



Certificate of Analysis

ULTRAGrade™ Solution
Antimony ICP / ICP-MS Standard
1000 µg/mL

Catalog Number: ICP-051
Lot Number: R01127
Job Number: J00017143
Lot Issue Date: 10/24/2013
Expiration Date: 11/30/2020

Starting Material: Antimony Metal
Starting Material Purity: 99.999%
Starting Material Lot #: BH02405
Matrix: 2% nitric acid, with trace tartaric acid in low TOC water (< 50 ppb)
Atomic Weight Sb: 121.87

Certified Value: 1000 ± 2 µg/mL

This Certified Reference Material (CRM) was manufactured and verified in accordance with ULTRA's ISO 9001 registered quality system. The analyte concentration(s) were prepared and verified by an ISO Guide 34 / ISO 17025 accredited laboratory, and compared to calibration standards independently prepared using NIST SRM(s). The certified value and uncertainty value at the 95% confidence level for each analyte is determined gravimetrically.

Classical Wet Assay Method: Theoretical, based on gravimetric measurements

Confirmation by Inductively Coupled Plasma Spectroscopy (ICP / ICP/MS) vs. NIST SRM 3102a

ULTRA uses purified acids, 18 megohm double deionized water, calibrated Class A glassware & meticulously cleaned bottles in the manufacturing of ULTRAGrade standards. Balances used in the manufacturing of this standard are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001.

Trace Metallic Impurities in Solution Standard in µg/mL:

*_ Al <0.010 ND	*_ Ga <0.005 ND	*_ Nb <0.050 ND	n_ S
s_ Sb <0.005 D	*_ Ge <0.005 ND	*_ Os <0.050 ND	*_ Ta <0.010 ND
*_ As <0.005 D	*_ Au <0.005 ND	*_ Pd <0.005 ND	*_ Te <0.005 ND
*_ Ba <0.005 ND	*_ Hf <0.005 ND	n_ P	*_ Tb <0.005 ND
*_ Be <0.005 ND	*_ Ho <0.005 ND	*_ Pt <0.005 ND	*_ Tl <0.005 ND
*_ Bi <0.005 ND	*_ In <0.005 ND	*_ K <0.005 ND	*_ Th <0.005 ND
*_ B <0.005 ND	*_ Ir <0.005 ND	*_ Pr <0.005 ND	*_ Tm <0.005 ND
*_ Cd <0.005 ND	*_ Fe <0.010 D	*_ Re <0.005 ND	*_ Sn <0.050 D
*_ Ca <0.005 ND	*_ La <0.005 ND	*_ Rh <0.005 ND	*_ Ti <0.005 ND
*_ Ce <0.005 ND	*_ Pb <0.005 D	*_ Rb <0.005 ND	*_ W <0.005 ND
*_ Cs <0.005 ND	*_ Li <0.005 ND	*_ Ru <0.005 ND	*_ U <0.005 ND
*_ Cr <0.005 ND	*_ Lu <0.005 ND	*_ Sm <0.005 ND	*_ V <0.005 ND
*_ Co <0.005 ND	*_ Mg <0.005 ND	*_ Sc <0.005 ND	*_ Yb <0.005 ND
*_ Cu <0.005 D	*_ Mn <0.005 ND	*_ Se <0.005 ND	*_ Y <0.005 ND
*_ Dy <0.005 ND	*_ Hg <0.005 ND	*_ Si <0.500 ND	*_ Zn <0.005 ND
*_ Er <0.005 ND	*_ Mo <0.005 ND	*_ Ag <0.005 ND	*_ Zr <0.005 ND
*_ Eu <0.005 ND	*_ Nd <0.005 ND	*_ Na <0.005 D	
*_ Gd <0.005 ND	*_ Ni <0.005 D	*_ Sr <0.005 ND	

* - element checked for
ND - not detected

I - spectral interference
D - detected

n - not checked for
s - solution standard element

Density of Solution (measured at 20.00°C ± 0.05°C): 1.0133 g/mL



ISO 9001 Registered Quality System - TUV USA

William J. Leary
Quality Assurance Manager