

# Phosphate CHEMets® Kit

**K-8510:** 0 - 1 & 1 - 10 ppm

## 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. Add 2 drops of A-8500 Activator Solution (fig 2). Cap the sample cup and shake it to mix the contents well.
3. Place the CHEMet 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 **2 minutes** for color development.
5. Use the appropriate comparator to determine the level of ortho-phosphate in the sample. If the color of the ampoule is between color standards, an estimate can be made.

- a. **Low Range Comparator (fig. 4):** Place the ampoule, flat end downward into the center tube of the comparator. Direct the top of the comparator up toward a source of light while viewing from the bottom. Rotate the comparator until the color standard below the ampoule shows the closest match.

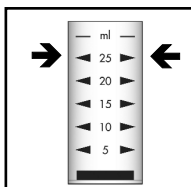


Figure 1

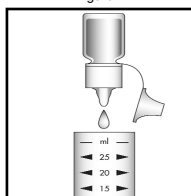


Figure 2

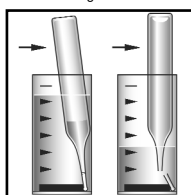


Figure 3

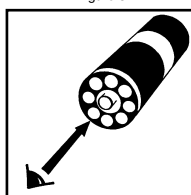


Figure 4

- b. **High Range Comparator (fig. 5):** Hold the comparator in a nearly horizontal position while standing directly beneath a source of light. Place the ampoule between the color standards moving it from left to right along the comparator until the best color match is found.

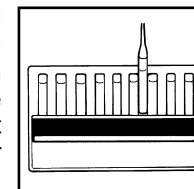


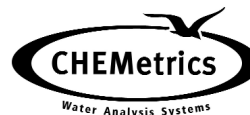
Figure 5

## Test Method

The Phosphate CHEMets®<sup>1</sup> test kit employs the stannous chloride chemistry.<sup>2</sup> 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. Results are expressed in ppm (mg/Liter) PO<sub>4</sub>.

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. CHEMets 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)



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