Glycol CHEMets® Kit

K-4815/R-4815: Multiple Ranges

This test method is somewhat temperature dependent. For best results, samples should be less than 40°C.

Read SDS (available at www.chemetrics.com) before using this product. Wear safety glasses and protective gloves.

Activator Solution Preparation

Fill the A-4401 Activator Solution bottle to the shoulder with distilled water or add 15 mL of distilled water. Add 10 drops of A-4402 Activator Solution. Cap the bottle and shake it until the chemical dissolves completely. Label the bottle with a **6 month** expiration date.

1 - 15 ppm Test Procedure

1. Fill the sample cup to the 20 mL mark with the sample to be tested (fig. 1).
2. Add 5 drops of A-4400 Activator Solution (fig. 2). Cap the sample cup and shake it to mix the contents well.
3. Wait **5 minutes**.
4. Add 6 drops of A-4401 Activator Solution and 4 drops of A-4402 Activator Solution (fig. 2). Cap the cup and shake it to mix the contents well.
5. Place the CHEMet ampoule, tip first, into the sample cup. Snap the tip. The ampoule will fill leaving a bubble for mixing (fig. 3).
6. To mix the ampoule, invert it several times, allowing the bubble to travel from end to end.

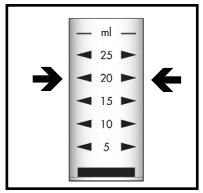

Figure 1

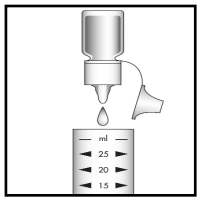

Figure 2

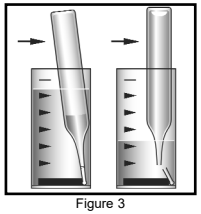
Figure 3

7. Dry the ampoule. Obtain a test result **12 minutes** after snapping the tip.
8. Obtain a test result by placing the ampoule between the color standards until the best color match is found (fig. 4).

   NOTE: To convert to ppm propylene glycol, multiply test result by 2.

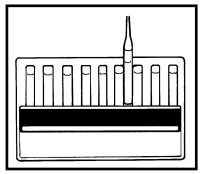
Figure 4

The kit range can be modified by performing a sample dilution. For the desired range, dilute the prescribed volume of sample to 20 mL with distilled water in the sample cup. Perform the test procedure, Steps 2-8, with this diluted sample. Multiply the result obtained in Step 8 by the corresponding factor to obtain the glycol concentration of the undiluted sample.

Desired Range, ppm ethylene glycol	Volume of Sample	Sample Measuring Device	Multiply Test Result by
10 - 150 ppm	2 mL	3mL syringe (in kit)	10
20 - 300 ppm	1 mL	3mL syringe (in kit)	20
100 -1500 ppm	200 uL	A-0194 & A-0171	100
200 - 3000 ppm	100 uL	A-0170 & A-0171	200
400 - 6000 ppm	50 uL	A-0193 & A-0171	400
800 - 12,000 ppm	25 uL	A-0191 & A-0171	800

Test Method

The Glycol CHEMets®[1] test method employs the Purpald®[2]/Periodate chemistry[3]. Periodic acid oxidizes ethylene glycol and propylene glycol to formaldehyde. In a highly alkaline solution, and in conjunction with an oxidizing agent, formaldehyde reacts with Purpald to form a purple colored complex.

Certain aldehydes and alcohols will cause high test results.

1. CHEMets is a registered trademark of CHEMetrics, Inc. U.S. Patent No. 3,634,038
2. Purpald is a registered trademark of Aldrich Chemical Company. The reagent methodology was developed by Aldrich Chemical Company.
3. Fritz, James S. and Schenk, George H., Quantitative Analytical Chemistry, 4th ed., p. 277, 1979.

CHEMetrics
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