Zinc Vacu-vials® Kit

K-9903: 0 - 3.00 ppm
K-9923: 0 - 6.00 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 620 nm and to zero the instrument using the ZERO ampoule supplied.

Safety Information

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

Test Procedure

1. Fill the sample cup to the 25 mL mark with the sample to be tested (fig 1).
2. Add A-9900 Indicator Solution (fig 2) to the cup. Stir to mix the contents of the cup.
   For K-9903: add 8 drops
   For K-9923: add 16 drops
3. Place the Vacu-vial 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 and wait **1 minute** for color development.

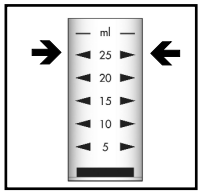

Figure 1

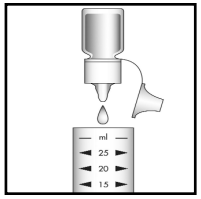

Figure 2

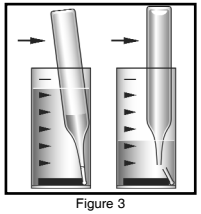
Figure 3

6. Insert the Vacu-vial ampoule into the photometer, flat end first, and obtain a reading in ppm (mg/Liter) zinc (Zn).

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

   K-9903: ppm = 3.36 (abs) - 0.11
   K-9923: ppm = 8.28 (abs) - 0.29

Test Method

The Zinc Vacu-vials®[1] test kit employs the zincon chemistry.[2,3] In an alkaline solution, dissolved zinc reacts with zincon (2-carboxy-2'-hydroxy-5'-sulfoformazyl benzene) to produce a blue colored complex in direct proportion to the dissolved zinc concentration. Other heavy metals also form colored complexes with zincon.

This test method determines **soluble zinc** only. To obtain test results for total zinc, perform the following pretreatment procedure:

a. Add 1 mL of concentrated hydrochloric acid to 50 mL of the sample to be tested. Mix thoroughly.
b. Adjust the sample pH to between 3 and 7 using 6 N sodium hydroxide. Use caution not to exceed pH 7.
c. Allow sample to cool to 30°C if necessary.
d. Perform the test procedure on this pretreated sample.

1. Vacu-vials is a registered trademark of CHEMetrics, Inc. U.S. Patent No. 3,634,038
2. APHA Standard Methods, 22nd ed., method 3500-Zn B - 1997
3. ASTM D 1691 - 84, Zinc in Water, Test Method A

Visit www.chemetrics.com to view product demonstration videos.
Always follow the test procedure above to perform a test.

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