

## **CERTIFICATE OF GRAVIMETRIC PREPARATION**

**PRODUCT:** ICP Standard Yttrium 10,000 mg/L  
**PRODUCT No.:** PY4B2  
**MATRIX:** 2-5% HNO<sub>3</sub>  
**LOT NO.:** PY4222L1  
**DATE OF PREPARATION:** 30<sup>th</sup> November 2022  
**EXPIRY DATE:** 28<sup>th</sup> November 2024  
**DENSITY VALUE:** 1.043 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.

Raw Material	Purity %	Nominal mg/L	Actual mg/kg
Yttrium Oxide	99.999	9588	9652 ± 0.2 %

**9652 mg/kg is equivalent to 10067 mg/L @ 20°C**

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

A handwritten signature in dark ink, appearing to read "Anna Honan".

**Date:** 14<sup>th</sup> August 2023

This certificate must not be reproduced except in full.