

MS-1 Trace Metals in Sediment					
Year	2021	Number of Rounds / Year	2	Number of Materials	2
Distribution		April, October (45 laboratories expected)			
Participation fee		€625,=			

Introduction

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.

For aluminium a total method of analysis should be used. For other elements you can use your method of choice, keeping in mind that for some elements in some samples the total method can result in a somewhat higher result compared to a partial method.

Determinand	Unit	Concentration range	Error		AA-EQS
		Sediment	Const	Prop	
Aluminium-AE	%	0.5–10	0.1	12.5%	
Aluminium-RT	%	1–10	0.1	12.5%	
Arsenic-AE	mg/kg	2–50	1	12.5%	
Arsenic-RT	mg/kg	2–50	1	12.5%	
Barium-AE	mg/kg	50 - 1000	1	12.5%	
Barium-RT	mg/kg	50 - 1000	1	12.5%	
Cadmium-AE	µg/kg	10–2000	20	12.5%	
Cadmium-RT	µg/kg	10–2000	20	12.5%	
Chromium-AE	mg/kg	10–1000	2	12.5%	
Chromium-RT	mg/kg	10–1000	2	12.5%	
Cobalt-AE	mg/kg	1 - 50	1	12.5%	
Cobalt-RT	mg/kg	1 - 50	1	12.5%	
Copper-AE	mg/kg	1–500	1	12.5%	
Copper-RT	mg/kg	1–500	1	12.5%	
Iron-AE	%	0.5–10	0.1	12.5%	
Iron-RT	%	0.5–10	0.1	12.5%	
Lead-AE	mg/kg	5–500	2	12.5%	
Lead-RT	mg/kg	5–500	2	12.5%	
Lithium-AE	mg/kg	10–100	0.1	12.5%	
Lithium-RT	mg/kg	10–100	0.1	12.5%	
Magnesium-AE	mg/kg	2000 - 20000	1	12.5%	
Magnesium-RT	mg/kg	2000 - 20000	1	12.5%	
Manganese-AE	mg/kg	100–2000	0.1	12.5%	
Manganese-RT	mg/kg	100–2000	0.1	12.5%	
Mercury-AE	µg/kg	10–2500	10	12.5%	
Mercury-RT	µg/kg	10–2500	10	12.5%	
Molybdene-AE	mg/kg	2 - 1000	1	12.5%	
Molybdene-RT	mg/kg	2 - 1000	1	12.5%	
Nickel-AE	mg/kg	2–100	1	12.5%	
Nickel-RT	mg/kg	2–100	1	12.5%	
Phosphorus-AE	mg/kg	100 - 2500	1	12.5%	
Phosphorus-RT	mg/kg	100 - 2500	1	12.5%	
Scandium-AE	mg/kg	1–20	0.1	12.5%	
Scandium-RT	mg/kg	1–20	0.1	12.5%	
Strontium-AE	mg/kg	50 - 500	1	12.5%	

Strontium-RT	mg/kg	50 - 500	1	12.5%	
Vanadium-AE	mg/kg	5 -500	1	12.5%	
Vanadium-RT	mg/kg	5 -500	1	12.5%	
Zinc-AE	mg/kg	20—1500	2.5	12.5%	
Zinc-RT	mg/kg	20—1500	2.5	12.5%	
TOC	%	0.2—10	0.1	12.5%	
Inorganic-carbonate	%	0.05—10	0.05	12.5%	

RT = Real Total destructions e.g. HF-destruction, röntgen-diffraction and neutron activation.

AE= Acid extractable and all other methods.

In addition to these parameters given in this table, we will add several additional metals into the dataset form on the Participant's sites. There you will find e.g. Na, S, K, Ca, Ti, Ga, Rb, Se, Sn, Cs, Ce, Ta, Tl, Th, U. In case enough participants report results these additional metals will be added permanently to the program.

*Only determinands in **bold** are in the scope of the accreditation*