

Program ID #016

Ozone Auto-Test™

0.20 – 2.5 mg/L

Improved Method: Use software upload version 8 or higher.

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 10mL of sample and 5mL of DI water to the sample cup for a total of 15mL. 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.

Sampling

The most critical part of the ozone test is sampling. Ozone loss from the sample occurs rapidly. Dipping and pouring should be performed quickly and with minimum agitation.

Test Procedure

1. Add 5 drops of Ozone Activator solution to the sample cup. **See Fig 1.**
2. Fill the sample cup to the 25 mL mark with the sample (try to minimize turbulence). **See Fig 2.**
3. 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 3.**
4. 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.
5. 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.
6. Immediately cover the cuvette with the cuvette cover.
7. The Orion AQ4000 will begin a 1 minute countdown. After the countdown is completed, the Orion AQ4000 will automatically proceed to the measure mode.
8. Record the concentration reading from the Orion AQ4000 display as either mg/L or ppm O₃ or log measurement into the data logger by pressing the **log** key.

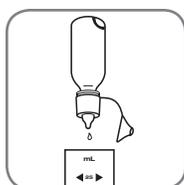


Figure 1

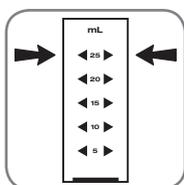


Figure 2

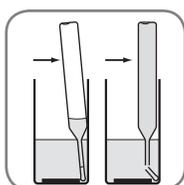


Figure 3

Test Method

The Ozone Auto-Test method employs the DDPD™ chemistry.¹ The sample is treated with an excess of potassium iodide. Ozone oxidizes the iodide to iodine. The iodine then oxidizes DDPD, a methyl-substituted form of DPD (N,N-diethyl-p-phenylenediamine), to form a purple colored species in direct proportion to the ozone concentration. Results are expressed in ppm (mg/Liter) O₃.

Various oxidizing agents such as halogens, ferric ions and cupric ions will produce high test results.

1. The DDPD is a trademark of CHEMetrics, Inc.

Ordering Information

Cat. No.	Description
AC4048	Orion AQUAfast IV Ozone 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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