

Certificate of Analysis

CLP ICP Calibration Verification Standard #1

Catalog Number: ICM-431

Lot Number: P00906

Job Number: J00015159

Lot Issue Date: 09/06/2012

Expiration Date: 10/31/2016

This Certified Reference Material (CRM) was manufactured and verified in accordance with ULTRA's ISO 9001 registered quality system. The analyte concentrations were verified by our ISO 17025 accredited laboratory to be within $\pm 5.0\%$, when 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	1000	$\pm$	5	$\mu\text{g/mL}$	ICP / ICP-MS	3101a
barium	1000	$\pm$	5	$\mu\text{g/mL}$	ICP / ICP-MS	3104a
beryllium	25.00	$\pm$	0.13	$\mu\text{g/mL}$	ICP / ICP-MS	3105a
calcium	2504	$\pm$	13	$\mu\text{g/mL}$	ICP / ICP-MS	3109a
chromium	100.0	$\pm$	0.5	$\mu\text{g/mL}$	ICP / ICP-MS	3112a
cobalt	250.0	$\pm$	1.3	$\mu\text{g/mL}$	ICP / ICP-MS	3113
copper	125.0	$\pm$	0.6	$\mu\text{g/mL}$	ICP / ICP-MS	3114
iron	500.0	$\pm$	2.5	$\mu\text{g/mL}$	ICP / ICP-MS	3126a
magnesium	2503	$\pm$	13	$\mu\text{g/mL}$	ICP / ICP-MS	3131a
manganese	250.0	$\pm$	1.3	$\mu\text{g/mL}$	ICP / ICP-MS	3132
nickel	250.0	$\pm$	1.3	$\mu\text{g/mL}$	ICP / ICP-MS	3136
potassium	2503	$\pm$	13	$\mu\text{g/mL}$	ICP / ICP-MS	3141a
* silver	125.0	$\pm$	0.6	$\mu\text{g/mL}$	ICP / ICP-MS	3151
sodium	2501	$\pm$	13	$\mu\text{g/mL}$	ICP / ICP-MS	3152a
* vanadium	250.0	$\pm$	1.3	$\mu\text{g/mL}$	ICP / ICP-MS	3165
zinc	250.0	$\pm$	1.3	$\mu\text{g/mL}$	ICP / ICP-MS	3168a

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

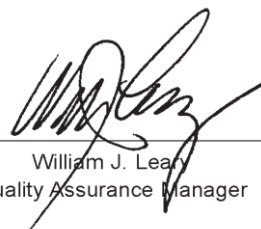
* *light sensitive*

ULTRA uses purified acids, 18 megohm double deionized water, calibrated Class A glassware & 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.



ISO 17025:2005
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