



# QUASIMEME

Quality assurance of information  
for marine environmental monitoring

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## Certificate of Analysis



**Sediment**

**REFERENCE MATERIAL**

**Sediment sample 60**

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## Certificate of Analysis Sediment 60

### 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 % probability) are calculated for these determinands.

The results of each determinand is expressed on dried sediment.

### Sample information

QUASIMEME reference materials cover a range of natural Marine sediment species from contaminated waters from the North Sea and/or Mediterranean. There is no spiking, mixing or other alterations of the samples. For sample preparation the sediment samples are dried at 40 oC and milled to pass a 0.5 mm sieve.

This Sediment sample 60 of Estuary sediment spiked from Westerscheldt 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	MS6	QSP083MS
2022.1	MS7	QBC072MS
2021.2	MS6	QSP080MS
2021.2	MS8	QPF015MS
2020.2	MS8	QPF011MS



## Consensus Values MS6

### Method: Organometals - MS6

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits		
Dibutyltin (DBT)	µg Sn/kg	8.99	2.336	26.0	36	9.05	1.562	0.487	8.20	-	9.78
Tributyltin (TBT)	µg Sn/kg	8.89	1.891	21.3	40	8.94	1.250	0.374	8.28	-	9.49



### Indicative Values MS6

#### Method: Organometals - MS6

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits		
Monobutyltin (MBT)	µg Sn/kg	37.0	22.07	59.6	31	37.9	15.37	4.95	28.9	-	45.1
Monophenyltin (MPhT)	µg Sn/kg	3.45	0.960	27.8	9	3.40	0.620	0.400	2.73	-	4.18
Diphenyltin (DPhT)	µg Sn/kg	2.09	0.652	31.1	7	2.13	0.420	0.308	1.51	-	2.68
Triphenyltin (TPhT)	µg Sn/kg	1.88	0.398	21.2	15	2.00	0.240	0.128	1.66	-	2.10



### Indicative Values MS7

#### Method: Brominated Flame Retardants - MS7

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
BDE028	µg/kg	0.0241	0.0155	64.5	9	0.0310	0.0128	0.0065	0.0124 - 0.0358
BDE047	µg/kg	1.30	0.243	18.7	12	1.26	0.169	0.088	1.15 - 1.46
BDE099	µg/kg	0.0769	0.0216	28.1	10	0.0815	0.0151	0.0085	0.0617 - 0.0921
BDE209	µg/kg	15.7	0.88	5.6	9	15.7	0.66	0.37	15.0 - 16.3



## Indicative Values MS8

### Method: Perfluorinated alkyl substances - MS8

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
n-PFOS	µg/kg	0.0490	0.0357	72.8	7	0.0523	0.0263	0.0169	0.0171 - 0.0809
total-PFOS	µg/kg	0.0846	0.0288	34.0	8	0.0905	0.0214	0.0127	0.0611 - 0.108
PFHxA	µg/kg	0.0168	0.0049	29.4	4	0.0167	0.0035	0.0031	0.0100 - 0.0237
PFHpA	µg/kg	0.0082	0.0018	21.6	4	0.0082	0.0012	0.0011	0.0057 - 0.0106
PFOA	µg/kg	0.0107	0.0033	30.3	4	0.0120	0.0025	0.0020	0.0062 - 0.0152
PFDA	µg/kg	0.0127	0.0023	18.1	4	0.0126	0.0015	0.0014	0.0095 - 0.0158
PFUnDA	µg/kg	0.0331	0.0110	33.3	5	0.0390	0.0074	0.0062	0.0204 - 0.0458
PFDoA	µg/kg	0.0587	0.0088	14.9	5	0.0614	0.0065	0.0049	0.0486 - 0.0687
PFTTrDA	µg/kg	0.192	0.0360	18.7	8	0.191	0.0220	0.0159	0.163 - 0.222
PFTeDA	µg/kg	0.132	0.0132	10.0	8	0.131	0.0080	0.0058	0.121 - 0.143
n-PFHxS	µg/kg	0.0303	0.0048	15.8	4	0.0303	0.0030	0.0030	0.0236 - 0.0369