EUROPEAN COMMISSION

JOINT RESEARCH CENTRE

Institute for Reference Materials and Measurements

Institute for Reference Materials and Measurements

CERTIFIED REFERENCE MATERIAL BCR® – 483

CERTIFICATE OF ANALYSIS

SEWAGE SLUDGE AMENDED SOIL			
Element	Mass fraction based on dry mass		Number of accepted sets of results p
	Certified value [1] [mg/kg]	Uncertainty [2] [mg/kg]	
EDTA-extractable			
Cd	24.3	1.3	18
Cr	28.6	2.6	9
Cu	215	11	17
Ni	28.7	1.7	17
Pb	229	8	17
Zn	612	20	17
Acetic acid-extractable			
Cd	18.3	0.6	18
Cr	18.7	1.0	17
Cu	33.5	1.6	18
Ni	25.8	1.0	15
Pb	2.10	0.25	12
Zn	620	24	18

[1] Unweighted mean value of the means of p accepted sets of data, each set being obtained in a different laboratory and/or with a different method of determination. The certified values are traceable to the extraction methods described in the certification report.

[2] Half-width of the 95 % confidence interval of the mean defined in [1].

This certificate is valid for one year after purchase.

Sales date:

The minimum amount of sample to be used is 5 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, December 1995
Latest revision: April 2007

Signed: 

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Indicative Values		
Element	Mass fraction based on dry mass	
	Indicative value[1)] [mg/kg]	Uncertainty [2)] [mg/kg]
Calcium chloride extractable content		
Cd	0.45	0.05
Cr	0.35	0.09
Cu	1.2	0.4
Ni	1.4	0.2
Pb	< 0.06	---
Zn	8.3	0.7
Sodium nitrate extractable content		
Cd	0.08	0.03
Cr	0.30	0.07
Cu	0.89	0.22
Ni	0.65	0.07
Pb	< 0.03	---
Zn	2.7	0.8
Ammonium nitrate extractable content		
Cd	0.26	0.05
Cr	0.27	0.10
Cu	1.2	0.3
Ni	1.1	0.3
Pb	0.020	0.013
Zn	6.5	0.9

1) Mean value
2) Standard deviation

DESCRIPTION OF THE SAMPLE

The material consists of a soil sample in a glass bottle containing about 70 g of powder. Additional information on the preparation, the certified and indicative values is given in the certification report.

ANALYTICAL METHOD USED FOR CERTIFICATION

- Electrothermal atomic absorption spectrometry
- Flame atomic absorption spectrometry
- Inductively coupled plasma atomic emission spectrometry
- Inductively coupled plasma mass spectrometry

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SAFETY INFORMATION

The usual laboratory safety precautions apply.

INSTRUCTIONS FOR USE

Before a bottle is opened, it should be shaken manually so that the material is re-homogenised. The sample must be used as it is from the bottle. The correction to dry mass should be made on a separate portion of 1 g which should be dried in an oven at (105 ± 2) °C for 3-4 h until constant mass is attained (successive weighings should not differ by more than 1 mg). The analysis must be carried out following strictly the extraction protocols given in the certification report (EDTA and acetic acid extraction procedures).

STORAGE

The tightly closed bottles may be kept at room temperature. The material picks up moisture when in prolonged contact with humid air. After having been opened the bottle should be stored in a dry desiccator.
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-483 is available on the internet (http://www.irmm.jrc.be). A paper copy can be obtained from IRMM on request.

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