

# Product Specification

## Tungsten ICP Standard, 1000 ppm W in H<sub>2</sub>O/tr NH<sub>4</sub>OH

**Lot Number:** SAMPLE

**Product Number:** PW1KW

**Manufacture Date:** N/A

**Expiration Date:** N/A

This is a single element solution that was prepared volumetrically to contain the certified value reported. The uncertainty associated with the certified value is the sum of the estimated errors due to the purity of the raw material, the volumetric preparation of the solution, and transpiration of the solution through the container wall.

The final solution concentration is confirmed by AA, ICP, or ICP-MS, and is traceable to NIST Standard Reference Material 3163. All trace level elements were determined by ICP or ICP-MS.

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Ammonium Tungstate	11120-25-5	High Purity
Ammonium Hydroxide	1336-21-6	Trace Metals

Test	Specification	Result	NIST SRM#
Appearance	Colorless liquid	N/A	
Tungsten (W)	995-1005 ppm	N/A	3163

### Trace Elements by ICP or ICP - MS

I=Spectral Interference N=Not Tested

All values reported in mg/L (ppm)

Aluminum (Al)	N/A	Lead (Pb)	N/A	Sulfur (S)	N/A
Antimony (Sb)	N/A	Lithium (Li)	N/A	Tantalum (Ta)	N/A
Arsenic (As)	N/A	Lutetium (Lu)	N/A	Tellurium (Te)	N/A
Barium (Ba)	N/A	Magnesium (Mg)	N/A	Terbium (Tb)	N/A
Beryllium (Be)	N/A	Manganese (Mn)	N/A	Thallium (Tl)	N/A
Bismuth (Bi)	N/A	Mercury (Hg)	N/A	Thorium (Th)	N/A
Boron (B)	N/A	Molybdenum (Mo)	N/A	Thulium (Tm)	N/A
Cadmium (Cd)	N/A	Neodymium (Nd)	N/A	Tin (Sn)	N/A
Calcium (Ca)	N/A	Nickel (Ni)	N/A	Titanium (Ti)	N/A
Cerium (Ce)	N/A	Niobium (Nb)	N/A	Uranium (U)	N/A
Cesium (Cs)	N/A	Osmium (Os)	N/A	Vanadium (V)	N/A
Chromium (Cr)	N/A	Palladium (Pd)	N/A	Ytterbium (Yb)	N/A
Cobalt (Co)	N/A	Phosphorus (P)	N/A	Yttrium (Y)	N/A
Copper (Cu)	N/A	Platinum (Pt)	N/A	Zinc (Zn)	N/A
Dysprosium (Dy)	N/A	Potassium (K)	N/A	Zirconium (Zr)	N/A
Erbium (Er)	N/A	Praseodymium (Pr)	N/A		
Europium (Eu)	N/A	Rhenium (Re)	N/A		
Gadolinium (Gd)	N/A	Rhodium (Rh)	N/A		
Gallium (Ga)	N/A	Rubidium (Rb)	N/A		
Germanium (Ge)	N/A	Ruthenium (Ru)	N/A		
Gold (Au)	N/A	Samarium (Sm)	N/A		
Hafnium (Hf)	N/A	Scandium (Sc)	N/A		
Holmium (Ho)	N/A	Selenium (Se)	N/A		
Indium (In)	N/A	Silicon (Si)	N/A		
Iridium (Ir)	N/A	Silver (Ag)	N/A		
Iron (Fe)	N/A	Sodium (Na)	N/A		
Lanthanum (La)	N/A	Strontium (Sr)	N/A		

Specification	Reference
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Tungsten ICP Standard, 1 mL = 1 mg W (1,000 ppm W) in Water / tr Ammonium Hydroxide      EPA (200.7)

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 This standard is guaranteed to be stable and accurate provided the product is kept tightly capped and stored under normal laboratory conditions. Balances are calibrated using NIST traceable weights whose verification of maintenance and recalibration is documented per inhouse Standard Operating Procedures. Class A glassware is also calibrated and routinely rechecked per inhouse Standard Operating Procedures. Trace metal analyzed acids and Trace Metals Analyzed Water are used in the manufacture of this product. Triple cleaned containers are used in the manufacture of this product.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
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PW1KW-500      500 mL natural poly      18 months

**Recommended Storage:** 15°C - 30°C (59°F - 86°F)



Katie Schnur  
 Quality Control Manager

This Certificate of Analysis is designed to comply with ISO Guide 31 "Reference Materials -- Contents of Certificates and Labels."