Iron VACUettes® Kit

K-6010D/R-6001D: 0 - 30 & 30 - 300 ppm

K-6010A/R-6001A: 0 - 60 & 60 - 600 ppm

Safety Information

Read SDS before performing this test procedure. Wear safety glasses and protective gloves.

Soluble Iron Procedure

1. Fill the dilutor snapper cup to the -ml- mark with **distilled water** (fig. 1).
2. Fill the small micro-test tube approximately halfway with the sample to be tested (fig. 2).
3. Place a VACUette tip firmly on to the ampoule tip.
4. Holding the VACUette almost horizontally, touch the tip to the contents of the micro-test tube (fig. 2).
   NOTE: The capillary tip will fill completely with sample.
5. **Required for R-6001D only:** Pull the VACUette into a vertical position. A small portion of the collected sample should fall into the sleeve of the VACUette tip (fig. 3).
   NOTE: If none of the sample falls **immediately,** tap lightly on the shoulder of the ampoule.
6. Place the VACUette between the vertical tip guides on the inside of the dilutor snapper cup. Snap the ampoule tip. The ampoule will fill leaving a bubble for mixing (fig. 4).
7. To mix the ampoule, invert it several times, allowing the bubble to travel from end to end.
8. Dry the ampoule. Obtain a test result **4 minutes** after snapping the tip.

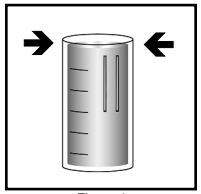

Figure 1

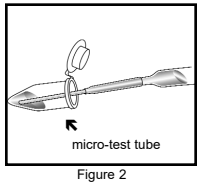

Figure 2

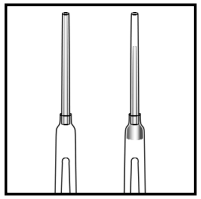

Figure 3

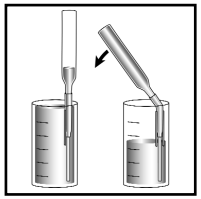

Figure 4

9. Obtain a test result using the appropriate comparator.
   a. **Low Range Comparator (fig. 5):** Place the ampoule, flat end first, into the comparator. Hold the comparator up toward a source of light and view from the bottom. Rotate the comparator until the best color match is found.
   b. **High Range Comparator (fig. 6):** Place the ampoule between the color standards until the best color match is found.

Figure 5

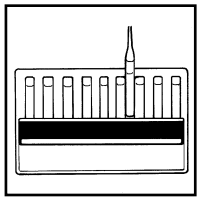

Figure 6

Total Iron Procedure

1. Fill the large (5 mL) micro-test tube to the 2 mL mark with the sample to be tested.
2. Add S-6000 Activator Solution to the 3 mL mark. Cap the microtest tube and shake it to mix the contents. Wait **4 minutes**.
3. After 4 minutes, shake the micro-test tube again, then perform the **Soluble Iron Procedure** using this pretreated sample. [Obtain a test result **1 minute** after snapping the tip (step 8).]
4. **Multiply** test results by **1.5** for the correct **Total Iron** concentration.

Test Method

The Iron VACUettes®[1] test kit employs the phenanthroline chemistry.[2,3,4] Some forms of insoluble iron (magnetite, ferrite, etc.) will show very low recoveries with this test.

1. VACUettes is a registered trademark of AquaPhoenix Scientiic, LLC U.S. Patent Nos. 4,537,747 & 4,596,780
2. APHA Standard Methods, 23rd ed., Method 3500-Fe B - 1997
3. ASTM D 1068 - 77, Iron in Water, Test Method A
4. J.A. Tetlow and A.L. Wilson, “The Absorptiometric Determination of Iron in Boiler Feed-water, “Analyst. Vol. 89, p 442 (1964)..

Sampling and Preservation

For soluble iron, analyze sample immediately upon collection. For total iron, analyze sample at the time of collection if possible. Otherwise, adjust the sample pH to less than 2 with nitric or hydrochloric acid. If the pH of the preserved sample is <1, adjust to pH 2-3 prior to analysis. If necessary, adjust test results for sample dilution resulting from preservation and pH adjustment.

Oct. 23, Rev. 19