



# Certificate of Analysis

ICP-MS Calibration Standard

Catalog Number: IMS-120

Lot Number: P00316

Job Number: J00014470

Lot Issue Date: 03/27/2012

Expiration Date: 04/30/2016

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	10.00	$\pm$	0.05 $\mu\text{g/mL}$	ICP / ICP-MS	3101a
arsenic	100.0	$\pm$	0.5 $\mu\text{g/mL}$	ICP / ICP-MS	3103a
barium	10.00	$\pm$	0.05 $\mu\text{g/mL}$	ICP / ICP-MS	3104a
beryllium	100.0	$\pm$	0.5 $\mu\text{g/mL}$	ICP / ICP-MS	3105a
bismuth	10.00	$\pm$	0.05 $\mu\text{g/mL}$	ICP / ICP-MS	3106
boron	100.0	$\pm$	0.5 $\mu\text{g/mL}$	ICP / ICP-MS	3107
cadmium	10.00	$\pm$	0.05 $\mu\text{g/mL}$	ICP / ICP-MS	3108
calcium	1000	$\pm$	5 $\mu\text{g/mL}$	ICP / ICP-MS	3109a
chromium	10.00	$\pm$	0.05 $\mu\text{g/mL}$	ICP / ICP-MS	3112a
cobalt	10.00	$\pm$	0.05 $\mu\text{g/mL}$	ICP / ICP-MS	3113
copper	10.00	$\pm$	0.05 $\mu\text{g/mL}$	ICP / ICP-MS	3114
gallium	10.00	$\pm$	0.05 $\mu\text{g/mL}$	ICP / ICP-MS	3119a
iron	100.0	$\pm$	0.5 $\mu\text{g/mL}$	ICP / ICP-MS	3126a
lead	10.00	$\pm$	0.05 $\mu\text{g/mL}$	ICP / ICP-MS	3128
lithium	10.00	$\pm$	0.05 $\mu\text{g/mL}$	ICP / ICP-MS	3129a
magnesium	10.00	$\pm$	0.05 $\mu\text{g/mL}$	ICP / ICP-MS	3131a
manganese	10.00	$\pm$	0.05 $\mu\text{g/mL}$	ICP / ICP-MS	3132
molybdenum	10.00	$\pm$	0.05 $\mu\text{g/mL}$	ICP / ICP-MS	3134
nickel	10.00	$\pm$	0.05 $\mu\text{g/mL}$	ICP / ICP-MS	3136
potassium	10.00	$\pm$	0.05 $\mu\text{g/mL}$	ICP / ICP-MS	3141a
rubidium	10.00	$\pm$	0.05 $\mu\text{g/mL}$	ICP / ICP-MS	3145a
selenium	100.0	$\pm$	0.5 $\mu\text{g/mL}$	ICP / ICP-MS	3149
* silver	10.00	$\pm$	0.05 $\mu\text{g/mL}$	ICP / ICP-MS	3151
sodium	10.00	$\pm$	0.05 $\mu\text{g/mL}$	ICP / ICP-MS	3152a
strontium	10.00	$\pm$	0.05 $\mu\text{g/mL}$	ICP / ICP-MS	3153a
tellurium	10.00	$\pm$	0.05 $\mu\text{g/mL}$	ICP / ICP-MS	3156
thallium	10.00	$\pm$	0.05 $\mu\text{g/mL}$	ICP / ICP-MS	3158
uranium	10.00	$\pm$	0.05 $\mu\text{g/mL}$	ICP / ICP-MS	3164
* vanadium	10.00	$\pm$	0.05 $\mu\text{g/mL}$	ICP / ICP-MS	3165
zinc	100.0	$\pm$	0.5 $\mu\text{g/mL}$	ICP / ICP-MS	3168a

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

\* light sensitive

ULTRA uses purified acids, 18 megohm double deionized water, calibrated Class A glassware & 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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ISO 9001 Registered Quality System – TUV USA