

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, follow the manufacturer's instructions to set the wavelength to **470 nm** and to zero the instrument using the ZERO ampoule supplied.

Sample Temperature

Sample temperatures that deviate significantly from 20°C (68°F) may introduce test result bias.

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 **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 (H₂O₂).

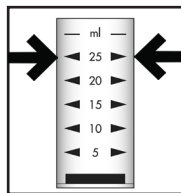


Figure 1

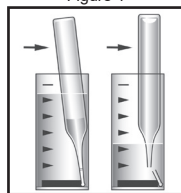


Figure 2

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.

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

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.

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. See technical bulletin on the website for details.

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 AquaPhoenix Scientific, LLC U.S. Patent No. 3,634,038

2. APHA Standard Methods Online, Method 4500-H₂O₂ B - 2020

Safety Information

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

