

Nitrate 44

Range(s): 0-44 ppm NO_3^- , 0-10.0 ppm $\text{NO}_3\text{-N}$



Procedure

1. Turn on the Colorimeter.
2. Select a test menu (ALL TESTS, RECENT TESTS, or FAVORITES) containing Nitrate 44 using $\blacktriangleleft\blacktriangleright$.
3. Select Nitrate 44 using $\blacktriangle\blacktriangledown$; then press ENTER $\odot$.
4. Select a chemical form (NO_3 or $\text{NO}_3\text{-N}$) for expression of test results using $\blacktriangle\blacktriangledown$.
5. Rinse and fill 50 mL dilution vial to 15 mL mark with sample water.
6. Using the 0.5 g dipper spoon, add 1 level dipper Nitrate 44 - Reagent A. **Firmly** secure cap.
7. Shake dilution vial for 10-15 seconds.
8. Select TIMER using $\blacktriangleleft\blacktriangleright$; then press ENTER $\odot$.
9. Remove cap from dilution vial. Using the 0.15 g dipper spoon, add 1 level dipper Nitrate 44 - Reagent B. **Firmly** secure cap.
10. Select START using $\blacktriangleleft\blacktriangleright$; then press ENTER $\odot$.
(A 1-minute [01:00] countdown will begin.)
11. Shake dilution vial **vigorously**.
Note: Shaking technique will affect test color development. For best results, perform test multiple times using a known standard solution and adjust shaking technique as needed to obtain correct results.
12. When the timer beeps, discontinue shaking and allow particles to settle.
13. Remove cap from dilution vial. Rinse and fill a clean, dry 25 mm sample cell to the 10 mL mark with sample; then cap.
14. Select EXIT using $\blacktriangleleft\blacktriangleright$; then press ENTER $\odot$.
15. Insert sample cell into sample cell compartment. Align marks per User's Manual.
16. Select ZERO using $\blacktriangleleft\blacktriangleright$; then press ENTER $\odot$.
Zero will be displayed.
17. Remove sample cell from sample cell compartment; then remove cap.
18. Select TIMER using $\blacktriangle\blacktriangledown$; A 2-minute [02:00] countdown will be displayed.
19. Using the 0.05 g dipper spoon, add 1 compressed dipper Nitrate 44 - Reagent C; then cap and invert 10 times to mix thoroughly.
20. Immediately select START by pressing ENTER $\odot$.
Select AUTO using $\blacktriangleleft\blacktriangleright$; then press ENTER $\odot$. Insert sample cell into sample cell compartment. Align marks.
21. When the timer beeps, the instrument will read the sample and the result will be displayed.

Interferences

Biguanide (as product), all levels – positive interference
 Molybdenum, all levels – negative interference
 Nitrite, all levels – positive interference
 Polymer (PAA), all levels – negative interference
 Zinc, all levels – positive interference
 The following analytes were tested to the levels listed and found not to cause any interference up to the specified values:

Alkalinity, Total (CaCO_3) – 200 ppm
 Bromine – 10 ppm
 Chloride – 3640 ppm
 Chlorine – 10 ppm
 Copper – 0.25 ppm
 Cyanuric Acid – 100 ppm
 Fluoride – 10 ppm

Hardness, Calcium (CaCO_3) – 1000 ppm
 Hardness, Magnesium (CaCO_3) – 1000 ppm
 Hydrogen Peroxide – 34 ppm
 Iron, Ferric – 0.25 ppm
 Iron, Ferrous – 0.5 ppm
 Manganese – 0.8 ppm
 Phosphate – 100 ppm

**Interferences
(continued)**

Phosphonate – 20 ppm
Polyphosphate – 5 ppm
Silica – 150 ppm

Sulfate – 1000 ppm
Sulfite – 100 ppm

Test Method

Chromotropic Acid

Reduction of nitrate to nitrite is achieved with zinc metal under acidic conditions. Sulfanilamide reacts with nitrate-nitrogen forming a diazonium salt capable of coupling with chromotropic acid. This coupling reaction forms a colored complex with an intensity proportional to the concentration of nitrate in a sample.

**Estimated
Detection Limit**

0.43 ppm NO_3^-

Precision

Using a single lot of reagent and a standard solution of 25 ppm NO_3^- , an individual analyst obtained a standard deviation with the instrument of ± 2 ppm NO_3^- .

Application

Recreational Water

Ordering Info**Reagent Pack**

K-8035 Nitrate 44

Formulated for exclusive use with Taylor's TTi® Colorimeter.

Reagent Pack Components

R-8035A Nitrate 44 - Reagent A

R-8035B Nitrate 44 - Reagent B

R-8035C Nitrate 44 - Reagent C



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