

# Nitrate CHEMets® Kit

K-6904/R-6902: 0 - 3 ppm N

## Test Procedure

1. Fill the **reaction tube** (green screw cap tube) to the **15 mL mark** with the sample to be tested.
2. Empty the contents of one Cadmium Foil Pack into the **reaction tube** (fig. 1). Cap the reaction tube and shake it vigorously for **exactly 3 minutes**. Allow the sample to sit undisturbed for **2 minutes**.
3. Pour **10 mL** of the treated sample into the **25 mL sample cup** (fig. 2). Do not transfer cadmium particles to the sample cup.
4. Place the CHEMet ampoule, tip first, into the sample cup. Snap the tip. The ampoule will fill leaving a bubble for mixing (fig. 3).
5. To mix the ampoule, invert it several times, allowing the bubble to travel from end to end.
6. Dry the ampoule and wait **10 minutes** for color development.
7. Obtain a test result by placing the ampoule between the color standards until the best color match is found (fig. 4).

**NOTE:** To convert to ppm nitrate ( $\text{NO}_3$ ), multiply the test result by 4.4.

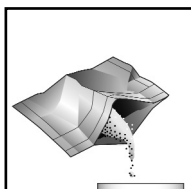


Figure 1

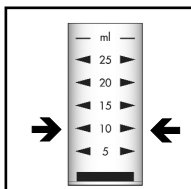


Figure 2

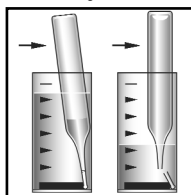


Figure 3

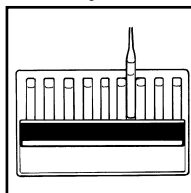


Figure 4

## Test Method

The Nitrate CHEMets®<sup>1</sup> test kit employs the cadmium reduction method.<sup>2,3,4</sup> Nitrate is reduced to nitrite in the presence of cadmium. In an acidic solution, the nitrite diazotizes with a primary aromatic amine and then couples with another organic molecule to produce a pink-orange colored azo dye. The resulting color is proportional to the nitrate concentration.

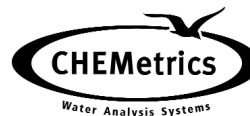
Samples containing nitrite will give erroneous, high test results. Samples containing in excess of 2000 ppm chloride will give low test results. Certain metals, chlorine, oil and grease will also give low test results.

1. CHEMets is a registered trademark of CHEMetrics, Inc. U.S. Patent No. 3,634,038
2. APHA Standard Methods, 21st ed., method 4500- $\text{NO}_3^-$  E (2005)
3. ASTM D 3867 - 09, Nitrite-Nitrate in Water, Test Method B
4. EPA Methods for Chemical Analysis of Water and Wastes, method 353.3 (1983)

## Safety Information

Read MSDS (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)

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