






# Copper Total 4.5

Range(s): 0-4.5 ppm Cu



## 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.

- Turn on the Colorimeter.
- Select a test menu (ALL TESTS, RECENT TESTS, or FAVORITES) containing Copper Total 4.5 using ◀▶.
- Select Copper Total 4.5 using ▲▼; then press ENTER .
- Rinse and fill 25 mm sample cell to 10 mL mark with sample; then cap.
- Insert sample cell into sample cell compartment. Align marks per User's Manual.
- Select ZERO using ◀▶; then press ENTER . Zero will be displayed.
- Remove sample cell from sample cell compartment; then remove cap.
- Using the 0.15 g dipper spoon, add 1 level dipper Copper Total 4.5 - Reagent A; then cap and swirl to mix thoroughly.
- Add 0.5 mL Copper Total 4.5 - Reagent B; then swirl to mix.
- Add 0.5 mL Copper Total 4.5 - Reagent C; then cap and swirl to mix thoroughly.
- Insert sample cell into sample cell compartment. Align marks.
- Select TIMER using ◀▶; then press ENTER .
- Select START using ◀▶; then press ENTER . (A 2-minute [02:00] countdown will begin.) Immediately select AUTO using ◀▶; then press ENTER .
- When the timer beeps, the instrument will read the sample and the result will be displayed.

## Interferences

Aluminum, all levels – negative interference

Manganese, all levels – negative interference

Silver, all levels – positive interference

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

Alkalinity – 500 ppm

Azole (BT) – 2.5 ppm

Azole (TT) – 2.5 ppm

Biguanide – 50 ppm

Bromine – 40 ppm

Chloride – 2500 ppm

Chlorine – 15 ppm

Cyanuric Acid – 275 ppm

EDTA – 20 ppm

Fluoride – 10 ppm

Hardness, Calcium (CaCO<sub>3</sub>) – 1000 ppm

Iron, Ferrous – 5 ppm

Iron, Ferric – 5 ppm

Lead – 3 ppm

Magnesium – 300 ppm

Molybdate – 200 ppm

Nitrate – 2000 ppm

Nitrite – 2000 ppm

Phosphate – 100 ppm

Phosphonate (HEDP) – 50 ppm

Polymer – 1000 ppm

Polyphosphate – 50 ppm

Sulfate – 1000 ppm

Sulfite – 100 ppm

Zinc – 5 ppm

**Test Method**

Bicinchoninic Acid

Copper reacts with bicinchoninic acid to produce a purple color that is proportional to the concentration of total copper in a sample.

---

**Estimated  
Detection Limit**

0.06 ppm Cu

---

**Precision**

Using two lots of reagent and a standard solution of 3.5 ppm Cu, an individual analyst obtained a standard deviation with the instrument of  $\pm 0.03$  ppm Cu.

---

**Application**

Industrial Water, Recreational Water, and Wastewater

---

**Ordering Info**

**Reagent Pack**

K-8043 Copper Total 4.5

Formulated for exclusive use with Taylor's TTI® Colorimeter.

**Reagent Pack Components**

R-8043A Copper Total 4.5 - Reagent A

R-8043B Copper Total 4.5 - Reagent B

R-8043C Copper Total 4.5 - Reagent C

