

Copper Vacu-vials® Kit

K-3503

V-2000, V-3000: 0 - 12.00 ppm (Prog. # 55)

Spectrophotometer: 0 - 7.00 ppm

Instrument Set-up

For CHEMetrics photometers, follow the **Setup and Measurement Procedures** in the operator's manual. For spectrophotometers, set the wavelength to 485 nm. A sealed ZERO ampoule is supplied in this kit for zeroing when the sample is colorless and not turbid. For improved accuracy with colored or turbid samples, Sample Zeroing Accessory Pack, Cat. # A-0503 is recommended. Using the sample cup, snap the tip of the A-0503 ampoule in the sample (see figure 2 below). Invert the ampoule to mix. Dry the ampoule and use it in place of the supplied ZERO ampoule to zero the instrument.

Test Procedure

1. Fill the sample cup to the 25 mL mark with the sample to be tested (fig. 1).
2. Place the Vacu-vial ampoule, tip first, into the sample cup. Snap the tip. The ampoule will fill leaving a bubble for mixing (fig. 2).
3. To mix the ampoule, invert it several times, allowing the bubble to travel from end to end.
4. Dry the ampoule. Obtain a test result **2 minutes** after snapping the tip.
5. Insert the Vacu-vial ampoule into the photometer, flat end first, and obtain a reading in ppm (mg/Liter) copper (Cu).

NOTE: If using a spectrophotometer that is not pre-calibrated for CHEMetrics products, then use the **equation below** or the **Concentration Calculator** found under the Support tab at www.chemetrics.com.

$$\text{ppm} = 0.37 (\text{abs})^2 + 5.93 (\text{abs}) - 0.01$$

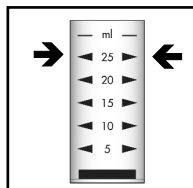


Figure 1

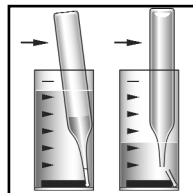


Figure 2

Test Method

The Copper Vacu-vials®¹ test kit employs the bathocuproine chemistry.² In a neutral solution, cuprous ions react with bathocuproine (2,9-dimethyl-4,7-diphenyl-1,10-phenanthrolinedisulfonic acid, disodium salt) to form an orange colored chelate in direct proportion to the copper concentration.

This test method is applicable to drinking water, surface water, groundwater, wastewaters and seawater. For seawater analysis wait **1 minute** for color development.

1. Vacu-vials is a registered trademark of CHEMetrics, LLC U.S. Patent No. 3,634,038
2. APHA Standard Methods, 23rd ed., method 3500-Cu C - 1999

Safety Information

Read SDS (available at www.chemetrics.com) before performing this test procedure. Wear safety glasses and protective gloves.

Visit www.chemetrics.com to view product demonstration videos.
Always follow the test procedure above to perform a test.



www.chemetrics.com
4295 Catlett Road, Midland, VA 22728-0214 U.S.A.
Phone: (800) 356-3072; Fax: (540) 788-4856
E-Mail: orders@chemetrics.com

Feb. 23, Rev. 19