

## **Chlorophyll Sampling** rev. by Nina Nemcek Feb 2010

### **Sample Collection and Storage:**

Chlorophyll samples are collected in square, calibrated, ~330 ml HDPE bottles at several depths in the euphotic zone. Typically during Strait of Georgia, High Seas Salmon and La Perouse cruises duplicate samples are taken at 3 depths, whereas on Line P, a full profile to 100 m is taken with a single duplicate. It is best to take duplicates for all samples when possible as variability between filters can be quite high. Each sample bottle should be rinsed thoroughly three times (including the cap) before filling. It is preferable to swirl the water around the inside of the bottle during rinsing instead of shaking vigorously to avoid rupturing cells. After 3 rinses, fill bottle ALL THE WAY TO THE TOP leaving as little room for air as possible. (You may find it necessary to fill the bottle and then the cap and tip the cap to top up the bottle). If possible, samples are filtered immediately. Otherwise, place bottles in a cold, dark environment (fridge) until filtration (no more than a few hours).

### **Filtration:**

A filtration manifold system containing 6 filtration towers, the manifold, and a filtrate flask should be set up in as dark an environment as possible (turn off lights where possible and lower black canvas cover over manifold where available) Before beginning filtration, load each tower with a 25 mm GF/F filter and screw on filter funnel tight. Do not touch the filters with your fingers –use the supplied forceps. Beginning with shallowest sample, invert gently (do not shake) and pour (without dripping) into a clean filtration tower. Turn on pump and ensure that suction does not go over 70 mm Hg (there is usually a mark on the pump gauge to show this point). Record the volume filtered on the sample label and transfer label from sample bottle to scintillation vial. Stop suction as soon as sample has passed through the filter. When filtration is complete remove the filter (using forceps) and gently place in scintillation vial sample side up. Freeze immediately at -20C (or -80C if available) in trays and keep dark.

### **Storage and Transport:**

If samples are not being analyzed at sea, and a -80C freezer is available, storage at -80C is preferable. Regardless of storage temperature, the samples should be analyzed as soon as possible after return to land (within a couple of weeks). Make sure the chlorophyll samples are kept frozen and dark during transit from ship to the phytoplankton lab, wrap the trays in a black plastic bag for the trip to the lab, and make sure they are the last thing loaded and the first offloaded.

### **Bottle washing:**

Square HDPE chlorophyll sampling bottles are rinsed between cruises with DMQ and air dried. New chlorophyll bottles should be soaked in 0.5 % Extran for 72 hours, rinsed 6 times with tap water, once with DMQ, and air dried.