



# Spectrapure

## Inorganic standards for atomic spectroscopy and ion chromatography

### About Spectrapure Products

Spectrapure Standards was founded in 1986 to provide the world market with quality calibration standards for use in atomic spectroscopy and ion chromatography. Since spring 2004 we have produced our certified ultimate quality standards under own label *Spectrapure Standards*. Our long production experience and lifelong scientific and practical experience with atomic absorption spectrometry and plasma spectrochemistry (ICP-OES and ICP-MS) are a prerequisite to meet the market demand for reliable calibration solutions. Our commitment to quality and reliability are the main elements for the historic success of our products.



## Preparation and Certification

We have taken notice of that no measurements is more reliable than the standards themselves. All *Spectrapure Standards* are therefore produced from preferably high purity metals or oxides with known stoichiometric compositions, only occasionally from salts. This strategy allows us to maintain and control the high purity and accuracy of the *Spectrapure Standards*. The accuracy of all standard solutions is confirmed by plasma spectrochemical measurements against NIST Certified Spectrometric Standard Solutions when available. (National Institute of Standards and Technology, USA.)

All standards solutions are packed in dark, high density, polyethylene bottles to avoid instability of solutions caused by sunlight, prevent contamination and to minimize weight-losses due to diffusion. The annual transpiration is approx. 0.08 % when stored at ambient temperatures. Storage at +4 °C reduces this change to  $\leq 0.01$  %.

Every Spectrapure standard solution comes with a comprehensive Certificate of Analysis. All solutions are guaranteed stable and accurate for 2 years from shipment, unless otherwise specified.

## Notice

**Spectrapure products are intended for laboratory use only. They are not intended for medical, food, drug or household use. All products should be handled or used by qualified laboratory professionals only. The responsibility for safe handling or use rests solely with the user and purchaser.**

**Spectrapure Standards reserves the right to correct errors or specifications without prior notice or liability. The information in this catalogue is correct to the best of our present knowledge but not guaranteed to be so. Spectrapure Standards assumes no responsibility with respect thereto.**

## Single Element Standards

Element	Source	Purity (%)	Matrix	Volume (ml)	Catalog no.	
					1 mg/ml	10 mg/ml
<b>Ag</b>	Ag metal	99.999	2.5% HNO <sub>3</sub>	125	S-Ag-1.125	S-Ag-10.125
				250	S-Ag-1.250	S-Ag-10.250
<b>Al</b>	Al metal	99.999	2.5% HCl + 0.2% HNO <sub>3</sub> *	125	S-Al-1.125	S-Al-10.125
				250	S-Al-1.250	S-Al-10.250
<b>As</b>	As metal	99.9999	2.5% HNO <sub>3</sub>	125	S-As-1.125	S-As-10.125
				250	S-As-1.250	S-As-10.250
<b>Au</b>	Au metal	99.999	4.9% HCl	125	S-Au-1.125	S-Au-10.125
				250	S-Au-1.250	S-Au-10.250
<b>B</b>	H <sub>3</sub> BO <sub>3</sub>	99.999	2.5% HNO <sub>3</sub>	125	S-B-1.125	S-B-10.125
				250	S-B-1.250	S-B-10.250
<b>Ba</b>	BaCl <sub>2</sub>	99.995	2.5% HNO <sub>3</sub>	125	S-Ba-1.125	S-Ba-10.125
				250	S-Ba-1.250	S-Ba-10.250
<b>Be</b>	Be metal	99.9	2.5% HCl	125	S-Be-1.125	S-Be-10.125
				250	S-Be-1.250	S-Be-10.250
<b>Bi</b>	Bi metal	> 99.999	2.5% HNO <sub>3</sub>	125	S-Bi-1.125	S-Bi-10.125
				250	S-Bi-1.250	S-Bi-10.250
<b>Br</b>	NaBr	99.999	H <sub>2</sub> O	125	S-Br-1.125	S-Br-10.125
				250	S-Br-1.250	S-Br-10.250
<b>Ca</b>	CaCO <sub>3</sub>	99.999	2.5% HNO <sub>3</sub>	125	S-Ca-1.125	S-Ca-10.125
				250	S-Ca-1.250	S-Ca-10.250
<b>Cd</b>	Cd metal	99.9999	2.5% HNO <sub>3</sub>	125	S-Cd-1.125	S-Cd-10.125
				250	S-Cd-1.250	S-Cd-10.250
<b>Ce</b>	CeO <sub>2</sub>	99.995	2.5% HNO <sub>3</sub>	125	S-Ce-1.125	
				250	S-Ce-1.250	
<b>Cl</b>	NaCl	99.995	H <sub>2</sub> O	125	S-Cl-1.125	S-Cl-10.125
				250	S-Cl-1.250	S-Cl-10.250
<b>Co</b>	Co metal	99.9985	2.5% HNO <sub>3</sub>	125	S-Co-1.125	S-Co-10.125
				250	S-Co-1.250	S-Co-10.250
<b>Cr</b>	Cr metal	99.995	2.5% HNO <sub>3</sub> + 0.1% HCl*	125	S-Cr-1.125	S-Cr-10.125
				250	S-Cr-1.250	S-Cr-10.250
<b>Cs</b>	CsCl	99.999	2.5% HNO <sub>3</sub>	125	S-Cs-1.125	
				250	S-Cs-1.250	
<b>Cu</b>	Cu metal	99.9998	2.5% HNO <sub>3</sub>	125	S-Cu-1.125	S-Cu-10.125
				250	S-Cu-1.250	S-Cu-10.250
<b>Dy</b>	Dy <sub>2</sub> O <sub>3</sub>	99.99	2.5% HNO <sub>3</sub>	125	S-Dy-1.125	
				250	S-Dy-1.250	
<b>Er</b>	Er <sub>2</sub> O <sub>3</sub>	99.99	2.5% HNO <sub>3</sub>	125	S-Er-1.125	
				250	S-Er-1.250	
<b>Eu</b>	Eu <sub>2</sub> O <sub>3</sub>	99.99	2.5% HNO <sub>3</sub>	125	S-Eu-1.125	
				250	S-Eu-1.250	
<b>F</b>	NaF	99.995	H <sub>2</sub> O	125	S-F-1.125	S-F-10.125
				250	S-F-1.250	S-F-10.250
<b>Fe</b>	Fe metal	99.99	2.5% HNO <sub>3</sub>	125	S-Fe-1.125	S-Fe-10.125
				250	S-Fe-1.250	S-Fe-10.250
<b>Ga</b>	Ga metal	99.99	2.5% HNO <sub>3</sub>	125	S-Ga-1.125	S-Ga-10.125
				250	S-Ga-1.250	S-Ga-10.250

Element	Source	Purity (%)	Matrix	Volume (ml)	Catalog no.	
					1 mg/ml	10 mg/ml
<b>Gd</b>	Gd <sub>2</sub> O <sub>3</sub>	99.99	2.5% HNO <sub>3</sub>	125	S-Gd-1.125	S-Gd-10.125
				250	S-Gd-1.250	S-Gd-10.250
<b>Ge</b>	Ge metal	99.999	4.9 % HF	125	S-Ge-1.125	S-Ge-10.125
				250	S-Ge-1.250	S-Ge-10.250
<b>Hf</b>	HfO <sub>2</sub>	99.988	4.9 % HF	125	S-Hf-1.125	
				250	S-Hf-1.250	
<b>Hg</b>	Hg metal	99.9999	2.5% HNO <sub>3</sub>	125	S-Hg-1.125	S-Hg-10.125
				250	S-Hg-1.250	S-Hg-10.250
<b>Ho</b>	Ho <sub>2</sub> O <sub>3</sub>	99.99	2.5% HNO <sub>3</sub>	125	S-Ho-1.125	
				250	S-Ho-1.250	
<b>I</b>	NaI	99.995	H <sub>2</sub> O	125	S-I-1.125	S-I-10.125
				250	S-I-1.250	S-I-10.250
<b>In</b>	In metal	99.999	2.5% HNO <sub>3</sub>	125	S-In-1.125	S-In-10.125
				250	S-In-1.250	S-In-10.250
<b>Ir</b>	(NH <sub>4</sub> ) <sub>2</sub> IrCl <sub>6</sub>	99.999	4.9% HCl	125	S-Ir-1.125	
				250	S-Ir-1.250	
<b>K</b>	KCl	99.995	2.5% HNO <sub>3</sub>	125	S-K-1.125	S-K-10.125
				250	S-K-1.250	S-K-10.250
<b>La</b>	La <sub>2</sub> O <sub>3</sub>	99.999	2.5% HNO <sub>3</sub>	125	S-La-1.125	S-La-10.125
				250	S-La-1.250	S-La-10.250
<b>Li</b>	Li <sub>2</sub> CO <sub>3</sub>	99.999	2.5% HNO <sub>3</sub>	125	S-Li-1.125	S-Li-10.125
				250	S-Li-1.250	S-Li-10.250
<b>Lu</b>	Lu <sub>2</sub> O <sub>3</sub>	99.999	2.5% HNO <sub>3</sub>	125	S-Lu-1.125	S-Lu-10.125
				250	S-Lu-1.250	S-Lu-10.250
<b>Mg</b>	Mg metal	99.98	2.5% HNO <sub>3</sub>	125	S-Mg-1.125	S-Mg-10.125
				250	S-Mg-1.250	S-Mg-10.250
<b>Mn</b>	Mn metal	99.99	2.5% HNO <sub>3</sub>	125	S-Mn-1.125	S-Mn-10.125
				250	S-Mn-1.250	S-Mn-10.250
<b>Mo</b>	Mo metal	99.95	2.5% HCl	125	S-Mo-1.125	S-Mo-10.125
				250	S-Mo-1.250	S-Mo-10.250
<b>Na</b>	NaCl	99.995	2.5% HNO <sub>3</sub>	125	S-Na-1.125	S-Na-10.125
				250	S-Na-1.250	S-Na-10.250
<b>Nb</b>	Nb metal	> 99.9	4.9% HF	125	S-Nb-1.125	S-Nb-10.125
				250	S-Nb-1.250	S-Nb-10.250
<b>Nd</b>	Nd <sub>2</sub> O <sub>3</sub>	99.99	2.5% HNO <sub>3</sub>	125	S-Nd-1.125	S-Nd-10.125
				250	S-Nd-1.250	S-Nd-10.250
<b>Ni</b>	Ni metal	99.999	2.5% HNO <sub>3</sub>	125	S-Ni-1.125	S-Ni-10.125
				250	S-Ni-1.250	S-Ni-10.250
<b>Os</b>	(NH <sub>4</sub> ) <sub>2</sub> OsCl <sub>6</sub>	99.99	4.9% HCl	125	S-Os-1.125	
				250	S-Os-1.250	
<b>P</b>	NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub>	99.999	2.5% HNO <sub>3</sub>	125	S-P-1.125	S-P-10.125
				250	S-P-1.250	S-P-10.250
<b>Pb</b>	Pb metal	99.999	2.5% HNO <sub>3</sub>	125	S-Pb-1.125	S-Pb-10.125
				250	S-Pb-1.250	S-Pb-10.250
<b>Pd</b>	Pd metal	99.995	4.9% HCl	125	S-Pd-1.125	S-Pd-10.125
				250	S-Pd-1.250	S-Pd-10.250
<b>Pr</b>	Pr <sub>6</sub> O <sub>11</sub>	99.99	2.5% HNO <sub>3</sub>	125	S-Pr-1.125	
				250	S-Pr-1.250	

Element	Source	Purity (%)	Matrix	Volume (ml)	Catalog no.	
					1 mg/ml	10 mg/ml
<b>Pt</b>	Pt metal	99.995	4.9% HCl	125	S-Pt-1.125	S-Pt-10.125
				250	S-Pt-1.250	S-Pt-10.250
<b>Rb</b>	RbCl	99.99	2.5% HNO <sub>3</sub>	125	S-Rb-1.125	
				250	S-Rb-1.250	
<b>Re</b>	Re metal	99.99	2.5% HNO <sub>3</sub>	125	S-Re-1.125	S-Re-10.125
				250	S-Re-1.250	S-Re-10.250
<b>Rh</b>	(NH <sub>4</sub> ) <sub>2</sub> RhCl <sub>6</sub>	99.997	4.9% HCl	125	S-Rh-1.125	
				250	S-Rh-1.250	
<b>Ru</b>	(NH <sub>4</sub> ) <sub>2</sub> RuCl <sub>6</sub>	99.99	4.9% HCl	125	S-Ru-1.125	
				250	S-Ru-1.250	
<b>S</b>	(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	99.999	2.5% HNO <sub>3</sub>	125	S-S-1.125	S-S-10.125
				250	S-S-1.250	S-S-10.250
<b>Sb</b>	Sb metal	99.999	2.5% HCl + 0.5% tartaric acid	125	S-Sb-1.125	S-Sb-10.125
				250	S-Sb-1.250	S-Sb-10.250
<b>Sc</b>	Sc <sub>2</sub> O <sub>3</sub>	99.995	2.5% HCl	125	S-Sc-1.125	S-Sc-10.125
				250	S-Sc-1.250	S-Sb-10.250
<b>Se</b>	Se metal	99.999	2.5% HNO <sub>3</sub>	125	S-Se-1.125	S-Se-10.125
				250	S-Se-1.250	S-Se-10.250
<b>Si</b>	SiO <sub>2</sub>	99.995	2.5% HNO <sub>3</sub> + traces HF*	125	S-Si-1.125	S-Si-10.125
				250	S-Si-1.250	S-Si-10.250
<b>Sm</b>	Sm <sub>2</sub> O <sub>3</sub>	99.99	2.5% HNO <sub>3</sub>	125	S-Sm-1.125	
				250	S-Sm-1.250	
<b>Sn</b>	Sn metal	99.999	4.9% HCl	125	S-Sn-1.125	S-Sn-10.125
				250	S-Sn-1.250	S-Sn-10.250
<b>Sr</b>	SrCO <sub>3</sub>	99.994	2.5% HNO <sub>3</sub>	125	S-Sr-1.125	S-Sr-10.125
				250	S-Sr-1.250	S-Sr-10.250
<b>Ta</b>	Ta metal	> 99.9	4.9% HF	125	S-Ta-1.125	S-Ta-10.125
				250	S-Ta-1.250	S-Ta-10.250
<b>Tb</b>	Tb <sub>4</sub> O <sub>7</sub>	99.997	2.5% HNO <sub>3</sub>	125	S-Tb-1.125	
				250	S-Tb-1.250	
<b>Te</b>	Te metal	99.999	4.9 % HCl	125	S-Te-1.125	S-Te-10.125
				250	S-Te-1.250	S-Te-10.250
<b>Th</b>	ThO <sub>2</sub>	99.99	2.5% HNO <sub>3</sub>	125	S-Th-1.125	S-Th-10.125
				250	S-Th-1.250	S-Th-10.250
<b>Ti</b>	Ti metal	99.99	4.9% HCl + 0.1% HF*	125	S-Ti-1.125	S-Ti-10.125
				250	S-Ti-1.250	S-Ti-10.250
<b>Tl</b>	Tl metal	99.999	2.5% HNO <sub>3</sub>	125	S-Tl-1.125	
				250	S-Tl-1.250	
<b>Tm</b>	Tm <sub>2</sub> O <sub>3</sub>	99.998	2.5% HNO <sub>3</sub>	125	S-Tm-1.125	
				250	S-Tm-1.250	
<b>U</b>	U <sub>3</sub> O <sub>8</sub>	99.998	2.5% HNO <sub>3</sub>	125	S-U-1.125	S-U-10.125
				250	S-U-1.250	S-U-10.250
<b>V</b>	V <sub>2</sub> O <sub>5</sub>	99.995	2.5% HNO <sub>3</sub> + 0.5% HCl	125	S-V-1.125	S-V-10.125
				250	S-V-1.250	S-V-10.250
<b>W</b>	W metal	99.998	4.9 % HF	125	S-W-1.125	S-W-10.125
				250	S-W-1.250	S-W-10.250
<b>Y</b>	Y <sub>2</sub> O <sub>3</sub>	99.999	2.5% HNO <sub>3</sub>	125	S-Y-1.125	S-Y-10.125
				250	S-Y-1.250	S-Y-10.250
<b>Yb</b>	Yb <sub>2</sub> O <sub>3</sub>	99.99	2.5% HNO <sub>3</sub>	125	S-Yb-1.125	
				250	S-Yb-1.250	

Element	Source	Purity (%)	Matrix	Volume (ml)	Catalog no.	
					1 mg/ml	10 mg/ml
Zn	Zn metal	99.995	2.5% HNO <sub>3</sub>	125	S-Zn.1.125	S-Zn.10.125
				250	S-Zn.1.250	S-Zn.10.250
Zr	ZrO <sub>2</sub>	99.978	4.9 % HCl + 0.2 % HF*	125	S-Zr.1.125	S-Zr.10.125
				250	S-Zr.1.250	S-Zr.10.250

\* Matrix for 1 mg/ml standard - matrix may be different in the 10 mg/ml standard

## Multi Element Standards

Catalog no.	Elements	Matrix	Volume (ml)	Conc. (mg/l)
<b>M100</b>	Ca, Mg	2.5% HNO <sub>3</sub>	250	1000
<b>M101</b>	K, Na	2.5% HNO <sub>3</sub>	250	1000
<b>M105</b>	Al, Na, V	2.5% HNO <sub>3</sub> + 1% HCl	250	500 (Al) 1000 (Na) 2000 (V)
<b>M111</b>	Al, Na, Pb, Si, V	2.5% HCl	250	500 (Al, Na, Pb, Si) 1000 (V)
<b>M112</b>	Ca, Cu, Fe, Mg, Ni, Zn	2.5% HCl	250	500
<b>M113</b>	Al, Ca, Cu, Fe, Mg, Na, Ni, Pb, Si, V, Zn	2.5% HCl	250	100 (Al, Si) 250 (all others)
<b>M151</b>	Al, As, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, V, Zn	2.0% HNO <sub>3</sub>	250	0.500
<b>M152</b>	Ca, K, Mg, Na	1.0% HCl	250	10.0 (K, Mg) 50.0 (Ca, Na)
<b>M310</b>	Ba, Be, Ca, Cs, K, Li, Mg, Na, Rb, Sr	2.5% HNO <sub>3</sub>	250	100
<b>M311</b>	Cd, Co, Cu, Cr, Fe, Mn, Ni, Pb, V, Zn	2.5% HNO <sub>3</sub>	250	100
<b>M312</b>	Al, B, Hf, Mo, Nb, P, Si, Ta, Ti, W, Zr	3.0% HF + 0.9% HNO <sub>3</sub> + 1.0% HCl	250	100
<b>M313</b>	Au, Ir, Os, Pd, Pt, Re, Rh, Ru	4.9% HCl	250	100
<b>M314</b>	As, Bi, Ga, Ge, In, Pb, Sb, Se, Sn, Te, Ti, V	4.9% HCl	250	50.0
<b>M315</b>	Ce, Dy, Er, Eu, Gd, Ho, La, Lu, Nd, Pr, Sc, Sm, Tb, Th, Tm, Y, Yb	2.5% HNO <sub>3</sub>	250	50.0

Catalog no.	Elements	Matrix	Volume (ml)	Conc. (mg/l)
<b>M316</b>	Al, B, Ca, Co, Cr, Cu, Fe, K, Mg, Mn, Na, Ni, P, Pb, Si, Sn, Ti, V, Zn, Zr	4.9% HCl + 1.5% HNO <sub>3</sub>	250	50.0
<b>M317</b>	Al, As, B, Ba, Ca, Cd, Co, Cr, Cs, Cu, Fe, Ga, Li, Mg, Mn, Na, Ni, Pb, Rb, Sr, Th, Tl, U, V, Zn	2.5% HNO <sub>3</sub>	250	10.0
<b>M318</b>	Be, Mo, Sb, Sn, Te, Y	1.0% HCl	250	10.0
<b>M319</b>	Ce, Dy, Er, Eu, Gd, Ho, La, Lu, Nd, Pr, Sm, Tb, Tm, Yb	2.5% HNO <sub>3</sub>	250	10.0
<b>AAS sensitivity adjusted standards*</b>				
<b>M102</b>	Cd, Pb, Zn	2.5% HNO <sub>3</sub>	250	100 (Zn) 150 (Cd) 2000 (Pb)
<b>M103</b>	Co, Cr, Cu, Fe, Mn, Ni	2.5% HNO <sub>3</sub>	250	500 (Mn) 800 (Cr, Cu) 1000 (Fe) 1400 (Co, Ni)
<b>M104</b>	Ca, K, Li, Mg, Na	2.5% HNO <sub>3</sub>	250	150 (Mg) 250 (Na) 1000 (K, Li) 2000 (Ca)

\* Approximately the same absorption signal for all selected elements when flame AAS is used

## Ion Chromatography Standards

Element	Source	Purity (%)	Matrix	Volume (ml)	Catalog no.	
					1 mg/ml	10 mg/ml
<b>Br<sup>-</sup></b>	NaBr	99.999	H <sub>2</sub> O	125	S-Br-1.125	S-Br-10.125
				250	S-Br-1.250	S-Br-10.250
<b>Cl<sup>-</sup></b>	NaCl	99.995	H <sub>2</sub> O	125	S-Cl-1.125	S-Cl-10.125
				250	S-Cl-1.250	S-Cl-10.250
<b>F<sup>-</sup></b>	NaF	99.995	H <sub>2</sub> O	125	S-F-1.125	S-F-10.125
				250	S-F-1.250	S-F-10.250
<b>I<sup>-</sup></b>	NaI	99.995	H <sub>2</sub> O	125	S-I-1.125	S-I-10.125
				250	S-I-1.250	S-I-10.250
<b>NO<sub>2</sub><sup>-</sup></b>	NaNO <sub>2</sub>	99.995	H <sub>2</sub> O	125	S-NO2-1.125	S-NO2-10.125
				250	S-NO2-1.250	S-NO2-10.250
<b>NO<sub>3</sub><sup>-</sup></b>	NaNO <sub>3</sub>	99.995	H <sub>2</sub> O	125	S-NO3-1.125	S-NO3-10.125
				250	S-NO3-1.250	S-NO3-10.250
<b>PO<sub>4</sub><sup>3-</sup></b>	NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub>	99.999	H <sub>2</sub> O	125	S-P-1.125	S-P-10.125
				250	S-P-1.250	S-P-10.250
<b>SO<sub>4</sub><sup>2-</sup></b>	(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	99.999	H <sub>2</sub> O	125	S-S-1.125	S-S-10.125
				250	S-S-1.250	S-S-10.250

## Multi Ion Chromatography Standards

Catalog no.	Elements	Matrix	Volume (ml)	Conc. (mg/l)
<b>M550</b>	Cl <sup>-</sup> , F <sup>-</sup> , NO <sub>3</sub> <sup>-</sup> , PO <sub>4</sub> <sup>3-</sup> , SO <sub>4</sub> <sup>2-</sup>	H <sub>2</sub> O	250	100
<b>M555</b>	Cl <sup>-</sup> , F <sup>-</sup> , NO <sub>3</sub> <sup>-</sup> , PO <sub>4</sub> <sup>3-</sup> , SO <sub>4</sub> <sup>2-</sup>	H <sub>2</sub> O	250	20 (Cl <sup>-</sup> ) 30 (F <sup>-</sup> ) 100 (NO <sub>3</sub> <sup>-</sup> ) 150 (PO <sub>4</sub> <sup>3-</sup> , SO <sub>4</sub> <sup>2-</sup> )

## Support Reagents

Catalog no.	Name	Concentration	Matrix	Volume (ml)
<i>Modifiers:</i>				
<b>SU101</b>	Magnesium nitrate	1% Mg(NO <sub>3</sub> ) <sub>2</sub>	H <sub>2</sub> O	100
<b>SU102</b>	Ammonium di-hydrogene phosphate	5% NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub>	H <sub>2</sub> O	
<i>Ionization Buffers / Releasing Agents:</i>				
<b>SU201</b>	Cesium chloride	10mg/ml CsCl	H <sub>2</sub> O	500
<b>SU202</b>	Potassium chloride	10 mg/ml KCl	H <sub>2</sub> O	500
<b>SU203</b>	Lanthanum chloride	10 mg/ml LaCl <sub>3</sub>	0.5% HNO <sub>3</sub>	500

## Custom Blended Standards

We welcome requests for multielement special mixtures to meet customers needs and we produce whatever standard you require. To ensure quality, however, we need to take the inter-element compatibility and stability of the mixture into consideration.

The custom blended standards are produced with the same high purity starting materials as our certified regular standards and are prepared from stock solutions made directly traceable to NIST. To ensure our ultimate quality there is a minimum volume required to produce custom blended standards. This volume (250 - 1000 mL) varies with the desired concentration of the elements

We are looking forward to processing your inquiry.