

Nutrient Filtration Information Sheet

AST recommends that personnel undertaking water sampling consult Australian Standard, AS 5667. This document recommends that field filtration occurs at the time of sample collection to guarantee the soluble nutrient concentrations do not alter. Filtration can be undertaken in the field using disposable hermetically sealed syringes and 0.45µm PES filters.

Soluble (dissolved) nutrients includes ammonia (NH₃), Nitrate (NO₃), Nitrite (NO₂), and phosphate (PO₄) otherwise known as dissolved reactive phosphorus (DRP).

Equipment required

- Green labelled 250mL plastic bottle
- Green labelled 50mL tube
- Sealed 30mL plastic syringe
- PES 0.45µm filter

Prevent contamination

- Wear disposable vinyl gloves if possible.
- Do not touch the filter tips or syringe tips.
- Do not smoke anywhere nearby where samples will be taken.
- Ensure eski/ transport container is clean.
- Do not store samples or sampling equipment near fish products.

Collect sample

- Collect the sample preferably directly into a 250mL green labelled plastic bottle or, if using, a sampling device. Rinse bottle or sampling device with sample.

Filter sample for soluble (dissolved) nutrients

Filter a sub-sample from the green labelled 250mL bottle into a green labelled 50mL tube:

- *Mix the sample:* Ensure the sample to be filtered is well mixed before filtering.
- *Take subsample into syringe:* Remove a 30mL syringe unit from the packet and dip into the sample. Draw up a full 30mL of the well mixed sample and then attach the filter to the tip by screwing it on.
- *Rinse the filter with the sample:* Discard the first ~5mL of filtrate to waste.
- *Collect the filtered sample:* Collect the remainder of the filtered water in to a green labelled 50mL tube.
- If the syringe filter fouls before the sample has been completely filtered withdraw the plunger 1 – 2mm, invert the syringe so that the point is up, remove the filter and replace with a new filter. Discard ~5 drops and continue to filter. If this continues to be a problem discuss this with the laboratory staff.
- One pass through the syringe will deliver ~ 30mL of sample. This is sufficient for analysis.
- Discard used syringes and filters responsibly.

Total nutrients

- The remainder of the sample in the larger sample bottle (~ 200mL) can be submitted for total nutrient determination (total nitrogen, total kjeldahl nitrogen, total phosphorus).
- Leave a headspace (~ 10 % of the container volume) for aeration, mixing and freeze expansion.
- “Filtered Total Nutrients” will require an additional 50mL blue capped tube, filter as per above.

Sample submission or preservation

- Return to laboratory immediately in a chilled container. If this is not possible, samples should be frozen (ensure containers are not overfilled causing containers to bulge excessively). Ensure the freezer has not been used for storage of material that could contaminate the sample, eg fish products.

