Ozone Vacu-vials® Kit

K-7433: 0 - 0.75 ppm

Instrument Setup

For CHEMetrics photometers, follow the **Setup and Measurement Procedures** in the operator's manual.

For spectrophotometers with a beam height (Z dimension) of 15 mm or less, follow the manufacturer's instructions to set the wavelength to 600 nm and to zero the instrument using the ZERO ampoule supplied.

Obtaining a Reagent Blank Absorbance Value

A reagent blank absorbance value must be obtained for **each ampoule** prior to using it to perform the test procedure below. Insert the **unsnapped ampoule** into the instrument cell holder and obtain an absorbance value for the reagent. CHEMetrics pre-programmed photometers will retain this reagent blank value. If using a spectrophotometer, record the value for later use. This is the Unsnapped Absorbance. Proceed with the **Test Procedure** using this ampoule.

Test Procedure

1. Fill the sample cup to the 25 mL mark with the sample to be tested, being careful to minimize turbulence (fig. 1).
   NOTE: Ozone loss from sample occurs rapidly. Do not transfer sample to other containers.
2. Immediately place the Vacu-vial ampoule from which the reagent blank value was generated, tip first, into the sample cup. Snap the tip. The ampoule will fill leaving a bubble for mixing (fig. 2).
3. Invert the ampoule **continuously for a full 30 seconds**, allowing the bubble to travel from end to end in the ampoule with each inversion.

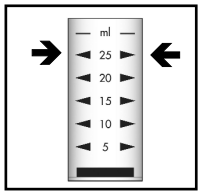

Figure 1

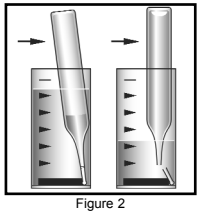
Figure 2

4. Dry the ampoule and insert it into the photometer, flat end first, and obtain a reading.
   NOTE: CHEMetrics pre-programmed photometers will deliver a test result in ppm Ozone (O_3). If using a spectrophotometer, record the value obtained in Step #4 (Snapped Absorbance), then use the equation below or the concentration calculator found under the support tab at www.chemetrics.com to obtain a test result.

   (Unsnapped Abs/3.6) - Snapped Abs = Adjusted Abs

   ppm O_3 = 1.68(Adjusted Abs)² + 2.45(Adjusted Abs) + 0.02

Test Method

The Ozone Vacu-vials®[1] test kit employs the indigo chemistry.[2,3] Indigo trisulfonate reagent reacts quantitatively with ozone, bleaching the blue color in direct proportion to the amount of ozone present. Malonic acid is included in the ampoule to prevent interference from up to 10 ppm chlorine.

1. Vacu-vials is a registered trademark of CHEMetrics, Inc. U.S. Patent No. 3,634,038
2. Bader, H. and Hoigne, J. "Determination of Ozone in Water by the Indigo Method," Water Research Vol. 15, 449-456, 1981.
3. APHA Standard Methods, 23rd ed., method 4500-O_3 B - 1997

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.

CHEMetrics
Simplicity in Water Analysis

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Sept. 19, Rev. 6