QUASIMEME

Quality assurance of information for marine environmental monitoring

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Certificate of Analysis

Biota

REFERENCE MATERIAL

Biota sample 373

WAGENINGEN
UNIVERSITY & RESEARCH

Certificate of Analysis Biota 373

General Information

In this report an overview is given of analytical data for this sample collected in our proficiency testing program. The consensus values are calculated using a robust statistical model. With this NDA model mean and standard deviation are calculated using all reported data when at least 4 results are left after removal of reported 'lower than' (<) and 0 (= zero) values. No outliers are removed.

This report is divided into two sections: Consensus Values and Indicative Values. The division is made on the reliability of the data. Consensus Values are based on at least 10 results while the relative uncertainty is smaller than 6.25%. Indicative Values are based on a relative uncertainty of maximum 35% with at least 4 and less than 10 results or a relative uncertainty higher than 6.25%.

For each determinand the following parameters are given: mean, standard deviation, coefficient of variation, number of results, median, MAD (Median of Absolute Deviation) and the uncertainty in the assigned value. The confidence limits (at 95 % probabilty) are calculated for these determinands.

The results of each determinand is expressed on a wet weight basis.

Sample information

QUASIMEME reference materials cover a range of natural Biota species from contaminated waters from the North Sea and/or Mediterranean. The supplied wet test materials are homogenised and sterilised by autoclaving.

This Biota sample 373 of Mixture Flounder+sole+plaice from Western scheldt, the Netherlands is prepared for the QUASIMEME proficiency programs. The results on which the values in this report are based were taken from the periods given in the following table.

Year.Round	Program	Sample Round Id
2022.2	BT2	QOR153BT
2022.2	BT9	QBC074BT

Consensus Values BT2

Method: Chlorinated organics - BT2

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
PCB101	µg/kg	7.36	1.177	16.0	16	7.30	0.830	0.368	6.73 - 7.98
PCB118	µg/kg	4.58	0.675	14.7	16	4.55	0.477	0.211	4.22 - 4.94
PCB138	µg/kg	9.44	1.331	14.1	15	9.42	0.951	0.430	8.70 - 10.2
PCB153	µg/kg	19.2	3.80	19.8	16	19.0	2.56	1.19	17.2 - 21.2
PCB180	µg/kg	5.92	0.710	12.0	17	5.80	0.500	0.215	5.56 - 6.29
pp'-DDD	µg/kg	0.953	0.1548	16.2	14	0.958	0.1128	0.0517	0.865 - 1.04
pp'-DDE	µg/kg	3.84	0.729	19.0	15	3.86	0.477	0.235	3.44 - 4.24

Indicative Values BT2

Method: Chlorinated organics - BT2

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
PCB28	µg/kg	0.602	0.1327	22.0	15	0.605	0.0948	0.0428	0.529 - 0.675
PCB31	µg/kg	0.209	0.0554	26.5	7	0.215	0.0414	0.0262	0.159 - 0.258
PCB52	µg/kg	2.92	0.628	21.5	14	2.94	0.466	0.210	2.56 - 3.28
PCB105	µg/kg	0.907	0.1234	13.6	9	0.920	0.0800	0.0514	0.814 - 1.000
PCB128	(µg/kg)	1.20	0.064	5.4	4	1.20	0.040	0.040	1.11 - 1.28
PCB156	µg/kg	0.593	0.1148	19.4	9	0.642	0.0820	0.0478	0.506 - 0.679
PCB170	(µg/kg)	2.16	0.285	13.2	7	2.12	0.183	0.135	1.90 - 2.41
PCB183	(µg/kg)	1.25	0.123	9.8	4	1.29	0.090	0.077	1.08 - 1.42
PCB187	(µg/kg)	5.27	0.822	15.6	6	5.25	0.540	0.419	4.45 - 6.09
PCB194	(µg/kg)	0.578	0.0627	10.9	6	0.580	0.0450	0.0320	0.515 - 0.640
PCB209	(µg/kg)	0.112	0.0048	4.3	4	0.113	0.0035	0.0030	0.105 - 0.119
HCB	µg/kg	0.0819	0.0518	63.2	11	0.0973	0.0374	0.0195	0.0475 - 0.116
Dieldrin	µg/kg	0.898	0.2021	22.5	4	0.856	0.1350	0.1263	0.617 - 1.18

Method: Lipids - BT2

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
Total-Lipid	%	3.16	0.304	9.6	8	3.16	0.190	0.134	2.91 - 3.41
Extractable-Lipid	%	3.64	0.088	2.4	5	3.63	0.070	0.049	3.54 - 3.74

Consensus Values BT9

Method: Brominated Flame Retardants - BT9

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
BDE28	µg/kg	0.0121	0.0013	10.8	12	0.0122	0.0009	0.0005	0.0113 - 0.0130
BDE47	µg/kg	0.193	0.0289	15.0	17	0.191	0.0200	0.0088	0.178 - 0.207
BDE100	µg/kg	0.0699	0.0083	11.8	16	0.0711	0.0058	0.0026	0.0656 - 0.0743

Indicative Values BT9

Method: Brominated Flame Retardants - BT9

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
BDE66	µg/kg	0.0061	0.0016	26.6	9	0.0066	0.0012	0.0007	0.0049 - 0.0073
BDE99	µg/kg	0.0142	0.0036	25.2	11	0.0145	0.0025	0.0013	0.0119 - 0.0166
BDE153	µg/kg	0.0112	0.0021	19.3	10	0.0114	0.0014	0.0008	0.0096 - 0.0127
BDE154	µg/kg	0.0480	0.0142	29.7	15	0.0484	0.0100	0.0046	0.0401 - 0.0558
BDE209	µg/kg	0.525	0.1088	20.7	7	0.533	0.0820	0.0514	0.427 - 0.622
Total lipid	(%)	3.53	0.216	6.1	8	3.58	0.135	0.096	3.36 - 3.71