



Certificate of Analysis

ICP/MS Calibration Standard #2

Catalog Number: IMS-102

Lot Number: R00246

Job Number: J00016012

Lot Issue Date: 03/18/2013

Expiration Date: 04/30/2017

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 | 10.00 | ± | 0.05 | µg/mL | ICP / ICP-MS | 3101a |
| arsenic | 10.00 | ± | 0.05 | µg/mL | ICP / ICP-MS | 3103a |
| barium | 10.00 | ± | 0.05 | µg/mL | ICP / ICP-MS | 3104a |
| beryllium | 10.00 | ± | 0.05 | µg/mL | ICP / ICP-MS | 3105a |
| bismuth | 10.00 | ± | 0.05 | µg/mL | ICP / ICP-MS | 3106 |
| cadmium | 10.00 | ± | 0.05 | µg/mL | ICP / ICP-MS | 3108 |
| calcium | 10.00 | ± | 0.05 | µg/mL | ICP / ICP-MS | 3109a |
| cesium | 10.00 | ± | 0.05 | µg/mL | ICP / ICP-MS | 3111a |
| chromium | 10.00 | ± | 0.05 | µg/mL | ICP / ICP-MS | 3112a |
| cobalt | 10.00 | ± | 0.05 | µg/mL | ICP / ICP-MS | 3113 |
| copper | 10.00 | ± | 0.05 | µg/mL | ICP / ICP-MS | 3114 |
| gallium | 10.00 | ± | 0.05 | µg/mL | ICP / ICP-MS | 3119a |
| indium | 10.00 | ± | 0.05 | µg/mL | ICP / ICP-MS | 3124a |
| iron | 10.00 | ± | 0.05 | µg/mL | ICP / ICP-MS | 3126a |
| lead | 10.00 | ± | 0.05 | µg/mL | ICP / ICP-MS | 3128 |
| lithium | 10.00 | ± | 0.05 | µg/mL | ICP / ICP-MS | 3129a |
| magnesium | 10.00 | ± | 0.05 | µg/mL | ICP / ICP-MS | 3131a |
| manganese | 10.00 | ± | 0.05 | µg/mL | ICP / ICP-MS | 3132 |
| nickel | 10.00 | ± | 0.05 | µg/mL | ICP / ICP-MS | 3136 |
| potassium | 10.00 | ± | 0.05 | µg/mL | ICP / ICP-MS | 3141a |
| rubidium | 10.00 | ± | 0.05 | µg/mL | ICP / ICP-MS | 3145a |
| selenium | 10.00 | ± | 0.05 | µg/mL | ICP / ICP-MS | 3149 |
| * silver | 10.00 | ± | 0.05 | µg/mL | ICP / ICP-MS | 3151 |
| sodium | 10.00 | ± | 0.05 | µg/mL | ICP / ICP-MS | 3152a |
| strontium | 10.00 | ± | 0.05 | µg/mL | ICP / ICP-MS | 3153a |
| thallium | 10.00 | ± | 0.05 | µg/mL | ICP / ICP-MS | 3158 |
| uranium | 10.00 | ± | 0.05 | µg/mL | ICP / ICP-MS | 3164 |
| * vanadium | 10.00 | ± | 0.05 | µg/mL | ICP / ICP-MS | 3165 |
| zinc | 10.00 | ± | 0.05 | µg/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 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