

AQ-6 Volatile Organics in Seawater	
Year: 2024	Participants: 10 laboratories expected
Number of rounds: 1 per year	Start exercise: 1 April
Number of materials: 2 per round	Sample size: 1000 ml

[Participation form](#)
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This study covers the determination of volatile organochlorine compounds (VOCs) in seawater test materials.

## Test Materials

The seawater for this study is collected from the Eastern Atlantic Ocean and is filtered to remove bacteria and particles. The test materials are thoroughly mixed and dispensed into one-litre glass bottles. These bottles are individually spiked with methanol solutions containing the volatile organic compounds (VOCs) to be analysed.

Glass beads are added to the spiked test materials to reduce the headspace volume in order to prevent volatilisation of the added VOCs.

Homogeneity of the test materials is assumed, as they were spiked to the same concentration level. The test materials are stable for the purposes of the exercise.

## Determinands and Concentration Ranges

The VOCs 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.

Determinand*	Unit	Concentration Range	Error	
		Seawater (spiked)	Const	Prop
Benzene	µg/L	0.2-50	0.15	12.5%
Carbontetrachloride	µg/L	0.2-10	0.1	20.0%
Chloroform	µg/L	0.5-20	0.01	17.5%
1,2-Dichloroethane	µg/L	0.2-10	0.05	17.5%
Dichloromethane	µg/L	0.2-20	0.2	17.5%
Trichloroethene	µg/L	0.2-10	0.1	20.0%
1,1,1-Trichloroethane	µg/L	0.2-10	0.05	15.0%
1,1,2-Trichloroethane	µg/L	1-20	0.3	10.0%
Tetrachloroethene	µg/L	0.2-10	0.1	25.0%
Styrene	µg/L	0.1-50		
2-chlorotoluene	µg/L	0.1-10		
4-chlorotoluene	µg/L	0.1-10		
1,1-dichloroethane	µg/L	0.1-10	0.01	17.5%

Determinand*	Unit	Concentration Range	Error	
		Seawater (spiked)	Const	Prop
1,1-dichloroethene	µg/L	0.1-10		
1,2-dichloropropane	µg/L	0.1-10		
1,2-dichlorobenzene	µg/L	0.1-10		
1,3-dichlorobenzene	µg/L	0.1-10		
1,4-dichlorobenzene	µg/L	0.1-10		
1,3,5-trimethylbenzene	µg/L	0.1-10		
1,1,1,2-tetrachloroethane	µg/L	0.1-10		
Chlorobenzene	µg/L	0.1-10		
cis-1,2-dichloroethene	µg/L	0.1-10		
trans-1,2-dichloroethene	µg/L	0.1-10		
Toluene	µg/L	0.1-10		
Ethylbenzene	µg/L	0.1-10		
o-xylene	µg/L	0.1-10		
m+p-xylene	µg/L	0.1-10		
Isopropylbenzene	µg/L	0.1-10		
n-propylbenzene	µg/L	0.1-10		
tert-butylbenzene	µg/L	0.1-10		

\* This exercise is not in the scope of accreditation.