

# Iron HR CHEMets® Kit

K-6020B/R-6001 & A-0171: 250 - 2500 ppm

## Sample Temperature

Sample temperatures that deviate significantly from 20°C (68°F) may introduce test result bias.

## Soluble Iron Procedure

1. Place a pipette tip firmly onto the end of the MiniPet® (fig. 1).

**NOTE:** Use a fresh pipette tip for each test.

2. Depress the plunger on the minipet. Immerse the tip in the sample to be tested and release the plunger. A portion of the sample will be drawn into the tip (fig. 2).

**NOTE:** Do not touch the side or bottom of the sample container with the tip during sampling.

3. Hold the minipet over the sample cup, and depress the plunger to dispense sample (fig. 3).

4. Dilute the contents of the sample cup to the **25 mL mark with distilled water** (fig. 4).

5. Place the CHEMet ampoule, tip first, into the sample cup. Snap the tip. The ampoule will fill leaving a bubble for mixing (fig. 5).

6. To mix the ampoule, invert it several times, allowing the bubble to travel from end to end.

7. Dry the ampoule. Obtain a test result **4 minutes** after snapping the tip.

8. Obtain a test result by placing the ampoule between the color standards until the best color match is found (fig. 6).

**NOTE:** Use the 250 - 2500 ppm concentration scale on the comparator label.

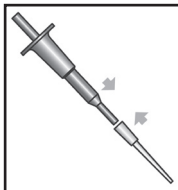


Figure 1

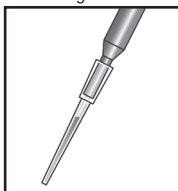


Figure 2

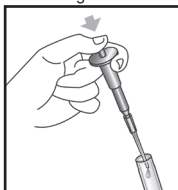


Figure 3

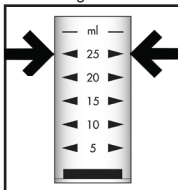


Figure 4

## Total Iron Procedure

1. Perform Steps # 1 - 4 of the **Soluble Iron Procedure**.
2. Add 5 drops of S-6000 Activator Solution. Stir briefly. **Wait 4 minutes.**
3. After 4 minutes, stir the sample once again then preform the **Soluble Iron Procedure** using this pretreated sample. Obtain a test result **1 minute** after snapping the tip (Step # 7).

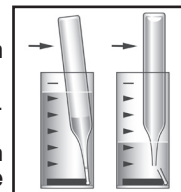


Figure 5

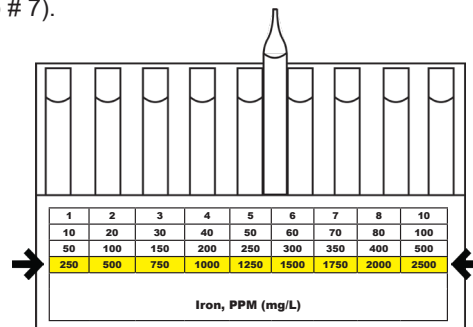


Figure 6

## Test Method

The Iron CHEMets®1 test method employs the phenanthroline chemistry.<sup>2,3,4</sup> Ferrous iron reacts with 1,10-phenanthroline to form an orange colored complex in direct proportion to the ferrous iron concentration. Total iron (ferrous plus ferric) is determined by adding a mixture of thioglycolic acid and ammonia to the sample. This mixture dissolves most forms of particulate iron. Certain forms of very insoluble iron (magnetite, ferrite, etc.) require a digestion procedure in place of the Total Iron Procedure.

1. CHEMets is a registered trademark of AquaPhoenix Scientific, LLC U.S. Patent No.3,634,038
2. APHA Standard Methods, 23<sup>rd</sup> 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).
5. MiniPet is a registered trademark of Tricontinent Scientific, Inc.

## Safety Information

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

Aug. 25, Rev. 3