



WEPAL-QUASIMEME

Certificate of Analysis



Biota

REFERENCE MATERIAL

Biota sample 384

2026-Aug-11



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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 measurand, 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.

Please note: Most WEPAL-QUASIMEME reference materials are found to be stable over the long term (>10 years) for most measurand/matrix combinations. There are a few exceptions known to us as being less stable over the long term. These are organotins in sediment (MS6), ASP in shellfish (BT7), some PAHs and PCBs in sediment (SETOC) and N-NH₄ (as N) & N-NO₃ (as N) in clay soils (ISE).

The results of each measurand 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 384 of Mussel tissue from Yerseke, the Netherlands (spiked) is prepared for the QUASIMEME proficiency programs. The results on which the values in this report are based were taken from the rounds given in the following table.

Year.Round	Program	Sample Round Id
2026.1	BT4	QPH122BT
2026.1	BT8	QSP098BT



Consensus Values BT4

Method: Polycyclic aromatic hydrocarbons - BT4

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Benzo[b]fluoranthene	µg/kg	1.29	0.256	19.8	16	1.27	0.161	0.080	6.19

Method: Lipids - BT4

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Total-Lipid	%	1.59	0.148	9.3	8	1.56	0.064	0.065	4.11



Indicative Values BT4

Method: Polycyclic aromatic hydrocarbons - BT4

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Chrysene + Triphenylene	µg/kg	1.13	0.357	31.6	5	1.20	0.244	0.199	17.7
Benzo[e]pyrene	µg/kg	1.84	0.324	17.6	8	1.80	0.176	0.143	7.76
Indeno[1,2,3-cd]pyrene	µg/kg	1.68	0.440	26.1	16	1.65	0.248	0.137	8.16
Phenanthrene	µg/kg	17.2	3.48	20.2	13	17.0	1.46	1.21	7.01
Pyrene	µg/kg	1.95	0.693	35.5	14	1.93	0.469	0.231	11.8
Benzo[g,h,i]perylene	µg/kg	0.817	0.185	22.7	13	0.791	0.111	0.064	7.86
Fluoranthene	µg/kg	7.43	2.47	33.3	16	7.87	1.32	0.772	10.4
Benzo[a]anthracene	µg/kg	0.738	0.235	31.9	17	0.750	0.150	0.071	9.66
Benzo[a]pyrene	µg/kg	0.910	0.462	50.7	17	0.973	0.156	0.140	15.4
Naphthalene	µg/kg	0.690	0.247	35.8	8	0.681	0.093	0.109	15.8
Dibenz[ah]anthracene	µg/kg	0.775	0.227	29.3	13	0.810	0.074	0.079	10.2
Benzo[k]fluoranthene	µg/kg	0.620	0.245	39.6	15	0.620	0.130	0.079	12.8
Anthracene	µg/kg	8.01	2.96	36.9	14	8.72	1.47	0.988	12.3
Fluorene	µg/kg	0.787	0.396	50.3	11	0.827	0.249	0.149	19.0
Acenaphthylene	µg/kg	25.4	6.61	26.0	9	26.3	3.41	2.75	10.8
2-methylphenanthrene	µg/kg	0.403	0.164	40.6	4	0.415	0.074	0.102	25.4
Perylene	µg/kg	1.22	0.466	38.3	5	1.20	0.260	0.260	21.4
Chrysene	µg/kg	0.869	0.252	29.0	14	0.885	0.123	0.084	9.69
1-methylnaphtalene	µg/kg	0.350	0.118	33.6	5	0.350	0.081	0.066	18.8
2-methylnaphtalene	µg/kg	0.282	0.048	17.1	5	0.287	0.027	0.027	9.57



Indicative Values BT8

Method: Organometals - BT8

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Tributyltin (TBT)	µg Sn/kg	1.72	0.347	20.2	9	1.85	0.190	0.144	8.40
Dibutyltin (DBT)	µg Sn/kg	0.556	0.133	23.8	6	0.550	0.103	0.068	12.2
Monobutyltin (MBT)	µg Sn/kg	1.10	0.329	30.0	6	1.10	0.216	0.168	15.3