



Certificate of Analysis

Custom Standard

Catalog Number: ICUS-7481

Lot Number: CR-5638

Lot Issue Date: 12/7/2017

Expiration Date: 1/31/2019

This Reference Material (RM) 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
iron	1004	± 5.0	µg/mL	ICP / ICP-MS	3126a
calcium	1001	± 5.0	µg/mL	ICP / ICP-MS	3109a
sodium	999	± 5.0	µg/mL	ICP / ICP-MS	3152a
magnesium	999	± 5.0	µg/mL	ICP / ICP-MS	3131a
potassium	1000	± 5.0	µg/mL	ICP / ICP-MS	3141a
strontium	999	± 5.0	µg/mL	ICP / ICP-MS	3153a
silver	100.1	± 0.5	µg/mL	ICP / ICP-MS	3151
aluminum	100.2	± 0.5	µg/mL	ICP / ICP-MS	3101a
arsenic	100.1	± 0.5	µg/mL	ICP / ICP-MS	3103a
beryllium	100.2	± 0.5	µg/mL	ICP / ICP-MS	3105a
barium	100.1	± 0.5	µg/mL	ICP / ICP-MS	3104a
boron	100.1	± 0.5	µg/mL	ICP / ICP-MS	3107
cadmium	100.2	± 0.5	µg/mL	ICP / ICP-MS	3108
chromium	100.0	± 0.5	µg/mL	ICP / ICP-MS	3112a
cobalt	100.1	± 0.5	µg/mL	ICP / ICP-MS	3113
copper	100.1	± 0.5	µg/mL	ICP / ICP-MS	3114
manganese	100.0	± 0.5	µg/mL	ICP / ICP-MS	3132
molybdenum	100.1	± 0.5	µg/mL	ICP / ICP-MS	3134
nickel	100.2	± 0.5	µg/mL	ICP / ICP-MS	3136
lead	100.2	± 0.5	µg/mL	ICP / ICP-MS	3128
*vanadium	100.1	± 0.5	µg/mL	ICP / ICP-MS	3165
zinc	100.2	± 0.5	µg/mL	ICP / ICP-MS	3168a
selenium	100.2	± 0.5	µg/mL	ICP / ICP-MS	3149
antimony	100.0	± 0.5	µg/mL	ICP / ICP-MS	3102a
lithium	100.1	± 0.5	µg/mL	ICP / ICP-MS	3129a
tin	100.2	± 0.5	µg/mL	ICP / ICP-MS	3161a
phosphorous	1001	± 5.0	µg/mL	ICP / ICP-MS	3139a
silicon	1001	± 5.0	µg/mL	ICP / ICP-MS	3150

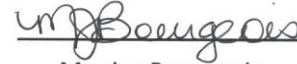
Matrix: 5% nitric acid with trace hydrofluoric and tartaric acids in low TOC water (< 50 ppb)

** Light Sensitive*

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/NCSL Z-540-1 and ISO 9001.




John Russo
President


Monica Bourgeois
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ISO 9001 Registered Quality System – TUV USA