

CERTIFICATE OF GRAVIMETRIC PREPARATION

PRODUCT: ICP Multi-Element Standard (15 elements) in 2-5% HNO₃
PRODUCT No.: ICP15A10
LOT NO.: ICP15A25D1
DATE OF PREPARATION: 14th April 2025
EXPIRY DATE: 28th April 2027
DENSITY VALUE: 1.030 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
Al	97.1	97.1	100
Ba	97.1	97.1	100
Ca	97.1	97.1	100
Cd	97.1	97.1	100
Co	97.1	97.1	100
Cr	97.1	97.1	100
Cu	97.1	97.1	100
Fe	97.1	97.1	100
Mg	97.1	97.1	100
Mn	97.1	97.1	100
Na	97.1	97.1	100
Ni	97.1	97.1	100
Pb	97.1	97.1	100
Ti	97.1	97.1	100
Zn	97.1	97.1	100

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 $\pm 0.2\%$. 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, using balances calibrated by Reagecon engineers with 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 Supervisor



Date: 16th April 2025

This certificate must not be reproduced except in full.