

Product Specification

Holmium ICP Standard, 1000 ppm Ho in 3% HNO₃

Lot Number: SAMPLE

Product Number: PHO1KN

Manufacture Date: N/A

Expiration Date: N/A

The certified value for this product is confirmed in independent testing by a second qualified chemist. The uncertainty associated with the certified value is $\pm 0.5\%$ relative, which 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 3123. All trace level elements were determined by ICP or ICP-MS.

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Nitric Acid	7697-37-2	Trace Metals
Holmium Oxide	12055-62-8	High Purity

Test	Specification	Result	NIST SRM#
Appearance	Light pink liquid	N/A	
Holmium (Ho)	995-1005 ppm	N/A	3123

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

Specification	Reference
Holmium ICP Standard, 1 mL = 1 mg Ho (1,000 ppm Ho) in 3% HNO ₃	EPA (200.7)
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.	

Part Number	Size / Package Type	Shelf Life (Unopened Container)
PHO1KN-100	100 mL natural LDPE	18 months

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

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