Iso-Analytical Limited

Report of Analysis

IA-R005 – ^{13}C Beet Sugar Laboratory Standard

This laboratory standard is intended to provide a sample of known isotope composition with a $^{13}C/^{12}C$ isotope ratio stated in parts per thousand difference (‰) from the V-PDB (Pee Dee Belemnite) isotope ratio standard. This laboratory standard is not certified, but is provided to allow routine checking of the overall quality of measurements performed by continuous-flow isotope ratio mass spectrometry, and may be used as part of a quality control program. It is not intended for use as a substitute for calibration materials or inter-comparison materials distributed by NIST or IAEA.

Analysis

The $^{13}C/^{12}C$ isotope ratio of the laboratory standard was measured by elemental analyser continuous-flow isotope ratio mass spectrometry using IAEA-CH-6 (ANU Sucrose) as the calibration material. The $^{13}C/^{12}C$ isotope ratio in the laboratory standard was measured five times on three separate occasions.

Isotope Abundance

The laboratory standard IA-R005 is compared to V-PDB for the $^{13}C/^{12}C$ isotope ratio. The isotope composition of the laboratory standard in ‰ relative to V-PDB is:

Laboratory Standard	$\delta^{13}C_{V\text{-}PDB}$ (‰) $\delta_m \pm \sigma_1$
IA-R005	-26.03 ± 0.11

Note: $\delta_m = \sum_{i=1}^{n} \delta_i/n$; $\sigma_1 = \sqrt{\sum_{i=1}^{n} (\delta_m - \delta_i)^2/(n-1)}$; n = 15 for ^{13}C

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