QUASIMEME

Quality assurance of information for marine environmental monitoring

Certificate of Analysis

Polycyclic Aromatic Hydrocarbons in seawater

REFERENCE MATERIAL

AQ13 sample 49

WAGENINGEN
UNIVERSITY & RESEARCH

Certificate of Analysis AQ13 49

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 49 of Seawater spiked 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
2023.1	AQ13	QPH047SW

Consensus Values AQ13

Method: Polycyclic aromatic hydrocarbons - AQ13

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
Indeno[1,2,3-cd]pyrene	µg/L	0.0873	0.0124	14.1	17	0.0840	0.0068	0.0037	0.0810 - 0.0936
Phenanthrene	µg/L	0.626	0.1151	18.4	17	0.640	0.0692	0.0349	0.568 - 0.685
Benzo[g,h,i]perylene	µg/L	0.0562	0.0082	14.7	16	0.0556	0.0044	0.0026	0.0518 - 0.0606
Fluoranthene	µg/L	0.354	0.0443	12.5	18	0.351	0.0269	0.0131	0.332 - 0.376
Benzo[b]fluoranthene	µg/L	0.0517	0.0077	14.9	17	0.0500	0.0053	0.0023	0.0478 - 0.0557
Benzo[a]pyrene	µg/L	0.0428	0.0078	18.3	16	0.0428	0.0050	0.0025	0.0386 - 0.0470
Naphthalene	µg/L	1.35	0.175	13.0	16	1.36	0.099	0.055	1.26 - 1.44
Benzo[k]fluoranthene	µg/L	0.0307	0.0035	11.5	16	0.0306	0.0020	0.0011	0.0288 - 0.0326
Anthracene	µg/L	0.414	0.0854	20.6	19	0.400	0.0520	0.0245	0.373 - 0.455
Acenaphthylene	µg/L	0.789	0.1424	18.0	16	0.804	0.0718	0.0445	0.714 - 0.865
Pyrene	µg/L	0.0551	0.0082	14.9	14	0.0541	0.0048	0.0027	0.0504 - 0.0598

Indicative Values AQ13

Method: Polycyclic aromatic hydrocarbons - AQ13

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
Acenaphthene	µg/L	0.808	0.1668	20.6	16	0.792	0.0760	0.0521	0.719 - 0.896
Dibenzo[ah]anthracene	µg/L	0.0467	0.0146	31.2	14	0.0479	0.0069	0.0049	0.0383 - 0.0550
Benzo[a]anthracene	µg/L	0.0238	0.0059	24.9	14	0.0238	0.0043	0.0020	0.0204 - 0.0272
Benzo[e]pyrene	µg/L	-	-	-	5	0.0235	0.0	-	- - -
Chrysene	µg/L	0.0295	0.0065	22.0	13	0.0293	0.0037	0.0022	0.0256 - 0.0334
Fluorene	µg/L	0.0397	0.0090	22.8	13	0.0394	0.0047	0.0031	0.0343 - 0.0452