



CHLORINE KIT

DIRECT READING TITRATOR, 0-10 ppm

CODE 3176-02

QUANTITY	CONTENTS	CODE
5 g	DPD #1 Powder	6807-C
50	Chlorine DPD #3R Tablets	6905A-H
2 x 30 mL	*Ferrous Ammonium Sulfate	*6815-G
15 mL	*Control Reagent	*6495-E
1	Demineralizer Bottle	1151
2	Test Tube, 5-10-12.9-15-20-25 mL, glass, w/cap	0608
1	Pipet, 1.0 mL, plastic	0354
1	Direct Reading Titrator, 0-10 Range	0377
1	Spoon, 0.1 g, plastic	0699

*WARNING: Reagents marked with an * are considered to be potential health hazards. To view or print a Safety Data Sheet (SDS) for these reagents go to www.lamotte.com. Search for the four digit reagent code number listed on the reagent label, in the contents list or in the test procedures. Omit any letter that follows or precedes the four digit code number. For example, if the code is 4450WT-H, search 4450. To obtain a printed copy, contact LaMotte by e-mail, phone or fax.

Emergency information for all LaMotte reagents is available from Chem-Tel: (US, 1-800-255-3924) (International, call collect, 813-248-0585).

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

Read the Direct Reading Titrator Instruction Manual before proceeding. The Titrator has a special tip to improve the titration sensitivity. Make sure the tip is firmly attached. Each minor division on the Titrator scale equals 0.2 ppm.

Read the Demineralizer Bottle Instruction Manual before proceeding.

PREPARATION OF A CHECK STANDARD

A check standard should be used to verify the accuracy whenever a new titrating solution is prepared.

1. Place 891 mg potassium permanganate in a 1 liter volumetric flask. Dissolve and dilute to 1 liter with distilled or deionized water. This is the stock solution.
2. Transfer 10 mL to a 100 mL volumetric flask. Dilute to 100 mL with distilled or deionized water.
3. To prepare a 1 ppm standard, transfer 1 mL to a second 100 mL volumetric flask. Dilute to 100 mL with distilled or deionized water. This is the check standard. Use as a water sample to run the test. If the final result is not 1 ppm chlorine, fresh Ferrous Ammonium Sulfate titrating solution should be prepared.

PREPARATION OF FERROUS AMMONIUM SULFATE TITRATING SOLUTION

Fresh titrating solution should be prepared daily.

1. Use the 1.0 mL pipet (0354) to transfer 1.0 mL of *Ferrous Ammonium Sulfate (6815) to a test tube (0608).
2. Dilute to 25 mL line with deionized water from the Demineralizer Bottle (1151).
3. Add 10 drops of *Control Reagent (6495). Cap and shake for 5 seconds. Wait 30 seconds until foam settles.
4. Run test using check standard as the sample. If result is not 1 ppm, remake titrating solution.

PROCEDURE

1. Fill test tube (0608) to 10 mL line with sample water.
2. Use the 0.1 g spoon (0699) to add 0.1 g of DPD #1 Powder (6807). Cap and gently mix until powder dissolves. Solution will turn red if chlorine is present.
3. Fill the Direct Reading Titrator (0377) with the *Ferrous Ammonium Sulfate Titrating Solution prepared in the previous procedure by inserting the tip in the solution and withdrawing the plunger.
4. While gently swirling tube, titrate sample with *Ferrous Ammonium Sulfate until color changes from red to colorless. Do not disturb Titrator, as titration will continue in Step 7.
5. Read result directly from the scale where the large ring on the Titrator meets the Titrator barrel. Record as ppm Free Chlorine.
6. Carefully remove the cap and Titrator. Add one Chlorine DPD #3R Tablet (6905A). Cap and mix until tablet dissolves.
7. Continue titration until color changes from red to colorless.
8. Read result directly from the scale where the large ring on the Titrator meets the Titrator barrel. Record as ppm Total Residual Chlorine.
9. To determine combined chlorine, subtract free available chlorine from total residual chlorine. Record as ppm Combined Chlorine.

$$\text{Combined Chlorine (ppm)} = \text{Total Residual Chlorine} - \text{Free Available Chlorine}$$

NOTE: Thoroughly clean and rinse test tubes after each use.

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