

# Peroxide Vacu-vials® Kit

**K-5543:** 0.15 - 6.00 ppm

## Instrument Set-up

For CHEMetrics photometers, follow the instrument specific **Setup and Measurement Procedures** in the Operator's manual. For spectrophotometers capable of accepting a 13 mm diameter round cell, follow the manufacturer's specifications to set the wavelength to 470 nm and to use the ZERO ampoule supplied with this test kit to zero the instrument.

## Safety Information

Read MSDS before performing this test procedure. Wear safety glasses and disposable gloves.

## 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 in the sample cup. Snap the tip by pressing the ampoule against the side of the cup. The ampoule will fill leaving a small bubble to facilitate mixing (fig 2).
3. Mix the contents of the ampoule by inverting it several times, allowing the bubble to travel from end to end. Dry the ampoule. Test results should be obtained within **1 minute** after snapping the ampoule tip.
4. Read the Vacu-vial ampoule in your photometer. If applicable, use the calibration table to obtain test results in ppm (mg/Liter) hydrogen peroxide as  $H_2O_2$ . Accuracy may be compromised if test results are outside the stated test range.

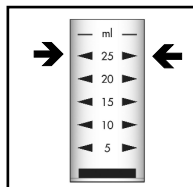


Figure 1

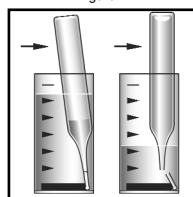


Figure 2

## Test Method

The Peroxide Vacu-vials®<sup>1</sup> test kit employs the ferric thiocyanate chemistry.<sup>2</sup> 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. Results are expressed in ppm (mg/Liter)  $H_2O_2$ . 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)



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