

Certificate of Analysis

ICP Calibration Standard

Catalog Number: ICM-101

Lot Number: CP-5022

Lot Issue Date: 10/04/2016

Expiration Date: 11/30/2020

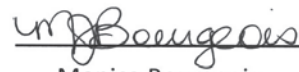
This Certified Reference Material (CRM) was manufactured and verified in accordance with ULTRA's ISO 9001 registered quality system. The analyte concentration(s) were prepared and verified by an ISO Guide 34 / ISO 17025 accredited laboratory, and compared to calibration standards independently prepared 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	100.1	±	0.5	µg/mL	ICP / ICP-MS	3101a
barium	100.1	±	0.5	µg/mL	ICP / ICP-MS	3104a
beryllium	100.2	±	0.5	µg/mL	ICP / ICP-MS	3105a
bismuth	100.0	±	0.5	µg/mL	ICP / ICP-MS	3106
boron	100.4	±	0.5	µg/mL	ICP / ICP-MS	3107
cadmium	100.1	±	0.5	µg/mL	ICP / ICP-MS	3108
calcium	100.2	±	0.5	µg/mL	ICP / ICP-MS	3109a
chromium	100.1	±	0.5	µg/mL	ICP / ICP-MS	3112a
cobalt	100.2	±	0.5	µg/mL	ICP / ICP-MS	3113
copper	100.2	±	0.5	µg/mL	ICP / ICP-MS	3114
gallium	100.0	±	0.5	µg/mL	ICP / ICP-MS	3119a
iron	100.0	±	0.5	µg/mL	ICP / ICP-MS	3126a
lead	100.1	±	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
nickel	100.1	±	0.5	µg/mL	ICP / ICP-MS	3136
potassium	100.2	±	0.5	µg/mL	ICP / ICP-MS	3141a

ULTRA uses purified acids, 18 megaohm double deionized water, calibrated Class A glassware, and meticulously cleaned bottles in the manufacturing of ULTRA grade 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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 John Russo
 President


 Monica Bourgeois
 Director of QA/RA

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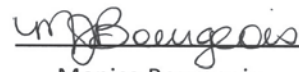
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Analyte	True Value				Analytical Method	NIST SRM
selenium	100.1	±	0.5	µg/mL	ICP / ICP-MS	3149
sodium	100.2	±	0.5	µg/mL	ICP / ICP-MS	3152a
strontium	100.1	±	0.5	µg/mL	ICP / ICP-MS	3153a
tellurium	100.0	±	0.5	µg/mL	ICP / ICP-MS	3156
thallium	100.2	±	0.5	µg/mL	ICP / ICP-MS	3158
zinc	100.1	±	0.5	µg/mL	ICP / ICP-MS	3168a

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

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