

Ammonia/Ammonium Quantification with Fluorometer 360/460nm

Description:

AMMONIA (NH₃) or its ion form ammonium (NH₄⁺) is an important source of nitrogen for living systems. Ammonia is found in the atmosphere, rainwater, soil, seawater, volcanic areas. It is widely used as fertilizer, cleaner, antimicrobial agents and in fermentation and chemical synthesis. The convenient assay uses o-phthalaldehyde reagent to directly measure NH₃/ NH₄⁺. The fluorescence intensity at ex/em = 360/460nm is directly proportionate to the NH₃ concentration in the sample.

Samples: Urine, soil extracts, swimming pool samples etc.

Assay Performance:

- Linear Detection Range: 0 to 1 mM (0 – 17ppm)
- Detection Limit: 30 μM (0.5 ppm)
- Typical Precision (CV%): < 2% at 1 mM; < 4% at 0.25 mM

Assay Procedure:

Important: Prior to assay, bring the assay reagents to room temperature.

1. Prepare 1mM Ammonia Standard by mixing 5 μL provided 20mM NH₄Cl and 95 μL H₂O in an Eppendorf tube.
2. Prepare enough Working Reagent by combining the following per tube: 100 μL Assay Buffer, 4 μL Reagent A and 4 μL Reagent B. In separate mini glass tubes, add 10 μL H₂O (Blank), 10 μL 1mM NH₄Cl (Standard), and 10 μL Sample. Then add 100 μL Working Reagent to each tube and mix. Incubate for 15-20 min at room temperature in the dark.
3. Switch on the fluorometer. To calibrate the fluorometer, place the "Blank" tube into the sample holder. Press "Calibrate", "Assay 1", then "Blank". Fluorometer starts Measuring. Press "<- Std ->", until the window shows "1.000". Place the 1 mM Standard into the Sample holder. Press "Measure". The fluorometer shows "Calibrate Finished". The fluorometer is now calibrated. Press "Return".
4. Measure. Place the sample tube into the Sample Holder. Press "Measure", "Assay 1", "Measure". The NH₃ concentration (mM) will be displayed in the window. Record the data, or press "Save" to save the data for later retrieval. Press "Return" and then "Measure" for the next sample.

Note: if the measured concentration is >1 mM, dilute the sample in H₂O and repeat assay. Multiply the results by the dilution factor.

Product Information:

Products are for Research Use Only.

- Ammonia Assay Kit: sufficient for approximately 200 assays.
Kit content: 1 mL Reagent A; 1 mL Reagent B; 20 mL Assay Buffer, 400 μL Standard.
- Mini glass tubes.
- Fluorometer comes with a 5VDC power adapter, a USB cable, manual and data management software CD.

Avoid contact and inhalation. Standard laboratory safety procedures should be followed when handling this product. Safety procedures include wearing OSHA approved safety glasses, gloves and protective clothing.

Shipping and storage: the kit is shipped at room temperature.

Store Reagents A and B at -20°C, Assay Buffer and Standard at 2-8°C. Shelf life: 12 months after receipt.

