NEW Optical Kit for

Ammonium Concentration Determination

Introduction

Accurate determination of ammonium in aquatic environments is a critical measurement when investigating Nitrogen cycling and nutrient dynamics. Historically, methods for ammonium determination have been a source of frustration within the scientific community due to the lack of a simple, accurate and affordable method, particularly in the submicromolar range.

Recent developments in fluorometry have resulted in the introduction of two new optical kits (10-303 and 7000-960) specifically designed for a new ammonium technique.

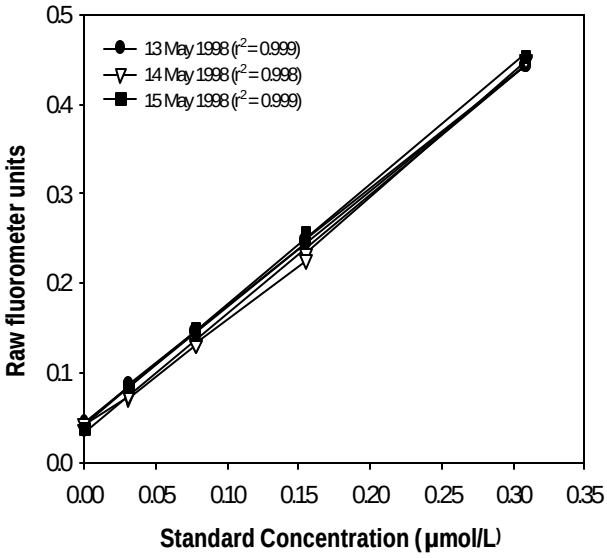
Ammonium Technique

The new ammonium technique offers researchers and technicians an excellent alternative to existing colormetric methods. Benefits of the fluorometric method include:

- **Sensitivity**: Detection in the submicromolar range.
- **Wide Range:** Two protocols have been developed to allow for use in a wide range of concentrations.
- **Accuracy:** More accurate than previous methods for low ammonium concentration samples.
- **Simple:** Requires only one mixed, non-toxic reagent and no special equipment other than a Turner Designs fluorometer.
- **Convenient:** Easy sample collection and preservation.
- **Affordable:** Filter Fluorometer with optical kit and one working reagent.
- **Field Portable:** Use with the 10-AU-005-CE Field Fluorometer.
- **Non-toxic reagents:** OPA, sodium sulfite, and sodium borate.

The widely used colormetric indophenol blue method is susceptible to inconsistent results, particularly with submicromolar ammonium concentrations. The new fluorometric technique has been proven to provide accurate and precise data over a wide range of water quality, ammonium concentration and salinity.

This fluorometric method is particularly useful for work in oligotrophic systems, where natural ammonium concentrations are commonly in the submicromolar range.



Recent Publications

Holmes, R.M., A.Aminot, R.Kerouel, B.A.Hooker, B.J.Peterson. 1999 . A simple and precise method for measuring ammonium in marine and freshwater ecosystems. Can. J. Fish. Aquat. Sci. **56:** 1801-1808.

Kérouel, R., and A. Aminot. 1997. Fluorometric determination of ammonia in sea and estuarine waters by direct segmented flow analysis. Mar. Chem. **57**:265-275.

Visit our website at www.fluorometer.com for detailed information on numerous fluorescent applications or call us at (408) 749-0994.

The Ammonium Optical Kit (**P/N: 10-303 or 7000-960**) includes two Near UV Mercury Vapor Lamps, 350nm excitation filter (310-390nm), a 410-600nm emission filter, a 1:75 Attenuator plate and a 10-300 Reference Filter (>300 nm). The 10-303 Optical Kit works in the 10-AU Digital Field Fluorometer and the Model 10 Analog Fluorometer. The 7000-960 Optical Kit works in the TD-700 Laboratory Fluorometer.