

# visocolor® HE Sulphite SU 100

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## Test kit for the determination of sulphite, hydrogen sulphite and sulphurous acid

### Method:

Titrimetric determination after addition of iodine solution and reverse titration of unused iodine with sodium thiosulphate

### Contents of test kit (\*refill pack):

sufficient for 100 tests with a sulphite concentration up to 100 mg/l  $\text{SO}_3^{2-}$

100 ml Sulphite-1*	1 test tube with ring mark
30 ml Sulphite-2*	1 dosage syringe 1 ml
10 ml Sulphite-3*	1 titration syringe 0-100 mg/l $\text{SO}_3^{2-}$ (1 graduation mark $\triangle$ 2 mg/l)
100 ml Sulphite TL SU 100*	2 large dropping tips for the dosage syringe 2 small dropping tips for the titration syringe

### Hazard warning:

Sulphite-2 contains sulphuric acid 63%.

**Causes severe burns.** In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. For further information ask for a safety data sheet.

### Procedure:

1. Rinse the test tube several times with the water to be tested, then fill up to ring mark.
2. Place a dropping tip on the dosage syringe. Press down the plunger, dip the tip into reagent **Sulphite-1** and slowly draw back the plunger, until the lower edge of the black plunger seal is level with value 1.0 ml on the scale. The small air cushion under the plunger has no effect. Add the content of the syringe (**1.0 ml**) to the sample and mix.
3. Add **2 drops of Sulphite-2** and mix. The solution turns **yellow**.  
(If the solution remains colourless, continue according to point 7.)
4. Add **1 drop of Sulphite-3**. The solution turns **greyish to yellowish blue**.
5. Place a dropping tip on the titration syringe. Press down the plunger, dip the tip into the titration solution **TL SU 100** and slowly draw back the plunger, until the lower edge of the black plunger seal is level with value 100 on the syringe scale. The small air cushion under the plunger will not effect the determination.
6. **Adding the titration solution:** We recommend holding the syringe in the left hand and the test tube in the right (see sketch) and then add the titration solution drop by drop, lightly swirling the test tube at the same time. Continue to slowly add the titration solution until the test solution is completely **colourless**. Read off sulphite content in mg/l  $\text{SO}_3^{2-}$  from the syringe barrel (lower rim of the black plunger O-ring). The final change to

colourless can be well followed against a white background (e.g. a piece of white paper). The titration should not be carried out too slowly. After the end of the titration, another colour change back to blue should be ignored.

7. Should the test solution not change colour to yellow, after the addition of two drops of Sulphite-2 then the sulphite concentration is higher than 100 mg/l  $\text{SO}_3^{2-}$ . In this case repeat the test and add **2 ml of Sulphite-1**, instead of just 1 ml (range: 100-200 mg/l  $\text{SO}_3^{2-}$ ). In the case of even higher sulphite concentrations add correspondingly larger amounts of Sulphite-1 from the beginning, until the addition of Sulphite-2 changes the colour to yellow. Titrate until colour change (see above) and read off sulphite content in mg/l  $\text{SO}_3^{2-}$  from the syringe barrel. For each **additional** ml of Sulphite-1 add 100 mg/l sulphite to the test results.

This method can be applied also for the analysis of sea water.

### Disposing of the samples:

The used analysis specimens can be flushed down the drain with tap water and channelled off to the local sewage treatment works.

### Interferences:

Larger concentrations of sulphide and nitrite ions as well as ascorbic acid interfere:

1 mg/l $\text{NO}_2^-$	$\triangle$ 1,7 mg/l $\text{SO}_3^{2-}$
1 mg/l $\text{S}^{2-}$	$\triangle$ 2,5 mg/l $\text{SO}_3^{2-}$
1 mg/l ascorbic acid	$\triangle$ 0,5 mg/l $\text{SO}_3^{2-}$

### Note:

For the determination of dithionite contact MACHEREY-NAGEL for special working instructions.

1 mg/l  $\text{SO}_3^{2-}$  corresponds to 0.80 mg/l  $\text{SO}_2$  or 0.40 mg/l S.  
100 mg/l  $\text{SO}_3^{2-}$  correspond to 1.25 mmol/l  $\text{SO}_3^{2-}$ .



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