QUASIMEME

Quality assurance of information for marine environmental monitoring

Certificate of Analysis

Biota

REFERENCE MATERIAL

Biota sample 364

WAGENINGEN
UNIVERSITY & RESEARCH

Certificate of Analysis Biota 364

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 364 of Mussel from Limfjord, Denmark 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
2020.1	BT1	QTM127BT

Consensus Values BT1

Method: Metals - BT1

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
Arsenic	mg/kg	1.80	0.139	7.7	22	1.81	0.090	0.037	1.74 - 1.86
Cadmium	µg/kg	100	4.6	4.6	23	99.9	3.1	1.2	98.4 - 102.3
Chromium	µg/kg	146	24.8	17.0	19	150	17.0	7.1	134 - 158
Cobalt	µg/kg	113	11.3	10.0	12	113	7.8	4.1	106 - 120
Copper	µg/kg	1430	115	8.0	22	1430	82	31	1381 - 1482
Iron	mg/kg	31.8	3.97	12.5	14	32.5	2.75	1.33	29.5 - 34.1
Lead	µg/kg	106	7.4	6.9	21	106	5.0	2.0	103.0 - 109.6
Manganese	µg/kg	2970	152	5.1	17	2960	107	46	2889 - 3045
Mercury	µg/kg	13.8	2.99	21.7	25	13.9	2.14	0.75	12.5 - 15.0
Nickel	µg/kg	331	26.5	8.0	20	333	17.8	7.4	319 - 344
Selenium	µg/kg	593	39.4	6.6	17	591	26.0	11.9	573 - 613
Zinc	mg/kg	23.7	1.71	7.2	22	23.8	1.15	0.46	23.0 - 24.5

Method: Weight - BT1

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
Dry-weight	%	23.5	0.20	0.9	16	23.5	0.15	0.06	23.41 - 23.62

Indicative Values BT1

Method: Metals - BT1

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
Aluminium	mg/kg	14.7	6.60	44.9	7	13.4	4.41	3.12	8.80 - 20.6
Barium	µg/kg	387	99.8	25.8	4	388	66.0	62.3	248 - 525
Calcium	mg/kg	359	77.5	21.6	4	370	51.0	48.4	251 - 466
Magnesium	mg/kg	406	39.3	9.7	5	400	26.3	21.9	361 - 451
Molybdene	µg/kg	114	22.0	19.3	10	117	15.1	8.7	98.2 - 129
Potassium	mg/kg	1740	259	14.9	5	1800	183	145	1443 - 2037
Silver	µg/kg	8.32	2.833	34.1	10	8.33	1.970	1.120	6.32 - 10.3
Sodium	mg/kg	4830	364	7.5	5	4950	250	204	4409 - 5247
Uranium	µg/kg	25.0	0.77	3.1	5	25.2	0.50	0.43	24.1 - 25.9
Vanadium	µg/kg	127	20.2	15.9	9	130	13.9	8.4	112 - 143