Iron Ferrous 3

Range(s): 0-3.00 ppm Fe^{2+}

Procedure

Note: When testing multiple samples simultaneously, a separate sample cell with an unreacted sample of the water tested must be used to zero the colorimeter. Please note that varying the test procedure from the original can affect the precision of the test.

1. Turn on the Colorimeter.
2. Select a test menu (ALL TESTS, RECENT TESTS, or FAVORITES) containing Iron Ferrous 3 using ◀▶.
3. Select Iron Ferrous 3 using ▲▼; then press ENTER ◉.
4. Rinse and fill 25 mm sample cell to 10 mL mark with sample; then cap.
5. Insert sample cell into sample cell compartment. Align marks per User's Manual.
6. Select ZERO using ◀▶; then press ENTER ◉. Zero will be displayed.
7. Remove sample cell from sample cell compartment; then remove cap.
8. Add 0.5 mL Iron Ferrous 3 - Reagent A; then swirl to mix thoroughly.
9. Add Iron Ferrous 3 - Reagent B to 15 mL mark; then cap and swirl to mix thoroughly.
10. Insert sample cell into sample cell compartment. Align marks.
11. Select READ using ◀▶; then press ENTER ◉. The instrument will read the sample and the result will be displayed.

Interferences

Bromine > 15 ppm – negative interference
Polyphosphate > 10 ppm – negative interference

The following analytes were tested to the levels listed and found not to cause any interference up to the specified values:

Alkalinity, Total ($CaCO_3$) – 1000 ppm
Aluminum – 80 ppm
Azole (BT) – 50 ppm
Azole (TT) – 20 ppm
Biguanide – 50 ppm
Chloride – 1000 ppm
Copper – 5 ppm
Fluoride – 20 ppm
Hardness, Calcium ($CaCO_3$) – 1000 ppm
Iron, Ferric – 10 ppm
Lead – 3 ppm
Magnesium – 440 ppm
Molybdate – 200 ppm
Nitrate – 2000 ppm
Phosphate – 100 ppm
Phosphonate – 20 ppm
Polymer – 1100 ppm
Silica – 150 ppm
Sulfate – 1000 ppm
Sulfite – 200 ppm
Zinc – 5 ppm

Test Method

Phenanthroline

Under acidic conditions, 1,10-phenanthroline reacts with ferrous iron to produce a red-orange color that is proportional to the concentration of iron in a sample.

(over)

Estimated Detection Limit

0.05 ppm Fe^{2+}

Precision

Using a single lot of reagent and a standard solution of 1.50 ppm Fe^{2+}, an individual analyst obtained a standard deviation with the instrument of ± 0.03 ppm Fe^{2+}.

Application

Industrial Water

Ordering Info

Reagent Pack

K-8010 Iron Ferrous 3

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

Reagent Pack Components

R-8010A Iron Ferrous 3 - Reagent A

R-8010B Iron Ferrous 3 - Reagent B

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