

# Sulfide Vacu-vials® Kit

**K-9523:** 0 - 6.00 ppm (Prog. # 180)

## Instrument Set-up

For CHEMetrics photometers, follow the **Setup and Measurement Procedures** in the operator's manual. For spectrophotometers, set the wavelength to 610 nm. A sealed ZERO ampoule is supplied in this kit for zeroing when the sample is colorless and not turbid. For improved accuracy with colored or turbid samples, Sample Zeroing Accessory Pack, Cat. # A-0504 is recommended. Using the sample cup, snap the tip of the A-0504 ampoule in the sample (see figure 3 below). Invert the ampoule to mix. Dry the ampoule and use it in place of the supplied ZERO ampoule to zero the instrument.

## 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 A-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.
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** found under the Support tab at [www.chemetrics.com](http://www.chemetrics.com).

$$\text{ppm} = 5.91 (\text{abs}) + 0.03$$

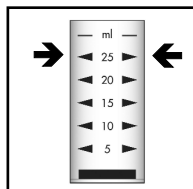


Figure 1

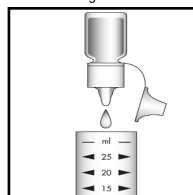


Figure 2

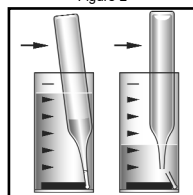


Figure 3

## 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 CHEMetrics, LLC U.S. Patent No. 3,634,038
2. APHA Standard Methods, 23rd ed., Method 4500-S<sup>2-</sup>- D - 2000
3. EPA Methods for Chemical Analysis of Water and Wastes, Method 376.2 (1983)

## Safety Information

Read SDS (available at [www.chemetrics.com](http://www.chemetrics.com)) before performing this test procedure. Wear safety glasses and protective gloves.

Visit [www.chemetrics.com](http://www.chemetrics.com) to view product demonstration videos.  
Always follow the test procedure above to perform a test.



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