

# Certificate of Analysis

**CLP ICP Calibration Verification Standard #1**

**Catalog Number: ICM-431**

**Lot Number: CS-0100**

**Lot Issue Date: 01/12/2018**

**Expiration Date: 02/28/2022**

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	999.4 ± 5.0 µg/mL	ICP / ICP-MS	3101
barium	1000.0 ± 5.0 µg/mL	ICP / ICP-MS	3104
beryllium	25.0 ± 0.1 µg/mL	ICP / ICP-MS	3105
calcium	2502.0 ± 13.0 µg/mL	ICP / ICP-MS	3109
chromium	100.0 ± 0.5 µg/mL	ICP / ICP-MS	3112
cobalt	250.4 ± 1.3 µg/mL	ICP / ICP-MS	3113
copper	125.2 ± 0.6 µg/mL	ICP / ICP-MS	3114
iron	500.2 ± 2.5 µg/mL	ICP / ICP-MS	3126
magnesium	2501.0 ± 13.0 µg/mL	ICP / ICP-MS	3131
manganese	250.1 ± 1.3 µg/mL	ICP / ICP-MS	3132
nickel	250.4 ± 1.3 µg/mL	ICP / ICP-MS	3136
potassium	2502.0 ± 13.0 µg/mL	ICP / ICP-MS	3141
* silver	125.1 ± 0.6 µg/mL	ICP / ICP-MS	3151
sodium	2502.0 ± 13.0 µg/mL	ICP / ICP-MS	3152
* vanadium	250.2 ± 1.3 µg/mL	ICP / ICP-MS	3165
zinc	250.4 ± 1.3 µg/mL	ICP / ICP-MS	3168


**Matrix:** 2% nitric acid with trace hydrofluoric 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.



  
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ISO 9001 Registered Quality System – TUV USA