



Sulphite T

M370

0.1 - 5 mg/L SO<sub>3</sub>

DTNB

### Instrument specific information

The test can be performed on the following devices. In addition, the required cuvette and the absorption range of the photometer are indicated.

Instrument Type	Cuvette	$\lambda$	Measuring Range
MD 600, MD 610, MD 640, MultiDirect	ø 24 mm	430 nm	0.1 - 5 mg/L SO <sub>3</sub>
XD 7000, XD 7500	ø 24 mm	408 nm	0.1 - 6 mg/L SO <sub>3</sub>
SpectroDirect	ø 24 mm	405 nm	0.05 - 4 mg/L SO <sub>3</sub>

### Material

Required material (partly optional):

Reagents	Packaging Unit	Part Number
Sulfite LR	Tablet / 100	518020BT

### Application List

- Waste Water Treatment
- Galvanization





## Determination of Sulphite with Tablet

Select the method on the device.

For this method, a ZERO measurement does not have to be carried out every time on the following devices: XD 7000, XD 7500



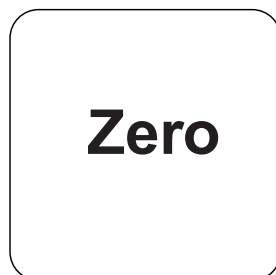
Fill 24 mm vial with **10 mL sample**.



Close vial(s).



Place **sample vial** in the sample chamber. Pay attention to the positioning.

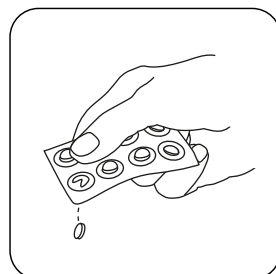


Press the **ZERO** button.

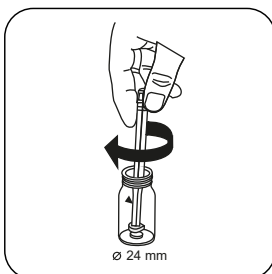


Remove the vial from the sample chamber.

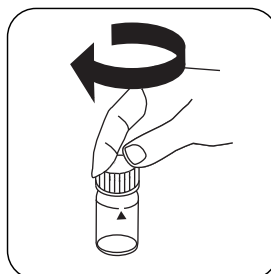
For devices that require **no ZERO measurement**, start here.



Add **SULFITE LR tablet**.



Crush tablet(s) by rotating slightly.



Close vial(s).



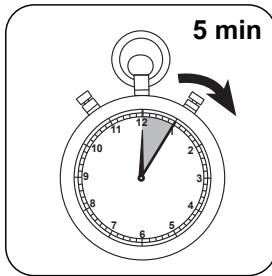
Dissolve tablet(s) by inverting.



Place **sample vial** in the sample chamber. Pay attention to the positioning.



Press the **TEST** (XD: **START**) button.



Wait for **5 minute(s) reaction time**.

Once the reaction period is finished, the measurement takes place automatically. The result in mg/L Sulphite appears on the display.



## Analyses

The following table identifies the output values can be converted into other citation forms.

Unit	Cite form	Scale Factor
mg/l	SO <sub>3</sub> <sup>2-</sup>	1
mg/l	Na <sub>2</sub> SO <sub>3</sub>	1.5743

## Chemical Method

DTNB

## Appendix

### Calibration function for 3rd-party photometers

Conc. = a + b•Abs + c•Abs<sup>2</sup> + d•Abs<sup>3</sup> + e•Abs<sup>4</sup> + f•Abs<sup>5</sup>

	∅ 24 mm	□ 10 mm
a	-2.67453•10 <sup>-1</sup>	-4.42153•10 <sup>-1</sup>
b	2.78503•10 <sup>+0</sup>	6.69645•10 <sup>+0</sup>
c		
d		
e		
f		

## Method Validation

Limit of Detection	0.04 mg/L
Limit of Quantification	0.118 mg/L
End of Measuring Range	6.0 mg/L
Sensitivity	2.815 mg/L / Abs
Confidence Intervall	0.081 mg/L
Standard Deviation	0.033 mg/L
Variation Coefficient	1.41 %

## Bibliography

R.E. Humphrey, M.H. Ward, W. Hinze, Spectrophotometric determination of sulphite with 4,4'-dithio-dipyridine and 5,5'-dithiobis(2-nitrobenzoic acid), Anal. Chem., 1970, 42 (7), pp 698–702