MS-1 Trace Metals in Sediment	
Year: 2024	Participants: 45 laboratories expected
Number of rounds: 2 per year	Start exercise: 1 April, 1 October
Number of materials: 2 per round	Sample size: 20 g

Participation form | Timetable | PT Scheme | Costs

This study covers the determination of metals, total organic carbon (TOC) and carbonate in marine sediments.

Test Materials

The test materials cover a range of natural sediments from contaminated waters from the North Sea and/or Mediterranean. Each batch of material is prepared in bulk. The level of within and between sample homogeneity for the sediment is determined. All materials show to be homogeneous and stable for the purpose of the test.

Determinands and concentration ranges

The metals to be determined are given in the table below. The table also shows:
- The expected concentration range for the determinands in the test materials.
- The constant and proportional error that will be used for assessment of the results.

RT = Real Total destructions e.g. HF-destruction, röntgen-diffraction and neutron activation.
AE= Acid extractable and all other methods.

In addition to the determinands given in this table, several additional metals are added into the dataset form on the Participant's sites. There you will find amongst others Na, S, K, Ti, Ga, Se, Sn, Cs, Ce, Ta, Tl. In case enough participants report results these additional metals will be added permanently to the proficiency test.

Determinand*	Unit	Concentration range	Error	
		Sediment	Const	Prop
Aluminium-AE	%	0.5-10	0.01	25.0%
Aluminium-RT	%	1-10	0.01	12.5%
Arsenic-AE	mg/kg	2-50	0.5	12.5%
Arsenic-RT	mg/kg	2-50	0.5	12.5%
Barium-AE	mg/kg	50-1000	20	17.5%
Barium-RT	mg/kg	50-1000	15	6.0%
Cadmium-AE	µg/kg	10-5000	25	7.5%
Cadmium-RT	µg/kg	10-5000	35	10.0%
Calcium-AE	g/kg	5-100		
Calcium-RT	g/kg	5-100		
Chromium-AE	mg/kg	10-1000	5	17.5%

Determinand*	Unit	Concentration range	Error	
		Sediment	Const	Prop
Chromium-RT	mg/kg	10-1000	7.5	10.0%
Cobalt-AE	mg/kg	1-50	0.3	10.0%
Cobalt-RT	mg/kg	1-50	0.4	7.5%
Copper-AE	mg/kg	1-500	0.75	7.5%
Copper-RT	mg/kg	1-500	0.5	10.0%
Iron-AE	%	0.5-10	0.10	7.5%
Iron-RT	%	0.5-10	0.10	7.5%
Lead-AE	mg/kg	5-500	2.5	10.0%
Lead-RT	mg/kg	5-500	2.5	10.0%
Lithium-AE	mg/kg	10-100	2	12.5%
Lithium-RT	mg/kg	10-100	2	12.5%
Magnesium-AE	mg/kg	2000-20000	0.1	10.0%
Magnesium-RT	mg/kg	2000-20000		
Manganese-AE	mg/kg	100-2000	10	7.5%
Manganese-RT	mg/kg	100-2000	10	7.5%
Mercury-AE	µg/kg	10-2500	12.5	12.5%
Mercury-RT	µg/kg	10-2500	12.5	10.0%
Molybdene-AE	mg/kg	2-1000		
Molybdene-RT	mg/kg	2-1000		
Nickel-AE	mg/kg	2-100	1	12.5%
Nickel-RT	mg/kg	2-100	1	10.0%
Phosporus-AE	mg/kg	100-3500	10	10.0%
Phosphorus-RT	mg/kg	100-3500		
Rubidium-AE	µg/kg	10-50		
Rubidium-RT	µg/kg	10-100		
Scandium-AE	mg/kg	1-20		
Scandium-RT	mg/kg	1-20		
Strontium-AE	mg/kg	50-500	10	6.0%
Strontium-RT	mg/kg	50-500	1	12.5%
Thallium-AE	µg/kg	50-1000		
Thallium-RT	µg/kg	100-1500		
Uranium-AE	mg/kg	0.2-5		
Uranium-RT	mg/kg	0.5-5		
Vanadium-AE	mg/kg	5 -500	1.5	20.0%
Vanadium-RT	mg/kg	5 -500	1	10.0%
Zinc-AE	mg/kg	20-1500	2.5	7.5%
Zinc-RT	mg/kg	20-1500	5	7.5%
TOC	%	0.2-10	0.1	10.0%
Inorganic-carbonate	%	0.05-10	0.25	15.0%
Loss on ignition	%	0.02-10		

*Determinands which are not in bold are not in the scope of accreditation.