

**Chloride T****90****0.5 - 25 mg/l Cl<sup>-</sup>****CL-1****Silver Nitrate / Turbidity**

## 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 100, MD 600, MD 610, MD 640, MultiDirect	ø 24 mm	530 nm	0.5 - 25 mg/l Cl <sup>-</sup>
SpectroDirect, XD 7000, XD 7500	ø 24 mm	450 nm	0.5 - 25 mg/l Cl <sup>-</sup>

## Material

Required material (partly optional):

Reagents	Packaging Unit	Part Number
Chloride T1	Tablet / 100	515910BT
Chloride T1	Tablet / 250	515911BT
Chloride T2	Tablet / 100	515920BT
Chloride T2	Tablet / 250	515921BT
Set Chloride T1/T2 100 Pc.#	100 each	517741BT
Set Chloride T1/T2 250 Pc.#	250 each	517742BT

## Application List

- Waste Water Treatment
- Cooling Water
- Drinking Water Treatment
- Raw Water Treatment
- Galvanization

## Preparation

1. Highly alkaline water should – if necessary – be neutralised before any analysis with Nitric acid.

## Notes

1. High concentrations of electrolytes and organic compounds have different effects on the precipitation reaction.

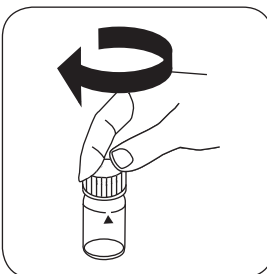
## Implementation of the provision Chloride with Tablet

Select the method on the device

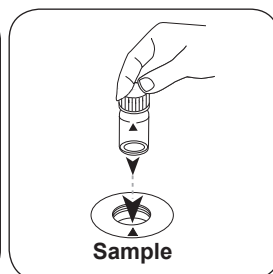
For this method, no ZERO measurements are to be carried out with the following devices: XD 7000, XD 7500



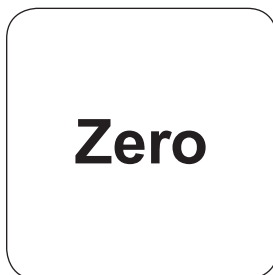
Fill 24 mm vial with **10 ml sample**.



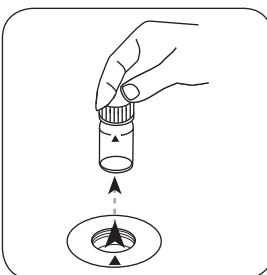
Close vial(s).



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

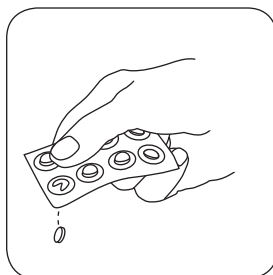


Press the **ZERO** button.

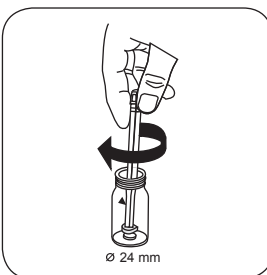


Remove the vial from the sample chamber.

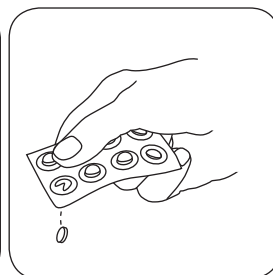
For devices that require **no ZERO measurement**, start here.



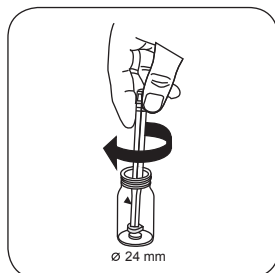
Add **CHOLORIDE T1 tablet**.



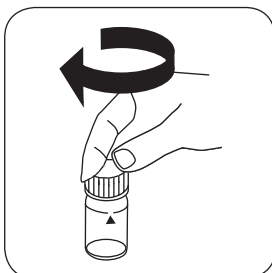
Crush tablet(s) by rotating slightly and dissolve.



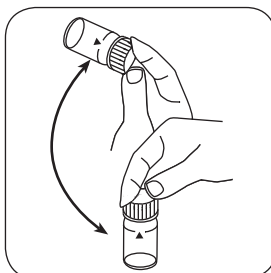
Add **CHOLORIDE T2 tablet**.



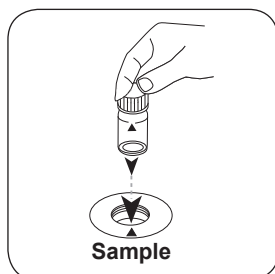
Crush tablet(s) by rotating slightly.



Close vial(s).



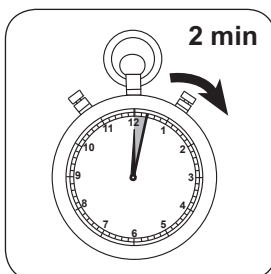
Dissolve tablet(s) by inverting.



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



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



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

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

The result in mg/l Chloride 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	Cl-	1
mg/l	NaCl	1.65

## Chemical Method

Silver Nitrate / Turbidity

## Appendix

### Interferences

#### Persistent Interferences

1. Ions that also form deposits with Silver nitrate in acidic media, such as Bromides, Iodides and Thiocyanates, cause interference.
2. Individual particles are not attributable to the presence of chloride. Chloride causes a finely distributed turbidity with a milky appearance. **Disturbance through heavy shaking or stirring leads to bigger sized particles, which can cause lower readings.**

### Method Validation

Limit of Detection	7.046 mg/l
Limit of Determination	21.139 mg/l
End of Measuring Range	25 mg/l
Sensitivity	0.026 mg/l
Standard Deviation	0.061 µg

#### Derived from

DIN 38405

<sup>a)</sup> determination of free, combined and total | <sup>b)</sup> Reactor is necessary for COD (150 °C), TOC (120 °C) and total -chromium, - phosphate, -nitrogen, (100 °C) | <sup>c)</sup> MultiDirect: Adapter is necessary for Vacu-vials® (Order code 19 20 75) | <sup>d)</sup> Spectroquant® is a Merck KGaA Trademark | <sup>e)</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>f)</sup> additionally required for determination of bromine, chlorine dioxide and ozone in the presence of chlorine | <sup>g)</sup> Reagent recovers most insoluble iron oxides without digestion | <sup>h)</sup> additionally required for samples with hardness values above 300 mg/l CaCO<sub>3</sub> | <sup>i)</sup> high range by dilution | <sup>j)</sup> including stirring rod, 10 cm