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.

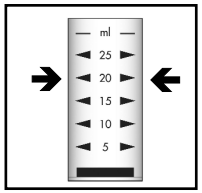

Figure 1

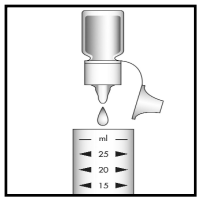

Figure 2

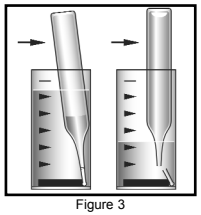
Figure 3

7. Dry the ampoule and wait **12 minutes** for color development.
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.

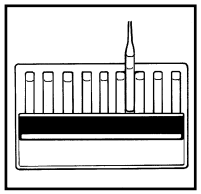
Figure 4

The kit range can be modified by performing a sample dilution. A dilution kit (Cat # A-0188) that contains the needed equipment is sold separately.

Volume of Sample	Sample Measuring Device	Total Volume (mL) with distilled water	Multiply Test Result by	Resulting Range, ppm ethylene glycol
2 mL	3 mL syringe	20	10	10 - 150 ppm
1 mL	3 mL syringe	20	20	20 - 300 ppm
200 uL	teal minipet	20	100	100 -1500 ppm
100 uL	blue minipet	20	200	200 - 3000 ppm
50 uL	yellow minipet	20	400	400 - 6000 ppm
25 uL	orange minipet	20	800	800 - 12,000 ppm
10 uL	white minipet	20	2000	2000 - 30,000 ppm

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.

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