Ozone Vacu-vials® Kit

K-7423: 0 - 5.00 ppm (Prog. #133)

Instrument Set-up

For CHEMetrics photometers, follow the **Setup and Measurement Procedures** in the operator's manual. For spectrophotometers, follow the manufacturer's instructions to set the wavelength to **515 nm** and to zero the instrument using the ZERO ampoule supplied.

Sample Temperature

Sample temperatures that deviate significantly from 20°C (68°F) may introduce test result bias.

Test Procedure

1. Add 5 drops of S-2500 Activator Solution to the empty sample cup (fig. 1).
2. Fill the sample cup to the 25 mL mark with the sample to be tested, being careful to minimize turbulence (fig. 2).
   NOTE: Ozone loss from sample occurs rapidly. Do not transfer sample to other containers.
3. **Immediately** place the Vacu-vial ampoule, tip first, into the sample cup. Snap the tip. The ampoule will fill leaving a bubble for mixing (fig. 3).
4. To mix the ampoule, invert it several times, allowing the bubble to travel from end to end. Tap the bottom of the ampoule on a hard surface to cause any tiny bubbles that have collected on the ampoule wall to rise to the top of the liquid in the ampoule.
5. Dry the ampoule. Obtain a test result **1 minute** after snapping tip.

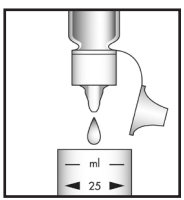

Figure 1

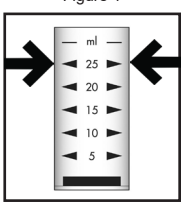

Figure 2

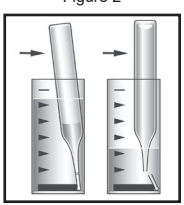
Figure 3

6. Insert the Vacu-vial ampoule into the photometer, flat end first, and obtain a reading in ppm (mg/Liter) ozone (O_3).

   NOTE: If using a spectrophotometer that is not pre-calibrated for CHEMetrics products, then use the **equation below** or the **Concentration Calculator** on the website.

$$ppm = 1.10\ (abs)^2 + 2.16\ (abs)$$

Test Method

The Ozone Vacu-vials®[1] test kit employs the DPD chemistry.[2,3] The sample is treated with an excess of potassium iodide. Ozone oxidizes the iodide to iodine. The iodine then oxidizes DPD (N,N-diethyl-p-phenylenediamine) to form a pink colored species in direct proportion to the ozone concentration.

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

1. Vacu-vials is a registered trademark of AquaPhoenix Scientific, LLC U.S. Patent No. 3,634,038
2. APHA Standard Methods, 23rd ed., Method 4500-Cl G - 2000
3. EPA Methods for Chemical Analysis of Water and Wastes, method 330.5 (1983)

Safety Information

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

CHEMetrics®
By AquaPhoenix Scientific

Feb. 25, Rev. 12