JOINT RESEARCH CENTRE
Institute for Reference Materials and Measurements

CERTIFICATE OF ANALYSIS

BCR® – 188

SPIKED MILK POWDER			
Compound [1]	Mass fraction (based on dry mass)		Number of accepted sets of results p
	Certified value [2] [µg/kg]	Uncertainty [3] [µ/kg]	
HCB	37.4	2.7	20
β-HCH	12.0	1.2	19
β-HEPO	32.0	1.9	21
p,p'-DDE	51	4	19
Dieldrin	36.1	2.5	21
Endrin	6.2	0.9	19
p,p'-DDT	69	5	19

1) As determined by GC-ECD.
2) The certified values are the unweighted mean of the means of p sets of results. These sets of results were provided by different laboratories using GC-ECD under different conditions and with different sample preparation methods. The certified values and their uncertainty are traceable to the International System of units (SI).
3) The uncertainty is taken as the half-width of the 95 % confidence interval of the mean value defined in 3).

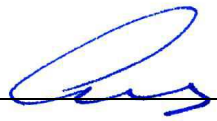
This certificate is valid for one year after purchase.

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 responsibility of IRMM.

Brussels, March 1989
Latest revision: January 2016

Signed: 

Prof. Dr. Hendrik Emons
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Joint Research Centre
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Additional Material Information	
	Mass Fraction [1] [µg/kg]
γ-HCH	> 25

1) This value is the minimum value obtained in the post-certification monitoring of the material. It is stated without an uncertainty and gives merely information about other material properties that may be of interest for the user.

DESCRIPTION OF THE SAMPLE

The sample is a milk powder obtained by spray drying of partly skimmed milk (mixed with butter fat, which was spiked with organochlorine pesticides) at 103 to 180 °C. It is provided in sealed hard glass ampoules containing approximately 15 to 20 g under argon.

ANALYTICAL METHOD USED FOR CERTIFICATION

After reconstitution, various solvents (e.g. ethoxy-ethane/hexane, cyclohexane/ethyl acetate, petroleum ether/acetone, pentane/acetone, dichloromethane) were used for extraction; for clean-up, techniques such as percolation over silica gel, Florisil or neutral or basic alumina, gel permeation chromatography and liquid-liquid partitioning (acetonitrile/hexane) were chosen. For the final measurement gas chromatography (capillary or packed column with various sorbents) and electron capture detection was the method of choice.

PARTICIPANTS

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- Universidad de Zaragoza, Instituto Tecnológico de Aragón, Zaragoza (ES)

SAFETY INFORMATION

The usual laboratory safety precautions apply.

INSTRUCTIONS FOR USE

This material is intended for proving accuracy of analytical methods.
The ampoules should be stored unopened and preferably in the cool; direct exposure to sunlight is to be avoided. A cooled ampoule is to be equilibrated to room temperature before opening. The moisture content should be determined by drying approximately 2 g of another sample portion in a ventilated oven (atmospheric pressure) at 102 ± 1 °C to constant mass (Annex II of certification report). Dispose in accordance with good laboratory practice.

STORAGE

The material should be stored at + 4 °C ± 3 °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 on the production of BCR-188 is available on the internet (http://www.irmm.jrc.be). A paper copy can be obtained from IRMM on request.

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