

AQ-3 Metals in Seawater					
Year	2021	Number of Rounds / Year	2	Number of Materials	4
Distribution	April, October (30 laboratories expected)				
Participation fee	€700,=				

Introduction

This study covers the determination of trace metals in the seawater and low salinity seawater test materials.

Test Materials

The test materials are prepared in bulk from filtered seawater. Low salinity seawater test material is prepared by dilution with ultra-pure demineralised water. All test materials are preserved with 2 mL trace metal analysis grade nitric acid per litre of test material. Normally 1 spiked seawater, 1 unspiked seawater and 1 spiked low salinity seawater are supplied for each exercise.

Homogeneity of the test materials is assumed, as they were prepared in bulk and thoroughly mixed, before being dispensed into 1 litre polypropylene bottles for distribution. The test materials are stable for the purposes of the exercise.

Determinands and concentration ranges

The trace metals to be determined are given in the table below. The table also shows:

- The expected concentration range for the determinands in the spiked test materials.
- The constant and proportional error that will be used for assessment of the results.

Where available the AA-EQS (EU-WFD) is given.

Determinand	Unit	Concentration Range		Error		AA-EQS
		Low Salinity Seawater (spiked)	Seawater (spiked)	Const	Prop	
Arsenic	µg/L	0.2–10	0.05–5	0.5	12.5%	
Boron	µg/L	200–5000	1000–5000	0.4	12.5%	
Cadmium	µg/L	0.05–1	0.001–0.5	0.005	12.5%	0.2
Chromium	µg/L	0.5–10	0.01–5	0.1	12.5%	
Cobalt	µg/L	0.01–5	0.001–0.5	0.01	12.5%	
Copper	µg/L	0.2–10	0.05–10	0.2	12.5%	
Iron	µg/L	0.2–10	0.05–10	0.4	12.5%	
Lead	µg/L	0.01–2	0.0002–15	0.01	12.5%	7.2
Manganese	µg/L	0.1–5	0.02–5	0.4	12.5%	
Nickel	µg/L	0.1–2	0.2–5	0.2	12.5%	20
Silver	µg/L	0.1–2	0.02–2	0.2	12.5%	
Tin	µg/L	0.1–5	0.02–1	0.2	12.5%	
Vanadium	µg/L	0.2–5	0.1–5	0.2	12.5%	
Zinc	µg/L	0.2–25	0.5–25	0.4	12.5%	

N.B. In addition to the test materials mentioned above, we are intending to send 1 extra bottle with much higher concentrations (± 20 times higher indicated). This bottle will be clearly indicated as high contaminated.

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