

Need to clean a sensor

Or it got really cold.. what now?

By Alfred Wegener Institute
Sandra Tippenhauer, Gereon Budeus, Andreas Wisotzki, Gerd Rohardt
Last changes 19 09 2019

In this document we describe how you should clean the CTD and its sensors. Comments and feedback for improving this document are very welcome.

At normal temperatures, you should flush the CTD sensors using clean ocean water. The water for flushing should be collected from deep water sample leftovers from other stations. If possible, filter the water using a 0.5 micron filter. If you do not have deep water you can use clean Oceanwater from OSIL (found in AWI013). Attach the syringes and make sure that the water stays in the sensors.

On Polarstern it should be fine to keep the CTD above freezing temperatures in between casts. Frequently check whether the doors and the curtains are closed. If it gets too cold in the Abfüllraum you need to dry the sensors. This applies also to the sensors in Ocean City. If you cannot make sure that the sensors will not freeze, dry them.

To dry the sensors, flush them with Bio-Ethanol. There is a 5L bottle of Bio-Ethanol in the dangerous goods store. It has the label CTD10. There is a 1L bottle in AWI013 to get smaller amounts of the Bio-Ethanol.

Flush the sensors with Bio-Ethanol only once. That is enough. Wait until all Bio-Ethanol is out of the sensor again and dry the sensor using an aquarium pump (see picture). You find this pump in AWI013. Get a gentle stream of air through the sensor until it is dry.



Before the next measurement

If you dried sensors, you need to prepare them before you can measure again. Make sure that it is warm enough to prevent freezing (especially in ocean city).

Fill the syringes with clean ocean water and push it into the sensors. Make sure that the water stays inside the conductivity cell. Leave the water in there for at least 30 minutes before you take the first profile. If the data look strange, increase the time frame.

Oil or bio-fouling

If there is biology growing in the sensors, or the sensor is contaminated by oil, clean them with Triton X. Check the Seabird application note [clean_appnote2DMar14_0.pdf](#) for details. On the ship we have clean water (Milli-Q) and Triton X available, which was sufficient for cleaning in the past.