

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, follow the manufacturer's instructions to set the wavelength to **430 nm** and to zero the instrument using the ZERO ampoule supplied.

Sample Temperature

Sample temperatures that deviate significantly from 20°C (68°F) may introduce test result bias.

0 - 10 ppm Non-Seawater Test Procedure

1. Add 2 drops of S-1500 Stabilizer and 10 drops of S-1502 Activator 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 (NH₃-N).

NOTE: If using a spectrophotometer that is not precalibrated for CHEMetrics products, then use the **equation below** or the **Concentration Calculator** on the website.

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

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

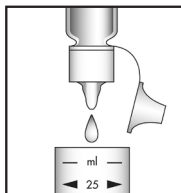


Figure 1

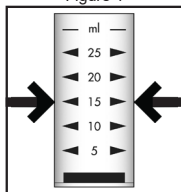


Figure 2

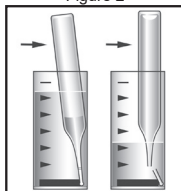


Figure 3

0 - 150 ppm Non-Seawater Test Procedure

1. Add 2 drops of S-1500 Stabilizer and 10 drops of S-1502 Activator 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. Stir to mix the contents of the cup.
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 S-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 S-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®¹ test kit employs direct nesslerization.^{2,3} In a strongly alkaline solution, ammonia reacts with Nessler Reagent (K₂HgI₄) 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.

1. Vacu-vials is a registered trademark of AquaPhoenix Scientific, LLC. Patent No. 3,634,038

2. APHA Standard Methods, 18th ed., Method 4500-NH₃-C - 1988

3. ASTM D 1426 - 08, Ammonia Nitrogen in Water, Test Method A

Safety Information

Read SDS before performing this test procedure. Wear safety glasses and protective gloves.