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CERTIFICATE OF ANALYSIS

ERM®-CC007

Organochlorine pesticides in soil

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Certified Values		
	Certified value [1]	Uncertainty [2]
Compound	Mass fraction in µg/kg	
α-HCH	32	± 6
β-HCH	386	± 40
p,p'-DDE	56	± 6
o,p'-DDT	36	± 7
p,p'-DDT	153	± 15

[1] The certified value is the mean of 5 laboratory means using GC-ECD and GC-MS including IDMS. The values are traceable to the SI (Système International d'Unités) via calibration using sufficiently pure substances.

[2] Estimated expanded uncertainty *U* with a coverage factor of about *k*=2, corresponding to a level of confidence of 95 %, as defined in the Guide to the expression of uncertainty in measurement, ISO, 1993.

This certificate is valid until March 2006; this validity may be extended as further evidence of stability becomes available.

The minimum sample size for one determination is 5 g.

NOTE

European Reference Material ERM®-CC007 was originally certified as BAM-U007. It was produced and certified under the responsibility of Bundesanstalt für Materialforschung und –prüfung (BAM) according to the principles laid down in the technical guidelines of the European Reference Materials® co-operation agreement between BAM-LGC-IRMM. Information on these guidelines is available on the Internet (http://www.erm-crm.org).

Accepted as an ERM®, Berlin, 2004-04-14.

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DESCRIPTION OF THE SAMPLE

The reference material ERM®-CC007 can be used to assure the correct implementation of the own analytical method or of the analytical method according to E DIN ISO 10382 [1] or to verify the performance of method modifications.

ERM®-CC007 is a natural matrix reference material taken from a contaminated industrial site near Berlin. The material was dried, classified by sieving and homogenised. It comes in 50 ml amber glass bottles each containing approximately 41 grams of material. The screw caps contain PTFE-inlays and are sealed with shrinking foil. The stability tests started in Sept 1999 and are continued. A minimum stability of 6 years and 8 months since that date can be expected at a storage temperature of –20°C. If future stability tests should show significant changes in the certified properties, BAM will inform all known customers of the CRM. If the stability of the reference material extends beyond the indicated period, a respective information will be published on the internet (http://www.bam.de/service/referenzmaterialien/).

The tests for homogeneity and stability are described in detail in the certification report.

PARTICIPANTS AND ANALYTICAL METHOD USED FOR CERTIFICATION

The BAM in-house certification study involved 4 independent measuring stations using different analytical procedures as shown in the following table:

BAM-laboratory	Analytical method	Extraction method	Extraction solvent
1	GC/ECD	Soxhlet	Toluene
2*	GC/ECD	Sonication	Cyclohexane/Acetone
3	GC/HR-MS	ASE™	Cyclohexane/Acetone
4	GC/LR-MS	ASE™	n-Hexane/Acetone (1:1)

*according to E DIN ISO 10382 with changed mixture of extraction solvent

Specific remarks on the procedures for extraction and analysis can be found in the certification report.

SAFETY INFORMATION

It is strongly recommended to handle and dispose the reference material in accordance with the guidelines for hazardous materials legally in force at the site of end use and disposal.

INSTRUCTIONS FOR USE

Before withdrawing a subsample the bottle has to have reached room temperature and is to be mixed thoroughly. Thereafter, the bottle is to be closed tight and stored at –20°C. The stability of the reference material is not affected by short periods of handling at ambient temperature during transport and use.

STORAGE

The material has to be stored in its original bottles at -20°C.

TECHNICAL REPORT

A detailed technical report (paper copy; in German) describing the analytical procedures and the treatment of the analytical data used to certify the content of individual OCP is available on request from BAM.

REFERENCES

[1] E DIN ISO 10382 from 1998 „Gaschromatographic Determination of the Contents of Polychlorinated Biphenyls (PCB) and Organochlorine Pesticides (OCP)

Supply of Reference Materials by Bundesanstalt für Materialforschung und –prüfung:

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