RICCA CHEMICAL COMPANY®

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Certificate of Analysis

Beryllium ICP Standard, 1000 ppm Be in 3% HNO_3

Lot Number: 4401P31 **Product Number:** PBE1KN

Manufacture Date: JAN 23, 2024
Expiration Date: JUL 2025

This is a single element solution that was prepared volumetrically to contain the certified value reported. The uncertainty associated with the certifiec 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 3105a. All trace level elements were determined by ICP or ICP-MS.

Name	CAS#	Grade
Water	7732-18-5	
Nitric Acid	7697-37-2	
Beryllium Basic Acetate	19049-40-2	

Test	Specification	Result	NIST SRM#
Appearance	Colorless liquid	Passed	
Beryllium (Be)	995-1005 ppm	1000 ppm	3105

I=Spectral Interference N=Not Tested

Trace Elements by ICP or ICP - MS

All values reported in mg/L (ppm)

Aluminum (Al)	0.1809 ppm	Lead (Pb)	< 0.00003 ppn	Strontium (Sr)	0.0277 ppm
Antimony (Sb)	< 0.0001 ppm	Lithium (Li)	0.0379 ppm	Sulfur (S)	I
Arsenic (As)	I	Lutetium (Lu)	< 0.0003 ppm	Tantalum (Ta)	0.1187 ppm
Barium (Ba)	< 0.0001 ppm	Magnesium (Mg)	0.0180 ppm	Tellurium (Te)	I
Bismuth (Bi)	0.0069 ppm	Manganese (Mn)	0.1525 ppm	Terbium (Tb)	< 0.00003 ppn
Boron (B)	0.2671 ppm	Mercury (Hg)	< 0.03 ppm	Thallium (Tl)	I
Cadmium (Cd)	< 0.00007 ppn	Molybdenum (Mo)	0.0805 ppm	Thorium (Th)	< 0.0002 ppm
Calcium (Ca)	N	Neodymium (Nd)	< 0.0002 ppm	Thulium (Tm)	N
Cerium (Ce)	< 0.00003 ppn	Nickel (Ni)	< 0.0001 ppm	Tin (Sn)	< 0.0002 ppm
Cesium (Cs)	0.0220 ppm	Niobium (Nb)	0.0074 ppm	Titanium (Ti)	N
Chromium (Cr)	I	Osmium (Os)	< 0.003 ppm	Tungsten (W)	0.0990 ppm
Cobalt (Co)	< 0.00002 ppn	Palladium (Pd)	0.0149 ppm	Uranium (U)	< 0.00007 ppn
Copper (Cu)	< 0.00005 ppn	Phosphorus (P)	I	Vanadium (V)	I
Dysprosium (Dy)	< 0.0001 ppm	Platinum (Pt)	< 0.00003 ppn	Ytterbium (Yb)	< 0.001 ppm
Erbium (Er)	N	Potassium (K)	I	Yttrium (Y)	0.0009 ppm
Europium (Eu)	< 0.00008 ppn	Praseodymium (Pr)	N	Zinc (Zn)	0.0125 ppm
Gadolinium (Gd)	< 0.0002 ppm	Rhenium (Re)	N	Zirconium (Zr)	0.0070 ppm
Gallium (Ga)	< 0.0006 ppm	Rhodium (Rh)	N		
Germanium (Ge)	0.0150 ppm	Rubidium (Rb)	< 0.00004 ppn		
Gold (Au)	I	Ruthenium (Ru)	0.0003 ppm		
Hafnium (Hf)	I	Samarium (Sm)	< 0.002 ppm		
Holmium (Ho)	< 0.0001 ppm	Scandium (Sc)	0.0095 ppm		
Indium (In)	< 0.00003 ppn	Selenium (Se)	I		
Iridium (Ir)	< 0.00007 ppn	Silicon (Si)	I		
Iron (Fe)	< 0.001 ppm	Silver (Ag)	0.0522 ppm		
Lanthanum (La)	0.0065 ppm	Sodium (Na)	< 0.02 ppm		

Specification	Reference
Beryllium ICP, 1000 ppm / HNO3	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)
PBE1KN-100	100 mL natural LDPE	18 months

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

Paul Brandon (01/23/2024)
Production Manager
This document is designed to comply with ISO Guide 31 "Reference Materials -- Contents of Certificates and Labels."