

Hydrazine Vacu-vials® Kit

K-5003 (CHEMetrics Photometer): 0.10 - 1.20 ppm

K-5003 (Spectrophotometer): 0.070 - 0.700 ppm

Instrument Set-up

For CHEMetrics photometers, follow the **Setup and Measurement Procedures** in the operator's manual. For spectrophotometers, follow the manufacturer's specifications to set the wavelength to 445 nm and to zero the instrument using the ZERO ampoule supplied.

Generating Reagent Blank - Required for CHEMetrics V-2000 Only

A fresh reagent blank must be generated for each series of tests performed and with each new lot of Hydrazine Vacu-vials. Use a reagent blank ampoule from the same lot as the test Hydrazine Vacu-vials. To generate the reagent blank ampoule, perform **Steps # 1-4** of the test procedure using **distilled water** in place of sample in **Step # 1**.

Test Procedure

1. Fill the sample cup to the 25 mL mark with the sample to be tested (fig 1).
2. Place the Vacu-vial ampoule, tip first, into the sample cup. Snap the tip. The ampoule will fill leaving a bubble for mixing (fig 2).
3. To mix the ampoule, invert it several times, allowing the bubble to travel from end to end.
4. Dry the ampoule and wait **10 minutes** for color development.

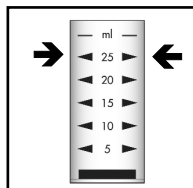


Figure 1

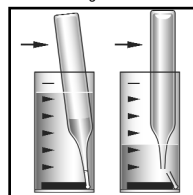


Figure 2

5. Insert the Vacu-vial ampoule into the photometer, flat end first, and obtain a reading in ppm (mg/Liter) hydrazine as N₂H₄. Accuracy may be compromised if test results are outside the stated test range.

NOTE: Only use the equations below if you are using a spectrophotometer that is not pre-calibrated for CHEMetrics products:

$$\text{ppm} = 0.728 (\text{abs}) + 0.002$$

Test Method

The Hydrazine Vacu-vials®¹ test kit employs the PDMAB chemistry.^{2,3} In an acidic solution, hydrazine reacts with PDMAB (p-dimethylaminobenzaldehyde) to form a yellow colored complex in direct proportion to the hydrazine concentration.

1. Vacu-vials is a registered trademark of CHEMetrics, Inc. U.S. Patent No. 3,634,038
2. Thomas, L. C.; Chamberlin, G. J., Colorimetric Chemical Analytical Methods, 8th ed., pp 194 - 195, 1974
3. ASTM D 1385 - 07, Hydrazine in Water

Safety Information

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

Visit www.chemetrics.com to view product demonstration videos.

Always follow the test procedure above to perform a test.



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