

# Sulfide Vacu-vials® Kit

K-9503

## 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 **660 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 25 mL mark with the sample to be tested (fig. 1).
2. Add **5 drops** of S-9500 Activator Solution (fig. 2). Stir to mix the contents of the cup.
3. Immediately place the 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. Obtain a test result **5 minutes** after snapping tip.

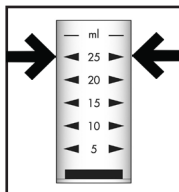


Figure 1

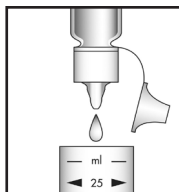


Figure 2

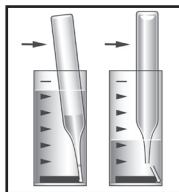


Figure 3

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

**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.

$$\text{ppm} = 1.41 (\text{abs}) - 0.02$$

## Test Method

The Sulfide Vacu-vials®<sup>1</sup> test kit employs the methylene blue chemistry.<sup>2,3</sup> In an acidic solution, sulfide reacts with N,N-dimethyl-p-phenylenediamine and ferric chloride to produce methylene blue. The resulting blue color is directly proportional to the sulfide concentration.

Strong reducing agents, including high levels of sulfide, will cause low test results. Sulfide is very volatile, especially when the sample is acidified. It is essential to analyze the sample as quickly as possible.

1. Vacu-vials is a registered trademark of AquaPhoenix Scientific, LLC. U.S. Patent No. 3,634,038
2. APHA Standard Methods, 23<sup>rd</sup> ed., Method 4500-S<sub>2</sub>-D - 2000
3. EPA Methods for Chemical Analysis of Water and Wastes, Method 376.2 (1983)

## Instrument Ranges

**V-2000, V-3000:** 0 - 3.00 ppm (Prog. # 179)

**Spectrophotometer:** 0 - 1.00 ppm

## Safety Information

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