



CERTIFIED REFERENCE MATERIAL BCR[®] – 535

CERTIFICATE OF ANALYSIS

FRESHWATER HARBOUR SEDIMENT			
Compound	Mass fraction based on dry mass		Number of accepted sets of results p
	Certified value ¹⁾ [mg/kg]	Uncertainty ²⁾ [mg/kg]	
Pyrene	2.52	0.18	14
Benz[a]anthracene	1.54	0.10	12
Benzo[a]pyrene	1.16	0.10	13
Benzo[e]pyrene	1.86	0.13	13
Benzo[b]fluoranthene	2.29	0.15	11
Benzo[k]fluoranthene	1.09	0.15	12
Indeno[1,2,3-cd]pyrene	1.56	0.14	13

¹⁾ This value is the unweighted mean of the means of p accepted sets of results. The certified values are traceable to the SI.
²⁾ The uncertainty is taken as the half-width of the 95 % confidence interval of the mean given in ¹⁾.

This certificate is valid for one year after purchase.

Sales date:

The minimum amount of sample to be used is 500 mg.

DESCRIPTION OF THE SAMPLE

The sample consists of approximately 40 g of river harbour sediment in brown glass bottles with a polythene insert. Additional information on the material is given in the report.

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, March 1997

Latest revision: April 2007

Signed: _____

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Additional Material Information	
Sediment characteristics	Mass Fraction [%]
organic matter content	12
loss on ignition	14
inorganic carbon content	7.9
moisture content	1.61
CaCO ₃ content	8.9
particle size fraction < 2 mm	23.4

ANALYTICAL METHOD USED FOR CERTIFICATION

Calibration was done with BCR-CRMs for PAHs (047, 048, 050, 051R, 053, 137R, 177, 271) or with compounds of verified purity and stoichiometry. The samples were extracted with one or a mixture of solvents. Clean-up was carried out by column chromatography (on alumina or silica, gel permeation), high performance liquid chromatography (HPLC), liquid/liquid partition with DMF or DMSO/water. Capillary gas chromatography (CGC) with flame ionisation detection or mass spectrometry was performed using different injection systems, different columns including multidimensional GC and different temperature programmes or HPLC with UV or fluorescence detection.

PARTICIPANTS

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- Vakgroep Bodemkunde en Plantevoeding, Landbouwniversiteit Wageningen (NL)
- Vlaamse Instelling voor Technologisch Onderzoek, Mol (BE)
- VTT Chemical Technology, Espoo (FI)

SAFETY INFORMATION

Appropriate safety measures should be taken when opening the bottle. Opening should preferably take place under a hood.

INSTRUCTIONS FOR USE

For analysis the sample should be taken as it is. Before opening the bottle it is recommended to let the bottle reach ambient temperature and to shake it manually for two to four minutes.

The correction to dry mass must be determined on a separate portion of 1 g taken at the same time of the analysis from the same bottle. It should be done by drying in an oven at 105 ± 1 °C for 2 hours.

STORAGE

The samples should be stored at a temperature of 4 °C.

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 BCR-535 is available on the internet (<http://www.irmm.jrc.be>). A paper copy can be obtained from IRMM on request.

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