Peroxide Vacu-vials® Kit

K-5543: 0 - 6.00 ppm (Prog. # 95)

Instrument Set-up

For CHEMetrics photometers, follow the **Setup and Measurement Procedures** in the operator's manual. For spectrophotometers, set the wavelength to 470 nm. A sealed ZERO ampoule is supplied in this kit for zeroing when the sample is colorless and not turbid. For improved accuracy with colored or turbid samples, Sample Zeroing Accessory Pack, Cat. # A-0503 is recommended. Using the sample cup, snap the tip of the A-0503 ampoule in the sample (see figure 2 below). Invert the ampoule to mix. Dry the ampoule and use it in place of the supplied ZERO ampoule to zero the instrument.

Test Procedure

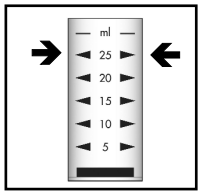

Figure 1

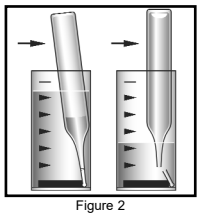
Figure 2

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 **between 30 seconds and 1 minute** after snapping tip.
5. Insert the Vacu-vial ampoule into the photometer, flat end first, and obtain a reading in ppm (mg/Liter) hydrogen peroxide (H_2O_2).

NOTE: **If using a spectrophotometer** that is not pre-calibrated for CHEMetrics products, then use the **equation below** or the **Concentration Calculator** found under the Support tab at *www.chemetrics.com*.

$$ppm = 4.39\ (abs) - 0.03$$

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.

Ferric iron, peracetic acid (PAA) and persulfate will produce high test results. Cupric copper also interferes with the test.

Testing for peroxide in the presence of PAA or cupric copper requires a modified test procedure. Contact technical@chemetrics.com for more information.

The K-5543 Vacu-vials can be used to measure persulfate with two simple modifications to the test procedure:

- Allow 90 seconds for color development in step # 4.
- Multiply peroxide test results from step # 5 by 7 to convert to parts per million (ppm) sodium persulfate.

1. Vacu-vials is a registered trademark of CHEMetrics, LLC U.S. Patent No. 3,634,038
2. APHA Standard Methods Online, Method 4500-H_2O_2 B - 2020

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.

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