

Certificate of Analysis

Boron ICP Standard, 1000 ppm B in H₂O/tr NH₄OH

Lot Number: 4404F65

Product Number: PB1KW

Manufacture Date: APR 05, 2024

Expiration Date: SEP 2025

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 3107. All trace level elements were determined by ICP or ICP-MS.

Name	CAS#	Grade
Water	7732-18-5	
Boric Acid	10043-35-3	
Ammonium Hydroxide	1336-21-6	

Test	Specification	Result	NIST SRM#
Appearance	Colorless liquid	Passed	
Boron (B)	995-1005 ppm	1000 ppm	3107

Trace Elements by ICP or ICP - MS

I=Spectral Interference N=Not Tested

All values reported in mg/L (ppm)

Aluminum (Al)	N	Lead (Pb)	< 0.00003 ppm	Strontium (Sr)	< 0.00006 ppm
Antimony (Sb)	< 0.0001 ppm	Lithium (Li)	0.0807 ppm	Sulfur (S)	I
Arsenic (As)	< 0.0007 ppm	Lutetium (Lu)	< 0.0003 ppm	Tantalum (Ta)	0.1115 ppm
Barium (Ba)	< 0.0001 ppm	Magnesium (Mg)	< 0.0007 ppm	Tellurium (Te)	I
Beryllium (Be)	0.3074 ppm	Manganese (Mn)	< 0.00002 ppm	Terbium (Tb)	N
Bismuth (Bi)	< 0.00002 ppm	Mercury (Hg)	< 0.03 ppm	Thallium (Tl)	< 0.00002 ppm
Cadmium (Cd)	< 0.00007 ppm	Molybdenum (Mo)	0.0147 ppm	Thorium (Th)	< 0.0002 ppm
Calcium (Ca)	N	Neodymium (Nd)	< 0.0002 ppm	Thulium (Tm)	< 0.00002 ppm
Cerium (Ce)	< 0.00003 ppm	Nickel (Ni)	< 0.0001 ppm	Tin (Sn)	< 0.0002 ppm
Cesium (Cs)	0.0621 ppm	Niobium (Nb)	< 0.00008 ppm	Titanium (Ti)	I
Chromium (Cr)	< 0.00006 ppm	Osmium (Os)	< 0.003 ppm	Tungsten (W)	< 0.0001 ppm
Cobalt (Co)	< 0.00002 ppm	Palladium (Pd)	0.0004 ppm	Uranium (U)	0.0009 ppm
Copper (Cu)	< 0.00005 ppm	Phosphorus (P)	< 0.02 ppm	Vanadium (V)	< 0.00004 ppm
Dysprosium (Dy)	< 0.0001 ppm	Platinum (Pt)	0.0030 ppm	Ytterbium (Yb)	< 0.001 ppm
Erbium (Er)	< 0.00007 ppm	Potassium (K)	I	Yttrium (Y)	0.0001 ppm
Europium (Eu)	< 0.00008 ppm	Praseodymium (Pr)	< 0.00003 ppm	Zinc (Zn)	< 0.0003 ppm
Gadolinium (Gd)	< 0.0002 ppm	Rhenium (Re)	< 0.00003 ppm	Zirconium (Zr)	< 0.002 ppm
Gallium (Ga)	0.0006 ppm	Rhodium (Rh)	< 0.00003 ppm		
Germanium (Ge)	0.0004 ppm	Rubidium (Rb)	< 0.00004 ppm		
Gold (Au)	< 0.0005 ppm	Ruthenium (Ru)	0.0011 ppm		
Hafnium (Hf)	< 0.001 ppm	Samarium (Sm)	< 0.002 ppm		
Holmium (Ho)	< 0.0001 ppm	Scandium (Sc)	0.0299 ppm		
Indium (In)	< 0.00003 ppm	Selenium (Se)	I		
Iridium (Ir)	0.0001 ppm	Silicon (Si)	I		
Iron (Fe)	< 0.001 ppm	Silver (Ag)	I		
Lanthanum (La)	0.0023 ppm	Sodium (Na)	I		

Specification	Reference
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<p>Boron ICP, 1000 ppm in H₂O</p> <p>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 in-house Standard Operating Procedures. Class A glassware is also calibrated and routinely rechecked per in-house 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.</p>	<p>EPA (200.7)</p>
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Part Number	Size / Package Type	Shelf Life (Unopened Container)
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<p>PB1KW-100</p>	<p>100 mL natural LDPE</p>	<p>18 months</p>
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Recommended Storage: 15°C - 30°C (59°F - 86°F)



Paul Brandon (04/05/2024)

Production Manager

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

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