

Certificate of Analysis (Stable Isotope)

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

Cat No. B2193 ó Certificate no. WA101B

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 ²H/¹H and ¹⁸O/¹⁶O isotope ratios of this standard were determined by CF-IRMS using V-SMOW2 and SLAP2 as calibration materials. IAEA-OH-14 and IAEA-OH-16 (water samples from the WICO 2011 inter-laboratory study) were used as inter-comparison materials. All samples were prepared by equilibration with (1) hydrogen for ²H/¹H and (2) carbon dioxide for ¹⁸O/¹⁶O. The results quoted are based on 15 separate measurements (five times on three separate occasions). Uncertainty is expressed as one standard deviation (1) from the mean value.

Standard	$\delta^{2}\text{H}_{\text{V-SMOW}} (\text{‰})$ $\delta \pm \sigma$	$\delta^{18}\text{O}_{\text{V-SMOW}} (\text{‰})$ $\delta \pm \sigma$
B2193 Medium Natural Water	-98.32 ± 1.13	-12.34 ± 0.13

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. As the standard is consumed it is suggested that the contents be transferred to a smaller *dry* glass bottle with a gas tight sealing top to reduce the volume of air in contact with the water.

Information

Calibrated August 2014.

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

For and on behalf of
Elemental Microanalysis Ltd

Jon Davies
Technical Manager