EUROPEAN COMMISSION

JOINT RESEARCH CENTRE

Institute for Reference Materials and Measurements

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Institute for Reference
Materials and Measurements

CERTIFIED REFERENCE MATERIAL
BCR® – 657

CERTIFICATE OF ANALYSIS

SUGAR		
	Carbon-13 isotope ratio	
	Certified value [1] [‰]	Uncertainty [2] [‰]
$\delta^{13}C_{VPDB}$	-10.76	0.04
1) Unweighted mean of the means of 14 accepted sets of data, each set being obtained in a different laboratory. The value is traceable to the VPDB and the standard method used (CEN/TC 174 N 108). 2) The uncertainty is taken as the half-width of the 95 % confidence interval.		

This certificate is valid for one year after purchase.

Sales date:

The minimum sample intake is 0.2 g.

NOTE

This material has been certified by BCR (Community Bureau of Reference, the former reference materials programme of the European Commission). The certificate has been revised under the responsibility of IRMM.

Brussels, June 2001
Revised: February 2007

Signed:

Prof. Dr. Hendrik Emons
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DESCRIPTION OF THE SAMPLE

The sample consists of approximately 1 g of dry glucose in a sealed amber vial.

ANALYTICAL METHOD USED FOR CERTIFICATION

The method used for the determination of carbon-13/carbon-12 ratios of sugar is given in CEN/TC 174 N 108.

$\delta^{13}C_{VPDB}$ of the sample is determined directly on the carbon dioxide obtained from the total combustion of the sugar and measured using an Isotope Ratio Mass Spectrometer. The results are traceable to the international VPDB scale (Vienna-Pee Dee Belemnite supplied by the International Atomic Energy Agency in Vienna) expressed in parts per thousand.

$$\delta^{13}C_{VPDB}\ ‰ = [\ {}^{13}C/{}^{12}C_{sample}/{}^{13}C/{}^{12}C_{VPDB} - 1\ ] \times 1000$$

PARTICIPANTS

Preparation of the material, homogeneity and stability studies
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Certification measurements
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SAFETY INFORMATION

The usual laboratory precautions apply.

INSTRUCTIONS FOR USE

For analysis the sample should be taken as it is. Before use it can be stored at room temperature. Once in use, keep the flask in a dessicator and tightly closed to avoid moisture. Several measurements can be performed from the same flask; over a period of 28 days maximum.

STORAGE

On receipt, the materials should be stored at room temperature.
However, the European Commission cannot be held responsible for changes that happen during storage of the material at the customer's premises, especially of opened samples.

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NOTE

A technical report on the production of BRC-657 is available on the internet (http://www.irmm.jrc.be). A paper copy can be obtained from IRMM on request.