

# Certificate of Analysis

**ICP Calibration Standard**

**Catalog Number: ICM-104**

**Lot Number: P01162**

**Job Number: J00015347**

**Lot Issue Date: 11/06/2012**

**Expiration Date: 12/31/2015**

This Certified Reference Material (CRM) was manufactured and verified in accordance with ULTRA's ISO 9001 registered quality system. The analyte concentrations were verified by our ISO 17025 accredited laboratory to be within  $\pm 5.0\%$ , when 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.

Analyte	True Value			Analytical Method	NIST SRM	
	Value	±	Uncertainty			
aluminum	500.4	±	2.5	µg/mL	ICP / ICP-MS	3101a
arsenic	100.0	±	0.5	µg/mL	ICP / ICP-MS	3103a
beryllium	100.0	±	0.5	µg/mL	ICP / ICP-MS	3105a
cadmium	25.00	±	0.13	µg/mL	ICP / ICP-MS	3108
chromium	100.0	±	0.5	µg/mL	ICP / ICP-MS	3112a
cobalt	100.0	±	0.5	µg/mL	ICP / ICP-MS	3113
copper	100.0	±	0.5	µg/mL	ICP / ICP-MS	3114
iron	100.0	±	0.5	µg/mL	ICP / ICP-MS	3126a
lead	100.0	±	0.5	µg/mL	ICP / ICP-MS	3128
manganese	100.0	±	0.5	µg/mL	ICP / ICP-MS	3132
* mercury	5.000	±	0.025	µg/mL	ICP / ICP-MS	3133
nickel	100.0	±	0.5	µg/mL	ICP / ICP-MS	3136
selenium	25.00	±	0.13	µg/mL	ICP / ICP-MS	3149
* vanadium	250.0	±	1.3	µg/mL	ICP / ICP-MS	3165
zinc	100.0	±	0.5	µg/mL	ICP / ICP-MS	3168a

Matrix: 5% nitric acid, and trace hydrofluoric acids, in low TOC water (< 50 ppb)

*\* light sensitive*

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/NCSS Z-540-1 and ISO 9001.



ISO 17025:2005  
Accredited  
A2LA  
Cert. No. 0851.01

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



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