



## 1200 COLORIMETER

**CHLORINE TABLET TEST • Model 1200-CL • Code 3670-01**

Qty.	Contents	Code
100	*Chlorine DPD #1 Instrument Grade Tablets	6903-J
100	Chlorine DPD #3 Instrument Grade Tablets	6197-J
1	Colorimeter Tubes, w/caps, 1 set	0290-6
1	Tablet Crushers	0175
2	Water Sample Collecting Bottle	0688
1	1200 Colorimeter for Chlorine DPD	26728

**\*WARNING:** Reagents marked with a \* are considered hazardous substances. Material Safety Data Sheets (MSDS) are supplied for these reagents. For your safety, read label and accompanying MSDS before using.

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

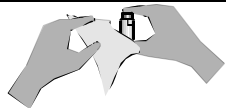
### DPD CHLORINE INTRODUCTION

Chlorine is added to water to kill bacteria and other disease-producing organisms, control algae, and remove undesirable odors and colors. Chlorine added to water quickly forms hypochlorous acid, HClO, also known as Free Available Chlorine, the active ingredient responsible for chlorine's sanitizing capabilities. Free Available Chlorine combines with impurities in the water to form chloramines and other organic nitrogen compounds. In combined form, its sanitizing capability diminishes, and higher levels of chlorine are necessary to achieve effective sanitation.


Therefore, it is essential to chlorinate to the point of establishing a Free Available Chlorine Residual, and then to maintain that residual at a recommended level. The LaMotte DPD tablet test method distinguishes levels of Free Available Chlorine, Combined Chlorine, and Total Residual Chlorine, using a single test sample.

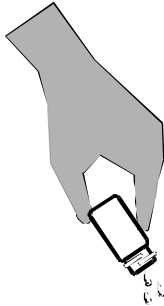
## CHLORINE TEST PROCEDURE - DPD METHOD

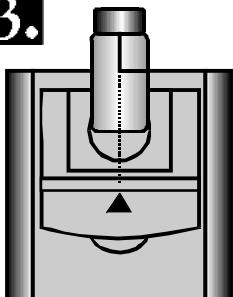
Read the 1200 Colorimeter Manual before proceeding. Carefully wipe tubes dry before inserting into the colorimeter chamber.





### FREE AVAILABLE CHLORINE


**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.**  Empty all but a few drops of sample from tube. Add one \*Chlorine DPD #1 Tablet (6903) and crush with tablet crusher (0175). NOTE: To insure accurate results, tablet must be crushed before filling tube.

**6.**  Fill to 10 mL line with sample. Cap and mix until tablet disintegrates. Make readings within 30 seconds after disintegration of the tablet.

**7.**  Align the index line with the arrow on the meter, insert tube into chamber, the lid. Push the **READ** button. Record results as ppm Free Available Chlorine. Save sample for the Total Residual Chlorine test.

**8.**  Add one Chlorine DPD #3 Tablet (6197) to the sample from Step 6. Crush tablet.

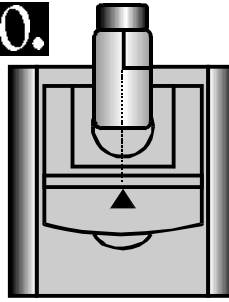
## TOTAL RESIDUAL CHLORINE

9.



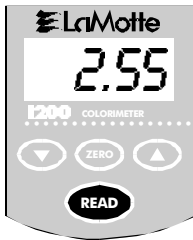
Cap and mix until tablet disintegrates.\*

10.



Insert the tube into the chamber, being sure to align the index line with the arrow on the meter. Close the lid.

11.



Push the **READ** button. Record reading as ppm Total Residual Chlorine.

12.

Subtract the Free Available Chlorine reading from the Total Residual Chlorine reading to determine ppm Combined Chlorine (Monochloramine, Dichloramine, and Nitrogen Trichloride) present in the water sample.

If either chlorine reading displays  $E_{r2}$ , repeat procedure on diluted sample, and multiply the result by the appropriate dilution factor. See 1200 Colorimeter Instruction Manual for procedure.

Levels of chlorine above 10 mg/L will cause a bleaching effect on the DPD indicator, and may give a false indication that no chlorine is present. If it is possible that the chlorine concentration is greater than 10 mg/L (e.g. after shock treatment), perform test on a diluted sample and multiply the result by appropriate dilution factor.

**CAUTION:** DO NOT leave reacted DPD samples in test tubes (0290). Discard sample and thoroughly rinse tubes. If allowed to remain, DPD will stain tubes, significantly impairing the operation of the 1200 Colorimeter. If necessary, acid wash, and vigorously clean glassware with test tube brush and detergent.

\*For wastewater samples, Standard Methods for the Examination of Water and Wastewater recommends waiting 2 minutes for full color development.

# **DPD CHLORINE TEST METHOD SPECIFICATIONS**

---

## **APPLICATION**

Drinking water supplies and distribution systems, swimming pool and spas, sewage and chlorinated waste waters, process waters and sanitizing solutions.

## **RANGE**

0 to 4.0 mg/L Chlorine (may be extended by dilution)

## **METHOD**

In the absence of Iodide, Free Available Chlorine reacts instantly with the buffered diethyl-p-phenylenediamine indicator (DPD) to produce a red color in proportion to the amount of chlorine present. Subsequent addition of potassium iodide produces a rapid color response from the combined forms of chlorine (chloramines).

## **HANDLING & PRESERVATION**

Chlorine in aqueous solutions, particularly weak solutions, is not stable. Exposure to sunlight or agitation will accelerate the reduction of chlorine. Fill sample containers to the top and cap tightly. Analyze samples as soon as possible after collection.

## **INTERFERENCES**

The only interfering substance likely to be encountered is oxidized manganese. The extent of this interference can be determined by treating a sample with sodium arsenite to destroy the chlorine present, so that the amount of interference can be measured.

## **CALIBRATION**

The single test colorimeter is precalibrated. In order to comply with NPDWR or NPDES reporting regulations, the calibration should be checked periodically by using a set of reference standards including a 0 mg/L blank and 0.3, 1.0, and 3.5 mg/L chlorine. To prepare these standards, a LaMotte 1000 mg/L standard chlorine equivalent solution (Code 3858) is available. Consult with your local regulatory agency to determine standardization frequency.

## **LaMOTTE COMPANY**

Helping People Solve Analytical Challenges®

PO Box 329 • Chestertown • Maryland • 21620 • USA  
800-344-3100 • 410-778-3100 (Out side U.S.A.)

Visit us on the web at [www.lamotte.com](http://www.lamotte.com)