

# 1200 COLORIMETER IRON

**MODEL 1200-FE 3681-01**

<b>QUANTITY</b>	<b>CONTENTS</b>	<b>CODE</b>
2 x 15 mL	*Acid Phenanthroline Indicator	*2776-E
2 x 5 g	*Iron Reducing Reagent	*2777-C
1	Colorimeter Tubes, with caps, set of 6	0290-6
1	Spoon, 0.1 g, plastic	0699
1	Water Sample Collecting Bottle	0688
1	1200 Colorimeter for Iron	26738

**\*WARNING:** Reagents marked with a \* are considered to be potential health hazards. To view or print a Material Safety Data Sheet (MSDS) for these reagents see MSDS CD or [www.lamotte.com](http://www.lamotte.com). To obtain a printed copy, contact LaMotte by email, phone or fax.

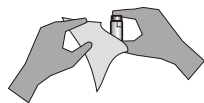
To order individual reagents or test kit components, use the specified code number.

## **INTRODUCTION**

Most natural waters contain some iron. The concentration 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.

## IRON TEST PROCEDURE - 1,10 PHENANTHROLINE METHOD

Read the 1200 Colorimeter Manual before proceeding. Carefully wipe tubes dry before inserting into the colorimeter chamber.



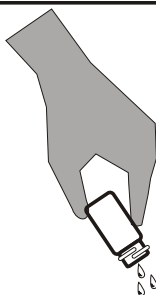
### IRON

1.



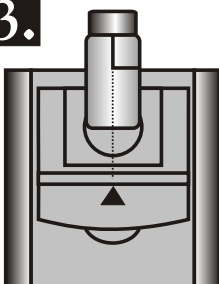
Fill the Water Sample Collecting Bottle (0688) with sample water. This will be used to dispense sample water for the tests.

2.



Rinse and fill a colorimeter tube (0290) to the 10 mL line with sample water. Cap and wipe dry.

3.



Insert the tube into the chamber, being sure to align the index line with the arrow on the meter. Close the lid. This tube is the blank or zero.

4.



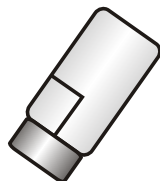
Push the **READ** button to turn the meter on. Press the **ZERO** button and hold it for 2 seconds until **bLA** is displayed. Release the button to take a zero reading (0.00 ppm).

5.



Remove tube from colorimeter. Use the 0.1 g spoon (0699) to add one measure of \*Iron Reducing Reagent (2777).

6.



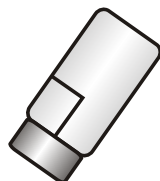
Cap and invert the tube 15 times to mix.

7.



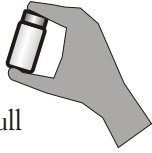
Remove the cap and add 6 drops of \*Acid Phenanthroline Indicator (2776).

8.



Cap and invert the tube 3 times to mix reagents.

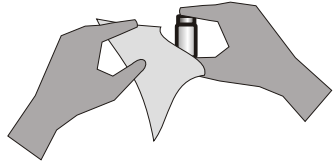
9.



Wait 5 minutes for full color development. Solution will turn orange if iron is present.



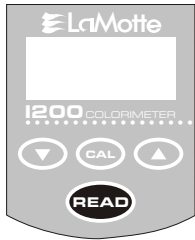
10.



Wipe tube dry.

11.

Align the index line with the arrow on the meter, insert tube into chamber. Close the lid. Push the **READ** button. Record results as ppm Iron.



If the reading displays *ER2*, repeat procedure on diluted sample, and multiply the result by the appropriate dilution factor. See 1200 Colorimeter Instruction Manual for procedure.

# **IRON TEST METHOD SPECIFICATIONS**

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## **APPLICATION**

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

## **RANGE**

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0 to 4.0 ppm Iron

## **METHOD**

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

## **HANDLING & PRESERVATION**

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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 after collection since ferrous iron undergoes oxidation to ferric iron.

## **INTERFERENCES**

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Strong oxidizing agents, cyanide, nitrite, phosphates, chromium, and zinc in concentrations exceeding 10 times that of iron; cobalt and copper in excess of 5 mg/L, and nickel in excess of 2 mg/L. Bismuth, cadmium, mercury, molybdate, and silver precipitate phenanthroline.

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