



# Hydrogen Sulfide Test Kit

HS-WR (223801)

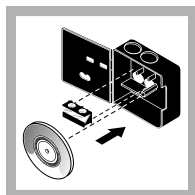
DOC326.98.00025

## Test preparation

**CAUTION:** ⚠ *Review the Safety Data Sheets (MSDS/SDS) for the chemicals that are used. Use the recommended personal protective equipment.*

- Analyze samples immediately after collection.
- Put the color disc on the center pin in the color comparator box (numbers to the front).
- Use the color disc that is applicable to the test procedure range.
- Use sunlight or a lamp as a light source to find the color match with the color comparator box.
- Rinse the tubes with sample before the test. Rinse the tubes with deionized water after the test.
- If the color match is between two segments, use the value that is in the middle of the two segments.
- If the color disc becomes wet internally, pull apart the flat plastic sides to open the color disc. Remove the thin inner disc. Dry all parts with a soft cloth. Assemble when fully dry.
- Use the pretreatment procedure for samples that contain turbidity or color. Strong reducing substances such as sulfite and thiosulfate interfere with the test.
- This procedure determines total sulfides,  $H_2S$ ,  $HS^-$ , and some metal sulfides in groundwater, wastewater brines and seawater. For soluble sulfides, wait briefly for the solids to fall, then use the top layer in the analysis. For insoluble sulfides, subtract the soluble sulfide result from the total sulfide result.
- Very high concentrations of sulfide can prevent the full color development. Dilute the sample with deionized water. Use the diluted sample in the test procedure and multiply the result by the dilution factor. Some sulfide loss can occur when the sample is diluted.
- To record the test result as mg/L  $H_2S$ , multiply the test result by 1.06.
- The final test solutions will contain hexavalent chromium. Dispose of reacted solutions according to local, state and federal regulations.

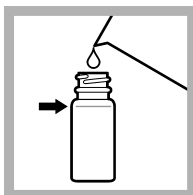
## Test procedure—Hydrogen Sulfide (0–0.56 mg/L $S^{2-}$ )



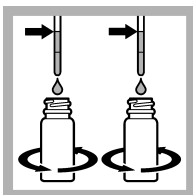
1. Install the long-path adapter in the color comparator box.



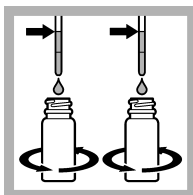
2. Fill a bottle to the 25-mL mark with deionized water (or pretreated sample).



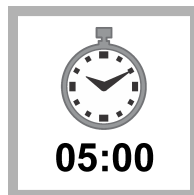
3. Fill a second bottle to the 25-mL mark with sample.



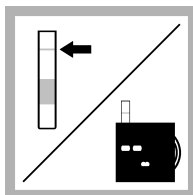
4. Add 1 mL of Sulfide 1 Reagent to each bottle. Swirl to mix.



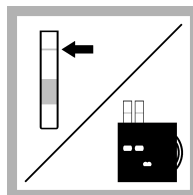
5. Add 1 mL of Sulfide 2 Reagent to each bottle. Swirl to mix.



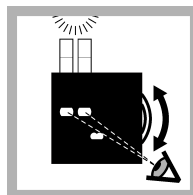
6. Wait 5 minutes. A blue color develops.



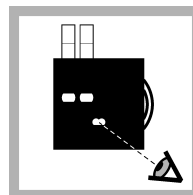
7. Fill a tube to the top line with water from the first bottle. Put the tube into the left opening of the color comparator box.



8. Fill a second tube to the top line with the prepared sample. Put the second tube into the color comparator box.



9. Hold the color comparator box below a light source. Turn the color disc to find the color match.

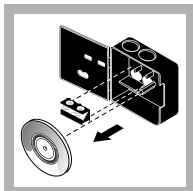


10. Read the result in mg/L in the scale window.

## Replacement items

Description	Unit	Item no.
Hydrogen Sulfide Reagent Set (contains Sulfide 1, Sulfide 2, deionized water)	60 tests/pkg	2244501
Sulfide 1 Reagent	100 mL MDB	181632
Sulfide 2 Reagent	100 mL MDB	181732
Water, deionized	100 mL	27242
Bromine water	29 mL	221120
Phenol solution	29 mL	211220
Bottle, square, with 25-mL mark	each	1704200
Cap, bottle	6/pkg	2166706
Color comparator box	each	173200
Color disc, hydrogen sulfide, 0–0.56 mg/L	each	9264700
Color disc, hydrogen sulfide, 0–2.00, 0–10.0 mg/L	each	9262800
Dropper, plastic	each	608000
Long-path adapter	each	2412200
Plastic viewing tubes, 18 mm, with caps	4/pkg	4660004
Tube insert, optical	each	2128800

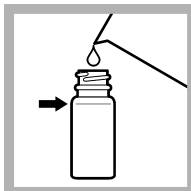
### Test procedure—Hydrogen Sulfide (0–2.00 mg/L S<sup>2-</sup>)



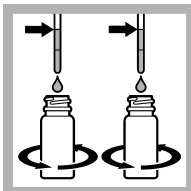
1. If installed, remove the long-path adapter.



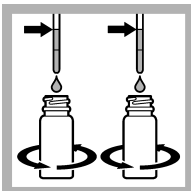
2. Fill a bottle to the 25-mL mark with deionized water (or pretreated sample).



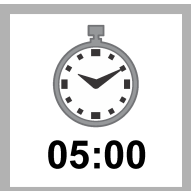
3. Fill a second bottle to the 25-mL mark with sample.



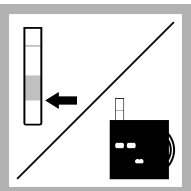
4. Add 1 mL of Sulfide 1 Reagent to each bottle. Swirl to mix.



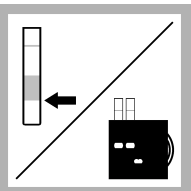
5. Add 1 mL of Sulfide 2 Reagent to each bottle. Swirl to mix.



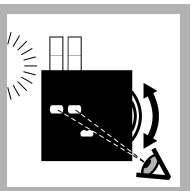
6. Wait 5 minutes. A blue color develops.



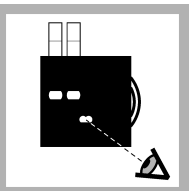
7. Fill a tube to the first line (5 mL) with water from the first bottle. Put the tube into the left opening of the color comparator box.



8. Fill a second tube to the first line (5 mL) with the prepared sample. Put the second tube into the color comparator box.

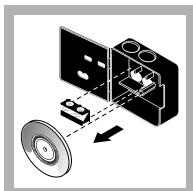


9. Hold the color comparator box in front of a light source. Turn the color disc to find the color match.



10. Read the result in mg/L in the scale window.

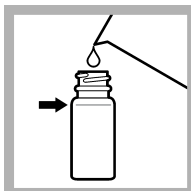
### Test procedure—Hydrogen Sulfide (0–10.0 mg/L S<sup>2-</sup>)



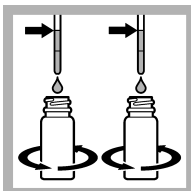
1. If installed, remove the long-path adapter.



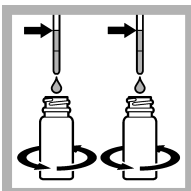
2. Fill a bottle to the 25-mL mark with deionized water (or pretreated sample).



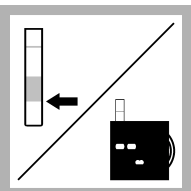
3. Fill a second bottle to the 25-mL mark with sample.



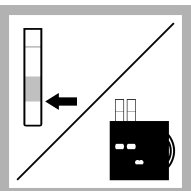
4. Add 2 mL of Sulfide 1 Reagent to each bottle. Swirl to mix.



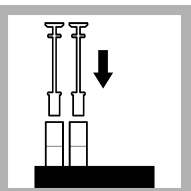
5. Add 2 mL of Sulfide 2 Reagent to each bottle. Swirl to mix.



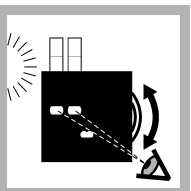
6. Fill a tube to the first line (5 mL) with water from the first bottle. Put the tube into the left opening of the color comparator box.



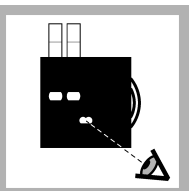
7. Fill a second tube to the first line (5 mL) with the prepared sample. Put the second tube into the color comparator box.



8. Add an optical tube insert to each tube.

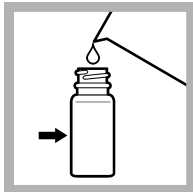


9. Hold the color comparator box in front of a light source. Turn the color disc to find the color match.

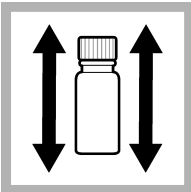


10. Read the value in the scale window. Multiply the value by 5 to get the result in mg/L.

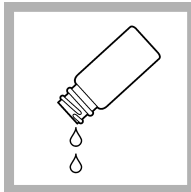
### Pretreatment procedure for samples with color or turbidity



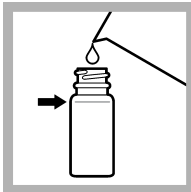
1. Fill a bottle half full with sample.



2. Tighten the cap on the bottle. Shake vigorously.



3. Discard the solution. Do steps 1 and 2 again.



4. Fill the bottle to the 25-mL mark with sample.



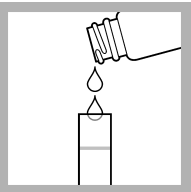
5. Add one drop of bromine water. Swirl to mix.



6. Repeat step 5 until the color is light yellow-brown.



7. Add one drop of Phenol Solution. Swirl to mix.



8. Use the pretreated sample in the test procedure.

