



EUROPEAN COMMISSION  
JOINT RESEARCH CENTRE  
Institute for Reference Materials and Measurements



# CERTIFIED REFERENCE MATERIAL BCR<sup>®</sup> – 177R

## CERTIFICATE OF ANALYSIS

PYRENE		
	Mass fraction	
	Certified value <sup>1)</sup> [g/g]	Uncertainty <sup>2)</sup> [g/g]
Pyrene	0.9980	0.0004
<p>1) This value is the unweighted mean of 24 sets of results, independently obtained from 7 laboratories. The value is traceable to the SI.</p> <p>2) The certified uncertainty is the expanded uncertainty estimated in accordance with the Guide to the Expression of Uncertainty in Measurement (GUM) with a coverage factor <math>k = 2</math>, corresponding to a level of confidence of about 95 %.</p>		

This certificate is valid for one year after purchase.

Sales date:

The minimum amount of sample to be used is 2 mg.

### 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, November 1983  
Revised: May 2007

Signed: \_\_\_\_\_

Prof. Dr. Hendrik Emons  
Unit for Reference Materials  
EC-JRC-IRMM  
Retieseweg 111  
2440 Geel, Belgium

## DESCRIPTION OF THE SAMPLE

The material is available in brown glass bottles containing 10 mg. The CRM corresponds to the original CRM BCR-177 (100 mg), which was re-packaged under clean and inert gas conditions. The identity between BCR-177 and BCR-177R has been demonstrated using differential scanning calorimetry (DSC).

## ANALYTICAL METHOD USED FOR CERTIFICATION

- Gas chromatography (GC)
- High performance liquid chromatography (HPLC)
- Mass spectrometry (GC/MS and direct inlet MS)

## PARTICIPANTS

- Biochemisches Institut für Umweltcarcinogene, Ahrensburg (DE)
- BP Research Centre, Sunbury-on-Thames (GB)
- Bundesanstalt für Materialprüfung, Berlin (DE)
- Centre d'Etudes et de Recherches des Charbonnages de France, Verneuil (FR)
- CNR, Laboratorio sull'Inquinamento Atmosferico, Roma (IT)
- Energieonderzoek Centrum Nederland, Petten (NL)
- Instituut voor Toegepaste Chemie, TNO, Utrecht (NL)
- Istituto Superiore di Sanità, Roma (IT)
- Joint Research Centre, Petten (NL)
- Laboratoire Central de la Préfecture de Police, Paris (FR)
- National Physical Laboratory, Teddington (GB)
- Instituut voor Toegepaste Chemie, TNO, Delft (NL)

## SAFETY INFORMATION

Cancer suspect agent. The material must be handled with great care, especially avoiding skin contamination, ingestion or inhalation. Discard solutions after use in accordance with appropriate safety regulations for carcinogenic or cancer suspect agents.

## INSTRUCTIONS FOR USE

This material is intended for the calibration of measurement procedures. Solutions for calibration purposes should be freshly prepared and be protected from extended exposure to light and air. Discard solutions after use.

## STORAGE

The material should be stored in darkness under cool conditions to prevent photo-oxidation reactions. 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.

## LEGAL NOTICE

Neither IRMM, its subsidiaries, its contractors nor any person acting on their behalf,

(a) make any warranty or representation, express or implied that the use of any information, material, apparatus, method or process disclosed in this document does not infringe any privately owned intellectual property rights; or

(b) assume any liability with respect to, or for damages resulting from, the use of any information, material, apparatus, method or process disclosed in this document save for loss or damage arising solely and directly from the negligence of IRMM or any of its subsidiaries.

## NOTE

A technical report on the production of BCR-177R is available on the internet (<http://www.irmm.jrc.be>). A paper copy can be obtained from IRMM on request.