

Peroxide Vacu-vials® Kit

K-5543 (CHEMetrics Photometer): 0 - 6.00 ppm

K-5543 (Spectrophotometer): 0 - 4.00 ppm

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 470 nm and to zero the instrument using the ZERO ampoule supplied.

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. Test results should be obtained within **1 minute** after snapping the ampoule.
5. Insert the Vacu-vial ampoule into the photometer, flat end first, and obtain a reading in ppm (mg/Liter) hydrogen peroxide (H₂O₂).

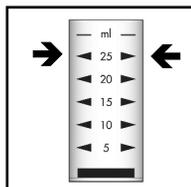


Figure 1

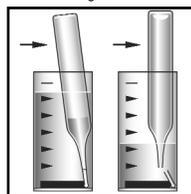


Figure 2

NOTE: Only use the equation below if you are using a spectrophotometer that is not pre-calibrated for CHEMetrics products:

$$\text{ppm} = 4.39 (\text{abs}) - 0.03$$

Test Method

The Peroxide Vacu-vials®¹ test kit employs the ferric thiocyanate chemistry.² In an acidic solution, hydrogen peroxide oxidizes ferrous iron. The resulting ferric iron reacts with ammonium thiocyanate to form ferric thiocyanate, a red-orange colored complex, in direct proportion to the hydrogen peroxide concentration.

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

1. Vacu-vials is a registered trademark of CHEMetrics, Inc. U.S. Patent No. 3,634,038
2. D. F. Boltz and J. A. Howell, eds., Colorimetric Determination of Nonmetals, 2nd ed., Vol. 8, p. 304 (1978)

Safety Information

Read MSDS (available at www.chemetrics.com) 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.



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