

Nitrate Vacu-vials® Kit

K-7003: 0 - 1.00 ppm N (Prog. # 125)

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 **520 nm** and to zero the instrument using the ZERO ampoule supplied.

Test Procedure

1. Fill the sample cup to the 25 mL mark with the sample to be tested (fig 1).
2. Place the Vacu-vial ampoule, tip first, into the sample cup. Snap the tip. The ampoule will fill leaving a bubble for mixing (fig 2).
3. To mix the ampoule, invert it several times, allowing the bubble to travel from end to end.
4. Dry the ampoule. Obtain a test result **10 minutes** after snapping tip.
5. Insert the Vacu-vial ampoule into the photometer, flat end first, and obtain a reading in ppm (mg/Liter) nitrite-nitrogen (NO₂-N).

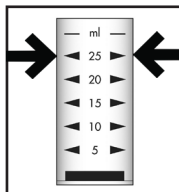


Figure 1

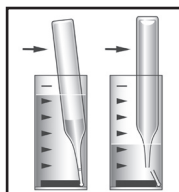


Figure 2

NOTE: If using a **spectrophotometer** that is not pre-calibrated for CHEMetrics products, then use the **equation below** or the **Concentration Calculator** on the website. If instrument response is > 2 absorbance (abs), dilute sample and retest.

$$\text{ppm N} = 0.24 (\text{abs})^3 - 0.67 (\text{abs})^2 + 1.17 (\text{abs})$$

NOTE: To convert to ppm Nitrite (NO₂), multiply test result by 3.3.

Test Method

The Nitrite Vacu-vials®¹ test kit employs the azo dye formation method.^{2,3} In an acidic solution, nitrite diazotizes with a primary aromatic amine and then couples with another organic molecule to produce a highly colored azo dye. The resulting pink-orange color is proportional to the nitrite concentration in the sample.

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

2. APHA Standard Methods, 23rd ed., Method 4500-NO₂-B - 2000.

3. EPA Methods for Chemical Analysis of Water and Wastes, Method 354.1 (1983).

Safety Information

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

