



Certificate of Analysis

ULTRAGrade™ Solution
Gallium ICP Standard
10,000 µg/mL

Catalog Number: ICP-131
Lot Number: G00491A
Job Number: J00005925
Lot Issue Date: 06/17/2008
Expiration Date: 07/31/2015

Starting Material: Gallium Metal
Starting Material Purity: 99.999%
Starting Material Lot No.: BH00485
Matrix: 1% nitric acid in low TOC (< 50 ppb) water
Atomic Weight Ga: 69.72

Certified Value: 10,000 ± 20 µg/mL

This Certified Reference Material (CRM) was manufactured and verified in accordance with ULTRA's ISO 9001:2000 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The certified value and uncertainty value, at the 95% confidence level, for each analyte determined gravimetrically.

Classical Wet Assay Method: Theoretical, based on gravimetric measurements

Confirmation by Inductively Coupled Plasma Spectroscopy (ICP) vs. NIST SRM 3119a

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/NCCL Z-540-1 and ISO 9001

Trace Metallic Impurities in Solution Standard in µg/mL:

* Al <0.03 ND	s Ga	n Nb	n S
* Sb <0.02 ND	n Ge	n Os	n Ta
* As <0.03 ND	n Au	n Pd	n Te
* Ba <0.02 ND	n Hf	* P <0.03 ND	n Tb
* Be <0.01 ND	n Ho	n Pt	* Tl <0.02 ND
* Bi <0.02 ND	* In 1-3 D	* K <0.03 ND	n Th
* B <0.03 ND	n Ir	n Pr	n Tm
* Cd <0.01 ND	* Fe <0.01 ND	n Re	* Sn 2-5 D
* Ca <0.01 ND	* La <0.03 ND	n Rh	* Ti <0.02 ND
n Ce	* Pb 2-5 D	n Rb	n W
n Cs	* Li <0.01 ND	n Ru	n U
* Cr <0.03 ND	n Lu	n Sm	* V <0.03 ND
* Co <0.03 ND	* Mg <0.01 ND	n Sc	n Yb
* Cu <0.03 ND	n Mn	* Se <0.03 ND	n Y
n Dy	* Hg <0.01 ND	* Si <0.01 ND	* Zn <0.01 ND
* Er <0.03 ND	* Mo <0.03 ND	* Ag <0.03 ND	n Zr
* Eu <0.03 ND	n Nd	* Na <0.03 ND	
* Gd <0.03 ND	* Ni <0.03 ND	* Sr <0.01 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 22.0°C ± 0.5°C): 1.041 g/mL



ISO 9001 Registered Quality System – TUV USA

William J. Leary
Quality Assurance Manager