

Certificate of Analysis

Gold ICP Standard, 1000 ppm Au in 3% HCl

Lot Number: 4312G13

Product Number: PAU1KH

Manufacture Date: DEC 14, 2023

Expiration Date: JUN 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 3121. All trace level elements were determined by ICP or ICP-MS.

Name	CAS#	Grade
Water	7732-18-5	
Hydrochloric Acid	7647-01-0	
Nitric Acid	7697-37-2	
Gold	7440-57-5	

Test	Specification	Result	NIST SRM#
Appearance	Golden yellow liquid	Passed	
Gold (Au)	995-1005 ppm	1000 ppm	3121

Trace Elements by ICP or ICP - MS

I=Spectral Interference N=Not Tested

All values reported in mg/L (ppm)

Aluminum (Al)	< 0.0009 ppm	Lanthanum (La)	0.0001 ppm	Silver (Ag)	0.1634 ppm
Antimony (Sb)	< 0.0001 ppm	Lead (Pb)	I	Sodium (Na)	< 0.02 ppm
Arsenic (As)	I	Lithium (Li)	0.4599 ppm	Strontium (Sr)	< 0.00006 ppm
Barium (Ba)	< 0.0001 ppm	Lutetium (Lu)	< 0.0003 ppm	Sulfur (S)	I
Beryllium (Be)	< 0.0001 ppm	Magnesium (Mg)	< 0.0007 ppm	Tantalum (Ta)	0.1037 ppm
Bismuth (Bi)	0.0507 ppm	Manganese (Mn)	< 0.00002 ppm	Tellurium (Te)	I
Boron (B)	I	Mercury (Hg)	< 0.03 ppm	Terbium (Tb)	0.0001 ppm
Cadmium (Cd)	< 0.00007 ppm	Molybdenum (Mo)	0.0586 ppm	Thallium (Tl)	I
Calcium (Ca)	< 0.004 ppm	Neodymium (Nd)	< 0.0002 ppm	Thorium (Th)	0.0073 ppm
Cerium (Ce)	< 0.00003 ppm	Nickel (Ni)	0.0280 ppm	Thulium (Tm)	N
Cesium (Cs)	0.0041 ppm	Niobium (Nb)	0.0063 ppm	Tin (Sn)	0.0030 ppm
Chromium (Cr)	< 0.00006 ppm	Osmium (Os)	0.0199 ppm	Titanium (Ti)	< 0.001 ppm
Cobalt (Co)	< 0.00002 ppm	Palladium (Pd)	0.7383 ppm	Tungsten (W)	0.0522 ppm
Copper (Cu)	N	Phosphorus (P)	I	Uranium (U)	0.0003 ppm
Dysprosium (Dy)	< 0.0001 ppm	Platinum (Pt)	0.0071 ppm	Vanadium (V)	< 0.00004 ppm
Erbium (Er)	< 0.00007 ppm	Potassium (K)	< 0.00002 ppm	Ytterbium (Yb)	< 0.001 ppm
Europium (Eu)	N	Praseodymium (Pr)	< 0.00003 ppm	Yttrium (Y)	< 0.00009 ppm
Gadolinium (Gd)	0.0002 ppm	Rhenium (Re)	N	Zinc (Zn)	< 0.0003 ppm
Gallium (Ga)	< 0.0006 ppm	Rhodium (Rh)	0.0002 ppm	Zirconium (Zr)	0.0109 ppm
Germanium (Ge)	0.0068 ppm	Rubidium (Rb)	< 0.00004 ppm		
Hafnium (Hf)	0.0056 ppm	Ruthenium (Ru)	< 0.00007 ppm		
Holmium (Ho)	< 0.0001 ppm	Samarium (Sm)	< 0.002 ppm		
Indium (In)	0.0008 ppm	Scandium (Sc)	0.0052 ppm		
Iridium (Ir)	0.0033 ppm	Selenium (Se)	I		
Iron (Fe)	0.1751 ppm	Silicon (Si)	I		

Specification	Reference
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Gold ICP, 1000 ppm in 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)
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PAU1KH-100

100 mL amber glass

18 months

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



Paul Brandon (12/14/2023)

Production Manager

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

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