QUASIMEME

Quality assurance of information for marine environmental monitoring

Certificate of Analysis

Biota

REFERENCE MATERIAL

Biota sample 340

WAGENINGEN
UNIVERSITY & RESEARCH

Certificate of Analysis Biota 340

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 340 of Bream from Lake Zoommeer, 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
2023.2	BT9	QBC077BT
2022.1	BT9	QBC071BT
2021.1	BT2	QOR146BT
2018.1	BT9	QBC056BT
2015.2	BT9	QBC045BT

Consensus Values BT2

Method: Chlorinated organics - BT2

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
PCB28	µg/kg	1.74	0.264	15.2	16	1.72	0.120	0.082	1.60 - 1.88
PCB52	µg/kg	6.17	1.017	16.5	17	6.21	0.708	0.308	5.65 - 6.69
PCB101	µg/kg	14.2	1.68	11.8	17	14.4	1.10	0.51	13.4 - 15.1
PCB118	µg/kg	10.2	1.80	17.6	16	10.8	1.29	0.56	9.25 - 11.2
PCB153	µg/kg	44.8	7.23	16.1	16	44.5	4.35	2.26	40.9 - 48.6
PCB180	µg/kg	17.8	3.55	19.9	16	17.3	2.20	1.11	16.0 - 19.7

Method: Lipids - BT2

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
Total-Lipid	%	3.30	0.337	10.2	10	3.31	0.153	0.133	3.06 - 3.54

Indicative Values BT2

Method: Chlorinated organics - BT2

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits		
g-HCH	µg/kg	-	-	-	4	0.100	0.1	-	-	-	-
Transnonachlor	µg/kg	-	-	-	4	0.140	0.0	-	-	-	-
Dieldrin	µg/kg	1.11	0.183	16.5	6	1.11	0.080	0.093	0.927	-	1.29
pp'-DDE	µg/kg	9.05	1.802	19.9	15	9.21	0.970	0.582	8.06	-	10.0
pp'-DDD	µg/kg	1.63	0.511	31.3	15	1.73	0.270	0.165	1.35	-	1.91
HCB	µg/kg	0.681	0.2436	35.8	15	0.709	0.1430	0.0786	0.547	-	0.815
PCB105	µg/kg	1.53	0.441	28.7	8	1.56	0.278	0.195	1.18	-	1.89
PCB138+PCB163	µg/kg	-	-	-	5	23.7	1.9	-	-	-	-
PCB156	µg/kg	1.66	0.426	25.7	8	1.72	0.304	0.188	1.31	-	2.01
PCB31	µg/kg	0.978	0.1711	17.5	6	0.970	0.0960	0.0873	0.807	-	1.15
PCB138	µg/kg	22.1	4.35	19.7	12	22.4	2.65	1.57	19.3	-	24.8
Heptachlor-epoxide (sum)	(µg/kg)	-	-	-	4	0.419	0.4	-	-	-	-
trans-chlordane	(µg/kg)	-	-	-	5	0.196	0.1	-	-	-	-

Method: Lipids - BT2

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits		
Extractable-Lipid	%	-	-	-	5	3.33	0.0	-	-	-	-

Consensus Values BT9

Method: Brominated Flame Retardants - BT9

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
BDE47	µg/kg	1.25	0.288	23.1	64	1.26	0.165	0.045	1.17 - 1.32
BDE100	µg/kg	0.437	0.1285	29.4	61	0.460	0.0700	0.0206	0.404 - 0.470
BDE153	µg/kg	0.145	0.0526	36.4	55	0.149	0.0350	0.0089	0.130 - 0.159
BDE154	µg/kg	0.366	0.1021	27.9	60	0.364	0.0620	0.0165	0.339 - 0.392
Total lipid	(%)	3.17	0.397	12.5	13	3.20	0.260	0.138	2.93 - 3.41

Indicative Values BT9

Method: Brominated Flame Retardants - BT9

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
BDE28	µg/kg	0.0235	0.0127	54.1	40	0.0271	0.0086	0.0025	0.0194 - 0.0275
BDE209	µg/kg	-	-	-	5	0.107	0.1	-	- - -
Total HBCD	µg/kg	-	-	-	4	0.0333	0.0	-	- - -
a-HBCD	µg/kg	-	-	-	5	0.0270	0.0	-	- - -