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## Seawater sample preparation for microplastic determination

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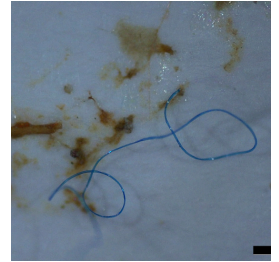
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**Protocol status:** Working

**We use this protocol in our group and it is working.**

**Created:** February 12, 2020

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**Protocol Integer ID:** 32984

**Keywords:** seawater sample preparation, fit for seawater sample preparation, microplastic determination, microplastic particle, sample preparation, sample, stereomicroscope

## Abstract

The following protocol is fit for seawater sample preparation prior to its observation under a stereomicroscope for the determination of microplastic particles.


## Guidelines


The airborne contamination is proved to be reduced as the preventive methodology is improved, as it is recommended on the study of Norén and Naustvol (2010).

Potential microplastics can be identified following Lusher et al. (2014) guidelines, based on features such as colour and form, and on thickness and three dimensional bending in the case of fibres.


## Materials

### MATERIALS

 MilliQ water

 Glass microfibre filter (0.7 µm; GF/F ø=47 mm)

### STEP MATERIALS

 MilliQ water

Glass beakers, petri dishes, vacuum filtration device.



## Protocol materials

⊗ MilliQ water

⊗ Glass microfibre filter (0.7  $\mu\text{m}$ ; GF/F  $\varnothing=47$  mm)

⊗ MilliQ water

⊗ MilliQ water



## Troubleshooting

### Before start

Take into consideration the following common measures to prevent contamination of the samples during lab processing:

- (i) Wear cotton clothes while manipulating the samples,
- (ii) clean all containers using distilled water prior to its reuse,
- (iii) perform blank controls filtering MilliQ water,
- (iv) place a clean petri dish with a filter paper close to the manipulation area to register possible airborne contamination.



- 1 Clean the glass beaker where your seawater sample is transferred: rinse it thoroughly three times with  
 MilliQ water 2m
- Note down the volume.
- 2 Prepare the **vacuum filtration** system with a glass microfibre filter (**0.7 µm**; GF/F ø=47 mm) and filter the full volume. 15m
- 3 **Rinse** the vacuum filtration system three times while it continues filtrating to the microfibre filter, **so no particles are left behind.** 5m
- 4 Place the filter on a petri dish and let it **dry overnight** in the oven at  60 °C . 1d
- 5 Observe the filter under a **microscope.** 10m  
Take pictures and measures of the identified particles following Lusher et al (2014) guidelines.