



# CERTIFIED REFERENCE MATERIAL BCR<sup>®</sup>-159

## CERTIFICATE OF ANALYSIS

| DIBENZO[a,h]PYRENE <sup>1)</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                        |                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Mass fraction                          |                                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Certified value <sup>2)</sup><br>[g/g] | Uncertainty <sup>3)</sup><br>[g/g] |
| Dibenzo[a,h]pyrene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.9928                                 | ± 0.007                            |
| <p>1) Dibenzo[b,def]chrysene according to IUPAC rules, synonym 3,4:8,9-Dibenzpyrene; CAS # 189-64-0.</p> <p>2) Unweighted mean of accepted mean values, independently obtained by 7 laboratories. The value is traceable to the International System of Units (SI).</p> <p>3) 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 2.5 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, May 1997

Revised: December 2007

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

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## DESCRIPTION OF THE SAMPLE

The material is available in a brown glass bottle, containing 100 mg.

## ANALYTICAL METHOD USED FOR CERTIFICATION

- Gas liquid chromatography (GLC)
- High performance liquid chromatography (HPLC)
- Mass spectrometry (GC/MS and direct inlet MS)
- Differential Scanning Calorimetry (DSC)

## PARTICIPANTS

- Biochemisches Institut für Umweltcarcinogene, Ahrensburg (DE)
- BP Research Centre, Sunbury-on-Thames (GB)
- Bundesanstalt für Materialprüfung (B.A.M.), 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)
- European Commission, Joint Research Centre, Institute for Energy, Petten (NL)
- Instituut voor Toegepaste Chemie, TNO, Delft (NL)
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- Istituto Superiore di Sanità, Roma (IT)
- Laboratoire Central de la Préfecture de Police, Paris (FR)
- National Physical Laboratory, Teddington (GB)
- Universiteit Leiden, Gorlaeus laboratorium, Leiden (NL)
- Vrije Universiteit Amsterdam, Subfaculteit Chemie, Amsterdam (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

The material is intended as a pure reference and calibration material for the effective analytical and regulatory control of PAHs.

Diluted solutions used for calibration should be protected from extended exposure to light and oxygen. Calibration solutions should be discarded after use into special waste containers.

## STORAGE

The material should be stored in the dark at 4 °C 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.

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## NOTE

A technical report on the production of BCR®-159 is available on the internet (<http://www.irmm.jrc.be>). A paper copy can be obtained from IRMM on request.