

JOINT RESEARCH CENTRE
Directorate F – Health, Consumers and Reference Materials

CERTIFICATE OF ANALYSIS

ERM[®] - BB430

PORK FAT		
Organochlorine pesticide ¹⁾	Mass Fraction	
	Certified value ²⁾ [mg/kg]	Certified uncertainty ³⁾ [mg/kg]
HCB	0.193	0.017
α -HCH	0.25	0.04
β -HCH	0.109	0.010
β -HEPO	0.213	0.016
p,p'-DDT	0.48	0.07
p,p'-DDD	0.222	0.022
p,p'-DDE	0.38	0.09

1) Organochlorine pesticide as measured by gas chromatography. Different sample preparation procedures (extraction and clean-up) were applied.

2) Unweighted mean of 6-8 accepted sets of results, each set being obtained in a different laboratory and/or with a different method of determination. The certified value and its uncertainty are traceable to the International System of units (SI).

3) The certified uncertainty is the expanded uncertainty with a coverage factor $k = 2$ corresponding to a level of confidence of about 95 % estimated in accordance with ISO/IEC Guide 98-3, Guide to the Expression of Uncertainty in Measurement (GUM:1995), ISO, 2008.

This certificate is valid for one year after purchase.

Sales date:

The minimum amount of sample to be used is 0.5 g.

Accepted as an ERM[®], Geel, May 2011

Latest revision: December 2016

INFORMATION ONLY

Dr Doris Florian

European Commission, Joint Research Centre
Directorate F – Health, Consumers and Reference Materials
Retieseweg 111
B-2440 Geel, Belgium

NOTE

European Reference Material ERM[®]-BB430 was produced and certified under the responsibility of the Institute for Reference Materials and Measurements of the European Commission's Joint Research Centre according to the principles laid down in the technical guidelines of the European Reference Materials[®] co-operation agreement between BAM-IRMM-LGC. Information on these guidelines is available on the internet (<http://www.erm-crm.org>).

Indicative Values		
Organochlorine pesticide ¹⁾	Mass fraction	
	Indicative value ²⁾ [mg/kg]	Uncertainty [mg/kg]
γ -HCH	1.87	0.31 ³⁾
Dieldrin	0.21	0.05 ⁴⁾
Endrin	0.055	0.016 ³⁾

1) Organochlorine pesticide as measured by gas chromatography. Different sample preparation procedures (extraction and clean-up) were applied.

2) Unweighted mean of 4-5 accepted sets of results, each set being obtained in a different laboratory and/or with a different method of determination.

3) The uncertainty is the expanded uncertainty with a coverage factor $k = 2.78$ corresponding to a level of confidence of about 95 % estimated in accordance with ISO/IEC Guide 98-3, Guide to the Expression of Uncertainty in Measurement (GUM:1995), ISO, 2008.

4) The uncertainty is the expanded uncertainty as described in 3) with a coverage factor $k = 3.18$

DESCRIPTION OF THE SAMPLE

The sample is a homogenous pork fat spiked with organochlorine pesticides. It is provided in sealed amber glass ampoules containing approximately 5 g of material bottled under argon.

ANALYTICAL METHODS USED FOR CERTIFICATION

Gas chromatography with electron capture detection (GC-ECD), gas chromatography with mass spectrometry (GC-MS), gas chromatography with tandem mass spectrometry (GC-MS/MS), and comprehensive gas chromatography with time-of-flight mass spectrometry (GCxGC-TOF-MS)

PARTICIPANTS

- Central Agricultural Office (CAO), HU (Measurements performed under ISO/IEC 17025 accreditation, DAP-PL-3101.00)
- European Commission, Joint Research Centre, Institute for Reference Materials and Measurements (IRMM), BE
- Federal Institute for Materials Research and Testing (BAM), DE (Measurements performed under ISO/IEC 17025 accreditation, DAP-PL-2614.14)
- Helmholtz Centre München, DE (Measurements performed under ISO/IEC 17025 accreditation, DAC-PL-0141-01-10)
- Institute for Environmental Studies (IVM), NL (Measurements performed under ISO/IEC 17025)
- Institute for Food Safety (RIKILT), NL (Measurements performed under ISO/IEC 17025 accreditation, L014, RSV: A0204)
- Solvias AG, CH (Measurements in conformity with GLP according to Directive 2004/9/EC)
- Spectralservice AG, DE (Measurements in conformity with GLP according to Directive 2004/9/EC)
- State Veterinary Institute Jihlava, CZ (Measurements performed under ISO/IEC 17025 accreditation, CAI-341)
- Technical University of Denmark (DTU), DK (Measurements performed under ISO/IEC 17025 accreditation, DANAK-350)

SAFETY INFORMATION

The usual laboratory safety precautions apply.

INSTRUCTIONS FOR USE AND INTENDED USE

This material is intended to be used for method performance control and validation purposes. Samples should be allowed to warm to $55\text{ °C} \pm 5\text{ °C}$ in order to dissolve completely. The content should be thoroughly mixed before sub-samples of at least 0.5 g are taken. The fat should be weighed out immediately after opening and the mass fractions of the pesticides have to be calculated based on this mass.

Dispose in accordance with good laboratory practice.

STORAGE

The material should be stored at $-20\text{ °C} \pm 5\text{ °C}$ in the dark.

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.

LEGAL NOTICE

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NOTE

A detailed technical report is available at crm.jrc.ec.europa.eu. A paper copy can be obtained from the Joint Research Centre, Directorate F – Health, Consumers and Reference Materials on request.

European Commission – Joint Research Centre
Directorate F – Health, Consumers and Reference Materials
Retieseweg 111, B - 2440 Geel (Belgium)
Telephone: +32-(0)14-571.705 - Fax: +32-(0)14-590.406