



Chemicals

# Thermo Scientific Specpure standards

Achieving precision for your  
calibration needs

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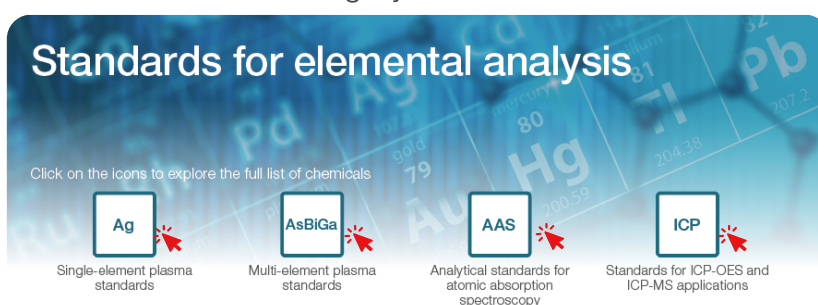
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To access other sections in this document, you may click on the corresponding dots that map with reference to the contents on page 2. For example, clicking the top most dot will lead you to the section on buffer solutions.

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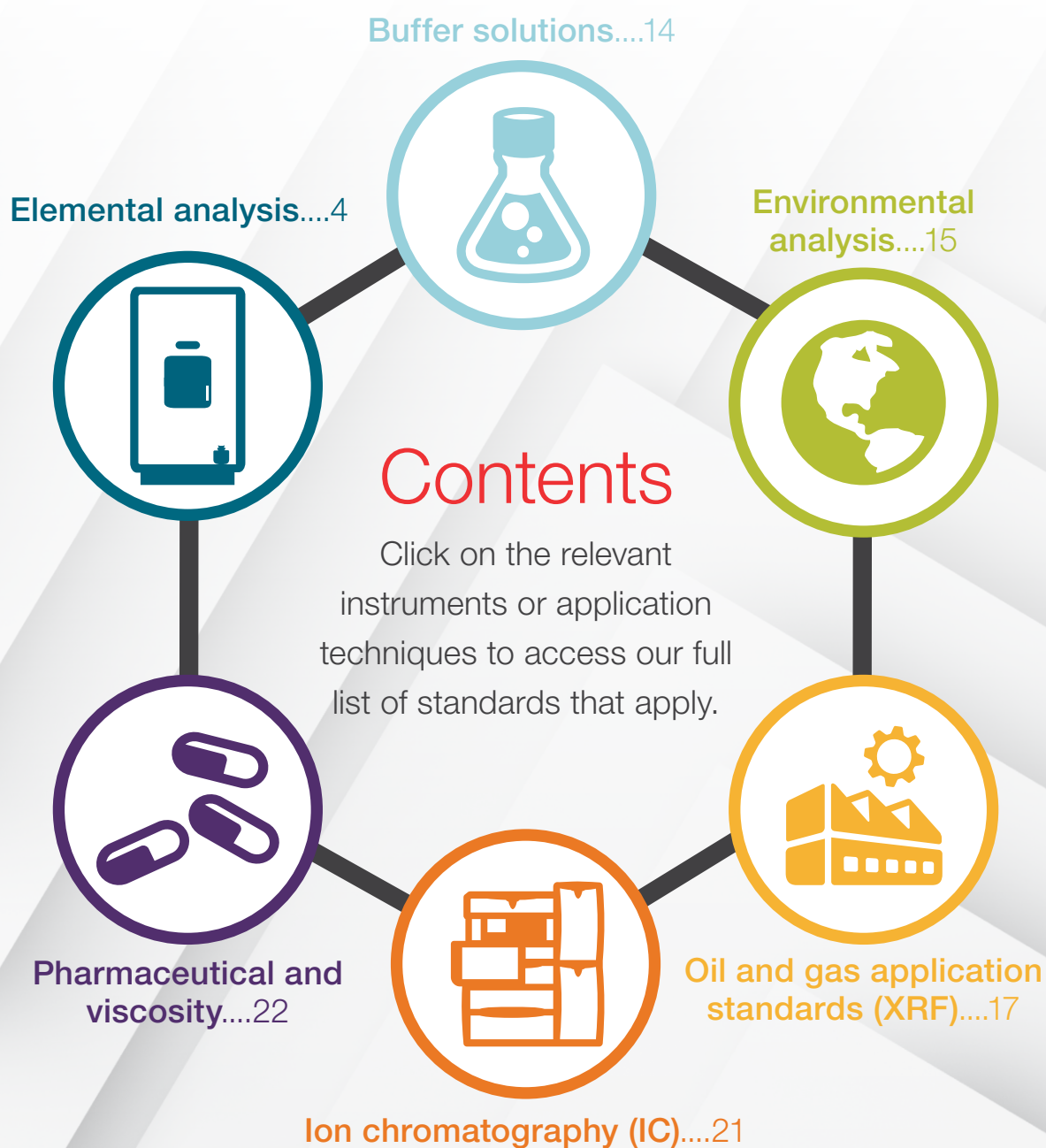
Element	Cat. No.	Description	Pack size	Matrix
	014407 	Calcium, plasma standard solution, Specpure, Ca 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	013852 	Calcium, plasma standard solution, Specpure, Ca 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>

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# Thermo Scientific Specpure standards

The Thermo Scientific brand is known worldwide for its variety of high purity products used in analytical chemistry. The analytical and labware products are available from stock, and forms our comprehensive offering of spectrochemical analytical standard solutions. **Specpure standards are unsurpassed in accuracy, purity and quality.**



# Standards for elemental analysis

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Single-element plasma standards



Multi-element plasma standards



Analytical standards for atomic absorption spectroscopy



Standards for ICP-OES and ICP-MS applications

## Specpure single element plasma standards

These solutions are applicable for use in ICP-OES, ICP-MS, XRF, and other techniques for elemental analysis. These techniques are capable of determining the concentrations of many elements quickly, either simultaneously or sequentially.

Element	Cat. No.	Description	Pack size	Matrix
Ag	045264	Silver, plasma standard solution, Specpure, Ag 1000 µg/mL	100 mL	2% HNO <sub>3</sub>
	014418	Silver, plasma standard solution, Specpure, Ag 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	013849	Silver, plasma standard solution, Specpure, Ag 10 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
Al	013856	Aluminum, plasma standard solution, Specpure, Al 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HCl
	014405	Aluminum, plasma standard solution, Specpure, Al 10000 µg/mL	50 mL, 100 mL, 500 mL	5% HCl
	038727	Aluminum, plasma standard solution, Specpure, Al 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	038721	Aluminum, plasma standard solution, Specpure, Al 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
As	045246	Arsenic, plasma standard solution, Specpure, As 10 µg/mL	100 mL	2% HNO <sub>3</sub>
	014369	Arsenic, plasma standard solution, Specpure, As 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	013836	Arsenic, plasma standard solution, Specpure, As 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
Au	014392	Gold, plasma standard solution, Specpure, Au 10,000 µg/mL	50 mL, 100 mL, 500 mL	20% HCl
	013881	Gold, plasma standard solution, Specpure, Au 1000 µg/mL	50 mL, 100 mL, 500 mL	20% HCl
B	045273	Boron 11, 1 1B, plasma standard solution, Specpure, 11B 100µg/mL	50 mL	H <sub>2</sub> O
	014370	Boron, plasma standard solution, Specpure, B 10,000 µg/mL	50 mL, 100 mL, 500 mL	1% NH <sub>4</sub> OH
	013859	Boron, plasma standard solution, Specpure, B 1000 µg/mL	50 mL, 100 mL, 500 mL	1% NH <sub>4</sub> OH
	039147	Boron, plasma standard solution, Specpure, B 1000 µg/mL	50 mL, 100 mL, 500 mL	H <sub>2</sub> O
Ba	045247	Barium, plasma standard solution, Specpure, Ba 10 µg/mL	100 mL	2% HNO <sub>3</sub>
	014423	Barium, plasma standard solution, Specpure, Ba 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	013876	Barium, plasma standard solution, Specpure, Ba 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
Be	013848	Beryllium, plasma standard solution, Specpure, Be 1000 µg/mL	50 mL, 100 mL	5% HNO <sub>3</sub>
	045248	Beryllium, plasma standard solution, Specpure, Be 10 µg/mL	100 mL	2% HNO <sub>3</sub>
	014406	Beryllium, plasma standard solution, Specpure, Be 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
Bi	045249	Bismuth, plasma standard solution, Specpure, Bi 10 µg/mL	100 mL	2% HNO <sub>3</sub>
	014388	Bismuth, plasma standard solution, Specpure, Bi 10 µg/mL	50 mL, 100 mL	5% HNO <sub>3</sub>
	013822	Bismuth, plasma standard solution, Specpure, Bi 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>

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Element	Cat. No.	Description	Pack size	Matrix
Ca	014407	Calcium, plasma standard solution, Specpure, Ca 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	013852	Calcium, plasma standard solution, Specpure, Ca 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
Cd	045274	Cadmium 106, 106Cd, plasma standard solution, Specpure, 106Cd	50 mL	2% HNO <sub>3</sub>
	045250	Cadmium, plasma standard solution, Specpure, Cd 10 µg/mL	100 mL	2% HNO <sub>3</sub>
	014424	Cadmium, plasma standard solution, Specpure, Cd 10,000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
	013813	Cadmium, plasma standard solution, Specpure, Cd 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
Ce	014371	Cerium, plasma standard solution, Specpure, Ce 10,000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
	013815	Cerium, plasma standard solution, Specpure, Ce 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
Co	045252	Cobalt, plasma standard solution, Specpure, Co 10 µg/mL	100 mL	2% HNO <sub>3</sub>
	014390	Cobalt, plasma standard solution, Specpure, Co 10 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	013828	Cobalt, plasma standard solution, Specpure, Co 1000 µg/mL	50 mL, 100 mL	5% HNO <sub>3</sub>
Cr	045275	Chromium 50, 50Cr, plasma standard solution, Specpure, 50Cr	50 mL	2% HNO <sub>3</sub>
	045251	Chromium, plasma standard solution, Specpure, Cr 10 µg/mL	100 mL	2% HNO <sub>3</sub>
	038722	Chromium, plasma standard solution, Specpure, Cr 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	014408	Chromium, plasma standard solution, Specpure, Cr 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HCl
	013864	Chromium, plasma standard solution, Specpure, Cr 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HCl
Cs	038728	Chromium, plasma standard solution, Specpure, Cr 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	014425	Cesium, plasma standard solution, Specpure, Cs 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
Cu	013825	Cesium, plasma standard solution, Specpure, Cs 1000 µg/mL	50 mL, 500 mL	5% HNO <sub>3</sub>
	045276	Copper 65, 65Cu, plasma standard solution, Specpure, 65Cu	50 mL	2% HNO <sub>3</sub>
	045253	Copper, plasma standard solution, Specpure, Cu 10 µg/mL	100 mL	2% HNO <sub>3</sub>
	014372	Copper, plasma standard solution, Specpure, Cu 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
Dy	013867	Copper, plasma standard solution, Specpure, Cu 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	014426	Dysprosium, plasma standard solution, Specpure, Dy 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	013838	Dysprosium, plasma standard solution, Specpure, Dy 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Er	014409	Erbium, plasma standard solution, Specpure, Er 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	013877	Erbium, plasma standard solution, Specpure, Er 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Eu	035761	Europium, plasma standard solution, Specpure, Eu 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	035753	Europium, plasma standard solution, Specpure, Eu 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
Fe	045277	Iron 57, 57Fe, plasma standard solution, Specpure, 57Fe	50 mL	2% HNO <sub>3</sub>
	047221	Iron, plasma standard solution, Specpure, Fe 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	047206	Iron, plasma standard solution, Specpure, Fe 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
Ga	014427	Gallium, plasma standard solution, Specpure, Ga 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub> /tr. HCl
	013869	Gallium, plasma standard solution, Specpure, Ga 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub> /tr. HCl
Gd	014373	Gadolinium, plasma standard solution, Specpure, Gd 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	013829	Gadolinium, plasma standard solution, Specpure, Gd 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
Ge	045254	Germanium, plasma standard solution, Specpure, Ge 10 µg/mL	100 mL	2% HNO <sub>3</sub> /tr. HF
	014410	Germanium, plasma standard solution, Specpure, Ge 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub> /tr. HF
	013841	Germanium, plasma standard solution, Specpure, Ge 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub> /tr. HF
	042242	Germanium, plasma standard solution, Specpure, Ge 1000 µg/mL	50 mL, 100 mL, 500 mL	H <sub>2</sub> O/tr. F <sup>-</sup>

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Element	Cat. No.	Description	Pack size	Matrix
Hf	014374	Hafnium, plasma standard solution, Specpure, Hf 10,000 µg/mL	50 mL, 100 mL	5% HCl
	013843	Hafnium, plasma standard solution, Specpure, Hf 1000 µg/mL	50 mL, 100 mL	5% HCl
Hg	045259	Mercury, plasma standard solution, Specpure, Hg 10 µg/mL	100 mL	5% HNO <sub>3</sub>
	014395	Mercury, plasma standard solution, Specpure, Hg 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	013865	Mercury, plasma standard solution, Specpure, Hg 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
Ho	045255	Holmium, plasma standard solution, Specpure, Ho 10 µg/mL	100 mL	2% HNO <sub>3</sub>
	035762	Holmium, plasma standard solution, Specpure, Ho 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	035756	Holmium, plasma standard solution, Specpure, Ho 1000 µg/mL	100 mL	5% HNO <sub>3</sub>
In	045256	Indium, plasma standard solution, Specpure, In 10 µg/mL	100 mL	2% HNO <sub>3</sub>
	014411	Indium, plasma standard solution, Specpure, In 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	013846	Indium, plasma standard solution, Specpure, In 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
Ir	035752	Iridium, plasma standard solution, Specpure, Ir 10,000 µg/mL	50 mL, 100 mL, 500 mL	20% HCl
	035751	Iridium, plasma standard solution, Specpure, Ir 1000 µg/mL	50 mL, 100 mL, 500 mL	20% HCl
K	014379	Potassium, plasma standard solution, Specpure, K 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	013866	Potassium, plasma standard solution, Specpure, K 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
La	014429	Lanthanum, plasma standard solution, Specpure, La 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	013870	Lanthanum, plasma standard solution, Specpure, La 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
Li	045280	Lithium 6, <sup>6</sup> Li, plasma standard solution, Specpure, <sup>6</sup> Li 100 µg/mL	100 mL	2% HNO <sub>3</sub>
	014394	Lithium, plasma standard solution, Specpure, Li 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	013821	Lithium, plasma standard solution, Specpure, Li 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
Lu	035757	Lutetium, plasma standard solution, Specpure, Lu 10,000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
	035765	Lutetium, plasma standard solution, Specpure, Lu 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
Mg	014430	Magnesium, plasma standard solution, Specpure, Mg 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	013861	Magnesium, plasma standard solution, Specpure, Mg 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
Mn	045258	Manganese, plasma standard solution, Specpure, Mn 10 µg/mL	100 mL	2% HNO <sub>3</sub>
	014413	Manganese, plasma standard solution, Specpure, Mn 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	013826	Manganese, plasma standard solution, Specpure, Mn 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
Mo	045260	Molybdenum, plasma standard solution, Specpure, Mo 10 µg/mL	100 mL	5% HNO <sub>3</sub> /tr. HF
	035766	Molybdenum, plasma standard solution, Specpure, Mo 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub> /tr. HF
	038726	Molybdenum, plasma standard solution, Specpure, Mo 10,000 µg/mL	100 mL, 500 mL	1% NH <sub>4</sub> OH
	035758	Molybdenum, plasma standard solution, Specpure, Mo 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub> /tr. HF
	038719	Molybdenum, plasma standard solution, Specpure, Mo 1000 µg/mL	50 mL, 100 mL	1% NH <sub>4</sub> OH
Na	014400	Sodium, plasma standard solution, Specpure, Na 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	013832	Sodium, plasma standard solution, Specpure, Na 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
Nb	014396	Niobium, plasma standard solution, Specpure, Nb 10,000 µg/mL	50 mL, 100 mL, 500 mL	2% HF
	013831	Niobium, plasma standard solution, Specpure, Nb 1000 µg/mL	50 mL, 100 mL, 500 mL	2% HF
Nd	014431	Neodymium, plasma standard solution, Specpure, Nd 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	013882	Neodymium, plasma standard solution, Specpure, Nd 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>

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Element	Cat. No.	Description	Pack size	Matrix
Ni	045282	Nickel 61, 61Ni, plasma standard solution, Specpure, 61Ni 10 µg/mL	50 mL	2% HNO <sub>3</sub>
	045261	Nickel, plasma standard solution, Specpure, Ni 10 µg/mL	100 mL	2% HNO <sub>3</sub>
	014414	Nickel, plasma standard solution, Specpure, Ni 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	013839	Nickel, plasma standard solution, Specpure, Ni 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
Os	013871	Osmium, plasma standard solution, Specpure, Os 1000 µg/mL	50 mL, 100 mL, 500 mL	20% HCl
P	047152	Phosphorus, plasma standard solution, Specpure, P 10,000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
	013862	Phosphorus, plasma standard solution, Specpure, P 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
Pb	045278	Lead, Natural Pb, plasma standard solution, Specpure, 100 µg/mL	50 mL	2% HNO <sub>3</sub>
	045279	Lead NIST ,plasma standard solution, Specpure, NIST 100µg/mL	50 mL	2% HNO <sub>3</sub>
	045257	Lead, plasma standard solution, Specpure, Pb 10 µg/mL	100 mL	2% HNO <sub>3</sub>
	014412	Lead, plasma standard solution, Specpure, Pb 10,000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
	013853	Lead, plasma standard solution, Specpure, Pb 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
Pd	014432	Palladium, plasma standard solution, Specpure, Pd 10,000 µg/mL	50 mL, 100 mL, 500 mL	20% HCl
	013833	Palladium, plasma standard solution, Specpure, Pd 1000 µg/mL	50 mL, 100 mL, 500 mL	20% HCl
	044631	Palladium, plasma standard solution, Specpure, Pd 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
Pr	014433	Praseodymium, plasma standard solution, Specpure, 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	013812	Praseodymium, plasma standard solution, Specpure, 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Pt	013827	Platinum, plasma standard solution, Specpure, 1000 µg/mL	50 mL, 100 mL, 500 mL	20% HCl
	014397	Platinum, plasma standard solution, Specpure, Pt 10,000 µg/mL	50 mL, 100 mL, 500 mL	20% HCl
Rb	014380	Rubidium, plasma standard solution, Specpure, Rb 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	013872	Rubidium, plasma standard solution, Specpure, Rb 1000 µg/mL	50 mL, 100 mL	5% HNO <sub>3</sub>
Re	014416	Rhenium, plasma standard solution, Specpure, Re 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	013817	Rhenium, plasma standard solution, Specpure, Re 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
Rh	045320	Rhodium, plasma standard solution, Specpure, Rh 10 µg/mL	100 mL	2% HCl
	035763	Rhodium, plasma standard solution, Specpure, Rh 10,000 µg/mL	50 mL, 100 mL, 500 mL	20% HCl
	035754	Rhodium, plasma standard solution, Specpure, Rh 1000 µg/mL	50 mL, 100 mL, 500 mL	20% HCl
Ru	035773	Ruthenium, plasma standard solution, Specpure, Ru 10,000 µg/mL	50 mL, 100 mL, 500 mL	20% HCl
	035767	Ruthenium, plasma standard solution, Specpure, Ru 1000 µg/mL	50 mL, 100 mL, 500 mL	20% HCl
S	014436	Sulfur, plasma standard solution, Specpure, S 10,000 µg/mL	50 mL, 100 mL, 500 mL	H <sub>2</sub> O
	013842	Sulfur, plasma standard solution, Specpure, S 1000 µg/mL	50 mL, 100 mL, 500 mL	H <sub>2</sub> O
Sb	047147	Antimony, plasma standard solution, Specpure, Sb 10,000 µg/mL	50 mL, 100 mL, 500 mL	30% HCl
	047103	Antimony, plasma standard solution, Specpure, Sb 1000 µg/mL	50 mL, 100 mL	30% HCl
	041683	Antimony, plasma standard solution, Specpure, Sb 10,000 µg/mL	50 mL, 100 mL, 500 mL	1% HNO <sub>3</sub> /6% tartaric acid
	041682	Antimony, plasma standard solution, Specpure, Sb 1000 µg/mL	50 mL, 100 mL, 500 mL	1% HNO <sub>3</sub> /6% tartaric acid
Sc	035755	Scandium, plasma standard solution, Specpure, Sc 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	035769	Scandium, plasma standard solution, Specpure, Sc 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>

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Element	Cat. No.	Description	Pack size	Matrix
Se	045283	Selenium 78,78Se, plasma standard solution, Specpure, 10 µg/mL	50 mL	2% HNO <sub>3</sub>
	045284	Selenium 82, 82Se, plasma standard solution, Specpure, 10 µg/mL	50 mL	2% HNO <sub>3</sub>
	045263	Selenium, plasma standard solution, Specpure, Se 10 µg/mL	100 mL	2% HNO <sub>3</sub>
	014381	Selenium, plasma standard solution, Specpure, Se 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
Si	013845	Selenium, plasma standard solution, Specpure, Se 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	038723	Silicon, plasma standard solution, Specpure, Si 10,000 µg/mL	50 mL, 100 mL, 500 mL	H <sub>2</sub> O/tr. F <sup>-</sup>
Sm	038717	Silicon, plasma standard solution, Specpure, Si 1000 µg/mL	50 mL, 100 mL, 500 mL	H <sub>2</sub> O/tr. F <sup>-</sup>
	014417	Samarium, plasma standard solution, Specpure, Sm 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
Sn	013854	Samarium, plasma standard solution, Specpure, Sm 1000 µg/mL	50 mL, 100 mL	5% HNO <sub>3</sub>
	014384	Tin, plasma standard solution, Specpure, Sn 10,000 µg/mL	50 mL, 100 mL, 500 mL	20% HCl
Sr	013863	Tin, plasma standard solution, Specpure, Sn 1000 µg/mL	50 mL, 100 mL, 500 mL	20% HCl
	045285	Strontium, Natural Sr, plasma standard solution, Specpure, 100 µg/mL	50 mL	2% HNO <sub>3</sub>
	014382	Strontium, plasma standard solution, Specpure, Sr 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
Ta	013874	Strontium, plasma standard solution, Specpure, Sr 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	014419	Tantalum, plasma standard solution, Specpure, Ta 10,000 µg/mL	50 mL, 100 mL, 500 mL	2% HF
Tb	013840	Tantalum, plasma standard solution, Specpure, Ta 1000 µg/mL	50 mL, 100 mL, 500 mL	2% HF
	045266	Terbium, plasma standard solution, Specpure, Tb 10 µg/mL	100 mL	2% HNO <sub>3</sub>
	014383	Terbium, plasma standard solution, Specpure, Tb 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
Te	013860	Terbium, plasma standard solution, Specpure, Tb 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	045265	Tellurium, plasma standard solution, Specpure, Te 10 µg/mL	100 mL	2% HNO <sub>3</sub>
	047187	Tellurium, plasma standard solution, Specpure, Te 10,000 µg/mL	50 mL, 100 mL, 500 mL	30% HCl
Ti	044632	Tellurium, plasma standard solution, Specpure, Te 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	047183	Tellurium, plasma standard solution, Specpure, Te 1000 µg/mL	50 mL, 100 mL, 500 mL	30% HCl
	045267	Titanium, plasma standard solution, Specpure, Ti 10 µg/mL	100 mL	2% HNO <sub>3</sub> /tr. HF
	035759	Titanium, plasma standard solution, Specpure, Ti 10,000 µg/mL	50 mL	5% HNO <sub>3</sub> /tr. HF
Tl	038725	Titanium, plasma standard solution, Specpure, Ti 10,000 µg/mL	50 mL, 100 mL, 500 mL	H <sub>2</sub> O/tr. F <sup>-</sup>
	035768	Titanium, plasma standard solution, Specpure, Ti 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub> /tr. HF
	038720	Titanium, plasma standard solution, Specpure, Ti 1000 µg/mL	50 mL, 100 mL, 500 mL	H <sub>2</sub> O/tr. F <sup>-</sup>
Tm	045288	Thallium 203, 203Tl, plasma standard solution, Specpure, 10 µg/mL	50 mL	2% HNO <sub>3</sub>
	014437	Thallium, plasma standard solution, Specpure, Tl 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	013851	Thallium, plasma standard solution, Specpure, Tl 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
V	014402	Thulium, plasma standard solution, Specpure, Tm 10,000 µg/mL	50 mL, 100 mL	5% HNO <sub>3</sub>
	013824	Thulium, plasma standard solution, Specpure, Tm 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
W	014385	Vanadium, plasma standard solution, Specpure, V 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	013850	Vanadium, plasma standard solution, Specpure, V 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	042248	Tungsten, plasma standard solution, Specpure r, W 1000 µg/mL	50 mL, 100 mL, 500 mL	H <sub>2</sub> O
W	035772	Tungsten, plasma standard solution, Specpure, W 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub> /tr. HF
	042249	Tungsten, plasma standard solution, Specpure, W 10,000 µg/mL	50 mL, 100 mL, 500 mL	H <sub>2</sub> O
	035770	Tungsten, plasma standard solution, Specpure, W 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub> /tr. HF

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Element	Cat. No.	Description	Pack size	Matrix
Y	045268	Yttrium, plasma standard solution, Specpure, Y 10 µg/mL	100 mL	2% HNO <sub>3</sub>
	014422	Yttrium, plasma standard solution, Specpure, Y 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	013855	Yttrium, plasma standard solution, Specpure, Y 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
Yb	014439	Ytterbium, plasma standard solution, Specpure, Yb 10,000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
	013819	Ytterbium, plasma standard solution, Specpure, Yb 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Zn	045289	Zinc 68, plasma standard solution, Specpure, 68Zn 10 µg/mL	50 mL	2% HNO <sub>3</sub>
	045269	Zinc, plasma standard solution, Specpure, 10 µg/mL	100 mL	2% HNO <sub>3</sub>
	014404	Zinc, plasma standard solution, Specpure, Zn 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
	013835	Zinc, plasma standard solution, Specpure, Zn 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HNO <sub>3</sub>
Zr	014386	Zirconium, plasma standard solution, Specpure, Zr 10,000 µg/mL	50 mL, 100 mL, 500 mL	5% HCl
	013875	Zirconium, plasma standard solution, Specpure, Zr 1000 µg/mL	50 mL, 100 mL, 500 mL	5% HCl

## Specpure multi-element plasma standards

These solutions are applicable for use in ICP-OES, ICP-MS, XRF, and other techniques for elemental analysis. These techniques are capable of determining the concentrations of many elements quickly, either simultaneously or sequentially.

Cat. No.	Description	Pack size	Matrix
044428	Alkali Metals, plasma standard solution, Specpure, Ba, Be, Ca, Cs, K, Li, Mg, Na, Rb, Sr @ 100 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
014657	Heavy Metals, plasma standard solution, Specpure, Ag, As, Ba, Cd, Cr, Hg, Pb, Se @ 100 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
042881	Multi-Element Plasma Standard Solution 1, Specpure	100 mL	Dilute HNO <sub>3</sub>
042882	Multi-Element Plasma Standard Solution 2, Specpure	100 mL	Dilute HNO <sub>3</sub>
042884	Multi-Element Plasma Standard Solution 3, Specpure	100 mL	Dilute HNO <sub>3</sub>
042885	Multi-Element Plasma Standard Solution 4, Specpure	100 mL	Dilute HNO <sub>3</sub>
044267	Non Metals, plasma standard solution, Specpure, As, B, P, S, Se, Si, Te @ 100 µg/mL	100 mL, 500 mL	5% HCl/tr. F
014652	Precious Metals, plasma standard solution, Specpure, Au, Ir, Os, Pd, Pt, Re, Rh, Ru @ 100 µg/mL	100 mL, 500 mL	20% HCl
044270	Refractory Metals, plasma standard solution, Specpure, Al, B, Cr, Hf, Mo, Nb, Si, Ta, Ti, V, W, Zr @ 100 µg/mL	100 mL, 500 mL	5% HCl/tr. F
044268	Semi Metals, plasma standard solution, Specpure, As, Bi, Ga, Ge, In, Pb, Sb, Se, Sn, Te, Tl @ 100 µg/mL, Thermo Scientific Chemicals	100 mL, 500 mL	20% HCl/tr. F
047180	Semiquantitative Standard 1, Specpure	100 mL, 500 mL	40% Aqua regia
036770	Semiquantitative Standard 2, Specpure	100 mL, 500 mL	40% Aqua regia/ tr. HF
044518	Transition Metals, plasma standard solution, Specpure, Cd, Co, Cr, Cu, Fe, Mn, Ni, V, Zn @ 100 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>

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# Specpure standards for atomic absorption spectroscopy (AAS)



These solutions are intended for use with either flame or furnace absorption spectroscopy. Our standards are the most frequently used instrumental technique for elemental analysis. The Thermo Scientific range offers 70 single element aqueous solutions at 1,000 µg/mL in both 100 mL and 500 mL sizes.

## Analytical standards

Element	Cat. No.	Description	Pack size	Matrix
Ag	088096	Silver, AAS standard solution, Specpure, Ag 1000 µg/mL	100 mL	5% HNO <sub>3</sub>
Al	033557	Aluminum, AAS standard solution, Specpure, Al 1000 µg/mL	100 mL, 500 mL	5% HCl
As	033559	Arsenic, AAS standard solution, Specpure, As 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Au	088068	Gold, AAS standard solution, Specpure, Au 1000 µg/mL	100 mL, 500 mL	20% HCl
B	088055	Boron, AAS solution standard, Specpure, B 1000 µg/mL	100 mL, 500 mL	H <sub>2</sub> O
Ba	088052	Barium, AAS standard solution, Specpure, Ba 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Be	088053	Beryllium, AAS standard solution, Specpure, Be 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Bi	088054	Bismuth, AAS standard solution, Specpure, Bi 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Ca	088057	Calcium, AAS standard solution, Specpure, Ca 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Cd	088056	Cadmium, AAS standard solution, Specpure, Cd 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Ce	030520	Cerium, AAS standard solution, Specpure, Ce 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Co	088060	Cobalt, AAS standard solution, Specpure, Co 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Cr	088059	Chromium, AAS standard solution, Specpure, Cr 1000 µg/mL	100 mL, 500 mL	5% HCl
Cs	088058	Cesium, AAS standard solution, Specpure, Cs 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Cu	088061	Copper, AAS standard solution, Specpure, Cu 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Dy	088062	Dysprosium, AAS standard solution, Specpure, Dy 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Er	088063	Erbium, AAS standard solution, Specpure, Er 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Fe	047282	Iron, AAS standard solution, Specpure, Fe 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Ga	088066	Gallium, AAS standard solution, Specpure, Ga 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub> /tr. HCl
Gd	088065	Gadolinium, AAS standard solution, Specpure, Gd 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Ge	088067	Germanium, AAS standard solution, Specpure, Ge 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub> /tr. HF
Hf	088069	Hafnium, AAS standard solution, Specpure, Hf 1000 µg/mL	100 mL, 500 mL	5% HCl
Hg	088079	Mercury, AAS standard solution, Specpure, Hg 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Ho	088070	Holmium, AAS standard solution, Specpure, Ho 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
In	088071	Indium, AAS standard solution, Specpure, In 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Ir	088072	Iridium, AAS standard solution, Specpure, Ir 1000 µg/mL	100 mL, 500 mL	20% HCl
K	088087	Potassium, AAS standard solution, Specpure, K 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
La	088074	Lanthanum, AAS standard solution, Specpure, La 1000 µg/mL	100 mL	5% HNO <sub>3</sub>
Li	088076	Lithium, AAS standard solution, Specpure, Li 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Lu	089886	Lutetium, AAS standard solution, Specpure, Lu 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Mg	088077	Magnesium, AAS standard solution, Specpure, Mg 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Mn	088078	Manganese, AAS standard solution, Specpure, Mn 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Mo	035764	Molybdenum, AAS standard solution, Specpure, Mo 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub> /tr. HF
Na	088097	Sodium, AAS standard solution, Specpure, Na 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Nb	088083	Niobium, AAS standard solution, Specpure, Nb 1000 µg/mL	100 mL, 500 mL	2% HF
Nd	088081	Neodymium, AAS standard solution, Specpure, Nd 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>







Element	Cat. No.	Description	Pack size	Matrix
Ni	088082	Nickel, AAS standard solution, Specpure, Ni 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Os	042239	Osmium, AAS standard solution, Specpure, Os 1000 µg/mL	100 mL	20% HCl
P	089887	Phosphorus, AAS standard solution, Specpure, P 1000 µg/mL	100 mL	5% HNO <sub>3</sub>
Pb	088075	Lead, AAS standard solution, Specpure, Pb 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Pd	088085	Palladium, AAS standard solution, Specpure, Pd 1000 µg/mL	100 mL	20% HCl
Pr	088088	Praseodymium, AAS standard solution, Specpure, Pr 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Pt	088086	Platinum, AAS standard solution, Specpure, Pt 1000 µg/mL	100 mL, 500 mL	20% HCl
Rb	088091	Rubidium, AAS standard solution, Specpure, Rb 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Re	088089	Rhenium, AAS standard solution, Specpure, Re 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Rh	088090	Rhodium, AAS standard solution, Specpure, Rh 1000 µg/mL	100 mL, 500 mL	20% HCl
Ru	089117	Ruthenium, AAS standard solution, Specpure, Ru 1000 µg/mL	100 mL, 500 mL	20% HCl
S	022958	Sulfur, AAS standard solution, Specpure, S 1000 µg/mL	100 mL, 500 mL	H <sub>2</sub> O
Sb	047197	Antimony, AAS standard solution, Specpure, Sb 1000 µg/mL	100 mL, 500 mL	30% HCl
Se	088094	Selenium, AAS standard solution, Specpure, Se 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Si	047277	Silicon, AAS standard solution, Specpure, Si 1000 µg/mL	100 mL	H <sub>2</sub> O/tr. F <sup>-</sup>
Sm	088092	Samarium, AAS standard solution, Specpure, Sm 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Sn	088112	Tin, AAS standard solution, Specpure, Sn 1000 µg/mL	100 mL, 500 mL	20% HCl
Sr	088098	Strontium, AAS standard solution, Specpure, Sr 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Ta	089888	Tantalum, AAS standard solution, Specpure, Ta 1000 µg/mL	100 mL, 500 mL	2% HF
Tb	088110	Terbium, AAS standard solution, Specpure, Tb 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Te	047130	Tellurium, AAS standard solution, Specpure, Te 1000 µg/mL	100 mL	30% HCl
Ti	035771	Titanium, AAS standard solution, Specpure, Ti 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub> /tr. HF
Tl	088111	Thallium, AAS standard solution, Specpure, Tl 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Tm	089889	Thulium, AAS standard solution, Specpure, Tm 1000 µg/mL	100 mL	5% HNO <sub>3</sub>
V	088116	Vanadium, AAS standard solution, Specpure, V 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
W	035760	Tungsten, AAS standard solution, Specpure, W 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub> /tr. HF
Y	088117	Yttrium, AAS standard solution, Specpure, Y 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Yb	089890	Ytterbium, AAS standard solution, Specpure, Yb 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>
Zn	088118	Zinc, AAS standard solution, Specpure, Zn 1000 µg/mL	100 mL, 500 mL	5% HNO <sub>3</sub>

## AAS releasing agents and matrix modifiers

Cat. No.	Description	Pack size	Matrix
039035	Lanthanum nitrate, Releasing Agent Solution, Specpure	100 mL, 500 mL	2% HNO <sub>3</sub>
039043	Nickel nitrate, Matrix Modifier Solution, Specpure	100 mL	2% HNO <sub>3</sub>
039044	Magnesium nitrate, Matrix Modifier Solution, Specpure	100 mL	2% HNO <sub>3</sub>
042663	Ammonium dihydrogen phosphate, Matrix Modifier Solution, Specpure	100 mL	2% HNO <sub>3</sub>
044241	Palladium nitrate, Matrix Modifier Solution, Specpure	100 mL	10% HNO <sub>3</sub>
044765	Palladium nitrate, Matrix Modifier Solution, Specpure	100 mL	5% HNO <sub>3</sub>
045290	Palladium nitrate & Magnesium nitrate, Matrix Modifier Solution, Specpure	250 mL	2% HNO <sub>3</sub>
045291	Palladium nitrate & Magnesium nitrate, Matrix Modifier Solution, Specpure	250 mL	2% HNO <sub>3</sub>

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# Standards for ICP-OES and ICP-MS applications



Our standards are tailored to deliver exceptional accuracy, traceability, and reliability, ensuring optimal performance in your analytical measurement

## Single-element certified reference materials

Element	Cat. No.	Description	Pack size	Matrix
Ag	014199	Silver, Oil based standard solution, Specpure, Ag 1000 µg/g	50 g	Hydrocarbon oil
	043868	Silver, Oil based standard solution, Specpure, Ag 5000 µg/g	50 g	Hydrocarbon oil
Al	014229	Aluminum, Oil based standard solution, Specpure, Al 1000 µg/g	50 g	Hydrocarbon oil
	042432	Aluminum, Oil based standard solution, Specpure, Al 5000 µg/g	50 g	Hydrocarbon oil
As	043864	Arsenic, Oil based standard solution, Specpure, As 1000 µg/g	50 g	Hydrocarbon oil
B	014227	Boron, Oil based standard solution, Specpure, B 1000 µg/g	50 g	Hydrocarbon oil
	042435	Boron, Oil based standard solution, Specpure, B 5000 µg/g	50 g	Hydrocarbon oil
Ba	014230	Barium, Oil based standard solution, Specpure, Ba 1000 µg/g	50 g	Hydrocarbon oil
	042434	Barium, Oil based standard solution, Specpure, Ba 5000 µg/g	50 g	Hydrocarbon oil
Be	014221	Beryllium, Oil based standard solution, Specpure, Be 1000 µg/g	50 g	Hydrocarbon oil
Bi	014223	Bismuth, Oil based standard solution, Specpure, Bi 1000 µg/g	50 g	Hydrocarbon oil
	043865	Bismuth, Oil based standard solution, Specpure, Bi 5000 µg/g	50 g	Hydrocarbon oil
Ca	014225	Calcium, Oil based standard solution, Specpure, Ca 1000 µg/g	50 g	Hydrocarbon oil
	042437	Calcium, Oil based standard solution, Specpure, Ca 5000 µg/g	50 g	Hydrocarbon oil
Cd	014228	Cadmium, Oil based standard solution, Specpure, Cd 1000 µg/g	50 g	Hydrocarbon oil
	042436	Cadmium, Oil based standard solution, Specpure, Cd 5000 µg/g	50 g	Hydrocarbon oil
Co	047143	Cobalt, Oil based standard solution, Specpure, Co 1000 µg/g	50 g	Hydrocarbon oil
Cr	014222	Chromium, Oil based standard solution, Specpure, Cr 1000 µg/g	50 g	Hydrocarbon oil
	042438	Chromium, Oil based standard solution, Specpure, Cr 5000 µg/g	50 g	Hydrocarbon oil
Cu	047225	Copper, Oil based standard solution, Specpure, Cu 5000 µg/g	50 g	Hydrocarbon oil
	047276	Copper, Oil based standard solution, Specpure, Cu 1000 µg/g	50 g	Hydrocarbon oil
Fe	014220	Iron, Oil based standard solution, Specpure, Fe 1000 µg/g	50 g	Hydrocarbon oil
	042440	Iron, Oil based standard solution, Specpure, Fe 5000 µg/g	50 g	Hydrocarbon oil
Hg	043756	Mercury, Oil based standard solution, Specpure, Hg 1000 µg/g	50 g	Hydrocarbon oil
K	014216	Potassium, Oil based standard solution, Specpure, K 1000 µg/g	50 g	Hydrocarbon oil
	042448	Potassium, Oil based standard solution, Specpure, K 5000 µg/g	50 g	Hydrocarbon oil
La	014224	Lanthanum, Oil based standard solution, Specpure, La 1000 µg/g	50 g	Hydrocarbon oil
Li	014215	Lithium, Oil based standard solution, Specpure, Li 1000 µg/g	50 g	Hydrocarbon oil
	042442	Lithium, Oil based standard solution, Specpure, Li 5000 µg/g	50 g	Hydrocarbon oil
Mg	014219	Magnesium, Oil based standard solution, Specpure, Mg 1000 µg/g	50 g	Hydrocarbon oil
	042443	Magnesium, Oil based standard solution, Specpure, Mg 5000 µg/g	50 g	Hydrocarbon oil
Mn	014214	Manganese, Oil based standard solution, Specpure, Mn 1000 µg/g	50 g	Hydrocarbon oil
	042444	Manganese, Oil based standard solution, Specpure, Mn 5000 µg/g	50 g	Hydrocarbon oil
Mo	014213	Molybdenum, Oil based standard solution, Specpure, Mo 1000 µg/g	50 g	Hydrocarbon oil
	042445	Molybdenum, Oil based standard solution, Specpure, Mo 5000 µg/g	50 g	Hydrocarbon oil





Element	Cat. No.	Description	Pack size	Matrix
Na	014212	Sodium, Oil based standard solution, Specpure, Na 1000 µg/g	50 g	Hydrocarbon oil
	042449	Sodium, Oil based standard solution, Specpure, Na 5000 µg/g	50 g	Hydrocarbon oil
Ni	014211	Nickel, Oil based standard solution, Specpure, Ni 1000 µg/g	50 g	Hydrocarbon oil
	042446	Nickel, Oil based standard solution, Specpure, Ni 5000 µg/g	50 g	Hydrocarbon oil
P	014210	Phosphorus, Oil based standard solution, Specpure, P 1000 µg/g	50 g	Hydrocarbon oil
	042447	Phosphorus, Oil based standard solution, Specpure, P 5000 µg/g	50 g	Hydrocarbon oil
Pb	014208	Lead, Oil based standard solution, Specpure, Pb 1000 µg/g	50 g	Hydrocarbon oil
	042441	Lead, Oil based standard solution, Specpure, Pb 5000 µg/g	50 g	Hydrocarbon oil
S	043869	Sulfur, Oil based standard solution, Specpure, S 1000 µg/g	50 g	Hydrocarbon oil
	043870	Sulfur, Oil based standard solution, Specpure, S 5000 µg/g	50 g	Hydrocarbon oil
Sb	014207	Antimony, Oil based standard solution, Specpure, Sb 1000 µg/g	50 g	Hydrocarbon oil
	042433	Antimony, Oil based standard solution, Specpure, Sb 5000 µg/g	50 g	Hydrocarbon oil
Sc	043129	Scandium, Oil based standard solution, Specpure, Sc 1000 µg/g	50 g	Hydrocarbon oil
	045305	Selenium, Oil based standard solution, Specpure, Se 1000 µg/g	50 g	Hydrocarbon oil
Si	014209	Silicon, Oil based standard solution, Specpure, Si 1000 µg/g	50 g	Hydrocarbon oil
	043867	Silicon, Oil based standard solution, Specpure, Si 5000 µg/g	50 g	Hydrocarbon oil
Sn	014206	Tin, Oil based standard solution, Specpure, Sn 1000 µg/g	50 g	Hydrocarbon oil
	042450	Tin, Oil based standard solution, Specpure, Sn 5000 µg/g	50 g	Hydrocarbon oil
Sr	014205	Strontium, Oil based standard solution, Specpure, Sr 1000 µg/g	50 g	Hydrocarbon oil
Ti	014204	Titanium, Oil based standard solution, Specpure, Ti 1000 µg/g	50 g	Hydrocarbon oil
	042451	Titanium, Oil based standard solution, Specpure, Ti 5000 µg/g	50 g	Hydrocarbon oil
Tl	045306	Thallium, Oil based standard solution, Specpure, Tl 1000 µg/g	50 g	Hydrocarbon oil
V	014203	Vanadium, Oil based standard solution, Specpure, V 1000 µg/g	50 g	Hydrocarbon oil
	042452	Vanadium, Oil based standard solution, Specpure, V 5000 µg/g	50 g	Hydrocarbon oil
Y	047172	Yttrium, Oil based standard solution, Specpure, Y 1000 µg/g	50 g	Hydrocarbon oil
Zn	014200	Zinc, Oil based standard solution, Specpure, Zn 1000 µg/g	50 g	Hydrocarbon oil
	042453	Zinc, Oil based standard solution, Specpure, Zn 5000 µg/g	50 g	Hydrocarbon oil
Zr	043127	Zirconium, Oil based standard solution, Specpure, Zr 1000 µg/g	50 g	Hydrocarbon oil
	043128	Zirconium, Oil based standard solution, Specpure, Zr 5000 µg/g	50 g	Hydrocarbon oil

### Multi-element certified reference materials

Cat. No.	Description	Pack size	Matrix
036762	JM-21 Multi-element Oil Based Standard, Specpure, 100 µg/g	100g	Hydrocarbon oil
036766	JM Special, Multi-element Oil Based Standard, Specpure, 900 µg/g	100g	Hydrocarbon oil
036769	JM-21 Multi-element Oil Based Standard, Specpure, 900 µg/g	100g	Hydrocarbon oil

### Looking for EPA standards?

For more information on stock, memory check, calibration, tuning, interference check, or spike standards used in ICP, click [here](#) to find them under the “Environmental” standards section.



# Buffer solutions and standards

## Revolutionizing your pH control game

Designed to manage with pH fluctuations in your lab experiments, our buffer solutions are meticulously formulated using the highest quality chemicals to ensure consistent and accurate pH levels.

### Features:

- A NIST-traceable Certificate of Analysis is included with each standard solution
- Expiration date stickers are included with each standard solution
- These standards are ISO 9001, ISO Guide 34, and ISO/IEC 17025 certified.



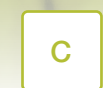
Cat. No.	Description	Pack size
040446	Buffer solution, pH 1.00 (+/-0.01 @ 25°C), No Color, Specpure, NIST Traceable	500 mL, 4 L
042415	Buffer solution, pH 1.68 (+/-0.01 @ 25°C), No Color, Specpure, NIST Traceable	500 mL, 1 L, 4 L
038709	Buffer solution, pH 10.00 (+/-0.01 @ 25°C), Colored Blue, Specpure, NIST Traceable	500 mL, 1 L, 4 L
038710	Buffer solution, pH 10.00 (+/-0.01 @ 25°C), No Color, Specpure, NIST Traceable	500 mL, 1 L, 4 L
042424	Buffer solution, pH 11.00 (+/-0.01 @ 25°C), No Color, Specpure, NIST Traceable	500 mL, 1 L, 4 L
042425	Buffer solution, pH 12.00 (+/-0.01 @ 25°C), No Color, Specpure, NIST Traceable	500 mL, 1 L, 4 L
047322	Buffer solution, pH 12.45 (+/-0.01 @ 25°C), No Color, Specpure, NIST Traceable	500 mL, 1 L, 4 L
046307	Buffer solution, pH 13.00 (+/-0.01 @ 25°C), No Color, Specpure, NIST Traceable	1 L, 4 L
040447	Buffer solution, pH 2.00 (+/-0.01 @ 25°C), No Color, Specpure, NIST Traceable	500 mL, 1 L, 4 L
042416	Buffer solution, pH 3.00 (+/-0.01 @ 25°C), No Color, Specpure, NIST Traceable	1 L, 4 L
038713	Buffer solution, pH 4.00 (+/-0.01 @ 25°C), Colored Red, Specpure, NIST Traceable	500 mL, 1 L, 4 L, 20 L
038714	Buffer solution, pH 4.01 (+/-0.01 @ 25°C), No Color, Specpure, NIST Traceable	500 mL, 1 L, 4 L
042417	Buffer solution, pH 5.00 (+/-0.01 @ 25°C), No Color, Specpure, NIST Traceable	500 mL, 1 L, 4 L
042418	Buffer solution, pH 6.00 (+/-0.01 @ 25°C), No Color, Specpure, NIST Traceable	500 mL, 1 L, 4 L
042419	Buffer solution, pH 6.86 (+/-0.01 @ 25°C), No Color, Specpure, NIST Traceable	500 mL, 1 L, 4 L
038711	Buffer solution, pH 7.00 (+/-0.01 @ 25°C), Colored Green, Specpure, NIST Traceable	500 mL, 1 L, 4 L
040439	Buffer solution, pH 7.00 (+/-0.01 @ 25°C), Colored Yellow, Specpure, NIST Traceable	500 mL, 1 L, 4 L
038712	Buffer solution, pH 7.00 (+/-0.01 @ 25°C), No Color, Specpure, NIST Traceable	500 mL, 1 L, 4 L
042420	Buffer solution, pH 8.00 (+/-0.01 @ 25°C), No Color, Specpure, NIST Traceable	500 mL, 1 L, 4 L
042421	Buffer solution, pH 9.00 (+/-0.01 @ 25°C), No Color, Specpure, NIST Traceable	500 mL, 1 L, 4 L
042422	Buffer solution, pH 9.18 (+/-0.01 @ 25°C), No Color, Specpure, NIST Traceable	500 mL, 1 L
042423	Buffer solution, pH 9.54 (+/-0.01 @ 25°C), No Color, Specpure, NIST Traceable	500 mL, 1 L
045294	Cesium nitrate, Ionization Buffer Solution, Specpure	100 mL
045293	Lithium nitrate, Ionization Buffer Solution, Specpure	100 mL

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# Standards for environmental testing



Calibration standards



Ground and wastewater pollution standards



Standards for ICP-MS (EPA-compliant)



Inorganic and elemental QC check standards



Standards for regulatory compliance



All other standards for environmental applications

## Calibration standards

Cat. No.	Description	Pack size
035419	Continuing Calibration Verification (CCV) Standards Kit, Specpure	2 × 100 mL
042602	ICP-MS Calibration Standard solution for EPA 6020 CLP-M, Specpure	100 mL
035259	Initial Calibration Blank/Continuing Calibration Blank (ICB/CCB), Specpure	500 mL
035418	Initial Calibration Verification(ICV) Standards Kit, Specpure	2 × 100 mL
044855	Instrument Calibration(ICAL) Standard, Solution A, Specpure	100 mL
044856	Instrument Calibration(ICAL) Standard, Solution B, Specpure	100 mL
035417	Instrument Calibration(ICAL) Standards Kit, Specpure	2 × 100 mL

## Ground and wastewater pollution standards

Cat. No.	Description	Pack size
036740	Ground & Waste Water Pollution Standard Solution 1, Specpure	100 mL
036745	Ground & Waste Water Pollution Standard Solution 2, Specpure	100 mL, 500 mL
036750	Ground & Waste Water Pollution Standard Solution 3, Specpure	100 mL
042579	Ground & Waste Water Pollution Standard Solution 4, Specpure	100 mL
042580	Ground & Waste Water Pollution Standard Solution 5, Specpure	100 mL
042562	Total Organic Carbon (TOC), standard solution, Specpure, 1000 µg/mL	100 mL, 500 mL
042234	Hexavalent Chromium, standard solution, Specpure, Cr+6 1000 µg/mL	100 mL, 500 mL
042561	Hydrazine, standard solution, Specpure, N <sub>2</sub> H <sub>4</sub> 100 µg/mL	450 mL
035422	Water Spiking Standard A (WSS-A) Solution, Specpure	100 mL
041331	Water Spiking Standard B (WSS-B) Solution, Specpure	100 mL

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## Standards for ICP-MS applications (EPA compliant)

Cat. No.	Description	Pack size
042650	ICP-MS Analytes B for EPA 6020 CLP-M, Specpure	100 mL
042602	ICP-MS Calibration Standard solution for EPA 6020 CLP-M, Specpure	100 mL
044935	ICP-MS General Memory & Interference Check Sample Mix for EPA 6020	100 mL
044713	ICP-MS Interference Check Standard solution B for EPA 6020, Specpure	100 mL
047135	ICP-MS Interferents A for EPA 6020A ICS, Specpure	500 mL
043161	ICP-MS Internal Standard for EPA 6020, Specpure	100 mL
044789	ICP-MS Internal Standard solution for EPA 200.8 & CLP ILM05.2, Specpure	100 mL
044651	ICP-MS Internal Standard solution, Specpure	100 mL
040488	ICP-MS Memory Check Standard solution B for EPA 6020 CLP-M, Specpure	100 mL, 500 mL
045551	ICP-MS QC Standard solution 20, Specpure	100 mL
040485	ICP-MS Stock Standard solution A for EPA 200.8, Rev. 4.4, Specpure	100 mL
042596	ICP-MS Stock Standard solution A for EPA 200.8, Rev. 5.4, Specpure	100 mL
040486	ICP-MS Stock Standard solution B for EPA 200.8, Specpure	100 mL
040482	ICP-MS Tuning Standard solution for EPA 6020 CLP-M, Specpure	100 mL
045641	ICP-MS Tuning Standard solution for EPA 200.8, Specpure	100 mL
042586	ICP-MS Tuning Standard solution for HP, Specpure	100 mL
044539	ICP-MS Water Spike Standard solution for EPA 6020 CLP-M, Specpure	100 mL
042604	ICP-MS Soil Spike Standard solution for EPA 6020 CLP-M, Specpure	100 mL

## Inorganic and elemental QC check standards

Cat. No.	Description	Pack size
039146	Multi-Element QC-19 Check Standard Solution, Specpure	100 mL, 500 mL
041328	Multi-Element QC-21 Check Standard Solution, Specpure	100 mL, 500 mL
039145	Multi-Element QC-7 Check Standard Solution, Specpure	100 mL
043804	Cyanide, standard solution, Specpure, CN <sup>-</sup> 1000 µg/mL	100 mL, 500 mL
042225	Silica, standard solution, Specpure, SiO <sub>2</sub> 1000 mg/mL	100 mL, 500 mL
042562	Total Organic Carbon (TOC), standard solution, Specpure, 1000 mg/mL	100 mL, 500 mL

## All other standards for environmental applications

Cat. No.	Description	Pack size
035420	Contract Required Detection Limits (CRDL) Standard, Specpure	100 mL
036743	TCLP (Toxic Characteristic Leaching Procedure ) Standard Solution 1, Specpure	100 mL, 500 mL
036748	TCLP (Toxic Characteristic Leaching Procedure ) Standard Solution 2, Specpure	100 mL
035256	Interference Check Standard A(ICS-A) Solution, Specpure	500 mL
035421	Interference Check Standard AB-1(ICS-AB1) Solution, Specpure	100 mL
041330	Interference Check Standard AB-2(ICS-AB2) Solution, Specpure	100 mL
035406	CLP Protocol Test Kit for ICP Analysis, Specpure	1 each

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# Standards for oil and gas industries



Click on the matrix to explore the full list of chemicals



Crude oil



Diesel oil



Heavy mineral oil



Isooctane



Kerosene



Light mineral oil



Residual oil

## Crude oil matrix

Cat. No.	Description	Pack size
041885	Sulfur in Crude Oil standard solution, Specpure, 1000 µg/g (0.10%)	100 mL
041886	Sulfur in Crude Oil standard solution, Specpure, 2500 µg/g (0.25%)	100 mL
041887	Sulfur in Crude Oil standard solution, Specpure, 5000 µg/g (0.50%)	100 mL
041888	Sulfur in Crude Oil standard solution, Specpure, 10,000 µg/g (1.00%)	100 mL
041889	Sulfur in Crude Oil standard solution, Specpure, 20,000 µg/g (2.00%)	100 mL
041890	Sulfur in Crude Oil standard solution, Specpure, 30,000 µg/g (3.00%)	100 mL
041891	Sulfur in Crude Oil standard solution, Specpure, 40,000 µg/g (4.00%)	100 mL
041892	Sulfur in Crude Oil standard solution, Specpure, 50,000 µg/g (5.00%)	100 mL

## Diesel oil matrix

Cat. No.	Description	Pack size
038764	Sulfur in Diesel Fuel standard solution, Specpure, blank (0.0000%)	100 mL
038765	Sulfur in Diesel Fuel standard solution, Specpure, 100 µg/g (0.010%)	100 mL
038766	Sulfur in Diesel Fuel standard solution, Specpure, 200 µg/g (0.020%)	100 mL
038767	Sulfur in Diesel Fuel standard solution, Specpure, 300 µg/g (0.030%)	100 mL
038768	Sulfur in Diesel Fuel standard solution, Specpure, 400 µg/g (0.040%)	100 mL
038769	Sulfur in Diesel Fuel standard solution, Specpure, 500 µg/g (0.050%)	100 mL
038770	Sulfur in Diesel Fuel standard solution, Specpure, 750 µg/g (0.075%)	100 mL
038771	Sulfur in Diesel Fuel standard solution, Specpure, 1000 µg/g (0.10%)	100 mL
038773	Sulfur in Diesel Fuel standard solution, Specpure, 3000 µg/g (0.30%)	100 mL
038774	Sulfur in Diesel Fuel standard solution, Specpure, 5000 µg/g (0.50%)	100 mL
038776	Sulfur in Diesel Fuel standard solution, Specpure, 10,000 µg/g (1.00%)	100 mL
038777	Sulfur in Diesel Fuel standard solution, Specpure, 15,000 µg/g (1.50%)	100 mL
038778	Sulfur in Diesel Fuel standard solution, Specpure, 20,000 µg/g (2.00%)	100 mL
038780	Sulfur in Diesel Fuel standard solution, Specpure, 30,000 µg/g (3.00%)	100 mL
041697	Sulfur in Diesel Fuel standard solution, Specpure, 40,000 µg/g (4.00%)	100 mL
041698	Sulfur in Diesel Fuel standard solution, Specpure, 50,000 µg/g (5.00%)	100 mL

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## Diesel oil matrix (continued)



Cat. No.	Description	Pack size
041699	Sulfur in Diesel Fuel standard solution, Specpure, 60,000 µg/g (6.00%)	100 mL
045308	Sulfur in Diesel Fuel standard solution, Specpure, 5 µg/g (0.0005%)	100 mL
045309	Sulfur in Diesel Fuel standard solution, Specpure, 10 µg/g (0.0010%)	100 mL
045310	Sulfur in Diesel Fuel standard solution, Specpure, 15 µg/g (0.0015%)	100 mL
045311	Sulfur in Diesel Fuel standard solution, Specpure, 20 µg/g (0.0020%)	100 mL
045312	Sulfur in Diesel Fuel standard solution, Specpure, 25 µg/g (0.0025%)	100 mL
045313	Sulfur in Diesel Fuel standard solution, Specpure, 50 µg/g (0.0050%)	100 mL
045314	Sulfur in Diesel Fuel standard solution, Specpure, 75 µg/g (0.0075%)	100 mL

## Heavy mineral oil matrix

Cat. No.	Description	Pack size
040548	Chlorine in Heavy Mineral Oil standard solution, Specpure, blank (0.000%)	100 mL
040549	Chlorine in Heavy Mineral Oil standard solution, Specpure, 100 µg/g (0.010%)	100 mL
040551	Chlorine in Heavy Mineral Oil standard solution, Specpure, 500 µg/g (0.050%)	100 mL
040553	Chlorine in Heavy Mineral Oil standard solution, Specpure, 1000 µg/g (0.10%)	100 mL
040558	Chlorine in Heavy Mineral Oil standard solution, Specpure, 10,000 µg/g (1.00%)	100 mL
040344	Sulfur in Heavy Mineral Oil standard solution, Specpure, blank (0.0000%)	100 mL
040345	Sulfur in Heavy Mineral Oil standard solution, Specpure, 100 µg/g (0.0100%)	100 mL
040346	Sulfur in Heavy Mineral Oil standard solution, Specpure, 200 µg/g (0.0200%)	100 mL
040347	Sulfur in Heavy Mineral Oil standard solution, Specpure, 300 µg/g (0.0300%)	100 mL
040348	Sulfur in Heavy Mineral Oil standard solution, Specpure, 400 µg/g (0.0400%)	100 mL
040349	Sulfur in Heavy Mineral Oil standard solution, Specpure, 500 µg/g (0.0500%)	100 mL
040350	Sulfur in Heavy Mineral Oil standard solution, Specpure, 750 µg/g (0.0750%)	100 mL
040351	Sulfur in Heavy Mineral Oil standard solution, Specpure, 1000 µg/g (0.10%)	100 mL
040352	Sulfur in Heavy Mineral Oil standard solution, Specpure, 1500 µg/g (0.15%)	100 mL
040353	Sulfur in Heavy Mineral Oil standard solution, Specpure, 3000 µg/g (0.30%)	100 mL
040354	Sulfur in Heavy Mineral Oil standard solution, Specpure, 5000 µg/g (0.50%)	100 mL
040355	Sulfur in Heavy Mineral Oil standard solution, Specpure, 7500 µg/g (0.75%)	100 mL
040356	Sulfur in Heavy Mineral Oil standard solution, Specpure, 10,000 µg/g (1.00%)	100 mL
040358	Sulfur in Heavy Mineral Oil standard solution, Specpure, 20,000 µg/g (2.00%)	100 mL
040359	Sulfur in Heavy Mineral Oil standard solution, Specpure, 30,000 µg/g (3.00%)	100 mL
040360	Sulfur in Heavy Mineral Oil standard solution, Specpure, 40,000 µg/g (4.00%)	100 mL
040361	Sulfur in Heavy Mineral Oil standard solution, Specpure, 50,000 µg/g (5.00%)	100 mL
041734	Sulfur in Heavy Mineral Oil standard solution, Specpure, 10 µg/g (0.0010%)	100 mL
041735	Sulfur in Heavy Mineral Oil standard solution, Specpure, 25 µg/g (0.0025%)	100 mL
042184	Chlorine in Heavy Mineral Oil standard solution, Specpure, 10 µg/g (0.001%)	100 mL
042185	Chlorine in Heavy Mineral Oil standard solution, Specpure, 50,000 µg/g (5.00%)	100 mL
045317	Sulfur in Heavy Mineral Oil standard solution, Specpure, 5 µg/g (0.0005%)	100 mL
045318	Sulfur in Heavy Mineral Oil standard solution, Specpure, 75 µg/g (0.0075%)	100 mL
045350	Sulfur in Heavy Mineral Oil standard solution, Specpure, 15 µg/g (0.0015%)	100 mL
045351	Sulfur in Heavy Mineral Oil standard solution, Specpure, 20 µg/g (0.0020%)	100 mL

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## Isooctane matrix

Cat. No.	Description	Pack size
041314	Sulfur in Isooctane standard solution, Specpure, blank (0.0000%)	100 mL
041315	Sulfur in Isooctane standard solution, Specpure, 10 µg/g (0.0010%)	100 mL
041318	Sulfur in Isooctane standard solution, Specpure, 50 µg/g (0.0050%)	100 mL
041320	Sulfur in Isooctane standard solution, Specpure, 200 µg/g (0.0200%)	100 mL
041321	Sulfur in Isooctane standard solution, Specpure, 300 µg/g (0.0300%)	100 mL
041322	Sulfur in Isooctane standard solution, Specpure, 400 µg/g (0.0400%)	100 mL
041324	Sulfur in Isooctane standard solution, Specpure, 1000 µg/g (0.100%)	100 mL
041325	Sulfur in Isooctane standard solution, Specpure, 3000 µg/g (0.300%)	100 mL
045319	Sulfur in Isooctane standard solution, Specpure, 5 µg/g (0.0005%)	100 mL
045321	Sulfur in Isooctane standard solution, Specpure, 75 µg/g (0.0075%)	100 mL
045322	Sulfur in Isooctane standard solution, Specpure, 500 µg/g (0.0500%)	100 mL
045323	Sulfur in Isooctane standard solution, Specpure, 750 µg/g (0.0750%)	100 mL
045324	Lead in Isooctane standard solution, Specpure, 37 µg/g(0.1g/gal)	100 g
045325	Lead in Isooctane standard solution, Specpure, 370 µg/g(1.0g/gal)	100 g
045326	Lead in Isooctane standard solution, Specpure, 740 µg/g(2.0g/gal)	100 g
045327	Lead in Isooctane standard solution, Specpure, 1110 µg/g(3.0g/gal)	100 g
045328	Lead in Isooctane standard solution, Specpure, 1480 µg/g(4.0g/gal)	100 g
045329	Lead in Isooctane standard solution, Specpure, 1850 µg/g(5.0g/gal)	100 g
045330	Lead in Isooctane standard solution, Specpure, 0 µg/g(0.000g/gal)	100 g
045331	Lead in Isooctane standard solution, Specpure, 0.37 µg/g(0.001g/gal)	100 g
045332	Lead in Isooctane standard solution, Specpure, 1.85 µg/g(0.005g/gal)	100 g
045333	Lead in Isooctane standard solution, Specpure, 3.70 µg/g(0.010g/gal)	100 g
045334	Lead in Isooctane standard solution, Specpure, 18.5 µg/g(0.050g/gal)	100 g
045335	Lead in Isooctane standard solution, Specpure, 37.0 µg/g(0.100 g/gal)	100 g
045336	Lead in Isooctane standard solution, Specpure, 111 µg/g(0.300g/gal)	100 g
045352	Sulfur in Isooctane standard solution, Specpure, 15 µg/g (0.0015%)	100 mL
045353	Sulfur in Isooctane standard solution, Specpure, 20 µg/g (0.0020%)	100 mL
045354	Lead in Isooctane standard solution, Specpure, 0 µg/g(0.0g/gal)	100 g

## Kerosene matrix

Cat. No.	Description	Pack size
040536	Sulfur in Kerosene standard solution, Specpure, blank (0.000%)	100 mL
040537	Sulfur in Kerosene standard solution, Specpure, 100 µg/g (0.010%)	100 mL
040538	Sulfur in Kerosene standard solution, Specpure, 300 µg/g (0.030%)	100 mL
040539	Sulfur in Kerosene standard solution, Specpure, 500 µg/g (0.050%)	100 mL
040540	Sulfur in Kerosene standard solution, Specpure, 750 µg/g (0.075%)	100 mL
040541	Sulfur in Kerosene standard solution, Specpure, 1000 µg/g (0.10%)	100 mL
041704	Sulfur in Kerosene standard solution, Specpure, 10 µg/g (0.001%)	100 mL
041705	Sulfur in Kerosene standard solution, Specpure, 50 µg/g (0.005%)	100 mL

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## Heavy mineral oil matrix

Cat. No.	Description	Pack size
042155	Sulfur in Light Mineral Oil standard solution, Specpure, Blank (0.0000%)	100 mL
042156	Sulfur in Light Mineral Oil standard solution, Specpure, 10 µg/g (0.0010%)	100 mL
042157	Sulfur in Light Mineral Oil standard solution, Specpure, 25 µg/g (0.0025%)	100 mL
042158	Sulfur in Light Mineral Oil standard solution, Specpure, 50 µg/g (0.0050%)	100 mL
042159	Sulfur in Light Mineral Oil standard solution, Specpure, 100 µg/g (0.0100%)	100 mL
042160	Sulfur in Light Mineral Oil standard solution, Specpure, 200 µg/g (0.0200%)	100 mL
042161	Sulfur in Light Mineral Oil standard solution, Specpure, 300 µg/g (0.0300%)	100 mL
042162	Sulfur in Light Mineral Oil standard solution, Specpure, 400 µg/g (0.0400%)	100 mL
042163	Sulfur in Light Mineral Oil standard solution, Specpure, 500 µg/g (0.0500%)	100 mL
042164	Sulfur in Light Mineral Oil standard solution, Specpure, 750 µg/g (0.0750%)	100 mL
042165	Sulfur in Light Mineral Oil standard solution, Specpure, 1,000 µg/g (0.10%)	100 mL
042166	Sulfur in Light Mineral Oil standard solution, Specpure, 1,500 µg/g (0.15%)	100 mL
042167	Sulfur in Light Mineral Oil standard solution, Specpure, 3,000 µg/g (0.30%)	100 mL
042168	Sulfur in Light Mineral Oil standard solution, Specpure, 5,000 µg/g (0.50%)	100 mL
042169	Sulfur in Light Mineral Oil standard solution, Specpure, 7,500 µg/g (0.75%)	100 mL
042170	Sulfur in Light Mineral Oil standard solution, Specpure, 10,000 µg/g (1.00%)	100 mL
042171	Sulfur in Light Mineral Oil standard solution, Specpure, 20,000 µg/g (2.00%)	100 mL
042172	Sulfur in Light Mineral Oil standard solution, Specpure, 30,000 µg/g (3.00%)	100 mL
042173	Sulfur in Light Mineral Oil standard solution, Specpure, 40,000 µg/g (4.00%)	100 mL
042174	Sulfur in Light Mineral Oil standard solution, Specpure, 50,000 µg/g (5.00%)	100 mL
045315	Sulfur in Light Mineral Oil standard solution, Specpure, 5 µg/g (0.0005%)	100 mL
045316	Sulfur in Light Mineral Oil standard solution, Specpure, 75 µg/g (0.0075%)	100 mL
045348	Sulfur in Light Mineral Oil standard solution, Specpure, 15 µg/g (0.0015%)	100 mL
045349	Sulfur in Light Mineral Oil standard solution, Specpure, 20 µg/g (0.0020%)	100 mL

## Residual oil matrix

Cat. No.	Description	Pack size
041751	Sulfur in Residual Oil standard solution, Specpure, 3500 µg/g (0.35%)	100 mL
041752	Sulfur in Residual Oil standard solution, Specpure, 7000 µg/g (0.70%)	100 mL
041753	Sulfur in Residual Oil standard solution, Specpure, 10,000 µg/g (1.00%)	100 mL
041755	Sulfur in Residual Oil standard solution, Specpure, 20,000 µg/g (2.00%)	100 mL
041756	Sulfur in Residual Oil standard solution, Specpure, 30,000 µg/g (3.00%)	100 mL
041757	Sulfur in Residual Oil standard solution, Specpure, 40,000 µg/g (4.00%)	100 mL

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# Ion chromatography standards

## Our commitment to accuracy and performance

Certified against internationally recognized reference materials, our Ion Chromatography Standards offer certified accuracy, giving you peace of mind that your measurements are precise and traceable. Whether you are analyzing anions such as chloride, nitrate, or sulfate, or cations like sodium, potassium, or calcium, Specpure has a wide range of standards to suit your specific analytical needs.

Cat. No.	Description	Pack size
042563	Acetate, Ion chromatography standard solution, Specpure, $\text{CH}_3\text{CO}_2^-$ 1000 $\mu\text{g}/\text{mL}$	100 mL, 500 mL
035560	Ammonium, Ion chromatography standard solution, Specpure, $\text{NH}_4^+$ 1000 $\mu\text{g}/\text{mL}$	100 mL
047208	Barium, Ion chromatography standard solution, Specpure, $\text{Ba}^{2+}$ 2 1000 $\mu\text{g}/\text{mL}$	100 mL
035552	Bromide, Ion chromatography standard solution, Specpure, $\text{Br}^-$ 1000 $\mu\text{g}/\text{mL}$	100 mL, 500 mL
047234	Calcium, Ion chromatography standard solution, Specpure, $\text{Ca}^{2+}$ 2 1000 $\mu\text{g}/\text{mL}$	100 mL
035551	Chloride, Ion chromatography standard solution, Specpure, $\text{Cl}^-$ 1000 $\mu\text{g}/\text{mL}$	100 mL, 500 mL
042564	Chromate, Ion chromatography standard solution, Specpure, $\text{CrO}_4^{2-}$ 2 1000 $\mu\text{g}/\text{mL}$	100 mL, 500 mL
042565	Dichromate, Ion chromatography standard solution, Specpure, $\text{Cr}_2\text{O}_7^{2-}$ 1000 $\mu\text{g}/\text{mL}$	100 mL, 500 mL
035550	Fluoride, Ion chromatography standard solution, Specpure, $\text{F}^-$ 1000 $\mu\text{g}/\text{mL}$	100 mL, 500 mL
042566	Formate, Ion chromatography standard solution, Specpure, $\text{HCO}_2^-$ 1000 $\mu\text{g}/\text{mL}$	100 mL, 500 mL
042567	Iodide, Ion chromatography standard solution, Specpure, $\text{I}^-$ 1000 $\mu\text{g}/\text{mL}$	100 mL, 500 mL
047252	Lithium, Ion chromatography standard solution, Specpure, $\text{Li}^+$ 1000 $\mu\text{g}/\text{mL}$	100 mL
047258	Magnesium, Ion chromatography standard solution, Specpure, $\text{Mg}^{2+}$ 2 1000 $\mu\text{g}/\text{mL}$	100 mL
041693	Multi Ion anion IC standard solution in $\text{H}_2\text{O}$ , Specpure	100 mL
041694	Multi Ion anion IC standard solution in $\text{H}_2\text{O}$ , Specpure	100 mL
035565	Multi Ion anion IC standard solution, Specpure (Dionex) in $\text{H}_2\text{O}$	100 mL
035564	Multi Ion anion IC standard solution, Specpure (Waters) in $\text{H}_2\text{O}$	100 mL
041695	Multi Ion cation IC standard solution, Specpure (Dionex) in 5% $\text{HNO}_3$	100 mL
035549	Nitrate, Ion chromatography standard solution, Specpure, $\text{NO}_3^-$ 1000 $\mu\text{g}/\text{mL}$	100 mL
040020	Nitrite, Ion chromatography standard solution, Specpure, $\text{NO}_2^-$ 1000 $\mu\text{g}/\text{mL}$	100 mL
042568	Oxalate, Ion chromatography standard solution, Specpure, $\text{C}_2\text{O}_4^{2-}$ 2 1000 $\mu\text{g}/\text{mL}$	100 mL, 500 mL
035548	Phosphate, Ion chromatography standard solution, Specpure, $\text{PO}_4^{3-}$ 3 1000 $\mu\text{g}/\text{mL}$	100 mL, 500 mL
047260	Potassium, Ion chromatography standard solution, Specpure, $\text{K}^+$ 1000 $\mu\text{g}/\text{mL}$	100 mL
041696	Sodium, Ion chromatography standard solution, Specpure, $\text{Na}^+$ 1000 $\mu\text{g}/\text{mL}$	100 mL
035547	Sulfate, Ion chromatography standard solution, Specpure, $\text{SO}_4^{2-}$ 2 1000 $\mu\text{g}/\text{mL}$	100 mL, 500 mL

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# Pharmaceutical and viscosity standards



## Pharmaceutical standards

Cat. No.	Description	Pack size
047318	Multi-Element ICH/USP Oral Standard Solution A, Specpure	100 mL
047325	Multi-Element ICH/USP Oral Standard Solution D, Specpure	100 mL
047350	Multi-Element ICH/USP Class 1&2A Parenteral Standard Solution, Specpure	100 mL
047356	Multi-Element ICH/USP Parenteral Combined Standard Solution 1, Specpure	100 mL
047358	Multi-Element Pharma Internal Standard Solution 1, Specpure, Te at 25; Sc at 10; Ge, In, Lu, Bi at 5 µg/mL	100 mL
047369	Multi-Element ICH/USP Parenteral Combined Standard Solution 2, Specpure	100 mL
047370	Multi-Element ICH/USP Oral Standard Solution B, Specpure	100 mL
047384	Multi-Element ICH Q3D & USP 232 Kit for Metals Analysis, Specpure	5 × 100 mL
047387	Multi-Element ICH/USP Oral Standard Solution C, Specpure	100 mL

## Viscosity standards

Cat. No.	Description	Pack size
045340	Viscosity standard, Specpure, nominally 30cSt @ 40° and 5.3cSt @ 100°	500 mL
047013	Viscosity standard, Specpure, nominally 50cSt @ 40° and 7.3cSt @ 100°	500 mL
047021	Viscosity standard, Specpure, nominally 50cSt @ 40° and 7.3cSt @ 100°	500 mL
047033	Viscosity standard, Specpure, nominally 100cSt @ 40° and 16.8cSt @ 100°	500 mL
047036	Viscosity standard, Specpure, nominally 10cSt @ 40° and 2.7cSt @ 100°	500 mL
047100	Viscosity standard, Specpure, nominally 120cSt @ 40° and 20cSt @ 100°	500 mL
047155	Viscosity standard, Specpure, nominally 500cSt @ 40° and 52cSt @ 100°	500 mL
047158	Viscosity standard, Specpure, nominally 930cSt @ 40° and 82cSt @ 100°	500 mL

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# Periodic table of elements

key		filling of electrons																																																																																																																				
Atomic number	Electronegativity																																																																																																																					
Element symbol	Element name																																																																																																																					
Relative atomic mass	Electronic structure																																																																																																																					
1 <b>H</b> Hydrogen 1.008 1s <sup>1</sup>	2.1	2 <b>He</b> Helium 4.003 1s <sup>2</sup>	3 <b>Li</b> Lithium 6.94 (He) 2s <sup>1</sup>	4 <b>Be</b> Beryllium 9.012 (He) 2s <sup>2</sup>	5 <b>B</b> Boron 10.81 (He) 2s <sup>2</sup> 2p <sup>1</sup>	6 <b>C</b> Carbon 12.01 (He) 2s <sup>2</sup> 2p <sup>2</sup>	7 <b>N</b> Nitrogen 14.01 (He) 2s <sup>2</sup> 2p <sup>3</sup>	8 <b>O</b> Oxygen 16.00 (He) 2s <sup>2</sup> 2p <sup>4</sup>	9 <b>F</b> Fluorine 19.00 (He) 2s <sup>2</sup> 2p <sup>5</sup>	10 <b>Ne</b> Neon 20.18 (He) 2s <sup>2</sup> 2p <sup>6</sup>	11 <b>Na</b> Sodium 22.99 (He) 3s <sup>1</sup>	12 <b>Mg</b> Magnesium 24.31 (He) 3s <sup>2</sup>	13 <b>Al</b> Aluminium 26.98 (He) 3s <sup>2</sup> 3p <sup>1</sup>	14 <b>Si</b> Silicon 28.09 (He) 3s <sup>2</sup> 3p <sup>2</sup>	15 <b>P</b> Phosphorus 30.97 (He) 3s <sup>2</sup> 3p <sup>3</sup>	16 <b>S</b> Sulfur 32.06 (He) 3s <sup>2</sup> 3p <sup>4</sup>	17 <b>Cl</b> Chlorine 35.45 (He) 3s <sup>2</sup> 3p <sup>5</sup>	18 <b>Ar</b> Argon 39.95 (He) 3s <sup>2</sup> 3p <sup>6</sup>	19 <b>K</b> Potassium 39.10 (Ar) 4s <sup>1</sup>	20 <b>Ca</b> Calcium 40.08 (Ar) 4s <sup>2</sup>	21 <b>Sc</b> Scandium 44.96 (Ar) 3d <sup>1</sup> 4s <sup>2</sup>	22 <b>Ti</b> Titanium 47.88 (Ar) 3d <sup>2</sup> 4s <sup>2</sup>	23 <b>V</b> Vanadium 50.94 (Ar) 3d <sup>3</sup> 4s <sup>2</sup>	24 <b>Cr</b> Chromium 52.00 (Ar) 3d <sup>5</sup> 4s <sup>1</sup>	25 <b>Mn</b> Manganese 54.94 (Ar) 3d <sup>5</sup> 4s <sup>2</sup>	26 <b>Fe</b> Iron 55.85 (Ar) 3d <sup>6</sup> 4s <sup>2</sup>	27 <b>Co</b> Cobalt 58.93 (Ar) 3d <sup>7</sup> 4s <sup>2</sup>	28 <b>Ni</b> Nickel 58.69 (Ar) 3d <sup>8</sup> 4s <sup>2</sup>	29 <b>Cu</b> Copper 63.55 (Ar) 3d <sup>10</sup> 4s <sup>1</sup>	30 <b>Zn</b> Zinc 65.39 (Ar) 3d <sup>10</sup> 4s <sup>2</sup>	31 <b>Ga</b> Gallium 69.72 (Ar) 3d <sup>10</sup> 4s <sup>2</sup> 4p <sup>1</sup>	32 <b>Ge</b> Germanium 72.64 (Ar) 3d <sup>10</sup> 4s <sup>2</sup> 4p <sup>2</sup>	33 <b>As</b> Arsenic 74.92 (Ar) 3d <sup>10</sup> 4s <sup>2</sup> 4p <sup>3</sup>	34 <b>Se</b> Selenium 78.96 (Ar) 3d <sup>10</sup> 4s <sup>2</sup> 4p <sup>4</sup>	35 <b>Br</b> Bromine 79.90 (Ar) 3d <sup>10</sup> 4s <sup>2</sup> 4p <sup>5</sup>	36 <b>Kr</b> Krypton 83.79 (Ar) 3d <sup>10</sup> 4s <sup>2</sup> 4p <sup>6</sup>	37 <b>Rb</b> Rubidium 85.47 (Kr) 5s <sup>1</sup>	38 <b>Sr</b> Strontium 87.62 (Kr) 5s <sup>2</sup>	39 <b>Y</b> Yttrium 88.91 (Kr) 4d <sup>1</sup> 5s <sup>2</sup>	40 <b>Zr</b> Zirconium 91.22 (Kr) 4d <sup>2</sup> 5s <sup>2</sup>	41 <b>Nb</b> Niobium 92.91 (Kr) 4d <sup>4</sup> 5s <sup>1</sup>	42 <b>Mo</b> Molybdenum 95.96 (Kr) 4d <sup>5</sup> 5s <sup>1</sup>	43 <b>Tc</b> Technetium (98) (Kr) 4d <sup>5</sup> 5s <sup>2</sup>	44 <b>Ru</b> Ruthenium 101.1 (Kr) 4d <sup>7</sup> 5s <sup>1</sup>	45 <b>Rh</b> Rhodium 102.9 (Kr) 4d <sup>8</sup> 5s <sup>1</sup>	46 <b>Pd</b> Palladium 106.4 (Kr) 4d <sup>10</sup>	47 <b>Ag</b> Silver 107.9 (Kr) 4d <sup>10</sup> 5s <sup>1</sup>	48 <b>Cd</b> Cadmium 112.4 (Kr) 4d <sup>10</sup> 5s <sup>2</sup>	49 <b>In</b> Indium 114.8 (Kr) 4d <sup>10</sup> 5s <sup>2</sup> 5p <sup>1</sup>	50 <b>Sn</b> Tin 118.7 (Kr) 4d <sup>10</sup> 5s <sup>2</sup> 5p <sup>2</sup>	51 <b>Sb</b> Antimony 121.8 (Kr) 4d <sup>10</sup> 5s <sup>2</sup> 5p <sup>3</sup>	52 <b>Te</b> Tellurium 127.6 (Kr) 4d <sup>10</sup> 5s <sup>2</sup> 5p <sup>4</sup>	53 <b>I</b> Iodine 126.9 (Kr) 4d <sup>10</sup> 5s <sup>2</sup> 5p <sup>5</sup>	54 <b>Xe</b> Xenon 131.3 (Kr) 4d <sup>10</sup> 5s <sup>2</sup> 5p <sup>6</sup>	55 <b>Cs</b> Caesium 132.9 (Xe) 6s <sup>1</sup>	56 <b>Ba</b> Barium 137.3 (Xe) 6s <sup>2</sup>	57 <b>La</b> Lanthanum 138.9 (Xe) 5d <sup>1</sup> 6s <sup>2</sup>	58 <b>Ce</b> Cerium 140.1 (Xe) 4f <sup>1</sup> 5d <sup>1</sup> 6s <sup>2</sup>	59 <b>Pr</b> Praseodymium 140.9 (Xe) 4f <sup>3</sup> 6s <sup>2</sup>	60 <b>Nd</b> Neodymium 144.2 (Xe) 4f <sup>4</sup> 6s <sup>2</sup>	61 <b>Pm</b> Promethium (145) (Xe) 4f <sup>5</sup> 6s <sup>2</sup>	62 <b>Sm</b> Samarium 150.4 (Xe) 4f <sup>6</sup> 6s <sup>2</sup>	63 <b>Eu</b> Europium 152.0 (Xe) 4f <sup>7</sup> 6s <sup>2</sup>	64 <b>Gd</b> Gadolinium 157.2 (Xe) 4f <sup>7</sup> 5d <sup>1</sup> 6s <sup>2</sup>	65 <b>Tb</b> Terbium 158.9 (Xe) 4f <sup>9</sup> 6s <sup>2</sup>	66 <b>Dy</b> Dysprosium 162.5 (Xe) 4f <sup>10</sup> 6s <sup>2</sup>	67 <b>Ho</b> Holmium 164.9 (Xe) 4f <sup>11</sup> 6s <sup>2</sup>	68 <b>Er</b> Erbium 167.3 (Xe) 4f <sup>12</sup> 6s <sup>2</sup>	69 <b>Tm</b> Thulium 168.9 (Xe) 4f <sup>13</sup> 6s <sup>2</sup>	70 <b>Yb</b> Ytterbium 173.0 (Xe) 4f <sup>14</sup> 6s <sup>2</sup>	71 <b>Lu</b> Lutetium 175.0 (Xe) 4f <sup>14</sup> 5d <sup>1</sup> 6s <sup>2</sup>	72 <b>Hf</b> Hafnium 178.5 (Xe) 4f <sup>14</sup> 5d <sup>2</sup> 6s <sup>2</sup>	73 <b>Ta</b> Tantalum 180.9 (Xe) 4f <sup>14</sup> 5d <sup>3</sup> 6s <sup>2</sup>	74 <b>W</b> Tungsten 183.9 (Xe) 4f <sup>14</sup> 5d <sup>4</sup> 6s <sup>2</sup>	75 <b>Re</b> Rhenium 186.2 (Xe) 4f <sup>14</sup> 5d <sup>5</sup> 6s <sup>2</sup>	76 <b>Os</b> Osmium 190.2 (Xe) 4f <sup>14</sup> 5d <sup>6</sup> 6s <sup>2</sup>	77 <b>Ir</b> Iridium 192.2 (Xe) 4f <sup>14</sup> 5d <sup>7</sup> 6s <sup>2</sup>	78 <b>Pt</b> Platinum 195.1 (Xe) 4f <sup>14</sup> 5d <sup>9</sup> 6s <sup>1</sup>	79 <b>Au</b> Gold 197.0 (Xe) 4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>1</sup>	80 <b>Hg</b> Mercury 200.5 (Xe) 4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup>	81 <b>Tl</b> Thallium 204.38 (Xe) 4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>1</sup>	82 <b>Pb</b> Lead 207.2 (Xe) 4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>2</sup>	83 <b>Bi</b> Bismuth 209.0 (Xe) 4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>3</sup>	84 <b>Po</b> Polonium (209) (Xe) 4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>4</sup>	85 <b>At</b> Astatine (210) (Xe) 4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>5</sup>	86 <b>Rn</b> Radon (222) (Xe) 4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>6</sup>	87 <b>Fr</b> Francium (223) (Rn) 7s <sup>1</sup>	88 <b>Ra</b> Radium (226) (Rn) 7s <sup>2</sup>	89 <b>Ac</b> Actinium (227) (Rn) 5f <sup>1</sup> 6d <sup>1</sup> 7s <sup>2</sup>	90 <b>Th</b> Thorium 232 (Rn) 6d <sup>2</sup> 7s <sup>2</sup>	91 <b>Pa</b> Protactinium 231 (Rn) 5f <sup>2</sup> 6d <sup>1</sup> 7s <sup>2</sup>	92 <b>U</b> Uranium 238 (Rn) 5f <sup>3</sup> 6d <sup>1</sup> 7s <sup>2</sup>	93 <b>Np</b> Neptunium (237) (Rn) 5f <sup>4</sup> 6d <sup>1</sup> 7s <sup>2</sup>	94 <b>Pu</b> Plutonium (244) (Rn) 5f <sup>6</sup> 6d <sup>1</sup> 7s <sup>2</sup>	95 <b>Am</b> Americium (243) (Rn) 5f <sup>7</sup> 7s <sup>2</sup>	96 <b>Cm</b> Curium (247) (Rn) 5f <sup>7</sup> 6d <sup>1</sup> 7s <sup>2</sup>	97 <b>Bk</b> Berkelium (247) (Rn) 5f <sup>7</sup> 6d <sup>2</sup> 7s <sup>2</sup>	98 <b>Cf</b> Californium (251) (Rn) 5f <sup>7</sup> 6d <sup>3</sup> 7s <sup>2</sup>	99 <b>Es</b> Einsteinium (252) (Rn) 5f <sup>7</sup> 6d <sup>4</sup> 7s <sup>2</sup>	100 <b>Fm</b> Fermium (257) (Rn) 5f <sup>7</sup> 6d <sup>5</sup> 7s <sup>2</sup>	101 <b>Md</b> Mendelevium (258) (Rn) 5f <sup>7</sup> 6d <sup>6</sup> 7s <sup>2</sup>	102 <b>No</b> Nobelium (259) (Rn) 5f <sup>7</sup> 6d <sup>7</sup> 7s <sup>2</sup>	103 <b>Lr</b> Lawrencium (262) (Rn) 5f <sup>7</sup> 6d <sup>7</sup> 7s <sup>2</sup> 7p <sup>1</sup>	104 <b>Rf</b> Rutherfordium (267) (Rn) 5f <sup>14</sup> 6d <sup>2</sup> 7s <sup>2</sup>	105 <b>Db</b> Dubnium (268) (Rn) 5f <sup>14</sup> 6d <sup>3</sup> 7s <sup>2</sup>	106 <b>Sg</b> Seaborgium (269) (Rn) 5f <sup>14</sup> 6d <sup>4</sup> 7s <sup>2</sup>	107 <b>Bh</b> Bohrium (270) (Rn) 5f <sup>14</sup> 6d <sup>5</sup> 7s <sup>2</sup>	108 <b>Hs</b> Hassium (277) (Rn) 5f <sup>14</sup> 6d <sup>6</sup> 7s <sup>2</sup>	109 <b>Mt</b> Meitnerium (278) (Rn) 5f <sup>14</sup> 6d <sup>7</sup> 7s <sup>2</sup>	110 <b>Ds</b> Darmstadtium (281) (Rn) 5f <sup>14</sup> 6d <sup>8</sup> 7s <sup>2</sup>	111 <b>Rg</b> Roentgenium (282) (Rn) 5f <sup>14</sup> 6d <sup>9</sup> 7s <sup>2</sup>	112 <b>Cn</b> Copernicium (285) (Rn) 5f <sup>14</sup> 6d <sup>10</sup> 7s <sup>2</sup>	113 <b>Nh</b> Nihonium (286) (Rn) 5f <sup>14</sup> 6d <sup>10</sup> 7s <sup>2</sup> 7p <sup>1</sup>	114 <b>Fl</b> Flerovium (289) (Rn) 5f <sup>14</sup> 6d <sup>10</sup> 7s <sup>2</sup> 7p <sup>2</sup>	115 <b>Mc</b> Moscovium (289) (Rn) 5f <sup>14</sup> 6d <sup>10</sup> 7s <sup>2</sup> 7p <sup>3</sup>	116 <b>Lv</b> Livermorium (293) (Rn) 5f <sup>14</sup> 6d <sup>10</sup> 7s <sup>2</sup> 7p <sup>4</sup>	117 <b>Ts</b> Tennessine (294) (Rn) 5f <sup>14</sup> 6d <sup>10</sup> 7s <sup>2</sup> 7p <sup>5</sup>	118 <b>Og</b> Oganesson (294) (Rn) 5f <sup>14</sup> 6d <sup>10</sup> 7s <sup>2</sup> 7p <sup>6</sup>







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