Technical Specification

Tests For: Ammonia in natural, sea and wastewater
Test Range: 0–12 mg/L N (12N), 0–50 mg/L N (50N)
Reagent Chemistry Used: Salicylate
Basis of Test Method: 4500-Ammonia-F, US EPA 350.1, ISO15750:2009
Method Detection Limit* 12N: 0.20 mg/L
Method Detection Limit* 50N: 0.70 mg/L
Limit of Quantification** 12N: 0.65 mg/L
Limit of Quantification** 50N: 2.18 mg/L

*The Method Detection Limit (MDL) is defined as the minimum measured concentration of a substance that can be reported with 99% confidence to be different from the method blank results.[i]

**The Limit of Quantification (LOQ) is the smallest quantity that can be detected with reasonable certainty for a given analytical procedure. [ii]

Testing for Ammonia

Ammonia occurs as a breakdown product of nitrogenous material in natural waters. It is also found in domestic effluents and certain industrial waste waters. Ammonia is harmful to fish and other forms of aquatic life, and the ammonia level must be carefully controlled in water used for fish farms and aquariums. Ammonia tests are routinely applied for the monitoring of natural water, sea water, and for pollution control on effluents and waste waters.

The Palintest Tubetests Ammonia/12N/50N (Indophenol) test provides a simple method of measuring ammonia (ammoniacal nitrogen) over the ranges 0 - 12 mg/L and 0 - 50 mg/L N.

Reagent Chemistry

The Palintest Tubetests Ammonia/12N/50N (Indophenol) test is based on the Indophenol Blue method. Ammonia reacts with alkaline salicylate in the presence of chlorine to form a green-blue indophenol complex. Catalysts are incorporated to ensure complete and rapid colour development. The reagents are provided in the form of a pre-dispensed tube and a tablet for maximum convenience. The test is simply carried out by adding a sample of the water and a tablet to a tube.

The intensity of the colour produced in the test is proportional to the ammonia concentration and is measured using a Palintest Photometer.

Interferences

Any substances that consume chlorine may lead to low results.

The test can be used on sea or salt water without the need for pre-treatment of the sample.

Best Practice Advice for Testing

- At low temperatures the rate of colour development in the test is substantially slower. Colour development should be carried out between 18 and 22°C. To ensure correct conditions for the test, the Tubetests tubes should be brought within this temperature range prior to use.
- It is important to observe the standing period of 10 minutes ± 1 minute for optimum test results. Any continuing colour development or colour change after this period should be ignored.
- Tubetests tubes are light sensitive. Store in the original packs and keep the lid closed. Leave in a dark place while colour development is taking place.
- Once the 10-minute stand time is complete, invert the tubes and read exactly when the timer goes off for best results.
- Tablet one contains a chlorine donor reagent, too vigorous or long crushing of the tablet can lead to loss of chlorine and low results.

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[i] EPA, Definition and Procedure for the Determination of the Method Detection Limit, Revision 2, Dec 2016.
[ii] *IUPAC. Compendium of Chemical Terminology, 2nd ed. (the "Gold Book").*