

Certificate of Analysis

CLP ICP Calibration Standard #1
Catalog Number: ICM-411
Lot Number: T00148
Job Number: J00017666
Lot Issue Date: 02/03/2014
Expiration Date: 03/31/2018

This Certified Reference Material (CRM) 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	2002	±	10	µg/mL	ICP / ICP-MS	3101a
barium	2004	±	10	µg/mL	ICP / ICP-MS	3104a
beryllium	50.00	±	0.25	µg/mL	ICP / ICP-MS	3105a
calcium	5007	±	25	µg/mL	ICP / ICP-MS	3109a
chromium	200.0	±	1.0	µg/mL	ICP / ICP-MS	3112a
cobalt	500.0	±	2.5	µg/mL	ICP / ICP-MS	3113
copper	250.0	±	1.3	µg/mL	ICP / ICP-MS	3114
iron	1001	±	5	µg/mL	ICP / ICP-MS	3126a
magnesium	5004	±	25	µg/mL	ICP / ICP-MS	3131a
manganese	500.0	±	2.5	µg/mL	ICP / ICP-MS	3132
nickel	500.0	±	2.5	µg/mL	ICP / ICP-MS	3136
potassium	5009	±	25	µg/mL	ICP / ICP-MS	3141a
* silver	250.0	±	1.3	µg/mL	ICP / ICP-MS	3151
sodium	5002	±	25	µg/mL	ICP / ICP-MS	3152a
* vanadium	500.0	±	2.5	µg/mL	ICP / ICP-MS	3165
zinc	500.0	±	2.5	µg/mL	ICP / ICP-MS	3168a

Matrix: 5% nitric acid, 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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