



CERTIFIED REFERENCE MATERIAL BCR[®] – 349

CERTIFICATE OF ANALYSIS

COD LIVER OIL				
Congener No.	IUPAC Name	Mass fraction		Number of accepted sets of results p
		Certified value ¹⁾ [µg/kg]	Uncertainty ²⁾ [µg/kg]	
28	2,4,4' Trichlorobiphenyl	68	8	13
52	2,2',5,5' Tetrachlorobiphenyl	149	21	10
101	2,2',4,5,5' Pentachlorobiphenyl	372	18	14
118	2,3',4,4',5 Pentachlorobiphenyl	460	40	12
153	2,2',4,4',5,5' Hexachlorobiphenyl	940	40	11
180	2,2',3,4,4',5,5' Heptachlorobiphenyl	282	23	11

¹⁾ This value is the unweighted mean of the means of p accepted sets of results obtained by different clean up techniques and followed by gas chromatography with electron capture detection (GC-ECD). The values are therefore traceable to GC-ECD.

²⁾ The uncertainty is taken as the 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 1.6 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 1995
Revised: September 2013

Signed: _____

Prof. Dr. Hendrik Emons
European Commission
Joint Research Centre
Institute for Reference Materials and Measurements
Retieseweg 111
B-2440 Geel, Belgium

DESCRIPTION OF THE SAMPLE

The material consists of about 2 g cod liver oil with endogenous chlorobiphenyls in a sealed argon filled ampoule. The oil is stabilised by the addition of butyl hydroxy toluene (0.2 mg/g). Additional information on the presence of other chlorobiphenyls and chlorinated pesticides is given in the certification report.

ANALYTICAL METHODS USED FOR CERTIFICATION

Calibration was done with solutions of CRMs BCR-219 and BCR-293 to BCR-298. The samples were dissolved in an appropriate solvent (e.g. hexane, iso-octane) and clean-up was carried out by saponification, gel permeation chromatography, sulphuric acid or column chromatography (alumina, silica gel or florisil). Capillary gas chromatography with electron capture detection was performed using different injection systems, different columns and temperature programs.

PARTICIPANTS

- Department of Agriculture and Fisheries for Scotland (DAFS), Pitlochry (GB)
- Fisheries Research Centre (FRC), Dublin (IE)
- Fødevaredirektoratet, Soborg (DK)
- Havforskningsinstituttet, Bergen (NO)
- Institut Français de Recherche pour l'Exploration de la Mer (IFREMER), Brest (FR)
- Istituto Inquinamento Atmosferico, Roma (IT)
- Laboratoire Municipal de la Ville de Rouen, Rouen (FR)
- Milchwirtschaftliche Untersuchungs- und Forschungsanstalt, Kempten (DE)
- Rijksinstituut voor Visserijonderzoek (RIVO), IJmuiden (NL)
- Rijks-Kwaliteitsinstituut voor Land- en Tuinbouwproducten (RIKILT), Wageningen (NL)
- Statens naturvårdsverk, Solna (SE)
- Universität Ulm, Ulm (DE)
- Vrije Universiteit Amsterdam, Instituut voor Milieuvraagstukken, Amsterdam (NL)

SAFETY INFORMATION

The usual laboratory safety precautions apply.

INSTRUCTIONS FOR USE

The material is intended to be used to check the accuracy of analytical methods.

The calculation should be based on the mass of the total sample and not on the basis of fat. Before opening, the ampoules should be heated to 40 °C for 10 min until homogeneous. Dispose in accordance with good laboratory practice.

STORAGE

The ampoules should be kept at about 20 °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.

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NOTE

A technical report on the production of BCR-349 is available on the internet (<http://www.irmm.jrc.be>). A paper copy can be obtained from IRMM on request.