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CERTIFICATE OF GRAVIMETRIC PREPARATION

PRODUCT: IC Multi-Element Standard (6 elements)

PRODUCT No.: ICC-DX-611

MATRIX: H_2O

LOT NO.: ICCDX61123B1

DATE OF PREPARATION: 21st February 2023

EXPIRY DATE: 28th February 2025

DENSITY VALUE: 1.004 g/ml @ 20°C

PREPARATION OF STANDARD:

All standard components have been pre-qualified/verified before use. All analytical measuring devices and instrumentation have been pre-calibrated. The actual concentrations reported below are based on this preparation methodology and compound impurities.

Elements	Nominal mg/kg	Actual mg/kg	Actual mg/l @ 20°C
Calcium (as Ca^{2+})	996	998	1002
Ammonium (as NH_4^+)	399	399	401
Sodium (as Na^+)	199	200	201
Potassium (as K^+)	199	200	201
Magnesium (as Mg^{2+})	199	200	201
Lithium (as Li^+)	49.8	49.9	50.1

The expanded uncertainty (k=2) due to weighing, volumetric preparation and homogeneity is calculated in compliance with EURACHEM/CITAC Guide: Quantifying Uncertainty in Analytical Measurements as ± 0.2 %. All values are verified by ICP-MS analysis using externally sourced ISO 17034 accredited Certified Reference Materials as calibrants/quality controls where possible.

TRACEABILITY IN THE PRODUCTION OF THIS STANDARD

This product was prepared gravimetrically on a mass/mass basis. The solute was weighed on a balance calibrated by Reagecon engineers using mass standards traceable to the National and International primary standard of mass. Reagecon holds ISO 17025 accreditation for calibration of non-automatic weighing machines. The resulting Balance Certificate of Calibration was issued in accordance with the requirements of ISO/IEC 17025. The balance was calibrated under monitored environmental conditions and atmospheric pressure. Tests were performed for capacity, readability, repeatability, eccentricity and linearity.

TEST METHOD:

The mean result of this standard was verified using a calibrated ICP-MS system according to an in-house test method. The result reported in this certificate was confirmed by analysis of a sample of this lot taken at time of manufacture. The density of this standard was determined using a high performance calibrated density meter.

This certificate relates solely to the lot number given above.

Approved By: QC Technician

Eileen Malone.

Date: 09th March 2023