QUASIMEME

Quality assurance of information
for marine environmental monitoring

Certificate of Analysis

Volatile Organics in seawater

REFERENCE MATERIAL

AQ6 sample 75

WAGENINGEN
UNIVERSITY & RESEARCH

Certificate of Analysis   AQ6 75

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.

Sample information

QUASIMEME reference materials cover a range of natural SeaWater species from contaminated waters from the North Sea and/or Mediterranean.

This AQ6 sample 75 of Seawater spiked with volatiles from North Sea 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
2023.1	AQ6	QVC074SW

Consensus Values   AQ6

Method: VOCs - AQ6

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits		
Carbon-tetrachloride	µg/L	4.00	0.494	12.3	10	4.15	0.320	0.195	3.65	-	4.35
Tetrachloroethene	µg/L	5.83	0.805	13.8	10	5.85	0.615	0.318	5.26	-	6.40
Trichlorethene	µg/L	4.08	0.579	14.2	10	4.03	0.325	0.229	3.67	-	4.48
Chloroform	µg/L	7.37	0.719	9.8	10	7.39	0.515	0.284	6.86	-	7.87
Benzene	µg/L	34.6	3.60	10.4	10	34.5	2.04	1.42	32.1	-	37.2

Indicative Values   AQ6

Method: VOCs - AQ6

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits		
1-1-1-trichloroethane	µg/L	2.10	0.206	9.8	9	2.10	0.106	0.086	1.95	-	2.26
1-2-dichloroethane	µg/L	5.41	0.592	10.9	9	5.51	0.305	0.247	4.96	-	5.85
1-1-2-trichloroethane	µg/L	6.72	0.304	4.5	8	6.65	0.146	0.134	6.47	-	6.97
Dichloromethane	µg/L	15.9	2.28	14.3	9	16.0	2.00	0.95	14.2	-	17.7
Styrene	µg/L	-	-	-	5	1.17	0.4	-	-	-	-
2-chlorotoluene	µg/L	-	-	-	5	1.98	0.0	-	-	-	-
4-chlorotoluene	µg/L	-	-	-	5	3.28	0.6	-	-	-	-
1,1-dichloroethane	µg/L	7.08	1.167	16.5	7	6.94	0.561	0.551	6.03	-	8.12
1,1-dichloroethene	µg/L	-	-	-	5	1.90	0.4	-	-	-	-
1,2-dichloropropane	µg/L	6.07	0.767	12.6	7	6.07	0.475	0.362	5.39	-	6.76
1,2-dichlorobenzene	µg/L	6.88	1.173	17.0	6	7.10	0.745	0.599	5.71	-	8.05
1,3-dichlorobenzene	µg/L	-	-	-	5	4.01	0.6	-	-	-	-
1,4-dichlorobenzene	µg/L	5.50	1.546	28.1	6	5.29	0.657	0.789	3.96	-	7.05
1,1,1,2-tetrachlorethane	µg/L	-	-	-	4	2.14	0.1	-	-	-	-
Chlorobenzene	µg/L	3.57	0.501	14.0	6	3.52	0.240	0.256	3.07	-	4.07
cis-1,2-dichloroethene	µg/L	2.22	0.302	13.6	8	2.24	0.207	0.133	1.97	-	2.46
trans-1,2-dichloroethene	µg/L	4.96	0.502	10.1	7	5.02	0.285	0.237	4.51	-	5.40
Toluene	µg/L	8.21	0.882	10.7	8	8.19	0.605	0.390	7.49	-	8.93
Ethylbenzene	µg/L	2.67	0.297	11.1	8	2.69	0.208	0.131	2.43	-	2.92
o-Xylene	µg/L	6.11	0.641	10.5	7	6.25	0.346	0.303	5.53	-	6.68
m+p-Xylene	µg/L	7.46	1.080	14.5	8	7.74	0.580	0.477	6.58	-	8.34
Isopropylbenzene	µg/L	3.46	0.420	12.1	7	3.53	0.230	0.198	3.09	-	3.84
n-Propylbenzene	µg/L	-	-	-	4	2.09	0.1	-	-	-	-
tert-bytylbenzene	µg/L	-	-	-	4	3.32	0.1	-	-	-	-