

DEHA CHEMets® Kit

K-3902/R-3902: 0 - 400 & 400 - 3000 ppb

Sample Temperature

This test method is temperature dependent. 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 S-3900 Activator Solution (fig. 2). Stir to mix the contents of the cup.
3. **Immediately** place the CHEMet ampoule, tip first, into the sample cup. 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. Obtain a test result **10 minutes** after snapping the tip.
6. Obtain a test result using the appropriate comparator.

a. **Low Range Comparator (fig. 4):**

Place the ampoule, flat end first, into the comparator. Hold the comparator up toward a source of light and view from the bottom. Rotate the comparator until the best color match is found.

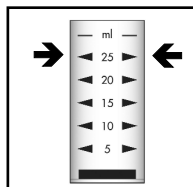


Figure 1

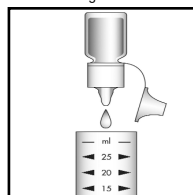


Figure 2

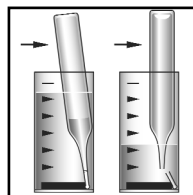


Figure 3

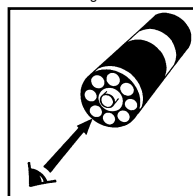


Figure 4

- b. **High Range Comparator (fig. 5):**
Place the ampoule between the color standards until the best color match is found.

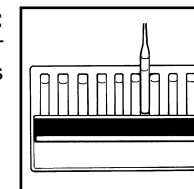


Figure 5

Test Method

The DEHA CHEMets®¹ test 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. CHEMets is a registered trademark of AquaPhoenix Scientific, LLC U.S. Patent No. 3,634,038
2. G. Frederick Smith Chemical Co., The Iron Reagents, 3rd ed., p. 47 (1980).

Safety Information

Read SDS before performing this test procedure. Wear safety glasses and protective gloves.

