

Iron VACUettes®

0 - 30 & 30 - 300 ppm

Soluble Iron Procedure

1. Fill the dilutor snapper cup to the **top edge** with **iron free water**.
2. Fill the micro-test tube approximately halfway with **your sample** (fig 1).
3. Make sure that the VACUette tip is firmly attached to the ampoule tip.
4. Holding the VACUette almost horizontally, touch the tip to the contents of the micro-test tube (fig 1).
NOTE: The capillary tip will fill completely with sample.
5. Pull the VACUette into a vertical position. A small portion of the collected sample should fall into the sleeve of the VACUette tip (fig 2).

NOTE: If none of the sample falls, a light tap near the shoulder of the ampoule will accomplish this.

6. Place the VACUette in the dilutor snapper cup and snap the tip (fig 3). The ampoule will fill leaving a bubble to facilitate mixing.
7. Mix the contents of the ampoule by inverting it several times, allowing the bubble to travel from end to end. Dry the exterior of the ampoule and wait **1 minute** for color development.
8. Use the appropriate comparator to determine the level of iron in the sample. If the color of the VACUette ampoule is between two color standards, a concentration estimate can be made.
 - a. Place the VACUette ampoule, flat end downward into the center of the low range comparator. Direct the top of the comparator up toward a bright source of light while viewing from the bottom. Rotate the comparator until the color standard below the ampoule shows the closest match (fig 4).

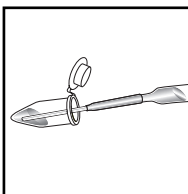


Figure 1

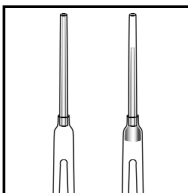


Figure 2

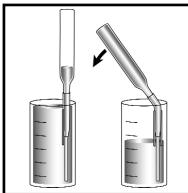


Figure 3

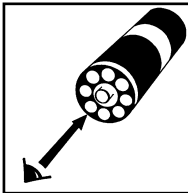


Figure 4

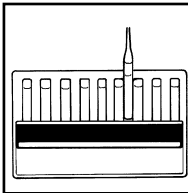


Figure 5

- b. Hold the high range comparator in a nearly horizontal position while standing directly beneath a bright source of light. Place the VACUette ampoule between the color standards moving it from left to right along the comparator until the best color match is found (fig 5).

Total Iron Procedure

1. Fill the sample cup to the 2 mL mark with your sample.
2. Add A-6000 Activator Solution until the volume reaches 3 mL. Cap the cup and shake it to mix the contents. Wait **4 minutes**.
3. After 4 minutes, stir the sample and then perform the **Soluble Iron Procedure** using this pretreated sample.
4. **Multiply** test results by **1.5** for the correct **Total Iron** concentration.

Test Method

The Iron VACUettes®¹ employ the phenanthroline chemistry.^{2,3} Results are expressed in ppm (mg/Liter) Fe. Various metals will produce high test results. Some forms of insoluble iron (magnetite, ferrite, etc.) require the following digestion in place of the Total Iron Procedure:

- A. Fill a heat-resistant, glass container to 10 mL with sample.
- B. Add 5 mL of A-6000 Solution. Stir briefly.
- C. Gently boil the sample to reduce volume to 7-8 mL.
- D. Cool the sample and dilute to 15 mL with iron-free water.
- E. Perform the **Soluble Iron Procedure** using this pretreated sample.
- F. Multiply test results by 1.5 for the correct Total Iron concentration.

1. VACUettes is a registered trademark of CHEMetrics, Inc. U.S. Patent Nos. 4,537,747 & 4,596,780

2. APHA Standard Methods, 20th ed., p. 3-76, method 3500-Fe B (1998)

3. ASTM D 1068 - 88, Iron in Water, Test Method A

Safety Information

Read MSDS before performing this test procedure. Wear safety glasses.

Reorder Information

Cat. No.

Test Kit, complete	K-6010D
Refill, 30 VACUette ampoules	R-6001D
Activator Solution, six 10 mL bottles	A-6000
Dilutor Snapper Cup, 25 mL, package of six	A-0018
Micro-Test Tube, package of ten	A-0015
Sample Cup and Top, 5 mL, package of six	A-0105
Comparator, 0-30 ppm	C-6001D
Comparator, 30-300 ppm	C-6010D

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