Iron 4

Range(s): 0-4.00 ppm Fe

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.

Note: To obtain total iron, a sample digestion must first be performed. Refer to Part 2 of the User's Manual for procedure.

1. Turn on the Colorimeter.
2. Select a test menu (ALL TESTS, RECENT TESTS, or FAVORITES) containing Iron 4 using ◀▶.
3. Select Iron 4 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 4 - Reagent A; then swirl to mix.
9. Add 1 mL Iron 4 - Reagent B; then cap and swirl to mix thoroughly.
10. Insert sample cell into sample cell compartment. Align marks.
11. Select TIMER using ◀▶; then press ENTER ⊙.
12. Select START using ◀▶; then press ENTER ⊙. (A 2-minute [02:00] countdown will begin.) Immediately select AUTO using ◀▶; then press ENTER ⊙.
13. When the timer beeps, the instrument will read the sample and the result will be displayed.

Interferences

Alkalinity, Total ($CaCO_3$) > 200 ppm – negative interference
ATMP, all levels – negative interference
Copper > 1.0 ppm – negative interference
EDTA, all levels – negative interference
Phosphonate (HEDP) > 20 ppm – negative interference (all levels interfere when iron is < 1 ppm)
Polyphosphate (HEDP) > 5 ppm – negative interference

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

Aluminum – 80 ppm
Azole (BT) – 50 ppm
Azole (TT) – 20 ppm
Biguanide – 50 ppm
Bromine – 10 ppm
Chloride – 1000 ppm
Chlorine – 10 ppm
Cyanuric Acid – 200 ppm
Ethylene Glycol – 60%
Fluoride – 20 ppm
Hardness, Calcium ($CaCO_3$) – 1000 ppm
Magnesium – 500 ppm
Molybdate – 10 ppm
Nitrate – 2000 ppm
Nitrite – 2000 ppm
NTA – 20 ppm as $CaCO_3$
Phosphate – 50 ppm
Phosphonate (PBTC) – 20 ppm
Polymer – 1000 ppm
Polyphosphate – 5 ppm
Polyquat – 30 ppm
Propylene Glycol – 50%
Quat – 100 ppm
Silica – 150 ppm
Sulfate – 1000 ppm
Sulfite – 100 ppm
Zinc – 5 ppm

(over)

Test Method

TPTZ (tripyridyl-s-triazine)

Ferric iron in a sample is reduced to ferrous iron. The ferrous iron then reacts with TPTZ to form a deep blue-purple complex that is proportional to the concentration of ferrous iron in a sample.

Estimated Detection Limit

0.10 ppm Fe

Precision

Using two lots of reagent and a standard solution of 2.00 ppm Fe, an individual analyst obtained a standard deviation with the instrument of ± 0.02 ppm Fe.

Application

Industrial Water and Recreational Water

Ordering Info

Reagent Pack

K-8009 Iron 4

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

Reagent Pack Components

R-8009A Iron 4 - Reagent A

R-8009B Iron 4 - Reagent B

taylor

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