

Certificate of Analysis

Custom Standard

Catalog Number: CICM-240

Lot Number: CM-2990

Lot Issue Date: 06/01/2015

Expiration Date: 06/30/2018

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	20.0	±	0.1 µg/mL	ICP / ICP-MS	3101a
antimony	20.0	±	0.1 µg/mL	ICP / ICP-MS	3102a
arsenic	20.0	±	0.1 µg/mL	ICP / ICP-MS	3103a
barium	20.0	±	0.1 µg/mL	ICP / ICP-MS	3104a
beryllium	20.0	±	0.1 µg/mL	ICP / ICP-MS	3105a
boron	20.0	±	0.1 µg/mL	ICP / ICP-MS	3107
cadmium	20.0	±	0.1 µg/mL	ICP / ICP-MS	3108
calcium	20.0	±	0.1 µg/mL	ICP / ICP-MS	3109a
chromium	20.0	±	0.1 µg/mL	ICP / ICP-MS	3112a
cobalt	20.0	±	0.1 µg/mL	ICP / ICP-MS	3113
copper	20.0	±	0.1 µg/mL	ICP / ICP-MS	3114
iron	20.0	±	0.1 µg/mL	ICP / ICP-MS	3126a
lead	20.0	±	0.1 µg/mL	ICP / ICP-MS	3128
lithium	20.0	±	0.1 µg/mL	ICP / ICP-MS	3129a
magnesium	20.0	±	0.1 µg/mL	ICP / ICP-MS	3131a
manganese	20.0	±	0.1 µg/mL	ICP / ICP-MS	3132
molybdenum	20.0	±	0.1 µg/mL	ICP / ICP-MS	3134
nickel	20.0	±	0.1 µg/mL	ICP / ICP-MS	3136
phosphorus	100.1	±	0.5 µg/mL	ICP / ICP-MS	3139a

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/NCCL Z-540-1 and ISO 9001.

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Analyte	True Value				Analytical Method	NIST SRM
potassium	100.1	±	0.5	µg/mL	ICP / ICP-MS	3141a
selenium	20.0	±	0.1	µg/mL	ICP / ICP-MS	3149
silicon	100.1	±	0.5	µg/mL	ICP / ICP-MS	3150
silver	5.00	±	0.03	µg/mL	ICP / ICP-MS	3151
sodium	20.0	±	0.1	µg/mL	ICP / ICP-MS	3152a
strontium	20.0	±	0.1	µg/mL	ICP / ICP-MS	3153a
thallium	20.0	±	0.1	µg/mL	ICP / ICP-MS	3158
tin	20.0	±	0.1	µg/mL	ICP / ICP-MS	3161a
* vanadium	20.0	±	0.1	µg/mL	ICP / ICP-MS	3165
zinc	20.0	±	0.1	µg/mL	ICP / ICP-MS	3168a

Matrix: 2% nitric acid, trace hydrofluoric acid, and trace tartaric acid in low TOC water (< 50 ppb)

* *light sensitive*

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