

Hydrazine Vacu-vials® Kit

K-5003 (V-2000 Photometer): 0.10 - 1.20 ppm

K-5003 (Spectrophotometer): 0.070 - 0.700 ppm

Instrument Set-up

For CHEMetrics photometers, follow the instrument specific **Setup and Measurement Procedures** in the Operator's manual.

For spectrophotometers capable of accepting a 13 mm diameter round cell, follow the manufacturer's specifications to set the wavelength to 445 nm and to use the ZERO ampoule supplied with this test kit to zero the instrument.

Generating Reagent Blank Required for V-2000 Only (Method Rev. 8 or higher)

A fresh reagent blank must be generated for each series of tests performed and with each new lot number of Hydrazine Vacu-vials on the V-2000. Use a reagent blank ampoule from the same lot as the test Hydrazine Vacu-vials.

To generate the reagent blank ampoule, perform **Steps # 1-3** of the test procedure as outlined below using **distilled water** in place of sample in **Step # 1**.

The resulting ampoule is the reagent blank (For CHEMetrics photometers, see instrument specific **Setup and Measurement Procedures**).

Test Procedure

1. Fill the sample cup to the 25 mL mark with the sample to be tested (fig 1).

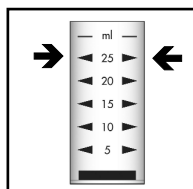


Figure 1

2. Place the Vacu-vial 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 2).

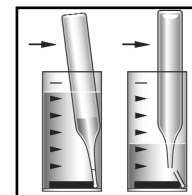


Figure 2

3. 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 **10 minutes** for color development.
4. Read the Vacu-vial ampoule in your photometer. If applicable, use the calibration table to obtain test results in ppm (mg/Liter) hydrazine as N_2H_4 . Accuracy may be compromised if test results are outside the stated test ranges.

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. Results are expressed in ppm (mg/Liter) N_2H_4 .

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 - 01, Hydrazine in Water

Safety Information

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



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