

IRON

BIPYRIDYL METHOD • CODE 3648-SC

QUANTITY	CONTENTS	CODE
30 mL	*Iron Reagent #1	*4450-G
5 g	*Iron Reagent #2 Powder	*V-4451-C
1	Pipet, 0.5 mL, plastic	0353
1	Spoon, 0.1 g, plastic	0699

*WARNING: Reagents marked with an * are considered hazardous substances. To view or print a Material Safety Data Sheet (MSDS) for these reagents see MSDS CD or our web site. To obtain a printed copy, contact us by e-mail, phone or fax.

Most natural waters contain some iron. Its presence may vary from small traces to very large amounts in water which is contaminated by acid mine wastes. For domestic use, the concentration should not exceed 0.2 ppm and for some industrial applications not even a trace of iron can be tolerated. There are many means available for removing or reducing the iron content. Water softening resins are effective for removing small amounts of iron and special ion exchange materials are selective for iron removal. High concentrations of iron can be removed by such chemical processes as oxidation and lime or lime-soda softening. Because of the many means of removing or reducing the amount of iron in water, the particular method employed will depend largely on the form of iron which is present and the end use of the treated water.

APPLICATION: Drinking, surface and saline waters; domestic and industrial wastes.

RANGE: 0.00–6.00 Iron

METHOD: Ferric iron is reduced to ferrous iron and subsequently forms a colored complex with bipyridyl for a quantitative measure of total iron.

SAMPLE HANDLING & PRESERVATION: The sample container should be cleaned with acid and rinsed with deionized water. Addition of acid to adjust the sample to pH 2–3 will prevent deposition of iron on the container walls. Samples should be analyzed as soon as possible.

INTERFERENCES: Strong oxidizing agents interfere, as well as copper and cobalt in excess of 5.0 mg/L.

PROCEDURE

1. Press and hold **ON** button until colorimeter turns on.
2. Press **ENTER** to start.
3. Press **ENTER** to select TESTING MENU.
4. Select ALL TESTS (or another sequence containing 51 Iron Bipyridyl) from TESTING MENU.
5. Scroll to and select 51 Iron Bipyridyl from menu.
6. Rinse a clean tube (0290) with sample water. Fill to the 10 mL line with sample.
7. Insert tube into chamber, close lid and select SCAN BLANK.
8. Remove tube from colorimeter. Use the 0.5 mL pipet (0353) to add one measure of *Iron Reagent #1 (V-4450). Cap and mix.
9. Use the 0.1 g spoon (0699) to add 0.1 g of *Iron Reagent #2 Powder (V-4451). Cap and shake vigorously for 30 seconds. Wait three minutes for maximum color development.
10. At the end of 3 minute waiting period, do not mix. Insert tube into chamber, close lid and select SCAN SAMPLE. Record result.
11. Press **OFF** button to turn colorimeter off or press **EXIT** button to exit to a previous menu or make another menu selection.

NOTE: For best possible results, a reagent blank should be determined to account for any contribution to the test result by the reagent system. To determine the reagent blank, follow the above test procedure to scan a distilled or deionized water blank. Then follow the above procedure to perform the test on a distilled or deionized water sample. This test result is the reagent blank. Subtract the reagent blank from all subsequent test results of unknown samples. It is necessary to determine the reagent blank only when a new lot number of reagents are obtained.