

# Ammonia Vacu-vials® Kit

**K-1513:** 0 - 10.00 ppm N (Prog. # 17)

**K-1513:** 0 - 150 ppm N (Prog. # 18)

## Instrument Set-up

For CHEMetrics photometers, follow the **Setup and Measurement Procedures** in the operator's manual. For spectrophotometers, set the wavelength to 430 nm. A sealed ZERO ampoule is supplied in this kit for zeroing when the sample is colorless and not turbid. For improved accuracy with colored or turbid samples, Sample Zeroing Accessory Pack, Cat. # A-0025 is recommended. Fill the A-0025 test tube with the sample and use this in place of the supplied ZERO ampoule to zero the instrument.

## 0 - 10 ppm Non-Seawater Test Procedure

1. Add 10 drops of A-1505 Stabilizer Solution to the empty sample cup (fig. 1).
2. Fill the sample cup to the 15 mL mark with the sample to be tested (fig. 2). Stir to mix the contents of the cup.
3. Place the Vacu-vial ampoule, tip first, into the sample cup. Snap the tip. The ampoule will fill leaving a bubble for mixing (fig. 3).
4. To mix the ampoule, invert it several times, allowing the bubble to travel from end to end.
5. Dry the ampoule. Obtain a test result **2 minutes** after snapping tip.
6. Insert the Vacu-vial ampoule into the photometer, flat end first, and obtain a reading in ppm (mg/Liter) ammonia-nitrogen (NH<sub>3</sub>-N).

**NOTE:** If using a spectrophotometer that is not pre-calibrated for CHEMetrics products, then use the **equation below** or the **Concentration Calculator** found under the Support tab at [www.chemetrics.com](http://www.chemetrics.com).

$$0 - 10 \text{ ppm N} = 0.50 (\text{abs})^2 + 5.50 (\text{abs}) - 0.06$$

$$0 - 150 \text{ ppm N} = 8 (\text{abs})^2 + 82 (\text{abs}) - 1$$

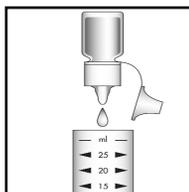


Figure 1

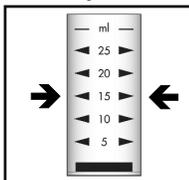


Figure 2

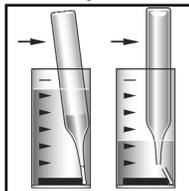


Figure 3

## 0 - 150 ppm Non-Seawater Test Procedure

1. Add 10 drops of A-1505 Stabilizer Solution to the empty sample cup (fig. 1).
2. Using the syringe provided, obtain 1.0 mL of the sample to be tested and dispense into the sample cup.
3. Dilute the contents of the sample cup to the 15 mL mark with distilled water.
4. Perform the 0 - 10 ppm test procedure, beginning with step 3.

## Seawater Test Procedure

The accessories needed for seawater testing are sold separately, Catalog No. A-1503.

1. Add 1.0 mL of A-1504 Stabilizer Solution to the empty sample cup (fig. 1).
2. Fill the sample cup to the 15 mL mark with the seawater sample to be tested (fig. 2).
3. Add 10 drops of A-1502 Activator Solution. Stir to mix the contents of the cup.
4. Perform the 0 - 10 ppm test procedure, beginning with step 3

## Test Method

The Ammonia Vacu-vials®<sup>1</sup> test kit employs direct nesslerization.<sup>2,3</sup> In a strongly alkaline solution, ammonia reacts with Nessler Reagent (K<sub>2</sub>Hgl<sub>4</sub>) to produce a yellow-colored complex in direct proportion to the ammonia concentration.

This method is applicable to drinking water, clean surface water, good quality nitrified wastewater effluent and seawater. Other types of samples may require a preliminary distillation step. For more information on method interferences, contact Technical Services at [technical@chemetrics.com](mailto:technical@chemetrics.com).

1. Vacu-vials is a registered trademark of CHEMetrics, Inc. U.S. Patent No. 3,634,038
2. APHA Standard Methods, 18th ed., Method 4500-NH<sub>3</sub> C - 1988
3. ASTM D 1426 - 08, Ammonia Nitrogen in Water, Test Method A

## Safety Information

Read SDS (available at [www.chemetrics.com](http://www.chemetrics.com)) before performing this test procedure. Wear safety glasses and protective gloves.



Simplicity in Water Analysis

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