WAGENINGEN EVALUATING PROGRAMS

FOR ANALYTICAL LABORATORIES

Certificate of Analysis

International Sediment Exchange for Tests on Organic Contaminants

REFERENCE MATERIAL

SETOC sample 710

WAGENINGEN
UNIVERSITY & RESEARCH

Certificate of Analysis SETOC 710

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, the 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 8 results and a maximum relative uncertainty of 6.25%. Indicative Values are based on a maximum relative uncertainty of 35% and a minimum of 4 and maximum of 7 results, or a relative uncertainty greater than 6.25% when there are at least 8 results.

For each determinand the following parameters are given: mean, standard deviation, coefficient of variation, number of results, median, MAD (Median of Absolute Deviation), the uncertainty of the mean (consensus or indicative) value and the relative uncertainty.

All values, expressed on a weight basis (kg or %), are reported as oven-dried (105°C) material. Moisture is reported in the material as received.

Sample information

WEPAL reference materials are from natural sources only. There is no spiking, mixing or other alterations of the samples. For sample preparation, the SETOC samples are dried at 40°C and milled to pass a 0.5 mm sieve.

This SETOC sample 710 of Sediment, from Netherlands, is prepared for the WEPAL proficiency programs. The sample has been used in 1 period (or round). The results on which the values in this report are based were taken from the period given in the following table:

Year	Round	Number
1993	3	3

Consensus Values SETOC 710

Method: Metals

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
As	mg/kg	19.8	3.32	16.8	21	20.0	2.00	0.906	4.58
Cu	mg/kg	8.62	1.79	20.8	22	8.35	1.11	0.477	5.54
Ni	mg/kg	27.6	4.67	16.9	21	27.2	2.70	1.28	4.61
Zn	mg/kg	79.7	6.55	8.2	22	80.5	4.25	1.75	2.19

Indicative Values SETOC 710

Method: Polycyclic aromatic hydrocarbons

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
naphthalene	µg/kg	9.34	9.53	102.0	12	16.0	6.00	3.44	36.8
phenanthrene	µg/kg	11.6	11.1	95.6	19	20.0	10.0	3.18	27.4
fluoranthene	µg/kg	14.0	8.73	62.3	20	20.0	7.50	2.44	17.4
pyrene	µg/kg	7.44	3.64	49.0	13	10.0	2.00	1.26	17.0
chrysene	µg/kg	8.46	3.47	41.0	11	10.0	2.00	1.31	15.5
benzo(b)fluoranthene	µg/kg	22.4	50.2	224.6	15	70.0	60.0	16.2	72.5
benzo(k)fluoranthene	µg/kg	5.86	7.04	120.2	8	8.95	4.95	3.11	53.1
benzo(a)pyrene	µg/kg	5.43	4.86	89.5	9	10.0	8.00	2.03	37.3
indeno(1,2,3-cd)pyrene	µg/kg	5.81	7.46	128.5	8	25.0	16.3	3.30	56.8
benzo(ghi)perylene	µg/kg	6.55	3.50	53.4	12	10.0	2.50	1.26	19.3

Method: Other parameters

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
AOX	mg/kg	74.4	26.0	34.9	4	72.2	13.3	16.2	21.8
EOX	mg/kg	0.330	0.289	87.7	11	0.340	0.200	0.109	33.0
Particles < 2 µm	%	39.3	4.23	10.8	7	38.0	4.30	2.00	5.08
CN - Total	mg/kg	0.658	0.355	54.0	5	0.800	0.200	0.198	30.2

Method: Metals

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Cr	mg/kg	54.9	14.9	27.1	21	55.0	10.0	4.05	7.39
Hg	mg/kg	0.042	0.025	59.7	8	0.045	0.010	0.011	26.4
Pb	mg/kg	20.7	5.43	26.2	22	21.1	2.55	1.45	6.99