Bromine 10 T M78

0.1 - 3 mg/L Br_2

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
SpectroDirect, XD 7000, XD 7500	□ 10 mm	510 nm	0.1 - 3 mg/L Br_2

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. 1 High Calcium [e)]	Tablet / 100	515740BT
DPD No. 1 High Calcium [e)]	Tablet / 250	515741BT
DPD No. 1 High Calcium [e)]	Tablet / 500	515742BT

Application List

- Disinfection Control
- Raw Water Treatment
- Pool Water Control

Preparation

1. Cleaning of vials:
   As many household cleaners (e.g. dishwasher detergent) contain reducing substances, the subsequent determination of oxidising agents (e.g. ozone and chlorine) may show lower results. 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. When preparing the sample, Bromine outgassing, e.g. through the pipette or shaking, must be avoided. The analysis must take place immediately after taking the sample.
3. 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

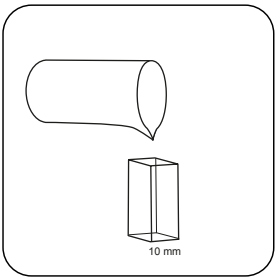
Variations in the length of the vial can extend the measuring range:

- 10 mm vial: 0.1 mg/L - 3 mg/L, solution: 0.01
- 20 mm vial: 0.05 mg/L - 1.5 mg/L, solution: 0.01
- 50 mm vial: 0.02 mg/L - 0.6 mg/L, solution: 0.001

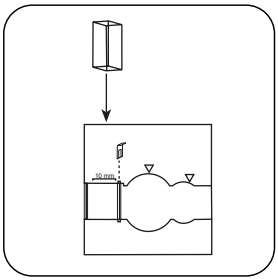
Determination of Bromine with Tablet

Select the method on the device.

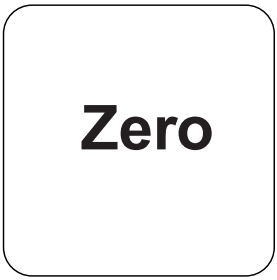
For this method, a ZERO measurement does not have to be carried out every time on the following devices: XD 7000, XD 7500



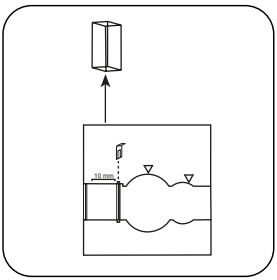
Fill 10 mm vial with **sample**.



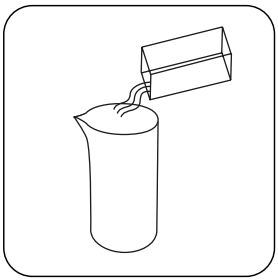
Place **sample vial** in the sample chamber. • Pay attention to the positioning.



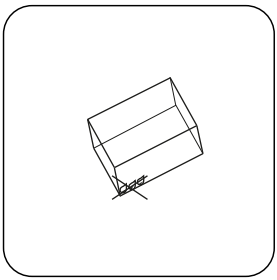
Press the **ZERO** button.



Remove **vial** from the sample chamber.

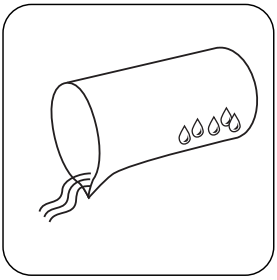


Empty vial.

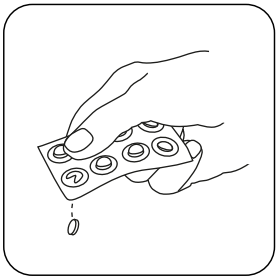


Dry the vial thoroughly.

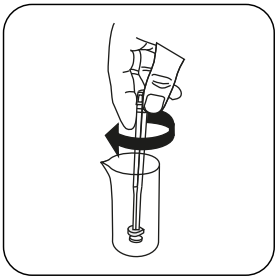
For devices that require **no ZERO measurement** , **start here**.



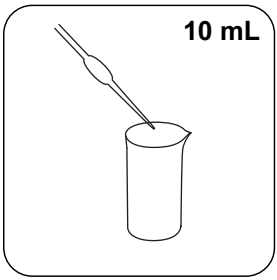
Rinse a beaker **with the sample and empty it, leaving a few drops remaining** in the beaker.



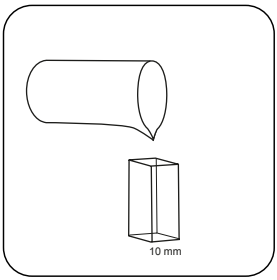
Add **DPD No. 1 tablet** .



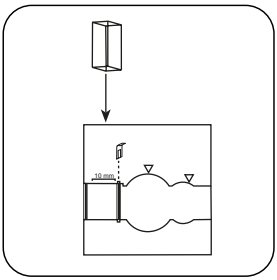
Crush tablet(s) by rotating slightly and dissolve.



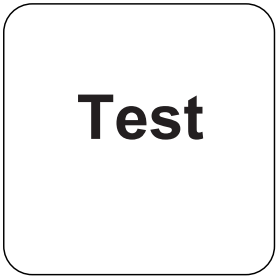
Add **10 mL sample**.



Fill 10 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 Bromine appears on the display.

Chemical Method

DPD

Appendix

Calibration function for 3rd-party photometers

Conc. = a + b•Abs + c•Abs^2 + d•Abs^3 + e•Abs^4 + f•Abs^5

	□ **10 mm**
a	-3.47814 • 10^{-2}
b	8.22863 • 10^{+0}
c	7.07422 • 10^{+0}
d	
e	
f	

Interferences

Persistant Interferences

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

2. Concentrations above 22 mg/L Bromine can lead to results within the measuring range of up to 0 mg/L. In this case, the water sample must be diluted. 10 ml of the diluted sample should be mixed with the reagent and the measurement taken again (plausibility test).

Derived from

US EPA 330.5 (1983)
APHA Method 4500 Cl-G

[e)] 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