

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.

1. Turn on the Colorimeter.
2. Select a test menu (ALL TESTS, RECENT TESTS, or FAVORITES) containing Copper Total 4.5 using ◀▶.
3. Select Copper Total 4.5 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 Copper Total 4.5 - Reagent A; then cap and swirl to mix thoroughly.
9. Add 0.5 mL Copper Total 4.5 - Reagent B; then swirl to mix.

10. Add 0.5 mL Copper Total 4.5 - Reagent C; then cap and swirl to mix thoroughly.
11. Insert sample cell into sample cell compartment. Align marks.
12. Select TIMER using ◀▶; then press ENTER Ⓢ.
13. Select START using ◀▶; then press ENTER Ⓢ. (A 2-minute [02:00] countdown will begin.) Immediately select AUTO using ◀▶; then press ENTER Ⓢ.
14. 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_3) – 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 ± 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

