

# Iso-Analytical Limited

## *Report of Analysis*

### IA-R006 – <sup>13</sup>C Cane Sugar Laboratory Standard

This laboratory standard is intended to provide a sample of known isotope composition with a <sup>13</sup>C/<sup>12</sup>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 <sup>13</sup>C/<sup>12</sup>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 <sup>13</sup>C/<sup>12</sup>C isotope ratio in the laboratory standard was measured five times on three separate occasions.

#### Isotope Abundance

The laboratory standard IA-R006 is compared to V-PDB for the <sup>13</sup>C/<sup>12</sup>C isotope ratio. The isotope composition of the laboratory standard in ‰ relative to V-PDB is:

Laboratory Standard	$\delta^{13}\text{C}_{\text{V-PDB}} (\text{‰})$ $\delta_m \pm \sigma_1$
IA-R006	-11.64 ± 0.03

Note:  $\delta_m = \sum_{i=1}^n \delta_i / n$  ;  $\sigma_1 = \sqrt{\sum_{i=1}^n (\delta_i - \delta_m)^2 / (n - 1)}$  ; n = 14 for <sup>13</sup>C

May 29, 2002

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