**Chlorine dioxide 50 T****M119****0.05 - 1 mg/L ClO<sub>2</sub>****DPD / Glycine****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.

<b>Instrument Type</b>	<b>Cuvette</b>	<b>λ</b>	<b>Measuring Range</b>
SpectroDirect, XD 7000, XD 7500	□ 50 mm	510 nm	0.05 - 1 mg/L ClO <sub>2</sub>

## Material

Required material (partly optional):

Reagents	Packaging Unit	Part Number
DPD No.1	Tablet / 100	511050BT
DPD No. 1	Tablet / 250	511051BT
DPD No. 1	Tablet / 500	511052BT
DPD No. 3	Tablet / 100	511080BT
DPD No. 3	Tablet / 250	511081BT
DPD No. 3	Tablet / 500	511082BT
DPD No. 1 High Calcium <sup>e)</sup>	Tablet / 100	515740BT
DPD No. 1 High Calcium <sup>e)</sup>	Tablet / 250	515741BT
DPD No. 1 High Calcium <sup>e)</sup>	Tablet / 500	515742BT
DPD No. 3 High Calcium <sup>e)</sup>	Tablet / 100	515730BT
DPD No. 3 High Calcium <sup>e)</sup>	Tablet / 250	515731BT
DPD No. 3 High Calcium <sup>e)</sup>	Tablet / 500	515732BT
Set DPD No. 1/No. 3 100 Pc. #	100 each	517711BT
Set DPD No. 1/No. 3 250 Pc. #	250 each	517712BT
Set DPD No. 1/Glycine 100 Stck. #	100 each	517731BT
Set DPD No. 1/Glycine 250 Stck. #	250 each	517732BT
Set DPD No. 1/No. 3 High Calcium 100 Pc. #	100 each	517781BT
Set DPD No. 1/No. 3 High Calcium 250 Pc. #	250 each	517782BT
Glycine <sup>f)</sup>	Tablet / 100	512170BT
Glycine <sup>f)</sup>	Tablet / 250	512171BT
DPD No. 3 Evo	Tablet / 100	511420BT
DPD No. 3 Evo	Tablet / 250	511421BT
DPD No. 3 Evo	Tablet / 500	511422BT

## Application List

- Waste Water Treatment
- Disinfection Control
- Boiler Water
- Cooling Water
- Raw Water Treatment
- Pool Water Control
- Drinking Water Treatment



## Sampling

1. When preparing the sample, outgassing, e.g. through the pipette or shaking, must be avoided.
2. The analysis must take place immediately after taking the sample.

## Preparation

1. Cleaning of vials:  
As many household cleaners (e.g. dishwasher detergent) contain reducing substances, this can lead to lower results with the determination of Chlorine dioxide. To avoid measurement errors, the glassware used should be free of chlorine consumption. To achieve this, all glassware should be placed in a sodium hypochlorite solution (0.1 g/L) for one hour and then rinsed thoroughly with deionised water.
2. Strong alkaline or acidic water samples must be adjusted between pH 6 and pH 7 before the analysis (use 0.5 mol/l Sulphuric acid or 1 mol/l Sodium hydroxide).

## Notes

1. EVO tablets can be used as an alternative to the corresponding standard tablet (e.g. DPD No. 3 EVO instead of DPD No. 3).

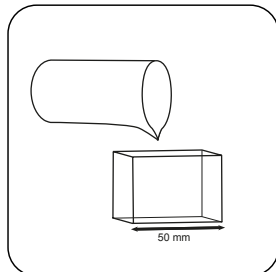




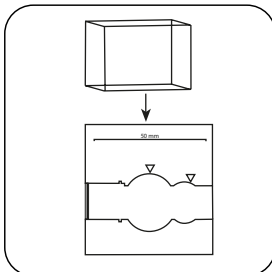
## Determination of Chlorine Dioxide, in absence of chlorine with tablet

Select the method on the device.

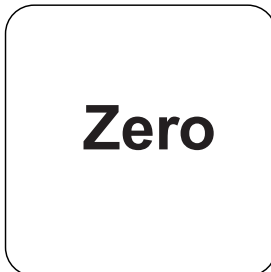
For this method, a ZERO measurement does not have to be carried out every time on the following devices: XD 7000, XD 7500



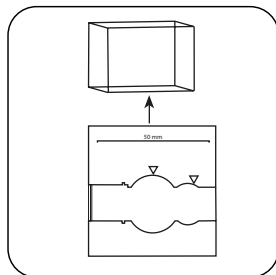
Fill 50 mm vial with sample.



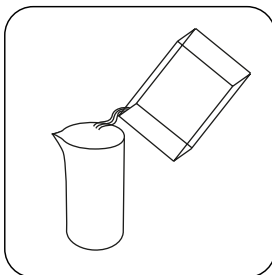
Place **sample vial** in the sample chamber. • Pay attention to the positioning.



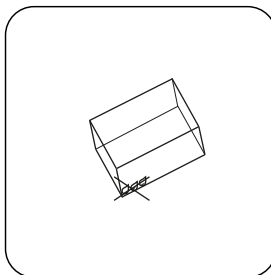
Press the **ZERO** button.



Remove **vial** from the sample chamber.

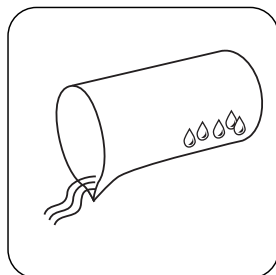


Empty vial.

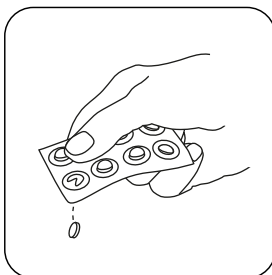


Dry the vial thoroughly.

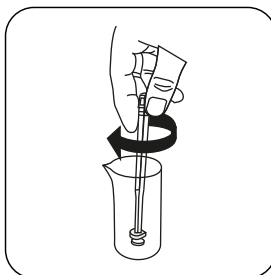
For devices that require **no ZERO measurement** , start here.



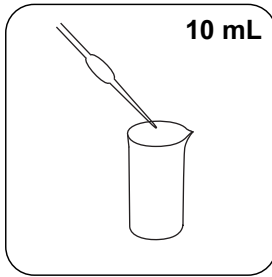
Rinse a beaker **with the sample and empty it, leaving a few drops remaining** in the beaker.



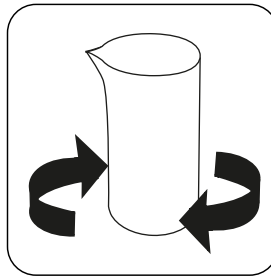
Add **DPD No. 1 tablet** .



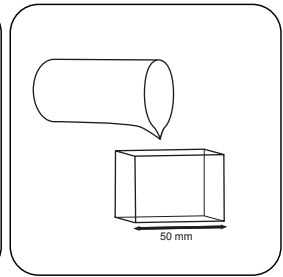
Crush tablet(s) by rotating slightly.



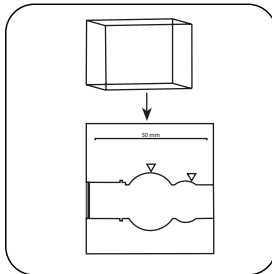
Add **10 mL sample**.



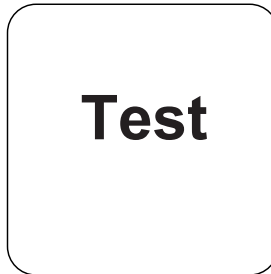
Dissolve tablet(s) by inverting.



Fill **50 mm vial** with sample.



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



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

The result in mg/L Chlorine Dioxide appears on the display.



## Chemical Method

DPD / Glycine

## Appendix

### Calibration function for 3rd-party photometers

$$\text{Conc.} = a + b \cdot \text{Abs} + c \cdot \text{Abs}^2 + d \cdot \text{Abs}^3 + e \cdot \text{Abs}^4 + f \cdot \text{Abs}^5$$

□ 50 mm

a	$1.25575 \cdot 10^{-2}$
b	$3.13095 \cdot 10^{-6}$
c	
d	
e	
f	

## Interferences

### Persistent Interferences

1. All oxidising agents in the samples lead to higher results.

### Removeable Interferences

1. Concentrations above 19 mg/L chlorine dioxide can lead to results within the measuring range of up to 0 mg/L. In this case, the water sample must be diluted with water that is free from chlorine dioxide. 10 ml of the diluted sample should be mixed with the reagent and the measurement taken again (plausibility test).
2. Turbidity: In samples with high Calcium content\* (and/or high humidity\*, the use of DPD No. 1 Tablet can lead to turbidity of the sample and therefore incorrect measurements. In this case, the alternative reagent tablet DPD No. 1 High Calcium should be used.

\*it is not possible to give exact values, because the development of turbidity depends on the composition and nature of the sample.

### Derived from

DIN 38408, Section 5

<sup>o)</sup> alternative reagent, used instead of DPD No.1/No.3 in case of turbidity in the water sample caused by high concentration of calcium and/or high conductivity | <sup>o)</sup> additionally required for determination of bromine, chlorine dioxide and ozone in the presence of chlorine | \* including stirring rod, 10 cm