

# Certificate of Analysis

**ICP Calibration Standard**
**Catalog Number: ICM-103**
**Lot Number: CS-1354**
**Lot Issue Date: 03/22/2018**
**Expiration Date: 04/30/2022**

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	
aluminum	1000	±	5	µg/mL	ICP / ICP-MS	3101
barium	1001	±	5	µg/mL	ICP / ICP-MS	3104
bismuth	1000	±	5	µg/mL	ICP / ICP-MS	3106
boron	1001	±	5	µg/mL	ICP / ICP-MS	3107
cadmium	1000	±	5	µg/mL	ICP / ICP-MS	3108
calcium	1000	±	5	µg/mL	ICP / ICP-MS	3109
chromium	1001	±	5	µg/mL	ICP / ICP-MS	3112
cobalt	1001	±	5	µg/mL	ICP / ICP-MS	3113
copper	1000	±	5	µg/mL	ICP / ICP-MS	3114
gallium	1003	±	5	µg/mL	ICP / ICP-MS	3119
indium	1000	±	5	µg/mL	ICP / ICP-MS	3124
iron	1000	±	5	µg/mL	ICP / ICP-MS	3126
lead	1000	±	5	µg/mL	ICP / ICP-MS	3128
lithium	1001	±	5	µg/mL	ICP / ICP-MS	3129
magnesium	1000	±	5	µg/mL	ICP / ICP-MS	3131
manganese	1002	±	5	µg/mL	ICP / ICP-MS	3132
nickel	1000	±	5	µg/mL	ICP / ICP-MS	3136
potassium	1001	±	5	µg/mL	ICP / ICP-MS	3141
* silver	1000	±	5	µg/mL	ICP / ICP-MS	3151
sodium	1001	±	5	µg/mL	ICP / ICP-MS	3152
strontium	1000	±	5	µg/mL	ICP / ICP-MS	3153
thallium	1000	±	5	µg/mL	ICP / ICP-MS	3158
zinc	1001	±	5	µg/mL	ICP / ICP-MS	3168

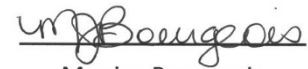
**Matrix:** 5% nitric acid in low TOC water (< 50 ppb)

\* *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/NCSL Z-540-1 and ISO 9001.



John Russo  
President



Monica Bourgeois  
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ISO 9001 Registered Quality System – TUV USA