

Manganese Vacu-vials® Kit

K-6503: 0 - 30.0 ppm (Prog. #110)

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 **520 nm** and to zero the instrument using the ZERO ampoule supplied.

Sample Temperature

Sample temperatures that deviate significantly from 20°C (68°F) may introduce test result bias.

Test Procedure

1. Fill the sample cup to the 20 mL mark with the sample to be tested (fig. 1).
2. Using the syringe, add 1 mL of S-6501 Activator Solution. Stir to mix the contents of the cup.
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. 2).
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 **1 minute** after snapping tip.
6. Insert the Vacu-vial ampoule into the photometer, flat end first, and obtain a reading in ppm (mg/Liter) manganese (Mn).

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.

$$\text{ppm} = 5.61 (\text{abs})^2 + 35.48 (\text{abs}) - 0.19$$

Test Method

The Manganese Vacu-vial^{®1} test kit method employs the periodate oxidation chemistry.² Soluble manganese compounds are oxidized by periodate in a slightly acidic solution to form permanganate ion. The resulting pink color is proportional to the manganese (Mn) concentration.

Permanganate (MnO₄⁻) develops approximately 25% more color with this reagent than other forms of manganese, causing a high bias. If the sample is known to contain manganese in the form of permanganate only, multiplying test results by 0.8 will improve the accuracy of the results.

1. Vacu-vials is a registered trademark of AquaPhoenix Scientific, LLC U.S. Patent No. 3,634,038
2. APHA Standard Methods, 14th ed., Method 314C (1975).

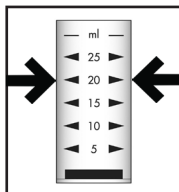


Figure 1

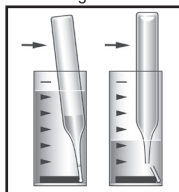


Figure 2

Safety Information

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

