

# Ammonia Vacu-vials® Kit

**K-1503:** 0.50 - 7.00 ppm

**K-1523:** 1.0 - 14.0 ppm

## Instrument Set-up

For CHEMetrics photometers, follow the instrument specific **Setup and Measurement Procedures** in the Operator's manual. For spectrophotometers capable of accepting a 13 mm diameter round cell, follow the manufacturer's specifications to set the wavelength to 430 nm and to use the ZERO ampoule supplied with this test kit to zero the instrument.

## Test Procedure for Non-Seawater Samples

1. Fill the sample cup to the 25 mL mark with the sample to be tested (fig 1).
2. Add 2 drops of A-1500 Stabilizer Solution (fig 2). Stir to mix the contents of the cup.
3. Place the Vacu-vial ampoule in the sample cup. Snap the tip by pressing the ampoule against the side of the cup. The ampoule will fill leaving a small bubble to facilitate mixing (fig 3).
4. Mix the contents of the ampoule by inverting it several times, allowing the bubble to travel from end to end. Dry the ampoule and wait **2 minutes** for color development.
5. Read the Vacu-vial ampoule in your photometer. If applicable, use the calibration table to obtain test results in ppm (mg/Liter) ammonia-nitrogen as  $\text{NH}_3\text{-N}$ . Accuracy may be compromised if test results are outside the stated test ranges.

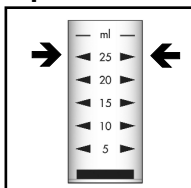


Figure 1

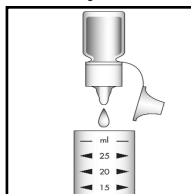


Figure 2

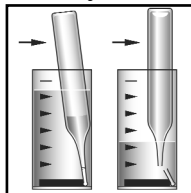


Figure 3

## Test Procedure for Seawater Samples

1. Using the syringe, add 1.0 mL of A-1501 Stabilizer Solution to the sample cup.
2. Fill the sample cup to the 25 mL mark with the seawater sample to be tested (fig 1).
3. Perform the Test Procedure above, 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 ( $\text{K}_2\text{HgI}_4$ ) to produce a yellow-colored complex in direct proportion to the ammonia concentration. Results are expressed in ppm (mg/Liter) ammonia-nitrogen,  $\text{NH}_3\text{-N}$ .

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. Ketones, alcohols, and aldehydes may cause off-color test results. Glycine and hydrazine will cause high test results. Aromatic and aliphatic amines, iron, sulfide, calcium and magnesium may cause turbidity.

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 (1992)
3. ASTM D 1426 - 03, Ammonia Nitrogen in Water, Test Method A

## Safety Information

Read MSDS before performing this test procedure. Wear safety glasses and disposable gloves.



www.chemetrics.com  
4295 Catlett Road, Calverton, VA 20138-0214 U.S.A.  
Phone: (800) 356-3072; Fax: (540) 788-4856  
E-Mail: orders@chemetrics.com

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