

# Chlorine F&T DPD/P 4 or 10

Range(s): 0-4.00 ppm Cl<sub>2</sub>, 0-10.0 ppm Cl<sub>2</sub>



## Procedure

Note: When testing multiple samples simultaneously, a separate sample cell with an unreacted sample of the water tested must be used to zero the colorimeter. Please note that varying the test procedure from the original can affect the precision of the test.

1. Turn on the Colorimeter.
2. Select a test menu (ALL TESTS, RECENT TESTS, or FAVORITES) containing Chlorine F&T DPD/P 4 (for 0-4.00 ppm Cl<sub>2</sub>) or Chlorine F&T DPD/P 10 (for 0-10.0 ppm Cl<sub>2</sub>) using ◀▶.
3. Select Chlorine F&T DPD/P 4 (for 0-4.00 ppm Cl<sub>2</sub>) or Chlorine F&T DPD/P 10 (for 0-10.0 ppm Cl<sub>2</sub>) using ▲▼; then press ENTER Ⓞ.
4. Rinse and fill 25 mm sample cell to 10 mL mark with sample; then cap.
5. Insert sample cell into sample cell compartment. Align marks per User's Manual.
6. Select ZERO using ◀▶; then press ENTER Ⓞ. Zero will be displayed.

7. Remove sample cell from sample cell compartment; then remove cap.
8. Using the 0.15 g dipper spoon, add 1 level dipper Chlorine F&T DPD/P - Reagent A; then cap and swirl to dissolve powder.
9. Insert sample cell into sample cell compartment. Align marks.
10. Select READ using ◀▶; then press ENTER Ⓞ. The instrument will read the sample and the result will be displayed. Record reading as free chlorine (FC) as Cl<sub>2</sub>.

To determine the concentration of total chlorine (TC) as Cl<sub>2</sub>, proceed to the following steps.

11. Remove sample cell from sample cell compartment; then remove cap.
12. Add 5 drops Chlorine F&T DPD/P - Reagent B; then cap and swirl to mix thoroughly.
13. Insert sample cell into sample cell compartment. Align marks.

14. Select READ using ◀▶; then press ENTER Ⓞ. The instrument will read the sample and the result will be displayed. Record reading as total chlorine (TC) as Cl<sub>2</sub>.

Note: When testing for total chlorine in wastewater, *Standard Methods for the Examination of Water and Wastewater* recommends a 2-minute wait time for full color development. To include a 2-minute wait time, omit step 14 above and continue with the following steps:

14. Select TIMER using ◀▶; then press ENTER Ⓞ.
15. Select START using ◀▶; then press ENTER Ⓞ. (A 2-minute [02:00] countdown will begin.) Immediately select AUTO using ◀▶; then press ENTER Ⓞ.
16. When the timer beeps, the instrument will read the sample and the result will be displayed. Record reading as total chlorine as Cl<sub>2</sub>.

## Interferences

Alkalinity, Total (CaCO<sub>3</sub>) > 200 ppm – negative interference  
 To remove interference: Fill dilution vial to 50 mL mark and adjust pH to 6-7 with Sulfuric Acid N (R-0686). Take a 10 mL portion and follow test procedure above.

Bromine, all levels – positive interference  
 Chlorine Dioxide, all levels – positive interference  
 Hardness, Calcium (CaCO<sub>3</sub>) > 1000 ppm – negative interference

Iodine, all levels – positive interference  
 Manganese, all levels – positive interference  
 Monopersulfate, all levels – positive interference  
 Ozone, all levels – positive interference

## Instruction #5378

### Interferences (continued)

The following analytes were tested to the levels listed and found not to cause any interference up to the specified values:

Azole (BT) – 5 ppm  
Azole (TT) – 5 ppm  
Biguanide (as product) – 50 ppm  
Chloride – 1000 ppm  
Copper – 5 ppm

Cyanuric Acid – 200 ppm  
Fluoride – 10 ppm  
Hydrogen Peroxide – 30 ppm  
Iron, Ferric – 10 ppm  
Iron, Ferrous – 10 ppm  
Molybdate – 10 ppm  
Nitrate – 2000 ppm  
Nitrite – 2000 ppm

Phosphate – 100 ppm  
Phosphonate – 20 ppm  
Polymer – 1000 ppm  
Polyphosphate – 5 ppm  
Silica – 150 ppm  
Sulfate – 1000 ppm  
Sulfite – 100 ppm  
Zinc – 5 ppm

### Test Method

DPD (N,N-diethyl-p-phenylenediamine)

Free chlorine, in the form of hypochlorous acid or hypochlorite ion, reacts with DPD to produce a magenta-colored compound with an intensity that is proportional to the concentration of free chlorine in a sample. Iodide ion, added subsequently, reacts with any chloramines present to form iodine, which then reacts with DPD to increase the intensity of the color proportional to the concentration of chloramines in a sample.

### Estimated Detection Limit

0.1 ppm Cl<sub>2</sub>

### Precision

Using two lots of reagent and a standard solution of 5 ppm Cl<sub>2</sub>, an individual analyst obtained a standard deviation with the instrument of ± 0.07 ppm Cl<sub>2</sub>.

### Application

Industrial Water, Potable Water, Recreational Water, and Wastewater

### Ordering Info

#### Reagent Pack

K-8001 Chlorine F&T DPD/P 4 or 10  
Formulated for exclusive use with Taylor's TTi® Colorimeter.

#### Reagent Pack Components

R-8001A Chlorine F&T DPD/P - Reagent A  
R-8001B Chlorine F&T DPD/P - Reagent B

#### Optional Reagents & Accessories

R-0686 Sulfuric Acid N



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