# Molybdate Vacu-vials® Kit

**K-6703:** 0 - 25.0 ppm Mo (Prog. # 115)

## Instrument Set-up

For CHEMetrics photometers, follow the **Setup and Measurement Procedures** in the operator's manual. For spectrophotometers, follow the manufacturer's instructions to set the wavelength to **400 nm** and to zero the instrument using the ZERO ampoule supplied.

## 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. Obtain a test result **1 minute** after snapping tip.
5. Insert the Vacu-vial ampoule into the photometer, flat end first, and obtain a reading in ppm (mg/Liter) molybdenum (Mo).

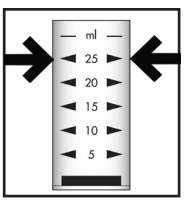

Figure 1

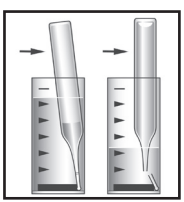
Figure 2

**NOTE: If using a spectrophotometer** that is not pre-calibrated for CHEMetrics products, then use the **equation below** or the **Concentration Calculator** on the website.

$$ppm = 26.4\ (abs) - 0.4$$

**NOTE:** To convert to ppm molybdate ($MoO_4$), multiply test result by 1.67

## Test Method

The Molybdate Vacu-vials®[1] test kit employs the catechol chemistry[2,3]. In a mildly reducing alkaline solution, catechol reacts with hexavalent molybdenum to form a yellow-orange colored chelate in direct proportion to the hexavalent molybdenum concentration.

*1. Vacu-vials is a registered trademark of AquaPhoenix Scientific, LLC U.S. Patent No. 3,634,038*
*2. Haight, G. P; Paragamian, V., Analytical Chemistry, p. 32, 642, 1960*
*3. Onishi, H.; Sandell, E. B., Photometric Determination of Trace Metals, 4th ed., Part 1, p. 295, 1978*

## Safety Information

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

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By AquaPhoenix Scientific

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