QUASIMEME

Quality assurance of information for marine environmental monitoring

Certificate of Analysis

Biota

REFERENCE MATERIAL

Biota sample 380

WAGENINGEN
UNIVERSITY & RESEARCH

Certificate of Analysis Biota 380

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, the 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 8 results and a maximum relative uncertainty of 6.25%. Indicative Values are based on a maximum relative uncertainty of 35% and a minimum of 4 and maximum of 7 results, or a relative uncertainty greater than 6.25% when there are at least 8 results.

For each determinand the following parameters are given: mean, standard deviation, coefficient of variation, number of results, median, MAD (Median of Absolute Deviation), the uncertainty of the mean (consensus or indicative) value and the relative uncertainty.

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 380 of Mussel tissue from Ijmuiden harbor, 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
2025.1	BT10	QPF039BT
2025.1	BT4	QPH118BT
2025.1	BT8	QSP094BT

Consensus Values BT4

Method: Polycyclic aromatic hydrocarbons - BT4

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Benzo[g,h,i]perylene	µg/kg	1.95	0.228	11.7	14	1.94	0.110	0.076	3.90
Fluoranthene	µg/kg	13.0	2.51	19.3	16	13.1	1.60	0.783	6.02

Indicative Values BT4

Method: Polycyclic aromatic hydrocarbons - BT4

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Chrysene + Triphenylene	µg/kg	8.01	1.08	13.5	5	8.02	0.610	0.606	7.57
Benzo[e]pyrene	µg/kg	5.67	1.06	18.7	6	5.84	0.699	0.542	9.56
Indeno[1,2,3-cd]pyrene	µg/kg	1.28	0.410	32.1	13	1.26	0.340	0.142	11.1
Phenanthrene	µg/kg	6.78	1.78	26.3	14	7.29	1.02	0.596	8.79
Pyrene	µg/kg	14.9	3.65	24.5	15	15.7	2.70	1.18	7.91
Benzo[a]anthracene	µg/kg	5.75	1.40	24.3	16	6.15	0.840	0.436	7.59
Benzo[b]fluoranthene	µg/kg	4.55	1.03	22.6	13	4.44	0.600	0.357	7.83
Benzo[a]pyrene	µg/kg	1.95	0.445	22.8	17	1.94	0.301	0.135	6.91
Naphthalene	µg/kg	1.85	0.731	39.5	8	1.85	0.456	0.323	17.4
Dibenz[ah]anthracene	µg/kg	0.285	0.071	24.8	7	0.302	0.040	0.033	11.7
Benzo[k]fluoranthene	µg/kg	1.87	0.501	26.7	12	1.87	0.310	0.181	9.64
Anthracene	µg/kg	0.842	0.275	32.7	14	0.868	0.169	0.092	10.9
Fluorene	µg/kg	1.10	0.323	29.5	10	1.14	0.249	0.128	11.6
Dibenzothiophene	µg/kg	0.457	0.166	36.3	4	0.471	0.090	0.104	22.7
3-6-dimethylphenanthrene	µg/kg	4.61	1.87	40.7	4	4.40	0.970	1.17	25.4
2-methylphenanthrene	µg/kg	6.89	0.342	5.0	4	6.89	0.155	0.214	3.11
Chrysene	µg/kg	5.06	1.46	28.8	13	5.40	0.870	0.505	9.99
Acenaphthene	µg/kg	0.401	0.190	47.3	7	0.430	0.061	0.090	22.3
1-methylnaphtalene	µg/kg	0.773	0.459	59.4	5	0.839	0.279	0.257	33.2
2-methylnaphtalene	µg/kg	0.807	0.243	30.1	5	0.840	0.130	0.136	16.8
C1-phenanthren.+ anthracen.	µg/kg	22.7	2.92	12.9	4	22.8	1.37	1.82	8.05
C2-phenanthren.+ anthracen.	µg/kg	50.5	17.1	33.9	5	50.5	10.1	9.58	19.0

Method: Lipids - BT4

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Total-Lipid	%	2.11	0.064	3.0	7	2.12	0.031	0.030	1.42

Indicative Values BT8

Method: Organometals - BT8

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Tributyltin (TBT)	µg Sn/kg	1.13	0.190	16.8	6	1.13	0.106	0.097	8.57
Dibutyltin (DBT)	µg Sn/kg	0.628	0.239	38.1	5	0.593	0.115	0.134	21.3
Monobutyltin (MBT)	µg Sn/kg	0.641	0.075	11.7	4	0.638	0.042	0.047	7.32

Consensus Values BT10

Method: Perfluorinated alkyl substances - BT10

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
n-PFOS	µg/kg	0.194	0.026	13.6	8	0.194	0.014	0.012	6.00

Indicative Values BT10

Method: Perfluorinated alkyl substances - BT10

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
PFOSA	µg/kg	0.530	0.146	27.6	6	0.548	0.093	0.075	14.1
PFOA	µg/kg	0.034	0.016	46.8	5	0.038	0.013	0.009	26.2
PFNA	µg/kg	0.024	0.007	29.5	5	0.024	0.004	0.004	16.5
PFDA	µg/kg	0.043	0.012	28.3	5	0.044	0.007	0.007	15.8
PFUnDA	µg/kg	0.041	0.005	12.9	4	0.042	0.003	0.003	8.05
PFDoA	µg/kg	0.098	0.019	19.9	5	0.098	0.011	0.011	11.1
PFTrDA	µg/kg	0.097	0.037	38.1	4	0.094	0.018	0.023	23.8
total-PFOS	µg/kg	0.212	0.046	21.9	5	0.211	0.029	0.026	12.2