CERTIFICATE OF ANALYSIS

ERM®-CC015a

ausverkauft / out of stock

Mineral oil contaminated sediment		
	Certified value [1]	Uncertainty [2]
Compound	Mass fraction in mg/kg	
Total petrol hydrocarbons (TPH)	1820	± 130

[1] Unweighted mean value of 11 laboratory means using gas chromatography with flame ionisation detection (GC/FID) according to ISO/FDIS 16703:2003.

[2] Estimated expanded uncertainty *U* with a coverage factor of *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 for a period of 12 months beginning with the dispatch of the reference material from BAM.

The minimum sample size for one determination is 10 g. The mass fraction of TPH is related on sample intake (not on dry mass). The water content is 5.7 % (*Karl Fischer* titration) and remains stable if the material is handled as indicated below.

NOTE

European Reference Material ERM®-CC015a replaces ERM®-CC015 which is sold out. 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).

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Berlin, 2005-06.08

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DESCRIPTION OF THE SAMPLE

The intended purpose of reference material ERM®-CC015a is the verification of analytical procedures for the determination of TPH in soils and sediments according to ISO/FDIS 16703:2003 [1] by GC/FID and for quality control in analytical laboratories.
The material ERM®-CC015a is a sediment sampled from River Weisse Elster, near the city of Leipzig, Saxony, Germany. The material had been contaminated over decades by industrial and municipal sewages. After drying, fractionation by sieving and homogenisation, the sieving fraction < 125 µm was subdivided into 360 units of 81 g which were filled in brown glass bottles with screw caps equipped with PTFE-inserts and sealed with shrinking foil. The material is stored at BAM at –20°C until dispatch.
The within- and among-bottle-homogeneity of the TPH content was demonstrated by analysis of variance on 15 selected bottles (5 replicate analyses per bottle).-
The initial stability study after storage of selected units of this reference material for up to 6 months at different temperatures allows to guarantee the period of validity of the certificate. Periodical investigations on the stability of this material will be carried out in order to keep this information up to date. The tests for homogeneity and stability are described in detail in the technical report.

PARTICIPANTS

The following laboratories, including three independent operator/equipment combinations at BAM, participated in the certification study using GC/FID for the determination of TPH according to ISO/FDIS 16073:2003 [1]:

chemlab, Gesellschaft für Analytik und Umweltberatung mbH	64625	Bensheim
Umweltbundesamt, Labor für Wasseranalytik, FG II 2.5	14193	Berlin
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PROTEKUM Umweltinstitut GmbH Oranienburg	16515	Oranienburg
Limnologisches Institut Dr. Karl Ernst Nowak	28870	Ottersberg

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 AND STORAGE

The material has to be stored at -20°C in its original bottle. Before withdrawing a subsample the bottle has to have reached ambient temperature. Thereafter, the bottle is to be closed tightly 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.

TECHNICAL REPORT

A detailed technical report (paper copy) describing the production, general characterisation as well as the analytical procedures applied and the treatment of the analytical data during certification of ERM®-CC015a is available on request from BAM.

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REFERENCES

[1] ISO /FDIS 16703:2003, “Soil quality - Determination of mineral oil content by gas chromatography”

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

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