

DEHA Vacu-vials® Kit

K-3903: 0.15 - 2.00 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 560 nm and to zero the instrument using the ZERO ampoule supplied.

Sample Temperature

This test method is temperature dependant. For best accuracy, sample temperature must be $20 \pm 3^{\circ}\text{C}$.

Test Procedure

1. Fill the sample cup to the 25 mL mark with the sample to be tested (fig 1).
2. Add 2 drops of A-3900 Activator Solution (fig 2). Stir to mix the contents of the cup.
3. Immediately place the Vacu-vial ampoule, tip first, into the sample cup and snap the tip. The ampoule will fill leaving a bubble for mixing (fig 3).
4. To mix the ampoule, invert it several times, allowing the bubble to travel from end to end.
5. Dry the ampoule and wait **exactly 10 minutes** for color development.
6. Insert the Vacu-vial ampoule into the photometer, flat end first, and obtain a reading in ppm (mg/Liter) DEHA. Accuracy may be compromised if test results are outside the stated test range.

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

$$\text{ppm} = 1.98 (\text{abs}) + 0.026$$

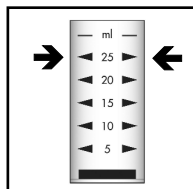


Figure 1

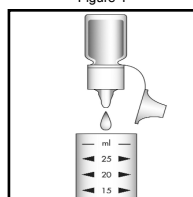


Figure 2

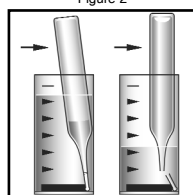


Figure 3

Test Method

The DEHA Vacu-vials®¹ test kit employs the PDTS chemistry². The sample is treated with an excess of ferric iron. DEHA (N,N-Diethylhydroxylamine) reacts quantitatively with ferric iron by reducing it to the ferrous state. The resulting ferrous iron then reacts with PDTS (3-(2-pyridyl)-5,6-bis(4-phenylsulfonic acid)-1,2,4-triazine disodium salt) to form a pink-purple colored complex in direct proportion to the DEHA concentration.

Substances which reduce ferric iron will give high test results. Various metals, especially ferrous iron, will produce high test results. To correct for metals interferences, perform the test procedure omitting Step 2. Then repeat the test procedure as written and subtract the first test result from the second.

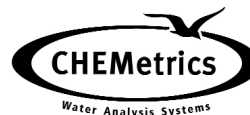
1. Vacu-vials is a registered trademark of CHEMetrics, Inc. U.S. Patent No. 3,634,038

2. G. Frederick Smith Chemical Co., The Iron Reagent, 3rd ed., p. 47 (1980).

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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