *(Nitrite)* 100 µg/mL

Dichloroacetate Surrogate Standard
M-300.1-SS **$ 125 / 100 mL**
0.5 mg/mL Dichloroacetate in Water

Nitrite

IC-NO2-10X-1	**$ 45 / 100 mL**
NO_2 *(Nitrite)*	1000 µg/mL
IC-NO2-1X-1	**$ 15 / 100 mL**
NO_2 *(Nitrite)*	100 µg/mL
IC-NO2-0.1X-1	**$ 15 / 100 mL**
NO_2 *(Nitrite)*	10 µg/mL

Anion Mix #15
IC-MAN-15-R2-1 **$ 70 / 100 mL**
Water Matrix 3 comps.

F *(Fluoride)*	100 µg/mL
NO_3 *(Nitrate)*	100 µg/mL
PO_4 *(Phosphate)*	100 µg/mL

Anion Mix #16
IC-MAN-16-R1-1 **$ 100 / 100 mL**
Water Matrix 6 comps.

F (Fluoride)	100 µg/mL
Cl (Chloride)	200 µg/mL
Br (Bromide)	100 µg/mL
NO_3 (Nitrate)	20 µg/mL
PO_4 (Phosphate)	30 µg/mL
SO_4 (Sulfate)	20 µg/mL

Anion Mix #17
IC-MAN-17-R1-1 **$ 85 / 100 mL**
Water Matrix 5 comps.

Cl (Chloride)	20 µg/mL
Br (Bromide)	12 µg/mL
NO_3 (Nitrate)	12 µg/mL
PO_4 (Phosphate)	12 µg/mL
SO_4 (Sulfate)	80 µg/mL

Anion Mix #18
IC-MAN-18-R1-1 **$ 85 / 100 mL**
Water Matrix 5 comps.

F (Fluoride)	100 µg/mL
Cl (Chloride)	100 µg/mL
NO_3 (Nitrate)	100 µg/mL
PO_4 (Phosphate)	100 µg/mL
SO_4 (Sulfate)	100 µg/mL

Technical Note

To enhance the shelf life and long term stability of our IC products, Nitrite has been removed from mixes that contain Nitrate.

Technical Note

We offer several Nitrite concentrations that can be added just prior to analysis for maximum stability.

Ion Chrom - Cation Singles

Dilute HNO_3 Matrix	Unit	100 µg/mL Cat. No.	Price	200 µg/mL Cat. No.	Price	1,000 µg/mL Cat. No.	Price
Ca (Calcium)	100 mL	IC-CA-1X-1	$ 15	IC-CA-2X-1	$ 25	IC-CA-10X-1	$ 45
	500 mL	IC-CA-1X-5	55	IC-CA-2X-5	60	IC-CA-10X-5	70
NH_4 (Ammonium)	100 mL	IC-NH4-1X-1	15	IC-NH4-2X-1	25	IC-NH4-10X-1 †	45
	500 mL	IC-NH4-1X-5	55	IC-NH4-2X-5	60	IC-NH4-10X-5 †	70
Mg (Magnesium)	100 mL	IC-MG-1X-1	15	IC-MG-2X-1	25	IC-MG-10X-1	45
	500 mL	IC-MG-1X-5	55	IC-MG-2X-5	60	IC-MG-10X-5	70
K (Potassium)	100 mL	IC-K-1X-1	15	IC-K-2X-1	25	IC-K-10X-1	45
	500 mL	IC-K-1X-5	55	IC-K-2X-5	60	IC-K-10X-5	70
Na (Sodium)	100 mL	IC-NA-1X-1	15	IC-NA-2X-1	25	IC-NA-10X-1	45
	500 mL	IC-NA-1X-5	55	IC-NA-2X-5	60	IC-NA-10X-5	70
Li (Lithium)	100 mL	IC-LI-1X-1	15	IC-LI-2X-1	25	IC-LI-10X-1	45
	500 mL	IC-LI-1X-5	55	IC-LI-2X-5	60	IC-LI-10X-5	70
Ba (Barium)	100 mL	IC-BA-1X-1	15	IC-BA-2X-1	25	IC-BA-10X-1	45
	500 mL	IC-BA-1X-5	55	IC-BA-2X-5	60	IC-BA-10X-5	70
Sr (Strontium)	100 mL	IC-SR-1X-1	15	IC-SR-2X-1	25	IC-SR-10X-1	45
	500 mL	IC-SR-1X-5	55	IC-SR-2X-5	60	IC-SR-10X-5	70
Sets	**8 x 100 mL**	IC-CAT-1X-1-SET	75	IC-CAT-2X-1-SET	130	IC-CAT-10X-1-SET	235
Above Listed	**8 x 500 mL**	IC-CAT-1X-5-SET	285	IC-CAT-2X-5-SET	315	IC-CAT-10X-5-SET	365

† **1,000 µg/mL as Ammonium (NH_4) Other Nitrogen species equivalents are:**

NH_3 (Ammonia) = 944 µg/mL N (Nitrogen) = 776 µg/mL

Ion Chrom - Cation Mixes

Cation Mix #1

IC-MCA-01-1 $ 150 / 100 mL

Dilute HNO_3 6 comps.

Ca (Calcium)	1000 µg/mL
NH_4 (Ammonium)	400 µg/mL
Mg (Magnesium)	200 µg/mL
K (Potassium)	200 µg/mL
Na (Sodium)	200 µg/mL
Li (Lithium)	50 µg/mL

Cation Mix #2

IC-MCA-02-1 $ 125 / 100 mL

Dilute HNO_3 6 comps.

Ca (Calcium)	100 µg/mL
NH_4 (Ammonium)	100 µg/mL
Mg (Magnesium)	100 µg/mL
K (Potassium)	100 µg/mL
Na (Sodium)	100 µg/mL
Li (Lithium)	100 µg/mL

Cation Mix #3

IC-MCA-03-1 $ 100 / 100 mL

Dilute HNO_3 4 comps.

Ca (Calcium)	100 µg/mL
K (Potassium)	100 µg/mL
Na (Sodium)	50 µg/mL
Li (Lithium)	10 µg/mL

Cation Mix #4

IC-MCA-04-1 $ 100 / 100 mL

Dilute HNO_3 4 comps.

Ca (Calcium)	400 µg/mL
Mg (Magnesium)	200 µg/mL
Ba (Barium)	1600 µg/mL
Sr (Strontium)	600 µg/mL

Cation Mix #5

IC-MCA-05-1 $ 100 / 100 mL

Dilute HNO_3 4 comps.

NH_4 (Ammonium)	3 µg/mL
K (Potassium)	6 µg/mL
Na (Sodium)	3 µg/mL
Li (Lithium)	0.5 µg/mL

Cation Mix #6

IC-MCA-06-1 $ 100 / 100 mL

Dilute HNO_3 6 comps.

Ca (Calcium)	2 µg/mL
NH_4 (Ammonium)	1.5 µg/mL
Mg (Magnesium)	2 µg/mL
K (Potassium)	2.5 µg/mL
Na (Sodium)	1.5 µg/mL
Li (Lithium)	0.2 µg/mL

Inorganic products containing acid generally require a hazardous shipping fee.

Inorganic products in water generally do not.

Wet Chemicals

Our Wet Chemical Standards are prepared from the highest quality raw material according to ASTM, EPA or "Standard Methods" [1] procedures. All balances used for preparation are calibrated regularly against NIST traceable weights. Each batch of finished product is analyzed to verify concentration, against NIST standards when possible. All of our Wet Chemical standards are subjected to the same rigorous quality control procedures as our ICP and IC standards.

1 Standard Methods for the Examination of Water and Wastewater. American Public Health Association, American Water Works Association, Water Environment Federation

Inorganic Constituents

Many of these methods use classical wet chemical methods to determine the components of either potable or wastewater.

Bromide
IC-BR-10X-1 **$ 45 / 100 mL**
1000 µg/mL Bromide in Water

Method 300.1 Ion Chrom Standard Revised
IC-MAN-14-R2-1 **$ 100 / 100 mL**
Water Matrix 6 comps.

F (Fluoride)	20 µg/mL
Cl (Chloride)	30 µg/mL
Br (Bromide)	100 µg/mL
NO_3-N (Nitrate-Nitrogen)	100 µg/mL
PO_4-P (Phosphate-Phosphorus)	150 µg/mL
SO_4 (Sulfate)	150 µg/mL

Technical Note
This product was designed to more closely meet the EPA standard by having the concentrations for the nutrients calculated back to the element rather than the anion.

Dichloroacetate Surrogate Standard
M-300.1-SS **$ 125 / 100 mL**
0.5 mg/mL Dichloroacetate in Water

Cyanide
WC-CN-1X-1 ▲ **$ 15 / 100 mL**
WC-CN-1X-5 ▲ **$ 55 / 500 mL**
100 µg/mL Cyanide in 2% NaOH

WC-CN-10X-1 ▲ **$ 45 / 100 mL**
WC-CN-10X-5 ▲ **$ 70 / 500 mL**
1000 µg/mL Cyanide in 2% NaOH

Chloride
IC-CL-10X-1 **$ 45 / 100 mL**
1000 µg/mL Chloride in Water

Total Residual Chlorine
WC-TRC-10X-10ML **$ 35 / 10 mL**
1000 µg/mL Chlorine in Water

Technical Note
This product is shipped in an amber flame sealed ampule for maximum stability.

Fluoride
IC-F-10X-1 **$ 45 / 100 mL**
1000 µg/mL Fluoride in Water

Iodide
IC-I-10X-1 **$ 45 / 100 mL**
1000 µg/mL Iodide in Water

pH
WC-PH-4-1 **$ 25 / 100 mL**
WC-PH-4-5 **$ 60 / 500 mL**
pH of 4.0 in Water

WC-PH-7-1 **$ 25 / 100 mL**
WC-PH-7-5 **$ 60 / 500 mL**
pH of 7.0 in Water

WC-PH-10-1 **$ 25 / 100 mL**
WC-PH-10-5 **$ 60 / 500 mL**
pH of 10.0 in Water

Phosphorus - Total
IC-PO4-P-10X-1 **$ 45 / 100 mL**
1000 µg/mL Phosphorus in Water

Technical Note
Can also be used for ortho-phosphate analysis.

▲ Hazardous fee require

Technical Note
Nitrogen Species are all calculated back to Nitrogen - Not the Anion or Cation species.

Nitrogen - Ammonium
IC-NH4-N-10X-1 **$ 45 / 100 mL**
1000 µg/mL Ammonium-Nitrogen in Water

Nitrogen - Nitrite
IC-NO2-N-10X-1 **$ 45 / 100 mL**
1000 µg/mL Nitrite-Nitrogen in Water

Nitrogen - Nitrate
IC-NO3-N-10X-1 **$ 45 / 100 mL**
1000 µg/mL Nitrate-Nitrogen in Water

Silica
WC-SIO2-10X-1 **$ 45 / 100 mL**
1000 µg/mL as Silica (SiO_2) in Water tr. HF

Sulfate
IC-SO4-10X-1 **$ 45 / 100 mL**
1000 µg/mL Sulfate (SO_4) in Water

Hexavalent Chromium
WC-HEX-10X-1 **$ 45 / 100 mL**
1000 µg/mL in Water

Standards of Interest
Anions available in additional concentrations, see page 358 for complete product listing.

Physical & Aggregate Properties

These Standards are concerned primarily with measuring actual physical characteristics of a sample as opposed to the chemical characteristics. These analytes are measured frequently in both drinking and waste waters.

Turbidity
WC-TURB-4X-1 **$ 45 / 100 mL**
400 NTU non-ratio Turbidity Standard

A stable solution of microspheres in an aqueous matrix. Can be diluted in turbidity free water to make a calibration curve.
Do not shake prior to use.

Alkalinity
WC-ALK-10X-1 **$ 25 / 100 mL**
1000 µg/mL $CaCO_3$ to pH 4.5

Hardness
WC-HARD-10X-1 **$ 45 / 100 mL**
1000 µg/mL equivalent $CaCO_3$

A combination of Ca and Mg to give an approximate concentration of 1000 µg/mL $CaCO_3$. Hardness µg/mL equivalent $CaCO_3$ = 2.497 [Ca µg/mL] + 4.118 [Mg µg/mL]

Conductivity
WC-COND-10X-1 **$ 25 / 100 mL**
1000 µmhos in Water

Solids
WC-SOL **$ 30 / sample**
2 comps.
1000 ppm TSS (Total Suspended Solids) and 1000 ppm TDS (Total Disolved Solids) for a 2000 ppm TS (Total Solids).

Dilute to 100 mL. Rinse vial and cap several times to recover all solids.

Methylene Blue Activated Substance (MBAS)
WC-MBAS-R1-10X-1 **$ 35 / 100 mL**
1000 µg/mL in Water

Aggregate Organic

Rather than determining individual organic analytes, these Standards are used to determine organic matter in broad categories, based primarily on how they react.

Biochemical Oxygen Demand (BOD)

WC-BOD-10ML **$ 25 / 10 mL**
100 µg/mL BOD (After Dilution)

75 mg/L glucose and 75 mg / L glutamic acid provided in a flame sealed ampule. Dilute to 1L immediately before use.

Absorbable Organic Halogens (AOX)

WC-AOX-2X-1 **$ 45 / 100 mL**
200 µg/mL Chlorine in Water

Inorganic products containing acid generally require a hazardous shipping fee.

Inorganic products in water generally do not.

Chemical Oxygen Demand (COD)

WC-COD-5X-10ML **$ 25 / 10 mL**
500 µg/mL COD in water

Total Organic Carbon (TOC)

WC-TOC-10X-1 **$ 25 / 100 mL**
1000 µg/mL TOC in water, tr. H_2SO_4

Total Inorganic Carbon (TIC)

WC-TIC-10X-1 **$ 25 / 100 mL**
1000 µg/mL Total Inorganic Carbon in Water

Total Organic Halides (TOX)

WC-TOX-10X-1 **$ 25 / 1 mL**
WC-TOX-10X-1-PAK *SAVE 20%* **$ 100 / 5 x 1 mL**
1000 µg/mL in MeOH

Total Organic Nitrogen (TON)

WC-TON-10X-1 **$ 45 / 100 mL**
1000 µg/mL Total Organic Nitrogen in Water

Total Kjeldahl Nitrogen (TKN)

WC-TKN-10X-1 **$ 45 / 100 mL**
1000 µg/mL Total Kjeldahl Nitrogen in Water

Oil and Grease

WC-OILG-10X-1 ▲ **$ 45 / 100 mL**
1000 µg/mL Total Oil and Grease in n-Propanol

Contains 500 µg/mL vegetable oil and 500 µg/mL of petroleum oil. Shake well before use.

Phenols

WC-PHEN-10X-1 **$ 45 / 100 mL**
1000 µg/mL Phenol in water.

▲ Hazardous fee required

Method 1664 Oil, Grease & Total Petroleum Hydrocarbon (TPH)

Precision and Recovery (PAR) Spiking Solution

M-1664-5ML **$ 15 / 1 x 5 mL**
M-1664-5ML-PAK *SAVE 20%* **$ 60 / 5 x 5 mL**
4.0 mg/mL each in Acetone 2 comps.
M-1664-20ML **$ 25 / 1 x 20 mL**
M-1664-20ML-PAK *SAVE 20%* **$ 100 / 5 x 20 mL**
4.0 mg/mL each in Acetone 2 comps.

Hexadecane Stearic acid

Technical Note

This Precison and Recovery (PAR) Spiking Solution was developed for Method 1664. This performance based method was developed to replace previous gravimetric procedures incorporating Freon-113 as the extraction solvent for the determination of Oil and Grease and Total Petroleum Hydrocarbons. Each standard is packaged in a flame sealed ampule conveniently sized for quality control of the analytical batch.

Method 413.2 & 418.1 Total Petroleum Hydrocarbon Analysis by IR

Oil, Grease & Petroleum Hydrocarbon Concentrates Mix

M-418-CON **$ 35 / 1 x 1 mL**
% by volume 3 comps.

Chlorobenzene	(25.0)	Hexadecane	(37.5)
Isooctane	(37.5)		

Oil, Grease and Petroleum Hydrocarbon Total Recoverable (IR Method)

M-418 **$ 30 / 1 x 1 mL**
M-418-PAK *SAVE 20%* **$ 120 / 5 x 1 mL**
Total 4.15 mg/mL in Freon 113, (Parts by volume) 3 comps.

Chlorobenzene	(10.0)	Isooctane	(15.0)
n-Hexadecane	(15.0)		

Method 8440 Total Petroleum Hydrocarbon Analysis

Total Recoverable Petroleum Hydrocarbon Mix

M-8440 **$ 20 / 1 x 1 mL**
M-8440-PAK *SAVE 20%* **$ 80 / 5 x 1 mL**
At stated conc. in Tetrachloroethene 3 comps.

Chlorobenzene	(0.10 w/w %)	Isooctane	(0.15 w/w %)
n-Hexadecane	(0.15 w/w %)		

Silica Gel Cleanup Calibration Solution

M-8440-SGC **$ 10 / 1 x 1 mL**
M-8440-SGC-PAK *SAVE 20%* **$ 40 / 5 x 1 mL**
10.0 mg/mL in Tetrachloroethene

Corn Oil

Total Petroleum Hydrocarbon Concentrate Mix

M-8440-CON **$ 30 / 1 x 1 mL**
M-8440-CON-PAK *SAVE 20%* **$ 120 / 5 x 1 mL**
3 comps.

Chlorobenzene	(25.0 vol %)	Isooctane	(37.5 vol %)
n-Hexadecane	(37.5 vol %)		

Standards of Interest

AccuStandard offers the widest selection of Petroleum standards. These TPH oil analysis standards are a sample of the hundreds in our Fuel and Hydrocarbon section.

Custom Formulations

Fast Turnaround

20-Plus Years Custom Formulation Experience

Custom Standards are a cost and time saving alternative

Certification

- Concentrations are certified gravimetrically and QC verified instrumentally.
- Traceable to NIST wherever possible.
- Each component within +/- 0.5% of the requested value unless otherwise stated on the Certificate of Analysis.
- Certificate of Analysis documents the certified gravimetric values.
- 18 month expiration period for most products.

Preparation

- Balances used are calibrated against NIST traceable weights.
- Solutions diluted to volume using Class A glassware.
- Highest purity raw materials and acids used.
- Packaged in pre-cleaned bottles.

Packaging Options

- Discounted pricing for bulk quantities.
- 5 x 100 mL or 1 x 500 mL minimum purchase.

Contact Inorganic Technical Service for inquiries

You Set the Standards
We make them!®

- Traceable to NIST Reference Materials
- Formulated from Ultra High Purity Starting Materials, Water & Acids
- Meets EPA and Customer Applications
- Concentration Verified by Wet Chemical and Instrumental Analysis
- Packaged in Specially prepared Acid Leached Bottles
- Full Documentation

Inorganic products containing acid generally require a hazardous shipping fee.

Inorganic products in water generally do not.

Multi-Element Contents

Quality Control Standards

Quality Control Standards can be used for many different applications. AccuTrace QC Standards are ideal for calibration when performing NPDES monitoring requirements and can be used for standard curve checks, inter-element correction methods, interference checks or any other unique application.

QC Standard #1

QCS-01-1 **$ 182 / 100 mL**
QCS-01-5 **$ 354 / 500 mL**
100 µg/mL each in 5% HNO_3 tr. HF 23 comps.

Sb (Antimony)	Mn (Manganese)
As (Arsenic)	Mo (Molybdenum)
Be (Beryllium)	Ni (Nickel)
Cd (Cadmium)	P (Phosphorus)
Ca (Calcium)	Se (Selenium)
Cr (Chromium)	Sr (Strontium)
Co (Cobalt)	Tl (Thallium)
Cu (Copper)	Sn (Tin)
Fe (Iron)	Ti (Titanium)
Pb (Lead)	V (Vanadium)
Li (Lithium)	Zn (Zinc)
Mg (Magnesium)	

QC Standard #2

QCS-02-1 **$ 89 / 100 mL**
QCS-02-5 **$ 174 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 tr. HF 7 comps

Al (Aluminum)	100
Ba (Barium)	100
B (Boron)	100
K (Potassium)	1000
Si (Silicon) †	500
Ag (Silver)	50
Na (Sodium)	100

† 1070 µg/mL as SiO_2

QC Standard #2R

QCS-02-R1-1 **$ 89 / 100 mL**
QCS-02-R1-5 **$ 174 / 500 mL**
100 µg/mL each in 5% HNO_3 tr. HF 7 comps.

Al (Aluminum)	Si (Silicon) †
Ba (Barium)	Ag (Silver)
B (Boron)	Na (Sodium)
K (Potassium)	

† 214 µg/mL as SiO_2

QC Standard #3

QCS-03-1 **$ 135 / 100 mL**
QCS-03-5 **$ 264 / 500 mL**
100 µg/mL each in 5% HNO_3 15 comps.

Al (Aluminum)	Pb (Lead)
Ba (Barium)	Mg (Magnesium)
Cd (Cadmium)	Mn (Manganese)
Ca (Calcium)	Ni (Nickel)
Cr (Chromium)	Na (Sodium)
Co (Cobalt)	Ti (Titanium)
Cu (Copper)	Zn (Zinc)
Fe (Iron)	

QC Standard #4

QCS-04-1 **$ 176 / 100 mL**
At stated conc. (µg/mL) in 5% HNO_3 19 comps.

Al (Aluminum)	100
Ba (Barium)	5
Be (Beryllium)	1
Bi (Bismuth)	200
B (Boron)	15
Cd (Cadmium)	20
Cr (Chromium)	25
Co (Cobalt)	20
Cu (Copper)	20
Ga (Gallium)	150
In (Indium)	200
Fe (Iron)	15
Pb (Lead)	200
Mn (Manganese)	5
Ni (Nickel)	50
Ag (Silver)	50
Sr (Strontium)	1
Tl (Thallium)	40
Zn (Zinc)	20

QC Standard #5

QCS-05-1 **$ 109 / 100 mL**
At stated conc. (µg/mL) in 2% HNO_3 3 comps.

Li (Lithium)	250
K (Potassium)	10,000
Na (Sodium)	1000

QC Standard #6

QCS-06-1 **$ 109 / 100 mL**
1000 µg/mL each in 2% HNO_3 4 comps.

Ba (Barium)	Mg (Magnesium)
Ca (Calcium)	Sr (Strontium)

Quality Control Standards Sets

QCS-1-SET **$ 325 / 3 x 100 mL**
QCS-01-1 QCS-02-1 QCS-03-1

QCS-5-SET **$ 635 / 3 x 500 mL**
QCS-01-5 QCS-02-5 QCS-03-5

QCS-R1-1-SET **$ 325 / 3 x 100 mL**
QCS-01-1 QCS-02-R1-1 QCS-03-1

QCS-R1-5-SET **$ 635 / 3 x 500 mL**
QCS-01-5 QCS-02-R1-5 QCS-03-5

TRACEABLE AccuTrace™ Reference Standards CERTIFIED

Second Source QC Standards

These Alternative Source Standards exactly match a formulation from another source you may be already using. These formulations save you the cost of a custom formulation by providing you with true independent lots.

- **NIST Traceable**
- **Independent Lots**
- **Exact Match**

Second Source QC Standard #1

QCS-ASL-7-1 **$ 85 / 1 x 100 mL**
QCS-ASL-7-5 **$ 165 / 1 x 500 mL**
At stated conc. (µg/mL) in 2-5% HNO_3 tr. HF 7 comps.

Al (Aluminum)	100
Ba (Barium)	100
B (Boron)	100
K (Potassium)	1000
Si (Silicon)	50
Ag (Silver)	100
Na (Sodium)	100

Second Source QC Standard #2

QCS-ASL-21-1 **$ 190 / 1 x 100 mL**
QCS-ASL-21-5 **$ 370 / 1 x 500 mL**
100 µg/mL each in 2-5% HNO_3 tr. HF 21 comps.

Sb (Antimony)	Mg (Magnesium)
As (Arsenic)	Mn (Manganese)
Be (Beryllium)	Mo (Molybdenum)
Cd (Cadmium)	Ni (Nickel)
Ca (Calcium)	Se (Selenium)
Cr (Chromium)	Sr (Strontium)
Co (Cobalt)	Tl (Thallium)
Cu (Copper)	Ti (Titanium)
Fe (Iron)	V (Vanadium)
Pb (Lead)	Zn (Zinc)
Li (Lithium)	

Second Source QC Standard #3

QCS-ASL-19-1 **$ 175 / 1 x 100 mL**
QCS-ASL-19-5 **$ 360 / 1 x 500 mL**
100 µg/mL each in 2-5% HNO_3 tr. HF 19 comps.

Sb (Antimony)	Mg (Magnesium)
As (Arsenic)	Mn (Manganese)
Be (Beryllium)	Mo (Molybdenum)
Cd (Cadmium)	Ni (Nickel)
Ca (Calcium)	Se (Selenium)
Cr (Chromium)	Tl (Thallium)
Co (Cobalt)	Ti (Titanium)
Cu (Copper)	V (Vanadium)
Fe (Iron)	Zn (Zinc)
Pb (Lead)	

Match Other Supplier's Products. Use as a True Second Source.

Instrument Check Standards

These instrument check standards are used to verify ICP instrumentation performance over specific wavelength ranges from 160 nm to 790 nm. These standards are ideal for method development, technician training and other calibration uses.

Instrument Check Standard #1

ICS-01-1 **$ 90 / 100 mL**
ICS-01-5 **$ 175 / 500 mL**
At stated conc. (µg/mL) in 2% HNO_3 9 comps.

Al (Aluminum)	100
Ba (Barium)	10
Be (Beryllium)	10
B (Boron)	100
Ca (Calcium)	10
Ni (Nickel)	100
P (Phosphorus)	1000
Sc (Scandium)	10
Zn (Zinc)	100

Instrument Check Standard #2

ICS-02-1 **$ 77 / 100 mL**
ICS-02-5 **$ 150 / 500 mL**
At stated conc. (µg/mL) in 2% HNO_3 7 comps.

Ba (Barium)	50
Be (Beryllium)	20
La (Lanthanum)	20
Mn (Manganese)	20
Ni (Nickel)	20
Sc (Scandium)	20
Zn (Zinc)	20

Instrument Check Standard #3

ICS-03-1 **$ 104 / 100 mL**
ICS-03-5 **$ 202 / 500 mL**
At stated conc. (µg/mL) in 2% HNO_3 tr. HF 11 comps.

As (Arsenic)	20
La (Lanthanum)	20
Li (Lithium)	20
Mn (Manganese)	20
Mo (Molybdenum)	20
Ni (Nickel)	20
P (Phosphorus)	100
K (Potassium)	100
Sc (Scandium)	20
Na (Sodium)	20
S (Sulfur)	100

Instrument Check Standard #4

ICS-04-1 **$ 112 / 100 mL**
ICS-04-5 **$ 218 / 500 mL**
At stated conc. (µg/mL) in 2% HNO_3 12 comps.

Al (Aluminum)	100
As (Arsenic)	100
Ba (Barium)	10
Cu (Copper)	100
Pb (Lead)	100
Mn (Manganese)	100
Ni (Nickel)	100
P (Phosphorus)	100
K (Potassium)	500
Sc (Scandium)	100
Na (Sodium)	100
Zn (Zinc)	100

Instrument Check Standard #5

ICS-05-1 **$ 134 / 100 mL**
ICS-05-5 **$ 261 / 500 mL**
At stated conc. (µg/mL) in 2% HNO_3 15 comps.

Al (Aluminum)	100
As (Arsenic)	100
Cd (Cadmium)	100
Cr (Chromium)	100
Co (Cobalt)	100
Cu (Copper)	100
Fe (Iron)	100
Pb (Lead)	100
Mg (Magnesium)	100
Mn (Manganese)	100
Ni (Nickel)	100
K (Potassium)	100
Na (Sodium)	100
Y (Yttrium)	600
Zn (Zinc)	100

Instrument Check Standard #6

ICS-06-1 **$ 86 / 100 mL**
ICS-06-5 **$ 168 / 500 mL**
50 µg/mL each in 2% HNO_3 9 comps.

Al (Aluminum)
As (Arsenic)
Cr (Chromium)
Co (Cobalt)
Cu (Copper)
Pb (Lead)
P (Phosphorus)
K (Potassium)
Na (Sodium)

Instrument Check Standard #7

ICS-07-1 **$ 90 / 100 mL**
ICS-07-5 **$ 175 / 500 mL**
At stated conc. (µg/mL) in 2% HNO_3 7 comps.

Al (Aluminum)	50
Ba (Barium)	50
Cd (Cadmium)	50
Cu (Copper)	50
Mn (Manganese)	50
K (Potassium)	500
Zn (Zinc)	50

Screening Standards

These four Qualitative Standards can be combined to scan samples quickly and easily for elements present. They should be used for element identification only. The concentration of each element is approximately 10 µg/mL. To screen for **all 68 elements** these 4 semi-quantitative standards can be blended together and used immediately.

Semi-Quantitative Standard #1

SQS-01-1 **$ 175 / 1 x 100 mL**
10 µg/mL each in 2-5% HNO_3 tr. HF 33 comps.

Al (Aluminum)
As (Arsenic)
Ba (Barium)
Bi (Bismuth)
Ca (Calcium)
Cd (Cadmium)
Ce (Cerium)
Dy (Dysprosium)
Er (Erbium)
Eu (Europium)
Ga (Gallium)
Gd (Gadolinium)
Ho (Holmium)
In (Indium)
La (Lanthanum)
Lu (Lutetium)
Mg (Magnesium)
Na (Sodium)
Nd (Neodymium)
P (Phosphorus)
Pb (Lead)
Pr (Praseodymium)
Sc (Scandium)
Se (Selenium)
Sm (Samarium)
Sr (Strontium)
Tb (Terbium)
Th (Thorium)
Tl (Thallium)
Tm (Thulium)
U (Uranium)
Y(Yttrium)
Yb (Ytterbium)

Semi-Quantitative Standard #2

SQS-02-R1-1 **$ 175 / 1 x 100 mL**
10 µg/mL each in 2-5% HNO_3 tr. HCl tr. HF 33 comps.

B (Boron)
Be (Beryllium)
Co (Cobalt)
Cr (Chromium)
Cs (Cesium)
Cu (Copper)
Fe (Iron)
Ge (Germanium)
Hf (Hafnium)
Ir (Iridium)
K (Potassium)
Li (Lithium)
Mn (Manganese)
Mo (Molybdenum)
Nb (Niobium)
Ni (Nickel)
Pd (Palladium)
Pt (Platinum)
Rb (Rubidium)
Re (Rhenium)
Rh (Rhodium)
Ru (Ruthenium)
S (Sulfur)
Sb (Antimony)
Si (Silicon)
Sn (Tin)
Ta (Tantalum)
Te (Tellurium)
Ti (Titanium)
V (Vanadium)
W (Tungsten)
Zn (Zinc)
Zr (Zirconium)

Semi-Quantitative Standard #3

SQS-03-1 **$ 45 / 1 x 100 mL**
10 µg/mL each in 2-5% HNO_3 2 comps.

Hg (Mercury)
Ag (Silver)

Semi-Quantitative Standard #4

SQS-04-1 **$ 45 / 1 x 100 mL**
10 µg/mL each in 5% HNO_3

Au (Gold)

Screening Standard Set

SQS-R1-1-SET **$ 352 / 4 x 100 mL**
SQS-01-1 SQS-02-R1-1
SQS-03-1 SQS-04-1

Technical Note

To verify screening results, use single element standards to confirm and quantify the concentration.

SDWA Standards

For use in SW-846, Method 1310 and U.S. NPDWR 40CFR Part 141. The three Drinking Water Standards are used for monitoring drinking water and/or ground and surface water.

Primary Drinking Water Metals

SDWA-01-1 **$ 85 / 100 mL**
SDWA-01-5 **$ 165 / 500 mL**
At stated conc. (µg/mL) in 2% HNO_3 7 comps.

As (Arsenic)	10
Ba (Barium)	100
Cd (Cadmium)	5
Cr (Chromium)	10
Pb (Lead)	10
Se (Selenium)	5
Ag (Silver)	10

Secondary Drinking Water Metals

SDWA-02-1 **$ 72 / 100 mL**
SDWA-02-5 **$ 139 / 500 mL**
At stated conc. (µg/mL) in 2% HNO_3 4 comps.

Cu (Copper)	100
Fe (Iron)	30
Mn (Manganese)	5
Zn (Zinc)	500

Mercury Solution

SDWA-03-1 **$ 34 / 100 mL**
SDWA-03-5 **$ 67 / 500 mL**
10 µg/mL in 5% HNO_3

Hg (Mercury)

Drinking Water Sets

SDWA-1-SET **$ 154 / 3 x 100 mL**
SDWA-01-1 SDWA-02-1 SDWA-03-1

SDWA-5-SET **$ 298 / 3 x 500 mL**
SDWA-01-5 SDWA-02-5 SDWA-03-5

Standards for Analytes covered in the Safe Drinking Water Act (SDWA)

Primary Metals for Analysis by ICP

Contains all approved elements
SDWA-04-1 **$ 95 / 100 mL**
SDWA-04-5 **$ 185 / 500 mL**
At stated conc. (µg/mL) in 2-5% HNO_3 9 comps.

As (Arsenic)	100
Ba (Barium)	10
Be (Beryllium)	10
Cd (Cadmium)	10
Ca (Calcium)	100
Cr (Chromium)	10
Cu (Copper)	10
Ni (Nickel)	10
Na (Sodium)	100

Primary Metals for Analysis by GFAA

Contains GFAA approved elements
SDWA-05-1 **$ 95 / 100 mL**
SDWA-05-5 **$ 185 / 500 mL**
10 µg/mL each in 2-5% HNO_3 9 comps.

Sb (Antimony)
As (Arsenic)
Cd (Cadmium)
Cr (Chromium)
Cu (Copper)
Pb (Lead)
Ni (Nickel)
Se (Selenium)
Tl (Thallium)

Primary Metals for Analysis by ICP-MS

Contains all approved elements
SDWA-06-MS-1 **$ 115 / 100 mL**
SDWA-06-MS-5 **$ 225 / 500 mL**
10 µg/mL each in 2% HNO_3 11 comps.

Sb (Antimony)
As (Arsenic)
Ba (Barium)
Be (Beryllium)
Cd (Cadmium)
Cr (Chromium)
Cu (Copper)
Pb (Lead)
Ni (Nickel)
Se (Selenium)
Tl (Thallium)

Primary Metals for Analysis by GFAA/ICP/ICP-MS

SDWA-07-1 **$ 135 / 100 mL**
SDWA-07-5 **$ 264 / 500 mL**
At stated conc. (µg/mL) in 2% HNO_3 tr. HF 14 comps.

Sb (Antimony)	100
As (Arsenic)	100
Ba (Barium)	10
Be (Beryllium)	10
Cd (Cadmium)	10
Ca (Calcium)	100
Cr (Chromium)	10
Cu (Copper)	10
Pb (Lead)	10
Ni (Nickel)	10
Se (Selenium)	10
Si (Silicon) †	100
Na (Sodium)	100
Tl (Thallium)	10

† 214 µg/mL as SiO_2

Secondary Metals for Analysis by GFAA/ICP/ICP-MS

SDWA-08-1 **$ 75 / 100 mL**
SDWA-08-5 **$ 146 / 500 mL**
At stated conc. (µg/mL) in 2-5% HNO_3 5 comps.

Al (Aluminum)	10
Fe (Iron)	100
Mn (Manganese)	10
Ag (Silver)	10
Zn (Zinc)	10

Primary & Secondary Metals for Analysis by GFAA/ICP/ICP-MS

Contains all Primary & Secondary Metals
SDWA-09-1 **$ 195 / 100 mL**
SDWA-09-5 **$ 370 / 500 mL**
At stated conc. (µg/mL) in 2% HNO_3 19 comps.

Al (Aluminum)	10
Sb (Antimony)	100
As (Arsenic)	100
Ba (Barium)	10
Be (Beryllium)	10
Cd (Cadmium)	10
Ca (Calcium)	100
Cr (Chromium)	10
Cu (Copper)	10
Fe (Iron)	100
Pb (Lead)	10
Mn (Manganese)	10
Ni (Nickel)	10
Se (Selenium)	10
Si (Silicon) †	100
Ag (Silver)	10
Na (Sodium)	100
Tl (Thallium)	10
Zn (Zinc)	10

† 214 µg/mL as SiO_2

Inorganic products containing acid generally require a hazardous shipping fee.

Inorganic products in water generally do not.

Groundwater & Wastewater Standards

Trace Metals I, II, III

Trace Metals I

WPTM-01-1 **$ 140 / 100 mL**
WPTM-01-5 **$ 273 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 15 comps.

Al (Aluminum)	500
As (Arsenic)	100
Be (Beryllium)	100
Cd (Cadmium)	25
Cr (Chromium)	100
Co (Cobalt)	100
Cu (Copper)	100
Fe (Iron)	100
Pb (Lead)	100
Mn (Manganese)	100
Hg (Mercury)	5
Ni (Nickel)	100
Se (Selenium)	25
V (Vanadium)	250
Zn (Zinc)	100

Trace Metals II

WPTM-02-1 **$ 64 / 100 mL**
WPTM-02-5 **$ 123 / 500 mL**
At stated conc. (µg/mL) in 2% HNO_3 3 comps.

Sb (Antimony)	20
Ag (Silver)	10
Tl (Thallium)	20

Trace Metal Sets

WPTM-1-SET	**$ 230 / 3 x 100 mL**
WPTM-01-1	WPTM-03-1
WPTM-02-1	
WPTM-5-SET	**$ 445 / 3 x 500 mL**
WPTM-01-5	WPTM-03-5
WPTM-02-5	

Trace Metals III

WPTM-03-1 **$ 85 / 100 mL**
WPTM-03-5 **$ 165 / 500 mL**
At stated conc. (µg/mL) in 2% HNO_3 tr. HF 6 comps.

Ba (Barium)	500
Ca (Calcium)	500
Mg (Magnesium)	100
Mo (Molybdenum)	500
K (Potassium)	100
Na (Sodium)	500

Alternate Metals for Groundwater and Wastewater Analysis

Alternate Metals I

WPAM-01-1 **$ 105 / 100 mL**
WPAM-01-5 **$ 200 / 500 mL**
At stated conc. (µg/mL) in 2% HNO_3 11 comps.

Al (Aluminum)	20
Sb (Antimony)	5
Be (Beryllium)	5
Co (Cobalt)	10
Cu (Copper)	10
Fe (Iron)	20
Mn (Manganese)	10
Ni (Nickel)	10
Tl (Thallium)	5
V (Vanadium)	20
Zn (Zinc)	10

Alternate Metals III

WPAM-03-1 **$ 65 / 100 mL**
WPAM-03-5 **$ 125 / 500 mL**
At stated conc. (µg/mL) in 2% HNO_3 4 comps.

Ca (Calcium)	500
Mg (Magnesium)	100
K (Potassium)	100
Na (Sodium)	500

Alternate Trace Metal Sets

WPAM-1-SET	**$ 133 / 2 x 100 mL**
WPAM-01-1	WPAM-03-1
WPAM-5-SET	**$ 260 / 2 x 500 mL**
WPAM-01-5	WPAM-03-5

TCLP Multi-Element Calibration Standards

For use in SW-846, Method 1311 Toxicity Characteristic Leaching Procedure

TCLP Standard #1

TCLP-01-1 **$ 98 / 100 mL**
TCLP-01-5 **$ 190 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 7 comps.

As (Arsenic)	25
Ba (Barium)	500
Cd (Cadmium)	5
Cr (Chromium)	25
Pb (Lead)	25
Se (Selenium)	5
Ag (Silver)	25

TCLP Standard for ICP

TCLP-ICP-1 **$ 68 / 100 mL**
TCLP-ICP-5 **$ 132 / 500 mL**
At stated conc. (µg/mL) in 2% HNO_3 4 comps.

Ba (Barium)	500
Cd (Cadmium)	5
Cr (Chromium)	25
Ag (Silver)	25

TCLP Standard for GFAA

TCLP-GFAA-1 **$ 50 / 100 mL**
TCLP-GFAA-5 **$ 110 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 3 comps.

As (Arsenic)	25
Pb (Lead)	25
Se (Selenium)	5

TCLP Standard #2

For Mercury Analysis using ICP or Cold Vapor AA
TCLP-02-1 **$ 34 / 100 mL**
TCLP-02-5 **$ 67 / 500 mL**
20 µg/mL in 5% HNO_3

Hg (Mercury)

MISA Test Group 29 Analysis Calibration Standards

For use in MISA Test Group 29 Analysis or general use standards. Set of six standards contains 69 elements at 100 µg/mL each. Ideal for the laboratory that wants to analyze for everything.

MISA Standard 1
Rare Earth Metals
MISA-01-1 **$ 125 / 100 mL**
100 µg/mL each in 5% HNO_3 18 comps.

Ce (Cerium)
Dy (Dysprosium)
Er (Erbium)
Eu (Europium)
Gd (Gadolinium)
Ho (Holmium)
La (Lanthanum)
Lu (Lutetium)
Nd (Neodymium)
Pr (Praseodymium)
Sc (Scandium)
Sm (Samarium)
Tb (Terbium)
Th (Thorium)
Tm (Thulium)
U (Uranium)
Yb (Ytterbium)
Y (Yttrium)

MISA Standard 2
Precious Metals
MISA-02-1 **$ 125 / 100 mL**
100 µg/mL each in 10% HCl 6 comps.

Au (Gold)
Ir (Iridium)
Pd (Palladium)
Pt (Platinum)
Rh (Rhodium)
Ru (Ruthenium)

MISA Standard 3
Tellurium
MISA-03-1 **$ 34 / 100 mL**
100 µg/mL in 10% HCl

Te (Tellurium)

MISA Standard 4
Alkali, Alkaline Earth, Non-Transition Group
MISA-04-1 **$ 125 / 100 mL**
100 µg/mL each in 10% HNO_3 16 comps.

Al (Aluminum)
As (Arsenic)
Ba (Barium)
Be (Beryllium)
Bi (Bismuth)
Ca (Calcium)
Cs (Cesium)
Ga (Gallium)
In (Indium)
Li (Lithium)
Mg (Magnesium)
K (Potassium)
Rb (Rubidium)
Se (Selenium)
Na (Sodium)
Sr (Strontium)

MISA Calibration Set
MISA-1-SET **$ 525 / 6 x 100 mL**

MISA-01-1
MISA-02-1
MISA-03-1
MISA-04-1
MISA-05-1
MISA-06-1

MISA Standard 5
Fluoride Soluble Group
MISA-05-1 **$ 125 / 100 mL**
100 µg/mL each in 5% HNO_3 tr. HF 15 comps.

Sb (Antimony)
B (Boron)
Ge (Germanium)
Hf (Hafnium)
Mo (Molybdenum)
Nb (Niobium)
P (Phosphorus)
Re (Rhenium)
Si (Silicon)
S (Sulfur)
Ta (Tantalum)
Sn (Tin)
Ti (Titanium)
W (Tungsten)
Zr (Zirconium)

MISA Standard 6
Transition Metals
MISA-06-1 **$ 125 / 100 mL**
100 µg/mL each in 10% HNO_3 13 comps.

Cd (Cadmium)
Co (Cobalt)
Cu (Copper)
Cr (Chromium)
Fe (Iron)
Pb (Lead)
Mn (Manganese)
Hg (Mercury)
Ni (Nickel)
Ag (Silver)
Tl (Thallium)
V (Vanadium)
Zn (Zinc)

Calibration and Matrix Blanks

Nitric Acid Blank
CLP-BLN-5 **$ 30 / 500 mL**
CLP-BLN-L-VAP **$ 45 / 1L (2 x 500 mL)**

5% HNO_3 in 18 Megohm ASTM Type I deionized Water

Mixed Acid Blank
CLP-BLMA-5 **$ 30 / 500 mL**
CLP-BLMA-L-VAP **$ 45 / 1L (2 x 500 mL)**

5% HCl + 1% HNO_3 in 18 Megohm ASTM Type I deionized Water

Hydrochloric Acid Blank
CLP-BLH-5 **$ 30 / 500 mL**
CLP-BLH-L-VAP **$ 45 / 1 L (2 x 500 mL)**

5% HCl in 18 Megohm ASTM Type I deionized Water

Water Blank
CLP-BLW-5 ▼ **$ 30 / 500 mL**
CLP-BLW-L-VAP ▼ **$ 40 / 1 L (2 x 500 mL)**

18 Megohm ASTM Type I deionized Water

▼ Hazardous fee not required.

TRACEABLE AccuTrace™ Reference Standards CERTIFIED

Calibration Check Standards

Calibration Standard #1
CLP-CAL-01-1 **$ 110 / 100 mL**
5000 µg/mL each in 5% HNO_3 4 comps.

Ca (Calcium)	K (Potassium)
Mg (Magnesium)	Na (Sodium)

Calibration Standard #2
CLP-CAL-02-1 **$ 75 / 100 mL**
At stated conc. (µg/mL) in 5% HNO_3 5 comps.

Cr (Chromium)	100
Mn (Manganese)	150
Ni (Nickel)	400
Ag (Silver)	100
Zn (Zinc)	200

CLP Calibration Standard Set
CLP-CAL-1-SET **$ 375 / 7 x 100 mL**

CLP-CAL-01	CLP-CAL-04	CLP-CAL-06
CLP-CAL-02	CLP-CAL-05	CLP-CAL-07
CLP-CAL-03		

Calibration Standard #3
CLP-CAL-03-1 **$ 95 / 100 mL**
At stated conc. (µg/mL) in 5% HNO_3 7 comps.

Al (Aluminum)	2000
Ba (Barium)	2000
Be (Beryllium)	50
Co (Cobalt)	500
Cu (Copper)	250
Fe (Iron)	1000
V (Vanadium)	500

Calibration Standard #4
CLP-CAL-04-1 **$ 65 / 100 mL**
At stated conc. (µg/mL) in 5% HNO_3 5 comps.

As (Arsenic)	100
Cd (Cadmium)	50
Pb (Lead)	50
Se (Selenium)	50
Tl (Thallium)	100

Calibration Standard #5
CLP-CAL-05-1 **$ 34 / 100 mL**
600 µg/mL in 2% HNO_3

Sb (Antimony)

Calibration Standard #6
CLP-CAL-06-1 **$ 34 / 100 mL**
100 µg/mL in 5% HNO_3

Hg (Mercury)

Calibration Standard #7
CLP-CAL-07-1 **$ 55 / 100 mL**
500 µg/mL each in 5% HNO_3 tr. HF 3 comps.

B (Boron)	Si (Silicon)
Mo (Molybdenum)	

Verification Standards

Initial Calibration Verification

CLP-ICV-01-1 **$ 225 / 100 mL**
CLP-ICV-01-5 **$ 445 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 22 comps.

Al (Aluminum)	200
Sb (Antimony)	60
As (Arsenic)	10
Ba (Barium)	200
Be (Beryllium)	5
Cd (Cadmium)	5
Ca (Calcium)	5000
Cr (Chromium)	10
Co (Cobalt)	50
Cu (Copper)	25
Fe (Iron)	100
Pb (Lead)	5
Mg (Magnesium)	5000
Mn (Manganese)	15
Ni (Nickel)	40
K (Potassium)	5000
Se (Selenium)	5
Ag (Silver)	10
Na (Sodium)	5000
Tl (Thallium)	10
V (Vanadium)	50
Zn (Zinc)	20

Initial Calibration Verification

CLP-ICV-01-R-1 **$ 225 / 100 mL**
CLP-ICV-01-R-5 **$ 445 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 22 comps.

Al (Aluminum)	200
Sb (Antimony)	60
As (Arsenic)	10
Ba (Barium)	200
Be (Beryllium)	5
Cd (Cadmium)	5
Ca (Calcium)	500
Cr (Chromium)	10
Co (Cobalt)	50
Cu (Copper)	25
Fe (Iron)	100
Pb (Lead)	5
Mg (Magnesium)	500
Mn (Manganese)	15
Ni (Nickel)	40
K (Potassium)	500
Se (Selenium)	5
Ag (Silver)	10
Na (Sodium)	500
Tl (Thallium)	10
V (Vanadium)	50
Zn (Zinc)	20

Technical Note

CLP-ICV-01-R has Ca, Mg, K & Na at 1/10 the concentration of CLP-ICV-01. This improves plasma robustness and often results in superior recoveries.

Continuing Calibration Verification

(Meets CLP QA Second Source Requirements)
CLP-CCV-01-1 **$ 225 / 100 mL**
CLP-CCV-01-5 **$ 445 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 16 comps.

Al (Aluminum)	1000
Ba (Barium)	1000
Be (Beryllium)	25
Ca (Calcium)	2500
Cr (Chromium)	50
Co (Cobalt)	250
Cu (Copper)	125
Fe (Iron)	500
Mg (Magnesium)	2500
Mn (Manganese)	75
Ni (Nickel)	200
K (Potassium)	2500
Ag (Silver)	50
Na (Sodium)	2500
V (Vanadium)	250
Zn (Zinc)	100

CLP-CCV-02-1 **$ 75 / 100 mL**
CLP-CCV-02-5 **$ 146 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 5 comps.

As (Arsenic)	50
Cd (Cadmium)	25
Pb (Lead)	25
Se (Selenium)	25
Tl (Thallium)	50

CLP-CCV-03-1 **$ 34 / 100 mL**
CLP-CCV-03-5 **$ 67 / 500 mL**
300 µg/mL in 2% HNO_3

Sb (Antimony)

Initial & Continuing Calibration Verification Sets

CLP-VER-1-SET **$ 445 / 4 x 100 mL**

CLP-ICV-01-1	CLP-CCV-02-1
CLP-CCV-01-1	CLP-CCV-03-1

CLP-VER-5-SET **$ 870 / 4 x 500 mL**

CLP-ICV-01-5	CLP-CCV-02-5
CLP-CCV-01-5	CLP-CCV-03-5

Initial & Continuing Calibration Revised Verification Sets

CLP-VER-R-1-SET **$ 445 / 4 x 100 mL**

CLP-ICV-01-R-1	CLP-CCV-02-1
CLP-CCV-01-1	CLP-CCV-03-1

CLP-VER-R-5-SET **$ 870 / 4 x 500 mL**

CLP-ICV-01-R-5	CLP-CCV-02-5
CLP-CCV-01-5	CLP-CCV-03-5

Continuing Calibration Verification Standard Sets

CLP-CCV-1-SET **$ 275 / 3 x 100 mL**

CLP-CCV-01-1	CLP-CCV-03-1
CLP-CCV-02-1	

CLP-CCV-5-SET **$ 525 / 3 x 500 mL**

CLP-CCV-01-5	CLP-CCV-03-5
CLP-CCV-02-5	

Spiking Standards

Spiking Solution

CLP-SPS-01-1 **$ 185 / 100 mL**
At stated conc. (µg/mL) in 5% HNO_3 18 comps.

Al (Aluminum)	200
Sb (Antimony)	50
As (Arsenic)	200
Ba (Barium)	200
Be (Beryllium)	5
Cd (Cadmium)	5
Cr (Chromium)	20
Co (Cobalt)	50
Cu (Copper)	25
Fe (Iron)	100
Pb (Lead)	50
Mn (Manganese)	50
Ni (Nickel)	50
Se (Selenium)	200
Ag (Silver)	5
Tl (Thallium)	200
V (Vanadium)	50
Zn (Zinc)	50

CLP Soil Spiking Solution

CLP-SPS-02-1 **$ 175 / 100 mL**
At stated conc. (µg/mL) in 5% HNO_3 16 comps.

Sb (Antimony)	100
As (Arsenic)	400
Ba (Barium)	400
Be (Beryllium)	10
Cd (Cadmium)	10
Cr (Chromium)	40
Co (Cobalt)	100
Cu (Copper)	50
Pb (Lead)	100
Mn (Manganese)	100
Ni (Nickel)	100
Se (Selenium)	400
Ag (Silver)	10
Tl (Thallium)	400
V (Vanadium)	100
Zn (Zinc)	100

Technical Note

Spiking solution CLP-SPS-01 can be used for both aqueous and solid samples. An additional spiking solution for soil as outlined in CLP SOW ILM03.0 is also available, CLP-SPS-02.

CLP Spiking Set

CLP-SPS-1-SET **$ 288 / 2 x 100 mL**

CLP-SPS-01-1	CLP-SPS-02-1

Interference Check & Analyte Standards

The common interferents checked for CLP requirements and their associated analytes are listed in our primary interferent analyte solutions. Occasionally, additional interferents may cause other analytical problems according to CLP SOW ILM03.0. These additional six elements are available with their respective analytes in the alternate interferent/analyte solutions.

Primary Analytes

CLP-PAN-01-1 **$ 110 / 100 mL**
CLP-PAN-01-5 **$ 225 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 12 comps.

Ag *(Silver)*	100
Ba *(Barium)*	50
Be *(Beryllium)*	50
Cd *(Cadmium)*	100
Co *(Cobalt)*	50
Cr *(Chromium)*	50
Cu *(Copper)*	50
Mn *(Manganese)*	50
Ni *(Nickel)*	100
Pb *(Lead)*	100
V *(Vanadium)*	50
Zn *(Zinc)*	100

Primary Interferents

CLP-PIN-01-1 **$ 110 / 100 mL**
CLP-PIN-01-5 **$ 215 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 4 comps.

Al (Aluminum)	5000
Ca (Calcium)	5000
Fe (Iron)	2000
Mg (Magnesium)	5000

Alternate Interferents

CLP-PIN-02-1 **$ 98 / 100 mL**
CLP-PIN-02-5 **$ 185 / 500 mL**
1000 µg/mL each in 5% HNO_3 6 comps.

Cr (Chromium)	Ni (Nickel)
Cu (Copper)	Ti (Titanium)
Mn (Manganese)	V (Vanadium)

Interferent / Analyte Sets

CLP-IA-1-SET **$ 345 / 4 x 100 mL**

CLP-PIN-01-1	CLP-PIN-02-1
CLP-PAN-01-1	CLP-PAN-02-1

CLP-IA-5-SET **$ 680 / 4 x 500 mL**

CLP-PIN-01-5	CLP-PIN-02-5
CLP-PAN-01-5	CLP-PAN-02-5

Alternate Analytes

CLP-PAN-02-1 **$ 115 / 100 mL**
CLP-PAN-02-5 **$ 225 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 tr. HF 12 comps.

Al (Aluminum)	100
Sb (Antimony)	100
As (Arsenic)	100
B (Boron)	100
Ca (Calcium)	10
Fe (Iron)	10
Mg (Magnesium)	10
Mo (Molybdenum)	100
Se (Selenium)	100
Si (Silicon)	10
Na (Sodium)	100
Tl (Thallium)	100

Detection Limit Standards

Contract Required Detection Limits (CRDL) Standard Solutions. We offer the flexibility of two convenient solutions:

CLP Detection Limits Standard #1

CLP-CRDL-01-1 **$ 130 / 100 mL**
At stated conc. (µg/mL) in 5% HNO_3 15 comps.

Sb (Antimony)	120
As (Arsenic)	120
Be (Beryllium)	10
Cd (Cadmium)	10
Cr (Chromium)	20
Co (Cobalt)	100
Cu (Copper)	50
Pb (Lead)	120
Mn (Manganese)	30
Ni (Nickel)	80
Se (Selenium)	120
Ag (Silver)	20
Tl (Thallium)	120
V (Vanadium)	100
Zn (Zinc)	40

Contract Required Detection Limits (CRDL) Set

CLP-CRDL-1-SET **$ 205 / 2 x 100 mL**

CLP-CRDL-01	CLP-CRDL-02

Technical Note

These standards are prepared to meet the requirements of the CLP protocol; Arsenic (As), Lead (Pb), Selenium (Se) and Thallium (Tl) are at a concentration two times the instrument detection limit (IDL) while the remaining elements are at two times the CRDL.

CLP Detection Limits Standard #2

CLP-CRDL-02-1 **$ 130 / 100 mL**
At stated conc. (µg/mL) in 5% HNO_3 15 comps.

Sb (Antimony)	120
As (Arsenic)	20
Be (Beryllium)	10
Cd (Cadmium)	10
Cr (Chromium)	20
Co (Cobalt)	100
Cu (Copper)	50
Pb (Lead)	6
Mn (Manganese)	30
Ni (Nickel)	80
Se (Selenium)	10
Ag (Silver)	20
Tl (Thallium)	20
V (Vanadium)	100
Zn (Zinc)	40

Technical Note

These standards are designed for ICPs equipped with ultrasonic nebulizers and offer the elements of interest at two times the CRDL level.

Method 200.7 (Revision 4.4, May 1994) Calibration Standards

Mixed Calibration Standard #1

M-200.7-01-1 **$ 96 / 100 mL**
M-200.7-01-5 **$ 187 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 10 comps.

Sb (Antimony)	50
As (Arsenic)	100
Ba (Barium)	10
B (Boron)	20
Cd (Cadmium)	20
Ca (Calcium)	100
Cu (Copper)	20
Mn (Manganese)	20
Se (Selenium)	50
Ag (Silver)	5

Mixed Calibration Standard #2

M-200.7-02R-1 **$ 75 / 100 mL**
M-200.7-02R-5 **$ 135 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 tr. HF
6 comps.

Li (Lithium)	50
Mo (Molybdenum)	100
K (Potassium)	200
Na (Sodium)	100
Sr (Strontium)	10
Ti (Titanium)	100

Mixed Calibration Standard #3

M-200.7-03R-1 **$ 55 / 100 mL**
M-200.7-03R-5 **$ 105 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 4 comps.

Ce (Cerium)	20
Co (Cobalt)	20
P (Phosphorus)	100
V (Vanadium)	20

Mixed Calibration Standard #4

M-200.7-04-1 **$ 69 / 100 mL**
M-200.7-04-5 **$ 134 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 tr. HF
5 comps.

Al (Aluminum)	100
Cr (Chromium)	50
Si (Silicon) †	100
Sn (Tin)	40
Zn (Zinc)	50

† 214 µg/mL as SiO_2

Mixed Calibration Standard #5

M-200.7-05-1 **$ 69 / 100 mL**
M-200.7-05-5 **$ 134 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 6 comps.

Be (Beryllium)	10
Fe (Iron)	100
Pb (Lead)	100
Mg (Magnesium)	100
Ni (Nickel)	20
Tl (Thallium)	50

Mixed Calibration Standards Sets

M-200.7-R-1-SET **$ 280 / 5 x 100 mL**
M-200.7-01-1 M-200.7-04-1
M-200.7-02R-1 M-200.7-05-1
M-200.7-03R-1

M-200.7-5-R-5-SET **$ 545 / 5 x 500 mL**
M-200.7-01-5 M-200.7-04-5
M-200.7-02R-5 M-200.7-05-5
M-200.7-03-5R

Method 200.7 Instrument Performance Standards

Instrument Performance Check Standard #1

M-200.7-IPC-01-1 **$ 210 / 100 mL**
M-200.7-IPC-01-5 **$ 430 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 26 comps.

Al (Aluminum)	20	Li (Lithium)	20
As (Arsenic)	20	Mg (Magnesium)	20
Ba (Barium)	20	Mn (Manganese)	20
Be (Beryllium)	20	Ni (Nickel)	20
B (Boron)	20	P (Phosphorus)	100
Cd (Cadmium)	20	K (Potassium)	100
Ca (Calcium)	20	Se (Selenium)	20
Ce (Cerium)	20	Ag (Silver)	2.5
Cr (Chromium)	20	Na (Sodium)	20
Co (Cobalt)	20	Sr (Strontium)	20
Cu (Copper)	20	Tl (Thallium)	20
Fe (Iron)	20	V (Vanadium)	20
Pb (Lead)	20	Zn (Zinc)	20

Instrument Performance Check Standard #2

M-200.7-IPC-02-1 **$ 70 / 100 mL**
M-200.7-IPC-02-5 **$ 135 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 tr. HF
5 comps.

Sb (Antimony)	20
Mo (Molybdenum)	20
Si (Silicon) †	100
Sn (Tin)	20
Ti (Titanium)	20

† 214 µg/mL as SiO_2

Method 200.7 Performance Check, Fortifying Solution & Mercury Standard

Laboratory Performance Check Standard

For use in demonstrating the initial and continuing verification of the calibration curves produced by this method.

LPCS-01-1 **$ 220 / 100 mL**
LPCS-01-5 **$ 440 / 500 mL**

At stated conc. (µg/mL) in 5% HNO_3 tr. HF
29 comps.

Al (Aluminum)	20
Sb (Antimony)	20
As (Arsenic)	20
Ba (Barium)	20
Be (Beryllium)	20
B (Boron)	20
Cd (Cadmium)	20
Ca (Calcium)	20
Cr (Chromium)	20
Co (Cobalt)	20
Cu (Copper)	20
Fe (Iron)	20
Pb (Lead)	20
Li (Lithium)	20
Mg (Magnesium)	20
Mn (Manganese)	20
Mo (Molybdenum)	20
Ni (Nickel)	20
P (Phosphorus)	100
K (Potassium)	100
Se (Selenium)	20
Si (Silicon) †	100
Ag (Silver)	5
Na (Sodium)	20
Sr (Strontium)	20
Tl (Thallium)	20
Sn (Tin)	20
V (Vanadium)	20
Zn (Zinc)	20

† 214 µg/mL as SiO_2

Laboratory Fortifying Stock Solution

For use in preparing the laboratory fortified blank and the laboratory fortified sample matrix.

LFSS-01-1 **$ 195 / 100 mL**
LFSS-01-5 **$ 380 / 500 mL**

At stated conc. (µg/mL) in 5% HNO_3 tr. HF
25 comps.

Al (Aluminum)	25
Sb (Antimony)	25
As (Arsenic)	25
Ba (Barium)	25
Be (Beryllium)	5
B (Boron)	25
Cd (Cadmium)	10
Cr (Chromium)	25
Co (Cobalt)	10
Cu (Copper)	25
Fe (Iron)	25
Pb (Lead)	25
Li (Lithium)	25
Mn (Manganese)	25
Mo (Molybdenum)	10
Ni (Nickel)	25
P (Phosphorus)	50
Se (Selenium)	25
Si (Silicon) †	25
Ag (Silver)	2.5
Sr (Strontium)	25
Tl (Thallium)	25
Sn (Tin)	10
V (Vanadium)	10
Zn (Zinc)	25

† 53.5 µg/mL as SiO_2

Mercury Standard

Mercury is available in a separate solution due to incompatibility with other elements.

TCLP-02-1 **$ 34 / 100 mL**
TCLP-02-5 **$ 67 / 500 mL**

20 µg/mL in 5% HNO_3

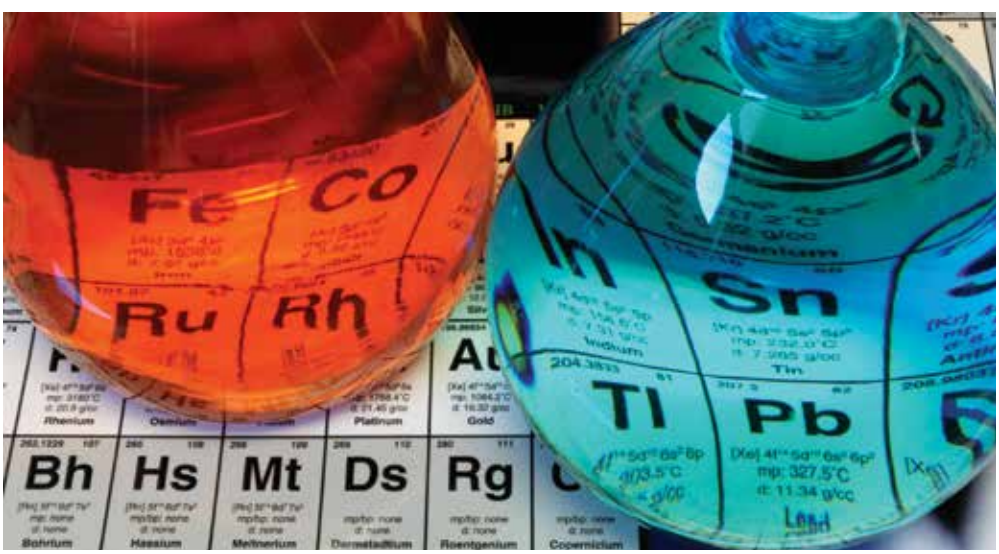
Hg (Mercury)

Technical Note

The analytes Ca, K, Mg, and Na are not included in the stock solution because their concentrations vary widely in environmental samples.

Inorganic products containing acid generally require a hazardous shipping fee.

Inorganic products in water generally do not.



Method 200.7 Fortifying (Spiking & Instrument Performance Standards)

These Standards have been split for stability and ease of use. Choose the Instrument Fortifying Standard you require for Part 1 & use with Part 2 to complete the analyte list. For Lab Fortified Blank use M-200.7-LFSS-01, for Water Samples use M-200.7-LFSS-01W, and for Solid Samples use M-200.7-LFSS-01S.

Part 1

Instrument Fortifying Standard

M-200.7-LFSS-01-1 **$ 200 / 100 mL**
M-200.7-LFSS-01-5 **$ 390 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 26 comps.

Al (Aluminum)	20
As (Arsenic)	20
Ba (Barium)	20
Be (Beryllium)	20
B (Boron)	20
Cd (Cadmium)	20
Ca (Calcium)	20
Ce (Cerium)	20
Cr (Chromium)	20
Co (Cobalt)	20
Cu (Copper)	20
Fe (Iron)	20
Pb (Lead)	20
Li (Lithium)	20
Mg (Magnesium)	20
Mn (Manganese)	20
Ni (Nickel)	20
P (Phosphorus)	20
K (Potassium)	500
Se (Selenium)	20
Ag (Silver)	7.5
Na (Sodium)	20
Sr (Strontium)	20
Tl (Thallium)	20
V (Vanadium)	20
Zn (Zinc)	20

Instrument Fortifying Standard for Water

M-200.7-LFSS-01W-1 **$ 195 / 100 mL**
M-200.7-LFSS-01W-5 **$ 380 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 22 comps.

Al (Aluminum)	20
As (Arsenic)	20
Ba (Barium)	20
Be (Beryllium)	20
B (Boron)	20
Cd (Cadmium)	20
Ce (Cerium)	20
Cr (Chromium)	20
Co (Cobalt)	20
Cu (Copper)	20
Fe (Iron)	20
Pb (Lead)	20
Li (Lithium)	20
Mn (Manganese)	20
Ni (Nickel)	20
P (Phosphorus)	20
K (Potassium)	500
Se (Selenium)	20
Ag (Silver)	7.5
Tl (Thallium)	20
V (Vanadium)	20
Zn (Zinc)	20

Instrument Fortifying Standard for Solids

M-200.7-LFSS-01S-1 **$ 200 / 100 mL**
M-200.7-LFSS-01S-5 **$ 390 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 24 comps.

As (Arsenic)	20
Ba (Barium)	20
Be (Beryllium)	20
B (Boron)	20
Cd (Cadmium)	20
Ca (Calcium)	20
Ce (Cerium)	20
Cr (Chromium)	20
Co (Cobalt)	20
Cu (Copper)	20
Pb (Lead)	20
Li (Lithium)	20
Mg (Magnesium)	20
Mn (Manganese)	20
Ni (Nickel)	20
P (Phosphorus)	20
K (Potassium)	500
Se (Selenium)	20
Ag (Silver)	7.5
Na (Sodium)	20
Sr (Strontium)	20
Tl (Thallium)	20
V (Vanadium)	20
Zn (Zinc)	20

Part 2

Instrument Fortifying Standard #2

M-200.7-LFSS-02-1 **$ 60 / 100 mL**
M-200.7-LFSS-02-5 **$ 120 / 500 mL**
20 µg/mL each in 5% HNO_3 tr. HF 5 comps.

Sb (Antimony)	Sn (Tin)
Mo (Molybdenum)	Ti (Titanium)
Si (Silicon) †	

† 42.78 µg/mL as SiO_2

Method 200.7 Spiking Solutions for Drinking Water

Spiking Standard #1R

M-200.7-SP-01-R ▼ **$ 50 / 50 mL**
At stated conc. (µg/mL) in H_2O tr. HF 4 comps.

B (Boron)	400
Mo (Molybdenum)	200
Si (Silicon) †	2000
P (Phosphorus)	400

† 4278 µg/mL SiO_2

Spiking Standard #2R

M-200.7-SP-02-R **$ 70 / 50 mL**
M-200.7-SP-02-R-1 **$ 135 / 100 mL**
M-200.7-SP-02-R-5 **$ 550 / 500 mL**
10,000 µg/mL each in in 2% HNO_3 4 comps.

Ca (Calcium)	K (Potassium)
Mg (Magnesium)	Na (Sodium)

Spiking Standard #3

M-200.7-SP-03 **$ 95 / 50 mL**
At stated conc. (µg/mL) in 5% HNO_3 12 comps.

Al (Aluminum)	2000
Ba (Barium)	2000
Be (Beryllium)	50
Cr (Chromium)	200
Co (Cobalt)	500
Cu (Copper)	250
Fe (Iron)	1000
Mn (Manganese)	500
Ni (Nickel)	500
Ag (Silver)	50
V (Vanadium)	500
Zn (Zinc)	500

Method 200.7 Spiking Set

M-200.7-SP-R-SET **$ 225 / 5 x 50 mL**
M-200.7-SP-01-R
M-200.7-SP-02-R
M-200.7-SP-03
M-200.7-SP-04-R
M-200.7-SP-05-R

Spiking Standard #4R

M-200.7-SP-04-R **$ 20 / 50 mL**
200 µg/mL in dilute HNO_3

Sb (Antimony)

Spiking Standard #5R

M-200.7-SP-05-R **$ 55 / 50 mL**
At stated conc. (µg/mL) in 5% HNO_3 5 comps.

As (Arsenic)	200
Cd (Cadmium)	100
Pb (Lead)	200
Se (Selenium)	400
Tl (Thallium)	400

Method 200.7 Interference Check Standards

For use in testing and verifying the inter-element spectral correction process.

SIC Solution #1

Used to evaluate the spectral interference for the analytes: Al, Sb, Se, Sn, V

SICS-01-1 **$ 34 / 100 mL**
SICS-01-5 **$ 67 / 500 mL**
50 µg/mL in Water tr. NH_4OH

Mo (Molybdenum)

Check Solutions Sets

SIC-1-SET **$ 120 / 3 x 100 mL**
SICS-01-1
SICS-02-1
SICS-03-1

SIC-5-SET **$ 230 / 3 x 500 mL**
SICS-01-5
SICS-02-5
SICS-03-5

SIC Solution #2

Used to evaluate the spectral interference for the analytes: Sb, Pb, Zn, Mo, As, Be

SICS-02-1 **$ 61 / 100 mL**
SICS-02-5 **$ 119 / 500 mL**
At stated conc. (µg/mL) in 2% HNO_3 5 comps.

Cr (Chromium)	20
Co (Cobalt)	10
Cu (Copper)	40
Mn (Manganese)	20
V (Vanadium)	10

SIC Solution #3

Used to evaluate the spectral interference for the analytes: Sb, Zn, As, Ag, Cr, Mn, V

SICS-03-1 **$ 52 / 100 mL**
SICS-03-5 **$ 102 / 500 mL**
At stated conc. (µg/mL) in 2% HNO_3 3 comps.

Al (Aluminum)	30
Fe (Iron)	150
Ni (Nickel)	20

Since everyone experiences different interference problems in their analysis, it is often easiest to design standards to match the "real world" samples. Below is a set of single element standards that can be used for making these standards in your lab.

Spectral Interference Check Set

Single Elements
SIC-SING-1-SET **$ 240 / 9 x 100 mL**
Each at 1,000 µg/mL in HNO_3

Al (Aluminum)	Mn (Manganese)
Cr (Chromium)	Mo (Molybdenum)
Co (Cobalt)	Ni (Nickel)
Cu (Copper)	V (Vanadium)
Fe (Iron)	

▼ Hazardous fee not required.

Method 6010B (Revision 2, from SW-846) Calibration Standards

Mixed Calibration Standard #1

MCS-01-1 **$ 85 / 100 mL**
MCS-01-5 **$ 165 / 500 mL**
At stated conc. (µg/mL) in 2% HNO_3 6 comps.

Be (Beryllium)	50
Cd (Cadmium)	150
Pb (Lead)	500
Mn (Manganese)	100
Se (Selenium)	200
Zn (Zinc)	150

Mixed Calibration Standard #2

MCS-02-1 **$ 85 / 100 mL**
MCS-02-5 **$ 165 / 500 mL**
At stated conc. (µg/mL) in 2% HNO_3 5 comps.

Ba (Barium)	100
Co (Cobalt)	100
Cu (Copper)	100
Fe (Iron)	10,000
V (Vanadium)	100

Complete Calibration Set 6010B, Rev. 2, 1996 and 6010C, Rev. 3, 2000

MCS-1996-1-SET **$ 385 / 7 x 100 mL**

MCS-01-1 MCS-04R-1 MCS-06R-1
MCS-02-1 MCS-05R-1 TCLP-02-1
MCS-03R-1

MCS-1996-5-SET **$ 750 / 7 x 500 mL**

MCS-01-5 MCS-04R-5 MCS-06R-5
MCS-02-5 MCS-05R-5 TCLP-02-5
MCS-03R-5

Mixed Calibration Standard #3R

MCS-03R-1 **$ 55 / 100 mL**
MCS-03R-5 **$ 107 / 500 mL**
At stated conc. (µg/mL) in 2% HNO_3 tr. HF 2 comps.

As (Arsenic)	500
Mo (Molybdenum)	100

Mixed Calibration Standard #4R

MCS-04R-1 **$ 98 / 100 mL**
MCS-04R-5 **$ 191 / 500 mL**
At stated conc. (µg/mL) in 2% HNO_3 8 comps.

Al (Aluminum)	200
Ca (Calcium)	1000
Cr (Chromium)	20
Li (Lithium)	100
Ni (Nickel)	20
K (Potassium)	400
Na (Sodium)	200
Sr (Strontium)	10

Technical Note

Additional Analyte Calibration Standards. The use of this Standard Solution (MCS-06R), plus a Mercury Standard (TCLP-02), completes the analyte list for the 1996 Rev. 2 and 2000 Rev. 3.

Mixed Calibration Standard #5R

MCS-05R-1 **$ 76 / 100 mL**
MCS-05R-5 **$ 148 / 500 mL**
At stated conc. (µg/mL) in 2% HNO_3 4 comps.

Sb (Antimony)	200
Mg (Magnesium)	1000
Ag (Silver)	50
Tl (Thallium)	200

Mixed Calibration Standard 6R

MCS-06R-1 **$ 64 / 100 mL**
MCS-06R-5 **$ 123 / 500 mL**
At stated conc. (µg/mL) in 2-5% HNO_3, tr. HF 5 comps.

P (Phosphorus)	200
Sn (Tin)	200
Ti (Titanium)	100
B (Boron)	50
Si (Silicon) †	100

† 214 µg/mL as SiO_2

Mercury Standard

Mercury is available in a separate solution due to its incompatibility with other elements.
TCLP-02-1 **$ 34 / 100 mL**
TCLP-02-5 **$ 67 / 500 mL**
20 µg/mL in 5% HNO_3

Hg (Mercury)

Method 6010B Spiking Standards

Three convenient solutions that can be used for spiking samples pre- or post- digestion.

Spiking Standard #1

QCS-01-1 **$ 182 / 100 mL**
QCS-01-5 **$ 354 / 500 mL**
100 µg/mL each in 5% HNO_3 tr. HF 23 comps.

Sb (Antimony)	Mn (Manganese)
As (Arsenic)	Mo (Molybdenum)
Be (Beryllium)	Ni (Nickel)
Cd (Cadmium)	P (Phosphorus)
Ca (Calcium)	Se (Selenium)
Cr (Chromium)	Sr (Strontium)
Co (Cobalt)	Tl (Thallium)
Cu (Copper)	Sn (Tin)
Fe (Iron)	Ti (Titanium)
Pb (Lead)	V (Vanadium)
Li (Lithium)	Zn (Zinc)
Mg (Magnesium)	

Spiking Standard #2

QCS-02-1 **$ 89 / 100 mL**
QCS-02-5 **$ 174 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 tr. HF 7 comps.

Al (Aluminum)	100
Ba (Barium)	100
B (Boron)	100
K (Potassium)	1000
Si (Silicon) †	500
Ag (Silver)	50
Na (Sodium)	100

† 1070 µg/mL as SiO_2

QC Standard #2R

QCS-02-R1-1 **$ 89 / 100 mL**
QCS-02-R1-5 **$ 174 / 500 mL**
100 µg/mL each in 5% HNO_3 tr. HF 7 comps.

Al (Aluminum)	Ag (Silver)
Ba (Barium)	Na (Sodium)
B (Boron)	
K (Potassium)	† 214 µg/mL as SiO_2
Si (Silicon) †	

Mercury Standard

Mercury is available in a separate solution due to incompatibility with other elements.
TCLP-02-1 **$ 34 / 100 mL**
TCLP-02-5 **$ 67 / 500 mL**
20 µg/mL in 5% HNO_3

Hg (Mercury)

Method 6010B (Revision 2 from SW-846, Dec. 1996) Performance and Interference Check Standards

Laboratory Performance Check Standard

LPCS-01R-1 **$ 230 / 100 mL**
LPCS-01R-5 **$ 450 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 tr. HF 30 comps.

Al (Aluminum)	20
Sb (Antimony)	20
As (Arsenic)	20
Ba (Barium)	20
Be (Beryllium)	20
B (Boron)	20
Cd (Cadmium)	20
Ca (Calcium)	20
Cr (Chromium)	20
Co (Cobalt)	20
Cu (Copper)	20
Fe (Iron)	20
Pb (Lead)	20
Li (Lithium)	20
Mg (Magnesium)	20
Mn (Manganese)	20
Mo (Molybdenum)	20
Ni (Nickel)	20
P (Phosphorous)	100
K (Potassium)	100
Se (Selenium)	20
Si (Silicon) †	100
Ag (Silver)	5
Na (Sodium)	20
Sr (Strontium)	20
Tl (Thallium)	20
Sn (Tin)	20
Ti (Titanium)	20
V (Vanadium)	20
Zn (Zinc)	20

† 214 µg/mL as SiO_2

Primary Interferents

CLP-PIN-01-1 **$ 110 / 100 mL**
CLP-PIN-01-5 **$ 215 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 4 comps.

Al (Aluminum)	5000
Ca (Calcium)	5000
Fe (Iron)	2000
Mg (Magnesium)	5000

Alternate Interferents

CLP-PIN-02-1 **$ 98 / 100 mL**
CLP-PIN-02-5 **$ 225 / 500 mL**
1000 µg/mL each in 5% HNO_3 6 comps.

Cr (Chromium)	Ni (Nickel)
Cu (Copper)	Ti (Titanium)
Mn (Manganese)	V (Vanadium)

Interference Set

SIC-SING-R-1-SET **$300 / set of 10 x 100 mL**
10 individual single element standards at 1,000 µg/mL in HNO_3

Al (Aluminum)	Mg (Magnesium)
Ca (Calcium)	Mn (Manganese)
Cr (Chromium)	Ni (Nickel)
Cu (Copper)	Ti (Titanium)
Fe (Iron)	V (Vanadium)

Technical Note

Because interference problems are dependent on the types of sample matrices encountered, it is often easier to create your own set of matrix matching interference check solutions. Therefore, we are offering a set of single element solutions to be used for that purpose.

If you would like us to formulate an interference check solution to meet your needs, please call our Inorganic Technical Service Department for a custom quotation.

Set-up Solutions

Nebulizer Adjustment Solution

ICP-69N-1 **$ 34 / 100 mL**
1000 µg/mL in HNO_3

Y (Yttrium)

Method 6010 (Revision 0, Sept. 1986) Interference Check Standards

Four standard mixtures are available for interference checks in SW-846, Method 6010 (Rev. 0, Sept. 1986) and Method 200.7.

Interference Check Standard #1

INT-01-1 **$ 242 / 100 mL**
INT-01-5 **$ 472 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 17 comps.

As (Arsenic)	1000
Ba (Barium)	300
Be (Beryllium)	100
Cd (Cadmium)	300
Cr (Chromium)	300
Co (Cobalt)	300
Cu (Copper)	300
Pb (Lead)	1000
Mn (Manganese)	200
Hg (Mercury)	50
Ni (Nickel)	300
K (Potassium)	20,000
Se (Selenium)	500
Ag (Silver)	300
Tl (Thallium)	1000
V (Vanadium)	300
Zn (Zinc)	300

Interference Check Standard #2

INT-02-1 **$ 85 / 100 mL**
INT-02-5 **$ 165 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 tr. HF 4 comps.

B (Boron)	500
Mo (Molybdenum)	300
Si (Silicon)	200
Ti (Titanium)	1000

Interference Check Standard #3

INT-03-1 **$ 34 / 100 mL**
INT-03-5 **$ 67 / 500 mL**
500 µg/mL in 2% HNO_3, tr. Tartaric acid

Sb (Antimony)

Interference Check Standard #4

INT-04-1 **$ 115 / 100 mL**
INT-04-5 **$ 225 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 5 comps.

Al (Aluminum)	1200
Ca (Calcium)	6000
Fe (Iron)	5000
Mg (Magnesium)	3000
Na (Sodium)	1000

Interference Check Standards Sets

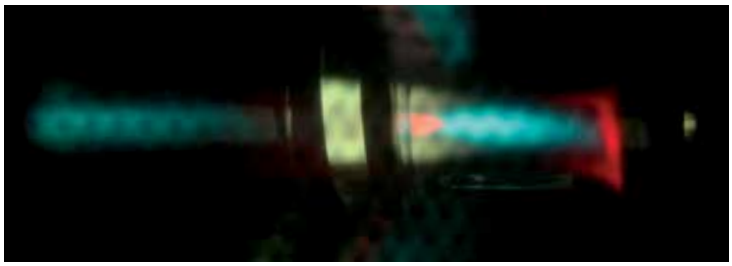
INT-1986-1-SET **$ 385 / 4 x 100 mL**

INT-01-1	INT-03-1
INT-02-1	INT-04-1

INT-1986-5-SET **$ 765 / 4 x 500 mL**

INT-01-5	INT-03-5
INT-02-5	INT-04-5

ICP Alternate Source



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Cross Reference Part No. Index

These calibration and testing standards have been carefully formulated to be used for specific instrument setup and verification.

Over 100 ICP Alternate Source Multi-Element Standards

Merck

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JYICP-MIXHM	JY-CALHM	7
JYICP-MIXMAJ	JY-CAL	7
JYICP-MIX7HSI	JY-QC7	7
JYICP-MIX9	JY-CHK	7
JYICP-MIX21	JY-QC21	7
JYICP-MIX23	JY-QC23	7
JYICP-QC1	JY-CHK1	7

Perkin Elmer

N0582152	PE-UVWAVE	12
N0691579	PE-MCS	10
N0691580	PE-UV	12
N8122014	PE-SETUP2 *	11
N8122017	PE-CRDL3 *	8
N8125030	PE-STAB *	12
N8125031	PE-CRDL4 *	8
N8125032	PE-SETUP1 *	11
N8125034	PE-SENS *	11
N8125040	PE-SMTUNE *	11
N8125041	PE-SMTUNE2 *	11
N9300200	PE-MCS1	10
N9300201	PE-MCS2	10
N9300202	PE-MCS3	10
N9300203	PE-MCS4	10
N9300204	PE-MCS5	10
N9300205	PE-ICS18	9
N9300208	PE-ICS5	9
N9300211	PE-WPTM1	12
N9300212	PE-WPTM2	12
N9300213	PE-WPTM3	12
N9300214	PE-WPAM1	12
N9300215	PE-WPAM3	12
N9300216	PE-SDWA1	11
N9300217	PE-SDWA2	11
N9300218	PE-CAL4	8
N9300219	PE-CAL5	8
N9300220	PE-CAL6	8
N9300221	PE-CAL7	8
N9300224	PE-CRDL1 *	8
N9300225	PE-CRDL2	8
N9300226	PE-INTA	9
N9300227	PE-ANAB	8
N9300228	PE-ALTINTA	8
N9300229	PE-ALTB	8
N9300230	PE-SPIKE	11
N9300231	PE-MECAL1	10
N9300232	PE-MECAL2	10
N9300233	PE-MECAL3	10
N9300234	PE-MECAL4	10
N9300235	PE-MECAL5	10

Perkin Elmer

N9300280	PE-QC7	11
N9300281	PE-QC21	11
N9301720	PE-MECAL3	10
N9301721	PE-CAL2	8
N9302946	PE-VISWAVE	12
N9303816	PE-CAL1	8
N9303818	PE-CAL3	8
N9303821	PE-CHK1	9
N9303822	PE-CHK3	9
N9303823	PE-CHK4	9
N9303824	PE-CHK5	9
N9303825	PE-VER1	12
N9303826	PE-VER2	12
N9303827	PE-INTFRA	9
N9303828	PE-INTFR1	9
N9303829	PE-INTFRB	9
N9303830	PE-INTFR2	9
N9303831	PE-INTFRC	9
N9303832	PE-INT	9
N9303834	PE-MEINT	10
N9303835	PE-MEM1	10
N9303836	PE-MEM2	10
N9303839	PE-SPIKE1	11
N9303840	PE-SPIKE2	11
N9303841	PE-SPIKE3	11
N9303843	PE-TUNSOL	12
N9307113	PE-MES1	9
N9307114	PE-MES2	9
N9307115	PE-MES3	9
N9307116	PE-MES4	9

Teledyne

601-3110	TELE-CHK1 *	13
601-4101	TELE-CHK2 *	13
601-4102	TELE-CHK3 *	13
602-00065	TELE-CHK4	13
602-00067	TELE-CHK4	13
602-00068	TELE-CHK5	13
602-00070	TELE-CHK5	13
602-00071	TELE-CHK6	13
602-00073	TELE-CHK6	13
620-403	TELE-CHK7	13
602-00125	TELE-CHK8-0.1X *	13

*** similar formulation**

ICP Alternate Source
Merck

AccuStandard has received many requests for the following multi-element standards. We offer our own version of these popular mixes offered by Merck. Products are made to the same specifications as other mixes in our product line and subject to the same rigorous quality control.

AccuStandard equivalent of Merck Multi-Element Standards

ICP Multi-Element Standard Solution I

MES-01-1 $ 176 / 100 mL
MES-01-5 $ 343 / 500 mL
At stated conc. (µg/mL) in 1 mol/L HNO_3 19 comps.

Ag (Silver)	50
Al (Aluminum)	100
B (Boron)	15
Ba (Barium)	5
Be (Beryllium)	1
Bi (Bismuth)	200
Cd (Cadmium)	20
Co (Cobalt)	20
Cr (Chromium)	25
Cu (Copper)	20
Fe (Iron)	15
Ga (Gallium)	150
In (Indium)	200
Mn (Manganese)	5
Ni (Nickel)	50
Pb (Lead)	200
Sr (Strontium)	1
Tl (Thallium)	400
Zn (Zinc)	20

ICP Multi-Element Standard Solution II

MES-02-1 $ 109 / 100 mL
MES-02-5 $ 214 / 500 mL
At stated conc. (µg/mL) in 1 mol/L HNO_3 3 comps.

Li (Lithium)	250
K (Potassium)	10,000
Na (Sodium)	1000

ICP Multi-Element Standard Solution III

MES-03-1 $ 109 / 100 mL
MES-03-5 $ 214 / 500 mL
1000 µg/mL each in 1 mol/L HNO_3 4 comps.

Ba (Barium)	Mg (Magnesium)
Ca (Calcium)	Sr (Strontium)

ICP Multi-Element Standard Solution IV

MES-04-1 $ 227 / 100 mL
MES-04-5 $ 681 / 500 mL
1000 µg/mL each in 1 mol/L HNO_3 23 comps.

Ag (Silver)	In (Indium)
Al (Aluminum)	K (Potassium)
B (Boron)	Li (Lithium)
Ba (Barium)	Mg (Magnesium)
Bi (Bismuth)	Mn (Manganese)
Ca (Calcium)	Na (Sodium)
Cd (Cadmium)	Ni (Nickel)
Co (Cobalt)	Pb (Lead)
Cr (Chromium)	Sr (Strontium)
Cu (Copper)	Tl (Thallium)
Fe (Iron)	Zn (Zinc)
Ga (Gallium)	

ICP Multi-Element Standard Solution V

MES-05-1-SET $200 / 2x100 mL
MES-05-5-SET $390 / 2x500 mL
At stated conc. (µg/mL) in 2-10% HCl tr. HNO_3 26 comps.

MES-05

Al (Aluminum)	20
As (Arsenic)	20
B (Boron)	2
Ba (Barium)	2
Be (Beryllium)	1
Ca (Calcium)	10
Cd (Cadmium)	2
Cr (Chromium)	2
Cu (Copper)	2
Fe (Iron)	2
K (Potassium)	100
Li (Lithium)	2
Mg (Magnesium)	1
Mn (Manganese)	1
Na (Sodium)	20
Ni (Nickel)	5
P (Phosphorus)	10
Pb (Lead)	20
Sc (Scandium)	1
Se (Selenium)	20
Sr (Strontium)	1
Te (Tellurium)	20
Ti (Titanium)	2
Y (Yttrium)	1
Zn (Zinc)	2

MES-05-HG
5% HNO_3
Hg (Mercury) 5

Supplied separately for better stability

ICP Multi-Element Standard Solution VI for MS

MES-06-1-SET $ 230 / 100 mL
MES-06-5-SET $ 450 / 500 mL
At stated conc. (µg/mL) in 1 mol/L HNO_3 tr. HF 30 comps.

Ag (Silver)	10
Al (Aluminum)	10
As (Arsenic)	100
B (Boron)	100
Ba (Barium)	10
Be (Beryllium)	100
Bi (Bismuth)	10
Ca (Calcium)	1000
Cd (Cadmium)	10
Co (Cobalt)	10
Cr (Chromium)	10
Cu (Copper)	10
Fe (Iron)	100
Ga (Gallium)	10
K (Potassium)	10
Li (Lithium)	10
Mg (Magnesium)	10
Mn (Manganese)	10
Mo (Molybdenum)	10
Na (Sodium)	10
Ni (Nickel)	10
Pb (Lead)	10
Rb (Rubidium)	10
Se (Selenium)	100
Sr (Strontium)	10
Tl (Thallium)	10
U (Uranium)	10
V (Vanadium)	10
Zn (Zinc)	100

MES-06-TE
Te (Tellurium) 10

Supplied separately for better stability in 10% HCl

ICP Multi-Element Standard Solution VII

MES-07-1 ▼ $ 188 / 100 mL
MES-07-5 ▼ $ 367 / 500 mL
100 µg/mL each in Water tr. HNO_3 9 comps.

NH_4 (Ammonium)	Mn (Manganese)
Ba (Barium)	Na (Sodium)
Ca (Calcium)	Sr (Strontium)
K (Potassium)	
Li (Lithium)	
Mg (Magnesium)	

ICP Multi-Element Standard Solution VIII

MES-08-1-SET $ 190 / 2x100 mL
MES-08-5-SET $ 371 / 2x500 mL
100 µg/mL each in 1 mol/L HNO_3 24 comps.

MES-08

Al (Aluminum)	K (Potassium)
B (Boron)	Li (Lithium)
Ba (Barium)	Mg (Magnesium)
Be (Beryllium)	Mn (Manganese)
Bi (Bismuth)	Na (Sodium)
Ca (Calcium)	Ni (Nickel)
Cd (Cadmium)	Pb (Lead)
Co (Cobalt)	Se (Selenium)
Cr (Chromium)	Sr (Strontium)
Cu (Copper)	Tl (Thallium)
Fe (Iron)	Zn (Zinc)
Ga (Gallium)	

MES-08-TE
10% HCl
Te (Tellurium)
Supplied separately for better stability

ICP Multi-Element Standard Solution IX

MES-09-1-SET $ 102 / 2x100 mL
MES-09-5-SET $ 199 / 2x500 mL
100 µg/mL each in 1 mol/L HNO_3 8 comps.

MES-09

As (Arsenic)	Ni (Nickel)
Be (Beryllium)	Se (Selenium)
Pb (Lead)	Tl (Thallium)
Cr (Chromium)	

MES-09-HG
Hg (Mercury)
Supplied separately for better stability.

ICP Multi-Element Standard Solution X

MES-10-1 $ 200 / 100 mL
MES-10-5 $ 390 / 500 mL
At stated conc. (µg/mL) in 1 mol/L HNO_3 23 comps.

Ca (Calcium)	3500
Mg (Magnesium)	1500
Na (Sodium)	800
K (Potassium)	300
B (Boron)	10
Fe (Iron)	10
Mo (Molybdenum)	10
Sr (Strontium)	10
As (Arsenic)	5
Ba (Barium)	5
Ni (Nickel)	5
V (Vanadium)	5
Zn (Zinc)	5
Mn (Manganese)	3
Co (Cobalt)	2.5
Pb (Lead)	2.5
Be (Beryllium)	2
Cd (Cadmium)	2
Cr (Chromium)	2
Cu (Copper)	2
Bi (Bismuth)	1
Se (Selenium)	1
Tl (Thallium)	1

Supplied at a 1:10 dilution for better long-term stability.

ICP Multi-Element Standard Solution XI

MES-11-1-SET $ 114 / 2x100 mL
MES-11-5-SET $ 222 / 2x500 mL
At stated conc. (µg/mL) in 1 mol/L HNO_3 6 comps.

MES-11

Cd (Cadmium)	10
Cr (Chromium)	900
Cu (Copper)	800
Ni (Nickel)	200
Pb (Lead)	900
Zn (Zinc)	2500

MES-11-HG
Hg (Mercury) 8
Supplied separately for better product stability

▼ Hazardous fee not required.

ICP Alternate Source
Merck

AccuStandard equivalent of Merck Multi-Element Standards

ICP Multi-Element Standard Solution XII

MES-12-1-SET $ 131 / 2x100 mL
MES-12-5-SET $ 255 / 2x500 mL
1000 µg/mL each in 5% HCl tr. HNO_3 7 comps.

MES-12-R1

As (Arsenic)	Si (Silicon)
Mo (Molybdenum)	W (Tungsten)
P (Phosphorus)	V (Vanadium)
S (Sulfur)	

MES-12-ZR
Zr (Zirconium)
Supplied separately for better product stability

ICP Multi-Element Standard Solution XIII

MES-13-1-SET $ 135 / 2x100 mL
MES-13-5-SET $ 264 / 2x500 mL
At stated conc. (µg/mL) in 5% HNO_3 15 comps.

MES-13

Al (Aluminum)	500
As (Arsenic)	100
Be (Beryllium)	100
Cd (Cadmium)	25
Co (Cobalt)	100
Cr (Chromium)	100
Cu (Copper)	100
Fe (Iron)	100
Mn (Manganese)	100
Ni (Nickel)	100
Pb (Lead)	100
Se (Selenium)	25
V (Vanadium)	250
Zn (Zinc)	100

MES-13-HG

Hg (Mercury)	5

Supplied separately for better stability

ICP Multi-Element Standard Solution XIV

MES-14-1 $ 104 / 100 mL
MES-14-5 $ 202 / 500 mL
At stated conc. (µg/mL) in 2% HCl tr. HNO_3 11 comps.

P (Phosphorus)	100
S (Sulfur)	100
K (Potassium)	100
As (Arsenic)	20
La (Lanthanum)	20
Li (Lithium)	20
Mo (Molybdenum)	20
Mn (Manganese)	20
Ni (Nickel)	20
Sc (Scandium)	20
Na (Sodium)	20

ICP Multi-Element Standard Solution XV

MES-15-1 $ 76 / 100 mL
MES-15-5 $ 148 / 500 mL
At stated conc. (µg/mL) in 2% HNO_3 8 comps.

Element	µg/mL
Ba (Barium)	1
Ca (Calcium)	1
K (Potassium)	50
La (Lanthanum)	10
Li (Lithium)	10
Mn (Manganese)	10
Na (Sodium)	10
Sr (Strontium)	10

ICP Multi-Element Standard Solution XVI

MES-16-1 $ 190 / 100 mL
MES-16-5 $ 370 / 500 mL
100 µg/mL each in 5% HNO_3 tr. HF 21 comps.

Sb (Antimony)	Mg (Magnesium)
As (Arsenic)	Mn (Manganese)
Be (Beryllium)	Mo (Molybdenum)
Cd (Cadmium)	Ni (Nickel)
Ca (Calcium)	Se (Selenium)
Cr (Chromium)	Sr (Strontium)
Co (Cobalt)	Tl (Thallium)
Cu (Copper)	Ti (Titanium)
Fe (Iron)	V (Vanadium)
Pb (Lead)	Zn (Zinc)
Li (Lithium)	

ICP Multi-Element Standard Solution XVII

MES-17-1 $ 102 / 100 mL
MES-17-5 $ 199 / 500 mL
100 µg/mL each in in 15% HCl tr. HNO_3 7 comps.

Hf (Hafnium)	Ta (Tantalum)
Ir (Iridium)	Ti (Titanium)
Sb (Antimony)	Zr (Zirconium)
Sn (Tin)	

ICP Multi-Element GF AAS Standard Solution XVIII

MES-18-R1-1 $ 135 / 100 mL
MES-18-R1-5 $ 263 / 500 mL
At stated conc. (µg/mL) in 5% HNO_3 16 comps.

Ag (Silver)	10
Al (Aluminum)	100
As (Arsenic)	100
Ba (Barium)	50
Be (Beryllium)	5
Cd (Cadmium)	5
Co (Cobalt)	50
Cr (Chromium)	20
Cu (Copper)	50
Fe (Iron)	20
Mn (Manganese)	20
Ni (Nickel)	50
Pb (Lead)	100
Sb (Antimony)	100
Se (Selenium)	100
Tl (Thallium)	100

ICP Multi-Element Standard Solution XIX for MS

MES-19-1 $ 86 / 100 mL
MES-19-5 $ 168 / 500 mL
1 µg/mL each in 1% HNO_3 5 comps.

Be (Beryllium)	Tl (Thallium)
Co (Cobalt)	U (Uranium)
In (Indium)	

Supplied as a 10X concentrate for better stability.

ICP Multi-Element Standard Solution XX for MS

MES-20-1 $ 95 / 100 mL
MES-20-5 $ 185 / 500 mL
1 µg/mL each in 1% HNO_3 tr. HCl 11 comps.

Mg (Magnesium)	Tl (Thallium)
Cu (Copper)	Ce (Cerium)
Cd (Cadmium)	Ge (Germanium)
Pb (Lead)	Tb (Terbium)
Sc (Scandium)	Ba (Barium)
Rh (Rhodium)	

Supplied as a 10X concentrate for better stability.

ICP Multi-Element Standard Solution XXI for MS

MES-21-1-SET $ 180 / 2x100 mL
MES-21-5-SET $ 350 / 2x500 mL
10 µg/mL each in 5% HNO_3 30 comps.

MES-21

Ag (Silver)	In (Indium)
Al (Aluminum)	K (Potassium)
As (Arsenic)	Li (Lithium)
Ba (Barium)	Mg (Magnesium)
Be (Beryllium)	Mn (Manganese)
Bi (Bismuth)	Na (Sodium)
Ca (Calcium)	Ni (Nickel)
Cd (Cadmium)	Pb (Lead)
Co (Cobalt)	Rb (Rubidium)
Cr (Chromium)	Se (Selenium)
Cs (Cesium)	Sr (Strontium)
Cu (Copper)	Tl (Thallium)
Fe (Iron)	V (Vanadium)
Ga (Gallium)	U (Uranium)
	Zn (Zinc)

MES-21-HG

Hg (Mercury)	10

Supplied separately for better product stability

ICP Multi-Element Standard Solution XXII for MS

MES-22-1 $ 70 / 100 mL
MES-22-5 $ 137 / 500 mL
2 µg/mL each in 2% HNO_3 tr. HCl 5 comps.

Cd (Cadmium)	Pb (Lead)
Cu (Copper)	Rh (Rhodium)
Mg (Magnesium)	

Supplied as a 10X concentrate for better stability.

ICP Multi-Element Standard Solution XXIII for MS

MES-23-1 $ 135 / 100 mL
MES-23-5 $ 264 / 500 mL
1 µg/mL each in 5% HNO_3 15 comps.

Ba (Barium)	Lu (Lutetium)
B (Boron)	Na (Sodium)
Co (Cobalt)	Rh (Rhodium)
Fe (Iron)	Sc (Scandium)
Ga (Gallium)	Tl (Thallium)
In (Indium)	U (Uranium)
K (Potassium)	Y (Yttrium)
Li (Lithium)	

ICP Multi-Element Standard Solution XXIV

MES-24-1 $ 135 / 100 mL
MES-24-5 $ 264 / 500 mL
At stated conc. (µg/mL) in 1% HNO_3 15 comps.

Al (Aluminum)	50
As (Arsenic)	50
Ba (Barium)	50
Cd (Cadmium)	50
Co (Cobalt)	50
Cr (Chromium)	50
Cu (Copper)	50
K (Potassium)	500
Mn (Manganese)	50
Mo (Molybdenum)	50
Ni (Nickel)	50
Pb (Lead)	50
Se (Selenium)	50
Sr (Strontium)	50
Zn (Zinc)	50

ICP Alternate Source
Agilent

AccuStandard offers calibration and testing standards for individual instruments. The Alternate Source Line (ASL) formulations match product from:

■ **Agilent** ■ **Horiba/Jobin Yvon** ■ **Perkin Elmer** ■ **Teledyne**

Save up to 50%

All of these products have been carefully formulated to be used for specific instrument setup and verification.

AccuStandard equivalent of Agilent Solutions

ICP-OES Wavelength Calibration Solution

AG-WAVECAL-ASL-1 **$ 135 / 100 mL**
AG-WAVECAL-ASL-5 **$ 264 / 500 mL**
AG-WAVECAL-ASL-10X-1 **$ 135 / 100 mL**
AG-WAVECAL-ASL-10X-5 **$ 264 / 500 mL**
At stated conc. (µg/mL) in 1% HNO_3 15 comps.

	CAL	CAL-10X
Al (Aluminum)	5	50
As (Arsenic)	5	50
Ba (Barium)	5	50
Cd (Cadmium)	5	50
Co (Cobalt)	5	50
Cr (Chromium)	5	50
Cu (Copper)	5	50
Mn (Manganese)	5	50
Mo (Molybdenum)	5	50
Ni (Nickel)	5	50
Pb (Lead)	5	50
Se (Selenium)	5	50
Sr (Strontium)	5	50
Zn (Zinc)	5	50
K (Potassium)	50	500

ICP/MS Stock Tuning Solution

AG-TUNSTOCK-ASL-1 **$ 105 / 100 mL**
AG-TUNSTOCK-ASL-5 **$ 204 / 500 mL**
10 µg/mL in 2% HNO_3 5 comps.

Li (Lithium)	Tl (Thalium)
Y (Yttrium)	Co (Cobalt)
Ce (Cerium)	

ICP/MS Stock Tuning Solution

AG-TUNSTOCK1-ASL-1 **$ 115 / 100 mL**
AG-TUNSTOCK1-ASL-5 **$ 225 / 500 mL**
10 µg/mL in 2% HNO_3 6 comps.

Li (Lithium)	Ce (Cerium)
Mg (Magnesium)	Tl (Thalium)
Y (Yttrium)	Co (Cobalt)

Internal Standard Mix for ICP/MS

AG-INTSTD-ASL-1 **$ 155 / 100 mL**
AG-INTSTD-ASL-5 **$ 298 / 500 mL**
100 µg/mL in 10% HNO_3, tr. HCl 8 comps.

Li-6 (Lithium-6)	In (Indium)
Sc (Scandium)	Tb (Terbium)
Ge (Germanium)	Lu (Lutetium)
Rh (Rhodium)	Bi (Bismuth)

NEW

INTF-A Quality Control Standard

AG-INTFA-ASL-1 **$ 115 / 100 mL**
AG-INTFA-ASL-5 **$ 225 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 4 comps.

Al (Aluminum)	5000
Ca (Calcium)	5000
Mg (Magnesium)	5000
Fe (Iron)	2000

7500 Series PA Tuning 1

AG-TUN1-ASL-1 **$ 205 / 100 mL**
AG-TUN1-ASL-5 **$ 398 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 26 comps.

Zn (Zinc)	20	Ba (Barium)	5
Be (Beryllium)	20	Co (Cobalt)	5
Cd (Cadmium)	20	Sr (Strontium)	5
As (Arsenic)	20	V (Vanadium)	5
Ni (Nickel)	10	Cr (Chromium)	5
Pb (Lead)	10	Mn (Manganese)	5
Mg (Magnesium)	10	Li-6 (Lithium-6)	5
Tl (Thallium)	5	Sc (Scandium)	5
Na (Sodium)	5	In (Indium)	5
Al (Aluminum)	5	Lu (Lutetium)	5
U (Uranium)	5	Bi (Bismuth)	5
Cu (Copper)	5	Y (Yttrium)	2.5
Th (Thorium)	5	Yb (Ytterbium)	2.5

7500 Series PA Tuning 2

AG-TUN2-ASL-1 **$ 95 / 100 mL**
AG-TUN2-ASL-5 **$ 185 / 500 mL**
At stated conc. (µg/mL) in 10% HCl, 1% HNO_3 tr. HF 8 comps.

Mo (Molybdenum)	10	Ru (Ruthenium)	10
Sb (Antimony)	10	Pd (Palladium)	10
Sn (Tin)	10	Ti (Titanium)	5
Ge (Germanium)	10	Ir (Iridium)	5

PA Tuning Solution Sets

AG-TUN-ASL-1-SET **$ 270 / 2 x 100 mL**
AG-TUN1-ASL-1 AG-TUN2-ASL-1

AG-TUN-ASL-5-SET **$ 525 / 2 x 500 mL**
AG-TUN1-ASL-5 AG-TUN2-ASL-5

ICP/MS Tuning Solution

VAR-TUN-ASL-1 **$ 105 / 100 mL**
VAR-TUN-ASL-5 **$ 204 / 500 mL**
10 µg/mL each in 2-5% HNO_3 8 comps.

Be (Beryllium)	Pb (Lead)
Mg (Magnesium)	Th (Thorium)
Co (Cobalt)	Ba (Barium)
In (Indium)	Ce (Cerium)

NEW

QCSTD-27 Quality Control Standard

AG-QCS27-ASL-1 **$ 225 / 100 mL**
AG-QCS27-ASL-5 **$ 436 / 500 mL**
100 µg/mL in 5% HNO_3 27 comps.

Al (Aluminum)	Co (Cobalt)	Se (Selenium)
Sb (Antimony)	Cu (Copper)	Si (Silicon)
As (Arsenic)	Fe (Iron)	Ag (Silver)
Ba (Barium)	Pb (Lead)	Sr (Strontium)
Be (Beryllium)	Mg (Magnesium)	Na (Sodium)
B (Boron)	Mn (Manganese)	Tl (Thallium)
Cd (Cadmium)	Mo (Molybdenum)	Ti (Titanium)
Ca (Calcium)	Ni (Nickel)	V (Vanadium)
Cr (Chromium)	K (Potassium)	Zn (Zinc)

Environmental Spike Mix

AG-SPIKE-ASL-R1-1 **$ 308 / 100 mL**
AG-SPIKE-ASL-R1-5 **$ 598 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 tr. HF 24 comps.

Ca (Calcium)	1000	Cr (Chromium)	100
Fe (Iron)	1000	Cu (Copper)	100
K (Potassium)	1000	Mn (Manganese)	100
Mg (Magnesium)	1000	Mo (Molybdenum)	100
Na (Sodium)	1000	Ni (Nickel)	100
Ag (Silver)	100	Pb (Lead)	100
Al (Aluminum)	100	Sb (Antimony)	100
As (Arsenic)	100	Se (Selenium)	100
Ba (Barium)	100	Tl (Thallium)	100
Be (Beryllium)	100	U (Uranium)	100
Cd (Cadmium)	100	V (Vanadium)	100
Co (Cobalt)	100	Zn (Zinc)	100

Environmental Initial Calibration Verification

AG-VER1-ASL-R1-1 **$ 328 / 100 mL**
AG-VER1-ASL-R1-5 **$ 636 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 26 comps.

Ca (Calcium)	1000	Cr (Chromium)	10
Fe (Iron)	1000	Cu (Copper)	10
K (Potassium)	1000	Mn (Manganese)	10
Mg (Magnesium)	1000	Mo (Molybdenum)	10
Na (Sodium)	1000	Ni (Nickel)	10
Sr (Strontium)	100	Pb (Lead)	10
Ag (Silver)	10	Sb (Antimony)	10
Al (Aluminum)	10	Se (Selenium)	10
As (Arsenic)	10	Tl (Thallium)	10
Ba (Barium)	10	U (Uranium)	10
Be (Beryllium)	10	V (Vanadium)	10
Cd (Cadmium)	10	Zn (Zinc)	10
Co (Cobalt)	10	Th (Thorium)	10

AccuStandard is not affiliated with the companies and brands on these pages. The brands and company names appear for the purpose of cross reference with the corresponding AccuStandard products.

AccuStandard equivalent of Agilent

ICV-7 Quality Control Standard

NEW

AG-ICV7-ASL-1 **$ 292 / 100 mL**
AG-ICV7-ASL-5 **$ 585 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 22 comps.

Ca (Calcium)	5000	Cu (Copper)	25
Mg (Magnesium)	5000	Zn (Zinc)	20
K (Potassium)	5000	Mn (Manganese)	15
Na (Sodium)	5000	As (Arsenic)	10
Al (Aluminum)	200	Cr (Chromium)	10
Ba (Barium)	200	Ag (Silver)	10
Fe (Iron)	100	Tl (Thallium)	10
Sb (Antimony)	60	Be (Beryllium)	5
Co (Cobalt)	50	Cd (Cadmium)	5
V (Vanadium)	50	Pb (Lead)	5
Ni (Nickel)	40	Se (Selenium)	5

ANALT-B Quality Control Standard

NEW

AG-ANALTB-ASL-1 **$ 125 / 100 mL**
AG-ANALTB-ASL-5 **$ 242 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 12 comps.

Ca (Calcium)	100	Be (Beryllium)	50
Ni (Nickel)	100	Co (Cobalt)	50
Pb (Lead)	100	Cr (Chromium)	50
Ag (Silver)	100	Cu (Copper)	50
Zn (Zinc)	100	Mn (Manganese)	50
Ba (Barium)	50	V (Vanadium)	50

Environmental Calibration Standard

AG-CAL-ASL-1 **$ 308 / 100 mL**
AG-CAL-ASL-5 **$ 598 / 500 mL**
At stated conc. (µg/mL) in 10% HNO_3 25 comps.

Ca (Calcium)	1000	Cu (Copper)	10
Fe (Iron)	1000	Mn (Manganese)	10
K (Potassium)	1000	Mo (Molybdenum)	10
Mg (Magnesium)	1000	Ni (Nickel)	10
Na (Sodium)	1000	Pb (Lead)	10
Ag (Silver)	10	Sb (Antimony)	10
Al (Aluminum)	10	Se (Selenium)	10
As (Arsenic)	10	Tl (Thallium)	10
Ba (Barium)	10	U (Uranium)	10
Be (Beryllium)	10	V (Vanadium)	10
Cd (Cadmium)	10	Zn (Zinc)	10
Co (Cobalt)	10	Th (Thorium)	10
Cr (Chromium)	10		

Calibration Mix 1 AA & ICP-OES

AG-CAL1-ASL-1 **$ 95 / 100 mL**
AG-CAL1-ASL-5 **$ 185 / 500 mL**
100 µg/mL each in 2% HNO_3 tr.HF 4 comps.

Sb (Antimony)	Sn (Tin)
Mo (Molybdenum)	Tl (Thallium)

Calibration Mix 2 AA & ICP-OES

AG-CAL2-ASL-1 **$ 205 / 100 mL**
AG-CAL2-ASL-5 **$ 398 / 500 mL**
100 µg/mL each in 5% HNO_3 18 comps.

Ag (Silver)	Mn (Manganese)
Al (Aluminum)	Ni (Nickel)
As (Arsenic)	Pb (Lead)
Ba (Barium)	Se (Selenium)
Be (Beryllium)	Tl (Thallium)
Cd (Cadmium)	Th (Thorium)
Co (Cobalt)	U (Uranium)
Cr (Chromium)	V (Vanadium)
Cu (Copper)	Zn (Zinc)

Calibration Mix Majors For AA & ICP-OES

AG-CALMAJOR-ASL-1 **$ 105 / 100 mL**
AG-CALMAJOR-ASL-5 **$ 204 / 500 mL**
500 µg/mL each in 5% HNO_3 5 comps.

Ca (Calcium)	Mg (Magnesium)
Fe (Iron)	Na (Sodium)
K (Potassium)	

6020 Interference Check Soln A

AG-INTFR-6020-ASL-1 **$ 385 / 100 mL**
AG-INTFR-6020-ASL-5 **$ 747 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 tr. HF 12 comps.

Cl (Chloride)	20,000	Mg (Magnesium)	1000
Ca (Calcium)	3000	P (Phosphorus)	1000
Fe (Iron)	2500	K (Potassium)	1000
Na (Sodium)	2500	S (Sulfur)	1000
C (Carbon)	2000	Mo (Molybdenum)	20
Al (Aluminum)	1000	Ti (Titanium)	20

6020 Interference Check Soln B

AG-INTFR2-6020-ASL-1 **$ 143 / 100 mL**
AG-INTFR2-6020-ASL-5 **$ 276 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 11 comps.

Cr (Chromium)	20	As (Arsenic)	10
Co (Cobalt)	20	Cd (Cadmium)	10
Cu (Copper)	20	Se (Selenium)	10
Mn (Manganese)	20	Zn (Zinc)	10
Ni (Nickel)	20	Ag (Silver)	5
V (Vanadium)	20		

Internal Standard Mix

AG-INT-ASL-1 **$ 132 / 100 mL**
AG-INT-ASL-5 **$ 256 / 500 mL**
10 µg/mL each in 5% HNO_3 7 comps.

Bi (Bismuth)	Sc (Scandium)
Ge (Germanium)	Tb (Terbium)
In (Indium)	Y(Yttrium)
Li-6 (Lithium-6)	

ICP Internal Standard

AG-INT2-ASL-1 **$ 125 / 100 mL**
AG-INT2-ASL-5 **$ 242 / 500 mL**
100 µg/mL each in 5% HNO_3 6 comps.

Li-6 (Lithium-6)	In (Indium)
Sc (Scandium)	Tb (Terbium)
Y(Yttrium)	Bi (Bismuth)

▼ Hazardous fee not required.

Multi-Element Calibration Std. 1

AG-MECAL1-ASL-1 **$ 165 / 100 mL**
AG-MECAL1-ASL-5 **$ 320 / 500 mL**
10 µg/mL each in 5% HNO_3 17 comps.

Ce (Cerium)	Pr (Praseodymium)
Dy (Dysprosium)	Sc (Scandium)
Er (Erbium)	Sm (Samarium)
Eu (Europium)	Tb (Terbium)
Gd (Gadolinium)	Th (Thorium)
Ho (Holmium)	Tm (Thulium)
La (Lanthanum)	Y (Yttrium)
Lu (Lutetium)	Yb (Ytterbium)
Nd (Neodymium)	

Multi-Element Calibration Std. 2A

AG-MECAL2A-ASL-1 **$ 225 / 100 mL**
AG-MECAL2A-ASL-5 **$ 436 / 500 mL**
10 µg/mL each in 5% HNO_3 27 comps.

Ag (Silver)	Li (Lithium)
Al (Aluminum)	Mg (Magnesium)
As (Arsenic)	Mn (Manganese)
Ba (Barium)	Na (Sodium)
Be (Beryllium)	Ni (Nickel)
Ca (Calcium)	Pb (Lead)
Cd (Cadmium)	Rb (Rubidium)
Co (Cobalt)	Se (Selenium)
Cr (Chromium)	Sr (Strontium)
Cs (Cesium)	Tl (Thallium)
Cu (Copper)	U (Uranium)
Fe (Iron)	V (Vanadium)
Ga (Gallium)	Zn (Zinc)
K (Potassium)	

Multi-Element Calibration Std. 3

AG-MECAL3-ASL-1 **$ 132 / 100 mL**
AG-MECAL3-ASL-5 **$ 256 / 500 mL**
10 µg/mL each in 10% HCl 10 comps.

Au (Gold)	Rh (Rhodium)
Hf (Hafnium)	Ru (Ruthenium)
Ir (Iridium)	Sb (Antimony)
Pd (Palladium)	Sn (Tin)
Pt (Platinum)	Te (Tellurium)

Multi-Element Calibration Std. 4

AG-MECAL4-ASL-1 ▼ **$ 142 / 100 mL**
AG-MECAL4-ASL-5 ▼ **$ 275 / 500 mL**
10 µg/mL each in Water, tr. HF 12 comps.

B (Boron)	S (Sulfur)
Ge (Germanium)	Si (Silicon)
Mo (Molybdenum)	Ta (Tantalum)
Nb (Niobium)	Ti (Titanium)
P (Phosphorus)	W (Tungsten)
Re (Rhenium)	Zr (Zirconium)

ICP Alternate Source
Horiba/Jobin Yvon

AccuStandard equivalent of Horiba/Jobin Yvon

Instrument Calibration Standard Heavy Metals

JY-CALHM-ASL-R1-1 **$ 106 / 100 mL**
JY-CALHM-ASL-R1-5 **$ 206 / 500 mL**
At stated conc. (µg/mL) in 2-5% HNO_3 5 comps.

As (Arsenic)	100
Tl (Thallium)	100
Cd (Cadmium)	50
Se (Selenium)	50
Pb (Lead)	50

Instrument Calibration Standard

JY-CAL-ASL-1 **$ 138 / 100 mL**
JY-CAL-ASL-5 **$ 397 / 500 mL**
5000 µg/mL each in 2-5% HNO_3 4 comps.

Ca (Calcium)	K (Potassium)
Mg (Magnesium)	Na (Sodium)

Instrument Check Standard

JY-CHK-ASL-1 **$ 119 / 100 mL**
JY-CHK-ASL-5 **$ 230 / 500 mL**
50 µg/mL each in 2-5% HNO_3 9 comps.

Al (Aluminum)	K (Potassium)
As (Arsenic)	Na (Sodium)
Co (Cobalt)	P (Phosphorus)
Cr (Chromium)	Pb (Lead)
Cu (Copper)	

Instrument Check Standard 1

JY-CHK1-ASL-1 **$ 106 / 100 mL**
JY-CHK1-ASL-5 **$ 206 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 5 comps.

K (Potassium)	1500
Pb (Lead)	1000
Al (Aluminum)	500
Mg (Magnesium)	500
Cd (Cadmium)	100

Quality Control Standard 7

JY-QC7-ASL-1 **$ 106 / 100 mL**
JY-QC7-ASL-5 **$ 206 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 7 comps.

K (Potassium)	1000
Si (Silicon)	500
Al (Aluminum)	100
B (Boron)	100
Ba (Barium)	100
Na (Sodium)	100
Ag (Silver)	50

Quality Control Standard 21

JY-QC21-ASL-1 **$ 238 / 100 mL**
JY-QC21-ASL-5 **$ 461 / 500 mL**
100 µg/mL each in 2-5% HNO_3 tr. HF 21 comps.

As (Arsenic)	Mo (Molybdenum)
Be (Beryllium)	Ni (Nickel)
Ca (Calcium)	Pb (Lead)
Cd (Cadmium)	Sb (Antimony)
Co (Cobalt)	Se (Selenium)
Cr (Chromium)	Sr (Strontium)
Cu (Copper)	Ti (Titanium)
Fe (Iron)	Tl (Thallium)
Li (Lithium)	V (Vanadium)
Mg (Magnesium)	Zn (Zinc)
Mn (Manganese)	

Quality Control Standard 23

JY-QC23-ASL-1 **$ 284 / 100 mL**
JY-QC23-ASL-5 **$ 550 / 500 mL**
1000 µg/mL each in 2-5% HNO_3 23 comps.

Ag (Silver)	In (Indium)
Al (Aluminum)	K (Potassium)
B (Boron)	Li (Lithium)
Ba (Barium)	Mg (Magnesium)
Bi (Bismuth)	Mn (Manganese)
Cd (Cadmium)	Na (Sodium)
Ca (Calcium)	Ni (Nickel)
Cr (Chromium)	Pb (Lead)
Co (Cobalt)	Sr (Strontium)
Cu (Copper)	Tl (Thallium)
Fe (Iron)	Zn (Zinc)
Ga (Gallium)	

ICP Alternate Source
Perkin Elmer

AccuStandard equivalent of Perkin Elmer

Alternate Interferents A
PE-ALTINTA-ASL-1 **$ 125 / 100 mL**
PE-ALTINTA-ASL-5 **$ 242 / 500 mL**
1000 µg/mL each in 5% HNO_3 tr. HF 6 comps.

Cr (Chromium)	Ni (Nickel)
Cu (Copper)	Ti (Titanium)
Mn (Manganese)	V (Vanadium)

Analytes B
PE-ANAB-ASL-1 **$ 144 / 100 mL**
PE-ANAB-ASL-5 **$ 280 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 tr. HF, tr. Tartaric acid 14 comps.

Cd (Cadmium)	100
Ni (Nickel)	100
Zn (Zinc)	100
Sb (Antimony)	60
Ba (Barium)	50
Be (Beryllium)	50
Co (Cobalt)	50
Cr (Chromium)	50
Cu (Copper)	50
Mn (Manganese)	50
V (Vanadium)	50
Ag (Silver)	20
As (Arsenic)	10
Tl (Thallium)	10

Alternate Analytes B
PE-ALTB-ASL-1 **$ 149 / 100 mL**
PE-ALTB-ASL-5 **$ 289 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 tr. HF, tr. Tartaric acid 12 comps.

Al (Aluminum)	100
As (Arsenic)	100
B (Boron)	100
Mo (Molybdenum)	100
Na (Sodium)	100
Sb (Antimony)	100
Se (Selenium)	100
Tl (Thallium)	100
Ca (Calcium)	10
Fe (Iron)	10
Mg (Magnesium)	10
Si (Silicon)	10

Instrument Calibration Std. 1
PE-CAL1-ASL-1 **$ 245 / 100 mL**
PE-CAL1-ASL-5 **$ 476 / 500 mL**
20 µg/mL each in 2% HNO_3 tr. Tartaric acid 20 comps.

Ag (Silver)	Mo (Molybdenum)
Al (Aluminum)	Ni (Nickel)
As (Arsenic)	Pb (Lead)
Ba (Barium)	Sb (Antimony)
Be (Beryllium)	Se (Selenium)
Cd (Cadmium)	Th (Thorium)
Co (Cobalt)	Tl (Thallium)
Cr (Chromium)	U (Uranium)
Cu (Copper)	V (Vanadium)
Mn (Manganese)	Zn (Zinc)

Instrument Calibration Std. 2
PE-CAL2-ASL-1 **$ 222 / 100 mL**
PE-CAL2-ASL-5 **$ 431 / 500 mL**
100 µg/mL each in 5% HNO_3 tr. HF, tr. Tartaric acid 26 comps.

Ag (Silver)	Mn (Manganese)
Al (Aluminum)	Mo (Molybdenum)
As (Arsenic)	Na (Sodium)
Ba (Barium)	Ni (Nickel)
Be (Beryllium)	Pb (Lead)
Ca (Calcium)	Sb (Antimony)
Cd (Cadmium)	Se (Selenium)
Co (Cobalt)	Sn (Tin)
Cr (Chromium)	Sr (Strontium)
Cu (Copper)	Ti (Titanium)
Fe (Iron)	Tl (Thallium)
K (Potassium)	V (Vanadium)
Mg (Magnesium)	Zn (Zinc)

Instrument Calibration Std. 3
PE-CAL3-ASL-1 **$ 94 / 100 mL**
PE-CAL3-ASL-5 **$ 181 / 500 mL**
1000 µg/mL each in 5% HNO_3 5 comps.

Fe (Iron)	Na (Sodium)
K (Potassium)	Mg (Magnesium)
Ca (Calcium)	

Instrument Calibration Std. 1
PE-CAL4-ASL-1 **$ 132 / 100 mL**
PE-CAL4-ASL-5 **$ 385 / 500 mL**
5000 µg/mL each in 5% HNO_3 4 comps.

Ca (Calcium)	Na (Sodium)
K (Potassium)	
Mg (Magnesium)	

Instrument Calibration Std. 2
PE-CAL5-ASL-1 **$ 89 / 100 mL**
PE-CAL5-ASL-5 **$ 172 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 5 comps.

Ni (Nickel)	400
Zn (Zinc)	200
Mn (Manganese)	150
Ag (Silver)	100
Cr (Chromium)	100

Instrument Calibration Std. 3
PE-CAL6-ASL-1 **$ 114 / 100 mL**
PE-CAL6-ASL-5 **$ 221 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 7 comps.

Al (Aluminum)	2000
Ba (Barium)	2000
Fe (Iron)	1000
Co (Cobalt)	500
V (Vanadium)	500
Cu (Copper)	250
Be (Beryllium)	50

Instrument Calibration Std. 4
PE-CAL7-ASL-1 **$ 79 / 100 mL**
PE-CAL7-ASL-5 **$ 152 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 5 comps.

As (Arsenic)	100
Tl (Thallium)	100
Cd (Cadmium)	50
Se (Selenium)	50
Pb (Lead)	50

Initial Calibration Verification Std.
PE-CRDL1-ASL-1 **$ 262 / 100 mL**
PE-CRDL1-ASL-5 **$ 508 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 tr. Tartaric acid 21 comps.

Ca (Calcium)	5000
Mg (Magnesium)	5000
K (Potassium)	5000
Na (Sodium)	5000
Ba (Barium)	200
Al (Aluminum)	200
Fe (Iron)	100
Sb (Antimony)	60
Co (Cobalt)	50
V (Vanadium)	50
Ni (Nickel)	40
Cu (Copper)	25
Zn (Zinc)	20
Mn (Manganese)	15
As (Arsenic)	10
Cr (Chromium)	10
Ag (Silver)	10
Tl (Thallium)	10
Cd (Cadmium)	5
Se (Selenium)	5
Pb (Lead)	3

Supplied as a 10X concentrate for better stability.

Detection Limit
PE-CRDL2-ASL-1 **$ 157 / 100 mL**
PE-CRDL2-ASL-5 **$ 305 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 tr. HF tr. Tartaric acid 15 comps.

Sb (Antimony)	120
Co (Cobalt)	100
V (Vanadium)	100
Ni (Nickel)	80
Cu (Copper)	50
Zn (Zinc)	40
Mn (Manganese)	30
Ag (Silver)	20
As (Arsenic)	20
Cr (Chromium)	20
Tl (Thallium)	20
Be (Beryllium)	10
Cd (Cadmium)	10
Se (Selenium)	10
Pb (Lead)	6

Detection Limit Standard for use with the ELAN 5000
PE-CRDL3-ASL-1 **$ 85 / 100 mL**
PE-CRDL3-ASL-5 **$ 165 / 500 mL**
1 µg/mL each in 1% HNO_3 5 comps.

Be (Beryllium)	Tl (Thallium)
Co (Cobalt)	U (Uranium)
In (Indium)	

Supplied as a 100X concentrate for better stability.

ELAN 6100 Detection Limit Solution
PE-CRDL4-ASL-1 **$ 85 / 100 mL**
PE-CRDL4-ASL-5 **$ 165 / 500 mL**
10 µg/mL each in 1% HNO_3 4 comps.

Be (Beryllium)	In (Indium)
Co (Cobalt)	U (Uranium)

Supplied as a 1000X concentrate for better stability.

ICP Alternate Source
Perkin Elmer

AccuStandard equivalent of Perkin Elmer

Instrument Check Standard 1
PE-CHK1-ASL-1 **$ 196 / 100 mL**
PE-CHK1-ASL-5 **$ 379 / 500 mL**
10 µg/mL each in 2% HNO_3 tr. HF, tr. Tartaric acid 17 comps.

Ag (Silver)
Al (Aluminum)
As (Arsenic)
Ba (Barium)
Be (Beryllium)
Cd (Cadmium)
Co (Cobalt)
Cr (Chromium)
Cu (Copper)
Mn (Manganese)
Ni (Nickel)
Pb (Lead)
Sb (Antimony)
Se (Selenium)
Tl (Thallium)
V (Vanadium)
Zn (Zinc)

Instrument Check Standard 3
PE-CHK3-ASL-1 **$ 114 / 100 mL**
PE-CHK3-ASL-5 **$ 222 / 500 mL**
200 µg/mL each in 2% HNO_3 5 comps.

Ca (Calcium)
Fe (Iron)
K (Potassium)
Mg (Magnesium)
Na (Sodium)

Instrument Check Standard 4
PE-CHK4-ASL-1 **$ 84 / 100 mL**
PE-CHK4-ASL-5 **$ 162 / 500 mL**
10 µg/mL each in 2% HNO_3 3 comps.

Mo (Molybdenum)
Th (Thorium)
U (Uranium)

Instrument Check Standard 5
PE-CHK5-ASL-1 **$ 94 / 100 mL**
PE-CHK5-ASL-5 **$ 181 / 500 mL**
10 µg/mL each in 2% HNO_3 tr. HF 4 comps.

Mo (Molybdenum)
Sn (Tin)
Sr (Strontium)
Ti (Titanium)

Multi-Element Solution 1 NEW
PE-MES1-ASL-1 **$ 105 / 100 mL**
PE-MES1-ASL-5 **$ 204 / 500 mL**
1000 µg/mL each in 5% HNO_3, 4 comps.

Al (Aluminum)
Ca (Calcium)
Fe (Iron)
Mg (Magnesium)

Multi-Element Solution 2 NEW
PE-MES2-ASL-1 **$ 94 / 100 mL**
PE-MES2-ASL-5 **$ 181 / 500 mL**
1000 µg/mL each in 5% HNO_3, 3 comps.

K (Potassium)
Na (Sodium)
P (Phosphorus)

Multi-Element Solution 3 NEW
PE-MES3-ASL-1 ▼ **$ 110 / 100 mL**
PE-MES3-ASL-5 ▼ **$ 215 / 500 mL**
1000 µg/mL each in Water tr. HF 5 comps.

Mo (Molybdenum)
Sb (Antimony)
Sn (Tin)
W (Tungsten)
Zr (Zirconium)

Multi-Element Solution 4 NEW
PE-MES4-ASL-1 **$ 170 / 100 mL**
PE-MES4-ASL-5 **$ 422 / 500 mL**
1000 µg/mL each in 5% HNO_3, 17 comps.

As (Arsenic)
Ba (Barium)
Be (Beryllium)
Cd (Cadmium)
Cr (Chromium)
Co (Cobalt)
Cu (Copper)
La (Lanthanum)
Pb (Lead)
Li (Lithium)
Mn (Manganese)
Ni (Nickel)
Sc (Scandium)
Sr (Strontium)
V (Vanadium)
Y (Yttrium)
Zn (Zinc)

Interference Check Standard 5
PE-ICS5-ASL-1 **$ 155 / 100 mL**
PE-ICS5-ASL-5 **$ 310 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 5 comps.

Ca (Calcium)	6000
Fe (Iron)	5000
Mg (Magnesium)	3000
Al (Aluminum)	1200
Na (Sodium)	1000

Interference Check Standard 18
PE-ICS18-ASL-1-SET **$ 275 / 2 x 100 mL**
PE-ICS18-ASL-5-SET **$ 534 / 2 x 500 mL**

PE-ICS18-ASL
At stated conc. (µg/mL) in 5% HNO_3 16 comps.

K (Potassium)	20000
As (Arsenic)	1000
Pb (Lead)	1000
Tl (Thallium)	1000
Se (Selenium)	500
Ag (Silver)	300
Ba (Barium)	300
Cd (Cadmium)	300
Co (Cobalt)	300
Cr (Chromium)	300
Cu (Copper)	300
Ni (Nickel)	300
V (Vanadium)	300
Zn (Zinc)	300
Mn (Manganese)	200
Be (Beryllium)	100

PE-ICS18-HG-ASL
100 µg/mL in 5% HNO_3

Hg (Mercury)

Supplied separately for better product stability.

Internal Standard Mix
PE-INT-ASL-1 **$ 127 / 100 mL**
PE-INT-ASL-5 **$ 246 / 500 mL**
10 µg/mL each in 5% HNO_3 7 comps.

Li6 (Lithium)
Sc (Scandium)
Ge (Germanium)
Y(Yttrium)
In (Indium)
Tb (Terbium)
Bi (Bismuth)

Interferents A
PE-INTA-ASL-1 **$ 199 / 100 mL**
PE-INTA-ASL-5 **$ 385 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 4 comps.

Al (Aluminum)	5000
Ca (Calcium)	5000
Mg (Magnesium)	5000
Fe (Iron)	2000

Interferents Check Solution 1
PE-INTFR1-ASL-1 **$ 255 / 100 mL**
PE-INTFR1-ASL-5 **$ 510 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 12 comps.

Cl (Chloride)	10000
C (Carbon)	2000
Al (Aluminum)	100
Ca (Calcium)	100
Fe (Iron)	100
K (Potassium)	100
Mg (Magnesium)	100
Na (Sodium)	100
P (Phosphorus)	100
S (Sulfur)	100
Mo (Molybdenum)	20
Ti (Titanium)	20

Interference Check Solution 2
PE-INTFR2-ASL-1 **$ 104 / 100 mL**
PE-INTFR2-ASL-5 **$ 202 / 500 mL**
10 µg/mL each in 2% HNO_3 9 comps.

Ag (Silver)
As (Arsenic)
Cd (Cadmium)
Co (Cobalt)
Cr (Chromium)
Cu (Copper)
Mn (Manganese)
Ni (Nickel)
Zn (Zinc)

Interference Check Standard A
PE-INTFRA-ASL-1 **$ 335 / 100 mL**
PE-INTFRA-ASL-5 **$ 665 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 tr. HF 12 comps.

Cl (Chloride)	21215
Ca (Calcium)	3000
Na (Sodium)	2500
Fe (Iron)	2500
C (Carbon)	2000
Al (Aluminum)	1000
K (Potassium)	1000
Mg (Magnesium)	1000
P (Phosphorus)	1000
S (Sulfur)	1000
Mo (Molybdenum)	20
Ti (Titanium)	20

Interference Check Standard B
PE-INTFRB-ASL-1 **$ 145 / 100 mL**
PE-INTFRB-ASL-5 **$ 281 / 500 mL**
At stated conc. (µg/mL) in 2% HNO_3 11 comps.

Co (Cobalt)	20
Cr (Chromium)	20
Cu (Copper)	20
Mn (Manganese)	20
Ni (Nickel)	20
V (Vanadium)	20
As (Arsenic)	10
Cd (Cadmium)	10
Se (Selenium)	10
Zn (Zinc)	10
Ag (Silver)	5

Interference Check Standard C
PE-INTFRC-ASL-1-SET **$ 185 / 2 x 100 mL**
PE-INTFRC-ASL-5-SET **$ 359 / 2 x 500 mL**
2 µg/mL each in 2% HNO_3 tr. HF tr. Tartaric acid 16 comps.

Sb (Antimony)
As (Arsenic)
Ba (Barium)
Be (Beryllium)
Cd (Cadmium)
Cr (Chromium)
Co (Cobalt)
Cu (Copper)
Pb (Lead)
Mn (Manganese)
Ni (Nickel)
Se (Selenium)
Ag (Silver)
Tl (Thallium)
V (Vanadium)
Zn (Zinc)

PE-INTFRC-HG-ASL
2 µg/mL in 5% HNO_3

Hg (Mercury)

Supplied separately for better product stability.

▼ Hazardous fee not required.

AccuStandard equivalent of Perkin Elmer

Mixed Calibration Standard

PE-MCS-ASL-1 **$ 125 / 100 mL**
PE-MCS-ASL-5 **$ 242 / 500 mL**
At stated conc. (µg/mL) in 2% HNO_3 10 comps.

As (Arsenic)	50
K (Potassium)	50
La (Lanthanum)	10
Li (Lithium)	10
Mn (Manganese)	10
Ni (Nickel)	10
Sr (Strontium)	10
Zn (Zinc)	10
Ba (Barium)	1
Mg (Magnesium)	1

Mixed Calibration Standard 1

PE-MCS1-ASL-1 **$ 104 / 100 mL**
PE-MCS1-ASL-5 **$ 202 / 500 mL**
At stated conc. (µg/mL) in 2% HNO_3 6 comps.

Pb (Lead)	500
Se (Selenium)	200
Cd (Cadmium)	150
Zn (Zinc)	150
Mn (Manganese)	100
Be (Beryllium)	50

Mixed Calibration Standard 2

PE-MCS2-ASL-1 **$ 94 / 100 mL**
PE-MCS2-ASL-5 **$ 181 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 5 comps.

Fe (Iron)	10000
Ba (Barium)	100
Co (Cobalt)	100
Cu (Copper)	100
V (Vanadium)	100

Mixed Calibration Standard 3

PE-MCS3-ASL-1 **$ 78 / 100 mL**
PE-MCS3-ASL-5 **$ 151 / 500 mL**
at stated conc. (µg/mL) in 2% HNO_3 tr. HF 3 comps.

As (Arsenic)	500
Mo (Molybdenum)	100
Si (Silicon)	100

Mixed Calibration Standard 4

PE-MCS4-ASL-1 **$ 106 / 100 mL**
PE-MCS4-ASL-5 **$ 205 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 6 comps.

Ca (Calcium)	1000
K (Potassium)	400
Al (Aluminum)	200
Na (Sodium)	200
Cr (Chromium)	20
Ni (Nickel)	20

Mixed Calibration Standard 5

PE-MCS5-ASL-1 **$ 89 / 100 mL**
PE-MCS5-ASL-5 **$ 173 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3, tr. HF tr. Tartaric acid 5 comps.

Mg (Magnesium)	1000
Sb (Antimony)	200
Tl (Thallium)	200
B (Boron)	100
Ag (Silver)	50

Multi-Element Calibration Standard 1

PE-MECAL1-ASL-1 **$ 93 / 100 mL**
PE-MECAL1-ASL-5 **$ 180 / 500 mL**
10 µg/mL each in 2% HNO_3 9 comps.

Be (Beryllium)	Mg (Magnesium)
Bi (Bismuth)	Ni (Nickel)
Ce (Cerium)	Pb (Lead)
Co (Cobalt)	U (Uranium)
In (Indium)	

Multi-Element Calibration Standard 2

PE-MECAL2-ASL-1 **$ 142 / 100 mL**
PE-MECAL2-ASL-5 **$ 275 / 500 mL**
10 µg/mL each in 5% HNO_3 17 comps.

Ce (Cerium)	Pr (Praseodymium)
Dy (Dysprosium)	Sm (Samarium)
Er (Erbium)	Sc (Scandium)
Eu (Europium)	Tb (Terbium)
Gd (Gadolinium)	Th (Thorium)
Ho (Holmium)	Tm (Thulium)
La (Lanthanum)	Yb (Ytterbium)
Lu (Lutetium)	Y (Yttrium)
Nd (Neodymium)	

Multi-Element Calibration Standard 3

PE-MECAL3-ASL-1-SET **$ 225 / 2 x 100 mL**
PE-MECAL3-ASL-5-SET **$ 436 / 2 x 500 mL**

PE-MECAL3-ASL
10 µg/mL each in 5% HNO_3 29 comps.

Ag (Silver)	K (Potassium)
Al (Aluminum)	Li (Lithium)
As (Arsenic)	Mg (Magnesium)
Ba (Barium)	Mn (Manganese)
Be (Beryllium)	Na (Sodium)
Bi (Bismuth)	Ni (Nickel)
Ca (Calcium)	Pb (Lead)
Cd (Cadmium)	Rb (Rubidium)
Co (Cobalt)	Se (Selenium)
Cr (Chromium)	Sr (Strontium)
Cs (Cesium)	Tl (Thallium)
Cu (Copper)	U (Uranium)
Fe (Iron)	V (Vanadium)
Ga (Gallium)	Zn (Zinc)
In (Indium)	

PE-MECAL3-HG-ASL
10 µg/mL in 5% HNO_3

Hg (Mercury)

Supplied separately for better product stability.

Multi-Element Calibration Standard 4

PE-MECAL4-ASL-1 **$ 90 / 100 mL**
PE-MECAL4-ASL-5 **$ 174 / 500 mL**
10 µg/mL each in 10% HCl 10 comps.

Au (Gold)	Rh (Rhodium)
Hf (Hafnium)	Ru (Ruthenium)
Ir (Iridium)	Sb (Antimony)
Pd (Palladium)	Sn (Tin)
Pt (Platinum)	Te (Tellurium)

Multi-Element Calibration Standard 5

PE-MECAL5-ASL-1 ▼ **$ 112 / 100 mL**
PE-MECAL5-ASL-5 ▼ **$ 217 / 500 mL**
10 µg/mL each in Water, tr. HF 12 comps.

B (Boron)	S (Sulfur)
Ge (Germanium)	Si (Silicon)
Mo (Molybdenum)	Ta (Tantalum)
Nb (Niobium)	Ti (Titanium)
P (Phosphorus)	W (Tungsten)
Re (Rhenium)	Zr (Zirconium)

Multi-Element Internal Standard

PE-MEINT-ASL-1 **$ 115 / 100 mL**
PE-MEINT-ASL-5 **$ 222 / 500 mL**
10 µg/mL each in 2% HNO_3 7 comps.

Bi (Bismuth)	Sc (Scandium)
Ho (Holmium)	Tb (Terbium)
In (Indium)	Y(Yttrium)
Li6 (Lithium)	

Memory Test 1

PE-MEM1-ASL-1 **$ 262 / 100 mL**
PE-MEM1-ASL-5 **$ 508 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 21 comps.

Al (Aluminum)	1000
Ca (Calcium)	1000
Fe (Iron)	1000
K (Potassium)	1000
Mg (Magnesium)	1000
Na (Sodium)	1000
Ag (Silver)	20
As (Arsenic)	20
Ba (Barium)	20
Be (Beryllium)	20
Cd (Cadmium)	20
Co (Cobalt)	20
Cr (Chromium)	20
Cu (Copper)	20
Mn (Manganese)	20
Ni (Nickel)	20
Pb (Lead)	20
Se (Selenium)	20
Tl (Thallium)	20
V (Vanadium)	20
Zn (Zinc)	20

Memory Test 2

PE-MEM2-ASL-1 ▼ **$ 248 / 100 mL**
PE-MEM2-ASL-5 ▼ **$ 481 / 500 mL**
At stated conc. (µg/mL) in Water, tr. HF 7 comps.

Cl (Chloride)	7200
C (Carbon)	2000
P (Phosphorus)	1000
S (Sulfur)	1000
Mo (Molybdenum)	20
Sb (Antimony)	20
Ti (Titanium)	20

▼ Hazardous fee not required

AccuStandard equivalent of Perkin Elmer

QC Standard 7 Elements

PE-QC7-ASL-1 **$ 89 / 100 mL**
PE-QC7-ASL-5 **$ 174 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 tr. HF 7 comps.

K (Potassium)	1000
Si (Silicon)	500
Al (Aluminum)	100
B (Boron)	100
Ba (Barium)	100
Na (Sodium)	100
Ag (Silver)	50

QC Standard 21 Elements

PE-QC21-ASL-1 **$ 195 / 100 mL**
PE-QC21-ASL-5 **$ 377 / 500 mL**
100 µg/mL each in 5% HNO_3, tr. HF, tr. Tartaric acid 21 comps.

As (Arsenic)
Be (Beryllium)
Ca (Calcium)
Cd (Cadmium)
Co (Cobalt)
Cr (Chromium)
Cu (Copper)
Fe (Iron)
Li (Lithium)
Mg (Magnesium)
Mn (Manganese)
Mo (Molybdenum)
Ni (Nickel)
Pb (Lead)
Sb (Antimony)
Se (Selenium)
Sr (Strontium)
Ti (Titanium)
Tl (Thallium)
V (Vanadium)
Zn (Zinc)

Primary Drinking Water Metals

PE-SDWA1-ASL-1-SET **$ 104 / 2 x 100 mL**
PE-SDWA1-ASL-5-SET **$ 202 / 2 x 500 mL**

PE-SDWA1-ASL
At stated conc. (µg/mL) in 2% HNO_3 7 comps.

Ba (Barium)	100
Ag (Silver)	10
As (Arsenic)	10
Cr (Chromium)	10
Pb (Lead)	10
Cd (Cadmium)	5
Se (Selenium)	5

PE-SDWA1-HG-ASL
10 µg/mL in 2% HNO_3

Hg (Mercury)

Supplied separately for better product stability.

Secondary Drinking Water Metals

PE-SDWA2-ASL-1 **$ 82 / 100 mL**
PE-SDWA2-ASL-5 **$ 159 / 500 mL**
At stated conc. (µg/mL) in 2% HNO_3 4 comps.

Zn (Zinc)	500
Cu (Copper)	100
Fe (Iron)	30
Mn (Manganese)	5

ELAN 6100 DRC Sensitivity/ Detection Limit Solution

PE-SENS-ASL-1 **$ 125 / 100 mL**
PE-SENS-ASL-5 **$ 242 / 500 mL**
1 µg/mL each in 2% HNO_3, tr. HCl 13 comps.

Ba (Barium)
Be (Beryllium)
Ca (Calcium)
Ce (Cerium)
Co (Cobalt)
In (Indium)
Fe (Iron)
Pb (Lead)
Mg (Magnesium)
K (Potassium)
Rh (Rhodium)
Na (Sodium)
U (Uranium)

Supplied as a 1000X concentrate for better stability.

ELAN 9000/6X00 Dual Detector Calibration Solution

PE-SETUP1-ASL-1 **$ 85 / 100 mL**
PE-SETUP1-ASL-5 **$ 165 / 500 mL**
2 µg/mL each in 2% HNO_3 tr. HCl 5 comps.

Cd (Cadmium)
Cu (Copper)
Pb (Lead)
Mg (Magnesium)
Rh (Rhodium)

Supplied as a 10X concentrate for better stability.

ELAN 6000/5000 Plasma Setup Solution

PE-SETUP2-ASL-1 **$ 95 / 100 mL**
PE-SETUP2-ASL-5 **$ 185 / 500 mL**
1 µg/mL each in 1% HNO_3 tr. HCl 11 comps.

Ba (Barium)
Cd (Cadmium)
Ce (Cerium)
Cu (Copper)
Ge (Germanium)
Pb (Lead)
Mg (Magnesium)
Rh (Rhodium)
Sc (Scandium)
Tb (Terbium)
Tl (Thallium)

Supplied as a 100X concentrate for better stability.

SmartTune Solution for ELAN/DRC-e

PE-SMTUNE-ASL-1 **$ 95 / 100 mL**
PE-SMTUNE-ASL-5 **$ 185 / 500 mL**
1 µg/mL each in 2% HNO_3 tr. HCl 9 comps.

Ba (Barium)
Be (Beryllium)
Ce (Cerium)
Co (Cobalt)
In (Indium)
Pb (Lead)
Mg (Magnesium)
Rh (Rhodium)
U (Uranium)

Supplied as a 100X concentrate for better stability.

SmartTune Solution for DRC/ DRC^{Plus}/DRC II

PE-SMTUNE2-ASL-1 **$ 105 / 100 mL**
PE-SMTUNE2-ASL-5 **$ 204 / 500 mL**
At stated conc. (µg/mL) in 0.5% HNO_3 10 comps.

Ba (Barium)	10
Be (Beryllium)	1
Ce (Cerium)	1
Co (Cobalt)	1
In (Indium)	1
Fe (Iron)	1
Pb (Lead)	1
Mg (Magnesium)	1
Th (Thorium)	1
U (Uranium)	1

Supplied as a 1000X concentrate for better stability.

Spike Sample Analysis

PE-SPIKE-ASL-1 **$ 195 / 100 mL**
PE-SPIKE-ASL-5 **$ 378 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3, tr. HF, tr. Tartaric acid 18 comps.

Al (Aluminum)	200
As (Arsenic)	200
Ba (Barium)	200
Se (Selenium)	200
Tl (Thallium)	200
Fe (Iron)	100
Co (Cobalt)	50
Mn (Manganese)	50
Ni (Nickel)	50
Pb (Lead)	50
Sb (Antimony)	50
V (Vanadium)	50
Zn (Zinc)	50
Cu (Copper)	25
Cr (Chromium)	20
Ag (Silver)	5
Be (Beryllium)	5
Cd (Cadmium)	5

Spike Sample Standard I (Water)

PE-SPIKE1-ASL-1 **$ 175 / 100 mL**
PE-SPIKE1-ASL-5 **$ 339 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3, tr. HF, tr. Tartaric acid 17 comps.

Fe (Iron)	500
Ba (Barium)	250
Zn (Zinc)	250
Co (Cobalt)	100
Cr (Chromium)	100
Cu (Copper)	100
Mn (Manganese)	100
Ni (Nickel)	100
Sb (Antimony)	100
V (Vanadium)	100
As (Arsenic)	50
Pb (Lead)	50
Ag (Silver)	25
Be (Beryllium)	25
Cd (Cadmium)	25
Se (Selenium)	25
Tl (Thallium)	25

Spike Sample Standard II (Soil)

PE-SPIKE2-ASL-1 **$ 140 / 100 mL**
PE-SPIKE2-ASL-5 **$ 271 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3, tr. HF, tr. Tartaric acid 15 comps.

Ba (Barium)	250
Cr (Chromium)	250
Cu (Copper)	250
Zn (Zinc)	250
V (Vanadium)	150
Ni (Nickel)	125
Co (Cobalt)	100
Pb (Lead)	100
Sb (Antimony)	100
As (Arsenic)	50
Cd (Cadmium)	50
Ag (Silver)	25
Be (Beryllium)	25
Se (Selenium)	25
Tl (Thallium)	25

Spike Sample Standard III (for ILM 05.2)

PE-SPIKE3-ASL-1 **$ 167 / 100 mL**
PE-SPIKE3-ASL-5 **$ 324 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3, tr. HF, tr. Tartaric acid 17 comps.

Al (Aluminum)	200
Ba (Barium)	200
Co (Cobalt)	50
Mn (Manganese)	50
Ni (Nickel)	50
V (Vanadium)	50
Zn (Zinc)	50
Cu (Copper)	25
Cr (Chromium)	20
Sb (Antimony)	10
Be (Beryllium)	5
Cd (Cadmium)	5
Ag (Silver)	5
Tl (Thallium)	5
As (Arsenic)	4
Pb (Lead)	2
Se (Selenium)	1

AccuStandard equivalent of Perkin Elmer

ELAN 9000/6100 Setup/Stab/ Masscal Solution

PE-STAB-ASL-1 **$ 95 / 100 mL**
PE-STAB-ASL-5 **$ 185 / 500 mL**
1 µg/mL each in 1% HNO_3 tr. HCl 9 comps.

Ba (Barium)	Pb (Lead)
Cd (Cadmium)	Mg (Magnesium)
Ce (Cerium)	Rh (Rhodium)
Cu (Copper)	U (Uranium)
In (Indium)	

Supplied as a 100X concentrate for better stability.

Tuning Solution I

PE-TUNSOL-ASL-1 **$ 145 / 100 mL**
PE-TUNSOL-ASL-5 **$ 281 / 500 mL**
10 µg/mL each in 2% HNO_3, tr. HCl 12 comps.

Ba (Barium)	Mg (Magnesium)
Be (Beryllium)	Pb (Lead)
Ce (Cerium)	Rh (Rhodium)
Co (Cobalt)	Tl (Thallium)
In (Indium)	U (Uranium)
Li (Lithium)	Y(Yttrium)

Low UV Standard

PE-UV-ASL-1 **$ 77 / 100 mL**
PE-UV-ASL-5 **$ 149 / 500 mL**
10 µg/mL each in 2% HNO_3 3 comps.

Al (Aluminum)	S (Sulfur)
P (Phosphorus)	

Save up to 50%

AccuStandard is not affiliated with the companies and brands on these pages. The brands and company names appear for the purpose of cross reference with the corresponding AccuStandard products.

VIS Wavecal Solution

PE-VISWAVE-ASL-1 **$ 76 / 100 mL**
PE-VISWAVE-ASL-5 **$ 148 / 500 mL**
At stated conc. (µg/mL) in 2% HNO_3 8 comps.

K (Potassium)	50
La (Lanthanum)	10
Li (Lithium)	10
Mn (Manganese)	10
Na (Sodium)	10
Sr (Strontium)	10
Ba (Barium)	1
Ca (Calcium)	1

UV Wavecal Solution

PE-UVWAVE-ASL-R1-1 **$ 115 / 100 mL**
PE-UVWAVE-ASL-R1-5 **$ 225 / 500 mL**
At stated conc. (µg/mL) in 5% HCl 12 comps.

K (Potassium)	100
P (Phosphorus)	100
S (Sulfur)	100
As (Arsenic)	20
La (Lanthanum)	20
Li (Lithium)	20
Mn (Manganese)	20
Mo (Molybdenum)	20
Na (Sodium)	20
Ni (Nickel)	20
Sc (Scandium)	20
Ca (Calcium)	1

Initial Calibration Verification Standard 1

PE-VER1-ASL-1 **$ 272 / 100 mL**
PE-VER1-ASL-5 **$ 528 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 tr. Tartaric acid 26 comps.

Fe (Iron)	1000
K (Potassium)	1000
Ca (Calcium)	1000
Na (Sodium)	1000
Mg (Magnesium)	1000
Sr (Strontium)	1000
Ag (Silver)	10
Al (Aluminum)	10
As (Arsenic)	10
Ba (Barium)	10
Be (Beryllium)	10
Cd (Cadmium)	10
Co (Cobalt)	10
Cr (Chromium)	10
Cu (Copper)	10
Mn (Manganese)	10
Mo (Molybdenum)	10
Ni (Nickel)	10
Pb (Lead)	10
Sb (Antimony)	10
Se (Selenium)	10
Tl (Thallium)	10
V (Vanadium)	10
Zn (Zinc)	10
Th (Thorium)	10
U (Uranium)	10

Initial Calibration Verification Standard 2

PE-VER2-ASL-R1-1 **$ 73 / 100 mL**
PE-VER2-ASL-R1-5 **$ 142 / 500 mL**
10 µg/mL each in 2% HNO_3 tr. HF 2 comps.

Sn (Tin)	Ti (Titanium)

Trace Metals I

PE-WPTM1-ASL-1-SET **$ 137 / 2 x 100 mL**
PE-WPTM1-ASL-5-SET **$ 266 / 2 x 500 mL**

PE-WPTM1-ASL
At stated conc. (µg/mL) in 5% HNO_3 14 comps.

Al (Aluminum)	500
V (Vanadium)	250
As (Arsenic)	100
Be (Beryllium)	100
Co (Cobalt)	100
Cr (Chromium)	100
Cu (Copper)	100
Fe (Iron)	100
Mn (Manganese)	100
Ni (Nickel)	100
Pb (Lead)	100
Zn (Zinc)	100
Cd (Cadmium)	25
Se (Selenium)	25

PE-WPTM1-HG-ASL
10 µg/mL in 5% HNO_3

Hg (Mercury)

Supplied separately for better product stability.

Trace Metals II

PE-WPTM2-ASL-1 **$ 68 / 100 mL**
PE-WPTM2-ASL-5 **$ 131 / 500 mL**
At stated conc. (µg/mL) in 2% HNO_3 3 comps.

Sb (Antimony)	20
Tl (Thallium)	20
Ag (Silver)	10

Trace Metals III

PE-WPTM3-ASL-1 **$ 104 / 100 mL**
PE-WPTM3-ASL-5 **$ 202 / 500 mL**
At stated conc. (µg/mL) in 2% HNO_3 6 comps.

Ba (Barium)	500
Ca (Calcium)	500
Mo (Molybdenum)	500
Na (Sodium)	500
K (Potassium)	100
Mg (Magnesium)	100

Alternate Metals 1

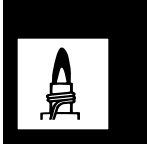
PE-WPAM1-ASL-1 **$ 129 / 100 mL**
PE-WPAM1-ASL-5 **$ 250 / 500 mL**
At stated conc. (µg/mL) in 2% HNO_3 11 comps.

Al (Aluminum)	20
Fe (Iron)	20
V (Vanadium)	20
Co (Cobalt)	10
Cu (Copper)	10
Mn (Manganese)	10
Ni (Nickel)	10
Zn (Zinc)	10
Be (Beryllium)	5
Sb (Antimony)	5
Tl (Thallium)	5

Alternate Metals 3

PE-WPAM3-ASL-1 **$ 79 / 100 mL**
PE-WPAM3-ASL-5 **$ 152 / 500 mL**
At stated conc. (µg/mL) in 2% HNO_3 4 comps.

Ca (Calcium)	500
Na (Sodium)	500
K (Potassium)	100
Mg (Magnesium)	100



AccuStandard equivalent of Teledyne

Check Mate 1

TELE-CHK1-ASL-1-SET **$ 205 / 2 x 100 mL**
TELE-CHK1-ASL-5-SET **$ 398 / 2 x 500 mL**

TELE-CHK1-ASL
At stated conc. (µg/mL) in 5% HCl, 1% HNO_3 24 comps.

Ca (Calcium)	100
K (Potassium)	100
Mg (Magnesium)	100
Na (Sodium)	100
Al (Aluminum)	10
As (Arsenic)	10
B (Boron)	10
Ba (Barium)	10
Be (Beryllium)	10
Cd (Cadmium)	10
Co (Cobalt)	10
Cr (Chromium)	10
Cu (Copper)	10
Fe (Iron)	10
Mn (Manganese)	10
Mo (Molybdenum)	10
Ni (Nickel)	10
Pb (Lead)	10
Sb (Antimony)	10
Se (Selenium)	10
Si (Silicon)	10
Tl (Thallium)	10
V (Vanadium)	10
Zn (Zinc)	10

TELE-CHK1-AG-ASL
1000 µg/mL in 2% HNO_3

Ag (Silver)

Supplied separately for better product stability.

Check Mate 2

TELE-CHK2-ASL-1-SET **$ 140 / 2 x 100 mL**
TELE-CHK2-ASL-5-SET **$ 272 / 2 x 500 mL**

TELE-CHK2-ASL
At stated conc. (µg/mL) in 5% HCl, 1% HNO_3 17 comps.

Ca (Calcium)	100
K (Potassium)	100
Mg (Magnesium)	100
Na (Sodium)	100
Al (Aluminum)	10
Ba (Barium)	10
Be (Beryllium)	10
Cd (Cadmium)	10
Co (Cobalt)	10
Cr (Chromium)	10
Cu (Copper)	10
Fe (Iron)	10
Mn (Manganese)	10
Ni (Nickel)	10
Sb (Antimony)	10
V (Vanadium)	10
Zn (Zinc)	10

TELE-CHK2-AG-ASL
1000 µg/mL in 2% HNO_3

Ag (Silver)

Supplied separately for better product stability.

Check Mate 3

TELE-CHK3-ASL-1-SET **$ 140 / 2 x 100 mL**
TELE-CHK3-ASL-5-SET **$ 271 / 2 x 500 mL**

TELE-CHK3-ASL
At stated conc. (µg/mL) in 5% HCl, 1% HNO_3 17 comps.

Ca (Calcium)	10
K (Potassium)	10
Mg (Magnesium)	10
Na (Sodium)	10
Al (Aluminum)	1
Ba (Barium)	1
Be (Beryllium)	1
Cd (Cadmium)	1
Co (Cobalt)	1
Cr (Chromium)	1
Cu (Copper)	1
Fe (Iron)	1
Mn (Manganese)	1
Ni (Nickel)	1
Sb (Antimony)	1
V (Vanadium)	1
Zn (Zinc)	1

TELE-CHK3-AG-ASL
1000 µg/mL in 2% HNO_3

Ag (Silver)

Supplied separately for better product stability.

Check Mate 4

TELE-CHK4-ASL-1 **$ 225 / 100 mL**
TELE-CHK4-ASL-5 **$ 436 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 22 comps.

Ca (Calcium)	5000
K (Potassium)	5000
Mg (Magnesium)	5000
Na (Sodium)	5000
Ba (Barium)	200
Fe (Iron)	100
Al (Aluminum)	60
Sb (Antimony)	60
Co (Cobalt)	50
V (Vanadium)	50
Ni (Nickel)	40
Cu (Copper)	25
Zn (Zinc)	20
Mn (Manganese)	15
Ag (Silver)	10
As (Arsenic)	10
Cr (Chromium)	10
Tl (Thallium)	10
Be (Beryllium)	5
Cd (Cadmium)	5
Pb (Lead)	5
Se (Selenium)	5

Check Mate 5

TELE-CHK5-ASL-1 **$ 179 / 100 mL**
TELE-CHK5-ASL-5 **$ 346 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 16 comps.

Ca (Calcium)	2000
K (Potassium)	2000
Mg (Magnesium)	2000
Na (Sodium)	2000
Al (Aluminum)	1000
Ba (Barium)	1000
Fe (Iron)	1000
Co (Cobalt)	500
Ni (Nickel)	500
V (Vanadium)	500
Cr (Chromium)	200
Cu (Copper)	200
Ag (Silver)	100
Be (Beryllium)	100
Mn (Manganese)	100
Zn (Zinc)	100

Check Mate 6

TELE-CHK6-ASL-1 **$ 91 / 100 mL**
TELE-CHK6-ASL-5 **$ 176 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 5 comps.

As (Arsenic)	500
Pb (Lead)	500
Se (Selenium)	500
Tl (Thallium)	500
Cd (Cadmium)	100

Check Mate 7

TELE-CHK7-ASL-1 **$ 140 / 100 mL**
TELE-CHK7-ASL-5 **$ 272 / 500 mL**
At stated conc. (µg/mL) in 5% HCl, 1% HNO_3 17 comps.

Ca (Calcium)	50
K (Potassium)	50
Mg (Magnesium)	50
Na (Sodium)	50
Al (Aluminum)	5
Ba (Barium)	5
Be (Beryllium)	5
Cd (Cadmium)	5
Co (Cobalt)	5
Cr (Chromium)	5
Cu (Copper)	5
Fe (Iron)	5
Mn (Manganese)	5
Ni (Nickel)	5
Sb (Antimony)	5
V (Vanadium)	5
Zn (Zinc)	5

Check Mate 8

TELE-CHK8-ASL-0.1X-1 **$ 195 / 100 mL**
TELE-CHK8-ASL-0.1X-5 **$ 378 / 500 mL**
At stated conc. (µg/mL) in 5% HNO_3 22 comps.

Ca (Calcium)	500
K (Potassium)	500
Na (Sodium)	500
Mg (Magnesium)	500
Al (Aluminum)	200
Ba (Barium)	200
Fe (Iron)	100
Sb (Antimony)	60
Co (Cobalt)	50
V (Vanadium)	50
Ni (Nickel)	40
Cu (Copper)	25
Zn (Zinc)	20
Mn (Manganese)	15
Ag (Silver)	10
As (Arsenic)	10
Cr (Chromium)	10
Tl (Thallium)	10
Be (Beryllium)	5
Cd (Cadmium)	5
Pb (Lead)	5
Se (Selenium)	5

Supplied at a 1:10 dilution for better long-term stability.

EU Formulation

Scope: For the determination of 32 elements by ICP (Inductively Coupled Plasma)

DIN EN ISO 11885 - 32 Element ICP Standard Set

DINENISO-11885-1-SET **$ 245 / 2 x 100 mL**
DINENISO-11885-5-SET **$480 / 2 x 500 mL**

Part 1

DINENISO-11885A-1 **100 mL**
DINENISO-11885A-5 **500 mL**
At stated conc. (µg/mL) in 2-5% HNO_3 tr. HF
24 comps.

Ag (Silver)	20
Al (Aluminum)	40
As (Arsenic)	80
Ba (Barium)	2
Be (Beryllium)	2
Bi (Bismuth)	40
Ca (Calcium)	2
Cd (Cadmium)	10
Co (Cobalt)	10
Cr (Chromium)	10
Cu (Copper)	10
Fe (Iron)	20
K (Potassium)	50
Li (Lithium)	2
Mg (Magnesium)	1
Mn (Manganese)	2
Na (Sodium)	20
Ni (Nickel)	50
Pb (Lead)	50
Sb (Antimony)	50
Se (Selenium)	50
Sr (Strontium)	0.5
V (Vanadium)	10
Zn (Zinc)	5

Part 2

DINENISO-11885B-1 **100 mL**
DINENISO-11885B-5 **500 mL**
At stated conc. (µg/mL) in 2-5% HNO_3 tr. HF
8 comps.

B (Boron)	5
Mo (Molybdenum)	30
P (Phosphorus)	50
S (Sulfur)	50
Si (Silicon)	20
Sn (Tin)	50
Ti (Titanium)	5
Zr (Zirconium)	10

ASTM D5184 Aluminum and Silicon in Fuel Oils by Ashing, Fusion, ICP-AES Spectrometry & AA Spectrometry

Tartaric Acid / Hydrochloric Acid Solution

D-5184-91-TA-5 **$ 20 / 1 x 500 mL**

Tartaric acid @ 0.5% w/v in 4% HCl

Silicon Standard Solution

D-5184-91-SI-1 ▼ **$ 34 / 1 x 100 mL**
D-5184-91-SI-5 ▼ **$ 67 / 1 x 500 mL**

Silicon @ 1000 µg/mL in water tr. NaOH

Aluminum Standard Solution

D-5184-91-AL-1 **$ 34 / 1 x 100 mL**
D-5184-91-AL-5 **$ 67 / 1 x 500 mL**

Aluminum @ 1000 µg/mL in 5 % HCl

Technical Note

Contact our Technical Service Department for **Ready-to-Aspirate** working level calibration curves designed for your laboratories' specific calibration ranges.

ASTM D5600 Trace Metals in Petroleum Coke by ICP-AES

Multi-Element Calibration Standard

D-5600-01-1 **$ 225 / 1 x 100 mL**
500 µg/mL each in 2-5% HNO_3 tr. HF 12 comps.

Aluminum	Nickel
Barium	Silicon
Calcium	Sodium
Iron	Titanium
Magnesium	Vanadium
Manganese	Zinc

Hydrochloric Acid Diluent

D-5600-BLH-5 **$ 50 / 1 x 500 mL**
D-5600-BLH-L-VAP **$ 65 / L (2 x 500 mL)**

20% HCl in ASTM Type I water

Lithium Borate Diluent

D-5600-LIB-1 **$ 125 / 1 x 100 mL**
D-5600-LIB-5 **$ 180 / 1 x 500 mL**

2.0% Lithium Borate in 10% HCl

Technical Note

D5600 Ready-to-Aspirate Standards
We have formulated the following stock standards for ASTM Method D5600. We have prepared numerous **Ready-to-Aspirate** ICP multi-element solutions. Should your company want to eliminate the preparation process for Inorganic standards, contact our Inorganic Technical Department for a quote on a **Ready-to-Aspirate** working level Inorganic standards.

▼ Hazardous fee not required.

ICP/MS
Multi-Element Standards

■ **Ultra Pure Matrix** ■ **Special Packaging** ■ **Traceability to National Reference Materials**

AccuStandard's ICP/MS Standards are formulated to meet the needs of this very special instrument. As matrix effect is of utmost concern, each standard is formulated in specially purified 18 megohm de-ionized water and ultra pure acids. After both wet chemical and instrumental analysis, the standards are packaged in acid leached FLPE containers to provide required protection.

Calibration Standards

These five standards encompass the entire range of elements all at 10 ppm.

Calibration Standard 1

ICP-MS-CAL1-1 **$ 110 / 100 mL**
10 µg/mL each in 5% HNO_3 17 comps.

Element	Most Abundant Isotope
Ce (Cerium)	140
Dy (Dysprosium)	164
Er (Erbium)	166
Eu (Europium)	153
Gd (Gadolinium)	158
Ho (Holmium)	165
La (Lanthanum)	139
Lu (Lutetium)	175
Nd (Neodymium)	143
Pr (Praseodymium)	141
Sm (Samarium)	152
Sc (Scandium)	45
Tb (Terbium)	159
Th (Thorium)	232
Tm (Thulium)	169
Yb (Ytterbium)	174
Y (Yttrium)	89

Calibration Standard 4

ICP-MS-CAL4-1 ▼ **$ 95 / 100 mL**
10 µg/mL each in H_2O tr. HF 12 comps.

Element	Most Abundant Isotope
B (Boron)	11
Ge (Germanium)	74
Mo (Molybdenum)	98
Nb (Niobium)	93
P (Phosphorous)	31
Re (Rhenium)	187
Si (Silicon)	28
S (Sulphur)	32
Ta (Tantalum)	181
Ti (Titanium)	48
W (Tungsten)	184
Zr (Zirconium)	90

Calibration Standard 2

ICP-MS-CAL2-1 **$ 180 / 100 mL**
10 µg/mL each in 5% HNO_3 29 comps.

Element	Most Abundant Isotope
Al (Aluminum)	27
As (Arsenic)	75
Ba (Barium)	138
Be (Beryllium)	9
Bi (Bismuth)	209
Cd (Cadmium)	114
Ca (Calcium)	40
Cs (Cesium)	133
Cr (Chromium)	52
Co (Cobalt)	59
Cu (Copper)	63
Ga (Gallium)	69
In (Indium)	115
Fe (Iron)	56
Pb (Lead)	208
Li (Lithium)	7
Mg (Magnesium)	24
Mn (Manganese)	55
Ni (Nickel)	58
K (Potassium)	39
Rb (Rubidium)	85
Se (Selenium)	80
Ag (Silver)	107
Na (Sodium)	23
Sr (Strontium)	88
Tl (Thallium)	205
U (Uranium)	238
V (Vanadium)	51
Zn (Zinc)	64

Calibration Standard Set

ICP-MS-CAL-1-SET **$ 390 / 5 x 100 mL**

ICP-MS-CAL1-1
ICP-MS-CAL2-1
ICP-MS-CAL3-1
ICP-MS-CAL4-1
ICP-MS-CAL5-1

Calibration Standard 3

ICP-MS-CAL3-1 **$ 80 / 100 mL**
10 µg/mL each in 10% HCl 10 comps.

Element	Most Abundant Isotope
Sb (Antimony)	121
Au (Gold)	197
Hf (Hafnium)	180
Ir (Iridium)	193
Pd (Palladium)	106
Pt (Platinum)	195
Rh (Rhodium)	103
Ru (Ruthenium)	102
Te (Tellurium)	130
Sn (Tin)	120

Calibration Standard 5

ICP-MS-CAL5-1 **$ 30 / 100 mL**
10 µg/mL in 5% HNO_3

Element	Most Abundant Isotope
Hg *(Mercury)*	202

TRACEABLE AccuTrace™ Reference Standards CERTIFIED

Matrix Blanks

Nitric Acid Blank

ICP-MS-BLN-1 **$ 30 / 100 mL**
ICP-MS-BLN-5 **$ 45 / 500 mL**

5% HNO_3 in 18 Megohm ASTM Type I deionized Water

Hydrochloric Acid Blank

ICP-MS-BLH-1 **$ 30 / 100 mL**
ICP-MS-BLH-5 **$ 45 / 500 mL**

5% HCl in 18 Megohm ASTM Type I deionized Water

These blanks are prepared from the same water source and acids as your standards and therefore provide a consistent matrix. They are excellent as a blank, preparing a standard curve, or as a diluent for standards and samples.

Water Blank

ICP-MS-BLW-1 ▼ **$ 30 / 100 mL**
ICP-MS-BLW-5 ▼ **$ 40 / 500 mL**

18 Megohm ASTM Type I deionized Water

▼ Hazardous fee not required.

Tuning Solutions

We offer two tuning solutions, both range from 7-238 mass units. Choose the one which best suits your needs.

ICP-MS-TUNSOL1-1 **$ 100 / 100 mL**
100 µg/mL each in 2% HNO_3 8 comps.

Element	Most Abundant Isotope
Ba (Barium)	138
Be (Beryllium)	9
Cu (Copper)	63
In (Indium)	115
Li (Lithium)	7
Mg (Magnesium)	24
Tl (Thallium)	205
U (Uranium)	238

ICP-MS-TUNSOL2-1 **$ 165 / 100 mL**
100 µg/mL each in 2% HNO_3 13 comps.

Element	Most Abundant Isotope
Ba (Barium)	138
Be (Beryllium)	9
Bi (Bismuth)	209
Ce (Cerium)	140
Cu (Copper)	63
Ho (Holmium)	165
In (Indium)	115
Pb (Lead)	208
Li (Lithium)	7
Mg (Magnesium)	24
Tl (Thallium)	205
U (Uranium)	238
Y (Yttrium)	89

Interference Check Standards

Solution A

ICP-MS-INTA-1 **$ 310 / 100 mL**
At stated conc. (µg/mL) in 1% HNO_3 12 comps.

Element	µg/mL	Most Abundant Isotope
Al (Aluminum)	1000	27
C (Carbon)	2000	12
Ca (Calcium)	3000	40
Cl (Chloride)	18000	35
Fe (Iron)	2500	56
Mg (Magnesium)	1000	24
Mo (Molybdenum)	20	98
P (Phosphorous)	1000	31
K (Potassium)	1000	39
Na (Sodium)	2500	23
S (Sulphur)	1000	32
Ti (Titanium)	20	48

Solution B

ICP-MS-INTB-1 **$ 95 / 100 mL**
At stated conc. (µg/mL) in 2% HNO_3 11 comps.

Element	µg/mL	Most Abundant Isotope
As *(Arsenic)*	10	75
Cd *(Cadmium)*	10	114
C *(Carbon)*	20	12
Cr *(Chromium)*	20	52
Cu *(Copper)*	20	63
Mn *(Manganese)*	20	55
Ni *(Nickel)*	20	58
Se *(Selenium)*	10	80
Ag *(Silver)*	20	107
V *(Vanadium)*	20	51
Zn *(Zinc)*	10	64

Interference Check Standard Set

ICP-MS-INT-1-SET **$ 350 / 2 x 100 mL**

ICP-MS-INTA-1 ICP-MS-INTB-1

Memory Check Solution

Memory Check Solution Sets

ICP-MS-MEMCHKA-R1-SET
$ 215 / 2 x 100 mL
ICP-MS-MEMCHKA1-R1
ICP-MS-MEMCHKA2-R1

ICP-MS-MEMCHK-R1-SET
$ 250 / 3 x 100 mL
ICP-MS-MEMCHKA1-R1
ICP-MS-MEMCHKA2-R1
ICP-MS-MEMCHKB-R1

Solution A

ICP-MS-MEMCHKA1-R1 **100 mL**
At stated conc. (µg/mL) in 2% HNO_3 24 comps.

Element	µg/mL	Most Abundant Isotope
Al (Aluminum)	1000	27
Sb (Antimony)	20	121
As (Arsenic)	20	75
Ba (Barium)	20	138
Be (Beryllium)	20	9
Cd (Cadmium)	20	114
Ca (Calcium)	1000	40
C (Carbon)	2000	12
Cr (Chromium)	20	52
Co (Cobalt)	20	59
Cu (Copper)	20	63
Fe (Iron)	1000	56
Pb (Lead)	20	208
Mg (Magnesium)	1000	24
Mo (Molybdenum)	20	98
K (Potassium)	1000	39
Ti (Titanium)	20	48
Mn (Manganese)	20	55
Ni (Nickel)	20	58
Se (Selenium)	20	80
Na (Sodium)	1000	23
Tl (Thallium)	20	205
V (Vanadium)	20	51
Zn (Zinc)	20	64

ICP-MS-MEMCHKA2-R1 **100 mL**
20 µg/mL In 2% HNO_3

Element	Most Abundant Isotope
Ag (Silver)	107

Solution B

ICP-MS-MEMCHKB-R1 ▼ **$ 60 / 100 mL**
At stated conc. (µg/mL) in H_2O 3 comps.

Element	µg/mL	Most Abundant Isotope
Cl (Chloride)	7200	35
P (Phosphorous)	1000	31
S (Sulphur)	1000	32

Technical Note

These memory check solutions are not designed to be used as standards. The solutions should be mixed together right before aspiration. Precipitate will form over time - this is normal and will not affect the performance of the solution. The mixture is used only to determine the memory or "carry-over" that occurs after running a "concentrated" solution.

▼ Hazardous fee not required.

Spiking Standards

Spiking Standard for Water

ICP-MS-SPIKE-W-1 **$ 130 / 100 mL**

At stated conc. (µg/mL) in 5% HNO_3 17 comps.

Element	µg/mL	Most Abundant Isotope
Sb (Antimony)	100	121
As (Arsenic)	50	75
Ba (Barium)	250	138
Be (Beryllium)	25	9
Cd (Cadmium)	25	114
Cr (Chromium)	100	52
Co (Cobalt)	100	59
Cu (Copper)	100	63
Fe (Iron)	500	56
Pb (Lead)	50	208
Mn (Manganese)	100	55
Ni (Nickel)	100	58
Se (Selenium)	25	80
Ag (Silver)	25	107
Tl (Thallium)	25	205
V (Vanadium)	100	51
Zn (Zinc)	250	64

Spiking Standard for Soil

ICP-MS-SPIKE-S-1 **$ 100 / 100 mL**

At stated conc. (µg/mL) in 5% HNO_3 15 comps.

Element	µg/mL	Most Abundant Isotope
Sb (Antimony)	100	121
As (Arsenic)	50	75
Ba (Barium)	250	138
Be (Beryllium)	25	9
Cd (Cadmium)	50	114
Cr (Chromium)	250	52
Co (Cobalt)	100	59
Cu (Copper)	250	63
Pb (Lead)	100	208
Ni (Nickel)	125	58
Se (Selenium)	25	80
Ag (Silver)	25	107
Tl (Thallium)	25	205
V (Vanadium)	150	51
Zn (Zinc)	250	90

Spiking Standard Set

ICP-MS-SPIKE-1-SET **$ 165 / 2 x 100 mL**

ICP-MS-SPIKE-W-1 ICP-MS-SPIKE-S-1

Quality Control

Sample 1

ICP-MS-QC1-1 **$ 63 / 100 mL**

10 µg/mL each in 2% HNO_3 9 comps.

Element	Most Abundant Isotope
Be (Beryllium)	9
Bi (Bismuth)	209
Ce (Cerium)	140
Co (Cobalt)	59
In (Indium)	115
Pb (Lead)	208
Mg (Magnesium)	24
Ni (Nickel)	58
U (Uranium)	238

Sample 2

ICP-MS-QC2-1 **$ 170 / 100 mL**

10 µg/mL each in 5% HNO_3 25 comps

Element	Most Abundant Isotope
Al (Aluminum)	27
Sb (Antimony)	121
As (Arsenic)	75
Ba (Barium)	138
Be (Beryllium)	9
Cd (Cadmium)	114
Ca (Calcium)	40
Cr (Chromium)	52
Co (Cobalt)	59
Cu (Copper)	63
Fe (Iron)	56
Pb (Lead)	208
Mg (Magnesium)	24
Mn (Manganese)	55
Mo (Molybdenum)	98
Ni (Nickel)	56
K (Potassium)	39
Se (Selenium)	80
Ag (Silver)	107
Na (Sodium)	23
Tl (Thallium)	205
Th (Thorium)	232
U (Uranium)	238
V (Vanadium)	51
Zn (Zinc)	64

Sample 3

ICP-MS-QC3-1 **$ 250 / 100 mL**

10 µg/mL each in 5% HNO_3 tr. HF 21 comps.

Element	Most Abundant Isotope
Sb (Antimony)	121
As (Arsenic)	75
Be (Beryllium)	9
Cd (Cadmium)	114
Ca (Calcium)	40
Cr (Chromium)	52
Co (Cobalt)	59
Cu (Copper)	63
Fe (Iron)	56
Pb (Lead)	208
Li (Lithium)	7
Mg (Magnesium)	24
Mn (Manganese)	55
Mo (Molybdenum)	98
Ni (Nickel)	58
Se (Selenium)	80
Sr (Strontium)	88
Tl (Thallium)	205
Ti (Titanium)	48
V (Vanadium)	51
Zn (Zinc)	64

Internal Standards

Single Internal Standards

For your convenience we offer two concentrations.

Element	Matrix	Unit	10 µg/mL	Price	100 µg/mL	Price
Bismuth	2-5% HNO	100 mL	ICP-MS-IS-BI-1	$ 30	ICP-MS-IS-BI-10X-1	$ 35
Holmium	2-5% HNO	100 mL	ICP-MS-IS-HO-1 **NEW**	30	ICP-MS-IS-HO-10X-1 **NEW**	42
Indium	2-5% HNO_3	100 mL	ICP-MS-IS-IN-1	30	ICP-MS-IS-IN-10X-1	42
Lutetium	2-5% HNO_3	100 mL	ICP-MS-IS-LU-1 **NEW**	65	ICP-MS-IS-LU-10X-1 **NEW**	121
Lithium-6	2-5% HNO_3	100 mL	ICP-MS-IS-LI6-1 **NEW**	85	ICP-MS-IS-LI6-10X-1 **NEW**	90
Rhodium	10% HCl	100 mL	ICP-MS-IS-RH-1	95	ICP-MS-IS-RH-10X-1	220
Scandium	2-5% HNO_3	100 mL	ICP-MS-IS-SC-1	55	ICP-MS-IS-SC-10X-1	78
Terbium	2-5% HNO_3	100 mL	ICP-MS-IS-TB-1	30	ICP-MS-IS-TB-10X-1	42
Yttrium	2-5% HNO_3	100 mL	ICP-MS-IS-Y-1	30	ICP-MS-IS-Y-10X-1	35

Internal Standard Mix

These internal standards have been chosen because they all have nearly 100% abundance of a single isotope and they are not commonly found in routine samples.

ICP-MS-IS-MIX1-1 **$ 70 / 100 mL**

10 µg/mL each in 2% HNO_3 7 comps.

Element	Most Abundant Isotope
Bi (Bismuth)	209
Ho (Holmium)	165
In (Indium)	115
6-Li (Lithium-6)	6
Sc (Scandium)	45
Tb (Terbium)	159
Y (Yttrium)	89

Method 200.8 Determination of Trace Elements in Water and Waste by ICP/MS

Calibration Standards

Calibration Standard #1 (1991 Version)

ICP-MS-200.8-CAL1-1 **$ 120 / 100 mL**
10 µg/mL each in 5% HNO_3 tr. HF 18 comps.

Element	Most Abundant Isotope
Al (Aluminum)	27
Sb (Antimony)	121
As (Arsenic)	75
Be (Beryllium)	9
Cd (Cadmium)	114
Cr (Chromium)	52
Co (Cobalt)	59
Cu (Copper)	63
Pb (Lead)	208
Mn (Manganese)	55
Mo (Molybdenum)	98
Ni (Nickel)	58
Se (Selenium)	80
Tl (Thallium)	205
Th (Thorium)	232
U (Uranium)	238
V (Vanadium)	51
Zn (Zinc)	64

Calibration Standard #2

ICP-MS-200.8-CAL2-1 **$ 75 / 100 mL**
10 µg/mL each in 2% HNO_3 2 comps.

Element	Most Abundant Isotope
Ba (Barium)	138
Ag (Silver)	67

Calibration Standard #1R (1994 Version)

ICP-MS-200.8-CAL1R-1 **$ 120 / 100 mL**
At stated conc. (µg/mL) in 2% HNO_3 tr. HF 18 comps.

Element	µg/mL	Most Abundant Isotope
Al (Aluminum)	10	27
Sb (Antimony)	10	121
As (Arsenic)	10	75
Be (Beryllium)	10	9
Cd (Cadmium)	10	114
Cr (Chromium)	10	52
Co (Cobalt)	10	59
Cu (Copper)	10	63
Pb (Lead)	10	208
Mn (Manganese)	10	55
Mo (Molybdenum)	10	98
Ni (Nickel)	10	58
Se (Selenium)	50	80
Tl (Thallium)	10	205
Th (Thorium)	10	232
U (Uranium)	10	238
V (Vanadium)	10	51
Zn (Zinc)	10	64

Calibration Standard #3

ICP-MS-200.8-CAL3-1 **$ 30 / 100 mL**
1 component in 5% HNO_3

Element	µg/mL	Most Abundant Isotope
Hg *(Mercury)*	5	202

Internal Standards

Internal Standard #1

ICP-MS-200.8-IS-1 **$ 135 / 100 mL**
100 µg/mL each in 2% HNO_3 5 comps.

Element	Most Abundant Isotope
Sc (Scandium)	45
Y (Yttrium)	89
In (Indium)	115
Tb (Terbium)	159
Bi (Bismuth)	209

Internal Standard #2

ICP-MS-200.8-IS2-1 **$ 75 / 100 mL**
100 µg/mL in 2% HNO_3

Element	Most Abundant Isotope
Au (Gold)	197

see previous pg for single element internal standards

Tuning Standard

ICP-MS-200.8-TUN-1 **$ 70 / 100 mL**
10 µg/mL each in 2% HNO_3 5 comps.

Element	Most Abundant Isotope
Be (Beryllium)	75
Mg (Magnesium)	24
Co (Cobalt)	59
In (Indium)	115
Pb (Lead)	208

Method 6020 Standards for Inductively Coupled Mass Spectrometry

Calibration Standard

ICP-MS-6020-CAL-R-1 **$ 175 / 100 mL**
10 µg/mL each in 2% HNO_3 22 comps.

Element	Most Abundant Isotope
Al (Aluminum)	27
Sb (Antimony)	121
As (Arsenic)	75
Ba (Barium)	138
Be (Beryllium)	9
Cd (Cadmium)	114
Ca (Calcium)	40
Cr (Chromium)	52
Co (Cobalt)	59
Cu (Copper)	63
Fe (Iron)	56
Pb (Lead)	208
Mg (Magnesium)	24
Mn (Manganese)	55
Ni (Nickel)	58
K (Potassium)	39
Se (Selenium)	80
Ag (Silver)	107
Na (Sodium)	23
Tl (Thallium)	205
V (Vanadium)	51
Zn (Zinc)	64

Calibration Standard

ICP-MS-6020-CAL-1 **$ 125 / 100 mL**
10 µg/mL each in 2% HNO_3 15 comps.

Element	Most Abundant Isotope
Al (Aluminum)	27
Sb (Antimony)	121
As (Arsenic)	75
Ba (Barium)	138
Be (Beryllium)	9
Cd (Cadmium)	114
Cr (Chromium)	52
Co (Cobalt)	59
Cu (Copper)	63
Pb (Lead)	208
Mn (Manganese)	55
Ni (Nickel)	58
Ag (Silver)	107
Tl (Thallium)	205
Zn (Zinc)	64

Interference Check Standard #1

ICP-MS-6020-INT1-1 **$ 310 / 100 mL**
At stated conc. (µg/mL) in 2% HNO_3 12 comps.

Element	µg/mL	Most Abundant Isotope
Al (Aluminum)	1000	27
Cl (Chloride)	10000	35
Ca (Calcium)	1000	40
C (Carbon)	2000	12
Fe (Iron)	1000	56
Mg (Magnesium)	1000	24
Mo (Molybdenum)	20	98
P (Phosphorous)	1000	31
K (Potassium)	1000	39
Na (Sodium)	1000	23
S (Sulfur)	1000	32
Ti (Titanium)	20	48

Interference Check Standard #2

ICP-MS-6020-INT2-1 **$ 75 / 100 mL**
2 µg/mL each in 5% HNO_3 tr. HF 9 comps.

Element	Most Abundant Isotope
As (Arsenic)	75
Cd (Cadmium)	114
Cr (Chromium)	52
Co (Cobalt)	59
Cu (Copper)	63
Mn (Manganese)	55
Ni (Nickel)	58
Ag (Silver)	107
Zn (Zinc)	64

Tuning Standard

ICP-MS-6020-TUN-1 **$ 75 / 100 mL**
10 µg/mL each in 2% HNO_3 4 comps.

Element	Most Abundant Isotope
Co (Cobalt)	59
In (Indium)	115
Li (Lithium)	7
Tl (Thallium)	205

Organometallic Standards
AA, ICP, DCP & XRF Analysis

These Standards were formulated for the analysis of metals in oils and other organic matrices. These Standards and curves provide a convenient way to analyze for metals (wear metals, additives and contaminants) in lubricating oils, gasolines, residual oils, crude oils, turbine fuels and environmental samples. All standards undergo rigorous quality assurance checks. Major constituents in the final Standard are typically analyzed by both plasma emission and rotrode techniques. Organometallic Standards listed on this page may contain sulfur which can be introduced by possible sulfonate starting materials used to formulate the actual organometallic standard. We developed a Premium Organometallic line for chemists preferring to have organometallic standards with <1 ppm sulfur or phosphorous (see Table of Contents).

- Single & Multi Element Standards
- Prepared Calibration Curves
- Formulated from Ultra High Purity Organometallic starting materials & matrices
- Certificate of Analysis

Single Element Organometallic

	1000 µg/g in 75 cSt base oil		5000 µg/g in 75 cSt base oil	
Element	**Cat. No. (50 g)**	**Price**	**Cat. No. (50 g)**	**Price**
Al (Aluminum)	WM-75CST-01	$ 38	WM-75CST-01-5X	$ 48
Sb (Antimony)	WM-75CST-02	38	WM-75CST-02-5X	48
As (Arsenic)	WM-75CST-03	44	----------	----
Ba (Barium)	WM-75CST-04	38	WM-75CST-04-5X	48
Be (Beryllium)	WM-75CST-05	41	----------	----
Bi (Bismuth)	WM-75CST-06	38	WM-75CST-06-5X	221
B (Boron)	WM-75CST-07	38	WM-75CST-07-5X	48
Cd (Cadmium)	WM-75CST-08	38	WM-75CST-08-5X	48
Ca (Calcium)	WM-75CST-09	38	WM-75CST-09-5X	48
Cr (Chromium)	WM-75CST-13	38	WM-75CST-13-5X	48
Co (Cobalt)	WM-75CST-14	38	WM-75CST-14-5X	48
Cu (Copper)	WM-75CST-15	38	WM-75CST-15-5X	48
Fe (Iron)	WM-75CST-27	38	WM-75CST-27-5X	48
La (Lanthanum)	WM-75CST-28	84	----------	----
Pb (Lead)	WM-75CST-29	38	WM-75CST-29-5X	48
Li (Lithium)	WM-75CST-30	38	WM-75CST-30-5X	48
Mg (Magnesium)	WM-75CST-32	38	WM-75CST-32-5X	48
Mn (Manganese)	WM-75CST-33	38	WM-75CST-33-5X	48
Hg (Mercury)	WM-75CST-34	44	----------	----
Mo (Molybdenum)	WM-75CST-35	38	WM-75CST-35-5X	48
Ni (Nickel)	WM-75CST-37	38	WM-75CST-37-5X	48
P (Phosphorous)	WM-75CST-41	38	WM-75CST-41-5X	48
K (Potassium)	WM-75CST-43	38	WM-75CST-43-5X	48
Sc (Scandium)	WM-75CST-50	65	----------	----
Se (Selenium)	WM-75CST-51	44	----------	----
Si (Silicon)	WM-75CST-52	38	WM-75CST-52-5X	48
Ag (Silver)	WM-75CST-53	38	WM-75CST-53-5X	48
Na (Sodium)	WM-75CST-54	38	WM-75CST-54-5X	48
Sr (Strontium)	WM-75CST-55	38	----------	----
S (Sulfur)	WM-75CST-56	38	WM-75CST-56-5X	48
Tl (Thallium)	WM-75CST-60	44	----------	----
Sn (Tin)	WM-75CST-63	38	WM-75CST-63-5X	48
Ti (Titanium)	WM-75CST-64	38	WM-75CST-64-5X	48
V (Vanadium)	WM-75CST-67	38	WM-75CST-67-5X	48
Y (Yttrium)	WM-75CST-69	44	WM-75CST-69-5X	106
Zn (Zinc)	WM-75CST-70	38	WM-75CST-70-5X	48
Zn (Zirconium)	WM-75CST-71	38	WM-75CST-71-5X	48

Matrix Oil and Stabilizer

75 cSt Oil
MOSOL-75 — **$ 23 / 500 mL**

Stabilizer
WM-STAB — **$ 95 / 1 x 50 g**

Technical Note

Used to improve the stability of Organo-metallic Standards when diluting into solvents such as Kerosene. Add 0.6% by weight.

Metals Additives

MA-900-100G — **$ 114 / 100 g**
MA-900-200G — **$ 165 / 200 g**
900 µg/g each in Hydrocarbon oil

MA-1000-100G — **$ 149 / 100 g**
MA-1000-200G — **$ 251 / 200 g**
1000 µg/g each in Hydrocarbon oil

MA-3000-100G — **$ 295 / 100 g**
MA-3000-200G — **$ 471 / 200 g**
3000 µg/g each in Hydrocarbon oil

MA-5000-100G — **$ 424 / 100 g**
MA-5000-200G — **$ 685 / 200 g**
5000 µg/g each in Hydrocarbon oil — 5 comps.

Ba (Barium)
Ca (Calcium)
Mg (Magnesium)
P (Phosphorous)
Zn (Zinc)

See Petrochemical Section for Metals in Biofuels.

TRACEABLE AccuTrace™ Reference Standards CERTIFIED

21 Wear Metal Multi-Element

Conc.	Unit	Cat. No.	Price
10 µg/g	100 g	WM-21-1X-100G	$ 95
	200 g	WM-21-1X-200G	100
30 µg/g	100 g	WM-21-3X-100G	95
	200 g	WM-21-3X-200G	100
50 µg/g	100 g	WM-21-5X-100G	100
	200 g	WM-21-5X-200G	105
100 µg/g	100 g	WM-21-10X-100G	105
	200 g	WM-21-10X-200G	160
300 µg/g	100 g	WM-21-30X-100G	170
	200 g	WM-21-30X-200G	310
500 µg/g	100 g	WM-21-50X-100G	245
	200 g	WM-21-50X-200G	445
900 µg/g	100 g	WM-21-90X-100G	380
	200 g	WM-21-90X-200G	675

WM-21-100G-SET **$ 1050**
set of above 7 x 100 g

WM-21-200G-SET **$ 1700**
set of above 7 x 200 g

21 Wear Metals in hydrocarbon oil at the stated conc.

Ag (Silver)
Al (Aluminum)
B (Boron)
Ba (Barium)
Ca (Calcium)
Cd (Cadmium)
Cr (Chromium)
Cu (Copper)
Fe (Iron)
Mg (Magnesium)
Mn (Manganese)
Mo (Molybdenum)
Na (Sodium)
Ni (Nickel)
P (Phosphorus)
Pb (Lead)
Si (Silicon)
Sn (Tin)
Ti (Titanium)
V (Vanadium)
Zn (Zinc)

22 Wear Metal Multi-Element

Conc.	Unit	Cat. No.	Price
10 µg/g	100 g	WM-22-1X-100G	$ 115
	200 g	WM-22-1X-200G	120
30 µg/g	100 g	WM-22-3X-100G	115
	200 g	WM-22-3X-200G	120
50 µg/g	100 g	WM-22-5X-100G	120
	200 g	WM-22-5X-200G	125
100 µg/g	100 g	WM-22-10X-100G	125
	200 g	WM-22-10X-200G	145
300 µg/g	100 g	WM-22-30X-100G	190
	200 g	WM-22-30X-200G	340
500 µg/g	100 g	WM-22-50X-100G	275
	200 g	WM-22-50X-200G	485
900 µg/g	100 g	WM-22-90X-100G	420
	200 g	WM-22-90X-200G	725

100 gram Set WM-22-100G-SET $ 1225
set of above 7 x 100 g

200 gram Set WM-22-200G-SET $ 1850
set of above 7 x 200 g

21 Wear Metals plus K in hydrocarbon oil at the stated conc.

Ag (Silver)
Al (Aluminum)
B (Boron)
Ba (Barium)
Ca (Calcium)
Cd (Cadmium)
Cr (Chromium)
Cu (Copper)
Fe (Iron)
K (Potassium)
Mg (Magnesium)
Mn (Manganese)
Mo (Molybdenum)
Na (Sodium)
Ni (Nickel)
P (Phosphorus)
Pb (Lead)
Si (Silicon)
Sn (Tin)
Ti (Titanium)
V (Vanadium)
Zn (Zinc)

23 Wear Metal Multi-Element

Conc.	Unit	Cat. No.	Price
10 µg/g	100 g	WM-23-1X-100G	$ 135
	200 g	WM-23-1X-200G	140
30 µg/g	100 g	WM-23-3X-100G	135
	200 g	WM-23-3X-200G	140
50 µg/g	100 g	WM-23-5X-100G	140
	200 g	WM-23-5X-200G	145
100 µg/g	100 g	WM-23-10X-100G	145
	200 g	WM-23-10X-200G	165
300 µg/g	100 g	WM-23-30X-100G	210
	200 g	WM-23-30X-200G	395
500 µg/g	100 g	WM-23-50X-100G	305
	200 g	WM-23-50X-200G	525
900 µg/g	100 g	WM-23-90X-100G	495
	200 g	WM-23-90X-200G	765

100 gram Set WM-23-100G-SET $ 1400
set of above 7 x 100 g

200 gram Set WM-23-200G-SET $ 2025
set of above 7 x 200 g

21 Wear Metals plus K and Sb in hydrocarbon oil at the stated conc.

Ag (Silver)
Al (Aluminum)
B (Boron)
Ba (Barium)
Ca (Calcium)
Cd (Cadmium)
Cr (Chromium)
Cu (Copper)
Fe (Iron)
K (Potassium)
Mg (Magnesium)
Mn (Manganese)
Mo (Molybdenum)
Na (Sodium)
Ni (Nickel)
P (Phosphorus)
Pb (Lead)
Sb (Antimomy)
Si (Silicon)
Sn (Tin)
Ti (Titanium)
V (Vanadium)
Zn (Zinc)

TRACEABLE AccuTrace™ Reference Standards CERTIFIED

Organometallic Standards
Premium Sulfur-Free

Organometallic Single Element Stock Standards

Element	1000 µg/g Cat. No.	Price 50 mL	5000 µg/g Cat. No.	Price 50 mL
Al (Aluminum)	WM-NMS-01	$ 55	WM-NMS-01-5X	$ 72
Sb (Antimony)	WM-NMS-02	55	WM-NMS-02-5X	72
As (Arsenic)	WM-NMS-03	55	WM-NMS-03-5X	72
Ba (Barium)	WM-NMS-04	55	WM-NMS-04-5X	72
Be (Beryllium)	WM-NMS-05	69	WM-NMS-05-5X	118
Cd (Cadmium)	WM-NMS-08	55	WM-NMS-08-5X	72
Ca (Calcium)	WM-NMS-09	55	WM-NMS-09-5X	72
Ce (Cerium)	WM-NMS-11	55	WM-NMS-11-5X	72
Cr (Chromium)	WM-NMS-13	44	WM-NMS-13-5X	58
Co (Cobalt)	WM-NMS-14	44	WM-NMS-14-5X	58
Cu (Copper)	WM-NMS-15	44	WM-NMS-15-5X	58
Ga (Gallium)	WM-NMS-20	72	WM-NMS-20-5X	142
Au (Gold)	WM-NMS-22	111	----------	----
Fe (Iron)	WM-NMS-27	55	WM-NMS-27-5X	72
Pb (Lead)	WM-NMS-29	55	WM-NMS-29-5X	72
Li (Lithium)	WM-NMS-30	72	WM-NMS-30-5X	124
Mg (Magnesium)	WM-NMS-32	55	WM-NMS-32-5X	72
Mn (Manganese)	WM-NMS-33	55	WM-NMS-33-5X	72
Hg (Mercury)	WM-NMS-34	62	WM-NMS-34-5X	110
Mo (Molybdenum)	WM-NMS-35	62	WM-NMS-35-5X	110
Ni (Nickel)	WM-NMS-37	55	WM-NMS-37-5X	72
P (Phosphorous)	WM-NMS-41	55	WM-NMS-41-5X	72
K (Potassium)	WM-NMS-43	55	WM-NMS-43-5X	72
Se (Selenium)	WM-NMS-51	55	WM-NMS-51-5X	72
Si (Silicon)	WM-NMS-52	72	WM-NMS-52-5X	124
Ag (Silver)	WM-NMS-53	72	WM-NMS-53-5X	124
Na (Sodium)	WM-NMS-54	55	WM-NMS-54-5X	72
Sr (Strontium)	WM-NMS-55	55	WM-NMS-55-5X	72
Tl (Thallium)	WM-NMS-60	55	WM-NMS-60-5X	72
Sn (Tin)	WM-NMS-63	55	WM-NMS-63-5X	72
Ti (Titanium)	WM-NMS-64	55	WM-NMS-64-5X	72
V (Vanadium)	WM-NMS-67	55	WM-NMS-67-5X	72
Y (Yttrium)	WM-NMS-69	60	WM-NMS-69-5X	105
Zn (Zinc)	WM-NMS-70	55	WM-NMS-70-5X	72
Zr (Zirconium)	WM-NMS-71	55	WM-NMS-71-5X	72

Premium Sulfur-Free
Sulfur below detection limits for most elements
No Metallic Sulfonates

- Stabilized
- Ready for Use

Technical Note

Sulfur below detection limits for most elements. Sulfur content otherwise noted on certificate. For use with X-ray fluorescence (XRF), plasma emission (ICP or DCP), rotating disk (RDE), or atomic absorption (AA) spectroscopy. May be blended together to prepare multi-element standards. Solutions are stabilized with proprietary chelation and stabilization solution and are ready for use. Additional stabilizers may be required in some cases. Contact Technical Service for additional information.

Organometallic Single Element Concentrates

Element	Conc. (Wt. %)	Cat. No.	Price / 25 grams	Cat. No.	Price / 50 grams
Al (Aluminum)	3	WM-NMS-01-30X-25G	$ 178	WM-NMS-01-30X-50G	$ 261
Sb (Antimony)	2	WM-NMS-02-20X-25G	122	WM-NMS-02-20X-50G	183
Ba (Barium)	12.5	WM-NMS-04-125X-25G	540	WM-NMS-04-125X-50G	780
Cd (Cadmium)	10	WM-NMS-08-100X-25G	510	WM-NMS-08-100X-50G	710
Ca (Calcium)	5	WM-NMS-09-50X-25G	272	WM-NMS-09-50X-50G	422
Ce (Cerium)	5	WM-NMS-11-50X-25G	272	WM-NMS-11-50X-50G	422
Cr (Chromium)	3.5	WM-NMS-13-35X-25G	194	WM-NMS-13-35X-50G	299
Co (Cobalt)	7.5	WM-NMS-14-75X-25G	422	WM-NMS-14-75X-50G	577
Cu (Copper)	6	WM-NMS-15-60X-25G	344	WM-NMS-15-60X-50G	516
Fe (Iron)	4	WM-NMS-27-40X-25G	239	WM-NMS-27-40X-50G	361
Pb (Lead)	20	WM-NMS-29-200X-25G	900	WM-NMS-29-200X-50G	1260
Li (Lithium)	1.5	WM-NMS-30-15X-25G	155	WM-NMS-30-15X-50G	239
Mg (Magnesium)	3	WM-NMS-32-30X-25G	180	WM-NMS-32-30X-50G	278
Mn (Manganese)	6	WM-NMS-33-60X-25G	333	WM-NMS-33-60X-50G	505
Mo (Molybdenum)	5	WM-NMS-35-50X-25G	272	WM-NMS-35-50X-50G	422
Ni (Nickel)	5	WM-NMS-37-50X-25G	272	WM-NMS-37-50X-50G	422
P (Phosphorus)	5	WM-NMS-41-50X-25G	272	WM-NMS-41-50X-50G	422
K (Potassium)	7.5	WM-NMS-43-75X-25G	422	WM-NMS-43-75X-50G	577
Pr (Praseodymium)	3	WM-NMS-44-30X-25G	175	WM-NMS-44-30X-50G	240
Se (Selenium)	3.5	WM-NMS-51-35X-25G	200	WM-NMS-51-35X-50G	270
Si (Silicon)	7.5	WM-NMS-52-75X-25G	383	WM-NMS-52-75X-50G	528
Na (Sodium)	2.5	WM-NMS-54-25X-25G	180	WM-NMS-54-25X-50G	278
Sr (Strontium)	10	WM-NMS-55-100X-25G	510	WM-NMS-55-100X-50G	710
Tl (Thallium)	5	WM-NMS-60-50X-25G	272	WM-NMS-60-50X-50G	422
Sn (Tin)	7.5	WM-NMS-63-75X-25G	422	WM-NMS-63-75X-50G	577
Ti (Titanium)	5	WM-NMS-64-50X-25G	272	WM-NMS-64-50X-50G	422
V (Vanadium)	4	WM-NMS-67-40X-25G	239	WM-NMS-67-40X-50G	361
Y (Yttrium)	2.5	WM-NMS-69-25X-25G	180	WM-NMS-69-25X-50G	278
Zn (Zinc)	6	WM-NMS-70-60X-25G	306	WM-NMS-70-60X-50G	461
Zr (Zirconium)	5	WM-NMS-71-50X-25G	272	WM-NMS-71-50X-50G	422

Technical Note

Sulfur below detection limits for most elements. Sulfur content otherwise noted on certificate. Made from ultrapure starting materials which have been certified against NIST SRMs whenever available. Concentrates can be used to formulate sets of standards for the analysis of additive elements in lubricating oils; iron, nickel and vanadium in residual oil; and wear metal in oils for X-Ray Fluorescence Spectroscopy (XRF). Can also be used to prepare single element or multi-element standards for plasma emission (ICP or DCP), rotating disk (RDE), or atomic absorption (AA) spectroscopy. Solutions are stabilized with proprietary chelation and stabilization solution but often require additional stabilizers when diluting with kerosene or mineral oil. Contact Technical Service for additional information.

Stabilization Solutions

The solutions were specifically designed for chelating & solubilizing our line of Sulfur-Free Organometallic Standards.

Stabilizer Solution A
ASTM-P-0122-0.5 **$ 80 / 50 mL**
ASTM-P-0122-1 **$ 120 / 100 mL**

Stabilizer Solution B
ASTM-P-0123-0.5 **$ 80 / 50 mL**
ASTM-P-0123-1 **$ 120 / 100 mL**

Stabilizer Solution C
ASTM-P-0124-0.5 **$ 80 / 50 mL**
ASTM-P-0124-1 **$ 120 / 100 mL**

Stabilizer Solution D
ASTM-P-0125-0.5 **$ 80 / 50 mL**
ASTM-P-0125-1 **$ 120 / 100 mL**

Premium Sulfur-Free
Sulfur below detection limits for most elements
No Metallic Sulfonates

Organometallic standards do not require a hazardous shipping fee except where noted.

Organometallic Standards
Premium Sulfur-Free

11 Wear Metal Multi-Element

Conc.	Unit	Cat. No.	Price
10 µg/g	100 mL	WM-11-NMS-1X-1	$ 130
30 µg/g	100 mL	WM-11-NMS-3X-1	130
50 µg/g	100 mL	WM-11-NMS-5X-1	130
100 µg/g	100 mL	WM-11-NMS-10X-1	140
300 µg/g	100 mL	WM-11-NMS-30X-1	165
500 µg/g	100 mL	WM-11-NMS-50X-1	245
900 µg/g	100 mL	WM-11-NMS-90X-1	325

WM-11-NMS-1-SET $ 1100
set of above 7 x 100 mL

11 Wear Metals in Mineral oil at the stated concentration.

Al (Aluminum)
Cr (Chromium)
Cu (Copper)
Fe (Iron)
Mg (Magnesium)
Na (Sodium)
Ni (Nickel)
Pb (Lead)
Si (Silicon)
Sn (Tin)
Ti (Titanium)

12 Wear Metal Multi-Element

Conc.	Unit	Cat. No.	Price
10 µg/g	100 mL	WM-12-NMS-1X-1	$ 135
30 µg/g	100 mL	WM-12-NMS-3X-1	135
50 µg/g	100 mL	WM-12-NMS-5X-1	135
100 µg/g	100 mL	WM-12-NMS-10X-1	145
300 µg/g	100 mL	WM-12-NMS-30X-1	170
500 µg/g	100 mL	WM-12-NMS-50X-1	250
900 µg/g	100 mL	WM-12-NMS-90X-1	375

WM-12-NMS-1-SET $ 1175
set of above 7 x 100 mL

12 Wear Metals in Mineral oil at the stated concentration.

Ag (Silver)
Al (Aluminum)
Cr (Chromium)
Cu (Copper)
Fe (Iron)
Mg (Magnesium)
Na (Sodium)
Ni (Nickel)
Pb (Lead)
Si (Silicon)
Sn (Tin)
Ti (Titanium)

Suitable for ASTM D4628, D4927, D4951, D5056, D5185, D6443, D6481

Premium Sulfur-Free
Sulfur below detection limits for most elements
No Metallic Sulfonates

20 Wear Metal Multi-Element

Conc.	Unit	Cat. No.	Price
10 µg/g	100 mL	WM-20-NMS-1X-1	$ 150
30 µg/g	100 mL	WM-20-NMS-3X-1	150
50 µg/g	100 mL	WM-20-NMS-5X-1	150
100 µg/g	100 mL	WM-20-NMS-10X-1	170
300 µg/g	100 mL	WM-20-NMS-30X-1	230
500 µg/g	100 mL	WM-20-NMS-50X-1	350
900 µg/g	100 mL	WM-20-NMS-90X-1	500

WM-20-NMS-1-SET $ 1450
set of above 7 x 100 mL

20 Wear Metals in Mineral oil at the stated concentration.

Al (Aluminum)
B (Boron)
Ba (Barium)
Ca (Calcium)
Cd (Cadmium)
Cr (Chromium)
Cu (Copper)
Fe (Iron)
Mg (Magnesium)
Mn (Manganese)
Mo (Molybdenum)
Na (Sodium)
Ni (Nickel)
P (Phosphorus)
Pb (Lead)
Si (Silicon)
Sn (Tin)
Ti (Titanium)
V (Vanadium)
Zn (Zinc)

21 Wear Metal Multi-Element

Conc.	Unit	Cat. No.	Price
10 µg/g	100 mL	WM-21-NMS-1X-1	$ 160
30 µg/g	100 mL	WM-21-NMS-3X-1	160
50 µg/g	100 mL	WM-21-NMS-5X-1	160
100 µg/g	100 mL	WM-21-NMS-10X-1	180
300 µg/g	100 mL	WM-21-NMS-30X-1	240
500 µg/g	100 mL	WM-21-NMS-50X-1	350
900 µg/g	100 mL	WM-21-NMS-90X-1	550

100 mL Set **WM-21-NMS-1-SET $ 1550**
set of above 7 x 100 mL

21 Wear Metal in Mineral oil at the stated concentration.

Ag (Silver)
Al (Aluminum)
B (Boron)
Ba (Barium)
Ca (Calcium)
Cd (Cadmium)
Cr (Chromium)
Cu (Copper)
Fe (Iron)
Mg (Magnesium)
Mn (Manganese)
Mo (Molybdenum)
Na (Sodium)
Ni (Nickel)
P (Phosphorus)
Pb (Lead)
Si (Silicon)
Sn (Tin)
Ti (Titanium)
V (Vanadium)
Zn (Zinc)

Technical Note

For analysis by XRF, AA, ICP or AE for applications for which sulfur interference is undesirable. Prepared with Sulfur-free organometallics that do not contain metallic sulfonates. Solutions are stabilized with proprietary chelation and stabilization solution and are ready for use. Additional stabilizers may be required in some cases. Contact Technical Service for additional information.

Recommended Internal Standard

Organometallic (Internal Standard) Sulfur free

	Conc.	Cat. No.	Price / 50 mL
Cobalt	1000 µg/g	WM-NMS-14	$ 44
	5000 µg/g	WM-NMS-14-5X	$ 58

Sulfur and Metals in Oil

Sulfur and Metals in Mineral Oil

ASTM-P-0100-SET — **$ 1675 / 12 x 100 mL**

Cat. No.	Sulfur (Wt. %)	Nickel (µg/g)	Vanadium (µg/g)	100 mL Price
ASTM-P-0100-01	0	0	0	$ 235
ASTM-P-0100-02	0.50	10	500	235
ASTM-P-0100-03	1	100	25	235
ASTM-P-0100-04	1.50	80	250	235
ASTM-P-0100-05	2	40	100	235
ASTM-P-0100-06	2.50	5	400	235
ASTM-P-0100-07	3	60	300	235
ASTM-P-0100-08	3.50	0	200	235
ASTM-P-0100-09	4	100	0	235
ASTM-P-0100-10	4.50	50	250	235
ASTM-P-0100-11	5	20	500	235
ASTM-P-0100-12	5.50	100	50	235

Sulfur and Metals in Residual Fuel Oil

ASTM-P-0101-SET — **$ 1965 / 12 x 100 mL**

Cat. No.	Sulfur (Wt. %)	Nickel (µg/g)	Vanadium (µg/g)	100 mL Price
ASTM-P-0101-01	0	0	0	$ 235
ASTM-P-0101-02	0.50	10	500	235
ASTM-P-0101-03	1	100	25	235
ASTM-P-0101-04	1.50	80	250	235
ASTM-P-0101-05	2	40	100	235
ASTM-P-0101-06	2.50	5	400	235
ASTM-P-0101-07	3	60	300	235
ASTM-P-0101-08	3.50	0	200	235
ASTM-P-0101-09	4	100	0	235
ASTM-P-0101-10	4.50	50	250	235
ASTM-P-0101-11	5	20	500	235
ASTM-P-0101-12	5.50	100	50	235

Test Method A - ICP with an Organic Solvent Specimen Solution

Sulfur and Metals in Mineral Oil

Designed for ASTM D5708

ASTM-P-0102-SET — **$ 1960 / 12 x 100 mL**

Cat. No.	Sulfur (Wt. %)	Iron (µg/g)	Nickel (µg/g)	Vanadium (µg/g)	100 mL Price
ASTM-P-0102-01	0	0	0	0	$ 265
ASTM-P-0102-02	0.50	300	10	500	265
ASTM-P-0102-03	1	500	100	25	265
ASTM-P-0102-04	-----	100	80	250	265
ASTM-P-0102-05	2	200	40	100	265
ASTM-P-0102-06	2.50	400	5	400	265
ASTM-P-0102-07	3	0	60	300	265
ASTM-P-0102-08	3.50	500	0	200	265
ASTM-P-0102-09	-----	100	100	0	265
ASTM-P-0102-10	4.50	300	50	250	265
ASTM-P-0102-11	5	200	20	500	265
ASTM-P-0102-12	5.50	50	100	50	265

Sulfur and Metals in Residual Fuel Oil

Designed for ASTM D5708

ASTM-P-0103-SET — **$ 2220 / 12 x 100 mL**

Cat. No.	Sulfur (Wt. %)	Iron (µg/g)	Nickel (µg/g)	Vanadium (µg/g)	100 mL Price
ASTM-P-0103-01	0	0	0	0	$ 280
ASTM-P-0103-02	0.50	300	10	500	280
ASTM-P-0103-03	1	500	100	25	280
ASTM-P-0103-04	-----	100	80	250	280
ASTM-P-0103-05	2	200	40	100	280
ASTM-P-0103-06	2.50	400	5	400	280
ASTM-P-0103-07	3	0	60	300	280
ASTM-P-0103-08	3.50	500	0	200	280
ASTM-P-0103-09	-----	100	100	0	280
ASTM-P-0103-10	4.50	300	50	250	280
ASTM-P-0103-11	5	200	20	500	280
ASTM-P-0103-12	5.50	50	100	50	280

After Acid Decomposition of Sample

Stock Multi-Element in Mineral Oil

D-5708-A-10X — **$ 150 / 100 mL**

100 µg/g in 20 cSt mineral oil — 3 comps.

Iron, Nickel, Vanadium

Working Level Multi-Element Aqueous Standard

D-5708-B-5 ▲ — **$ 105 / 500 mL**

10 µg/mL each in 2-5% HNO_3 — 3 comps.

Iron, Nickel, Vanadium

Stock Multi-Element Standard in Mineral Oil

D-5863-95B-10X-1 — **$ 225 / 1 x 100 mL**

At stated conc. (µg/g) in 20 cst Mineral Oil — 3 comps.

Sodium	50	Vanadium	150
Nickel	200		

Nitric Acid Blank

CLP-BLN-5 ▲ — **$ 30 / 500 mL**

CLP-BLN-L-VAP ▲ — **$ 45 / 1 L** (2 x 500 mL)

5% HNO_3 in ASTM Type I Water

▲ Hazardous fee required.

Stock Multi-Element Aqueous Standard

D-5708-B-10X-1 ▲ — **$ 60 / 100 mL**

D-5708-B-10X-5 ▲ — **$ 115 / 500 mL**

100 µg/mL each in 2-5% HNO_3 — 3 comps.

Iron, Nickel, Vanadium

NEW

Stock Multi-Element Standard in Mineral Oil

D-5863-00A-10X-1 — **$ 285 / 1 x 100 mL**

At stated conc. (µg/g) in 20 cst Mineral Oil — 3 comps.

Nickel	100	Iron	10
Vanadium	500	Sodium	20

ISO/CD 14597 Vanadium and Nickel Standards with Manganese (Internal Standard)

Vanadium Standards - Low Range for ISO/CD 14597 with 0.05% Manganese Internal Standard in Xylene-Mineral Oil

ASTM-P-0104-SET — **$ 1050 / 9 x 100 mL**

Cat. No.	Vanadium Conc. (Wt.%)	Price 100 mL
ASTM-P-0104-01	005	$ 165
ASTM-P-0104-02	025	165
ASTM-P-0104-03	050	165
ASTM-P-0104-04	075	165
ASTM-P-0104-05	0.0100	165
ASTM-P-0104-06	0.0125	165
ASTM-P-0104-07	0.0150	165
ASTM-P-0104-08	0.0175	165
ASTM-P-0104-09	0.0200	165

Vanadium Standards - High Range for ISO/CD 14597 with 0.05% Manganese Internal Standard in Xylene-Mineral Oil

ASTM-P-0105-SET — **$ 825 / 7 x 100 mL**

Cat. No.	Vanadium Conc. (Wt.%)	Price 100 mL
ASTM-P-0105-01	000	$ 135
ASTM-P-0105-02	0.0300	135
ASTM-P-0105-03	0.0400	135
ASTM-P-0105-04	0.0500	135
ASTM-P-0105-05	0.0600	135
ASTM-P-0105-06	0.0800	135
ASTM-P-0105-07	0.1000	135

Internal Standard

ASTM-P-0107-5 — **$ 235 / 500 mL**

Manganese @ 0.05 Wt. % in Xylene-Mineral Oil

Nickel Standards for ISO/CD 14597 with 0.05% Manganese Internal Standard in Xylene-Mineral Oil

ASTM-P-0106-SET — **$ 825 / 7 x 100 mL**

Cat. No.	Nickel Conc. (Wt.%)	Price 100 mL
ASTM-P-0106-01	000	$ 135
ASTM-P-0106-02	005	135
ASTM-P-0106-03	010	135
ASTM-P-0106-04	025	135
ASTM-P-0106-05	050	135
ASTM-P-0106-06	075	135
ASTM-P-0106-07	0.0100	135

Lubricating Oil Standards

ASTM-P-0108-SET — **$ 2080 / 17 x 100 mL**

Designed for ASTM D6481

Cat. No. Nominal Value	Ca (Wt.%)	P (Wt.%)	S (Wt.%)	Zn (Wt.%)
ASTM-P-0108-01	0.600	05	0.175	0.060
ASTM-P-0108-02	0.500	0.200	0.050	0.080
ASTM-P-0108-03	0.400	0.150	0.300	0.180
ASTM-P-0108-04	0.260	0.250	0.150	0.120
ASTM-P-0108-05	05	05	0.450	0.070
ASTM-P-0108-06	0.400	0.025	0.350	0.100
ASTM-P-0108-07	0.300	0.060	0.250	0.120
ASTM-P-0108-08	0.200	0.100	0.450	0.100
ASTM-P-0108-09	0.060	0.080	0.300	0.130
ASTM-P-0108-10	0.060	0.050	0.200	0.050
ASTM-P-0108-11	0.050	0.120	0.100	0.075
ASTM-P-0108-12	0.025	0.150	0.200	0.130
ASTM-P-0108-13	05	0.200	0.400	0.150
ASTM-P-0108-14	0.170	0.250	0.550	0.110
ASTM-P-0108-15	0.100	0.100	0.200	0.200
ASTM-P-0108-16	0.010	0.010	0.600	0.250
ASTM-P-0108-17	00	00	00	00

ASTM-P-0109-SET — **$ 2450 / 17 x 100 mL**

Cat. No. Nominal Value	Ca (Wt.%)	Cl (Wt.%)	P (Wt.%)	S (Wt.%)	Zn (Wt.%)
ASTM-P-0109-01	0.600	0.100	05	0.175	0.060
ASTM-P-0109-02	0.500	00	0.200	0.050	0.080
ASTM-P-0109-03	0.400	0.010	0.150	0.300	0.180
ASTM-P-0109-04	0.260	0.500	0.250	0.150	0.120
ASTM-P-0109-05	05	10	05	0.450	0.070
ASTM-P-0109-06	0.400	0.400	0.025	0.350	0.100
ASTM-P-0109-07	0.300	0.100	0.060	0.250	0.120
ASTM-P-0109-08	0.200	0.010	0.100	0.450	0.100
ASTM-P-0109-09	0.060	0.050	0.080	0.300	0.130
ASTM-P-0109-10	0.060	0.200	0.050	0.200	0.050
ASTM-P-0109-11	0.050	0.500	0.120	0.100	0.075
ASTM-P-0109-12	0.025	0.800	0.150	0.200	0.130
ASTM-P-0109-13	05	10	0.200	0.400	0.150
ASTM-P-0109-14	0.170	0.600	0.250	0.550	0.110
ASTM-P-0109-15	0.100	0.200	0.100	0.200	0.200
ASTM-P-0109-16	0.010	0.400	0.010	0.600	0.250
ASTM-P-0109-17	00	00	00	00	00

ASTM-P-0110-SET — **$ 2485 / 17 x 100 mL**

Designed for ASTM D4927

Cat. No. Nominal Value	Ba (Wt.%)	Ca (Wt.%)	P (Wt.%)	S (Wt.%)	Zn (Wt.%)
ASTM-P-0110-01	0.100	0.600	05	0.175	0.060
ASTM-P-0110-02	0.175	0.500	0.200	0.050	0.080
ASTM-P-0110-03	00	0.400	0.150	0.300	0.180
ASTM-P-0110-04	0.025	0.260	0.250	0.150	0.120
ASTM-P-0110-05	0.150	05	05	0.450	0.070
ASTM-P-0110-06	00	0.400	0.025	0.350	0.100
ASTM-P-0110-07	0.200	0.300	0.060	0.250	0.120
ASTM-P-0110-08	00	0.200	0.100	0.450	0.100
ASTM-P-0110-09	0.100	0.060	0.080	0.300	0.130
ASTM-P-0110-10	0.050	0.060	0.050	0.200	0.050
ASTM-P-0110-11	0.075	0.050	0.120	0.100	0.075
ASTM-P-0110-12	0.010	0.025	0.150	0.200	0.130
ASTM-P-0110-13	05	05	0.200	0.400	0.150
ASTM-P-0110-14	00	0.170	0.250	0.550	0.110
ASTM-P-0110-15	00	0.100	0.100	0.200	0.200
ASTM-P-0110-16	05	0.010	0.010	0.600	0.250
ASTM-P-0110-17	00	00	00	00	00

ASTM-P-0111-SET — **$ 2650 / 17 x 100 mL**

Designed for ASTM D4927

Cat. No. Nominal Value	Ba (Wt.%)	Ca (Wt.%)	Cl (Wt.%)	P (Wt.%)	S (Wt.%)	Zn (Wt.%)
ASTM-P-0111-01	0.100	0.600	0.100	05	0.175	0.060
ASTM-P-0111-02	0.175	0.500	00	0.200	0.050	0.080
ASTM-P-0111-03	00	0.400	0.010	0.150	0.300	0.180
ASTM-P-0111-04	0.025	0.260	0.500	0.250	0.150	0.120
ASTM-P-0111-05	0.150	05	10	05	0.450	0.070
ASTM-P-0111-06	00	0.400	0.400	0.025	0.350	0.100
ASTM-P-0111-07	0.200	0.300	0.100	0.060	0.250	0.120
ASTM-P-0111-08	00	0.200	0.010	0.100	0.450	0.100
ASTM-P-0111-09	0.100	0.060	0.050	0.080	0.300	0.130
ASTM-P-0111-10	0.050	0.060	0.200	0.050	0.200	0.050
ASTM-P-0111-11	0.075	0.050	0.500	0.120	0.100	0.075
ASTM-P-0111-12	0.010	0.025	0.800	0.150	0.200	0.130
ASTM-P-0111-13	05	05	10	0.200	0.400	0.150
ASTM-P-0111-14	00	0.170	0.600	0.250	0.550	0.110
ASTM-P-0111-15	00	0.100	0.200	0.100	0.200	0.200
ASTM-P-0111-16	05	0.010	0.400	0.010	0.600	0.250
ASTM-P-0111-17	00	00	00	00	00	00

ASTM-P-0112-SET — **$ 2485 / 17 x 100 mL**

Cat. No. Nominal Value	Ca (Wt.%)	Mg (Wt.%)	P (Wt.%)	S (Wt.%)	Zn (Wt.%)
ASTM-P-0112-01	0.600	0.100	05	0.175	0.060
ASTM-P-0112-02	0.500	0.150	0.200	0.050	0.080
ASTM-P-0112-03	0.400	0.350	0.150	0.300	0.180
ASTM-P-0112-04	0.260	0.225	0.250	0.150	0.120
ASTM-P-0112-05	05	0.450	05	0.450	0.070
ASTM-P-0112-06	0.400	0.500	0.025	0.350	0.100
ASTM-P-0112-07	0.300	0.325	0.060	0.250	0.120
ASTM-P-0112-08	0.200	0.250	0.100	0.450	0.100
ASTM-P-0112-09	0.060	0.100	0.080	0.300	0.130
ASTM-P-0112-10	0.060	0.400	0.050	0.200	0.050
ASTM-P-0112-11	0.050	0.300	0.120	0.100	0.075
ASTM-P-0112-12	0.025	0.200	0.150	0.200	0.130
ASTM-P-0112-13	05	0.375	0.200	0.400	0.150
ASTM-P-0112-14	0.170	0.175	0.250	0.550	0.110
ASTM-P-0112-15	0.100	0.425	0.100	0.200	0.200
ASTM-P-0112-16	0.010	0.275	0.010	0.600	0.250
ASTM-P-0112-17	00	00	00	00	00

ASTM-P-0113-SET — **$ 2650 / 17 x 100 mL**

Designed for ASTM D4628 & D4927

Cat. No. Nominal Value	Ba (Wt.%)	Ca (Wt.%)	Mg (Wt.%)	P (Wt.%)	S (Wt.%)	Zn (Wt.%)
ASTM-P-0113-01	0.025	0.600	0.100	05	0.175	0.060
ASTM-P-0113-02	00	0.500	0.150	0.200	0.050	0.080
ASTM-P-0113-03	0.100	0.400	0.350	0.150	0.300	0.180
ASTM-P-0113-04	0.175	0.260	0.225	0.250	0.150	0.120
ASTM-P-0113-05	0.150	05	0.450	05	0.450	0.070
ASTM-P-0113-06	00	0.400	0.500	0.025	0.350	0.100
ASTM-P-0113-07	0.100	0.300	0.325	0.060	0.250	0.120
ASTM-P-0113-08	0.200	0.200	0.250	0.100	0.450	0.100
ASTM-P-0113-09	0.050	0.060	0.100	0.080	0.300	0.130
ASTM-P-0113-10	0.075	0.060	0.400	0.050	0.200	0.050
ASTM-P-0113-11	0.010	0.050	0.300	0.120	0.100	0.075
ASTM-P-0113-12	00	0.025	0.200	0.150	0.200	0.130
ASTM-P-0113-13	0.175	05	0.375	0.200	0.400	0.150
ASTM-P-0113-14	05	0.170	0.175	0.250	0.550	0.110
ASTM-P-0113-15	00	0.100	0.425	0.100	0.200	0.200
ASTM-P-0113-16	05	0.010	0.275	0.010	0.600	0.250
ASTM-P-0113-17	00	00	00	00	00	00

Lubricating Oil Standards (Continued)

ASTM-P-0114-SET — **$ 2080 / 17 x 100 mL**

EDXRF ASTM Method — Designed for ASTM D6481

Cat. No. Nominal Value	Ca (Wt.%)	P (Wt.%)	S (Wt.%)	Zn (Wt.%)
ASTM-P-0114-01	05	05	0.050	0.050
ASTM-P-0114-02	0.600	00	00	00
ASTM-P-0114-03	00	0.300	00	00
ASTM-P-0114-04	10	00	10	00
ASTM-P-0114-05	00	00	00	0.300
ASTM-P-0114-06	05	0.250	0.800	0.300
ASTM-P-0114-07	0.500	0.150	0.500	0.150
ASTM-P-0114-08	0.010	0.200	0.100	0.250
ASTM-P-0114-09	0.050	0.010	0.400	0.075
ASTM-P-0114-10	0.100	0.150	0.200	0.200
ASTM-P-0114-11	0.200	0.200	0.800	0.100
ASTM-P-0114-12	0.400	05	0.800	0.300
ASTM-P-0114-13	0.600	0.100	0.500	0.050
ASTM-P-0114-14	0.800	0.010	0.050	0.100
ASTM-P-0114-15	10	0.300	10	0.150
ASTM-P-0114-16	0.400	0.050	0.600	0.250
ASTM-P-0114-17	00	00	00	00

ASTM-P-0115-SET — **$ 2485 / 17 x 100 mL**

Cat. No. Nominal Value	Ca (Wt.%)	P (Wt.%)	S (Wt.%)	Zn (Wt.%)	Mg (Wt.%)
ASTM-P-0115-01	05	05	0.050	0.050	0.100
ASTM-P-0115-02	0.600	00	00	00	0.150
ASTM-P-0115-03	00	0.300	00	00	0.350
ASTM-P-0115-04	10	00	10	00	0.225
ASTM-P-0115-05	00	00	00	0.300	0.450
ASTM-P-0115-06	05	0.250	0.800	0.300	0.500
ASTM-P-0115-07	0.500	0.150	0.500	0.150	0.325
ASTM-P-0115-08	0.010	0.200	0.100	0.250	0.250
ASTM-P-0115-09	0.050	0.010	0.400	0.075	0.050
ASTM-P-0115-10	0.100	0.150	0.200	0.200	0.400
ASTM-P-0115-11	0.200	0.200	0.800	0.100	0.300
ASTM-P-0115-12	0.400	05	0.800	0.300	0.200
ASTM-P-0115-13	0.600	0.100	0.500	0.050	0.375
ASTM-P-0115-14	0.800	0.010	0.050	0.100	0.175
ASTM-P-0115-15	10	0.300	10	0.150	0.425
ASTM-P-0115-16	0.400	0.050	0.600	0.250	0.275
ASTM-P-0115-17	00	00	00	00	00

ASTM-P-0116-SET — **$ 2600 / 11 x 100 mL**

Additives — Designed for ASTM D6481

Cat. No. Nominal Value	Ca (Wt.%)	P (Wt.%)	S (Wt.%)	Zn (Wt.%)
ASTM-P-0116-01	0.500	10	0.500	0.500
ASTM-P-0116-02	30	10	30	20
ASTM-P-0116-03	20	1.250	10	1.500
ASTM-P-0116-04	50	1.500	0.500	1.200
ASTM-P-0116-05	40	0.500	1.500	0.750
ASTM-P-0116-06	2.500	0.750	40	10
ASTM-P-0116-07	40	0.500	20	1.250
ASTM-P-0116-08	0.500	20	50	10
ASTM-P-0116-09	10	0.750	20	1.500
ASTM-P-0116-10	2.500	1.200	30	0.500
ASTM-P-0116-11	00	00	00	00

ASTM-P-0117-SET — **$ 2250 / 10 x 100 mL**

WLXRF ASTM Method — Designed for ASTM D6443

Cat. No. Nominal Value	Ca (Wt.%)	Cl (Wt.%)	Cu (Wt.%)	Mg (Wt.%)	P (Wt.%)	S (Wt.%)	Zn (Wt.%)
ASTM-P-0117-01	0.020	0.030	0.010	0.200	0.250	10	0.020
ASTM-P-0117-02	0.020	0.020	0.050	0.200	0.020	0.020	0.250
ASTM-P-0117-03	0.020	0.200	0.010	0.040	0.250	0.150	0.250
ASTM-P-0117-04	0.020	0.200	0.050	0.040	0.020	10	0.020
ASTM-P-0117-05	0.400	0.020	0.010	0.040	0.020	10	0.250
ASTM-P-0117-06	0.400	0.020	0.050	0.040	0.250	0.020	0.020
ASTM-P-0117-07	0.400	0.200	0.010	0.200	0.020	0.020	0.050
ASTM-P-0117-08	0.400	0.200	0.050	0.200	0.250	10	0.250
ASTM-P-0117-09	0.200	0.100	0.025	0.080	0.150	0.500	0.100
ASTM-P-0117-10	00	00	00	00	00	00	00

ASTM-P-0118-SET — **$ 2540 / 10 x 100 mL**

WLXRF ASTM Method — Designed for ASTM D4628, D4927, D4951, D6443

Cat. No. Nominal Value	Ba (Wt.%)	Ca (Wt.%)	Cl (Wt.%)	Cu (Wt.%)	Mg (Wt.%)	P (Wt.%)	S (Wt.%)	Zn (Wt.%)
ASTM-P-0118-01	0.020	0.020	0.030	0.010	0.200	0.250	10	0.020
ASTM-P-0118-02	0.250	0.020	0.020	0.050	0.200	0.020	0.020	0.250
ASTM-P-0118-03	0.020	0.020	0.200	0.010	0.040	0.250	0.150	0.250
ASTM-P-0118-04	0.250	0.020	0.200	0.050	0.040	0.020	10	0.020
ASTM-P-0118-05	0.020	0.400	0.020	0.010	0.040	0.020	10	0.250
ASTM-P-0118-06	0.250	0.400	0.020	0.050	0.040	0.250	0.020	0.020
ASTM-P-0118-07	0.020	0.400	0.200	0.010	0.200	0.020	0.020	0.050
ASTM-P-0118-08	0.250	0.400	0.200	0.050	0.200	0.250	10	0.250
ASTM-P-0118-09	0.130	0.200	0.100	0.025	0.080	0.150	0.500	0.100
ASTM-P-0118-10	00	00	00	00	00	00	00	00

Lubricating Oil Standards (Continued)

ASTM-P-0119-SET — **$ 3100 / 22 x 100 mL**

				Designed for ASTM D4628, D4927, D4951, D6443			
Cat. No. Nominal Value	Ca (Wt.%)	Cl (Wt.%)	Cu (Wt.%)	Mg (Wt.%)	P (Wt.%)	S (Wt.%)	Zn (Wt.%)
ASTM-P-0119-01	0.300	0.080	0.030	0.060	0.060	0.275	0.060
ASTM-P-0119-02	0.250	0.100	00	0.010	0.150	00	0.150
ASTM-P-0119-03	0.500	00	0.035	0.160	0.150	00	0.020
ASTM-P-0119-04	0.350	0.010	00	0.120	0.080	0.200	00
ASTM-P-0119-05	0.110	00	0.015	0.100	0.100	0.300	0.050
ASTM-P-0119-06	0.200	0.100	00	0.200	0.050	0.250	0.150
ASTM-P-0119-07	00	0.050	0.025	00	00	0.450	0.020
ASTM-P-0119-08	0.150	0.030	00	0.100	0.030	0.400	0.040
ASTM-P-0119-09	0.250	0.150	0.010	0.160	00	0.350	0.080
ASTM-P-0119-10	0.110	0.150	0.040	05	0.030	0.750	0.150
ASTM-P-0119-11	0.260	0.050	00	00	00	0.750	00
ASTM-P-0119-12	0.200	00	05	0.140	0.080	0.500	0.080
ASTM-P-0119-13	00	00	05	0.020	0.020	0.200	0.020
ASTM-P-0119-14	0.070	0.150	0.020	0.080	0.140	0.650	0.150
ASTM-P-0119-15	0.050	00	00	00	0.150	00	00
ASTM-P-0119-16	0.400	00	01	0.080	00	0.500	0.020
ASTM-P-0119-17	0.180	0.020	0.020	00	0.020	0.600	0.060
ASTM-P-0119-18	0.400	0.010	01	0.010	0.020	00	00
ASTM-P-0119-19	0.010	0.020	0.040	0.010	0.020	0.200	0.100
ASTM-P-0119-20	0.050	05	0.050	00	08	00	0.120
ASTM-P-0119-21	0.200	0.050	0.020	0.080	0.050	0.275	0.050
ASTM-P-0119-22	00	00	00	00	00	00	00

ASTM-P-0120-SET — **$ 3350 / 23 x 100 mL**

Cat. No. Nominal Value	Ba (Wt.%)	Ca (Wt.%)	Cl (Wt.%)	Cu (Wt.%)	Mg (Wt.%)	P (Wt.%)	S (Wt.%)	Zn (Wt.%)
ASTM-P-0120-01	0.100	0.300	0.080	0.030	0.060	0.060	0.275	0.060
ASTM-P-0120-02	0.175	0.250	0.100	00	0.010	0.150	00	0.150
ASTM-P-0120-03	0.040	0.500	00	0.035	0.160	0.150	00	0.020
ASTM-P-0120-04	0.020	0.350	0.010	00	0.120	0.080	0.200	00
ASTM-P-0120-05	0.150	0.110	00	0.015	0.100	0.100	0.300	0.050
ASTM-P-0120-06	00	0.200	0.100	00	0.200	0.050	0.250	0.150
ASTM-P-0120-07	0.200	00	0.050	0.025	00	00	0.450	0.020
ASTM-P-0120-08	00	0.150	0.030	00	0.100	0.030	0.400	0.040
ASTM-P-0120-09	00	0.250	0.150	0.010	0.160	00	0.350	0.080
ASTM-P-0120-10	00	0.110	0.150	0.040	05	0.030	0.750	0.150
ASTM-P-0120-11	0.100	0.260	0.050	00	00	00	0.750	00
ASTM-P-0120-12	0.050	0.200	00	05	0.140	0.080	0.500	0.080
ASTM-P-0120-13	00	00	00	05	0.020	0.020	0.200	0.020
ASTM-P-0120-14	0.080	0.070	0.150	0.020	0.080	0.140	0.650	0.150
ASTM-P-0120-15	0.010	0.050	00	00	00	0.150	00	00
ASTM-P-0120-16	00	0.400	00	01	0.080	00	0.500	0.020
ASTM-P-0120-17	00	0.180	0.020	0.020	00	0.020	0.600	0.060
ASTM-P-0120-18	00	0.400	0.010	01	0.010	0.020	00	00
ASTM-P-0120-19	0.150	0.010	0.020	0.040	0.010	0.020	0.200	0.100
ASTM-P-0120-20	05	0.050	05	0.050	00	08	00	0.120
ASTM-P-0120-21	0.100	0.200	0.050	0.020	0.080	0.050	0.275	0.050
ASTM-P-0120-22	0.120	0.200	00	00	00	00	0.750	00
ASTM-P-0120-23	00	00	00	00	00	00	00	00

Standards of Interest

Concentrations for the sets on pages 380-382 are targets. Actual production lots may vary.

Metal Working Fluids

ASTM-P-0121-SET — **$ 1560 / 13 x 100 mL**

Cat. No. Nominal Value	Cl (Wt.%)	P (Wt.%)	S (Wt.%)
ASTM-P-0121-01	00	00	00
ASTM-P-0121-02	0.750	0.025	0.500
ASTM-P-0121-03	0.050	0.100	30
ASTM-P-0121-04	10	0.500	2.500
ASTM-P-0121-05	0.100	05	20
ASTM-P-0121-06	1.500	0.200	10
ASTM-P-0121-07	20	05	30
ASTM-P-0121-08	10	0.050	0.100
ASTM-P-0121-09	0.500	0.400	00
ASTM-P-0121-10	20	0.200	1.500
ASTM-P-0121-11	00	0.500	1.500
ASTM-P-0121-12	1.250	0.010	0.050
ASTM-P-0121-13	0.050	0.300	0.050

Stabilization Solutions

The solutions were specifically designed for chelating & solubilizing our line of Sulfur-Free Organometallic Standards. Contact Tech Service for additional information.

Stabilizer Solution A

ASTM-P-0122-0.5 — **$ 80 / 50 mL**
ASTM-P-0122-1 — **$ 120 / 100 mL**

Stabilizer Solution B

ASTM-P-0123-0.5 — **$ 80 / 50 mL**
ASTM-P-0123-1 — **$ 120 / 100 mL**

Stabilizer Solution C

ASTM-P-0124-0.5 — **$ 80 / 50 mL**
ASTM-P-0124-1 — **$ 120 / 100 mL**

Stabilizer Solution D

ASTM-P-0125-0.5 — **$ 80 / 50 mL**
ASTM-P-0125-1 — **$ 120 / 100 mL**

ASTM D3230 Determination of Salts in Crude Oil

Mixed Salt Solution

D-3230-89-1 ▲ **$ 80 / 100 mL**
D-3230-89-5 ▲ **$ 160 / 500 mL**
At stated conc. in Alcohol Solution (1-butanol : MeOH) (ratio 63:37) tr. H_2O 3 comps.

Calcium chloride	10 µg/mL	Sodium chloride	70 µg/mL
Magnesium chloride	20 µg/mL		

ASTM D3237 Lead in Gasoline by AA Spectroscopy

Lead Standard Calibration Curve

D-3237-CAL-SET ▲ **$ 210 / 4 x 100 mL**
Set includes the following Catalog Numbers:

Description	Cat. No.	Price / 100 mL
Blank 1% Aliquot 336/MIBK	D-3237-01 ▲	$ 20
0.02 g Pb / gal (5.3 mg Pb/ L) in 1% Aliquat 336 / MIBK	D-3237-02 ▲	$ 80
0.05 g Pb / gal (13.2 mg Pb/ L) in 1% Aliquat 336 / MIBK	D-3237-03 ▲	$ 80
0.10 g Pb / gal (26.4 mg Pb/ L) in 1% Aliquat 336 / MIBK	D-3237-04 ▲	$ 80

D3237 Meets EPA Guidelines for RFG Analysis

ASTM D3605 Trace Metals in Gas Turbine Fuels by AA & Flame Emission & Spectroscopy

Trace Metals Standard

D-3605-91-R1-1 **$ 245 / 1 x 100 mL**
At stated conc. in 75 cSt Hydrocarbon oil 4 comps.

Na (Sodium)	(250 µg/mL)	Ca (Calcium)	(250 µg/mL)
Pb (Lead)	(250 µg/mL)	V (Vanadium)	(250 µg/mL)

Standards of Interest

See Table of Contents for a complete listing of Wear Metal Standards.

ASTM D3831 Manganese in Gasoline by AA Spectroscopy

Manganese Stock Solution

D-3831-1 ▲ **$ 65 / 1 x 100 mL**

Manganese @ 1.0 g Mn / gal (264.2 mg Mn / L) in Methyl isobutyl ketone

▲ Hazardous fee required.

Thousands of Standards, just a click away

AccuStandard.com

Solid Matrix Standards

AccuStandard offers a broad range of trace element standards in Solid Matrices to meet the requirements for “real world” solid waste reference materials. All Standards are furnished with a Certificate of Analysis, with the certified values, standard deviations, confidence intervals and performance intervals. A list of additional elements/analytes, instructions and other pertinent information is also included.

Solid Matrix Standards

Description	Cat. No.	Price / Unit
Metals in Ashes		
Trace Metals in Fly Ash 1	CRM001-100G	$ 145 / 100 g
Trace Metals - Fly Ash 2	CRM012-100G	145 / 100 g
Trace Metals - Fly Ash 3	CRM019-50G	145 / 50 g
TCLP Metals - Ash 1	CRM205-225G	165 / 225 g
Metals in Particulates & Water Treatment Media		
Trace Metals - Activated Charcoal	CRM002-100G	145 / 100 g
Trace Metals - Diatomaceous Earth	CRM004-100G	145 / 100 g
Trace Metals - Sewage Amended Soil	CRM005-50G	165 / 50 g
Trace Metals - Baghouse Dust	CRM014-50G	150 / 50 g
Metals in Paint		
Trace Metals - Paint Sludge 1	CRM006-50G	145 / 50 g
Trace Metals - Paint Chips	CRM013-50G	150 / 50 g
Trace Metals - Powdered Paint 1 **NEW**	CRM017-20G	120 / 20 g
Lead-Free Paint - Powdered **NEW**	CRM050-20G	120 / 20 g
Metals in Sludges		
Trace Metals - Paint Sludge 1	CRM006-50G	145 / 50 g
Trace Metals - Electroplating Sludge 1	CRM009-100G	130 / 100 g
Trace Metals - Electroplating Sludge 2	CRM010-100G	135 / 100 g
Trace Metals - Electroplating Sludge 3	CRM011-100G	145 / 100 g
Trace Metals - Wet Sewage Sludge	CRM018-50G	170 / 50 g
Trace Metals - Sewage Sludge 2 **NEW**	CRM029-50G	165 / 50 g
Trace Metals - Sewage Sludge 3 **NEW**	CRM031-40G	170 / 40 g
Trace Metals - Sewage Sludge 4	CRM055-50G	170 / 50 g
TCLP Metals		
TCLP Metals - Sandy Loam 1	CRM202-225G	165 / 225 g
TCLP Metals - Sandy Loam 2	CRM204-225G	170 / 225 g
TCLP Metals - Ash 1	CRM205-225G	165 / 225 g
TCLP Metals - Sandy Loam 3	CRM206-225G	170 / 225 g
TCLP Metals - Loamy Sand 3	CRM207-225G	170 / 225 g
TCLP Metals - Sandy Loam 4	CRM208-225G	170 / 225 g
TCLP Metals - Sandy Loam 11 **NEW**	CRM209-225G	170 / 225 g
TCLP Metals - Sandy Loam 12 **NEW**	CRM210-225G	170 / 225 g
TCLP Metals - Sandy Loam 13 **NEW**	CRM211-225G	170 / 225 g
TCLP Metals - Loamy Sand 1 **NEW**	CRM212-225G	170 / 225 g
TCLP Metals - Loamy Sand 2 **NEW**	CRM213-225G	170 / 225 g
TCLP Metals - Sandy Loam 6 **NEW**	CRM215-225G	170 / 225 g
TCLP Metals - Loam 1 **NEW**	CRM218-225G	170 / 225 g
Metals in Soil		
Trace Metals - Fresh Water Sediment 2	CRM015-50G	170 / 50 g
Trace Metals - Fresh Water Sediment 3	CRM016-50G	165 / 50 g
Trace Metals - Sandy Loam 2	CRM020-50G	165 / 50 g
Trace Metals - Sandy Loam 3	CRM021-100G	165 / 100 g
Trace Metals/Cyan - Loam 5	CRM022-20G	155 / 20 g
Trace Metals - Sandy Loam 7	CRM023-50G	165 / 50 g
Trace Metals - Loamy Sand 1	CRM024-50G	165 / 50 g
Trace Metals - Sandy Loam 8	CRM025-50G	165 / 50 g
Trace Metals - Sandy Loam 9	CRM026-50G	165 / 50 g
Trace Metals - Sandy Loam 10	CRM027-50G	165 / 50 g
Trace Metals - Sandy Loam 11 **NEW**	CRM028-50G	165 / 50 g
Trace Metals - Sandy Loam 2 **NEW**	CRM030-50G	165 / 50 g
Trace Metals - Loamy Sand 10 **NEW**	CRM033-50G	165 / 50 g
Trace Metals - Loamy Sand 3 **NEW**	CRM034-50G	165 / 50 g
Trace Metals - Loamy Sand 4 **NEW**	CRM036-50G	165 / 50 g
Chromium VI - Soil **NEW**	CRM041-30G	120 / 30 g
Trace Metals - Loam 3 **NEW**	CRM042-50G	165 / 50 g
Trace Metals - Sandy Loam 6 **NEW**	CRM043-50G	165 / 50 g
Trace Metals - Silt Loam 1 **NEW**	CRM044-50G	165 / 50 g
Trace Metals - Silty Clay 1 **NEW**	CRM045-50G	165 / 50 g
Trace Metals - Clay 1 **NEW**	CRM046-50G	165 / 50 g
Trace Metals - Sand 1 **NEW**	CRM048-50G	165 / 50 g
Trace Metals - Sandy Clay 1 **NEW**	CRM049-50G	165 / 50 g
Trace Metals - Clay 2 **NEW**	CRM051-50G	165 / 50 g
Trace Metals - Loamy Clay 1 **NEW**	CRM052-50G	175 / 50 g
Trace Metals - Loamy Clay 2 **NEW**	CRM059-50G	165 / 50 g

- **Ideal for AA and ICP Analysis**
- **Certified by EPA Methods and Protocols**
- **NATURAL Matrix, Not spiked or fortified**
- **US EPA SW-846, Method 3050B**
- **Method 1311**
- **Lead Abatement Program Material**

Solid waste standards do not require a hazardous shipping fee.

Solid Matrix Standards (continued)

Description	Cat. No.	Price / Unit
Metals in Soil (continued)		
Chromium VI - Clay **NEW**	CRM060-30G	120 / 30 g
Chromium VI - Sandy Loam **NEW**	CRM061-30G	120 / 30 g
Nutrients - Clay Soil **NEW**	CRM090-100G	170 / 100 g
Nutrients - Sandy Loam **NEW**	CRM091-100G	170 / 100 g
Nutrients - Sand **NEW**	CRM092-100G	170 / 100 g
Trace Metals - Taiwan Clay 1 **NEW**	CRM2003-50G	170 / 50 g
PH - Sandy Clay **NEW**	CRM497-100G	125 / 100 g
PH/Conductivity - Clay Soil **NEW**	CRM498-100G	125 / 100 g
PH - Loamy Sand **NEW**	CRM499-100G	125 / 100 g
Anions - Sandy Loam 1 **NEW**	CRM700-50G	160 / 50 g
Anions - Clay 1 **NEW**	CRM701-50G	160 / 50 g
Anions - Loamy Sand 1 **NEW**	CRM702-50G	160 / 50 g
Cyanide - Sediment **NEW**	CRM750-30G	125 / 30 g
Cyanide - Clay **NEW**	CRM751-30G	125 / 30 g
Cyanide - Sandy Loam **NEW**	CRM752-30G	125 / 30 g
Sulfide - Sediment **NEW**	CRM775-30G	125 / 30 g
Sulfide - Clay **NEW**	CRM776-30G	125 / 30 g
Sulfide - Sandy Loam **NEW**	CRM777-30G	125 / 30 g

Real World samples. Concentration on actual lots may vary.

Certificate of Analysis

CERTIFIED REFERENCE MATERIAL

Trace Metals - Industrial Incinerator Ash

ISO Guide 34
Cert# AR-1470

ISO/IEC 17025
Cert# AT-1467

Number CRM012-100G
Lot AR12
Solvent (Matrix) Incinerator Ash
Hazard Irritant
Storage &Handling Store in a cool dry environment.
Expiration Date See Sample Label
Certification Date: August 31, 2011
Certified By: Christopher Rucinski - QA Director

Analyte	*Units*	*Certified Value* [1,4]	*k* [3]	*Standard Deviation* [2]	*Confidence Interval*	*Prediction Interval*
Aluminum, Al Traceable to: NIST SRM 3101a Lot 992003	mg/Kg	2160 ± 30.8	2.00	91.0	2070 - 2250	1640 - 2680
Barium, Ba Traceable to: NIST SRM 3104a Lot 070222	mg/Kg	18.7 ± 0.372	2.00	1.10	17.6 - 19.8	13.1 - 24.3
Cadmium, Cd Traceable to: NIST SRM 3108 Lot 060531	mg/Kg	362 ± 5.92	2.00	17.5	344 - 379	375 - 448
Calcium, Ca Traceable to: NIST SRM 3109a Lot 050825	mg/Kg	2110 ± 34.2	2.00	101	2010 - 2210	1620 - 2600
Chromium, Cr (total) Traceable to: NIST SRM 3112a Lot 990607	mg/Kg	162000 ± 2044	2.00	6040	155000 - 168000	129000 - 194000
Copper, Cu Traceable to: NIST SRM 3114 Lot 891811	mg/Kg	3020 ± 46.7	2.00	138	2880 - 3150	2320 - 3710
Iron, Fe Traceable to: NIST SRM 3126a Lot 051031	mg/Kg	28700 ± 423	2.00	1250	27400 - 29900	22200 - 35200
Lead, Pb Traceable to: NIST SRM 3128 Lot 030721	mg/Kg	120 ± 6.26	2.00	18.5	102 - 139	18.8 - 222
Magnesium, Mg Traceable to: NIST SRM 3131a Lot 050302	mg/Kg	1510 ± 30.5	2.00	90.0	1420 - 1590	1080 - 1930
Manganese, Mn Traceable to: NIST SRM 3132 Lot 050429	mg/Kg	202 ± 2.71	2.00	8.00	194 - 210	158 - 247
Nickel, Ni Traceable to: NIST SRM 3136 Lot 000612	mg/Kg	13300 ± 150	2.00	442	12800 - 13700	10900 - 15700
Potassium, K Traceable to: NIST SRM 3141a Lot 051220	mg/Kg	73300 ± 866	2.00	2560	70800 - 75900	61000 - 85600
Silver, Ag Traceable to: NIST SRM 3151 Lot 992212	mg/Kg	54.8 ± 1.47	2.00	4.35	50.4 - 59.1	33.5 - 76.1
Sodium, Na Traceable to: NIST SRM 3152a Lot 010728	mg/Kg	29200 ± 382	2.00	1130	28100 - 30300	23800 - 34600
Zinc, Zn Traceable to: NIST SRM 3168a Lot 001402	mg/Kg	635 ± 9.48	2.00	28.0	607 - 663	495 - 774

Additional Information

Informational Values (Non-certified)
Trace Metal Acid Digestion by USEPA 3050B
Cobalt, Co - 22.4mg/Kg
Vanadium, V - 51.8mg/Kg

Description
A total sample size of 100 g is provided.
The sample has been heat sterilized.
This sample should be digested using USEPA method 3050, 3051 or equivilent methods.
This material was collected from a hazardous waste incinerator located in Western United States. The material is a natural matrix (not fortified) and the only processing was homogenization.

Page 1 of 3

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With references, such as unit conversions, general constants, element symbols, atomic weights and solvent miscibility table with densities and boiling points.

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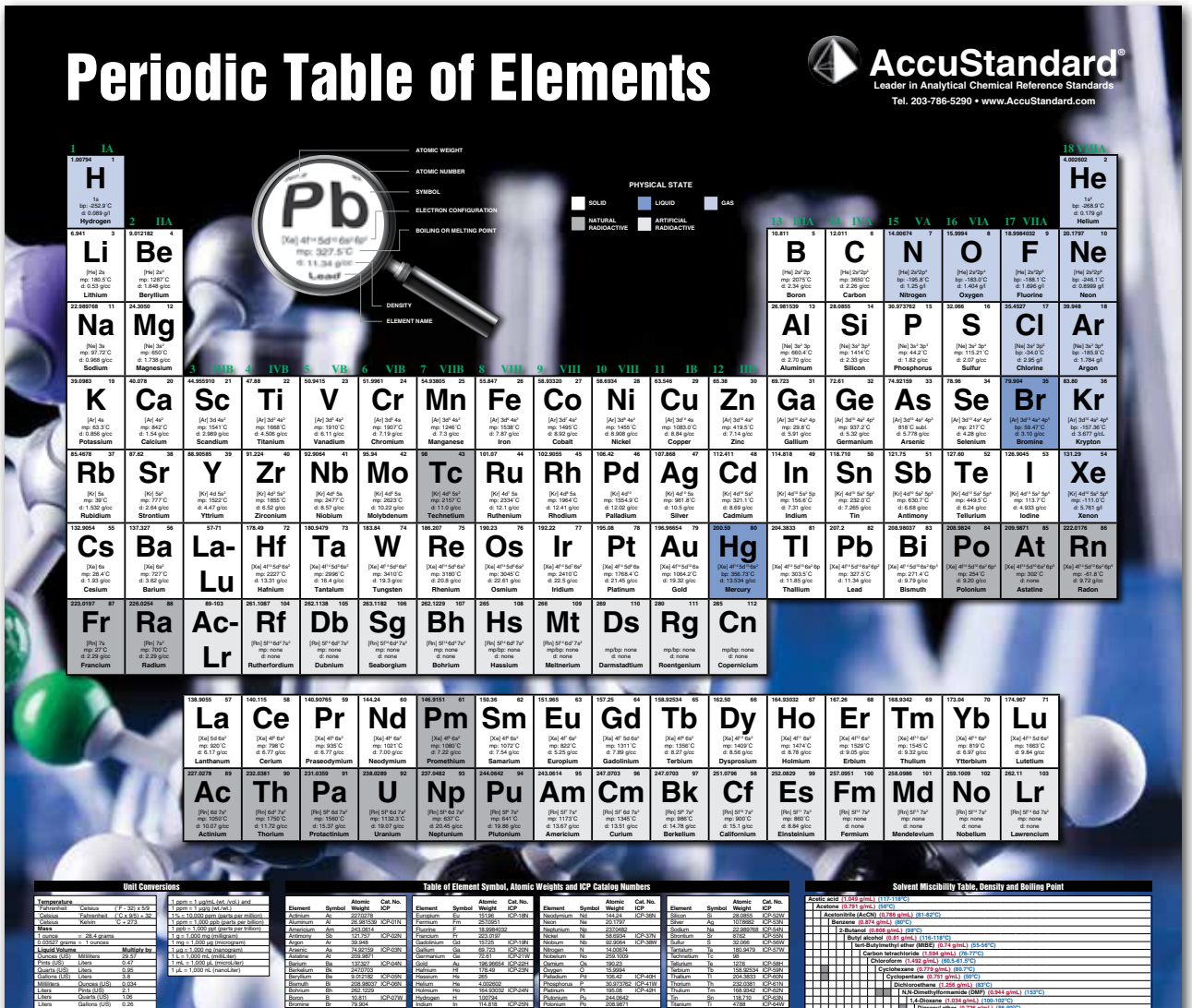

Technical Reference

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No. of Comps. ____

Product Description _____

Concentration _____

Solvent / Matrix _____

Requested Quantity

Organic

- ☐ 5 x 1 mL
- ☐ 10 x 1 mL
- ☐ 20 x 1 mL
- ☐ other ___ x ___

Inorganic

- ☐ _1_ x 500 mL
- ☐ ___ x 500 mL

	Component (s)	CAS No. (optional)	Concentration (if varied)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

Concentration Units

- ☐ ng/mL
- ☐ µg/mL
- ☐ mg/mL
- ☐ wt. %
- ☐ vol. %

Photocopy this form for future use

Quotation Notes _____

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