

	<p>How to use...</p> <h1>Ferrous Iron Kit</h1> (Hach Model IR-24) INSTRUCTION SHEET	
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Testing Location – Field or Laboratory

If the sample is kept to conduct the test later in the laboratory, be sure to refrigerate the sample. It is best to conduct the test within 24 hours of collecting the water.

Materials

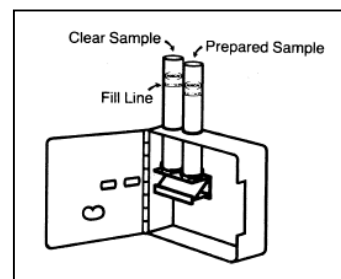
- FerroZine Iron Reagent Solution Pillows
- 2 plastic or glass test tubes
- black color comparator box with violet shaded color disk
- 1 plastic 25 mL measuring vial
- clippers or scissors

Testing Background

This test is an optional test for classes participating in the project to do. In this test, the 1,10 phenanthroline indicator in the Ferrous Iron Reagent reacts with the ferrous iron in the sample to form a violet color in proportion to the ferrous iron concentration.

Testing Instructions - Low Range Test (0-0.2 mg/L) - START WITH THIS TEST RANGE

1. Fill the plastic measuring vial, not test tube, to the 25 mL mark with sample water.
2. Add the contents of one FerroZine Iron Reagent Solution Pillow to the measuring vial. Swirl, not shake, to mix. Allow five minutes to pass for full color development. A violet color will appear if ferrous iron is present. While waiting, proceed to step 3.
3. Fill a clean test tube to the top line (under "No. 1730") with untreated **sample** water. Place this tube in the outermost opening in the black color comparator box (make sure the violet color disk is in it).
4. After 5 minutes, fill another test tube with the prepared sample (possibly violet in color) to the top line (under "No. 1730"). Place this tube in the centermost opening in the comparator box.
5. Hold the comparator up to a light source (sky, window, or lamp). Look through the openings on the front and rotate disk until the color matches in the two openings. *Note: BOTH test tubes either have to be capped or uncapped, not one capped and one uncapped.* Read the numerical value through the slit on the front on the "end view" scale. This is the amount of ferrous iron (mg/L) in the sample. Record this value on the data sheet. If there was no violet color and you are sure you have followed the instructions correctly, it can be concluded that

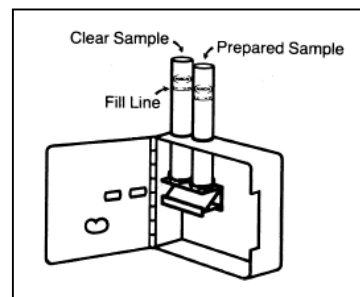


there was either no ferrous iron present or the amount was too small to be detected with this test kit.

Note: If the color developed is so dark as to be off the high end of the scale, proceed to the high range (0-1.0 mg/L) test instructions.

Testing Instructions - High Range Test (0-1.0 mg/L)

1. Fill the plastic measuring vial, not test tube, to the 25 mL mark with sample water.
2. Add the contents of one FerroZine Iron Reagent Solution Pillow to the measuring vial. Swirl, not shake, to mix. Allow five minutes to pass for full color development. A violet color will appear if ferrous iron is present. While waiting, proceed to step 3.
3. Fill a clean test tube to the bottom (5 mL) line with untreated **sample** water. Place this tube in the outermost opening in the black color comparator box (make sure the violet color disk is in it).
4. After 5 minutes, fill another test tube with the prepared sample (possibly violet in color) to the bottom (5 mL) line. Place this tube in the centermost opening in the comparator box.
5. Hold the comparator up to a light source (sky, window, or lamp). Look through the openings on the front and rotate disk until the color matches in the two openings. *Note: BOTH test tubes either have to be capped or uncapped, not one capped and one uncapped.* Read the numerical value through the slit on the front on the "**side view**" scale. This is the amount of ferrous iron (mg/L) in the sample. Record this value on the data sheet. If there was no violet color and you are sure you have followed the instructions correctly, it can be concluded that the amount was too small to be detected with this test kit.



Disposal and Clean Up

The waste from this test should be collected in a waste container to take back to the classroom. Once there, it can be flushed down the sink with plenty of water. Clean all equipment thoroughly with distilled water

Safety Precautions

The chemical in this kit may be hazardous to the health and safety of the user if inappropriately handled. Please read the warning on the package before performing the test. Use appropriate safety equipment and normal precautions.

Test instructions adapted from Hach Company (Loveland, CO) instructions for Ferrous Iron Test Kit IR-18C.