H₂O₂ T

M210

0.03 - 3 mg/L H₂O₂

DPD / Catalyst

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
MD 600, MD 610, MD 640, MultiDirect, PM 620, PM 630	ø 24 mm	530 nm	0.03 - 3 mg/L H ₂ O ₂
SpectroDirect	ø 24 mm	510 nm	0.03 - 1.5 mg/L H ₂ O ₂
XD 7000, XD 7500	ø 24 mm	510 nm	0.03 - 3 mg/L H ₂ O ₂

Material

Required material (partly optional):

Reagents	Packaging Unit	Part Number
Hydrogen Peroxide LR	Tablet / 100	512380BT
Hydrogen Peroxide LR	Tablet / 250	512381BT

Application List

- Waste Water Treatment
- Drinking Water Treatment
- Raw Water Treatment
- Disinfection Control

Sampling

1. When preparing the sample, Hydrogen Peroxide 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. To avoid measurement errors, the glassware used should be pretreated accordingly. 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. The DPD colour development is carried out at a pH value of 6.2 to 6.5. The reagents therefore contain a buffer for the pH adjustment. Strong alkaline or acidic water samples must therefore 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 Hydrogen peroxide 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



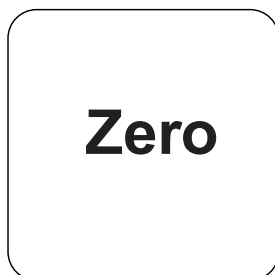
Fill 24 mm vial with **10 mL sample**.



Close vial(s).



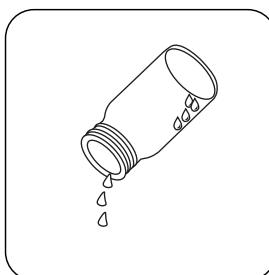
Place **sample vial** in the sample chamber. Pay attention to the positioning.



Press the **ZERO** button.

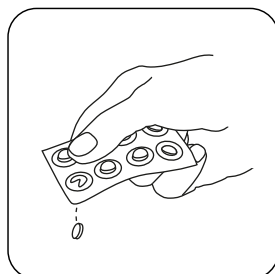


Remove the vial from the sample chamber.

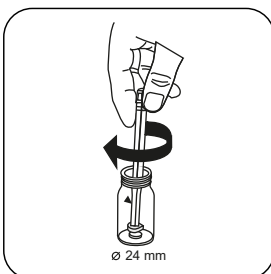


Empty vial except for a few drops.

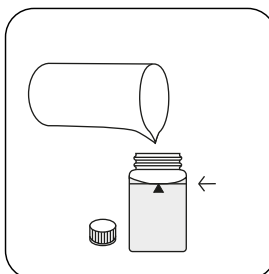
For devices that require **no ZERO measurement**, start here.



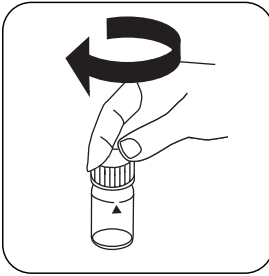
Add **HYDROGENPER-OXIDE LR tablet**.



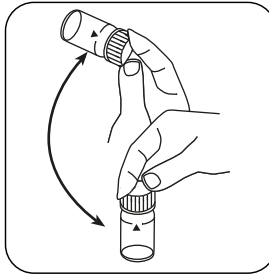
Crush tablet(s) by rotating slightly.



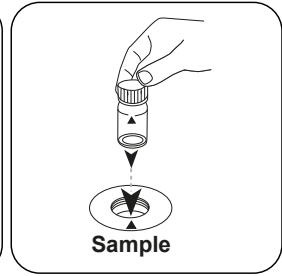
Fill up vial with **sample** to the **10 mL mark**.



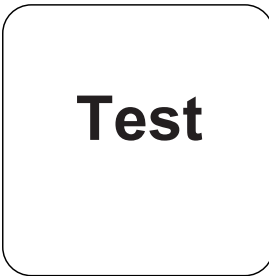
Close vial(s).



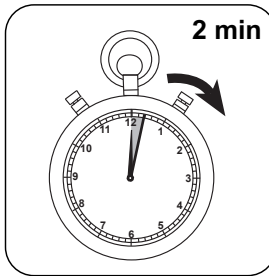
Dissolve tablet(s) by inverting.



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



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



Wait for **2 minute(s) reaction time**.

Once the reaction period is finished, the measurement takes place automatically.

The result in mg/L H₂O₂ appears on the display.



Chemical Method

DPD / Catalyst

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	$-2.45214 \cdot 10^{-2}$	$-2.45214 \cdot 10^{-2}$
b	$8.8458 \cdot 10^{-1}$	$1.90185 \cdot 10^{+0}$
c	$-3.75083 \cdot 10^{-2}$	$-1.73382 \cdot 10^{-1}$
d	$5.27986 \cdot 10^{-2}$	$5.24732 \cdot 10^{-1}$
e		
f		

Interferences

Persistent Interferences

1. All oxidising agents in the samples react like hydrogen peroxide, which leads to higher results.

Removeable Interferences

1. Concentrations above 5 mg/L hydrogen peroxide 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 hydrogen peroxide. 10 ml of the diluted sample should be mixed with the reagent and the measurement taken again (plausibility test).

Bibliography

Colorimetric Chemical Analytical Methods, 9th Edition, Lovibond

Derived from

US EPA 330.5
 APHA 4500 Cl-G