QUASIMEME

Quality assurance of information for marine environmental monitoring

Certificate of Analysis

Polycyclic Aromatic Hydrocarbons in seawater

REFERENCE MATERIAL

AQ13 sample 47

WAGENINGEN
UNIVERSITY & RESEARCH

Certificate of Analysis AQ13 47

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 AQ13 sample 47 of Seawater with spike solution 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
2022.1	AQ13	QPH045SW

Consensus Values AQ13

Method: Polycyclic aromatic hydrocarbons - AQ13

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
Benzo[a]anthracene	µg/L	0.0748	0.0103	13.8	11	0.0750	0.0070	0.0039	0.0680 - 0.0817
Benzo[a]pyrene	µg/L	0.0479	0.0059	12.3	13	0.0490	0.0040	0.0020	0.0444 - 0.0515
Chrysene	µg/L	0.0677	0.0093	13.8	11	0.0690	0.0063	0.0035	0.0615 - 0.0739
Fluoranthene	µg/L	0.618	0.0989	16.0	15	0.630	0.0697	0.0319	0.563 - 0.672
Pyrene	µg/L	0.0776	0.0127	16.3	11	0.0780	0.0081	0.0048	0.0692 - 0.0860

Indicative Values AQ13

Method: Polycyclic aromatic hydrocarbons - AQ13

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
Acenaphthene	µg/L	3.60	0.921	25.6	13	3.58	0.594	0.319	3.05 - 4.15
Acenaphthylene	µg/L	2.63	0.673	25.6	13	2.64	0.428	0.233	2.22 - 3.03
Anthracene	µg/L	1.19	0.240	20.2	15	1.21	0.170	0.078	1.06 - 1.32
Benzo[b]fluoranthene	µg/L	0.0461	0.0091	19.8	13	0.0480	0.0059	0.0032	0.0407 - 0.0516
Benzo[k]fluoranthene	µg/L	0.0459	0.0104	22.7	13	0.0460	0.0069	0.0036	0.0396 - 0.0521
Benzo[g,h,i]perylene	µg/L	0.0148	0.0033	22.5	13	0.0144	0.0024	0.0012	0.0128 - 0.0167
Dibenzo[ah]anthracene	µg/L	0.0723	0.0250	34.6	11	0.0676	0.0176	0.0094	0.0557 - 0.0888
Fluorene	µg/L	0.0345	0.0045	13.0	8	0.0344	0.0031	0.0020	0.0309 - 0.0382
Indeno[1,2,3-cd]pyrene	µg/L	0.598	0.1826	30.5	14	0.578	0.1288	0.0610	0.494 - 0.703
Naphthalene	µg/L	2.86	0.672	23.5	15	2.72	0.460	0.217	2.49 - 3.23
Phenanthrene	µg/L	0.701	0.1443	20.6	13	0.740	0.0966	0.0500	0.614 - 0.787