

Product Specification

Ruthenium ICP Standard, 1000 ppm Ru in 10% HCl

Lot Number: SAMPLE

Product Number: PRU1KH

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. No NIST Standard Reference Material is available for this element. All trace level elements were determined by ICP or ICP-MS.

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Hydrochloric Acid	7647-01-0	Trace Metals
Ruthenium (III) Chloride Hydrate	14898-67-0	High Purity

Test	Specification	Result
Appearance	Red-brown liquid	N/A
Ruthenium (Ru)	995-1005 ppm	N/A

Trace Elements by ICP or ICP - MS

I=Spectral Interference N=Not Tested

All values reported in mg/L (ppm)

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

Specification	Reference
Ruthenium ICP Standard, 1 mL = 1 mg Ru (1,000 ppm Ru) RuCl ₃ in 10% HCl	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)
PRU1KH-100	100 mL natural LDPE	18 months
PRU1KH-500	500 mL natural poly	18 months

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