

Certificate of Analysis

ICP Calibration Standard

Catalog Number: ICM-102

Lot Number: R01265

Lot Issue Date: 11/27/2013

Expiration Date: 12/31/2017

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	100.0 ± 0.5 µg/mL	ICP / ICP-MS	3101a
barium	5.000 ± 0.025 µg/mL	ICP / ICP-MS	3104a
beryllium	1.000 ± 0.005 µg/mL	ICP / ICP-MS	3105a
bismuth	200.0 ± 1.0 µg/mL	ICP / ICP-MS	3106
boron	15.00 ± 0.08 µg/mL	ICP / ICP-MS	3107
cadmium	20.00 ± 0.10 µg/mL	ICP / ICP-MS	3108
chromium	25.00 ± 0.13 µg/mL	ICP / ICP-MS	3112a
cobalt	20.00 ± 0.10 µg/mL	ICP / ICP-MS	3113
copper	20.00 ± 0.10 µg/mL	ICP / ICP-MS	3114
gallium	150.0 ± 0.8 µg/mL	ICP / ICP-MS	3119a
indium	200.0 ± 1.0 µg/mL	ICP / ICP-MS	3124a
iron	15.00 ± 0.08 µg/mL	ICP / ICP-MS	3126a
lead	200.0 ± 1.0 µg/mL	ICP / ICP-MS	3128
manganese	5.000 ± 0.025 µg/mL	ICP / ICP-MS	3132
nickel	50.00 ± 0.25 µg/mL	ICP / ICP-MS	3136
*silver	50.00 ± 0.25 µg/mL	ICP / ICP-MS	3151
strontium	1.000 ± 0.005 µg/mL	ICP / ICP-MS	3153a
thallium	400.0 ± 2.0 µg/mL	ICP / ICP-MS	3158
zinc	20.00 ± 0.10 µg/mL	ICP / ICP-MS	3168a

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.



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