Nitrate CHEMets® Kit

K-6909B/R-6909: 0 - 675 ppm N
K-6909C/R-6909: 0 - 2700 ppm N

Test Method

The Nitrate CHEMets®[1] test kit employs the cadmium reduction method.[2,3,4] 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 intensity of the color is proportional to the nitrate concentration.

Samples containing nitrite will give erroneous, high test results. Samples containing in excess of 20,000 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, 23rd ed., Method 4500-NO_3^- E - 2016
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)
5. MiniPet is a registered trademark of Tricontinent Scientific, Inc.

Safety Information

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

Test Procedure

1. Place a yellow pipette tip firmly onto the end of the MiniPet®[5] (fig. 1).
   NOTE: Use a fresh pipette tip for each test.
2. Depress the plunger on the minipet. Immerse the tip in the sample to be tested and release the plunger. A portion of the sample will be drawn into the tip (fig. 2).
   NOTE: Do not touch the side or bottom of the sample container with the tip during sampling.

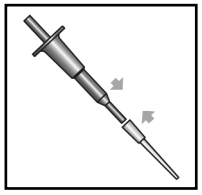
Figure 1

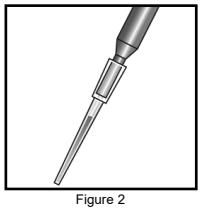
Figure 2

3. Hold the minipet over the **reaction tube** (screw cap tube), depress the plunger to dispense sample (fig. 3).
4. Dilute the contents of the reaction tube to the **15 mL mark with distilled water**.
5. Empty one Cadmium Foil Pack into the **reaction tube** (fig. 4). Cap the tube and shake it vigorously for **exactly 3 minutes.** Allow the sample to sit undisturbed for **2 minutes**.
6. Pour **10 mL** of the treated sample into the **25 mL sample cup** (fig. 5), **Do not transfer cadmium** particles to the sample cup.
7. Place the CHEMet ampoule, tip first, into the sample cup. Snap the tip. The ampoule will fill leaving a bubble for mixing (fig. 6).
8. To mix the ampoule, invert it several times, allowing the bubble to travel from end to end.
9. Dry the ampoule. Obtain a test result **10 minutes** after snapping the tip.
10. Obtain a test result by placing the ampoule between the color standards until the best color match is found (fig. 7).
    NOTE: To convert to ppm nitrate (NO_3), multiply the test result by 4.4.

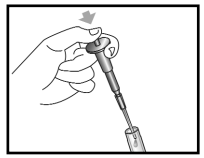
Figure 3

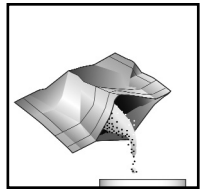
Figure 4

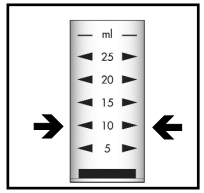

Figure 5

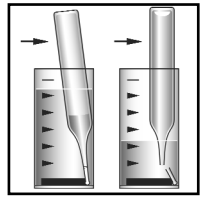
Figure 6

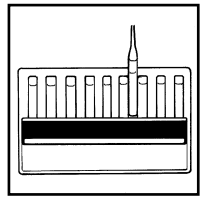
Figure 7

Visit www.chemetrics.com to view product demonstration videos. Always follow the test procedure above to perform a test.

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

July 22, Rev. 9