



Clean Water. Fertile Soil. Serious Science.

334 Hecla Street, Lake Linden, MI 49945 USA

Toll-free: 888/NITRATE

Int'l phone: 1.906.296.1115

Fax: 1.906.296.8003

Website: www.nitrate.com

Tech Line: 1.906.296.1130

Email: tech@nitrate.com

Acceptable Protocols for Preserving Water Samples

Freshwater Samples, Salt/Seawater Samples, etc.

It is often necessary to store samples to assay later or to store part of a sample to re-assay at a later time. There can be organisms present in the sample that may consume nitrate for energy, changing the original nitrate content. For any holding times longer than one day, the following steps should be taken to kill any microbes present, preventing changes and ensuring accurate results.

Note that each regulatory agency will have its own rules on sample collection and storage, so it is important for those users to find and follow the published rules. The US EPA requires the addition of acid, for example.

Here are some basic guidelines and recommendations for storing water samples.

In all cases, it's important to be consistent for all of the samples.

I. Preserving Water Samples in the Freezer

1. Collect your samples in a clean, freezer safe vessel with a secure cap or lid. Be sure to leave space for the expansion from the water freezing. **Label** the sample with the collection time and place.
2. Place samples in a household freezer (~-20°C) or in a lab grade freezer (~-80°C).
3. The time required for freezing will vary with the size of the sample.
4. After thawing, the samples will be ready for analysis.

II. Preserving Water Samples in acid*

1. Collect your samples in a clean vessel with a secure cap or lid. Be sure to leave space for the addition of acid. **Label** the sample with the collection time and place.
2. Acidify to a pH of less than 2. Add 0.15% vol./vol. of concentrated HNO₃ (nitric acid) (Example 0.15 mL per 100 mL of sample.)
3. When ready, run the assay. The samples do NOT have to be brought back to a neutral pH before running the analysis.

**Preserving the sample in acid is acceptable when using the Nitrate enzyme reduction method because the buffer in the nitrate reduction step of the assay neutralizes the acid.*