

Chlorine dioxide PP

M122

0.04 - 3.8 mg/L ClO₂

CLO2

DPD

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	λ	Measuring Range
MD50, MD 100, MD 600, MD 610, MD 640, MultiDirect	ø 24 mm	530 nm	0.04 - 3.8 mg/L ClO ₂
XD 7000, XD 7500	ø 24 mm	510 nm	0.04 - 3.8 mg/L ClO ₂

Material

Required material (partly optional):

Reagents	Packaging Unit	Part Number
Chlorine Free DPD F10	Powder / 100 pc.	530100
Chlorine Free DPD F10	Powder / 1000 pc.	530103
Glycine ⁹⁾	Tablet / 100	512170BT
Glycine ⁹⁾	Tablet / 250	512171BT
VARIO Glycine Reagent 10 %, 29 ml	29 mL	532210

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).



Determination of Chlorine Dioxide, in absence of chlorine with powder packs

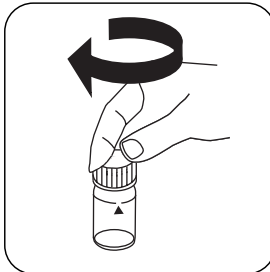
Select the method on the device.

In addition, choose the test: without Chlorine

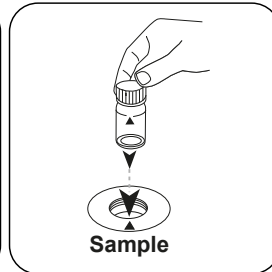
For this method, a ZERO measurement does not have to be carried out every time on the following devices: XD 7000, XD 7500



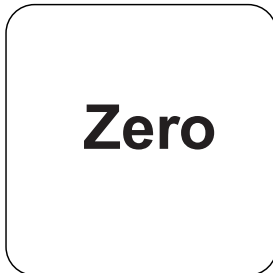
Fill 24 mm vial with **10 mL sample**.



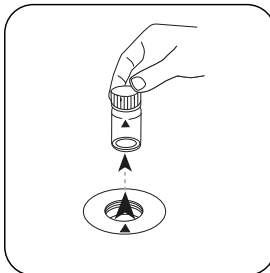
Close vial(s).



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

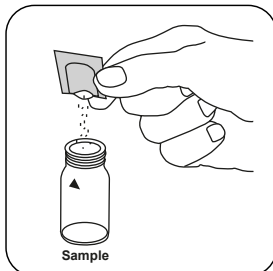


Press the **ZERO** button.

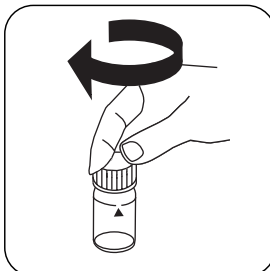


Remove the vial from the sample chamber.

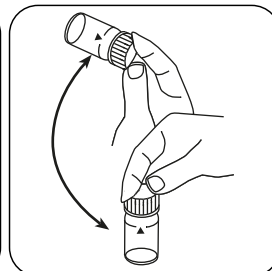
For devices that require **no ZERO measurement**, start here.



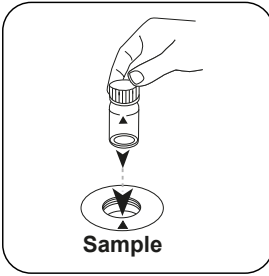
Add **Chlorine FREE-DPD / F10 powder pack**.



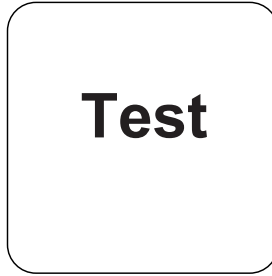
Close vial(s).



Invert several times to mix the contents (20 sec.).



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.



Determination of Chlorine Dioxide, in presence of chlorine with powder packs

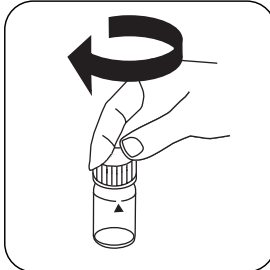
Select the method on the device.

In addition, choose the test: in presence of Chlorine

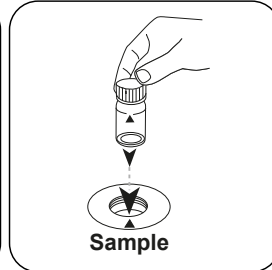
For this method, a ZERO measurement does not have to be carried out every time on the following devices: XD 7000, XD 7500



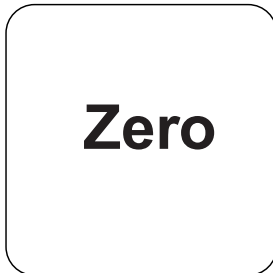
Fill 24 mm vial with **10 mL sample**.



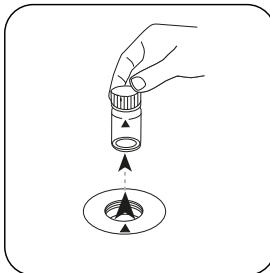
Close vial(s).



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

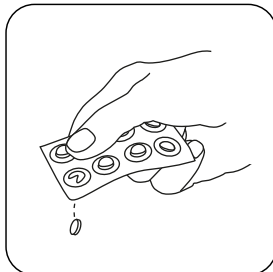


Press the **ZERO** button.

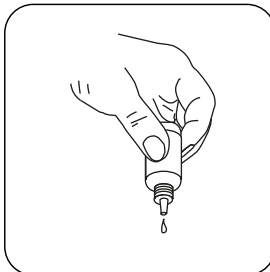


Remove the vial from the sample chamber.

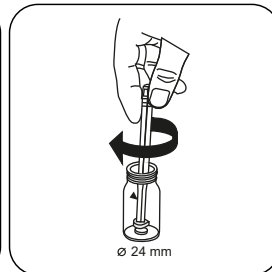
For devices that require **no ZERO measurement**, start here.



Add **GLYCINE tablet**.



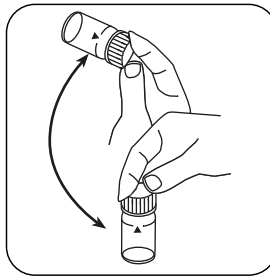
or add 4 drops **GLYCINE Reagent**.



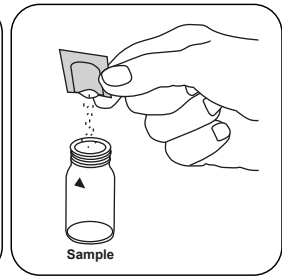
Crush tablet(s) by rotating slightly.



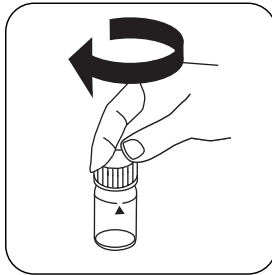
Close vial(s).



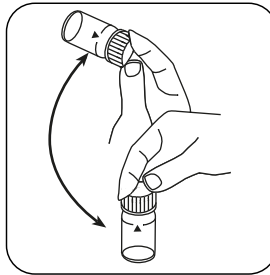
Dissolve tablet(s) by
inverting.



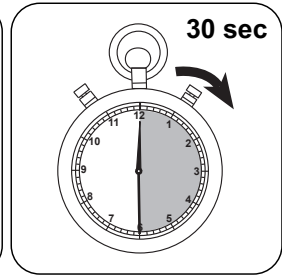
Add **Chlorine-Free-DPD/
F10 powder pack**.



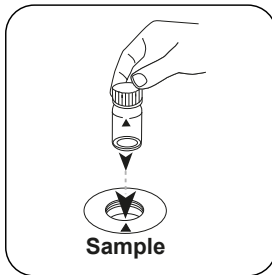
Close vial(s).



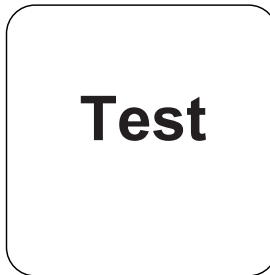
Invert several times to mix
the contents (20 sec.).



Wait for **30 second(s) reac-**
tion time.



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

Appendix

Calibration function for 3rd-party photometers

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

	∅ 24 mm	□ 10 mm
a	$-5.31232 \cdot 10^{-2}$	$-5.31232 \cdot 10^{-2}$
b	$3.27999 \cdot 10^{+0}$	$7.05198 \cdot 10^{+0}$
c	$2.13647 \cdot 10^{-1}$	$9.87583 \cdot 10^{-1}$
d		
e		
f		

Interferences

Persistent Interferences

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

Removeable Interferences

1. Concentrations above 3.8 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).

Derived from

DIN 38408, Section 5

⁹⁾ additionally required for determination of bromine, chlorine dioxide and ozone in the presence of chlorine