

Program ID #007

Copper Soluble Auto-Test™

1.0 – 14 mg/L

The Orion AQUAfast IV Auto-Test kit is intended for use with the Orion AQ4000 Advanced Colorimeter. For detailed setup and measurement procedures for the Orion AQ4000, consult your colorimeter manual.

NOTE: Before testing, zero the Orion AQ4000 using a sealed zero vial from the Orion AQUAfast IV Zero Auto-Test kit, AQ4ZER. If the sample is colored, use the sample cup provided to dilute the sample using the following steps: 1) Add 10 mL of sample and 5 mL of DI water to the sample cup for a total of 15 mL. 2) Transfer the diluted sample to a clean, dry screw top vial from the Orion Zero Auto-Test kit and use that vial to zero the meter. 3) See the colorimeter manual for details on the Zero Procedure for the Orion AQ4000. Discard the diluted sample after the zero procedure. Repeat for each colored sample. Re-zero with the sealed zero vial before testing any colorless samples.

Safety Information

Read MSDS before performing this test procedure. Wear safety glasses and gloves.

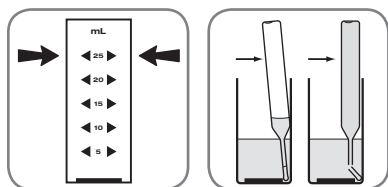
Test Procedure

Figure 1

Figure 2

1. Fill the sample cup to the 25 mL mark with the sample. **See Fig 1.**
2. Place the Auto-Test cuvette in the sample cup. Snap the tip by pressing the cuvette against the side of the cup. The cuvette will fill leaving a small bubble to facilitate mixing. **See Fig 2.**
3. Mix the contents of the cuvette by inverting it several times, allowing the bubble to travel from end to end each time. Wipe all liquid from the exterior of the cuvette.
4. Insert cuvette into Orion AQ4000. Align the ▼ on the Auto-Test cuvette with the ◆ on the adapter to obtain a continuous beeping and view ***** across the display. If ***** and beeping is not observed, rotate cuvette right or left to initiate the measurement.
5. Immediately cover the cuvette with the cuvette cover.
6. The Orion AQ4000 will begin a 2 minute countdown. After the countdown is completed, the Orion AQ4000 will automatically proceed to the measure mode.
7. Record the concentration reading from the Orion AQ4000 display as either mg/L or ppm Cu or log measurement into the data logger by pressing the **log** key.

Test Method

The Copper Soluble Auto-Test method employs the bathocuproine chemistry¹. In an acidic 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. Results are expressed in ppm (mg/Liter) Cu.

1. APHA Standard Methods, 18th ed., p. 3-63, method 3500-Cu E (1992)

Ordering Information

Cat. No.	Description
AC4035	Orion AQUAfast IV Bromine Auto-Test Kit
AQ4ZER	Orion AQUAfast IV Zero Vial Auto-Test Kit
AQ4CBL	Orion AQUAfast IV RS232 Cable
AQ4000	Orion AQUAfast IV Advanced Colorimeter

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