

Phosphate Vacu-vials® Kit

K-8513 (V-2000 Photometer): 0.30 - 8.00 ppm PO₄

K-8513 (V-2000 Photometer): 0.10 - 2.64 ppm P

K-8513 (Spectrophotometer): 0.20 - 5.00 ppm PO₄

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 690 nm and to use the ZERO ampoule supplied with this test kit to zero the instrument.

Test Procedure

1. Fill the sample cup to the 25 mL mark with the sample to be tested (fig 1).
2. Add 2 drops of A-8500 Activator Solution (fig 2). Cap the sample cup and shake it to mix the contents.
3. 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 3).
4. Mix the contents of the ampoule by inverting it several times, allowing the bubble to travel from end to end. Dry the ampoule and wait **3 minutes** for color development.
5. Read the Vacu-vial ampoule in your photometer. If applicable, use the calibration table to obtain test results in ppm (mg/Liter) phosphate as PO₄. Accuracy may be compromised if test results are outside the stated test range.

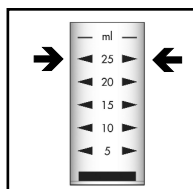


Figure 1

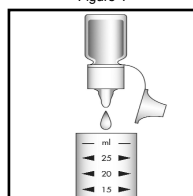


Figure 2

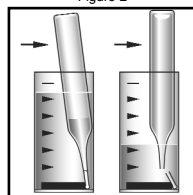


Figure 3

Test Method

The Phosphate Vacu-vials®¹ test kit employs the stannous chloride chemistry.² In an acidic solution, ortho-phosphate reacts with ammonium molybdate to form molybdophosphoric acid, which is then reduced by stannous chloride to the intensely colored molybdenum blue. The resulting blue color is directly proportional to the phosphate concentration.

Condensed phosphates (pyro-, meta- and other polyphosphates) and organically bound phosphates do not respond to this test. Sulfide, thiosulfate, and thiocyanate will cause low test results.

1. Vacu-vials is a registered trademark of CHEMetrics, Inc. U.S. Patent No. 3,634,038
2. APHA Standard Methods, 21st ed., method 4500-P D (2005)

Safety Information

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



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