

# Glycol VACUettes® Kit

## K-4815C/R-4815C

1,000 - 15,000 ppm Ethylene Glycol

### Safety Information

Read MSDS (available at [www.chemetrics.com](http://www.chemetrics.com)) before performing this test procedure. Wear safety glasses and protective gloves.

### Test Procedure

1. Fill the **micro-test tube** to the 1 mL mark with the sample to be tested (fig. 1).
2. Add 6 drops of A-4404 Activator Solution. Close the micro-test tube and shake it. Allow the sample to sit undisturbed for **5 minutes**.
3. Add 7 drops of A-4401 Activator Solution and 5 drops of A-4402 Activator Solution to the **empty dilutor snapper cup** (fig 2).
4. Fill the dilutor snapper cup to the -ml- mark with **distilled water** (fig. 3). Cap the cup and shake it to mix the contents well.
5. Make sure that the VACUette tip is firmly attached to the ampoule tip.
6. Holding the VACUette almost horizontally, touch the tip to the contents of the micro-test tube (fig 1).  
**NOTE:** The capillary tip will fill completely with sample.
7. Place the VACUette between the vertical tip guides on the inside of the dilutor snapper cup. Snap the ampoule tip (fig 4). The ampoule will fill leaving a bubble for mixing.
8. To mix the ampoule, invert it several times, allowing the bubble to travel from end to end.

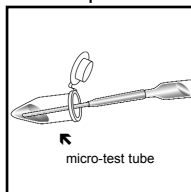


Figure 1

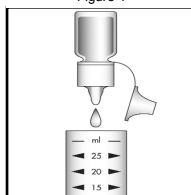


Figure 2

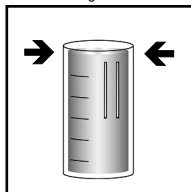


Figure 3

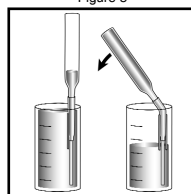


Figure 4

9. Dry the ampoule and wait **12 minutes** for color development.
10. Obtain a test result by placing the ampoule between the color standards until the best color match is found (fig 5).  
**NOTE:** To convert to ppm propylene glycol, multiply test result by 2.

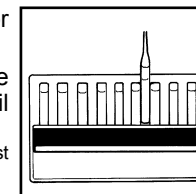


Figure 5

### Activator Solution Preparation

Fill the A-4401 Activator Solution bottle to the shoulder with distilled water or add 15 mL of distilled water. Shake the bottle until the chemical dissolves completely. If the solution will be stored at room temperature, label the bottle with a **6 week** expiration date. If it will be stored in the refrigerator, label it with a **4 month** expiration date.

### Sample Temperature

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

### Test Method

The Glycol VACUettes®<sup>1</sup> test method employs the Purpald®<sup>2</sup>/Periodate chemistry<sup>3</sup>. 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. VACUettes 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.

Visit [www.chemetrics.com](http://www.chemetrics.com) to view product demonstration videos.  
Always follow the test procedure above to perform a test.



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