

Certificate of Analysis (Stable Isotope)

Medium Natural Water
(^2H & ^{18}O Water Working Standard)

Cat No. B2193 – Certificate no. WA101C

General

This Laboratory Standard is intended to provide a water sample of known isotopic composition.

This standard is not certified but is provided to allow routine checking of quality of measurements and instrumentation and may be used as part of a quality control programme. It is not intended for use as a substitute for primary calibration materials distributed by NIST or IAEA.

Values and Uncertainty

The $^2\text{H}/^1\text{H}$ and $^{18}\text{O}/^{16}\text{O}$ isotope ratios of this standard were determined by CF-IRMS using IA-R063 and IA-R065 as calibration materials. WICO1 and WICO5 (water samples from the WICO 2016 inter-laboratory study) and IA-R064 were used as inter-comparison materials. All samples were prepared by equilibration with (1) hydrogen for $^2\text{H}/^1\text{H}$ and (2) carbon dioxide for $^{18}\text{O}/^{16}\text{O}$.

The results quoted are based on 30 separate measurements (ten times on three separate occasions).

Uncertainty is expressed as one standard deviation (σ_1) from the mean value.

Standard	$\delta \text{ } ^2\text{H} \text{ } _{\text{V-SMOW}} (\text{‰})$ $\bar{\delta}_m \pm \sigma_1$	$\delta \text{ } ^{18}\text{O} \text{ } _{\text{V-SMOW}} (\text{‰})$ $\bar{\delta}_m \pm \sigma_1$
B2193 Medium Natural Water	-141.44 \pm 1.02	-20.09 \pm 0.11

Storage and use

It is recommended that this laboratory standard is stored upside down in a cool dark place in the bottle provided to prevent evaporation. It is suggested that the standard is shaken before use to ensure thorough mixing of contents. Experience shows the standards will remain viable for many years if stored in this way in the bottles they have been provided in.

Information

Calibrated April 2021.

The technical aspects involved in the production of this Analytical Standard were carried out at Iso-Analytical Ltd.

For and on behalf of
Elemental Microanalysis Ltd

Jon Davies
Technical Manager