Oxygen Vacu-vials® Kit

K-7513: 0 - 15.0 ppm (Prog. # 141)

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 **520 nm** and to zero the instrument using the ZERO ampoule supplied.

Sampling

The most critical part of any dissolved oxygen test is sampling. It is difficult to obtain an aliquot which accurately reflects the oxygen content of a sample. Exposure to the high oxygen content of "air" will cause a sample to approach saturation. Biological activity may cause rapid oxygen depletion. Dipping and pouring should be performed with as little agitation as possible. Analysis should be performed immediately after sampling.

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 tip.

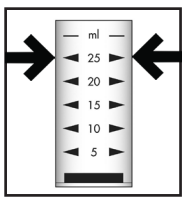

Figure 1

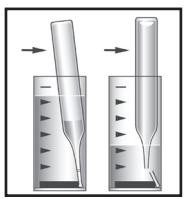
Figure 2

5. Insert the Vacu-vial ampoule into the photometer, flat end first, and obtain a reading in ppm (mg/Liter) oxygen (O_2).

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.

$$ppm = 1.92\ (abs)^2 + 9.96\ (abs) - 0.30$$

Test Method

The Oxygen Vacu-vials®[1] test kit employs the indigo carmine method.[2,3] In an acidic solution, oxygen oxidizes the yellowgreen colored leuco form of indigo carmine to form a highly colored blue dye. The resulting blue color is proportional to the dissolved oxygen concentration in the sample.

1. Vacu-vials is a registered trademark of AquaPhoenix Scientific, LLC U.S. Patent No. 3,634,038
2. ASTM D 888 - 87, Dissolved Oxygen in Water, Test Method A
3. Gilbert, T. W., Behymer, T. D., Castaneda, H. B., "Determination of Dissolved Oxygen in Natural and Wastewaters," American Laboratory, pp. 119-134, March 1982

Safety Information

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

CHEMetrics®
By AquaPhoenix Scientific

Jan. 24, Rev. 16