Phenols CHEMets® Kit

K-8012: 0 - 1 & 0 - 12 ppm

Test Procedure

1. Fill the sample cup to the 25 mL mark with the sample to be tested (fig 1).
2. Dissolve the crystals on the tip of the ampoule in the sample by stirring the sample briefly with the ampoule tip (fig 2).
3. Place the 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 **1 minute** for color development.

   NOTE: After the 1 minute color development, the color in the reacted ampoule may be more orange than the color standards. If this is the case, it is appropriate to wait up to an additional 5 minutes for an improved color match.
5. Use the appropriate comparator to determine the level of phenol in the sample. If the color of the ampoule is between two color standards, a concentration 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.

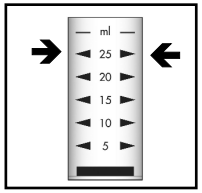

Figure 1

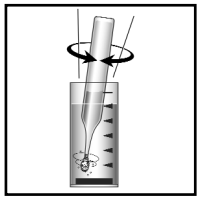
Figure 2

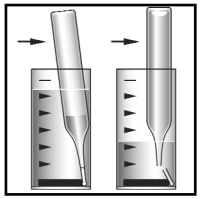
Figure 3

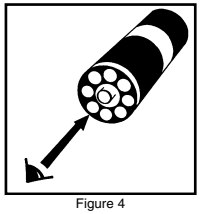
Figure 4

   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.

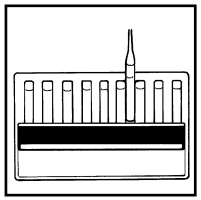
Figure 5

Test Method

The Phenols CHEMets®[1] test kit employs the 4-aminoantipyrine chemistry.[2,3,4] In an alkaline solution, phenols react with 4-aminoantipyrine to produce a red colored complex. The color forming reaction is initiated by potassium ferricyanide (tip coating). Test results are expressed in ppm (mg/Liter) "equivalent phenol" as C_6H_5OH.

Most parasubstituted phenols do not produce a color with this reagent. Ferrous iron causes a blue color which can be eliminated by adding several drops of 1% EDTA to the sample before dissolving the tip coating. Sulfide, in excess of 100 ppm, causes a yellow turbidity. Highly contaminated waste waters may require distillation to separate phenols from nonvolatile impurities.

1. CHEMets is a registered trademark of CHEMetrics, Inc. U.S. Patent No. 3,634,038
2. APHA Standard Methods, 14th ed., p. 574, method 510 C (1975)
3. ASTM D 1783 - 01, Phenolic Compounds in Water, Test Method B
4. EPA Methods for Chemical Analysis of Water and Wastes, method 420.1 (1983)

Safety Information

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

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