

# Nitrite Vacu-vials® Kit

**K-7013:** 0 - 0.750 ppm N (Prog. # 130)

## Instrument Set-up

For CHEMetrics photometers, follow the **Setup and Measurement Procedures** in the operator's manual. For spectrophotometers, set the wavelength to 520 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.

## Test Procedure

1. Add 5 drops of A-7004 Acidifier Solution to the empty sample cup (fig. 1).
2. Fill the sample cup to the 25 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 **8 minutes** after snapping tip.
6. Insert the Vacu-vial ampoule into the photometer, flat end first, and obtain a reading in ppm (mg/Liter) nitrite-nitrogen (NO<sub>2</sub>-N). To convert to ppm Nitrite (NO<sub>2</sub>), multiply test result by 3.3.

**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).

$$\text{ppm N} = 0.399 (\text{abs}) + 0.001$$

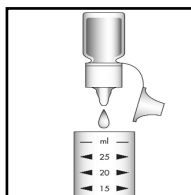


Figure 1

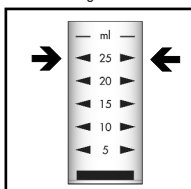


Figure 2

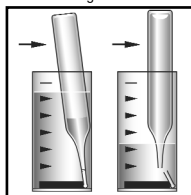


Figure 3

## Test Method

The Nitrite Vacu-vials®<sup>1</sup> test kit employs the azo dye method.<sup>2,3</sup> In an acidic solution, nitrite diazotizes with the primary aromatic amine N-(1-naphthyl)ethylenediamine dihydrochloride (NED) and then couples with sulfanilic acid to produce a highly colored azo dye. The resulting pink color is proportional to the nitrite concentration in the sample.

1. Vacu-vials is a registered trademark of CHEMetrics, LLC U.S. Patent No. 3,634,038
2. APHA Standard Methods, 23<sup>rd</sup> ed., Method 4500-NO<sub>2</sub><sup>-</sup> B - 2000.
3. EPA Methods for Chemical Analysis of Water and Wastes, Method 354.1 (1983).

## Safety Information

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

Visit [www.chemetrics.com](http://www.chemetrics.com) to view product demonstration videos.  
Always follow the test procedure above to perform a test.



[www.chemetrics.com](http://www.chemetrics.com)  
4295 Catlett Road, Midland, VA 22728 U.S.A.  
Phone: (800) 356-3072; Fax: (540) 788-4856  
E-Mail: [orders@chemetrics.com](mailto:orders@chemetrics.com)

Jan. 23, Rev. 2