

Inorganic Standards

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



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Certificate of Analysis

Sample: Single Element ICP

125 Market Street
New Haven, CT 06513
USA

AccuStandard, Inc.

CERTIFICATE OF ANALYSIS

AccuTrace™ Reference Standard

Tel: (203)786-5290
Fax: (203)786-5287
www.AccuStandard.com

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

Included on ISO/IEC 17025 Scope of Accreditation
 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	Ti 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<0.02
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	Sr 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	Tc 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 8009 (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 de-ionized 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 19 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 procedures 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, Inorganic QC Manager

Page 1 of 1 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 minimum 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



Single Element ICP				NoHaz 20 mL Size
Element Starting Material Matrix	Unit	1000 µg/mL Cat. No.	10,000 µg/mL Cat. No.	20 mL (NoHaz) 10,000 µg/mL Cat. No.
Aluminum	50 mL	-----	-- ICP-01N-10X-0.5	ICP-01N-10X-20ML
Al(NO ₃) ₃ • 9H ₂ O	100 mL	ICP-01N-1	ICP-01N-10X-1	
2-5% Nitric acid	500 mL	ICP-01N-5	ICP-01N-10X-5	
Antimony	50 mL	-----	-- ICP-02N-10X-0.5	ICP-02N-10X-20ML
Sb Dilute HNO ₃ tr	100 mL	ICP-02N-1	ICP-02N-10X-1	
Tartaric acid	500 mL	ICP-02N-5	ICP-02N-10X-5	
Arsenic	50 mL	-----	-- ICP-03N-10X-0.5	ICP-03N-10X-20ML
As	100 mL	ICP-03N-1	ICP-03N-10X-1	
2-5% Nitric acid	500 mL	ICP-03N-5	ICP-03N-10X-5	
Barium	50 mL	-----	-- ICP-04N-10X-0.5	ICP-04N-10X-20ML
Ba(NO ₃) ₂	100 mL	ICP-04N-1	ICP-04N-10X-1	
2-5% Nitric acid	500 mL	ICP-04N-5	ICP-04N-10X-5	
Beryllium	50 mL	-----	-- ICP-05N-10X-0.5	ICP-05N-10X-20ML
BeO(C ₂ H ₃ O ₂) ₆	100 mL	ICP-05N-1	ICP-05N-10X-1	
2-5% Nitric acid	500 mL	ICP-05N-5	ICP-05N-10X-5	
Bismuth	50 mL	-----	-- ICP-06N-10X-0.5	ICP-06N-10X-20ML
Bi	100 mL	ICP-06N-1	ICP-06N-10X-1	
2-10% Nitric acid	500 mL	ICP-06N-5	ICP-06N-10X-5	
Boron	50 mL	-----	-- ICP-07W-10X-0.5 ▼	ICP-07W-10X-20ML
H ₃ BO ₃	100 mL	ICP-07W-1 ▼	ICP-07W-10X-1 ▼	
Water tr. NH ₄ OH	500 mL	ICP-07W-5 ▼	ICP-07W-10X-5 ▼	
Cadmium	50 mL	-----	-- ICP-08N-10X-0.5	ICP-08N-10X-20ML
Cd	100 mL	ICP-08N-1	ICP-08N-10X-1	
2-5% Nitric acid	500 mL	ICP-08N-5	ICP-08N-10X-5	
Calcium	50 mL	-----	-- ICP-09N-10X-0.5	ICP-09N-10X-20ML
CaCO ₃	100 mL	ICP-09N-1	ICP-09N-10X-1	
2-5% Nitric acid	500 mL	ICP-09N-5	ICP-09N-10X-5	
Cerium	50 mL	-----	-- ICP-11N-10X-0.5	ICP-11N-10X-20ML
Ce(NO ₃) ₃	100 mL	ICP-11N-1	ICP-11N-10X-1	
2-5% Nitric acid	500 mL	ICP-11N-5	ICP-11N-10X-5	
Cesium	50 mL	-----	-- ICP-12N-10X-0.5	ICP-12N-10X-20ML
CsNO ₃	100 mL	ICP-12N-1	ICP-12N-10X-1	
2-5% Nitric acid	500 mL	ICP-12N-5	ICP-12N-10X-5	
Chromium reduced to (+3) state	50 mL	-----	-- ICP-13N-10X-0.5	ICP-13N-10X-20ML
(NH ₄) ₂ Cr ₂ O ₇	100 mL	ICP-13N-1	ICP-13N-10X-1	
2-5% Nitric acid	500 mL	ICP-13N-5	ICP-13N-10X-5	
Cobalt	50 mL	-----	-- ICP-14N-10X-0.5	ICP-14N-10X-20ML
Co	100 mL	ICP-14N-1	ICP-14N-10X-1	
2-5% Nitric acid	500 mL	ICP-14N-5	ICP-14N-10X-5	
Copper	50 mL	-----	-- ICP-15N-10X-0.5	ICP-15N-10X-20ML
Cu	100 mL	ICP-15N-1	ICP-15N-10X-1	
2-5% Nitric acid	500 mL	ICP-15N-5	ICP-15N-10X-5	
Dysprosium	50 mL	-----	-- ICP-16N-10X-0.5	ICP-16N-10X-20ML
Dy ₂ O ₃	100 mL	ICP-16N-1	ICP-16N-10X-1	
2-5% Nitric acid	500 mL	ICP-16N-5	ICP-16N-10X-5	
Erbium	50 mL	-----	-- ICP-17N-10X-0.5	ICP-17N-10X-20ML
Er ₂ O ₃	100 mL	ICP-17N-1	ICP-17N-10X-1	
2-5% Nitric acid	500 mL	ICP-17N-5	ICP-17N-10X-5	
Europium	50 mL	-----	-- ICP-18N-10X-0.5	ICP-18N-10X-20ML
Eu ₂ O ₃	100 mL	ICP-18N-1	ICP-18N-10X-1	
2-5% Nitric acid	500 mL	ICP-18N-5	ICP-18N-10X-5	

▼ Hazardous fee not required.



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



Single Element ICP				NoHaz 20 mL Size
Element	Starting Material	1000 µg/mL	10,000 µg/mL	20 mL (NoHaz) 10,000 µg/mL
Matrix	Unit	Cat. No.	Cat. No.	Cat. No.
Gadolinium	50 mL	-----	--	ICP-19N-10X-0.5
Gd ₂ O ₃	100 mL	ICP-19N-1	ICP-19N-10X-1	ICP-19N-10X-20ML
2-5% Nitric acid	500 mL	ICP-19N-5	ICP-19N-10X-5	
Gallium	50 mL	-----	--	ICP-20N-10X-0.5
Ga	100 mL	ICP-20N-1	ICP-20N-10X-1	ICP-20N-10X-20ML
2-5% Nitric acid	500 mL	ICP-20N-5	ICP-20N-10X-5	
Germanium	50 mL	-----	--	ICP-21W-10X-0.5 ▼
(NH ₄) ₂ GeF ₆	100 mL	ICP-21W-1 ▼	ICP-21W-10X-1 ▼	ICP-21W-10X-20ML
Water tr. HF	500 mL	ICP-21W-5 ▼	ICP-21W-10X-5 ▼	
Gold	50 mL	-----	--	ICP-22H-10X-0.5
Au	100 mL	ICP-22H-1	ICP-22H-10X-1	ICP-22H-10X-20ML
10% HCl (min.)	500 mL	ICP-22H-5	-----	--
Hafnium	50 mL	-----	--	ICP-23N-10X-0.5
HfO ₂	100 mL	ICP-23N-1	ICP-23N-10X-1	ICP-23N-10X-20ML
2-5% Nitric acid tr. HF	500 mL	ICP-23N-5	ICP-23N-10X-5	
Holmium	50 mL	-----	--	ICP-24N-10X-0.5
Ho ₂ O ₃	100 mL	ICP-24N-1	ICP-24N-10X-1	ICP-24N-10X-20ML
2-5% Nitric acid	500 mL	ICP-24N-5	ICP-24N-10X-5	
Indium	50 mL	-----	--	ICP-25N-10X-0.5
In	100 mL	ICP-25N-1	ICP-25N-10X-1	ICP-25N-10X-20ML
2-5% Nitric acid	500 mL	ICP-25N-5	ICP-25N-10X-5	
Iridium	50 mL	-----	--	ICP-26H-10X-0.5
IrCl ₃ • 3H ₂ O	100 mL	ICP-26H-1	ICP-26H-10X-1	ICP-26H-10X-20ML
10% HCl (min.)	500 mL	ICP-26H-5	-----	--
Iron	50 mL	-----	--	ICP-27N-10X-0.5
Fe	100 mL	ICP-27N-1	ICP-27N-10X-1	ICP-27N-10X-20ML
2-5% Nitric acid	500 mL	ICP-27N-5	ICP-27N-10X-5	
Lanthanum	50 mL	-----	--	ICP-28N-10X-0.5
La ₂ O ₃	100 mL	ICP-28N-1	ICP-28N-10X-1	ICP-28N-10X-20ML
2-5% Nitric acid	500 mL	ICP-28N-5	ICP-28N-10X-5	
Lead	50 mL	-----	--	ICP-29N-10X-0.5
Pb(NO ₃) ₂	100 mL	ICP-29N-1	ICP-29N-10X-1	ICP-29N-10X-20ML
2-5% Nitric acid	500 mL	ICP-29N-5	ICP-29N-10X-5	
Lithium	50 mL	-----	--	ICP-30N-10X-0.5
Li ₂ CO ₃	100 mL	ICP-30N-1	ICP-30N-10X-1	ICP-30N-10X-20ML
2-5% Nitric acid	500 mL	ICP-30N-5	ICP-30N-10X-5	
Lutetium	50 mL	-----	--	ICP-31N-10X-0.5
Lu ₂ O ₃	100 mL	ICP-31N-1	ICP-31N-10X-1	ICP-31N-10X-20ML
2-5% Nitric acid	500 mL	ICP-31N-5	ICP-31N-10X-5	
Magnesium	50 mL	-----	--	ICP-32N-10X-0.5
MgO	100 mL	ICP-32N-1	ICP-32N-10X-1	ICP-32N-10X-20ML
2-5% Nitric acid	500 mL	ICP-32N-5	ICP-32N-10X-5	
Manganese	50 mL	-----	--	ICP-33N-10X-0.5
Mn(C ₂ H ₃ O ₂) ₂	100 mL	ICP-33N-1	ICP-33N-10X-1	ICP-33N-10X-20ML
2-5% Nitric acid	500 mL	ICP-33N-5	ICP-33N-10X-5	
Mercury	50 mL	-----	--	ICP-34N-10X-0.5
Hg	100 mL	ICP-34N-1	ICP-34N-10X-1	ICP-34N-10X-20ML
10% Nitric acid	500 mL	ICP-34N-5	ICP-34N-10X-5	
Molybdenum	50 mL	-----	--	ICP-35W-10X-0.5 ▼
(NH ₄) ₂ MoO ₄	100 mL	ICP-35W-1 ▼	ICP-35W-10X-1 ▼	ICP-35W-10X-20ML
Water tr. NH ₄ OH	500 mL	ICP-35W-5 ▼	ICP-35W-10X-5 ▼	

▼ Hazardous fee not required.

ICP

Single Element



3 Year Minimum Shelf Life on Single Element ICP Standards



Single Element ICP				NoHaz 20 mL Size
Element	Unit	1000 µg/mL Cat. No.	10,000 µg/mL Cat. No.	20 mL (NoHaz) 10,000 µg/mL Cat. No.
Neodymium	50 mL	-----	--	ICP-36N-10X-0.5
Nd ₂ O ₃	100 mL	ICP-36N-1		ICP-36N-10X-1
2-5% Nitric acid	500 mL	ICP-36N-5		ICP-36N-10X-5
Nickel	50 mL	-----	--	ICP-37N-10X-0.5
Ni	100 mL	ICP-37N-1		ICP-37N-10X-1
2-5% Nitric acid	500 mL	ICP-37N-5		ICP-37N-10X-5
Niobium	50 mL	-----	--	ICP-38W-10X-0.5 ▼
Nb ₂ O ₅	100 mL	ICP-38W-1 ▼		ICP-38W-10X-1 ▼
Water tr. HF	500 mL	ICP-38W-5 ▼		ICP-38W-10X-5 ▼
Palladium	50 mL	-----	--	ICP-40H-10X-0.5
Pd	100 mL	ICP-40H-1		ICP-40H-10X-1
10% HCl (min.)	500 mL	ICP-40H-5	-----	--
Phosphorus	50 mL	-----	--	ICP-41W-10X-0.5 ▼
NH ₄ H ₂ PO ₄	100 mL	ICP-41W-1 ▼		ICP-41W-10X-1 ▼
Water	500 mL	ICP-41W-5 ▼		ICP-41W-10X-5 ▼
Platinum	50 mL	-----	--	ICP-42H-10X-0.5
Pt	100 mL	ICP-42H-1		ICP-42H-10X-1
10% HCl (min.)	500 mL	ICP-42H-5	-----	--
Potassium	50 mL	-----	--	ICP-43N-10X-0.5
KNO ₃	100 mL	ICP-43N-1		ICP-43N-10X-1
2-5% Nitric acid	500 mL	ICP-43N-5		ICP-43N-10X-5
Praseodymium	50 mL	-----	--	ICP-44N-10X-0.5
Pr ₆ O ₁₁	100 mL	ICP-44N-1		ICP-44N-10X-1
2-5% Nitric acid	500 mL	ICP-44N-5		ICP-44N-10X-5
Rhenium	50 mL	-----	--	ICP-45W-10X-0.5 ▼
Re	100 mL	ICP-45W-1 ▼		ICP-45W-10X-1 ▼
Water tr. Nitric acid	500 mL	ICP-45W-5 ▼		ICP-45W-10X-5 ▼
Rhodium	50 mL	-----	--	ICP-46H-10X-0.5
RhCl ₃ • 3H ₂ O	100 mL	ICP-46H-1		ICP-46H-10X-1
10% HCl (min.)	500 mL	ICP-46H-5	-----	--
Rubidium	50 mL	-----	--	ICP-47N-10X-0.5
RbNO ₃	100 mL	ICP-47N-1		ICP-47N-10X-1
2-5% Nitric acid	500 mL	ICP-47N-5		ICP-47N-10X-5
Ruthenium	50 mL	-----	--	ICP-48H-10X-0.5
RuCl ₃ • 3H ₂ O	100 mL	ICP-48H-1		ICP-48H-10X-1
10% HCl	500 mL	ICP-48H-5	-----	--
Samarium	50 mL	-----	--	ICP-49N-10X-0.5
Sm ₂ O ₃	100 mL	ICP-49N-1		ICP-49N-10X-1
2-5% Nitric acid	500 mL	ICP-49N-5		ICP-49N-10X-5
Scandium	50 mL	-----	--	ICP-50N-10X-0.5
Sc ₂ O ₃	100 mL	ICP-50N-1		ICP-50N-10X-1
2-5% Nitric acid	500 mL	ICP-50N-5		ICP-50N-10X-5
Selenium	50 mL	-----	--	ICP-51N-10X-0.5
Se	100 mL	ICP-51N-1		ICP-51N-10X-1
2-5% Nitric acid	500 mL	ICP-51N-5		ICP-51N-10X-5
Silicon	50 mL	-----	--	ICP-52W-10X-0.5 ▼
(NH ₄) ₂ SiF ₆	100 mL	ICP-52W-1 ▼		ICP-52W-10X-1 ▼
Water tr. HF	500 mL	ICP-52W-5 ▼		ICP-52W-10X-5 ▼
Silver	50 mL	-----	--	ICP-53N-10X-0.5
AgNO ₃	100 mL	ICP-53N-1		ICP-53N-10X-1
2-5% Nitric acid	500 mL	ICP-53N-5		ICP-53N-10X-5
Sodium	50 mL	-----	--	ICP-54N-10X-0.5
NaNO ₃	100 mL	ICP-54N-1		ICP-54N-10X-1
2-5% Nitric acid	500 mL	ICP-54N-5		ICP-54N-10X-5
Strontium	50 mL	-----	--	ICP-55N-10X-0.5
Sr(NO ₃) ₂	100 mL	ICP-55N-1		ICP-55N-10X-1
2-5% Nitric acid	500 mL	ICP-55N-5		ICP-55N-10X-5
Sulfur	50 mL	-----	--	ICP-56W-10X-0.5 ▼
(NH ₄) ₂ SO ₄	100 mL	ICP-56W-1 ▼		ICP-56W-10X-1 ▼
Water	500 mL	ICP-56W-5 ▼		ICP-56W-10X-5 ▼
Tantalum	50 mL	-----	--	ICP-57W-10X-0.5 ▼
Ta	100 mL	ICP-57W-1 ▼		ICP-57W-10X-1 ▼
Water tr. HF	500 mL	ICP-57W-5 ▼		ICP-57W-10X-5 ▼

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ICP Single Element

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- Formulated from Ultra High Purity Starting Materials and Acids
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Single Element ICP				NoHaz 20 mL Size	
Element Starting Material Matrix	Unit	1000 µg/mL Cat. No.	10,000 µg/mL Cat. No.	20 mL (NoHaz) 10,000 µg/mL Cat. No.	
Tellurium	50 mL	-----	--	ICP-58H-10X-0.5	ICP-58H-10X-20ML
Te	100 mL	ICP-58H-1		ICP-58H-10X-1	
20% HCl (min.)	500 mL	ICP-58H-5		ICP-58H-10X-5	
Terbium	50 mL	-----	--	ICP-59N-10X-0.5	ICP-59N-10X-20ML
Tb ₂ O ₇	100 mL	ICP-59N-1		ICP-59N-10X-1	
2-5% Nitric acid	500 mL	ICP-59N-5		ICP-59N-10X-5	
Thallium	50 mL	-----	--	ICP-60N-10X-0.5	ICP-60N-10X-20ML
Tl	100 mL	ICP-60N-1		ICP-60N-10X-1	
2-5% Nitric acid	500 mL	ICP-60N-5		ICP-60N-10X-5	
Thorium		-----	--	-----	--
Th(NO ₃) ₄ • 4H ₂ O	100 mL	ICP-61N-1			
2-5% Nitric acid	500 mL	ICP-61N-5			
Thulium	50 mL	-----	--	ICP-62N-10X-0.5	ICP-62N-10X-20ML
Tm ₂ O ₃	100 mL	ICP-62N-1		ICP-62N-10X-1	
2-5% Nitric acid	500 mL	ICP-62N-5		-----	
Tin	50 mL	-----	--	ICP-63N-10X-0.5	ICP-63N-10X-20ML
Sn	100 mL	ICP-63N-1		ICP-63N-10X-1	
2-5% Nitric acid tr. HF	500 mL	ICP-63N-5		ICP-63N-10X-5	
Titanium	50 mL	-----	--	ICP-64W-10X-0.5 ▼	-----
(NH ₄) ₂ TiF ₆	100 mL	ICP-64W-1 ▼		ICP-64W-10X-1 ▼	
Water tr. HF	500 mL	ICP-64W-5 ▼		ICP-64W-10X-5 ▼	
Tungsten	50 mL	-----	--	ICP-65W-10X-0.5 ▼	ICP-65W-10X-20ML
(NH ₄) ₂ WO ₄	100 mL	ICP-65W-1 ▼		ICP-65W-10X-1 ▼	
Water tr. NH ₄ OH	500 mL	ICP-65W-5 ▼		ICP-65W-10X-5 ▼	
Uranium	-----	-----	--	-----	--
U ₃ O ₈	100 mL	ICP-66N-1			
2-5% Nitric acid	500 mL	ICP-66N-5			
Vanadium	50 mL	-----	--	ICP-67N-10X-0.5	ICP-67N-10X-20ML
NH ₄ VO ₃	100 mL	ICP-67N-1		ICP-67N-10X-1	
2-5% Nitric acid	500 mL	ICP-67N-5		ICP-67N-10X-5	
Ytterbium	50 mL	-----	--	ICP-68N-10X-0.5	ICP-68N-10X-20ML
Yb ₂ O ₃	100 mL	ICP-68N-1		ICP-68N-10X-1	
2-5% Nitric acid	500 mL	ICP-68N-5		ICP-68N-10X-5	
Yttrium	50 mL	-----	--	ICP-69N-10X-0.5	ICP-69N-10X-20ML
Y ₂ O ₃	100 mL	ICP-69N-1		ICP-69N-10X-1	
2-5% Nitric acid	500 mL	ICP-69N-5		ICP-69N-10X-5	
Zinc	50 mL	-----	--	ICP-70N-10X-0.5	ICP-70N-10X-20ML
Zn	100 mL	ICP-70N-1		ICP-70N-10X-1	
2-5% Nitric acid	500 mL	ICP-70N-5		ICP-70N-10X-5	
Zirconium	50 mL	-----	--	ICP-71N-10X-0.5	ICP-71N-10X-20ML
ZrO(NO ₃) ₂	100 mL	ICP-71N-1		ICP-71N-10X-1	
2-5% Nitric acid	500 mL	ICP-71N-5		ICP-71N-10X-5	

▼ Hazardous fee not required.

Calibration and Matrix Blanks

Nitric Acid Blank

CLP-BLN-5 500 mL
CLP-BLN-L-VAP 1L
(2 x 500 mL)

5% HNO₃ in 18 Megohm ASTM Type I deionized Water

Hydrochloric Acid Blank

CLP-BLH-5 500 mL
CLP-BLH-L-VAP 1L
(2 x 500 mL)

5% HCl in 18 Megohm ASTM Type I deionized Water

Mixed Acid Blank

CLP-BLMA-5 500 mL
CLP-BLMA-L-VAP 1L
(2 x 500 mL)

5% HCl + 1% HNO₃ in 18 Megohm ASTM Type I deionized Water

Water Blank

CLP-BLW-5 ▼ 500 mL
CLP-BLW-L-VAP ▼ 1L
(2 x 500 mL)

18 Megohm ASTM Type I deionized Water

▼ Hazardous fee not required.

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

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.	Cat. No.	Cat. No.
Al (Aluminum)	2-5% HNO ₃	100 mL	ICP-MS-01N-0.01X-1	ICP-MS-01N-0.1X-1	ICP-MS-01N-1
Sb (Antimony)	2-5% HNO ₃	100 mL	ICP-MS-02N-0.01X-1	ICP-MS-02N-0.1X-1	ICP-MS-02N-1
As (Arsenic)	2-5% HNO ₃	100 mL	ICP-MS-03N-0.01X-1	ICP-MS-03N-0.1X-1	ICP-MS-03N-1
Ba (Barium)	2-5% HNO ₃	100 mL	ICP-MS-04N-0.01X-1	ICP-MS-04N-0.1X-1	ICP-MS-04N-1
Be (Beryllium)	2-5% HNO ₃	100 mL	ICP-MS-05N-0.01X-1	ICP-MS-05N-0.1X-1	ICP-MS-05N-1
Bi (Bismuth)	2-10% HNO ₃	100 mL	ICP-MS-06N-0.01X-1	ICP-MS-06N-0.1X-1	ICP-MS-06N-1
B (Boron) ▼	H ₂ O tr. NH ₄ OH	100 mL	ICP-MS-07W-0.01X-1	ICP-MS-07W-0.1X-1	ICP-MS-07W-1
Cd (Cadmium)	2-5% HNO ₃	100 mL	ICP-MS-08N-0.01X-1	ICP-MS-08N-0.1X-1	ICP-MS-08N-1
Ca (Calcium)	2-5% HNO ₃	100 mL	ICP-MS-09N-0.01X-1	ICP-MS-09N-0.1X-1	ICP-MS-09N-1
Ce (Cerium)	2-5% HNO ₃	100 mL	ICP-MS-11N-0.01X-1	ICP-MS-11N-0.1X-1	ICP-MS-11N-1
Cs (Cesium)	2-5% HNO ₃	100 mL	ICP-MS-12N-0.01X-1	ICP-MS-12N-0.1X-1	ICP-MS-12N-1
Cr (Chromium)	2-5% HNO ₃	100 mL	ICP-MS-13N-0.01X-1	ICP-MS-13N-0.1X-1	ICP-MS-13N-1
Co (Cobalt)	2-5% HNO ₃	100 mL	ICP-MS-14N-0.01X-1	ICP-MS-14N-0.1X-1	ICP-MS-14N-1
Cu (Copper)	2-5% HNO ₃	100 mL	ICP-MS-15N-0.01X-1	ICP-MS-15N-0.1X-1	ICP-MS-15N-1
Dy (Dysprosium)	2-5% HNO ₃	100 mL	ICP-MS-16N-0.01X-1	ICP-MS-16N-0.1X-1	ICP-MS-16N-1
Er (Erbium)	2-5% HNO ₃	100 mL	ICP-MS-17N-0.01X-1	ICP-MS-17N-0.1X-1	ICP-MS-17N-1
Eu (Europium)	2-5% HNO ₃	100 mL	ICP-MS-18N-0.01X-1	ICP-MS-18N-0.1X-1	ICP-MS-18N-1
Gd (Gadolinium)	2-5% HNO ₃	100 mL	ICP-MS-19N-0.01X-1	ICP-MS-19N-0.1X-1	ICP-MS-19N-1
Ga (Gallium)	2-5% HNO ₃	100 mL	ICP-MS-20N-0.01X-1	ICP-MS-20N-0.1X-1	ICP-MS-20N-1
Ge (Germanium) ▼	H ₂ O tr. HF	100 mL	ICP-MS-21W-0.01X-1	ICP-MS-21W-0.1X-1	ICP-MS-21W-1
Au (Gold)	10% HCl	100 mL	ICP-MS-22H-0.01X-1	ICP-MS-22H-0.1X-1	ICP-MS-22H-1
Hf (Hafnium)	2-5% HNO ₃ tr. HF	100 mL	ICP-MS-23N-0.01X-1	ICP-MS-23N-0.1X-1	ICP-MS-23N-1
Ho (Holmium)	2-5% HNO ₃	100 mL	ICP-MS-24N-0.01X-1	ICP-MS-24N-0.1X-1	ICP-MS-24N-1
In (Indium)	2-5% HNO ₃	100 mL	ICP-MS-25N-0.01X-1	ICP-MS-25N-0.1X-1	ICP-MS-25N-1
Ir (Iridium)	10% HCl	100 mL	ICP-MS-26H-0.01X-1	ICP-MS-26H-0.1X-1	ICP-MS-26H-1
Fe (Iron)	2-5% HNO ₃	100 mL	ICP-MS-27N-0.01X-1	ICP-MS-27N-0.1X-1	ICP-MS-27N-1
La (Lanthanum)	2-5% HNO ₃	100 mL	ICP-MS-28N-0.01X-1	ICP-MS-28N-0.1X-1	ICP-MS-28N-1
Pb (Lead)	2-5% HNO ₃	100 mL	ICP-MS-29N-0.01X-1	ICP-MS-29N-0.1X-1	ICP-MS-29N-1
Li (Lithium)	2-5% HNO ₃	100 mL	ICP-MS-30N-0.01X-1	ICP-MS-30N-0.1X-1	ICP-MS-30N-1
Lu (Lutetium)	2-5% HNO ₃	100 mL	ICP-MS-31N-0.01X-1	ICP-MS-31N-0.1X-1	ICP-MS-31N-1
Mg (Magnesium)	2-5% HNO ₃	100 mL	ICP-MS-32N-0.01X-1	ICP-MS-32N-0.1X-1	ICP-MS-32N-1
Mn (Manganese)	2-5% HNO ₃	100 mL	ICP-MS-33N-0.01X-1	ICP-MS-33N-0.1X-1	ICP-MS-33N-1
Hg (Mercury)	10% HNO ₃	100 mL	ICP-MS-34N-0.01X-1	ICP-MS-34N-0.1X-1	ICP-MS-34N-1
Mo (Molybdenum) ▼	H ₂ O tr. NH ₄ OH	100 mL	ICP-MS-35W-0.01X-1	ICP-MS-35W-0.1X-1	ICP-MS-35W-1
Nd (Neodymium) ▼	2-5% HNO ₃	100 mL	ICP-MS-36N-0.01X-1	ICP-MS-36N-0.1X-1	ICP-MS-36N-1

▼ Hazardous fee not required.





ICP/MS

Single Element

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

Single Element ICP/MS (Continued)

Element	Matrix	Unit	100 µg/mL		1,000 µg/mL		10,000 µg/mL	
			Cat. No.		Cat. No.		Cat. No.	
Ni (Nickel)	2-5% HNO ₃	100 mL	ICP-MS-37N-0.01X-1		ICP-MS-37N-0.1X-1		ICP-MS-37N-1	
Nb (Niobium)	H ₂ O tr. HF	100 mL	ICP-MS-38W-0.01X-1		ICP-MS-38W-0.1X-1		ICP-MS-38W-1	
Pd (Palladium)	10% HCl	100 mL	ICP-MS-40H-0.01X-1		ICP-MS-40H-0.1X-1		ICP-MS-40H-1	
P (Phosphorous) ▼	H ₂ O	100 mL	ICP-MS-41W-0.01X-1		ICP-MS-41W-0.1X-1		ICP-MS-41W-1	
Pt (Platinum)	10% HCl	100 mL	ICP-MS-42H-0.01X-1		ICP-MS-42H-0.1X-1		ICP-MS-42H-1	
K (Potassium)	2-5% HNO ₃	100 mL	ICP-MS-43N-0.01X-1		ICP-MS-43N-0.1X-1		ICP-MS-43N-1	
Pr (Praseodymium)	2-5% HNO ₃	100 mL	ICP-MS-44N-0.01X-1		ICP-MS-44N-0.1X-1		ICP-MS-44N-1	
Re (Rhenium) ▼	H ₂ O tr. HNO ₃	100 mL	ICP-MS-45W-0.01X-1		ICP-MS-45W-0.1X-1		ICP-MS-45W-1	
Rh (Rhodium)	10% HCl	100 mL	ICP-MS-46H-0.01X-1		ICP-MS-46H-0.1X-1		ICP-MS-46H-1	
Rb (Rubidium)	2-5% HNO ₃	100 mL	ICP-MS-47N-0.01X-1		ICP-MS-47N-0.1X-1		ICP-MS-47N-1	
Ru (Ruthenium)	10% HCl	100 mL	ICP-MS-48H-0.01X-1		ICP-MS-48H-0.1X-1		ICP-MS-48H-1	
Sm (Samarium)	2-5% HNO ₃	100 mL	ICP-MS-49N-0.01X-1		ICP-MS-49N-0.1X-1		ICP-MS-49N-1	
Sc (Scandium)	2-5% HNO ₃	100 mL	ICP-MS-50N-0.01X-1		ICP-MS-50N-0.1X-1		ICP-MS-50N-1	
Se (Selenium)	2-5% HNO ₃	100 mL	ICP-MS-51N-0.01X-1		ICP-MS-51N-0.1X-1		ICP-MS-51N-1	
Si (Silicon) ▼	H ₂ O tr. HF	100 mL	ICP-MS-52W-0.01X-1		ICP-MS-52W-0.1X-1		ICP-MS-52W-1	
Ag (Silver)	2-5% HNO ₃	100 mL	ICP-MS-53N-0.01X-1		ICP-MS-53N-0.1X-1		ICP-MS-53N-1	
Na (Sodium)	2-5% HNO ₃	100 mL	ICP-MS-54N-0.01X-1		ICP-MS-54N-0.1X-1		ICP-MS-54N-1	
Sr (Strontium)	2-5% HNO ₃	100 mL	ICP-MS-55N-0.01X-1		ICP-MS-55N-0.1X-1		ICP-MS-55N-1	
S (Sulfur) ▼	H ₂ O	100 mL	ICP-MS-56W-0.01X-1		ICP-MS-56W-0.1X-1		ICP-MS-56W-1	
Ta (Tantalum) ▼	H ₂ O tr. HF	100 mL	ICP-MS-57W-0.01X-1		ICP-MS-57W-0.1X-1		ICP-MS-57W-1	
Te (Tellurium)	10% HCl (min.)	100 mL	ICP-MS-58H-0.01X-1		ICP-MS-58H-0.1X-1		ICP-MS-58H-1	
Tb (Terbium)	2-5% HNO ₃	100 mL	ICP-MS-59N-0.01X-1		ICP-MS-59N-0.1X-1		ICP-MS-59N-1	
Tl (Thallium)	2-5% HNO ₃	100 mL	ICP-MS-60N-0.01X-1		ICP-MS-60N-0.1X-1		ICP-MS-60N-1	
Th (Thorium)	2-5% HNO ₃	100 mL	ICP-MS-61N-0.01X-1		ICP-MS-61N-0.1X-1		-----	--
Tm (Thulium)	2-5% HNO ₃	100 mL	ICP-MS-62N-0.01X-1		ICP-MS-62N-0.1X-1		ICP-MS-62N-1	
Sn (Tin)	2-5% HNO ₃ tr. HF	100 mL	ICP-MS-63N-0.01X-1		ICP-MS-63N-0.1X-1		ICP-MS-63N-1	
Ti (Titanium) ▼	H ₂ O tr. HF	100 mL	ICP-MS-64W-0.01X-1		ICP-MS-64W-0.1X-1		ICP-MS-64W-1	
W (Tungsten) ▼	H ₂ O tr. NH ₄ OH	100 mL	ICP-MS-65W-0.01X-1		ICP-MS-65W-0.1X-1		ICP-MS-65W-1	
U (Uranium)	2-5% HNO ₃	100 mL	ICP-MS-66N-0.01X-1		ICP-MS-66N-0.1X-1		-----	--
V (Vanadium)	2-5% HNO ₃	100 mL	ICP-MS-67N-0.01X-1		ICP-MS-67N-0.1X-1		ICP-MS-67N-1	
Yb (Ytterbium)	2-5% HNO ₃	100 mL	ICP-MS-68N-0.01X-1		ICP-MS-68N-0.1X-1		ICP-MS-68N-1	
Y (Yttrium)	2-5% HNO ₃	100 mL	ICP-MS-69N-0.01X-1		ICP-MS-69N-0.1X-1		ICP-MS-69N-1	
Zn (Zinc)	2-5% HNO ₃	100 mL	ICP-MS-70N-0.01X-1		ICP-MS-70N-0.1X-1		ICP-MS-70N-1	
Zr (Zirconium)	2-5% HNO ₃	100 mL	ICP-MS-71N-0.01X-1		ICP-MS-71N-0.1X-1		ICP-MS-71N-1	

▼ 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.	Element Starting Material Matrix	Unit	1000 µg/mL Cat. No.
Aluminum	100 mL	AA01N-1	Molybdenum	100 mL	AA35W-1 ▼
2-5% Nitric acid	500 mL	AA01N-5	Water tr. NH ₄ OH	500 mL	AA35W-5 ▼
Antimony	100 mL	AA02N-1	Nickel	100 mL	AA37N-1
2-5% HNO ₃ tr. Tartaric acid	500 mL	AA02N-5	2-5% Nitric acid	500 mL	AA37N-5
Arsenic	100 mL	AA03N-1	Phosphorus	100 mL	AA41W-1 ▼
2-5% Nitric acid	500 mL	AA03N-5	Water	500 mL	AA41W-5 ▼
Barium	100 mL	AA04N-1	Platinum	100 mL	AA42H-1
2-5% Nitric acid	500 mL	AA04N-5	2% HCl (min.)	500 mL	AA42H-5
Boron	100 mL	AA07W-1 ▼	Potassium	100 mL	AA43N-1
Water tr. NH ₄ OH	500 mL	AA07W-5 ▼	2-5% Nitric acid	500 mL	AA43N-5
Cadmium	100 mL	AA08N-1	Selenium	100 mL	AA51N-1
2-5% Nitric acid	500 mL	AA08N-5	2-5% Nitric acid	500 mL	AA51N-5
Calcium	100 mL	AA09N-1	Silicon	100 mL	AA52W-1 ▼
2-5% Nitric acid	500 mL	AA09N-5	Water tr. HF	500 mL	AA52W-5 ▼
Chromium	100 mL	AA13N-1	Silver	100 mL	AA53N-1
2-5% Nitric acid	500 mL	AA13N-5	2-5% Nitric acid	500 mL	AA53N-5
Cobalt	100 mL	AA14N-1	Sodium	100 mL	AA54N-1
2-5% Nitric acid	500 mL	AA14N-5	2-5% Nitric acid	500 mL	AA54N-5
Copper	100 mL	AA15N-1	Strontium	100 mL	AA55N-1
2-5% Nitric acid	500 mL	AA15N-5	2-5% Nitric acid	500 mL	AA55N-5
Gold	100 mL	AA22H-1	Sulfur	100 mL	AA56W-1 ▼
5% HCl (min.)	500 mL	AA22H-5	Water	500 mL	AA56W-5 ▼
Iron	100 mL	AA27N-1	Thallium	100 mL	AA60N-1
2-5% Nitric acid	500 mL	AA27N-5	2-5% Nitric acid	500 mL	AA60N-5
Lead	100 mL	AA29N-1	Tin	100 mL	AA63N-1
2-5% Nitric acid	500 mL	AA29N-5	2-5% Nitric acid tr. HF	500 mL	AA63N-5
Lithium	100 mL	AA30N-1	Titanium	100 mL	AA64W-1 ▼
2-5% Nitric acid	500 mL	AA30N-5	Water tr. HF	500 mL	AA64W-5 ▼
Magnesium	100 mL	AA32N-1	Vanadium	100 mL	AA67N-1
2-5% Nitric acid	500 mL	AA32N-5	5-10% Nitric acid	500 mL	AA67N-5
Manganese	100 mL	AA33N-1	Yttrium	100 mL	AA69N-1
2-5% Nitric acid	500 mL	AA33N-5	2-5% Nitric acid	500 mL	AA69N-5
Mercury	100 mL	AA34N-1	Zinc	100 mL	AA70N-1
2-5% Nitric acid	500 mL	AA34N-5	2-5% Nitric acid	500 mL	AA70N-5

▼ Hazardous fee not required.



Single Element AA



AA

Matrix Modifier & Calibration

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.
Ammonium dihydrogen phosphate 40% in H ₂ O	NH ₄ H ₂ PO ₄	50 mL	MOD-02-0.5 ▼
		100 mL	MOD-02-1 ▼
		500 mL	MOD-02-5 ▼
Ammonium nitrate 5% in H ₂ O	NH ₄ NO ₃	50 mL	MOD-03-0.5 ▼
		100 mL	MOD-03-1 ▼
		500 mL	MOD-03-5 ▼
Calcium nitrate 2% Calcium in 5% in HNO ₃	Ca(NO ₃) ₂ • 4H ₂ O	50 mL	MOD-04-0.5
		100 mL	MOD-04-1
		500 mL	MOD-04-5
Lanthanum chloride 5% Lanthanum in 5% HCl	LaCl ₃	50 mL	MOD-05-0.5
		100 mL	MOD-05-1
		500 mL	MOD-05-5
Lanthanum nitrate 5% Lanthanum in 5% HNO ₃	LaNO ₃	50 mL	MOD-06-0.5
		100 mL	MOD-06-1
		500 mL	MOD-06-5
Magnesium nitrate 2% Magnesium in 5% HNO ₃	Mg(NO ₃) ₂	50 mL	MOD-07-0.5
		100 mL	MOD-07-1
		500 mL	MOD-07-5
Nickel nitrate 5% Nickel in 5% HNO ₃	Ni(NO ₃) ₂	50 mL	MOD-08-0.5
		100 mL	MOD-08-1
		500 mL	MOD-08-5
Palladium nitrate 0.2% Palladium in 5% HNO ₃	Pd(NO ₃) ₂	50 mL	MOD-09A-0.5
		100 mL	MOD-09A-1
		500 mL	MOD-09A-5
Palladium nitrate 0.5% Palladium in 5% HNO ₃	Pd(NO ₃) ₂	50 mL	MOD-09B-0.5
		100 mL	MOD-09B-1
		500 mL	MOD-09B-5
Palladium nitrate 1.0% Palladium in 10% HNO ₃	Pd(NO ₃) ₂	50 mL	MOD-09C-0.5
		100 mL	MOD-09C-1
		500 mL	MOD-09C-5

Calibration and Matrix Blanks

Nitric Acid Blank

CLP-BLN-5 500 mL
CLP-BLN-L-VAP 1L
(2 x 500 mL)

5% HNO₃ in 18 Megohm ASTM Type I deionized Water

Hydrochloric Acid Blank

CLP-BLH-5 500 mL
CLP-BLH-L-VAP 1L
(2 x 500 mL)

5% HCl in 18 Megohm ASTM Type I deionized Water

Mixed Acid Blank

CLP-BLMA-5 500 mL
CLP-BLMA-L-VAP 1L
(2 x 500 mL)

5% HCl + 1% HNO₃ in 18 Megohm ASTM Type I deionized Water

Water Blank

CLP-BLW-5 ▼ 500 mL
CLP-BLW-L-VAP ▼ 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 50 mL
At stated conc. (µg/mL) in 5% HNO₃ 6 comps.

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

GFAA Predigestion Spike Solution

CLP-SP1-AA 50 mL
At stated conc. (µg/mL) in 5% HNO₃ 6 comps.

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

GFAA Initial Calibration Verification

(Meets CLP Second Source Requirements)

CLP-ICV-AA 50 mL
At stated conc. (µg/mL) in 5% HNO₃ 6 comps.

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

GFAA Mercury Standard for Calibration or Spiking

CLP-HG-AA 50 mL
100 µg/mL in 5% HNO₃

Hg (Mercury)

GFAA Postdigestion Spike Solution

(2 x CRDL except for Lead)
CLP-SP2-AA 50 mL
At stated conc. (µg/mL) in 5% HNO₃ 6 comps.

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

▼ Hazardous fee not required.

GFAA Set

CLP-AA-SET 5 x 50 mL

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

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

Water Matrix	Unit	100 µg/mL		
		Cat. No.	Cat. No.	Cat. No.
Acetate	100 mL	IC-ACET-1X-1	-----	IC-ACET-10X-1
	500 mL	IC-ACET-1X-5	-----	IC-ACET-10X-5
Br (Bromate)	100 mL	-----	-----	IC-BROM-10X-1
	500 mL	-----	-----	IC-BROM-10X-5
Br (Bromide)	100 mL	IC-BR-1X-1	IC-BR-2X-1	IC-BR-10X-1
	500 mL	IC-BR-1X-5	IC-BR-2X-5	IC-BR-10X-5
Citrate	100 mL	-----	-----	IC-CITR-10X-1
Chlorate	100 mL	IC-CHLR-1X-1	-----	IC-CHLR-10X-1
	500 mL	IC-CHLR-1X-5	-----	IC-CHLR-10X-5
Cl (Chloride)	100 mL	IC-Cl-1X-1	IC-Cl-2X-1	IC-Cl-10X-1
	500 mL	IC-Cl-1X-5	IC-Cl-2X-5	IC-Cl-10X-5
Chlorite <i>Call for availability</i>	100 mL	IC-CHLT-1X-1	-----	IC-CHLT-10X-1
	500 mL	IC-CHLT-1X-5	-----	IC-CHLT-10X-5
Chromate	100 mL	IC-CHRM-1X-1	-----	IC-CHRM-10X-1
	500 mL	IC-CHRM-1X-5	-----	IC-CHRM-10X-5
F (Fluoride)	100 mL	IC-F-1X-1	IC-F-2X-1	IC-F-10X-1
	500 mL	IC-F-1X-5	IC-F-2X-5	IC-F-10X-5
Formate	100 mL	IC-FORM-1X-1	-----	IC-FORM-10X-1
	500 mL	IC-FORM-1X-5	-----	IC-FORM-10X-5
Glycolate	100 mL	-----	-----	IC-GLYC-10X-1
Iodide	100 mL	-----	-----	IC-I-10X-1
Lactate	100 mL	-----	-----	IC-LACT-10X-1
Malate	100 mL	-----	-----	IC-MALA-10X-1
Maleate	100 mL	-----	-----	IC-MALE-10X-1
NO ₂ (Nitrite)	100 mL	IC-NO2-1X-1	IC-NO2-2X-1	IC-NO2-10X-1
	500 mL	IC-NO2-1X-5	IC-NO2-2X-5	IC-NO2-10X-5
NO ₃ (Nitrate)	100 mL	IC-NO3-1X-1	IC-NO3-2X-1	IC-NO3-10X-1
	500 mL	IC-NO3-1X-5	IC-NO3-2X-5	IC-NO3-10X-5
Oxalate	100 mL	IC-OXAL-1X-1	-----	IC-OXAL-10X-1
	500 mL	IC-OXAL-1X-5	-----	IC-OXAL-10X-5
Perchlorate	100 mL	-----	-----	IC-PER-10X-1
Phthalate	100 mL	-----	-----	IC-PHTH-10X-1
PO ₄ (Phosphate)	100 mL	IC-PO4-1X-1	IC-PO4-2X-1	IC-PO4-10X-1
	500 mL	IC-PO4-1X-5	IC-PO4-2X-5	IC-PO4-10X-5
Propionate	100 mL	-----	-----	IC-PROP-10X-1
Succinate	100 mL	-----	-----	IC-SUCC-10X-1
SO ₄ (Sulfate)	100 mL	IC-SO4-1X-1	IC-SO4-2X-1	IC-SO4-10X-1
	500 mL	IC-SO4-1X-5	IC-SO4-2X-5	IC-SO4-10X-5
Sulfide	20 mL	-----	-----	IC-SULF-10X-20ML
Dilute NaOH, stabilizer	5 x 20 mL	-----	-----	IC-SULF-10X-20ML-VAP
Tartrate	100 mL	-----	-----	IC-TART-10X-1



Anion Kits

IC-AN-1X-1-SET 7 x 100 mL

IC-AN-1X-5-SET 7 x 500 mL

Each at 100 µg/mL in Water

IC-AN-2X-1-SET 7 x 100 mL

IC-AN-2X-5-SET 7 x 500 mL

Each at 200 µg/mL in Water

IC-AN-10X-1-SET 7 x 100 mL

IC-AN-10X-5-SET 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 Chromatography

Ion Chrom - Ion Singles as the Element

	Unit	100 µg/mL	1000 µg/mL
NO₂-N (Nitrite-Nitrogen)	100 mL	IC-NO2-N-1X-1	IC-NO2-N-10X-1
Water Matrix	500 mL	IC-NO2-N-1X-5	IC-NO2-N-10X-5
NO₃-N (Nitrate-Nitrogen)	100 mL	IC-NO3-N-1X-1	IC-NO3-N-10X-1
Water Matrix	500 mL	IC-NO3-N-1X-5	IC-NO3-N-10X-5
PO₄-P (Phosphate-Phosphorous)	100 mL	IC-PO4-P-1X-1	IC-PO4-P-10X-1
Water Matrix	500 mL	IC-PO4-P-1X-5	IC-PO4-P-10X-5
SO₄-S (Sulfate-Sulfur)	100 mL	IC-SO4-S-1X-1	IC-SO4-S-10X-1
Water Matrix	500 mL	IC-SO4-S-1X-5	IC-SO4-S-10X-5
NH₄-N (Ammonium-Nitrogen)	100 mL	IC-NH4-N-1X-1	IC-NH4-N-10X-1
Water Matrix	500 mL	IC-NH4-N-1X-5	IC-NH4-N-10X-5

Anion Single Kits

IC-AN-R-10X-1-SET	7 x 100 mL
IC-AN-R-10X-5-SET	7 x 500 mL
<i>Each at 1000 µg/mL</i>	
Fluoride	Bromide
Chloride	Phosphate-Phosphorous
Nitrite-Nitrogen	Sulfate-Sulfur
Nitrate-Nitrogen	

Organic Acid Salt Standard

	Unit	100 µg/mL	1000 µg/mL
Formate	100 mL	IC-FORM-1X-1	IC-FORM-10X-1
Water Matrix	500 mL	IC-FORM-1X-5	IC-FORM-10X-5
Acetate	100 mL	IC-ACET-1X-1	IC-ACET-10X-1
Water Matrix	500 mL	IC-ACET-1X-5	IC-ACET-10X-5
Oxalate	100 mL	IC-OXAL-1X-1	IC-OXAL-10X-1
Water Matrix	500 mL	IC-OXAL-1X-5	IC-OXAL-10X-5
Chromate	100 mL	IC-CHRM-1X-1	IC-CHRM-10X-1
Water Matrix	500 mL	IC-CHRM-1X-5	IC-CHRM-10X-5

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-1 100 mL
1000 µg/mL in Water
Perchlorate

Conductivity Meter Calibration Standard

M-314.0-CMCS-1 100 mL
1410 µs/cm @ 25°C in Water

Mixed Common Anion Stock

M-314.0-MCA-250X-1 100 mL
25 mg/mL in Water 3 comps.
Chloride
Sulfate
Carbonate

Method 314.0 Perchlorate Calibration Set

M-314.0-SET 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	100 mL	5 x 50 mL	5 x 100 mL
	IC-ELU-01-0.5	IC-ELU-01-1	IC-ELU-01-0.5-PAK	IC-ELU-01-1-PAK
0.5 M Sodium carbonate (100X concentrate)	50 mL	100 mL	5 x 50 mL	5 x 100 mL
	IC-ELU-02-0.5	IC-ELU-02-1	IC-ELU-02-0.5-PAK	IC-ELU-02-1-PAK
0.18 M Sodium carbonate/ 0.17 M Sodium bicarbonate (100X concentrate)	50 mL	100 mL	5 x 50 mL	5 x 100 mL
	IC-ELU-03-0.5	IC-ELU-03-1	IC-ELU-03-0.5-PAK	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 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	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	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	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	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	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	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	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	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	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	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 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	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 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 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	100 mL
NO ₂ (Nitrite)	100 µg/mL

Dichloroacetate Surrogate Standard

M-300.1-SS	100 mL
0.5 mg/mL Dichloroacetate in Water	

Nitrite

IC-NO2-10X-1	100 mL
NO ₂ (Nitrite)	1000 µg/mL
IC-NO2-1X-1	100 mL
NO ₂ (Nitrite)	100 µg/mL
IC-NO2-0.1X-1	100 mL
NO ₂ (Nitrite)	10 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 Chromatography

Ion Chrom - Cation Singles

Dilute HNO ₃ Matrix	Unit	100 µg/mL		200 µg/mL		1,000 µg/mL	
		Cat. No.		Cat. No.		Cat. No.	
Ca (Calcium)	100 mL	IC-CA-1X-1		IC-CA-2X-1		IC-CA-10X-1	
	500 mL	IC-CA-1X-5		IC-CA-2X-5		IC-CA-10X-5	
NH ₄ (Ammonium)	100 mL	IC-NH4-1X-1		IC-NH4-2X-1		IC-NH4-10X-1 †	
	500 mL	IC-NH4-1X-5		IC-NH4-2X-5		IC-NH4-10X-5 †	
Mg (Magnesium)	100 mL	IC-MG-1X-1		IC-MG-2X-1		IC-MG-10X-1	
	500 mL	IC-MG-1X-5		IC-MG-2X-5		IC-MG-10X-5	
K (Potassium)	100 mL	IC-K-1X-1		IC-K-2X-1		IC-K-10X-1	
	500 mL	IC-K-1X-5		IC-K-2X-5		IC-K-10X-5	
Na (Sodium)	100 mL	IC-NA-1X-1		IC-NA-2X-1		IC-NA-10X-1	
	500 mL	IC-NA-1X-5		IC-NA-2X-5		IC-NA-10X-5	
Li (Lithium)	100 mL	IC-LI-1X-1		IC-LI-2X-1		IC-LI-10X-1	
	500 mL	IC-LI-1X-5		IC-LI-2X-5		IC-LI-10X-5	
Ba (Barium)	100 mL	IC-BA-1X-1		IC-BA-2X-1		IC-BA-10X-1	
	500 mL	IC-BA-1X-5		IC-BA-2X-5		IC-BA-10X-5	
Sr (Strontium)	100 mL	IC-SR-1X-1		IC-SR-2X-1		IC-SR-10X-1	
	500 mL	IC-SR-1X-5		IC-SR-2X-5		IC-SR-10X-5	
Sets	8 x 100 mL	IC-CAT-1X-1-SET		IC-CAT-2X-1-SET		IC-CAT-10X-1-SET	
Above Listed	8 x 500 mL	IC-CAT-1X-5-SET		IC-CAT-2X-5-SET		IC-CAT-10X-5-SET	

† 1,000 µg/mL as Ammonium (NH₄) Other Nitrogen species equivalents are:

NH₃ (Ammonia) = 944 µg/mL N (Nitrogen) = 776 µg/mL

Ion Chrom - Cation Mixes

Cation Mix #1

IC-MCA-01-1	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 #3

IC-MCA-03-1	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 #5

IC-MCA-05-1	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 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

Cation Mix #2

IC-MCA-02-1	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 #4

IC-MCA-04-1	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

Inorganic products containing acid generally require a hazardous shipping fee.

Inorganic products in water generally do not.



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-1 100 mL
1000 µg/mL Bromide in Water

Method 300.1 Ion Chrom Standard Revised

IC-MAN-14-R2-1 100 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 100 mL
0.5 mg/mL Dichloroacetate in Water

Cyanide

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

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

Chloride

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

Total Residual Chlorine

WC-TRC-10X-10ML 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-1 100 mL
1000 µg/mL Fluoride in Water

Iodide

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

pH

WC-PH-4-1 100 mL
WC-PH-4-5 500 mL
pH of 4.0 in Water

WC-PH-7-1 100 mL
WC-PH-7-5 500 mL
pH of 7.0 in Water

WC-PH-10-1 100 mL
WC-PH-10-5 500 mL
pH of 10.0 in Water

Phosphorus - Total

IC-PO4-P-10X-1 100 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-1 100 mL
1000 µg/mL Ammonium-Nitrogen in Water

Nitrogen - Nitrite

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

Nitrogen - Nitrate

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

Silica

WC-SIO2-10X-1 100 mL
1000 µg/mL as Silica (SiO₂) in Water tr. HF

Sulfate

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

Hexavalent Chromium

WC-HEX-10X-1 100 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-1 100 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-1 100 mL
1000 µg/mL CaCO₃ to pH 4.5

Hardness

WC-HARD-10X-1 100 mL
1000 µg/mL equivalent CaCO₃

A combination of Ca and Mg to give an approximate concentration of 1000 µg/mL CaCO₃. Hardness µg/mL equivalent CaCO₃ = 2.497 [Ca µg/mL] + 4.118 [Mg µg/mL]

Conductivity

WC-COND-10X-1 100 mL
1000 µmhos in Water

Solids

WC-SOL sample
2 comps.
1000 ppm TSS (Total Suspended Solids) and 1000 ppm TDS (Total Dissolved 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-1 100 mL
1000 µg/mL in Water



Wet Chemicals

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 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-1 100 mL

200 µg/mL Chlorine in Water

Chemical Oxygen Demand (COD)

WC-COD-5X-10ML 10 mL

500 µg/mL COD in water

Total Organic Carbon (TOC)

WC-TOC-10X-1 100 mL

1000 µg/mL TOC in water, tr. H₂SO₄

Total Inorganic Carbon (TIC)

WC-TIC-10X-1 100 mL

1000 µg/mL Total Inorganic Carbon in Water

Total Organic Halides (TOX)

WC-TOX-10X-1 1 mL

WC-TOX-10X-1-PAKSAVE 5 x 1 mL

1000 µg/mL in MeOH

Total Organic Nitrogen (TON)

WC-TON-10X-1 100 mL

1000 µg/mL Total Organic Nitrogen in Water

Total Kjeldahl Nitrogen (TKN)

WC-TKN-10X-1 100 mL

1000 µg/mL Total Kjeldahl Nitrogen in Water

Oil and Grease

WC-OILG-10X-1 ▲ 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-1 100 mL

1000 µg/mL Phenol in water.

▲ Hazardous fee required

Inorganic products containing acid generally require a hazardous shipping fee.

Inorganic products in water generally do not.





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

Precision and Recovery (PAR) Spiking Solution

M-1664-5ML		1 x 5 mL
M-1664-5ML-PAK	SAVE	5 x 5 mL
<i>4.0 mg/mL each in Acetone</i>		
M-1664-20ML		1 x 20 mL
M-1664-20ML-PAK	SAVE	5 x 20 mL
<i>4.0 mg/mL each in Acetone</i>		
Hexadecane	Stearic acid	2 comps.

Technical Note

This Precision 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		1 x 1 mL
<i>% by volume</i>		
Chlorobenzene (25.0)	Hexadecane (37.5)	3 comps.
Isooctane (37.5)		

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

M-418		1 x 1 mL
M-418-PAK	SAVE	5 x 1 mL
<i>Total 4.15 mg/mL in Freon 113, (Parts by volume)</i>		
Chlorobenzene (10.0)	Isooctane (15.0)	3 comps.
<i>n</i> -Hexadecane (15.0)		

Method 8440 Total Petroleum Hydrocarbon Analysis

Total Recoverable Petroleum Hydrocarbon Mix

M-8440		1 x 1 mL
M-8440-PAK	SAVE	5 x 1 mL
<i>At stated conc. in Tetrachloroethene</i>		
Chlorobenzene (0.10 w/w %)	Isooctane (0.15 w/w %)	3 comps.
<i>n</i> -Hexadecane (0.15 w/w %)		

Total Petroleum Hydrocarbon Concentrate Mix

M-8440-CON		1 x 1 mL
M-8440-CON-PAK	SAVE	5 x 1 mL
<i>3 comps.</i>		
Chlorobenzene (25.0 vol %)	Isooctane (37.5 vol %)	
<i>n</i> -Hexadecane (37.5 vol %)		

Silica Gel Cleanup Calibration Solution

M-8440-SGC		1 x 1 mL
M-8440-SGC-PAK	SAVE	5 x 1 mL
<i>10.0 mg/mL in Tetrachloroethene</i>		
Corn Oil		

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!®**



Multi-Element Contents

- 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

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Inorganic products containing acid generally require a hazardous shipping fee.
Inorganic products in water generally do not.



ICP

Multi-Element QC & Second Source QC

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-01-1 100 mL
QCS-01-5 500 mL
 100 µg/mL each in 5% HNO₃ 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-02-1 100 mL
QCS-02-5 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 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 SiO₂

QC Standard #2R

QCS-02-R1-1 100 mL
QCS-02-R1-5 500 mL
 100 µg/mL each in 5% HNO₃ tr. HF 7 comps.

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

† 214 µg/mL as SiO₂

QC Standard #3

QCS-03-1 100 mL
QCS-03-5 500 mL
 100 µg/mL each in 5% HNO₃ 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-04-1 100 mL
 At stated conc. (µg/mL) in 5% HNO₃ 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-05-1 100 mL
 At stated conc. (µg/mL) in 2% HNO₃ 3 comps.

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

QC Standard #6

QCS-06-1 100 mL
 1000 µg/mL each in 2% HNO₃ 4 comps.

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

Quality Control Standards Sets

QCS-1-SET 3 x 100 mL
 QCS-01-1 QCS-02-1 QCS-03-1

QCS-5-SET 3 x 500 mL
 QCS-01-5 QCS-02-5 QCS-03-5

QCS-R1-1-SET 3 x 100 mL
 QCS-01-1 QCS-02-R1-1 QCS-03-1

QCS-R1-5-SET 3 x 500 mL
 QCS-01-5 QCS-02-R1-5 QCS-03-5



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 1 x 100 mL
QCS-ASL-7-5 1 x 500 mL
 At stated conc. (µg/mL) in 2-5% HNO₃ 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 1 x 100 mL
QCS-ASL-21-5 1 x 500 mL
 100 µg/mL each in 2-5% HNO₃ 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 1 x 100 mL
QCS-ASL-19-5 1 x 500 mL
 100 µg/mL each in 2-5% HNO₃ 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	100 mL
ICS-01-5	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	100 mL
ICS-02-5	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	100 mL
ICS-03-5	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	100 mL
ICS-04-5	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	100 mL
ICS-05-5	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	100 mL
ICS-06-5	500 mL
50 µg/mL each in 2% HNO ₃ 9 comps.	
Al (Aluminum)	Pb (Lead)
As (Arsenic)	P (Phosphorus)
Cr (Chromium)	K (Potassium)
Co (Cobalt)	Na (Sodium)
Cu (Copper)	

Instrument Check Standard #7

ICS-07-1	100 mL
ICS-07-5	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	1 x 100 mL
10 µg/mL each in 2-5% HNO ₃ tr. HF 33 comps.	
Al (Aluminum)	Na (Sodium)
As (Arsenic)	Nd (Neodymium)
Ba (Barium)	P (Phosphorus)
Bi (Bismuth)	Pb (Lead)
Ca (Calcium)	Pr (Praseodymium)
Cd (Cadmium)	Sc (Scandium)
Ce (Cerium)	Se (Selenium)
Dy (Dysprosium)	Sm (Samarium)
Er (Erbium)	Sr (Strontium)
Eu (Europium)	Tb (Terbium)
Ga (Gallium)	Th (Thorium)
Gd (Gadolinium)	Tl (Thallium)
Ho (Holmium)	Tm (Thulium)
In (Indium)	U (Uranium)
La (Lanthanum)	Y (Yttrium)
Lu (Lutetium)	Yb (Ytterbium)
Mg (Magnesium)	

Semi-Quantitative Standard #2

SQS-02-R1-1	1 x 100 mL
10 µg/mL each in 2-5% HNO ₃ tr. HCl tr. HF 33 comps.	
B (Boron)	Pt (Platinum)
Be (Beryllium)	Rb (Rubidium)
Co (Cobalt)	Re (Rhenium)
Cr (Chromium)	Rh (Rhodium)
Cs (Cesium)	Ru (Ruthenium)
Cu (Copper)	S (Sulfur)
Fe (Iron)	Sb (Antimony)
Ge (Germanium)	Si (Silicon)
Hf (Hafnium)	Sn (Tin)
Ir (Iridium)	Ta (Tantalum)
K (Potassium)	Te (Tellurium)
Li (Lithium)	Ti (Titanium)
Mn (Manganese)	V (Vanadium)
Mo (Molybdenum)	W (Tungsten)
Nb (Niobium)	Zn (Zinc)
Ni (Nickel)	Zr (Zirconium)
Pd (Palladium)	

Semi-Quantitative Standard #3

SQS-03-1	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	1 x 100 mL
10 µg/mL each in 5% HNO ₃	
Au (Gold)	

Screening Standard Set

SQS-R1-1-SET	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.



ICP

SDWA (Safe Drinking Water Act) Standards

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	100 mL
SDWA-01-5	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	100 mL
SDWA-02-5	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	100 mL
SDWA-03-5	500 mL
10 µg/mL in 5% HNO ₃	
Hg (Mercury)	

Drinking Water Sets

SDWA-1-SET	3 x 100 mL
SDWA-01-1	SDWA-02-1
SDWA-03-1	
SDWA-5-SET	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	100 mL
SDWA-04-5	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 ICP-MS

Contains all approved elements

SDWA-06-MS-1	100 mL
SDWA-06-MS-5	500 mL
10 µg/mL each in 2% HNO ₃ 11 comps.	

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

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

SDWA-08-1	100 mL
SDWA-08-5	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 Metals for Analysis by GFAA

Contains GFAA approved elements

SDWA-05-1	100 mL
SDWA-05-5	500 mL
10 µg/mL each in 2-5% HNO ₃ 9 comps.	

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

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

SDWA-07-1	100 mL
SDWA-07-5	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 SiO₂

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

Contains all Primary & Secondary Metals

SDWA-09-1	100 mL
SDWA-09-5	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 SiO₂

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	100 mL
WPTM-01-5	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	100 mL
WPTM-02-5	500 mL
At stated conc. (µg/mL) in 2% HNO ₃ 3 comps.	
Sb (Antimony)	20
Ag (Silver)	10
Tl (Thallium)	20

Trace Metals III

WPTM-03-1	100 mL
WPTM-03-5	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

Trace Metal Sets

WPTM-1-SET	3 x 100 mL
WPTM-01-1	WPTM-03-1
WPTM-02-1	
WPTM-5-SET	3 x 500 mL
WPTM-01-5	WPTM-03-5
WPTM-02-5	

Alternate Metals for Groundwater and Wastewater Analysis

Alternate Metals I

WPAM-01-1	100 mL
WPAM-01-5	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	100 mL
WPAM-03-5	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	2 x 100 mL
WPAM-01-1	WPAM-03-1
WPAM-5-SET	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	100 mL
TCLP-01-5	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	100 mL
TCLP-ICP-5	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	100 mL
TCLP-GFAA-5	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	100 mL
TCLP-02-5	500 mL
20 µg/mL in 5% HNO ₃	
Hg (Mercury)	



ICP

MISA Test Group 29

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-01-1 100 mL
100 µg/mL each in 5% HNO₃ 18 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)	U (Uranium)
Lu (Lutetium)	Yb (Ytterbium)
Nd (Neodymium)	Y (Yttrium)

MISA Standard 2

Precious Metals

MISA-02-1 100 mL
100 µg/mL each in 10% HCl 6 comps.

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

MISA Standard 3

Tellurium

MISA-03-1 100 mL
100 µg/mL in 10% HCl

Te (Tellurium)

MISA Standard 4

Alkali, Alkaline Earth, Non-Transition Group

MISA-04-1 100 mL
100 µg/mL each in 10% HNO₃ 16 comps.

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

MISA Standard 5

Fluoride Soluble Group

MISA-05-1 100 mL
100 µg/mL each in 5% HNO₃ tr. HF 15 comps.

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

MISA Standard 6

Transition Metals

MISA-06-1 100 mL
100 µg/mL each in 10% HNO₃ 13 comps.

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

MISA Calibration Set

MISA-1-SET 6 x 100 mL

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

Calibration and Matrix Blanks

Nitric Acid Blank

CLP-BLN-5 500 mL
CLP-BLN-L-VAP 1 L
(2 x 500 mL)

5% HNO₃ in 18 Megohm ASTM Type I deionized Water

Mixed Acid Blank

CLP-BLMA-5 500 mL
CLP-BLMA-L-VAP 1 L
(2 x 500 mL)

5% HCl + 1% HNO₃ in 18 Megohm ASTM Type I deionized Water

Hydrochloric Acid Blank

CLP-BLH-5 500 mL
CLP-BLH-L-VAP 1 L
(2 x 500 mL)

5% HCl in 18 Megohm ASTM Type I deionized Water

Water Blank

CLP-BLW-5 ▼ 500 mL
CLP-BLW-L-VAP ▼ 1 L
(2 x 500 mL)

18 Megohm ASTM Type I deionized Water

▼ Hazardous fee not required.





Calibration Check Standards

Calibration Standard #1

CLP-CAL-01-1 100 mL
5000 µg/mL each in 5% HNO₃ 4 comps.

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

Calibration Standard #2

CLP-CAL-02-1 100 mL
At stated conc. (µg/mL) in 5% HNO₃ 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 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-03-1 100 mL
At stated conc. (µg/mL) in 5% HNO₃ 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-04-1 100 mL
At stated conc. (µg/mL) in 5% HNO₃ 5 comps.

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

Calibration Standard #5

CLP-CAL-05-1 100 mL
600 µg/mL in 2% HNO₃

Sb (Antimony)

Calibration Standard #6

CLP-CAL-06-1 100 mL
100 µg/mL in 5% HNO₃

Hg (Mercury)

Calibration Standard #7

CLP-CAL-07-1 100 mL
500 µg/mL each in 5% HNO₃ tr. HF 3 comps.

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





ICP

Contract Laboratory Program (CLP)

Verification Standards

Initial Calibration Verification

CLP-ICV-01-1 100 mL
 CLP-ICV-01-5 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 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-1 100 mL
 CLP-ICV-01-R-5 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 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

Continuing Calibration Verification

(Meets CLP QA Second Source Requirements)
 CLP-CCV-01-1 100 mL
 CLP-CCV-01-5 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 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-02-1 100 mL
 CLP-CCV-02-5 500 mL

At stated conc. (µg/mL) in 5% HNO₃ 5 comps.

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

CLP-CCV-03-1 100 mL
 CLP-CCV-03-5 500 mL

300 µg/mL in 2% HNO₃

Sb (Antimony)

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.

Initial & Continuing Calibration Verification Sets

CLP-VER-1-SET 4 x 100 mL

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

CLP-VER-5-SET 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 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 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 3 x 100 mL

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

CLP-CCV-5-SET 3 x 500 mL

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

Spiking Standards

Spiking Solution

CLP-SPS-01-1 100 mL
 At stated conc. (µg/mL) in 5% HNO₃ 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-02-1 100 mL
 At stated conc. (µg/mL) in 5% HNO₃ 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 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-01-1 100 mL
CLP-PAN-01-5 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 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

Alternate Interferents

CLP-PIN-02-1 100 mL
CLP-PIN-02-5 500 mL
 1000 µg/mL each in 5% HNO₃ 6 comps.

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

Alternate Analytes

CLP-PAN-02-1 100 mL
CLP-PAN-02-5 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 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

Interferent / Analyte Sets

CLP-IA-1-SET 4 x 100 mL

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

CLP-IA-5-SET 4 x 500 mL

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

Primary Interferents

CLP-PIN-01-1 100 mL
CLP-PIN-01-5 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 4 comps.

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

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-01-1 100 mL
 At stated conc. (µg/mL) in 5% HNO₃ 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 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-02-1 100 mL
 At stated conc. (µg/mL) in 5% HNO₃ 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.



ICP

EPA Method 200.7

Method 200.7 (Revision 4.4, May 1994) Calibration Standards

Mixed Calibration Standard #1

M-200.7-01-1 100 mL
M-200.7-01-5 500 mL
At stated conc. (µg/mL) in 5% HNO₃ 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-1 100 mL
M-200.7-02R-5 500 mL
At stated conc. (µg/mL) in 5% HNO₃ 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-1 100 mL
M-200.7-03R-5 500 mL
At stated conc. (µg/mL) in 5% HNO₃ 4 comps.

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

Mixed Calibration Standard #4

M-200.7-04-1 100 mL
M-200.7-04-5 500 mL
At stated conc. (µg/mL) in 5% HNO₃ tr. HF
5 comps.

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

† 214 µg/mL as SiO₂

Mixed Calibration Standard #5

M-200.7-05-1 100 mL
M-200.7-05-5 500 mL
At stated conc. (µg/mL) in 5% HNO₃ 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 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 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-01-1 100 mL
M-200.7-IPC-01-5 500 mL
At stated conc. (µg/mL) in 5% HNO₃ 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-02-1 100 mL
M-200.7-IPC-02-5 500 mL
At stated conc. (µg/mL) in 5% HNO₃ tr. HF
5 comps.

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

† 214 µg/mL as SiO₂



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-01-1 100 mL
LPCS-01-5 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 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 SiO₂

Laboratory Fortifying Stock Solution

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

LFSS-01-1 100 mL
LFSS-01-5 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 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 SiO₂

Mercury Standard

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

TCLP-02-1 100 mL
TCLP-02-5 500 mL
 20 µg/mL in 5% HNO₃

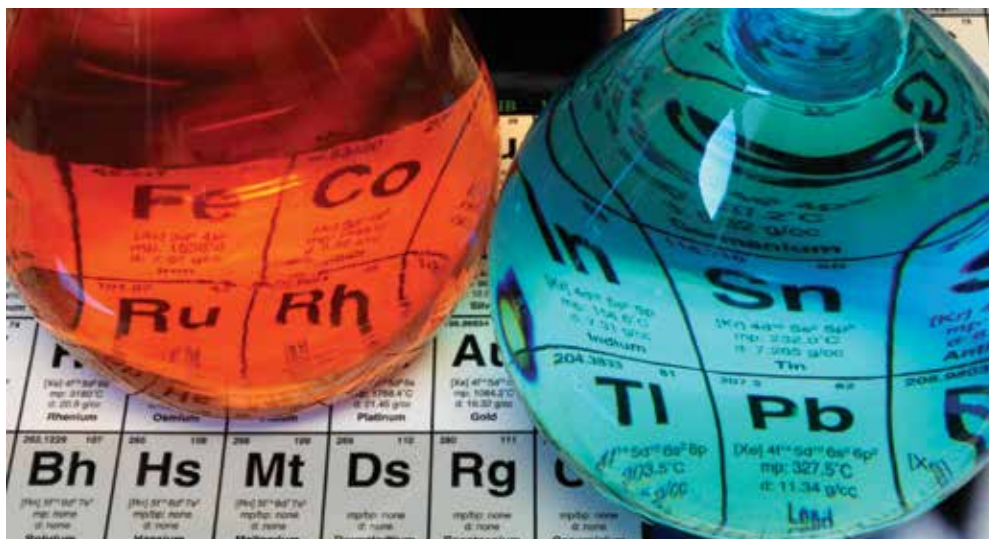
Hg (Mercury)

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-01-1 100 mL
M-200.7-LFSS-01-5 500 mL
At stated conc. (µg/mL) in 5% HNO₃ 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-1 100 mL
M-200.7-LFSS-01W-5 500 mL
At stated conc. (µg/mL) in 5% HNO₃ 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-1 100 mL
M-200.7-LFSS-01S-5 500 mL
At stated conc. (µg/mL) in 5% HNO₃ 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-02-1 100 mL
M-200.7-LFSS-02-5 500 mL
20 µg/mL each in 5% HNO₃ 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 mL
At stated conc. (µg/mL) in H₂O tr. HF 4 comps.

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

† 4278 µg/mL SiO₂

Spiking Standard #2R

M-200.7-SP-02-R 50 mL
M-200.7-SP-02-R-1 100 mL
M-200.7-SP-02-R-5 500 mL
10,000 µg/mL each in in 2% HNO₃ 4 comps.

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

Spiking Standard #3

M-200.7-SP-03 50 mL
At stated conc. (µg/mL) in 5% HNO₃ 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 5 x 50 mL
M-200.7-SP-01-R M-200.7-SP-04-R
M-200.7-SP-02-R M-200.7-SP-05-R
M-200.7-SP-03

Spiking Standard #4R

M-200.7-SP-04-R 50 mL
200 µg/mL in dilute HNO₃
Sb (Antimony)

Spiking Standard #5R

M-200.7-SP-05-R 50 mL
At stated conc. (µg/mL) in 5% HNO₃ 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-01-1 100 mL
SICS-01-5 500 mL

50 µg/mL in Water tr. NH₄OH

Mo (Molybdenum)

Check Solutions Sets

SIC-1-SET 3 x 100 mL
SICS-01-1 SICS-03-1
SICS-02-1

SIC-5-SET 3 x 500 mL
SICS-01-5 SICS-03-5
SICS-02-5

SIC Solution #2

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

SICS-02-1 100 mL
SICS-02-5 500 mL

At stated conc. (µg/mL) in 2% HNO₃ 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-03-1 100 mL
SICS-03-5 500 mL

At stated conc. (µg/mL) in 2% HNO₃ 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 9 x 100 mL
Each at 1,000 µg/mL in HNO₃

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-01-1 100 mL
MCS-01-5 500 mL
At stated conc. (µg/mL) in 2% HNO₃ 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-02-1 100 mL
MCS-02-5 500 mL
At stated conc. (µg/mL) in 2% HNO₃ 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 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 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-1 100 mL
MCS-03R-5 500 mL
At stated conc. (µg/mL) in 2% HNO₃ tr. HF 2 comps.

As (Arsenic)	500
Mo (Molybdenum)	100

Mixed Calibration Standard #4R

MCS-04R-1 100 mL
MCS-04R-5 500 mL
At stated conc. (µg/mL) in 2% HNO₃ 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

Mixed Calibration Standard #5R

MCS-05R-1 100 mL
MCS-05R-5 500 mL
At stated conc. (µg/mL) in 2% HNO₃ 4 comps.

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

Mixed Calibration Standard 6R

MCS-06R-1 100 mL
MCS-06R-5 500 mL
At stated conc. (µg/mL) in 2-5% HNO₃ tr. HF 5 comps.

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

† 214 µg/mL as SiO₂

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.

Mercury Standard

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

TCLP-02-1 100 mL

TCLP-02-5 500 mL

20 µg/mL in 5% HNO₃

Hg (Mercury)

Method 6010B Spiking Standards

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

Spiking Standard #1

QCS-01-1 100 mL
QCS-01-5 500 mL
100 µg/mL each in 5% HNO₃ 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-02-1 100 mL
QCS-02-5 500 mL
At stated conc. (µg/mL) in 5% HNO₃ 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 SiO₂

QC Standard #2R

QCS-02-R1-1 100 mL
QCS-02-R1-5 500 mL
100 µg/mL each in 5% HNO₃ 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-02-1 100 mL

TCLP-02-5 500 mL

20 µg/mL in 5% HNO₃

Hg (Mercury)



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

Laboratory Performance Check Standard

LPCS-01R-1 100 mL
LPCS-01R-5 500 mL

At stated conc. (µg/mL) in 5% HNO₃ 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 SiO₂

Primary Interferents

CLP-PIN-01-1 100 mL
CLP-PIN-01-5 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 4 comps.

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

Alternate Interferents

CLP-PIN-02-1 100 mL
CLP-PIN-02-5 500 mL
 1000 µg/mL each in 5% HNO₃ 6 comps.

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

Interference Set

SIC-SING-R-1-SET set of 10 x 100 mL
 10 individual single element standards at 1,000 µg/mL in HNO₃

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-1 100 mL
 1000 µg/mL in HNO₃
 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-01-1 100 mL
INT-01-5 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 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-02-1 100 mL
INT-02-5 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ tr. HF 4 comps.

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

Interference Check Standard #3

INT-03-1 100 mL
INT-03-5 500 mL
 500 µg/mL in 2% HNO₃, tr. Tartaric acid

Sb (Antimony)

Interference Check Standard #4

INT-04-1 100 mL
INT-04-5 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 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 4 x 100 mL

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

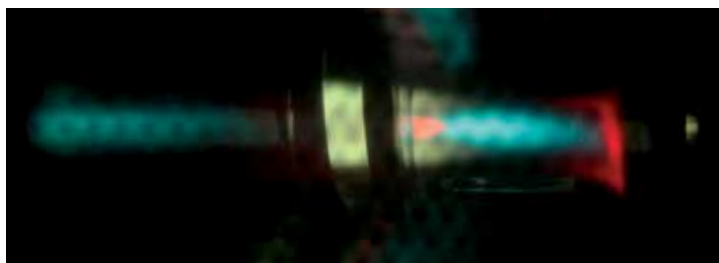
INT-1986-5-SET 4 x 500 mL

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



ICP Alternate Source

Instrument	Page
Merck ICP Standards	359-360
Agilent	361-362
Horiba/Jobin Yvon	363
Perkin Elmer	364-368
Teledyne	369



Cross Reference Part No. Index

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



Instrument	AccuStandard	Page	Instrument	AccuStandard	Page	Instrument	AccuStandard	Page
Merck			Horiba/Jobin Yvon			Perkin Elmer		
1.09410	MES-23	3	JYICP-MIXHM	JY-CALHM	7	N9300280	PE-QC7	11
1.09411	MES-24	3	JYICP-MIXMAJ	JY-CAL	7	N9300281	PE-QC21	11
1.09480	MES-13 *	3	JYICP-MIX7HSI	JY-QC7	7	N9301720	PE-MECAL3	10
1.09481	MES-14	3	JYICP-MIX9	JY-CHK	7	N9301721	PE-CAL2	8
1.09482	MES-15	3	JYICP-MIX21	JY-QC21	7	N9302946	PE-VISWAVE	12
1.09487	MES-16	3	JYICP-MIX23	JY-QC23	7	N9303816	PE-CAL1	8
1.09490	MES-12 *	3	JYICP-QC1	JY-CHK1	7	N9303818	PE-CAL3	8
1.09491	MES-11 *	2	Perkin Elmer			N9303821	PE-CHK1	9
1.09492	MES-08 *	2	N0582152	PE-UVWAVE	12	N9303822	PE-CHK3	9
1.09493	MES-10 *	2	N0691579	PE-MCS	10	N9303823	PE-CHK4	9
1.09494	MES-09 *	2	N0691580	PE-UV	12	N9303824	PE-CHK5	9
1.09495	MES-17	3	N8122014	PE-SETUP2 *	11	N9303825	PE-VER1	12
1.09496	MES-19 *	3	N8122017	PE-CRDL3 *	8	N9303826	PE-VER2	12
1.09497	MES-20 *	3	N8125030	PE-SETUP1 *	11	N9303827	PE-INTFRA	9
1.09498	MES-21	3	N8125031	PE-SETUP2 *	11	N9303828	PE-INTFR1	9
1.09499	MES-22 *	3	N8125032	PE-SETUP1 *	11	N9303829	PE-INTFRB	9
1.09500	MES-18	3	N8125033	PE-SETUP2 *	11	N9303830	PE-INTFR2	9
1.10322	MES-07	2	N8125034	PE-SENS *	11	N9303831	PE-INTFRC	9
1.10580	MES-06 *	2	N8125040	PE-SMTUNE *	11	N9303832	PE-INT	9
1.10714	MES-05 *	2	N8125041	PE-SMTUNE2 *	11	N9303834	PE-MEINT	10
1.11355	MES-04	2	N9300200	PE-MCS1	10	N9303835	PE-MEM1	10
1.15474	MES-01	2	N9300201	PE-MCS2	10	N9303836	PE-MEM2	10
1.15626	MES-03	2	N9300202	PE-MCS3	10	N9303839	PE-SPIKE1	11
1.15708	MES-02	2	N9300203	PE-MCS4	10	N9303840	PE-SPIKE2	11
Agilent			N9300204	PE-MCS5	10	N9303841	PE-SPIKE3	11
5183-4681	AG-INT	6	N9300205	PE-ICS18	9	N9303843	PE-TUNSOL	12
5183-4682	AG-VER1	4	N9300208	PE-ICS5	9	N9307113	PE-MES1	9
5183-4687	AG-SPIKE	4	N9300211	PE-WPTM1	12	N9307114	PE-MES2	9
5183-4688	AG-CAL	6	N9300212	PE-WPTM2	12	N9307115	PE-MES3	9
5188-6524	AG-TUN	4	N9300213	PE-WPTM3	12	N9307116	PE-MES4	9
5188-6525	AG-INTSTD	4	N9300214	PE-WPAM1	12	Teledyne		
5188-6526	AG-INTFR2-6020	6	N9300215	PE-WPAM3	12	601-3110	TELE-CHK1 *	13
5188-6527	AG-INTFR2-6020	6	N9300216	PE-SDWA1	11	601-4101	TELE-CHK2 *	13
5188-6564	AG-TUNSTOCK	4	N9300217	PE-SDWA2	11	601-4102	TELE-CHK3 *	13
5190-0465	AG-TUNSTOCK1	4	N9300218	PE-CAL4	8	602-00065	TELE-CHK4	13
8500-6940	AG-MECAL2A	6	N9300219	PE-CAL5	8	602-00067	TELE-CHK4	13
8500-6942	AG-MECAL4	6	N9300220	PE-CAL6	8	602-00068	TELE-CHK5	13
8500-6944	AG-MECAL1	6	N9300221	PE-CAL7	8	602-00070	TELE-CHK5	13
8500-6948	AG-MECAL3	6	N9300222	PE-CRDL1 *	8	602-00071	TELE-CHK6	13
190024400	VAR-TUN	4	N9300225	PE-CRDL2	8	602-00073	TELE-CHK6	13
190064800	AG-INTFA	5	N9300226	PE-INTA	9	602-00074	TELE-CHK7	13
190024900	AG-ICV7	5	N9300227	PE-ANAB	8	620-403	TELE-CHK7	13
190025000	AG-QCS27	5	N9300228	PE-ALTINTA	8	602-00125	TELE-CHK8-0.1X *	13
190025100	AG-ANALTB	5	N9300229	PE-ALTB	8			
6610030000	AG-WAVECAL-10X	4	N9300230	PE-SPIKE	11			
6610030100	AG-WAVECAL	4	N9300231	PE-MECAL1	10			
6610030400	AG-INT2	6	N9300232	PE-MECAL2	10			
6610030500	AG-CAL1	6	N9300233	PE-MECAL3	10			
6610030600	AG-CAL2	6	N9300234	PE-MECAL4	10			
6610030700	AG-CALMAJOR	6	N9300235	PE-MECAL5	10			

* similar formulation

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 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	100 mL
MES-01-5	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	100 mL
MES-02-5	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	100 mL
MES-03-5	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	100 mL
MES-04-5	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	2x100 mL
MES-05-5-SET	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
Cd (Cadmium)	10
Co (Cobalt)	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 VII

MES-07-1 ▼	100 mL
MES-07-5 ▼	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)	

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 VI for MS

MES-06-1-SET	100 mL
MES-06-5-SET	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
Ti (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 VIII

MES-08-1-SET	2x100 mL
MES-08-5-SET	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	2x100 mL
MES-09-5-SET	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	100 mL
MES-10-5	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	2x100 mL
MES-11-5-SET	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 2x100 mL
 MES-12-5-SET 2x500 mL
 1000 µg/mL each in 5% HCl tr.
 HNO₃ 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 2x100 mL
 MES-13-5-SET 2x500 mL
 At stated conc. (µg/mL) in 5% HNO₃
 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-14-1 100 mL
 MES-14-5 500 mL
 At stated conc. (µg/mL) in 2% HCl
 tr. HNO₃ 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-15-1 100 mL
 MES-15-5 500 mL
 At stated conc. (µg/mL) in 2% HNO₃
 8 comps.

Element

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-16-1 100 mL
 MES-16-5 500 mL
 100 µg/mL each in 5% HNO₃ 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-17-1 100 mL
 MES-17-5 500 mL
 100 µg/mL each in 15% HCl tr.
 HNO₃ 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-R1-1 100 mL
 MES-18-R1-5 500 mL
 At stated conc. (µg/mL) in 5%
 HNO₃ 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-19-1 100 mL
 MES-19-5 500 mL
 1 µg/mL each in 1% HNO₃
 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-20-1 100 mL
 MES-20-5 500 mL
 1 µg/mL each in 1% HNO₃ 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 2x100 mL
 MES-21-5-SET 2x500 mL
 10 µg/mL each in 5% HNO₃
 30 comps.

MES-21

In (Indium)
 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) V (Vanadium)
 Fe (Iron) U (Uranium)
 Ga (Gallium) Zn (Zinc)

MES-21-HG

Hg (Mercury) 10
 Supplied separately for better
 product stability

ICP Multi-Element

Standard Solution XXII

for MS
 MES-22-1 100 mL
 MES-22-5 500 mL
 2 µg/mL each in 2% HNO₃ 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-23-1 100 mL
 MES-23-5 500 mL
 1 µg/mL each in 5% HNO₃
 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-24-1 100 mL
 MES-24-5 500 mL
 At stated conc. (µg/mL) in 1%
 HNO₃ 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

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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

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	100 mL
AG-WAVECAL-ASL-5	500 mL
AG-WAVECAL-ASL-10X-1	100 mL
AG-WAVECAL-ASL-10X-5	500 mL

At stated conc. (µg/mL) in 1% HNO₃ 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	100 mL
AG-TUNSTOCK-ASL-5	500 mL

10 µg/mL in 2% HNO₃ 5 comps.

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

ICP/MS Stock Tuning Solution

AG-TUNSTOCK1-ASL-1	100 mL
AG-TUNSTOCK1-ASL-5	500 mL

10 µg/mL in 2% HNO₃ 6 comps.

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

Internal Standard Mix for ICP/MS

AG-INTSTD-ASL-1	100 mL
AG-INTSTD-ASL-5	500 mL

100 µg/mL in 10% HNO₃, tr. HCl 8 comps.

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

7500 Series PA Tuning 1

AG-TUN1-ASL-1	100 mL
AG-TUN1-ASL-5	500 mL

At stated conc. (µg/mL) in 5% HNO₃ 26 comps.

Zn (Zinc)	20	Ba (Barium)	5
Ce (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	100 mL
AG-TUN2-ASL-5	500 mL

At stated conc. (µg/mL) in 10% HCl, 1% HNO₃ 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 2 x 100 mL

AG-TUN1-ASL-1 AG-TUN2-ASL-1

AG-TUN-ASL-5-SET 2 x 500 mL

AG-TUN1-ASL-5 AG-TUN2-ASL-5

ICP/MS Tuning Solution

VAR-TUN-ASL-1	100 mL
VAR-TUN-ASL-5	500 mL

10 µg/mL each in 2-5% HNO₃ 8 comps.

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

Environmental Spike Mix

AG-SPIKE-ASL-R1-1	100 mL
AG-SPIKE-ASL-R1-5	500 mL

At stated conc. (µg/mL) in 5% HNO₃ 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	100 mL
AG-VER1-ASL-R1-5	500 mL

At stated conc. (µg/mL) in 5% HNO₃ 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

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INTF-A Quality Control Standard

AG-INTFA-ASL-1	100 mL
AG-INTFA-ASL-5	500 mL

At stated conc. (µg/mL) in 5% HNO₃ 4 comps.

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

QCSTD-27 Quality Control Standard

AG-QCS27-ASL-1	100 mL
AG-QCS27-ASL-5	500 mL

100 µg/mL in 5% HNO₃ 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)



ICP Alternate Source

Agilent

AccuStandard equivalent of Agilent

ICV-7 Quality Control Standard

AG-ICV7-ASL-1 100 mL

AG-ICV7-ASL-5 500 mL

At stated conc. (µg/mL) in 5% HNO₃ 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

AG-ANALTB-ASL-1

100 mL

AG-ANALTB-ASL-5

500 mL

At stated conc. (µg/mL) in 5% HNO₃ 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

100 mL

AG-CAL-ASL-5

500 mL

At stated conc. (µg/mL) in 10% HNO₃ 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

100 mL

AG-CAL1-ASL-5

500 mL

100 µg/mL each in 2% HNO₃ tr.HF 4 comps.

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

Calibration Mix 2 AA & ICP-OES

AG-CAL2-ASL-1

100 mL

AG-CAL2-ASL-5

500 mL

100 µg/mL each in 5% HNO₃ 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

100 mL

AG-CALMAJOR-ASL-5

500 mL

500 µg/mL each in 5% HNO₃ 5 comps.

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

6020 Interference Check Soln A

AG-INTFR-6020-ASL-1

100 mL

AG-INTFR-6020-ASL-5

500 mL

At stated conc. (µg/mL) in 5% HNO₃ 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

/ 100 mL

AG-INTFR2-6020-ASL-5

/ 500 mL

At stated conc. (µg/mL) in 5% HNO₃ 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

100 mL

AG-INT-ASL-5

500 mL

10 µg/mL each in 5% HNO₃ 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

100 mL

AG-INT2-ASL-5

500 mL

100 µg/mL each in 5% HNO₃ 6 comps.

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

Multi-Element Calibration Std. 1

AG-MECAL1-ASL-1

100 mL

AG-MECAL1-ASL-5

500 mL

10 µg/mL each in 5% HNO₃ 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

100 mL

AG-MECAL2A-ASL-5

500 mL

10 µg/mL each in 5% HNO₃ 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

100 mL

AG-MECAL3-ASL-5

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 ▼

100 mL

AG-MECAL4-ASL-5 ▼

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)

▼ Hazardous fee not required.



AccuStandard equivalent of Horiba/Jobin Yvon

Instrument Calibration Standard Heavy Metals

JY-CALHM-ASL-R1-1 100 mL
JY-CALHM-ASL-R1-5 500 mL
 At stated conc. (µg/mL) in 2-5% HNO₃ 5 comps.

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

Instrument Calibration Standard

JY-CAL-ASL-1 100 mL
JY-CAL-ASL-5 500 mL
 5000 µg/mL each in 2-5% HNO₃ 4 comps.

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

Instrument Check Standard

JY-CHK-ASL-1 100 mL
JY-CHK-ASL-5 500 mL
 50 µg/mL each in 2-5% HNO₃ 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-1 100 mL
JY-CHK1-ASL-5 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 5 comps.

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

Quality Control Standard 7

JY-QC7-ASL-1 100 mL
JY-QC7-ASL-5 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 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-1 100 mL
JY-QC21-ASL-5 500 mL
 100 µg/mL each in 2-5% HNO₃ 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-1 100 mL
JY-QC23-ASL-5 500 mL
 1000 µg/mL each in 2-5% HNO₃ 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)	

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ICP Alternate Source

Perkin Elmer

AccuStandard equivalent of Perkin Elmer

Alternate Interferents A

PE-ALTINTA-ASL-1	100 mL
PE-ALTINTA-ASL-5	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	100 mL
PE-ANAB-ASL-5	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	100 mL
PE-ALTB-ASL-5	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

Initial Calibration Verification Std.

PE-CRDL1-ASL-1	100 mL
PE-CRDL1-ASL-5	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.

Instrument Calibration Std. 1

PE-CAL1-ASL-1	100 mL
PE-CAL1-ASL-5	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	100 mL
PE-CAL2-ASL-5	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	100 mL
PE-CAL3-ASL-5	500 mL
1000 µg/mL each in 5% HNO ₃ 5 comps.	
Fe (Iron)	Na (Sodium)
K (Potassium)	Mg (Magnesium)
Ca (Calcium)	

Detection Limit

PE-CRDL2-ASL-1	100 mL
PE-CRDL2-ASL-5	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

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Instrument Calibration Std. 1

PE-CAL4-ASL-1	100 mL
PE-CAL4-ASL-5	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	100 mL
PE-CAL5-ASL-5	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	100 mL
PE-CAL6-ASL-5	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	100 mL
PE-CAL7-ASL-5	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

Detection Limit Standard for use with the ELAN 5000

PE-CRDL3-ASL-1	100 mL
PE-CRDL3-ASL-5	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	100 mL
PE-CRDL4-ASL-5	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.



AccuStandard equivalent of Perkin Elmer

Instrument Check Standard 1

PE-CHK1-ASL-1	100 mL
PE-CHK1-ASL-5	500 mL
10 µg/mL each in 2% HNO ₃ tr. HF, tr. Tartaric acid 17 comps.	
Ag (Silver)	Mn (Manganese)
Al (Aluminum)	Ni (Nickel)
As (Arsenic)	Pb (Lead)
Ba (Barium)	Sb (Antimony)
Be (Beryllium)	Se (Selenium)
Cd (Cadmium)	Tl (Thallium)
Co (Cobalt)	V (Vanadium)
Cr (Chromium)	Zn (Zinc)
Cu (Copper)	

Instrument Check Standard 3

PE-CHK3-ASL-1	100 mL
PE-CHK3-ASL-5	500 mL
200 µg/mL each in 2% HNO ₃ 5 comps.	
Ca (Calcium)	Mg (Magnesium)
Fe (Iron)	Na (Sodium)
K (Potassium)	

Instrument Check Standard 4

PE-CHK4-ASL-1	100 mL
PE-CHK4-ASL-5	500 mL
10 µg/mL each in 2% HNO ₃ 3 comps.	
Mo (Molybdenum)	U (Uranium)
Th (Thorium)	

Instrument Check Standard 5

PE-CHK5-ASL-1	100 mL
PE-CHK5-ASL-5	500 mL
10 µg/mL each in 2% HNO ₃ tr. HF 4 comps.	
Mo (Molybdenum)	Sr (Strontium)
Sn (Tin)	Ti (Titanium)

Multi-Element Solution 1

PE-MES1-ASL-1	100 mL
PE-MES1-ASL-5	500 mL
1000 µg/mL each in 5% HNO ₃ 4 comps.	
Al (Aluminum)	Fe (Iron)
Ca (Calcium)	Mg (Magnesium)

Multi-Element Solution 2

PE-MES2-ASL-1	100 mL
PE-MES2-ASL-5	500 mL
1000 µg/mL each in 5% HNO ₃ 3 comps.	
K (Potassium)	P (Phosphorus)
Na (Sodium)	

Multi-Element Solution 3

PE-MES3-ASL-1 ▼	100 mL
PE-MES3-ASL-5 ▼	500 mL
1000 µg/mL each in Water tr. HF 5 comps.	
Mo (Molybdenum)	W (Tungsten)
Sb (Antimony)	Zr (Zirconium)
Sn (Tin)	

Multi-Element Solution 4

PE-MES4-ASL-1	100 mL
PE-MES4-ASL-5	500 mL
1000 µg/mL each in 5% HNO ₃ 17 comps.	
As (Arsenic)	Li (Lithium)
Ba (Barium)	Mn (Manganese)
Be (Beryllium)	Ni (Nickel)
Cd (Cadmium)	Sc (Scandium)
Cr (Chromium)	Sr (Strontium)
Co (Cobalt)	V (Vanadium)
Cu (Copper)	Y (Yttrium)
La (Lanthanum)	Zn (Zinc)
Pb (Lead)	

Interference Check Standard 5

PE-IC55-ASL-1	100 mL
PE-IC55-ASL-5	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	2 x 100 mL
PE-ICS18-ASL-5-SET	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% HNO₃

Hg (Mercury)

Supplied separately for better product stability.

Internal Standard Mix

PE-INT-ASL-1	100 mL
PE-INT-ASL-5	500 mL
10 µg/mL each in 5% HNO ₃ 7 comps.	
Li6 (Lithium)	In (Indium)
Sc (Scandium)	Tb (Terbium)
Ge (Germanium)	Bi (Bismuth)
Y (Yttrium)	

Interferents A

PE-INTA-ASL-1	100 mL
PE-INTA-ASL-5	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	100 mL
PE-INTFR1-ASL-5	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	100 mL
PE-INTFR2-ASL-5	500 mL
10 µg/mL each in 2% HNO ₃ 9 comps.	
Ag (Silver)	Cu (Copper)
As (Arsenic)	Mn (Manganese)
Cd (Cadmium)	Ni (Nickel)
Co (Cobalt)	Zn (Zinc)
Cr (Chromium)	

Interference Check Standard A

PE-INTFRA-ASL-1	100 mL
PE-INTFRA-ASL-5	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	100 mL
PE-INTFRB-ASL-5	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	2 x 100 mL
PE-INTFRC-ASL-5-SET	2 x 500 mL
2 µg/mL each in 2% HNO ₃ tr. HF tr. Tartaric acid 16 comps.	

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

PE-INTFRC-HG-ASL

2 µg/mL in 5% HNO₃

Hg (Mercury)

Supplied separately for better product stability.

▼ Hazardous fee not required.



ICP Alternate Source

Perkin Elmer

AccuStandard equivalent of Perkin Elmer

Mixed Calibration Standard

PE-MCS-ASL-1 100 mL
PE-MCS-ASL-5 500 mL
At stated conc. (µg/mL) in 2% HNO₃ 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-1 100 mL
PE-MCS1-ASL-5 500 mL
At stated conc. (µg/mL) in 2% HNO₃ 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-1 100 mL
PE-MCS2-ASL-5 500 mL
At stated conc. (µg/mL) in 5% HNO₃ 5 comps.

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

Mixed Calibration Standard 3

PE-MCS3-ASL-1 100 mL
PE-MCS3-ASL-5 500 mL
at stated conc. (µg/mL) in 2% HNO₃ tr. HF 3 comps.

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

Mixed Calibration Standard 4

PE-MCS4-ASL-1 100 mL
PE-MCS4-ASL-5 500 mL
At stated conc. (µg/mL) in 5% HNO₃ 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-1 100 mL
PE-MCS5-ASL-5 500 mL
At stated conc. (µg/mL) in 5% HNO₃ 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-1 100 mL
PE-MECAL1-ASL-5 500 mL
10 µg/mL each in 2% HNO₃ 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-1 100 mL
PE-MECAL2-ASL-5 500 mL
10 µg/mL each in 5% HNO₃ 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 2 x 100 mL
PE-MECAL3-ASL-5-SET 2 x 500 mL
PE-MECAL3-ASL 10 µg/mL each in 5% HNO₃ 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% HNO₃

Hg (Mercury)

Supplied separately for better product stability.

Multi-Element Calibration Standard 4

PE-MECAL4-ASL-1 100 mL
PE-MECAL4-ASL-5 500 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 ▼ 100 mL
PE-MECAL5-ASL-5 ▼ 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-1 100 mL
PE-MEINT-ASL-5 500 mL
10 µg/mL each in 2% HNO₃ 7 comps.

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

Memory Test 1

PE-MEM1-ASL-1 100 mL
PE-MEM1-ASL-5 500 mL
At stated conc. (µg/mL) in 5% HNO₃ 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 ▼ 100 mL
PE-MEM2-ASL-5 ▼ 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

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▼ Hazardous fee not required.



AccuStandard equivalent of Perkin Elmer

QC Standard 7 Elements

PE-QC7-ASL-1 100 mL
PE-QC7-ASL-5 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 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-1 100 mL
PE-QC21-ASL-5 500 mL
 100 µg/mL each in 5% HNO₃ tr. HF, tr. Tartaric acid
 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)	

Primary Drinking Water Metals

PE-SDWA1-ASL-1-SET 2 x 100 mL
PE-SDWA1-ASL-5-SET 2 x 500 mL

PE-SDWA1-ASL
 At stated conc. (µg/mL) in 2% HNO₃ 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% HNO₃

Hg (Mercury)

Supplied separately for better product stability.

Secondary Drinking Water

Metals

PE-SDWA2-ASL-1 100 mL
PE-SDWA2-ASL-5 500 mL

At stated conc. (µg/mL) in 2% HNO₃ 4 comps.

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

ELAN 6100 DRC Sensitivity/

Detection Limit Solution

PE-SENS-ASL-1 100 mL
PE-SENS-ASL-5 500 mL

1 µg/mL each in 2% HNO₃ tr. HCl 13 comps.

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

Supplied as a 1000X concentrate for better stability.

ELAN 9000/6X00 Dual Detector Calibration Solution

PE-SETUP1-ASL-1 100 mL
PE-SETUP1-ASL-5 500 mL
 2 µg/mL each in 2% HNO₃ tr. HCl 5 comps.

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

Supplied as a 10X concentrate for better stability.

ELAN 6000/5000 Plasma Setup Solution

PE-SETUP2-ASL-1 100 mL
PE-SETUP2-ASL-5 500 mL
 1 µg/mL each in 1% HNO₃ tr. HCl 11 comps.

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

Supplied as a 100X concentrate for better stability.

SmartTune Solution for ELAN/DRC-e

PE-SMTUNE-ASL-1 100 mL
PE-SMTUNE-ASL-5 500 mL
 1 µg/mL each in 2% HNO₃ tr. HCl 9 comps.

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

Supplied as a 100X concentrate for better stability.

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

PE-SMTUNE2-ASL-1 100 mL
PE-SMTUNE2-ASL-5 500 mL
 At stated conc. (µg/mL) in 0.5% HNO₃ 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-1 100 mL
PE-SPIKE-ASL-5 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 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-1 100 mL
PE-SPIKE1-ASL-5 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 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-1 100 mL
PE-SPIKE2-ASL-5 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 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-1 100 mL
PE-SPIKE3-ASL-5 500 mL
 At stated conc. (µg/mL) in 5% HNO₃ 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



ICP Alternate Source

Perkin Elmer

AccuStandard equivalent of Perkin Elmer

ELAN 9000/6100 Setup/Stab/ Masscal Solution

PE-STAB-ASL-1	100 mL
PE-STAB-ASL-5	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	100 mL
PE-TUNSOL-ASL-5	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	100 mL
PE-UV-ASL-5	500 mL
10 µg/mL each in 2% HNO ₃	3 comps.

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



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	100 mL
PE-VISWAVE-ASL-5	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	100 mL
PE-UVWAVE-ASL-R1-5	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	100 mL
PE-VER1-ASL-5	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	100 mL
PE-VER2-ASL-R1-5	500 mL
10 µg/mL each in 2% HNO ₃ tr. HF	2 comps.

Sn (Tin)	Ti (Titanium)
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Trace Metals I

PE-WPTM1-ASL-1-SET	2 x 100 mL
PE-WPTM1-ASL-5-SET	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% HNO₃

Hg (Mercury)

Supplied separately for better product stability.

Trace Metals II

PE-WPTM2-ASL-1	100 mL
PE-WPTM2-ASL-5	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	100 mL
PE-WPTM3-ASL-5	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	100 mL
PE-WPAM1-ASL-5	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	100 mL
PE-WPAM3-ASL-5	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 2 x 100 mL
TELE-CHK1-ASL-5-SET 2 x 500 mL

TELE-CHK1-ASL

At stated conc. (µg/mL) in 5% HCl, 1% HNO₃
 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% HNO₃

Ag (Silver)

Supplied separately for better product stability.

Check Mate 2

TELE-CHK2-ASL-1-SET 2 x 100 mL
TELE-CHK2-ASL-5-SET 2 x 500 mL

TELE-CHK2-ASL

At stated conc. (µg/mL) in 5% HCl, 1% HNO₃
 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% HNO₃

Ag (Silver)

Supplied separately for better product stability.

Check Mate 3

TELE-CHK3-ASL-1-SET 2 x 100 mL
TELE-CHK3-ASL-5-SET 2 x 500 mL

TELE-CHK3-ASL

At stated conc. (µg/mL) in 5% HCl, 1% HNO₃
 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% HNO₃

Ag (Silver)

Supplied separately for better product stability.

Check Mate 4

TELE-CHK4-ASL-1 100 mL
TELE-CHK4-ASL-5 500 mL

At stated conc. (µg/mL) in 5% HNO₃ 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-1 100 mL
TELE-CHK5-ASL-5 500 mL

At stated conc. (µg/mL) in 5% HNO₃ 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-1 100 mL
TELE-CHK6-ASL-5 500 mL

At stated conc. (µg/mL) in 5% HNO₃ 5 comps.

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

Check Mate 7

TELE-CHK7-ASL-1 100 mL
TELE-CHK7-ASL-5 500 mL

At stated conc. (µg/mL) in 5% HCl, 1% HNO₃
 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-1 100 mL
TELE-CHK8-ASL-0.1X-5 500 mL

At stated conc. (µg/mL) in 5% HNO₃ 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.



ICP

Miscellaneous Applications

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	2 x 100 mL
DINENISO-11885-5-SET	2 x 500 mL

Part 1

DINENISO-11885A-1	100 mL
DINENISO-11885A-5	500 mL

At stated conc. (µg/mL) in 2-5% HNO₃ 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% HNO₃ 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	1 x 500 mL
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Tartaric acid @ 0.5% w/v in 4% HCl

Silicon Standard Solution

D-5184-91-SI-1 ▼	1 x 100 mL
D-5184-91-SI-5 ▼	1 x 500 mL

Silicon @ 1000 µg/mL in water tr. NaOH

Aluminum Standard Solution

D-5184-91-AL-1	1 x 100 mL
D-5184-91-AL-5	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	1 x 100 mL
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500 µg/mL each in 2-5% HNO₃ tr. HF 12 comps.

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

Hydrochloric Acid Diluent

D-5600-BLH-5	1 x 500 mL
D-5600-BLH-L-VAP	L (2 x 500 mL)

20% HCl in ASTM Type I water

Lithium Borate Diluent

D-5600-LIB-1	1 x 100 mL
D-5600-LIB-5	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-CAL1-1 100 mL
10 µg/mL each in 5% HNO₃ 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 2

ICP-MS-CAL2-1 100 mL
10 µg/mL each in 5% HNO₃ 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 3

ICP-MS-CAL3-1 100 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-CAL5-1 100 mL
10 µg/mL in 5% HNO₃

Element	Most Abundant Isotope
Hg (Mercury)	202

Calibration Standard 4

ICP-MS-CAL4-1 100 mL
10 µg/mL each in H₂O 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 Set

ICP-MS-CAL1-SET	5 x 100 mL
ICP-MS-CAL1-1	ICP-MS-CAL4-1
ICP-MS-CAL2-1	ICP-MS-CAL5-1
ICP-MS-CAL3-1	



Matrix Blanks

Nitric Acid Blank

ICP-MS-BLN-1 100 mL
ICP-MS-BLN-5 500 mL

5% HNO₃ in 18 Megohm ASTM Type I deionized Water

Hydrochloric Acid Blank

ICP-MS-BLH-1 100 mL
ICP-MS-BLH-5 500 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-1 100 mL
ICP-MS-BLW-5 500 mL

18 Megohm ASTM Type I deionized Water

▼ Hazardous fee not required.



ICP/MS

Multi-Element Standards

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 mL
100 µg/mL each in 2% HNO₃ 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-TUNSOL2-1 100 mL
100 µg/mL each in 2% HNO₃ 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-1 100 mL
At stated conc. (µg/mL) in 1% HNO₃ 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-1 100 mL
At stated conc. (µg/mL) in 2% HNO₃ 11 comps.

Element	µg/mL	Most Abundant Isotope
As (<i>Arsenic</i>)	10	75
Cd (<i>Cadmium</i>)	10	114
C (<i>Carbon</i>)	20	12
Cr (<i>Chromium</i>)	20	52
Cu (<i>Copper</i>)	20	63
Mn (<i>Manganese</i>)	20	55
Ni (<i>Nickel</i>)	20	58
Se (<i>Selenium</i>)	10	80
Ag (<i>Silver</i>)	20	107
V (<i>Vanadium</i>)	20	51
Zn (<i>Zinc</i>)	10	64

Interference Check Standard Set

ICP-MS-INT-1-SET 2 x 100 mL
ICP-MS-INTA-1 ICP-MS-INTB-1

Memory Check Solution

Memory Check Solution Sets

ICP-MS-MEMCHKA-R1-SET 2 x 100 mL

ICP-MS-MEMCHKA1-R1
ICP-MS-MEMCHKA2-R1

ICP-MS-MEMCHK-R1-SET 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% HNO₃ 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% HNO₃

Element	Most Abundant Isotope
Ag (Silver)	107

Solution B

ICP-MS-MEMCHKB-R1 ▼ 100 mL
At stated conc. (µg/mL) in H₂O 3 comps.

Element	µg/mL	Most Abundant Isotope
Cl (Chloride)	7200	35
P (Phosphorous)	1000	31
S (Sulphur)	1000	32

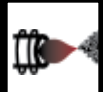
Technical Note

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.

ICP/MS

Multi-Element Standards



Spiking Standards

Spiking Standard for Water

ICP-MS-SPIKE-W-1 100 mL
At stated conc. (µg/mL) in 5% HNO₃ 17 comps.
Most Abundant

Element	µg/mL	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 mL
At stated conc. (µg/mL) in 5% HNO₃ 15 comps.
Most Abundant

Element	µg/mL	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 2 x 100 mL
ICP-MS-SPIKE-W-1 ICP-MS-SPIKE-S-1

Quality Control

Sample 1

ICP-MS-QC1-1 100 mL
10 µg/mL each in 2% HNO₃ 9 comps.

Element	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-QC2-1 100 mL
10 µg/mL each in 5% HNO₃ 25 comps

Element	Isotope
Al (Aluminium)	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-QC3-1 100 mL
10 µg/mL each in 5% HNO₃ tr. HF 21 comps.

Element	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	100 µg/mL
Bismuth	2-5% HNO	100 mL	ICP-MS-IS-BI-1	ICP-MS-IS-BI-10X-1
Holmium	2-5% HNO	100 mL	ICP-MS-IS-HO-1 NEW	ICP-MS-IS-HO-10X-1 NEW
Indium	2-5% HNO ₃	100 mL	ICP-MS-IS-IN-1	ICP-MS-IS-IN-10X-1
Lutetium	2-5% HNO ₃	100 mL	ICP-MS-IS-LU-1 NEW	ICP-MS-IS-LU-10X-1 NEW
Lithium-6	2-5% HNO ₃	100 mL	ICP-MS-IS-LI6-1 NEW	ICP-MS-IS-LI6-10X-1 NEW
Rhodium	10% HCl	100 mL	ICP-MS-IS-RH-1	ICP-MS-IS-RH-10X-1
Scandium	2-5% HNO ₃	100 mL	ICP-MS-IS-SC-1	ICP-MS-IS-SC-10X-1
Terbium	2-5% HNO ₃	100 mL	ICP-MS-IS-TB-1	ICP-MS-IS-TB-10X-1
Yttrium	2-5% HNO ₃	100 mL	ICP-MS-IS-Y-1	ICP-MS-IS-Y-10X-1

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-MIX1-1 100 mL
10 µg/mL each in 2% HNO₃ 7 comps.

Element	Isotope
Bi (Bismuth)	209
Ho (Holmium)	165
In (Indium)	115
6-Li (Lithium-6)	6
Sc (Scandium)	45
Tb (Terbium)	159
Y (Yttrium)	89



ICP/MS

EPA Method 200.8 & 6020

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-CAL1-1 100 mL
10 µg/mL each in 5% HNO₃ tr. HF 18 comps.

Element	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-CAL2-1 100 mL
10 µg/mL each in 2% HNO₃ 2 comps.

Element	Isotope
Ba (Barium)	138
Ag (Silver)	67

Calibration Standard #1R (1994 Version)

ICP-MS-200.8-CAL1R-1 100 mL
At stated conc. (µg/mL) in 2% HNO₃ tr. HF 18 comps.

Element	µg/mL	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-CAL3-1 100 mL
1 component in 5% HNO₃

Element	µg/mL	Isotope
Hg (Mercury)	5	202

Internal Standards

Internal Standard #1

ICP-MS-200.8-IS-1 100 mL
100 µg/mL each in 2% HNO₃ 5 comps.

Element	Isotope
Sc (Scandium)	45
Y (Yttrium)	89
In (Indium)	115
Tb (Terbium)	159
Bi (Bismuth)	209

Internal Standard #2

ICP-MS-200.8-IS2-1 100 mL
100 µg/mL in 2% HNO₃

Element	Isotope
Au (Gold)	197

see previous pg for
single element internal standards

Tuning Standard

ICP-MS-200.8-TUN-1 100 mL
10 µg/mL each in 2% HNO₃ 5 comps.

Element	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-1 100 mL
10 µg/mL each in 2% HNO₃ 22 comps.

Element	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-1 100 mL
10 µg/mL each in 2% HNO₃ 15 comps.

Element	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-INT1-1 100 mL
At stated conc. (µg/mL) in 2% HNO₃ 12 comps.

Element	µg/mL	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-INT2-1 100 mL
2 µg/mL each in 5% HNO₃ tr. HF 9 comps.

Element	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-1 100 mL
10 µg/mL each in 2% HNO₃ 4 comps.

Element	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

Element	1000 µg/g in 75 cSt base oil Cat. No. (50 g)	5000 µg/g in 75 cSt base oil Cat. No. (50 g)
Al (Aluminum)	WM-75CST-01	WM-75CST-01-5X
Sb (Antimony)	WM-75CST-02	WM-75CST-02-5X
As (Arsenic)	WM-75CST-03	
Ba (Barium)	WM-75CST-04	WM-75CST-04-5X
Be (Beryllium)	WM-75CST-05	
Bi (Bismuth)	WM-75CST-06	WM-75CST-06-5X
B (Boron)	WM-75CST-07	WM-75CST-07-5X
Cd (Cadmium)	WM-75CST-08	WM-75CST-08-5X
Ca (Calcium)	WM-75CST-09	WM-75CST-09-5X
Cr (Chromium)	WM-75CST-13	WM-75CST-13-5X
Co (Cobalt)	WM-75CST-14	WM-75CST-14-5X
Cu (Copper)	WM-75CST-15	WM-75CST-15-5X
Fe (Iron)	WM-75CST-27	WM-75CST-27-5X
La (Lanthanum)	WM-75CST-28	
Pb (Lead)	WM-75CST-29	WM-75CST-29-5X
Li (Lithium)	WM-75CST-30	WM-75CST-30-5X
Mg (Magnesium)	WM-75CST-32	WM-75CST-32-5X
Mn (Manganese)	WM-75CST-33	WM-75CST-33-5X
Hg (Mercury)	WM-75CST-34	
Mo (Molybdenum)	WM-75CST-35	WM-75CST-35-5X
Ni (Nickel)	WM-75CST-37	WM-75CST-37-5X
P (Phosphorous)	WM-75CST-41	WM-75CST-41-5X
K (Potassium)	WM-75CST-43	WM-75CST-43-5X
Sc (Scandium)	WM-75CST-50	
Se (Selenium)	WM-75CST-51	
Si (Silicon)	WM-75CST-52	WM-75CST-52-5X
Ag (Silver)	WM-75CST-53	WM-75CST-53-5X
Na (Sodium)	WM-75CST-54	WM-75CST-54-5X
Sr (Strontium)	WM-75CST-55	
S (Sulfur)	WM-75CST-56	WM-75CST-56-5X
Tl (Thallium)	WM-75CST-60	
Sn (Tin)	WM-75CST-63	WM-75CST-63-5X
Ti (Titanium)	WM-75CST-64	WM-75CST-64-5X
V (Vanadium)	WM-75CST-67	WM-75CST-67-5X
Y (Yttrium)	WM-75CST-69	WM-75CST-69-5X
Zn (Zinc)	WM-75CST-70	WM-75CST-70-5X
Zn (Zirconium)	WM-75CST-71	WM-75CST-71-5X

Matrix Oil and Stabilizer

75 cSt Oil
MOSOL-75 500 mL

Stabilizer
WM-STAB 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 100 g
MA-900-200G 200 g
900 µg/g each in Hydrocarbon oil

MA-1000-100G 100 g
MA-1000-200G 200 g
1000 µg/g each in Hydrocarbon oil

MA-3000-100G 100 g
MA-3000-200G 200 g
3000 µg/g each in Hydrocarbon oil

MA-5000-100G 100 g
MA-5000-200G 200 g
5000 µg/g each in Hydrocarbon oil 5 comps.

Ba (Barium) P (Phosphorous)
Ca (Calcium) Zn (Zinc)
Mg (Magnesium)

See Petrochemical Section for
Metals in Biofuels.





Organometallic Standards

AA, ICP, DCP & XRF Analysis

21 Wear Metal Multi-Element

Conc.	Unit	Cat. No.
10 µg/g	100 g	WM-21-1X-100G
	200 g	WM-21-1X-200G
30 µg/g	100 g	WM-21-3X-100G
	200 g	WM-21-3X-200G
50 µg/g	100 g	WM-21-5X-100G
	200 g	WM-21-5X-200G
100 µg/g	100 g	WM-21-10X-100G
	200 g	WM-21-10X-200G
300 µg/g	100 g	WM-21-30X-100G
	200 g	WM-21-30X-200G
500 µg/g	100 g	WM-21-50X-100G
	200 g	WM-21-50X-200G
900 µg/g	100 g	WM-21-90X-100G
	200 g	WM-21-90X-200G

WM-21-100G-SET

set of above 7 x 100 g

WM-21-200G-SET

set of above 7 x 200 g

21 Wear Metals in hydrocarbon oil at the stated conc.

Ag (Silver)	Cu (Copper)	P (Phosphorus)
Al (Aluminum)	Fe (Iron)	Pb (Lead)
B (Boron)	Mg (Magnesium)	Si (Silicon)
Ba (Barium)	Mn (Manganese)	Sn (Tin)
Ca (Calcium)	Mo (Molybdenum)	Ti (Titanium)
Cd (Cadmium)	Na (Sodium)	V (Vanadium)
Cr (Chromium)	Ni (Nickel)	Zn (Zinc)

22 Wear Metal Multi-Element

Conc.	Unit	Cat. No.
10 µg/g	100 g	WM-22-1X-100G
	200 g	WM-22-1X-200G
30 µg/g	100 g	WM-22-3X-100G
	200 g	WM-22-3X-200G
50 µg/g	100 g	WM-22-5X-100G
	200 g	WM-22-5X-200G
100 µg/g	100 g	WM-22-10X-100G
	200 g	WM-22-10X-200G
300 µg/g	100 g	WM-22-30X-100G
	200 g	WM-22-30X-200G
500 µg/g	100 g	WM-22-50X-100G
	200 g	WM-22-50X-200G
900 µg/g	100 g	WM-22-90X-100G
	200 g	WM-22-90X-200G

100 gram Set WM-22-100G-SET

set of above 7 x 100 g

200 gram Set WM-22-200G-SET

set of above 7 x 200 g

21 Wear Metals plus K in hydrocarbon oil at the stated conc.

Ag (Silver)	Fe (Iron)	Pb (Lead)
Al (Aluminum)	K (Potassium)	Si (Silicon)
B (Boron)	Mg (Magnesium)	Sn (Tin)
Ba (Barium)	Mn (Manganese)	Ti (Titanium)
Ca (Calcium)	Mo (Molybdenum)	V (Vanadium)
Cd (Cadmium)	Na (Sodium)	Zn (Zinc)
Cr (Chromium)	Ni (Nickel)	
Cu (Copper)	P (Phosphorus)	

23 Wear Metal Multi-Element

Conc.	Unit	Cat. No.
10 µg/g	100 g	WM-23-1X-100G
	200 g	WM-23-1X-200G
30 µg/g	100 g	WM-23-3X-100G
	200 g	WM-23-3X-200G
50 µg/g	100 g	WM-23-5X-100G
	200 g	WM-23-5X-200G
100 µg/g	100 g	WM-23-10X-100G
	200 g	WM-23-10X-200G
300 µg/g	100 g	WM-23-30X-100G
	200 g	WM-23-30X-200G
500 µg/g	100 g	WM-23-50X-100G
	200 g	WM-23-50X-200G
900 µg/g	100 g	WM-23-90X-100G
	200 g	WM-23-90X-200G

100 gram Set WM-23-100G-SET

set of above 7 x 100 g

200 gram Set WM-23-200G-SET

set of above 7 x 200 g

21 Wear Metals plus K and Sb in hydrocarbon oil at the stated conc.

Ag (Silver)	Fe (Iron)	Pb (Lead)
Al (Aluminum)	K (Potassium)	Sb (Antimony)
B (Boron)	Mg (Magnesium)	Si (Silicon)
Ba (Barium)	Mn (Manganese)	Sn (Tin)
Ca (Calcium)	Mo (Molybdenum)	Ti (Titanium)
Cd (Cadmium)	Na (Sodium)	V (Vanadium)
Cr (Chromium)	Ni (Nickel)	Zn (Zinc)
Cu (Copper)	P (Phosphorus)	



Organometallic Standards

Premium Sulfur-Free



Organometallic Single Element Stock Standards

Element	1000 µg/g Cat. No.	50 mL	5000 µg/g Cat. No.	50 mL
Al (Aluminum)	WM-NMS-01		WM-NMS-01-5X	
Sb (Antimony)	WM-NMS-02		WM-NMS-02-5X	
As (Arsenic)	WM-NMS-03		WM-NMS-03-5X	
Ba (Barium)	WM-NMS-04		WM-NMS-04-5X	
Be (Beryllium)	WM-NMS-05		WM-NMS-05-5X	
Cd (Cadmium)	WM-NMS-08		WM-NMS-08-5X	
Ca (Calcium)	WM-NMS-09		WM-NMS-09-5X	
Ce (Cerium)	WM-NMS-11		WM-NMS-11-5X	
Cr (Chromium)	WM-NMS-13		WM-NMS-13-5X	
Co (Cobalt)	WM-NMS-14		WM-NMS-14-5X	
Cu (Copper)	WM-NMS-15		WM-NMS-15-5X	
Ga (Gallium)	WM-NMS-20		WM-NMS-20-5X	
Au (Gold)	WM-NMS-22		-----	----
Fe (Iron)	WM-NMS-27		WM-NMS-27-5X	
Pb (Lead)	WM-NMS-29		WM-NMS-29-5X	
Li (Lithium)	WM-NMS-30		WM-NMS-30-5X	
Mg (Magnesium)	WM-NMS-32		WM-NMS-32-5X	
Mn (Manganese)	WM-NMS-33		WM-NMS-33-5X	

Element	1000 µg/g Cat. No.	50 mL	5000 µg/g Cat. No.	50 mL
Hg (Mercury)	WM-NMS-34		WM-NMS-34-5X	
Mo (Molybdenum)	WM-NMS-35		WM-NMS-35-5X	
Ni (Nickel)	WM-NMS-37		WM-NMS-37-5X	
P (Phosphorous)	WM-NMS-41		WM-NMS-41-5X	
K (Potassium)	WM-NMS-43		WM-NMS-43-5X	
Se (Selenium)	WM-NMS-51		WM-NMS-51-5X	
Si (Silicon)	WM-NMS-52		WM-NMS-52-5X	
Ag (Silver)	WM-NMS-53		WM-NMS-53-5X	
Na (Sodium)	WM-NMS-54		WM-NMS-54-5X	
Sr (Strontium)	WM-NMS-55		WM-NMS-55-5X	
Tl (Thallium)	WM-NMS-60		WM-NMS-60-5X	
Sn (Tin)	WM-NMS-63		WM-NMS-63-5X	
Ti (Titanium)	WM-NMS-64		WM-NMS-64-5X	
V (Vanadium)	WM-NMS-67		WM-NMS-67-5X	
Y (Yttrium)	WM-NMS-69		WM-NMS-69-5X	
Zn (Zinc)	WM-NMS-70		WM-NMS-70-5X	
Zr (Zirconium)	WM-NMS-71		WM-NMS-71-5X	

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.	25 grams	Cat. No.	50 grams
Al (Aluminum)	3	WM-NMS-01-30X-25G		WM-NMS-01-30X-50G	
Sb (Antimony)	2	WM-NMS-02-20X-25G		WM-NMS-02-20X-50G	
Ba (Barium)	12.5	WM-NMS-04-125X-25G		WM-NMS-04-125X-50G	
Cd (Cadmium)	10	WM-NMS-08-100X-25G		WM-NMS-08-100X-50G	
Ca (Calcium)	5	WM-NMS-09-50X-25G		WM-NMS-09-50X-50G	
Ce (Cerium)	5	WM-NMS-11-50X-25G		WM-NMS-11-50X-50G	
Cr (Chromium)	3.5	WM-NMS-13-35X-25G		WM-NMS-13-35X-50G	
Co (Cobalt)	7.5	WM-NMS-14-75X-25G		WM-NMS-14-75X-50G	
Cu (Copper)	6	WM-NMS-15-60X-25G		WM-NMS-15-60X-50G	
Fe (Iron)	4	WM-NMS-27-40X-25G		WM-NMS-27-40X-50G	
Pb (Lead)	20	WM-NMS-29-200X-25G		WM-NMS-29-200X-50G	
Li (Lithium)	1.5	WM-NMS-30-15X-25G		WM-NMS-30-15X-50G	
Mg (Magnesium)	3	WM-NMS-32-30X-25G		WM-NMS-32-30X-50G	
Mn (Manganese)	6	WM-NMS-33-60X-25G		WM-NMS-33-60X-50G	
Mo (Molybdenum)	5	WM-NMS-35-50X-25G		WM-NMS-35-50X-50G	
Ni (Nickel)	5	WM-NMS-37-50X-25G		WM-NMS-37-50X-50G	
P (Phosphorus)	5	WM-NMS-41-50X-25G		WM-NMS-41-50X-50G	
K (Potassium)	7.5	WM-NMS-43-75X-25G		WM-NMS-43-75X-50G	
Pr (Praseodymium)	3	WM-NMS-44-30X-25G		WM-NMS-44-30X-50G	
Se (Selenium)	3.5	WM-NMS-51-35X-25G		WM-NMS-51-35X-50G	
Si (Silicon)	7.5	WM-NMS-52-75X-25G		WM-NMS-52-75X-50G	
Na (Sodium)	2.5	WM-NMS-54-25X-25G		WM-NMS-54-25X-50G	
Sr (Strontium)	10	WM-NMS-55-100X-25G		WM-NMS-55-100X-50G	
Tl (Thallium)	5	WM-NMS-60-50X-25G		WM-NMS-60-50X-50G	
Sn (Tin)	7.5	WM-NMS-63-75X-25G		WM-NMS-63-75X-50G	
Ti (Titanium)	5	WM-NMS-64-50X-25G		WM-NMS-64-50X-50G	
V (Vanadium)	4	WM-NMS-67-40X-25G		WM-NMS-67-40X-50G	
Y (Yttrium)	2.5	WM-NMS-69-25X-25G		WM-NMS-69-25X-50G	
Zn (Zinc)	6	WM-NMS-70-60X-25G		WM-NMS-70-60X-50G	
Zr (Zirconium)	5	WM-NMS-71-50X-25G		WM-NMS-71-50X-50G	

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 50 mL
ASTM-P-0122-1 100 mL

Stabilizer Solution B

ASTM-P-0123-0.5 50 mL
ASTM-P-0123-1 100 mL

Stabilizer Solution C

ASTM-P-0124-0.5 50 mL
ASTM-P-0124-1 100 mL

Stabilizer Solution D

ASTM-P-0125-0.5 50 mL
ASTM-P-0125-1 100 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



Organometallic Standards

Premium Sulfur-Free

11 Wear Metal Multi-Element

Conc.	Unit	Cat. No.
10 µg/g	100 mL	WM-11-NMS-1X-1
30 µg/g	100 mL	WM-11-NMS-3X-1
50 µg/g	100 mL	WM-11-NMS-5X-1
100 µg/g	100 mL	WM-11-NMS-10X-1
300 µg/g	100 mL	WM-11-NMS-30X-1
500 µg/g	100 mL	WM-11-NMS-50X-1
900 µg/g	100 mL	WM-11-NMS-90X-1

WM-11-NMS-1-SET

set of above 7 x 100 mL

11 Wear Metals in Mineral oil at the stated concentration.

Al (Aluminum)	Mg (Magnesium)	Si (Silicon)
Cr (Chromium)	Na (Sodium)	Sn (Tin)
Cu (Copper)	Ni (Nickel)	Ti (Titanium)
Fe (Iron)	Pb (Lead)	

12 Wear Metal Multi-Element

Conc.	Unit	Cat. No.
10 µg/g	100 mL	WM-12-NMS-1X-1
30 µg/g	100 mL	WM-12-NMS-3X-1
50 µg/g	100 mL	WM-12-NMS-5X-1
100 µg/g	100 mL	WM-12-NMS-10X-1
300 µg/g	100 mL	WM-12-NMS-30X-1
500 µg/g	100 mL	WM-12-NMS-50X-1
900 µg/g	100 mL	WM-12-NMS-90X-1

WM-12-NMS-1-SET

set of above 7 x 100 mL

12 Wear Metals in Mineral oil at the stated concentration.

Ag (Silver)	Fe (Iron)	Pb (Lead)
Al (Aluminum)	Mg (Magnesium)	Si (Silicon)
Cr (Chromium)	Na (Sodium)	Sn (Tin)
Cu (Copper)	Ni (Nickel)	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.
10 µg/g	100 mL	WM-20-NMS-1X-1
30 µg/g	100 mL	WM-20-NMS-3X-1
50 µg/g	100 mL	WM-20-NMS-5X-1
100 µg/g	100 mL	WM-20-NMS-10X-1
300 µg/g	100 mL	WM-20-NMS-30X-1
500 µg/g	100 mL	WM-20-NMS-50X-1
900 µg/g	100 mL	WM-20-NMS-90X-1

WM-20-NMS-1-SET

set of above 7 x 100 mL

20 Wear Metals in Mineral oil at the stated concentration.

Al (Aluminum)	Fe (Iron)	Pb (Lead)
B (Boron)	Mg (Magnesium)	Si (Silicon)
Ba (Barium)	Mn (Manganese)	Sn (Tin)
Ca (Calcium)	Mo (Molybdenum)	Ti (Titanium)
Cd (Cadmium)	Na (Sodium)	V (Vanadium)
Cr (Chromium)	Ni (Nickel)	Zn (Zinc)
Cu (Copper)	P (Phosphorus)	

21 Wear Metal Multi-Element

Conc.	Unit	Cat. No.
10 µg/g	100 mL	WM-21-NMS-1X-1
30 µg/g	100 mL	WM-21-NMS-3X-1
50 µg/g	100 mL	WM-21-NMS-5X-1
100 µg/g	100 mL	WM-21-NMS-10X-1
300 µg/g	100 mL	WM-21-NMS-30X-1
500 µg/g	100 mL	WM-21-NMS-50X-1
900 µg/g	100 mL	WM-21-NMS-90X-1

100 mL Set

WM-21-NMS-1-SET

set of above 7 x 100 mL

21 Wear Metal in Mineral oil at the stated concentration.

Ag (Silver)	Cu (Copper)	P (Phosphorus)
Al (Aluminum)	Fe (Iron)	Pb (Lead)
B (Boron)	Mg (Magnesium)	Si (Silicon)
Ba (Barium)	Mn (Manganese)	Sn (Tin)
Ca (Calcium)	Mo (Molybdenum)	Ti (Titanium)
Cd (Cadmium)	Na (Sodium)	V (Vanadium)
Cr (Chromium)	Ni (Nickel)	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.	50 mL
Cobalt	1000 µg/g	WM-NMS-14	
	5000 µg/g	WM-NMS-14-5X	

Organometallic Standards

AA, ICP, DCP & XRF Analysis



Sulfur and Metals in Oil

Sulfur and Metals in Mineral Oil

ASTM-P-0100-SET				12 x 100 mL 100 mL
Cat. No.	Sulfur (Wt. %)	Nickel (µg/g)	Vanadium (µg/g)	
ASTM-P-0100-01	0	0	0	
ASTM-P-0100-02	0.50	10	500	
ASTM-P-0100-03	1	100	25	
ASTM-P-0100-04	1.50	80	250	
ASTM-P-0100-05	2	40	100	
ASTM-P-0100-06	2.50	5	400	
ASTM-P-0100-07	3	60	300	
ASTM-P-0100-08	3.50	0	200	
ASTM-P-0100-09	4	100	0	
ASTM-P-0100-10	4.50	50	250	
ASTM-P-0100-11	5	20	500	
ASTM-P-0100-12	5.50	100	50	

Sulfur and Metals in Residual Fuel Oil

ASTM-P-0101-SET				12 x 100 mL 100 mL
Cat. No.	Sulfur (Wt. %)	Nickel (µg/g)	Vanadium (µg/g)	
ASTM-P-0101-01	0	0	0	
ASTM-P-0101-02	0.50	10	500	
ASTM-P-0101-03	1	100	25	
ASTM-P-0101-04	1.50	80	250	
ASTM-P-0101-05	2	40	100	
ASTM-P-0101-06	2.50	5	400	
ASTM-P-0101-07	3	60	300	
ASTM-P-0101-08	3.50	0	200	
ASTM-P-0101-09	4	100	0	
ASTM-P-0101-10	4.50	50	250	
ASTM-P-0101-11	5	20	500	
ASTM-P-0101-12	5.50	100	50	

Test Method A - ICP with an Organic Solvent Specimen Solution

Sulfur and Metals in Mineral Oil

ASTM-P-0102-SET				12 x 100 mL 100 mL	Designed for ASTM D5708
Cat. No.	Sulfur (Wt. %)	Iron (µg/g)	Nickel (µg/g)	Vanadium (µg/g)	
ASTM-P-0102-01	0	0	0	0	
ASTM-P-0102-02	0.50	300	10	500	
ASTM-P-0102-03	1	500	100	25	
ASTM-P-0102-04	-----	100	80	250	
ASTM-P-0102-05	2	200	40	100	
ASTM-P-0102-06	2.50	400	5	400	
ASTM-P-0102-07	3	0	60	300	
ASTM-P-0102-08	3.50	500	0	200	
ASTM-P-0102-09	-----	100	100	0	
ASTM-P-0102-10	4.50	300	50	250	
ASTM-P-0102-11	5	200	20	500	
ASTM-P-0102-12	5.50	50	100	50	

Sulfur and Metals in Residual Fuel Oil

ASTM-P-0103-SET				12 x 100 mL 100 mL	Designed for ASTM D5708
Cat. No.	Sulfur (Wt. %)	Iron (µg/g)	Nickel (µg/g)	Vanadium (µg/g)	
ASTM-P-0103-01	0	0	0	0	
ASTM-P-0103-02	0.50	300	10	500	
ASTM-P-0103-03	1	500	100	25	
ASTM-P-0103-04	-----	100	80	250	
ASTM-P-0103-05	2	200	40	100	
ASTM-P-0103-06	2.50	400	5	400	
ASTM-P-0103-07	3	0	60	300	
ASTM-P-0103-08	3.50	500	0	200	
ASTM-P-0103-09	-----	100	100	0	
ASTM-P-0103-10	4.50	300	50	250	
ASTM-P-0103-11	5	200	20	500	
ASTM-P-0103-12	5.50	50	100	50	

Stock Multi-Element in Mineral Oil

D-5708-A-10X 100 mL
100 µg/g in 20 cSt mineral oil 3 comps.

Iron Vanadium
Nickel

After Acid Decomposition of Sample

Working Level Multi-Element Aqueous Standard

D-5708-B-5 ▲ 500 mL
10 µg/mL each in 2-5% HNO₃ 3 comps.

Iron Vanadium
Nickel

Stock Multi-Element Standard in Mineral Oil

D-5863-95B-10X-1 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 ▲ 500 mL
CLP-BLN-L-VAP ▲ 1 L (2 x 500 mL)
5% HNO₃ in ASTM Type I Water

Stock Multi-Element Aqueous Standard

D-5708-B-10X-1 ▲ 100 mL
D-5708-B-10X-5 ▲ 500 mL
100 µg/mL each in 2-5% HNO₃ 3 comps.

Iron Vanadium
Nickel

Stock Multi-Element Standard in Mineral Oil

D-5863-00A-10X-1 1 x 100 mL
At stated conc. (µg/g) in 20 cst Mineral Oil 3 comps.

Nickel 100 Iron 10
Vanadium 500 Sodium 20

▲ Hazardous fee required.

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			9 x 100 mL
Cat. No.	Vanadium Conc. (Wt.%)		100 mL
ASTM-P-0104-01	005		
ASTM-P-0104-02	025		
ASTM-P-0104-03	050		
ASTM-P-0104-04	075		
ASTM-P-0104-05	0.0100		
ASTM-P-0104-06	0.0125		
ASTM-P-0104-07	0.0150		
ASTM-P-0104-08	0.0175		
ASTM-P-0104-09	0.0200		

Vanadium Standards - High Range for ISO/CD 14597 with 0.05% Manganese Internal Standard in Xylene-Mineral Oil

ASTM-P-0105-SET			7 x 100 mL
Cat. No.	Vanadium Conc. (Wt.%)		100 mL
ASTM-P-0105-01	000		
ASTM-P-0105-02	0.0300		
ASTM-P-0105-03	0.0400		
ASTM-P-0105-04	0.0500		
ASTM-P-0105-05	0.0600		
ASTM-P-0105-06	0.0800		
ASTM-P-0105-07	0.1000		

Nickel Standards for ISO/CD 14597 with 0.05% Manganese Internal Standard in Xylene-Mineral Oil

ASTM-P-0106-SET			7 x 100 mL
Cat. No.	Nickel Conc. (Wt.%)		100 mL
ASTM-P-0106-01	000		
ASTM-P-0106-02	005		
ASTM-P-0106-03	010		
ASTM-P-0106-04	025		
ASTM-P-0106-05	050		
ASTM-P-0106-06	075		
ASTM-P-0106-07	0.0100		

Internal Standard

ASTM-P-0107-5 500 mL
Manganese @ 0.05 Wt. % in Xylene-Mineral Oil



Organometallic Standards

AA, ICP, DCP & XRF Analysis

Lubricating Oil Standards

ASTM-P-0108-SET

17 x 100 mL

Designed for ASTM D6481

Cat. No.	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

17 x 100 mL

Cat. No.	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

17 x 100 mL

Designed for ASTM D4927

Cat. No.	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

17 x 100 mL

Designed for ASTM D4927

Cat. No.	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

17 x 100 mL

Cat. No.	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

17 x 100 mL

Designed for ASTM D4628 & D4927

Cat. No.	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

Organometallic Standards

AA, ICP, DCP & XRF Analysis



Lubricating Oil Standards (Continued)

ASTM-P-0114-SET 17 x 100 mL

EDXRF ASTM Method

Designed for ASTM D6481

Cat. No.	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

17 x 100 mL

Cat. No.	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

11 x 100 mL

Additives

Designed for ASTM D6481

Cat. No.	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

10 x 100 mL

WLXRF ASTM Method

Designed for ASTM D6443

Cat. No.	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

10 x 100 mL

WLXRF ASTM Method

Designed for ASTM D4628, D4927, D4951, D6443

Cat. No.	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



Organometallic Standards

AA, ICP, DCP & XRF Analysis

Lubricating Oil Standards (Continued)

ASTM-P-0119-SET

22 x 100 mL

Designed for ASTM D4628, D4927, D4951, D6443

Cat. No.	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

Standards of Interest

Concentrations for the sets on pages 380-382 are targets. Actual production lots may vary.

ASTM-P-0120-SET

23 x 100 mL

Cat. No.	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

Metal Working Fluids

ASTM-P-0121-SET

13 x 100 mL

Cat. No.	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
ASTM-P-0122-1

50 mL
100 mL

Stabilizer Solution C

ASTM-P-0124-0.5
ASTM-P-0124-1

50 mL
100 mL

Stabilizer Solution B

ASTM-P-0123-0.5
ASTM-P-0123-1

50 mL
100 mL

Stabilizer Solution D

ASTM-P-0125-0.5
ASTM-P-0125-1

50 mL
100 mL



ASTM D3230 Determination of Salts in Crude Oil

Mixed Salt Solution

D-3230-89-1 ▲ 100 mL
 D-3230-89-5 ▲ 500 mL

At stated conc. in Alcohol Solution (1-butanol : MeOH) (ratio 63:37) tr. H₂O 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 ▲ 4 x 100 mL

Set includes the following Catalog Numbers:

Description	Cat. No.	100 mL
Blank 1% Aliquat 336/MIBK	D-3237-01 ▲	
0.02 g Pb / gal (5.3 mg Pb/ L) in 1% Aliquat 336 / MIBK	D-3237-02 ▲	
0.05 g Pb / gal (13.2 mg Pb/ L) in 1% Aliquat 336 / MIBK	D-3237-03 ▲	
0.10 g Pb / gal (26.4 mg Pb/ L) in 1% Aliquat 336 / MIBK	D-3237-04 ▲	



ASTM D3605 Trace Metals in Gas Turbine Fuels by AA & Flame Emission & Spectroscopy

Trace Metals Standard

D-3605-91-R1-1 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 ▲ 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.	Unit
Metals in Ashes		
Trace Metals in Fly Ash 1	CRM001-100G	100 g
Trace Metals - Fly Ash 2	CRM012-100G	100 g
Trace Metals - Fly Ash 3	CRM019-50G	50 g
TCLP Metals - Ash 1	CRM205-225G	225 g
Metals in Particulates & Water Treatment Media		
Trace Metals - Activated Charcoal	CRM002-100G	100 g
Trace Metals - Diatomaceous Earth	CRM004-100G	100 g
Trace Metals - Sewage Amended Soil	CRM005-50G	50 g
Trace Metals - Baghouse Dust	CRM014-50G	50 g
Metals in Paint		
Trace Metals - Paint Sludge 1	CRM006-50G	50 g
Trace Metals - Paint Chips	CRM013-50G	50 g
Trace Metals - Powdered Paint 1 NEW	CRM017-20G	20 g
Lead-Free Paint - Powdered NEW	CRM050-20G	20 g
Metals in Sludges		
Trace Metals - Paint Sludge 1	CRM006-50G	50 g
Trace Metals - Electroplating Sludge 1	CRM009-100G	100 g
Trace Metals - Electroplating Sludge 2	CRM010-100G	100 g
Trace Metals - Electroplating Sludge 3	CRM011-100G	100 g
Trace Metals - Wet Sewage Sludge	CRM018-50G	50 g
Trace Metals - Sewage Sludge 2 NEW	CRM029-50G	50 g
Trace Metals - Sewage Sludge 3 NEW	CRM031-40G	40 g
Trace Metals - Sewage Sludge 4	CRM055-50G	50 g
TCLP Metals		
TCLP Metals - Sandy Loam 1	CRM202-225G	225 g
TCLP Metals - Sandy Loam 2	CRM204-225G	225 g
TCLP Metals - Ash 1	CRM205-225G	225 g
TCLP Metals - Sandy Loam 3	CRM206-225G	225 g
TCLP Metals - Loamy Sand 3	CRM207-225G	225 g
TCLP Metals - Sandy Loam 4	CRM208-225G	225 g
TCLP Metals - Sandy Loam 11 NEW	CRM209-225G	225 g
TCLP Metals - Sandy Loam 12 NEW	CRM210-225G	225 g
TCLP Metals - Sandy Loam 13 NEW	CRM211-225G	225 g
TCLP Metals - Loamy Sand 1 NEW	CRM212-225G	225 g
TCLP Metals - Loamy Sand 2 NEW	CRM213-225G	225 g
TCLP Metals - Sandy Loam 6 NEW	CRM215-225G	225 g
TCLP Metals - Loam 1 NEW	CRM218-225G	225 g
Metals in Soil		
Trace Metals - Fresh Water Sediment 2	CRM015-50G	50 g
Trace Metals - Fresh Water Sediment 3	CRM016-50G	50 g
Trace Metals - Sandy Loam 2	CRM020-50G	50 g
Trace Metals - Sandy Loam 3	CRM021-100G	100 g
Trace Metals/Cyan - Loam 5	CRM022-20G	20 g
Trace Metals - Sandy Loam 7	CRM023-50G	50 g
Trace Metals - Loamy Sand 1	CRM024-50G	50 g
Trace Metals - Sandy Loam 8	CRM025-50G	50 g
Trace Metals - Sandy Loam 9	CRM026-50G	50 g
Trace Metals - Sandy Loam 10	CRM027-50G	50 g
Trace Metals - Sandy Loam 11 NEW	CRM028-50G	50 g
Trace Metals - Sandy Loam 2 NEW	CRM030-50G	50 g
Trace Metals - Loamy Sand 10 NEW	CRM033-50G	50 g
Trace Metals - Loamy Sand 3 NEW	CRM034-50G	50 g
Trace Metals - Loamy Sand 4 NEW	CRM036-50G	50 g
Chromium VI - Soil NEW	CRM041-30G	30 g
Trace Metals - Loam 3 NEW	CRM042-50G	50 g
Trace Metals - Sandy Loam 6 NEW	CRM043-50G	50 g
Trace Metals - Silt Loam 1 NEW	CRM044-50G	50 g
Trace Metals - Silty Clay 1 NEW	CRM045-50G	50 g
Trace Metals - Clay 1 NEW	CRM046-50G	50 g
Trace Metals - Sand 1 NEW	CRM048-50G	50 g
Trace Metals - Sandy Clay 1 NEW	CRM049-50G	50 g
Trace Metals - Clay 2 NEW	CRM051-50G	50 g
Trace Metals - Loamy Clay 1 NEW	CRM052-50G	50 g
Trace Metals - Loamy Clay 2 NEW	CRM059-50G	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.	Unit
Metals in Soil (continued)		
Chromium VI - Clay NEW	CRM060-30G	30 g
Chromium VI - Sandy Loam NEW	CRM061-30G	30 g
Nutrients - Clay Soil NEW	CRM090-100G	100 g
Nutrients - Sandy Loam NEW	CRM091-100G	100 g
Nutrients - Sand NEW	CRM092-100G	100 g
Trace Metals - Taiwan Clay 1 NEW	CRM2003-50G	50 g
PH - Sandy Clay NEW	CRM497-100G	100 g
PH/Conductivity - Clay Soil NEW	CRM498-100G	100 g
PH - Loamy Sand NEW	CRM499-100G	100 g
Anions - Sandy Loam 1 NEW	CRM700-50G	50 g
Anions - Clay 1 NEW	CRM701-50G	50 g
Anions - Loamy Sand 1 NEW	CRM702-50G	50 g
Cyanide - Sediment NEW	CRM750-30G	30 g
Cyanide - Clay NEW	CRM751-30G	30 g
Cyanide - Sandy Loam NEW	CRM752-30G	30 g
Sulfide - Sediment NEW	CRM775-30G	30 g
Sulfide - Clay NEW	CRM776-30G	30 g
Sulfide - Sandy Loam NEW	CRM777-30G	30 g

**Real World samples.
Concentration on
actual lots may vary.**

Certificate of Analysis

CERTIFIED REFERENCE MATERIAL

Trace Metals - Industrial Incinerator Ash

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				

ISO Guide 34
Cert# AR-1470

ISO/IEC 17025
Cert# AT-1467

Analyte	Units	Certified ^{1,4} Value	K ⁵	Standard ² Deviation	Confidence Interval	Prediction Interval
Aluminum, Al <small>Traceable to: NIST SRM 3101a Lot 992003</small>	mg/Kg	2160 ± 30.8	2.00	91.0	2070 - 2250	1640 - 2680
Barium, Ba <small>Traceable to: NIST SRM 3104a Lot 070222</small>	mg/Kg	18.7 ± 0.372	2.00	1.10	17.6 - 19.8	13.1 - 24.3
Cadmium, Cd <small>Traceable to: NIST SRM 3108 Lot 060531</small>	mg/Kg	362 ± 5.92	2.00	17.5	344 - 379	375 - 448
Calcium, Ca <small>Traceable to: NIST SRM 3109a Lot 050825</small>	mg/Kg	2110 ± 34.2	2.00	101	2010 - 2210	1620 - 2600
Chromium, Cr (total) <small>Traceable to: NIST SRM 3112a Lot 990607</small>	mg/Kg	162000 ± 2044	2.00	6040	155000 - 168000	129000 - 194000
Copper, Cu <small>Traceable to: NIST SRM 3114 Lot 891811</small>	mg/Kg	3020 ± 46.7	2.00	138	2880 - 3150	2320 - 3710
Iron, Fe <small>Traceable to: NIST SRM 3126a Lot 051031</small>	mg/Kg	28700 ± 423	2.00	1250	27400 - 29900	22200 - 35200
Lead, Pb <small>Traceable to: NIST SRM 3128 Lot 030721</small>	mg/Kg	120 ± 6.26	2.00	18.5	102 - 139	18.8 - 222
Magnesium, Mg <small>Traceable to: NIST SRM 3131a Lot 050302</small>	mg/Kg	1510 ± 30.5	2.00	90.0	1420 - 1590	1080 - 1930
Manganese, Mn <small>Traceable to: NIST SRM 3132 Lot 050429</small>	mg/Kg	202 ± 2.71	2.00	8.00	194 - 210	158 - 247
Nickel, Ni <small>Traceable to: NIST SRM 3136 Lot 000612</small>	mg/Kg	13300 ± 150	2.00	442	12800 - 13700	10900 - 15700
Potassium, K <small>Traceable to: NIST SRM 3141a Lot 051220</small>	mg/Kg	73300 ± 866	2.00	2560	70800 - 75900	61000 - 85600
Silver, Ag <small>Traceable to: NIST SRM 3151 Lot 992212</small>	mg/Kg	54.8 ± 1.47	2.00	4.35	50.4 - 59.1	33.5 - 76.1
Sodium, Na <small>Traceable to: NIST SRM 3152a Lot 010728</small>	mg/Kg	29200 ± 382	2.00	1130	28100 - 30300	23800 - 34600
Zinc, Zn <small>Traceable to: NIST SRM 3168a Lot 001402</small>	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 equivalent 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

Custom Services

Custom Synthesis

The AccuStandard Synthesis Department employs several PhD. Organic Chemists with many years of pertinent academic and industrial experience. The experienced staff has developed hundreds of pure chemical compounds for companies and governmental agencies around the world. The very well-equipped synthetic laboratory, with significant analytical support has made many notable synthesis projects possible. We specialize in synthesizing chemicals of high purity to be used as reference standards, and also offer custom synthesis capability on milligram to kilogram scales.



Analytical Capabilities

- GC-MS, GC-FID, GC-ECD, GC-NPD
- HPLC, LC-MS
- ICP, ICP-MS
- access to more analytical instrumentation if necessary

Synthesis and Purification

- Milligram to Kilogram Glassware
- Inert Conditions Equipment
- High Performance Flash Chromatography
- Distillation Equipment - High Vacuum, Molecular (Kugelrohr), and Spinning Band Columns
- Preparative TLC
- Parr Pressure and Hydrogenation Reactor

Custom Synthesized Products

- PCBs (all 209 congeners), & hydroxy, methoxy, and methylsulfonyl metabolites
- Halo-Dibenzodioxins and Furans
- PBDEs (all 209 congeners) & hydroxy, methoxy, chloro metabolites
- Fluorinated PBDEs
- Other Brominated Flame Retardants
- PBBs
- PAHs, Nitro-PAHs, Methyl-PAHs
- Pesticides and metabolites
- Explosives and metabolites
- Nonyl- and Octylphenol Ethoxylates
- Mono- and Diester Phthalates
- Organophosphates
- Other Rare Chemicals

AccuStandard is renowned for its quick response to the needs for new compounds. The company's especially strong Synthesis Department allows the synthesis of important and unique products. Featured in its history of firsts are all of the 209 congeners of polychlorinated biphenyls (PCBs), 209 congeners of polybrominated diphenyl ethers (PBDEs) as well as many halogenated dioxins and dibenzofurans, PAHs, pesticides and fluorinated surrogates substituting the expensive isotopically labelled compounds.

Among the more recent introductions are the hydroxy and methoxy PBDE congeners, mixed bromo/chloro hydroxy and methoxy diphenyl ethers, organophosphate flame retardants, biofuels, plastic additives (AccuStandard authored the Handbook for the Chemical Analysis of Plastic and Polymer Additives published by CRC Press), EPA Method 535 pesticide derivatives and previously unavailable explosive standards.

Custom Formulations

With over 30,000+ custom and 10,000+ listed standards, there is a good chance that AccuStandard will have a standard to meet your needs. However, if your laboratory requires something specific, our Chemists will manufacture a Custom Standard to meet your unique requirements. Custom Standards are an economical and time saving way to have a Standard prepared for your individual needs.

Custom QC options

1. Gravimetric/Volumetric Certification: Each purity is measured gravimetrically and QC verified instrumentally (where available). Every component in the Standard is guaranteed to be within +/-0.5% of the requested value unless otherwise stated on the Certificate of Analysis. The solutions are diluted to volume using Class A glassware. A Certificate of Analysis accompanies each Standard and documents the gravimetric values used.
2. Full Quantitative Certification: This QA/QC method includes extended GC analysis using both internal calibration standards plus statistical analysis. A data package containing analytical and gravimetric data can be provided if requested during the quotation phase (Organic Customs only).



Custom Packaging and Bulk Quantity Requirements

AccuStandard has the resources and equipment to meet your custom packaging requirements.

- Automated ampule filling & sealing 0.2 mL up to 20 mL and ampule sizes from 1 mL to 20 mL
- Quantities from 500 to over 500,000 ampules
- Homogeneity testing
- Amber ampules for added product stability
- Private labeling and packaging (OEM)

We can reduce your costs using the Cozzoli Auto Filling/Sealing Machine to package just the right size product for your application. OEM Standards - Privately labeled standards manufactured and tested to your specifications. Cold and under Nitrogen sealing available.



Custom Quotation Request Form

From: Company Contact _____
 Company Name _____
 Phone: () _____ Ext. _____
 FAX: () _____
 Email: _____

Send to:

Page ___ of ___

For Internal Use Only

AS Tech. Rep. _____ Product Ordering # _____
 Quote Creation Date _____ Quoted price \$ _____

Requested Quantity

No. of Comps. _____
 Product Description _____
 Concentration _____
 Solvent / Matrix _____

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)	Concentration Units
1 _____	_____	_____	<input type="checkbox"/> ng/mL
2 _____	_____	_____	<input type="checkbox"/> µg/mL
3 _____	_____	_____	<input type="checkbox"/> mg/mL
4 _____	_____	_____	<input type="checkbox"/> wt. %
5 _____	_____	_____	<input type="checkbox"/> vol. %
6 _____	_____	_____	
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 future use

Quotation Notes _____

Requested Delivery Date _____

Contact / Order Information

For ordering information contact your AccuStandard Distributor
Visit our website www.accustandard.com

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- Products listed in this catalog are for research use only.
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- Due to the products hazardous nature, they should be handled by trained personnel.
- AccuStandard's liability will be limited to, replacement of product or refund of purchase price.
- Notice of claims must be made within thirty (30) days from the date of delivery.

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AccuPAK

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AccuTrace

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eStandards

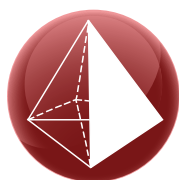
PolyStandards

PolyAddCheck



New Products in this Catalog

- Phthalates **17 NEW**
- Phosphate Flame Retardants (PFRs)
- PBDE Congeners (209)
- PBDE Metabolites **25 NEW**
- PBCDE Metabolites
- Biocides (EU Directive)
- Pesticides **Over 125 NEW**
- Plastic Additives **20 NEW**
- Bisphenol Analogs
- EN14105, EN15721 Biofuels
- Halobenzoquinones
- Imidazoles



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