



# Certificate of Analysis

**ULTRAGrade™ Solution**  
**Indium ICP / ICP-MS Standard**  
**1000 µg/mL**

**Catalog Number:** ICP-049  
**Lot Number:** R00677  
**Job Number:** J00016582  
**Lot Issue Date:** 07/11/2013  
**Expiration Date:** 08/31/2020

**Starting Material:** Indium metal  
**Starting Material Purity:** 99.999%, 99.999%  
**Starting Material Lot #:** BH02305, BH02449  
**Matrix:** 1% nitric acid in low TOC water (< 50 ppb)  
**Atomic Weight In:** 114.82

**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 3124a**

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 <0.005 ND	* Ga <0.005 ND	* Nb <0.005 ND	n S
* Sb <0.005 ND	* Ge <0.005 ND	* Os <0.005 ND	* Ta <0.005 ND
* As <0.005 ND	* Au <0.005 ND	* Pd <0.005 ND	* Te <0.005 ND
* Ba <0.005 ND	* Hf <0.005 ND	* P <0.005 ND	* Tb <0.005 ND
* Be <0.005 ND	* Ho <0.005 ND	* Pt <0.005 ND	* Tl <0.005 ND
* Bi <0.005 ND	s In	* 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 <1 D	* Fe <0.005 ND	* Re <0.005 ND	* Sn <0.005 ND
* Ca <0.005 ND	* La <0.005 ND	* Rh <0.005 ND	* Ti <0.005 ND
* Ce <0.005 ND	* Pb <0.005 ND	* 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 ND	* Mn <0.005 ND	* Se <0.005 ND	* Y <0.005 ND
* Dy <0.005 ND	n Hg	* Si <0.005 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 ND	
* Gd <0.005 ND	* Ni <0.005 ND	* 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):** 1.0074 g/mL



ISO 17025:2005  
Accredited  
A2LA  
Cert. No. 0851.01

ISO 9001:2000  
Registered  
TUV USA, Inc.  
Cert. No. 06-1004

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