

# 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

Element		Unit	1000 µg/mL		10,000 µg/mL	
Starting Material	Matrix		Cat. No.		Cat. No.	
<b>Aluminum (Al)</b> Al(NO <sub>3</sub> ) <sub>3</sub> • 9H <sub>2</sub> O	2-5% Nitric acid	50 mL	-----	--	ICP-01N-10X-0.5	
		100 mL	ICP-01N-1		ICP-01N-10X-1	
		500 mL	ICP-01N-5		ICP-01N-10X-5	
<b>Antimony (Sb)</b> Sb	2-5% Nitric acid tr. Tartaric acid	50 mL	-----	--	ICP-02N-10X-0.5	
		100 mL	ICP-02N-1		ICP-02N-10X-1	
		500 mL	ICP-02N-5		ICP-02N-10X-5	
<b>Arsenic (As)</b> As	2-5% Nitric acid	50 mL	-----	--	ICP-03N-10X-0.5	
		100 mL	ICP-03N-1		ICP-03N-10X-1	
		500 mL	ICP-03N-5		ICP-03N-10X-5	
<b>Barium (Ba)</b> Ba(NO <sub>3</sub> ) <sub>2</sub>	2-5% Nitric acid	50 mL	-----	--	ICP-04N-10X-0.5	
		100 mL	ICP-04N-1		ICP-04N-10X-1	
		500 mL	ICP-04N-5		ICP-04N-10X-5	
<b>Beryllium (Be)</b> BeO(C <sub>2</sub> H <sub>3</sub> O <sub>2</sub> ) <sub>6</sub>	2-5% Nitric acid	50 mL	-----	--	ICP-05N-10X-0.5	
		100 mL	ICP-05N-1		ICP-05N-10X-1	
		500 mL	ICP-05N-5		ICP-05N-10X-5	
<b>Bismuth (Bi)</b> Bi	2-10% Nitric acid	50 mL	-----	--	ICP-06N-10X-0.5	
		100 mL	ICP-06N-1		ICP-06N-10X-1	
		500 mL	ICP-06N-5		ICP-06N-10X-5	
<b>Boron (B)</b> H <sub>3</sub> BO <sub>3</sub>	Water tr. NH <sub>4</sub> OH	50 mL	-----	--	ICP-07W-10X-0.5	
		100 mL	ICP-07W-1		ICP-07W-10X-1	
		500 mL	ICP-07W-5		ICP-07W-10X-5	
<b>Cadmium (Cd)</b> Cd	2-5% Nitric acid	50 mL	-----	--	ICP-08N-10X-0.5	
		100 mL	ICP-08N-1		ICP-08N-10X-1	
		500 mL	ICP-08N-5		ICP-08N-10X-5	
<b>Calcium (Ca)</b> CaCO <sub>3</sub>	2-5% Nitric acid	50 mL	-----	--	ICP-09N-10X-0.5	
		100 mL	ICP-09N-1		ICP-09N-10X-1	
		500 mL	ICP-09N-5		ICP-09N-10X-5	
<b>Cerium (Ce)</b> Ce(NO <sub>3</sub> ) <sub>3</sub>	2-5% Nitric acid	50 mL	-----	--	ICP-11N-10X-0.5	
		100 mL	ICP-11N-1		ICP-11N-10X-1	
		500 mL	ICP-11N-5		ICP-11N-10X-5	
<b>Cesium (Cs)</b> CsNO <sub>3</sub>	2-5% Nitric acid	50 mL	-----	--	ICP-12N-10X-0.5	
		100 mL	ICP-12N-1		ICP-12N-10X-1	
		500 mL	ICP-12N-5		ICP-12N-10X-5	
<b>Chromium reduced to (+3) state</b> (NH <sub>4</sub> ) <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub>	2-5% Nitric acid	50 mL	-----	--	ICP-13N-10X-0.5	
		100 mL	ICP-13N-1		ICP-13N-10X-1	
		500 mL	ICP-13N-5		ICP-13N-10X-5	
<b>Cobalt (Co)</b> Co	2-5% Nitric acid	50 mL	-----	--	ICP-14N-10X-0.5	
		100 mL	ICP-14N-1		ICP-14N-10X-1	
		500 mL	ICP-14N-5		ICP-14N-10X-5	
<b>Copper (Cu)</b> Cu	2-5% Nitric acid	50 mL	-----	--	ICP-15N-10X-0.5	
		100 mL	ICP-15N-1		ICP-15N-10X-1	
		500 mL	ICP-15N-5		ICP-15N-10X-5	
<b>Dysprosium (Dy)</b> Dy <sub>2</sub> O <sub>3</sub>	2-5% Nitric acid	50 mL	-----	--	ICP-16N-10X-0.5	
		100 mL	ICP-16N-1		ICP-16N-10X-1	
		500 mL	ICP-16N-5		ICP-16N-10X-5	
<b>Erbium (Er)</b> Er <sub>2</sub> O <sub>3</sub>	2-5% Nitric acid	50 mL	-----	--	ICP-17N-10X-0.5	
		100 mL	ICP-17N-1		ICP-17N-10X-1	
		500 mL	ICP-17N-5		ICP-17N-10X-5	
<b>Europium (Eu)</b> Eu <sub>2</sub> O <sub>3</sub>	2-5% Nitric acid	50 mL	-----	--	ICP-18N-10X-0.5	
		100 mL	ICP-18N-1		ICP-18N-10X-1	
		500 mL	ICP-18N-5		ICP-18N-10X-5	
<b>Gadolinium (Gd)</b> Gd <sub>2</sub> O <sub>3</sub>	2-5% Nitric acid	50 mL	-----	--	ICP-19N-10X-0.5	
		100 mL	ICP-19N-1		ICP-19N-10X-1	
		500 mL	ICP-19N-5		ICP-19N-10X-5	
<b>Gallium (Ga)</b> Ga	2-5% Nitric acid	50 mL	-----	--	ICP-20N-10X-0.5	
		100 mL	ICP-20N-1		ICP-20N-10X-1	
		500 mL	ICP-20N-5		ICP-20N-10X-5	

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# ICP

## Single Element

### Single Element ICP

Element	Starting Material	Matrix	Unit	1000 µg/mL		10,000 µg/mL	
				Cat. No.		Cat. No.	
<b>Germanium (Ge)</b> Ge	(NH <sub>4</sub> ) <sub>2</sub> GeF <sub>6</sub>	Water tr. HF	50 mL	-----	--	ICP-21W-10X-0.5	
			100 mL	ICP-21W-1		ICP-21W-10X-1	
			500 mL	ICP-21W-5		ICP-21W-10X-5	
<b>Gold (Au)</b> Au	10% HCl		50 mL	-----	--	ICP-22H-10X-0.5	
			100 mL	ICP-22H-1		ICP-22H-10X-1	
			500 mL	ICP-22H-5		-----	--
<b>Hafnium (Hf)</b> Hf	2-5% Nitric acid tr. HF	HfO <sub>2</sub>	50 mL	-----	--	ICP-23N-10X-0.5	
			100 mL	ICP-23N-1		ICP-23N-10X-1	
			500 mL	ICP-23N-5		ICP-23N-10X-5	
<b>Holmium (Ho)</b> Ho	2-5% Nitric acid	Ho <sub>2</sub> O <sub>3</sub>	50 mL	-----	--	ICP-24N-10X-0.5	
			100 mL	ICP-24N-1		ICP-24N-10X-1	
			500 mL	ICP-24N-5		ICP-24N-10X-5	
<b>Indium (In)</b> In	2-5% Nitric acid		50 mL	-----	--	ICP-25N-10X-0.5	
			100 mL	ICP-25N-1		ICP-25N-10X-1	
			500 mL	ICP-25N-5		ICP-25N-10X-5	
<b>Iridium (Ir)</b> Ir	10% HCl	IrCl <sub>3</sub> • 3H <sub>2</sub> O	50 mL	-----	--	ICP-26H-10X-0.5	
			100 mL	ICP-26H-1		ICP-26H-10X-1	
			500 mL	ICP-26H-5		-----	--
<b>Iron (Fe)</b> Fe	2-5% Nitric acid		50 mL	-----	--	ICP-27N-10X-0.5	
			100 mL	ICP-27N-1		ICP-27N-10X-1	
			500 mL	ICP-27N-5		ICP-27N-10X-5	
<b>Lanthanum (La)</b> La	2-5% Nitric acid	La <sub>2</sub> O <sub>3</sub>	50 mL	-----	--	ICP-28N-10X-0.5	
			100 mL	ICP-28N-1		ICP-28N-10X-1	
			500 mL	ICP-28N-5		ICP-28N-10X-5	
<b>Lead (Pb)</b> Pb	2-5% Nitric acid	Pb(NO <sub>3</sub> ) <sub>2</sub>	50 mL	-----	--	ICP-29N-10X-0.5	
			100 mL	ICP-29N-1		ICP-29N-10X-1	
			500 mL	ICP-29N-5		ICP-29N-10X-5	
<b>Lithium (Li)</b> Li	2-5% Nitric acid	Li <sub>2</sub> CO <sub>3</sub>	50 mL	-----	--	ICP-30N-10X-0.5	
			100 mL	ICP-30N-1		ICP-30N-10X-1	
			500 mL	ICP-30N-5		ICP-30N-10X-5	
<b>Lutetium (Lu)</b> Lu	2-5% Nitric acid	Lu <sub>2</sub> O <sub>3</sub>	50 mL	-----	--	ICP-31N-10X-0.5	
			100 mL	ICP-31N-1		ICP-31N-10X-1	
			500 mL	ICP-31N-5		-----	--
<b>Magnesium (Mg)</b> Mg	2-5% Nitric acid	Mg(NO <sub>3</sub> ) <sub>2</sub> •6H <sub>2</sub> O	50 mL	-----	--	ICP-32N-10X-0.5	
			100 mL	ICP-32N-1		ICP-32N-10X-1	
			500 mL	ICP-32N-5		ICP-32N-10X-5	
<b>Manganese (Mn)</b> Mn	2-5% Nitric acid	Mn(C <sub>2</sub> H <sub>3</sub> O <sub>2</sub> ) <sub>2</sub>	50 mL	-----	--	ICP-33N-10X-0.5	
			100 mL	ICP-33N-1		ICP-33N-10X-1	
			500 mL	ICP-33N-5		ICP-33N-10X-5	
<b>Mercury (Hg)</b> Hg	10% Nitric acid		50 mL	-----	--	ICP-34N-10X-0.5	
			100 mL	ICP-34N-1		ICP-34N-10X-1	
			500 mL	ICP-34N-5		ICP-34N-10X-5	
<b>Molybdenum (Mo)</b> Mo	Water tr. NH <sub>4</sub> OH	(NH <sub>4</sub> ) <sub>2</sub> MoO <sub>4</sub>	50 mL	-----	--	ICP-35W-10X-0.5	
			100 mL	ICP-35W-1		ICP-35W-10X-1	
			500 mL	ICP-35W-5		ICP-35W-10X-5	
<b>Neodymium (Nd)</b> Nd	2-5% Nitric acid	Nd <sub>2</sub> O <sub>3</sub>	50 mL	-----	--	ICP-36N-10X-0.5	
			100 mL	ICP-36N-1		ICP-36N-10X-1	
			500 mL	ICP-36N-5		ICP-36N-10X-5	
<b>Nickel (Ni)</b> Ni	2-5% Nitric acid		50 mL	-----	--	ICP-37N-10X-0.5	
			100 mL	ICP-37N-1		ICP-37N-10X-1	
			500 mL	ICP-37N-5		ICP-37N-10X-5	
<b>Niobium (Nb)</b> Nb	Water tr. HF	Nb <sub>2</sub> O <sub>5</sub>	50 mL	-----	--	ICP-38W-10X-0.5	
			100 mL	ICP-38W-1		ICP-38W-10X-1	
			500 mL	ICP-38W-5		ICP-38W-10X-5	
<b>Palladium (Pd)</b> Pd	10% HCl		50 mL	-----	--	ICP-40H-10X-0.5	
			100 mL	ICP-40H-1		ICP-40H-10X-1	
			500 mL	ICP-40H-5		-----	--
<b>Phosphorus (P)</b> P	Water	NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub>	50 mL	-----	--	ICP-41W-10X-0.5	
			100 mL	ICP-41W-1		ICP-41W-10X-1	
			500 mL	ICP-41W-5		ICP-41W-10X-5	
<b>Platinum (Pt)</b> Pt	10% HCl		50 mL	-----	--	ICP-42H-10X-0.5	
			100 mL	ICP-42H-1		ICP-42H-10X-1	
			500 mL	ICP-42H-5		-----	--

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Single Element ICP						
Element	Starting Material	Matrix	Unit	Concentration		
				1000 µg/mL	10,000 µg/mL	
			Cat. No.	Cat. No.		
<b>Potassium (K)</b> KNO <sub>3</sub>	2-5% Nitric acid		50 mL	-----	--	ICP-43N-10X-0.5
			100 mL	ICP-43N-1		ICP-43N-10X-1
			500 mL	ICP-43N-5		ICP-43N-10X-5
<b>Praseodymium (Pr)</b> Pr <sub>6</sub> O <sub>11</sub>	2-5% Nitric acid		50 mL	-----	--	ICP-44N-10X-0.5
			100 mL	ICP-44N-1		ICP-44N-10X-1
			500 mL	ICP-44N-5		ICP-44N-10X-5
<b>Rhenium (Re)</b> Re	Water tr. Nitric acid		50 mL	-----	--	ICP-45W-10X-0.5
			100 mL	ICP-45W-1		ICP-45W-10X-1
			500 mL	ICP-45W-5		ICP-45W-10X-5
<b>Rhodium (Rh)</b> RhCl <sub>3</sub> • 3H <sub>2</sub> O	10% HCl		50 mL	-----	--	ICP-46H-10X-0.5
			100 mL	ICP-46H-1		ICP-46H-10X-1
			500 mL	ICP-46H-5		-----
<b>Rubidium (Rb)</b> RbNO <sub>3</sub>	2-5% Nitric acid		50 mL	-----	--	ICP-47N-10X-0.5
			100 mL	ICP-47N-1		ICP-47N-10X-1
			500 mL	ICP-47N-5		ICP-47N-10X-5
<b>Ruthenium (Ru)</b> RuCl <sub>3</sub> • 3H <sub>2</sub> O	10% HCl		50 mL	-----	--	ICP-48H-10X-0.5
			100 mL	ICP-48H-1		ICP-48H-10X-1
			500 mL	ICP-48H-5		-----
<b>Samarium (Sm)</b> Sm <sub>2</sub> O <sub>3</sub>	2-5% Nitric acid		50 mL	-----	--	ICP-49N-10X-0.5
			100 mL	ICP-49N-1		ICP-49N-10X-1
			500 mL	ICP-49N-5		ICP-49N-10X-5
<b>Scandium (Sc)</b> Sc <sub>2</sub> O <sub>3</sub>	2-5% Nitric acid		50 mL	-----	--	ICP-50N-10X-0.5
			100 mL	ICP-50N-1		ICP-50N-10X-1
			500 mL	ICP-50N-5		ICP-50N-10X-5
<b>Selenium (Se)</b> Se	2-5% Nitric acid		50 mL	-----	--	ICP-51N-10X-0.5
			100 mL	ICP-51N-1		ICP-51N-10X-1
			500 mL	ICP-51N-5		ICP-51N-10X-5
<b>Silicon (Si)</b> (NH <sub>4</sub> ) <sub>2</sub> SiF <sub>6</sub>	Water tr. HF		50 mL	-----	--	ICP-52W-10X-0.5
			100 mL	ICP-52W-1		ICP-52W-10X-1
			500 mL	ICP-52W-5		ICP-52W-10X-5
<b>Silver (Ag)</b> AgNO <sub>3</sub>	2-5% Nitric acid		50 mL	-----	--	ICP-53N-10X-0.5
			100 mL	ICP-53N-1		ICP-53N-10X-1
			500 mL	ICP-53N-5		ICP-53N-10X-5
<b>Sodium (Na)</b> NaNO <sub>3</sub>	2-5% Nitric acid		50 mL	-----	--	ICP-54N-10X-0.5
			100 mL	ICP-54N-1		ICP-54N-10X-1
			500 mL	ICP-54N-5		ICP-54N-10X-5
<b>Strontium (Sr)</b> Sr(NO <sub>3</sub> ) <sub>2</sub>	2-5% Nitric acid		50 mL	-----	--	ICP-55N-10X-0.5
			100 mL	ICP-55N-1		ICP-55N-10X-1
			500 mL	ICP-55N-5		ICP-55N-10X-5
<b>Sulfur (S)</b> (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	Water		50 mL	-----	--	ICP-56W-10X-0.5
			100 mL	ICP-56W-1		ICP-56W-10X-1
			500 mL	ICP-56W-5		ICP-56W-10X-5
<b>Tantalum (Ta)</b> Ta	Water tr. HF		50 mL	-----	--	ICP-57W-10X-0.5
			100 mL	ICP-57W-1		ICP-57W-10X-1
			500 mL	ICP-57W-5		ICP-57W-10X-5
<b>Tellurium (Te)</b> Te	20%-40% HCl		50 mL	-----	--	ICP-58H-10X-0.5
			100 mL	ICP-58H-1		ICP-58H-10X-1
			500 mL	ICP-58H-5		ICP-58H-10X-5
<b>Terbium (Tb)</b> Tb <sub>4</sub> O <sub>7</sub>	2-5% Nitric acid		50 mL	-----	--	ICP-59N-10X-0.5
			100 mL	ICP-59N-1		ICP-59N-10X-1
			500 mL	ICP-59N-5		ICP-59N-10X-5
<b>Thallium (Tl)</b> Tl	2-5% Nitric acid		50 mL	-----	--	ICP-60N-10X-0.5
			100 mL	ICP-60N-1		ICP-60N-10X-1
			500 mL	ICP-60N-5		ICP-60N-10X-5
<b>Thorium (Th)</b> Th(NO <sub>3</sub> ) <sub>4</sub> • 4H <sub>2</sub> O	2-5% Nitric acid		-----	-----	--	-----
			100 mL	ICP-61N-1		-----
			500 mL	ICP-61N-5		-----

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# ICP

## Single Element

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Element	Starting Material	Matrix	Unit	1000 µg/mL		10,000 µg/mL	
				Cat. No.		Cat. No.	
<b>Thulium (Tm)</b> Tm <sub>2</sub> O <sub>3</sub>		2-5% Nitric acid	50 mL	-----	--	ICP-62N-10X-0.5	
			100 mL	ICP-62N-1		ICP-62N-10X-1	
			500 mL	ICP-62N-5		-----	--
<b>Tin (Sn)</b> Sn		2-5% Nitric acid tr. HF	50 mL	-----	--	ICP-63N-10X-0.5	
			100 mL	ICP-63N-1		ICP-63N-10X-1	
			500 mL	ICP-63N-5		ICP-63N-10X-5	
<b>Titanium (Ti)</b> (NH <sub>4</sub> ) <sub>2</sub> TiF <sub>6</sub>		Water tr. HF	50 mL	-----	--	ICP-64W-10X-0.5	
			100 mL	ICP-64W-1		ICP-64W-10X-1	
			500 mL	ICP-64W-5		ICP-64W-10X-5	
<b>Tungsten (W)</b> (NH <sub>4</sub> ) <sub>2</sub> WO <sub>4</sub>		Water tr. NH <sub>4</sub> OH	50 mL	-----	--	ICP-65W-10X-0.5	
			100 mL	ICP-65W-1		ICP-65W-10X-1	
			500 mL	ICP-65W-5		ICP-65W-10X-5	
<b>Uranium (U)</b> U <sub>3</sub> O <sub>8</sub>		2-5% Nitric acid	-----	-----	--	-----	--
			100 mL	ICP-66N-1		-----	--
			500 mL	ICP-66N-5		-----	--
<b>Vanadium (V)</b> NH <sub>4</sub> VO <sub>3</sub>		2-5% Nitric acid	50 mL	-----	--	ICP-67N-10X-0.5	
			100 mL	ICP-67N-1		ICP-67N-10X-1	
			500 mL	ICP-67N-5		ICP-67N-10X-5	
<b>Ytterbium (Y)</b> Yb <sub>2</sub> O <sub>3</sub>		2-5% Nitric acid	50 mL	-----	--	ICP-68N-10X-0.5	
			100 mL	ICP-68N-1		ICP-68N-10X-1	
			500 mL	ICP-68N-5		ICP-68N-10X-5	
<b>Yttrium (Yb)</b> Y <sub>2</sub> O <sub>3</sub>		2-5% Nitric acid	50 mL	-----	--	ICP-69N-10X-0.5	
			100 mL	ICP-69N-1		ICP-69N-10X-1	
			500 mL	ICP-69N-5		ICP-69N-10X-5	
<b>Zinc (Zn)</b> Zn		2-5% Nitric acid	50 mL	-----	--	ICP-70N-10X-0.5	
			100 mL	ICP-70N-1		ICP-70N-10X-1	
			500 mL	ICP-70N-5		ICP-70N-10X-5	
<b>Zirconium (Zr)</b> ZrO(NO <sub>3</sub> ) <sub>2</sub>		2-5% Nitric acid	50 mL	-----	--	ICP-71N-10X-0.5	
			100 mL	ICP-71N-1		ICP-71N-10X-1	
			500 mL	ICP-71N-5		ICP-71N-10X-5	

### Calibration and Matrix Blanks

#### Nitric Acid Blank

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

5% HNO<sub>3</sub> 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% HNO<sub>3</sub> 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

**We can provide Custom formulations to meet your needs.**

To request a Custom formulation, contact Inorganic Technical Service using our website or Email [inotech@accustandard.com](mailto:inotech@accustandard.com).

Inorganic products containing acid generally require a hazardous fee for air shipments. Inorganic products in water generally do not.

# 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 Standards**

### Single Element ICP/MS

Element	Matrix	Unit	100 µg/mL			1,000 µg/mL			10,000 µg/mL		
			Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	
Aluminum (Al)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-01N-0.01X-1	ICP-MS-01N-0.1X-1	ICP-MS-01N-1						
Antimony (Sb)	2-5% HNO <sub>3</sub> tr. Tartaric acid	100 mL	ICP-MS-02N-0.01X-1	ICP-MS-02N-0.1X-1	ICP-MS-02N-1						
Arsenic (As)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-03N-0.01X-1	ICP-MS-03N-0.1X-1	ICP-MS-03N-1						
Barium (Ba)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-04N-0.01X-1	ICP-MS-04N-0.1X-1	ICP-MS-04N-1						
Beryllium (Be)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-05N-0.01X-1	ICP-MS-05N-0.1X-1	ICP-MS-05N-1						
Bismuth (Bi)	2-10% HNO <sub>3</sub>	100 mL	ICP-MS-06N-0.01X-1	ICP-MS-06N-0.1X-1	ICP-MS-06N-1						
Boron (B)	Water tr. NH <sub>4</sub> OH	100 mL	ICP-MS-07W-0.01X-1	ICP-MS-07W-0.1X-1	ICP-MS-07W-1						
Cadmium (Cd)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-08N-0.01X-1	ICP-MS-08N-0.1X-1	ICP-MS-08N-1						
Calcium (Ca)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-09N-0.01X-1	ICP-MS-09N-0.1X-1	ICP-MS-09N-1						
Cerium (Ce)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-11N-0.01X-1	ICP-MS-11N-0.1X-1	ICP-MS-11N-1						
Cesium (Cs)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-12N-0.01X-1	ICP-MS-12N-0.1X-1	ICP-MS-12N-1						
Chromium (Cr)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-13N-0.01X-1	ICP-MS-13N-0.1X-1	ICP-MS-13N-1						
Cobalt (Co)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-14N-0.01X-1	ICP-MS-14N-0.1X-1	ICP-MS-14N-1						
Copper (Cu)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-15N-0.01X-1	ICP-MS-15N-0.1X-1	ICP-MS-15N-1						
Dysprosium (Dy)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-16N-0.01X-1	ICP-MS-16N-0.1X-1	ICP-MS-16N-1						
Erbium (Er)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-17N-0.01X-1	ICP-MS-17N-0.1X-1	ICP-MS-17N-1						
Europium (Eu)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-18N-0.01X-1	ICP-MS-18N-0.1X-1	ICP-MS-18N-1						
Gadolinium (Gd)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-19N-0.01X-1	ICP-MS-19N-0.1X-1	ICP-MS-19N-1						
Gallium (Ga)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-20N-0.01X-1	ICP-MS-20N-0.1X-1	ICP-MS-20N-1						
Germanium (Ge)	Water tr. HF	100 mL	ICP-MS-21W-0.01X-1	ICP-MS-21W-0.1X-1	ICP-MS-21W-1						
Gold (Au)	10% HCl	100 mL	ICP-MS-22H-0.01X-1	ICP-MS-22H-0.1X-1	ICP-MS-22H-1						
Hafnium (Hf)	2-5% HNO <sub>3</sub> tr. HF	100 mL	ICP-MS-23N-0.01X-1	ICP-MS-23N-0.1X-1	ICP-MS-23N-1						
Holmium (Ho)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-24N-0.01X-1	ICP-MS-24N-0.1X-1	ICP-MS-24N-1						
Indium (In)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-25N-0.01X-1	ICP-MS-25N-0.1X-1	ICP-MS-25N-1						
Iridium (Ir)	10% HCl	100 mL	ICP-MS-26H-0.01X-1	ICP-MS-26H-0.1X-1	ICP-MS-26H-1						
Iron (Fe)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-27N-0.01X-1	ICP-MS-27N-0.1X-1	ICP-MS-27N-1						
Lanthanum (La)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-28N-0.01X-1	ICP-MS-28N-0.1X-1	ICP-MS-28N-1						
Lead (Pb)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-29N-0.01X-1	ICP-MS-29N-0.1X-1	ICP-MS-29N-1						
Lithium (Li)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-30N-0.01X-1	ICP-MS-30N-0.1X-1	ICP-MS-30N-1						
Lutetium (Lu)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-31N-0.01X-1	ICP-MS-31N-0.1X-1	ICP-MS-31N-1						
Magnesium (Mg)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-32N-0.01X-1	ICP-MS-32N-0.1X-1	ICP-MS-32N-1						
Manganese (Mn)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-33N-0.01X-1	ICP-MS-33N-0.1X-1	ICP-MS-33N-1						
Mercury (Hg) ●	5-10% HNO <sub>3</sub>	100 mL	ICP-MS-34N-0.01X-1	ICP-MS-34N-0.1X-1	ICP-MS-34N-1						
Molybdenum (Mo)	Water tr. NH <sub>4</sub> OH	100 mL	ICP-MS-35W-0.01X-1	ICP-MS-35W-0.1X-1	ICP-MS-35W-1						
Neodymium (Nd)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-36N-0.01X-1	ICP-MS-36N-0.1X-1	ICP-MS-36N-1						
Nickel (Ni)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-37N-0.01X-1	ICP-MS-37N-0.1X-1	ICP-MS-37N-1						
Niobium (Nb)	Water tr. HF	100 mL	ICP-MS-38W-0.01X-1	ICP-MS-38W-0.1X-1	ICP-MS-38W-1						
Palladium (Pd)	10% HCl	100 mL	ICP-MS-40H-0.01X-1	ICP-MS-40H-0.1X-1	ICP-MS-40H-1						
Phosphorus (P)	Water	100 mL	ICP-MS-41W-0.01X-1	ICP-MS-41W-0.1X-1	ICP-MS-41W-1						
Platinum (Pt)	10% HCl	100 mL	ICP-MS-42H-0.01X-1	ICP-MS-42H-0.1X-1	ICP-MS-42H-1						
Potassium (K)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-43N-0.01X-1	ICP-MS-43N-0.1X-1	ICP-MS-43N-1						
Praseodymium (Pr)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-44N-0.01X-1	ICP-MS-44N-0.1X-1	ICP-MS-44N-1						
Rhenium (Re)	Water tr. HNO <sub>3</sub>	100 mL	ICP-MS-45W-0.01X-1	ICP-MS-45W-0.1X-1	ICP-MS-45W-1						
Rhodium (Rh)	10% HCl	100 mL	ICP-MS-46H-0.01X-1	ICP-MS-46H-0.1X-1	ICP-MS-46H-1						

● Product contains Mercury. Dispose according to Federal, State or local laws.

**Single Element ICP/MS**  
continued on next page

Single Element ICP/MS



# ICP/MS

## Single Element

### Single Element ICP/MS

Element	Matrix	Unit	100 µg/mL	1,000 µg/mL	10,000 µg/mL
			Cat. No.	Cat. No.	Cat. No.
Rubidium (Rb)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-47N-0.01X-1	ICP-MS-47N-0.1X-1	ICP-MS-47N-1
Ruthenium (Ru)	10% HCl	100 mL	ICP-MS-48H-0.01X-1	ICP-MS-48H-0.1X-1	ICP-MS-48H-1
Samarium (Sm)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-49N-0.01X-1	ICP-MS-49N-0.1X-1	ICP-MS-49N-1
Scandium (Sc)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-50N-0.01X-1	ICP-MS-50N-0.1X-1	ICP-MS-50N-1
Selenium (Se)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-51N-0.01X-1	ICP-MS-51N-0.1X-1	ICP-MS-51N-1
Silicon (Si)	H <sub>2</sub> O tr. HF	100 mL	ICP-MS-52W-0.01X-1	ICP-MS-52W-0.1X-1	ICP-MS-52W-1
Silver (Ag)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-53N-0.01X-1	ICP-MS-53N-0.1X-1	ICP-MS-53N-1
Sodium (Na)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-54N-0.01X-1	ICP-MS-54N-0.1X-1	ICP-MS-54N-1
Strontium (Sr)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-55N-0.01X-1	ICP-MS-55N-0.1X-1	ICP-MS-55N-1
Sulfur (S)	Water	100 mL	ICP-MS-56W-0.01X-1	ICP-MS-56W-0.1X-1	ICP-MS-56W-1
Tantalum (Ta)	Water tr. HF	100 mL	ICP-MS-57W-0.01X-1	ICP-MS-57W-0.1X-1	ICP-MS-57W-1
Tellurium (Te)	10% HCl (min.)	100 mL	ICP-MS-58H-0.01X-1	ICP-MS-58H-0.1X-1	ICP-MS-58H-1
Terbium (Tb)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-59N-0.01X-1	ICP-MS-59N-0.1X-1	ICP-MS-59N-1
Thallium (Tl)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-60N-0.01X-1	ICP-MS-60N-0.1X-1	ICP-MS-60N-1
Thorium (Th)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-61N-0.01X-1	ICP-MS-61N-0.1X-1	----- --
Thulium (Tm)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-62N-0.01X-1	ICP-MS-62N-0.1X-1	ICP-MS-62N-1
Tin (Sn)	2-5% HNO <sub>3</sub> tr. HF	100 mL	ICP-MS-63N-0.01X-1	ICP-MS-63N-0.1X-1	ICP-MS-63N-1
Titanium (Ti)	Water tr. HF	100 mL	ICP-MS-64W-0.01X-1	ICP-MS-64W-0.1X-1	ICP-MS-64W-1
Tungsten (W)	Water tr. NH <sub>4</sub> OH	100 mL	ICP-MS-65W-0.01X-1	ICP-MS-65W-0.1X-1	ICP-MS-65W-1
Uranium (U)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-66N-0.01X-1	ICP-MS-66N-0.1X-1	----- --
Vanadium (V)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-67N-0.01X-1	ICP-MS-67N-0.1X-1	ICP-MS-67N-1
Ytterbium (Y)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-68N-0.01X-1	ICP-MS-68N-0.1X-1	ICP-MS-68N-1
Yttrium (Yb)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-69N-0.01X-1	ICP-MS-69N-0.1X-1	ICP-MS-69N-1
Zinc (Zn)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-70N-0.01X-1	ICP-MS-70N-0.1X-1	ICP-MS-70N-1
Zirconium (Zr)	2-5% HNO <sub>3</sub>	100 mL	ICP-MS-71N-0.01X-1	ICP-MS-71N-0.1X-1	ICP-MS-71N-1

### Matrix Blanks

#### Nitric Acid Blank

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

5% HNO<sub>3</sub> 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.

#### 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

#### Water Blank

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

18 Megohm ASTM Type I deionized Water





# AA

## Single Element and Matrix Modifier & Calibration



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	Unit	1000 µg/mL	Cat. No.	Element	Unit	1000 µg/mL	Cat. No.
Matrix				Matrix			
<b>Aluminum (Al)</b>	100 mL		AA01N-1	<b>Molybdenum (Mo)</b>	100 mL		AA35W-1
2-5% Nitric acid	500 mL		AA01N-5	Water tr. NH <sub>4</sub> OH	500 mL		AA35W-5
<b>Antimony (Sb)</b>	100 mL		AA02N-1	<b>Nickel (Ni)</b>	100 mL		AA37N-1
2-5% HNO <sub>3</sub> tr. Tartaric acid	500 mL		AA02N-5	2-5% Nitric acid	500 mL		AA37N-5
<b>Arsenic (As)</b>	100 mL		AA03N-1	<b>Phosphorus (P)</b>	100 mL		AA41W-1
2-5% Nitric acid	500 mL		AA03N-5	Water	500 mL		AA41W-5
<b>Barium (Ba)</b>	100 mL		AA04N-1	<b>Potassium (K)</b>	100 mL		AA43N-1
2-5% Nitric acid	500 mL		AA04N-5	2-5% Nitric acid	500 mL		AA43N-5
<b>Boron (B)</b>	100 mL		AA07W-1	<b>Selenium (Se)</b>	100 mL		AA51N-1
Water tr. NH <sub>4</sub> OH	500 mL		AA07W-5	2-5% Nitric acid	500 mL		AA51N-5
<b>Cadmium (Cd)</b>	100 mL		AA08N-1	<b>Silicon (Si)</b>	100 mL		AA52W-1
2-5% Nitric acid	500 mL		AA08N-5	Water tr. HF	500 mL		AA52W-5
<b>Calcium (Ca)</b>	100 mL		AA09N-1	<b>Silver (Ag)</b>	100 mL		AA53N-1
2-5% Nitric acid	500 mL		AA09N-5	2-5% Nitric acid	500 mL		AA53N-5
<b>Chromium (Cr)</b>	100 mL		AA13N-1	<b>Sodium (Na)</b>	100 mL		AA54N-1
2-5% Nitric acid	500 mL		AA13N-5	2-5% Nitric acid	500 mL		AA54N-5
<b>Cobalt (Co)</b>	100 mL		AA14N-1	<b>Strontium (Sr)</b>	100 mL		AA55N-1
2-5% Nitric acid	500 mL		AA14N-5	2-5% Nitric acid	500 mL		AA55N-5
<b>Copper (Cu)</b>	100 mL		AA15N-1	<b>Sulfur (S)</b>	100 mL		AA56W-1
2-5% Nitric acid	500 mL		AA15N-5	Water	500 mL		AA56W-5
<b>Gold (Au)</b>	100 mL		AA22H-1	<b>Thallium (Tl)</b>	100 mL		AA60N-1
5% HCl (min.)	500 mL		AA22H-5	2-5% Nitric acid	500 mL		AA60N-5
<b>Iron (Fe)</b>	100 mL		AA27N-1	<b>Tin (Sn)</b>	100 mL		AA63N-1
2-5% Nitric acid	500 mL		AA27N-5	2-5% Nitric acid tr. HF	500 mL		AA63N-5
<b>Lead (Pb)</b>	100 mL		AA29N-1	<b>Titanium (Ti)</b>	100 mL		AA64W-1
2-5% Nitric acid	500 mL		AA29N-5	Water tr. HF	500 mL		AA64W-5
<b>Lithium (Li)</b>	100 mL		AA30N-1	<b>Vanadium (V)</b>	100 mL		AA67N-1
2-5% Nitric acid	500 mL		AA30N-5	5-10% Nitric acid	500 mL		AA67N-5
<b>Magnesium (Mg)</b>	100 mL		AA32N-1	<b>Yttrium (Yb)</b>	100 mL		AA69N-1
2-5% Nitric acid	500 mL		AA32N-5	2-5% Nitric acid	500 mL		AA69N-5
<b>Manganese (Mn)</b>	100 mL		AA33N-1	<b>Zinc (Zn)</b>	100 mL		AA70N-1
2-5% Nitric acid	500 mL		AA33N-5	2-5% Nitric acid	500 mL		AA70N-5
<b>Mercury (Hg) ●</b>	100 mL		AA34N-1				
2-5% Nitric acid	500 mL		AA34N-5				

● Product contains Mercury, dispose according to Federal, State or local laws.

### 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.
<b>Ammonium dihydrogen phosphate</b> 40% in Water	NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub>	50 mL	MOD-02-0,5
		100 mL	MOD-02-1
<b>Ammonium nitrate</b> 5% in Water	NH <sub>4</sub> NO <sub>3</sub>	50 mL	MOD-03-0,5
		100 mL	MOD-03-1
<b>Magnesium nitrate</b> 2% Magnesium in 5% HNO <sub>3</sub>	Mg(NO <sub>3</sub> ) <sub>2</sub>	50 mL	MOD-07-0,5
		100 mL	MOD-07-1
<b>Nickel nitrate</b> 5% Nickel in 5% HNO <sub>3</sub>	Ni(NO <sub>3</sub> ) <sub>2</sub>	50 mL	MOD-08-0,5
		100 mL	MOD-08-1
<b>Palladium nitrate</b> 0.2% Palladium in 5% HNO <sub>3</sub>	Pd(NO <sub>3</sub> ) <sub>2</sub>	50 mL	MOD-09A-0,5
		100 mL	MOD-09A-1
<b>Palladium nitrate</b> 1.0% Palladium in 10% HNO <sub>3</sub>	Pd(NO <sub>3</sub> ) <sub>2</sub>	50 mL	MOD-09C-0,5
		100 mL	MOD-09C-1

#### Technical Note

Contact our Inorganic Technical Service Department if an additional matrix modifier is needed.

### Calibration and Matrix Blanks

#### Nitric Acid Blank

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

5% HNO<sub>3</sub> 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% HNO<sub>3</sub> 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