EUROPEAN COMMISSION
JOINT RESEARCH CENTRE

Institute for Reference Materials and Measurements (Geel)

CERTIFIED REFERENCE MATERIAL
BCR®-530

CERTIFICATE OF ANALYSIS

INDUSTRIAL SOIL (clay soil)			
Chlorophenols	Mass fraction based on dry mass		Number of accepted sets of results p
	Certified value [1] [mg/kg]	Uncertainty [2] [mg/kg]	
3,4-dichlorophenol	6.0	0.5	8
2,4,5-trichlorophenol	40	7	10
Pentachlorophenol	0.47	0.09	8
Polychlorodibenzo-p-dioxins and polychlorodibenzo-furans[3]	Certified value [2] [µg/kg]	Uncertainty [2] [µg/kg]	Number of accepted sets of results p
1,2,3,6,7,8-HxCDD (D67)	0.061	0.011 [4]	12
1,2,3,7,8,9-HxCDD (D70)	0.0218	0.0029	6
1,2,3,7,8-PeCDF (F94)	0.24	0.04	11
2,3,4,7,8-PeCDF (F114)	0.62	0.07	9
1,2,3,4,7,8-HxCDF (F118)	0.321	0.016	9
1,2,3,6,7,8-HxCDF (F121)	0.186	0.023	11
2,3,4,6,7,8-HxCDF (F130)	0.126	0.012	11

[1] This value is the unweighted mean of the means of p accepted sets of results. The certified value and its uncertainty are traceable to the International System of units (SI).
[2] The uncertainty is taken as the half-width of the 95 % confidence interval of the mean given in [1].
[3] As determined by GC-MS
[4] The uncertainty is adjusted for inhomogeneity.

This certificate is valid for one year after purchase.

Sales date:

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

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 1998
Latest revision: February 2014

Signed: 

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DESCRIPTION OF THE SAMPLE

The sample consists of approximately 50 g of industrial clay soil in brown glass bottles with a polythene insert lined with aluminium. Information on the presence of additional organic chlorinated compounds other than those tabulated is given in the report.

ANALYTICAL METHODS USED FOR CERTIFICATION

Calibration was done with BCR-CRMs (PCDD/F) or compounds of verified purity and stoichiometry (CB and CP). The samples were extracted with one or a mixture of solvents and were cleaned-up before or after derivatisation (CP only). Separation and quantification was carried out by HPLC with amperometric detection (CP) or gas chromatography with ECD, MS or atomic emission detection.

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SAFETY INFORMATION

Toxic material. The material must be handled with great care, especially avoiding skin contamination, ingestion or inhalation.

INSTRUCTIONS FOR USE

For analysis the sample should be taken as it is.
Before a bottle is opened, it should be shaken manually for at least 5 minutes so that the material is re-homogenised.
Due to the pre-treatment of the soil its physico-chemical behaviour may differ from soil samples routinely measured. Therefore it may be necessary to re-constitute the reference material.
The mass fraction of water in the soil is approximately 0.6 %. Thus any correction will fall well within the uncertainty of the analytical procedure. However it is recommended to verify the water content on a separate portion of the material on each occasion of the analysis, preferably by Karl Fischer titration.
The material is not intended for use as a calibrant.
For detailed information, please consult the certification report.

STORAGE

The samples should be stored in the dark at a constant 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 is available on the internet (http://www.irmm.jrc.be). A paper copy can be obtained from IRMM on request.

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