

1.14416.0001

MQuant® Sulfide Test

S²⁻

1. Method

Determination with color-card comparator

In aqueous solutions of sulfides a pH-dependent equilibrium exists between dissolved hydrogen sulfide (H₂S), hydrogen sulfide ions (HS⁻), and sulfide ions (S²⁻). In the acidic range, in which practically only dissolved hydrogen sulfide is present, this reacts with dimethyl-p-phenylenediamine and iron(III) ions to form methylene blue. The sulfide concentration is measured **semiquantitatively** by visual comparison of the color of the measurement solution with the color fields of a color card.

2. Measuring range and number of determinations

Measuring range / color-scale graduation	Number of determinations
0.02 - 0.04 - 0.06 - 0.08 - 0.10 - 0.13 - 0.16 - 0.20 - 0.25 mg/l S ²⁻	100

3. Applications

Sample material:

Groundwater and surface water
Drinking water and mineral water
Waters from aquaculture
Wastewater
Soils after appropriate sample pretreatment
This test is **not suited** for seawater.

4. Influence of foreign substances

This was checked individually in solutions containing 1 and 0 mg/l S²⁻. The determination is not yet interfered with up to the concentrations of foreign substances given in the table. Cumulative effects were not checked; such effects can, however, not be excluded

Concentrations of foreign substances in mg/l or %							
Ag⁺	0.05	Cu²⁺	0.05	NO₂⁻	10	EDTA	0
Al ³⁺	1000	F ⁻	1000	Pb²⁺	10	NaCl	0.5 %
Ca ²⁺	1000	Fe³⁺	10	PO ₄ ³⁻	1000	NaNO ₃	1 %
Cd ²⁺	1000	Hg²⁺	1	SiO ₃ ²⁻	1000	Na ₂ SO ₄	1 %
CN ⁻	1000	Mg ²⁺	1000	Zn ²⁺	1000		
Cr ³⁺	100	NH ₄ ⁺	1000				
Cr₂O₇²⁻	10	Ni ²⁺	1000				

5. Reagents and auxiliaries

Please note the warnings on the packaging materials!

The test reagents are stable up to the date stated on the pack when stored closed at +15 to +25 °C.

Package contents:

1 bottle of reagent S-1
2 bottles of reagent S-2
2 bottles of reagent S-3
2 test tubes with screw caps (in comparator block)
1 color card

Other reagents and accessories:

MQuant® Universal indicator strips pH 0 - 14, Cat. No. 1.09535
Sodium hydroxide solution 1 mol/l Titripur®, Cat. No. 1.09137
Sulfuric acid 0.5 mol/l Titripur®, Cat. No. 1.09072

MQuant® Flat-bottomed long tubes with screw caps for MQuant® tests with color-card comparator (12 pcs), Cat. No. 1.14901

6. Preparation

- Analyze immediately after sampling.
- The pH must be within the range 2 - 10.**
Adjust, if necessary, with sodium hydroxide solution or sulfuric acid.
- Filter turbid samples.

7. Procedure

Open the box and set up with both test tubes **on the left**.

Unfold the color card and insert it, colored end first, into the slit at the lower **right-hand** edge of the box.

	Measurement sample tube <u>nearer to</u> the tester (A)	Blank tube <u>farther from</u> the tester (B)	
Pretreated sample (10 - 25 °C)	20 ml	20 ml	Fill the test tube to the mark (= 20 ml).
Reagent S-1	2 drops ¹⁾	-	Add, close the tube, and mix.
Reagent S-2	10 drops ¹⁾	-	Add, close the tube, and mix.
Reagent S-3	10 drops ¹⁾	-	Add, close the tube, and mix.

Leave to stand for 1 min (reaction time).

Slide the color card through to the left until the closest possible color match is achieved between the two open test tubes when viewed from above.

Read off the result in mg/l S²⁻ from the color card at the lower right-hand edge of the box.

¹⁾ Hold the bottle vertically while adding the reagent!

Notes on the measurement:

- The color of the measurement solution remains stable for at least 60 min after the end of the reaction time stated above.
- Turbidity in the measurement solution makes the color comparison more difficult.
- If the color of the measurement solution is equal to or more intense than the darkest color on the scale, repeat the measurement using **fresh**, diluted samples until a value of less than 0.25 mg/l S²⁻ is obtained.

Concerning the result of the analysis, the dilution must be taken into account:

$$\text{Result of analysis} = \text{measurement value} \times \text{dilution factor}$$

8. Method control

To check test reagents, measurement device, and handling:

Freshly prepare a sulfide standard solution containing 0.10 mg/l S²⁻ (application see the website) and **immediately** analyze as described in section 7.

Additional notes see under www.qa-test-kits.com.

9. Notes

- Reclose the reagent bottles immediately after use.
- Rinse the test tubes **with distilled water only**.
- Information on disposal can be obtained at www.disposal-test-kits.com.**

