

Sample preparation for TOC-L analysis

1. Generality

For a TOC analysis, you must take the following point to consideration:

- The registration for the use of the instrument is done only by email at laetitia.monbaron@unil.ch.
- Don't forget to register yourself during the planification on the field.
- A maximum of **100** samples can be measured in a week, only if they have been prepared and put in vial on Monday before 2 p.m.
- During periods of heavy use, it may take a month to analyze a serie of sample. In the meantime, freeze the samples at -20°C. **NB** take them out on Friday and put them in the fridge for a scheduled analysis on Monday.
- The samples must all be filtered (minimum 0.45µm) and their conductivities must be below 500µS/cm. (described in the protocol below).

2. Equipment

- Count if possible **20mL** of sample.

NB : if the IC analysis is planned on the same sample, provide **50mL**.

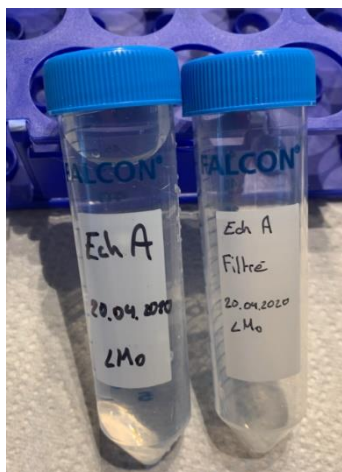
- Syringes « luer lock ».
- Filters 0.45µm Nylon.
- A conductimeter (**NB** set the measurement unit in µS/cm).
- The user manual for the conductimeter.
- Micropipettes and falcon tubes for possible dilutions.
- Vials TOC

3. Conductivity measurement

- Usually, the conductivity of the sample is measured directly in the field. If this is not the case, think of taking a little more sample than planned for the analysis, the ideal being to measure the conductivity in a small amount which is not kept for the analysis (risk of cross contamination).

4. Sample filtration

Filter the sample according to the procedure below:



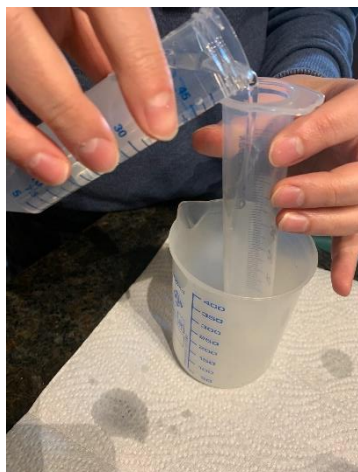
Label the tubes for the filtration.



Separate a 50mL syringe in half by pulling the plunger.



Attach the filter to the syringe by turning clockwise.



Pour the unfiltered sample into the syringe over a waste beaker.



Dispose of the first mL of sample in the waste.



Filter the sample in the tube provided for this purpose.

5. Samples dilution

For samples with conductivity exceeding $500\mu\text{S}/\text{cm}$, provide a dilution.

- From 500 to $1000\mu\text{S}/\text{cm}$, dilute 2x: example 10mL sample + 10mL H₂O MiliQ.
- From 1000 to $2500\mu\text{S}/\text{cm}$, dilute 5x: example 4mL sample + 16mL H₂O MiliQ.
- From 2500 to $5000\mu\text{S}/\text{cm}$, dilute 10x: example 2mL sample + 18mL H₂O MiliQ.

NB: If the IC analysis is planned at the same time, plan to dilute 50mL of sample.

6. Analysis

On the day of the analysis, transfer each sample to 1 tube for TOC analysis.

- In case of NPOC analysis (only of organic carbons) put a silicone septum and fill the vial 1cm from the edge.



→ In case of TIC and TOC analysis, simultaneously use aluminum to cover the vial before closing the cap.



The results will be transferred by email in a Excel table. The unit of measure is mg/L.

7. Vials cleaning

- Remove all writings/label from the vials.
- Eliminate aluminum.
- Rinse the caps with MiliQ water and allow them to dry.
- Empty the vials of their content. **!!! Do not forget to recover the stirrer!!!**
- Place the vials in the rack for the dishwasher.