

# Certificate of Analysis

**ICP Calibration Standard**

**Catalog Number: ICM-108**

**Lot Number: CS-0546**

**Lot Issue Date: 02/05/2018**

**Expiration Date: 03/31/2022**

This Reference Material (RM) 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.

Analyte	True Value			Analytical Method	NIST SRM	
antimony	100.0	±	0.5	µg/mL	ICP / ICP-MS	3102a
arsenic	100.1	±	0.5	µg/mL	ICP / ICP-MS	3103a
beryllium	100.2	±	0.5	µg/mL	ICP / ICP-MS	3105a
cadmium	100.2	±	0.5	µg/mL	ICP / ICP-MS	3108
calcium	100.1	±	0.5	µg/mL	ICP / ICP-MS	3109a
chromium	100.0	±	0.5	µg/mL	ICP / ICP-MS	3112a
cobalt	100.1	±	0.5	µg/mL	ICP / ICP-MS	3113
copper	100.1	±	0.5	µg/mL	ICP / ICP-MS	3114
iron	100.2	±	0.5	µg/mL	ICP / ICP-MS	3126a
lead	100.2	±	0.5	µg/mL	ICP / ICP-MS	3128
lithium	100.1	±	0.5	µg/mL	ICP / ICP-MS	3129a
magnesium	100.1	±	0.5	µg/mL	ICP / ICP-MS	3131a
manganese	100.1	±	0.5	µg/mL	ICP / ICP-MS	3132
molybdenum	100.1	±	0.5	µg/mL	ICP / ICP-MS	3134
nickel	100.2	±	0.5	µg/mL	ICP / ICP-MS	3136
selenium	100.2	±	0.5	µg/mL	ICP / ICP-MS	3149
strontium	100.2	±	0.5	µg/mL	ICP / ICP-MS	3153a
thallium	100.1	±	0.5	µg/mL	ICP / ICP-MS	3158
titanium	100.0	±	0.5	µg/mL	ICP / ICP-MS	3162a
* vanadium	100.1	±	0.5	µg/mL	ICP / ICP-MS	3165
zinc	100.1	±	0.5	µg/mL	ICP / ICP-MS	3168a

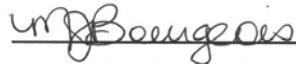
**Matrix:** 5% nitric acid, trace hydrofluoric acid, trace tartaric acid in low TOC water (< 50 ppb)

\* *light sensitive*

ULTRA uses purified acids, 18 megaohm double deionized water, calibrated Class A glassware, and 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.



John Russo  
President



Monica Bourgeois  
Director of QA/RA



ISO 9001 Registered Quality System – TUV USA