Copper 50 T M149

0.05 - 1 mg/L Cu[a)]

Biquinoline

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	□ 50 mm	559 nm	0.05 - 1 mg/L Cu[a)]

Material

Required material (partly optional):

Reagents	Packaging Unit	Part Number
Copper No. 1	Tablet / 100	513550BT
Copper No. 1	Tablet / 250	513551BT
Copper No. 2	Tablet / 100	513560BT
Copper No. 2	Tablet / 250	513561BT
Set Copper No. 1/No. 2 100 Pc.[#]	100 each	517691BT
Set Copper No. 1/No. 2 250 Pc.[#]	250 each	517692BT

Application List

- Cooling Water
- Boiler Water
- Waste Water Treatment
- Pool Water Control
- Drinking Water Treatment
- Galvanization

Preparation

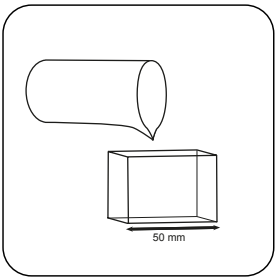
1. Strong alkaline or acidic water samples must be adjusted to pH 4 to 6 before analysis.

Determination of Copper, free with tablet

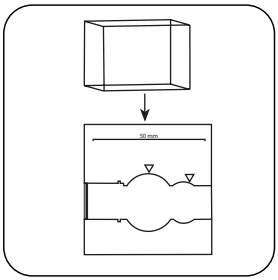
Select the method on the device.

In addition, choose the test: free

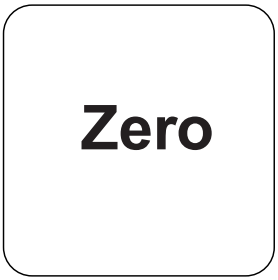
For this method, a ZERO measurement does not have to be carried out every time on the following devices: XD 7000, XD 7500



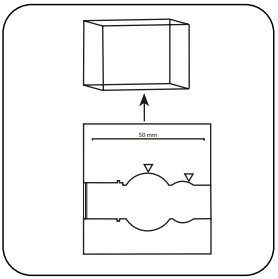
Fill 50 mm vial with **sample**.



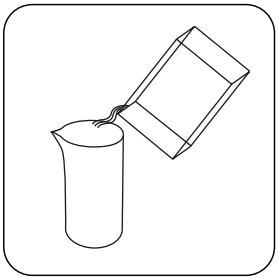
Place **sample vial** in the sample chamber. • Pay attention to the positioning.



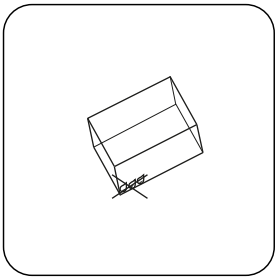
Press the **ZERO** button.



Remove **vial** from the sample chamber.

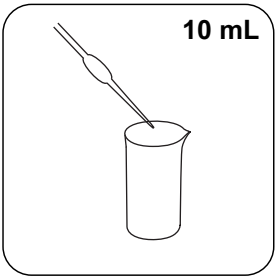


Empty vial.

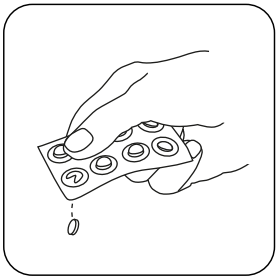


Dry the vial thoroughly.

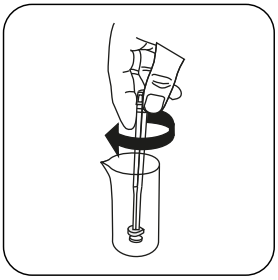
For devices that require **no ZERO measurement** , **start here**.



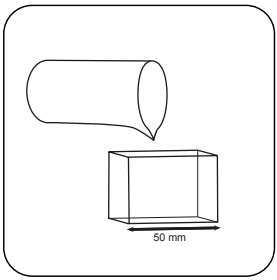
Fill a suitable sample vessel with **10 mL sample** .



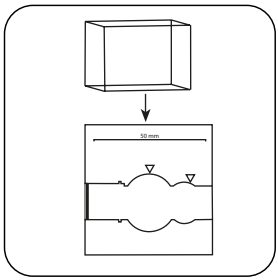
Add **COPPER No. 1 tablet** .



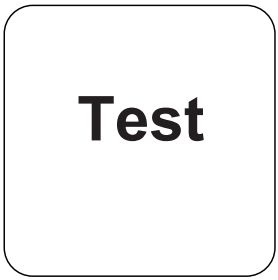
Crush tablet(s) by rotating slightly and dissolve.



Fill 50 mm vial with **sample**.



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



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

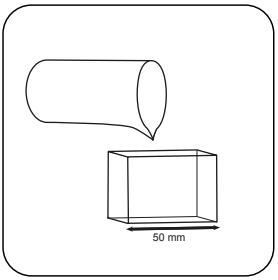
The result in mg/L free Copper appears on the display.

Determination of Copper, total with tablet

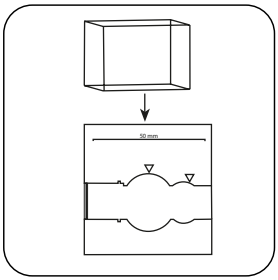
Select the method on the device.

In addition, choose the test: total

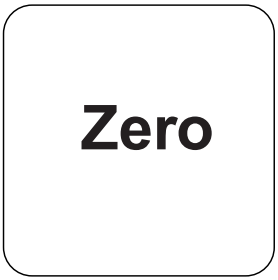
For this method, a ZERO measurement does not have to be carried out every time on the following devices: XD 7000, XD 7500



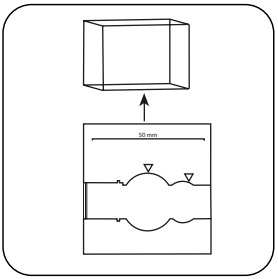
Fill 50 mm vial with **sample**.



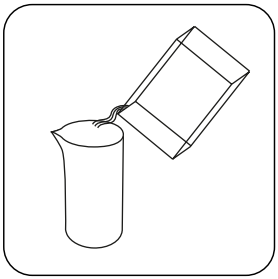
Place **sample vial** in the sample chamber. • Pay attention to the positioning.



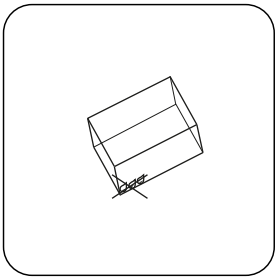
Press the **ZERO** button.



Remove **vial** from the sample chamber.

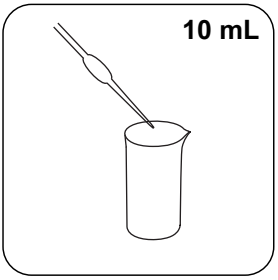


Empty vial.

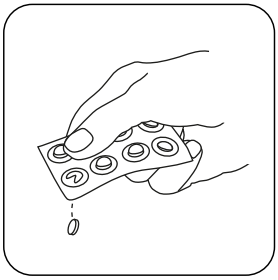


Dry the vial thoroughly.

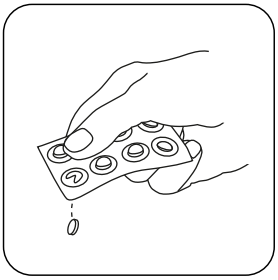
For devices that require **no ZERO measurement** , **start here**.



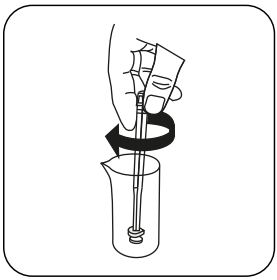
Fill a suitable sample vessel with **10 mL sample** .



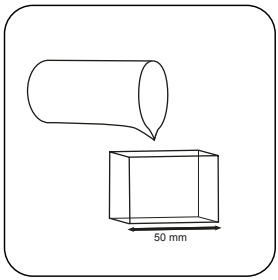
Add **COPPER No. 1 tablet** .



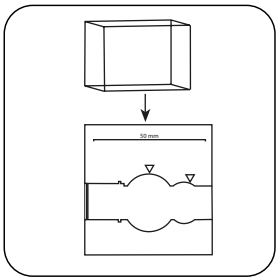
Add **COPPER No. 2 tablet** .



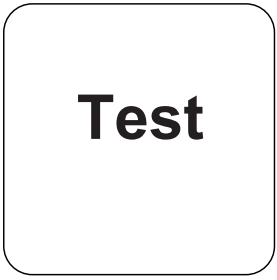
Crush tablet(s) by rotating slightly and dissolve.



Fill 50 mm vial with **sample**.



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



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

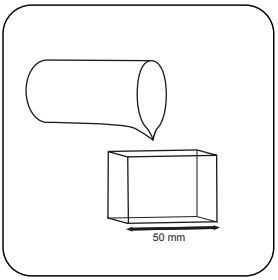
The result in mg/L total Copper appears on the display.

Determination of Copper, differentiated with tablet

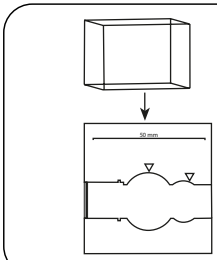
Select the method on the device.

In addition, choose the test: differentiated

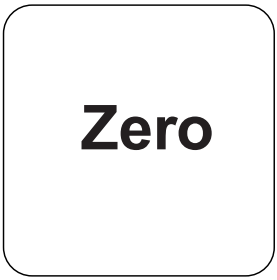
For this method, a ZERO measurement does not have to be carried out every time on the following devices: XD 7000, XD 7500



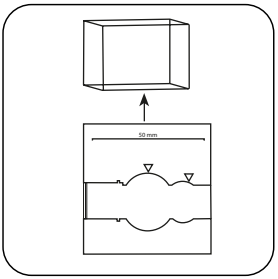
Fill 50 mm vial with **sample**.



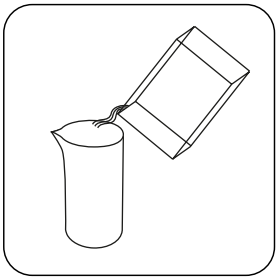
Place **sample vial** in the sample chamber. • Pay attention to the positioning.



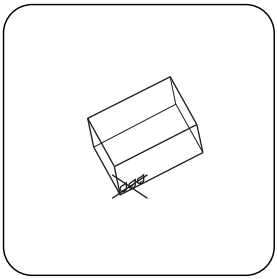
Press the **ZERO** button.



Remove **vial** from the sample chamber.

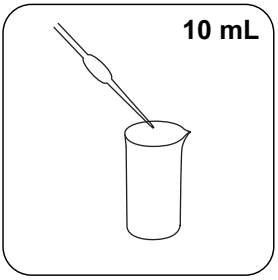


Empty vial.

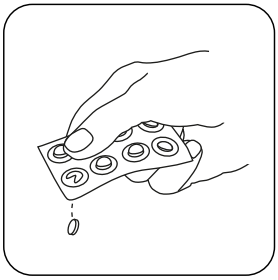


Dry the vial thoroughly.

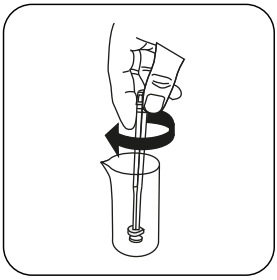
For devices that require **no ZERO measurement** , **start here**.



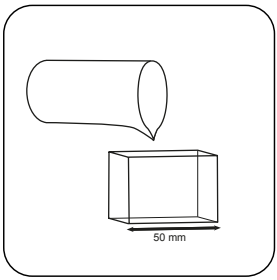
Fill a suitable sample vessel with **10 mL sample** .



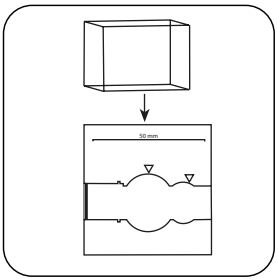
Add **COPPER No. 1 tablet** .



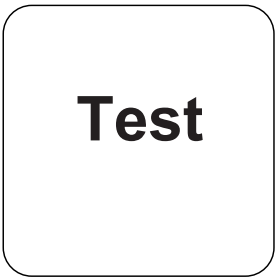
Crush tablet(s) by rotating slightly and dissolve.



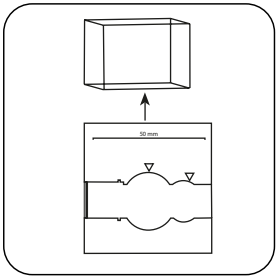
Fill 50 mm vial with **sample**.



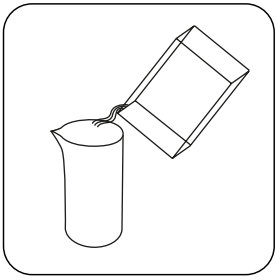
Place **sample vial** in the sample chamber. • Pay attention to the positioning.



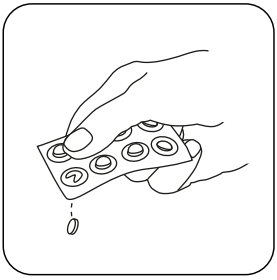
Press the **TEST** (XD: **START**)button.



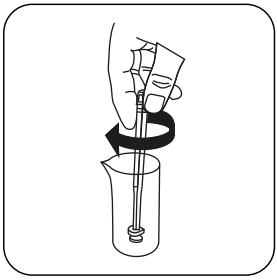
Remove **vial** from the sample chamber.



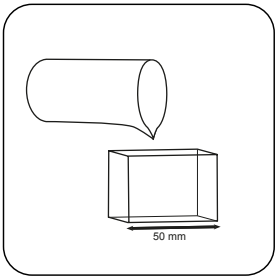
Return the sample solution completely to the sample vessel.



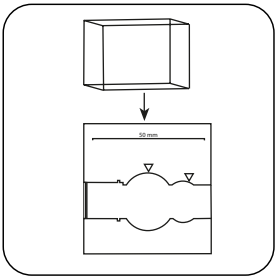
Add **COPPER No. 2 tablet** .



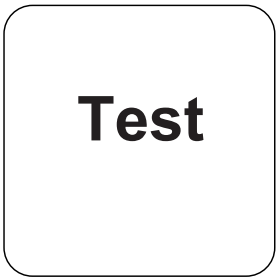
Crush tablet(s) by rotating slightly and dissolve.



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 free Copper; combined Copper; total Copper appears on the display.

Chemical Method

Biquinoline

Appendix

Interferences

Persistant Interferences

1. Cyanide and Silver interfere with the test result.

Method Validation

Limit of Detection	0.009 mg/L
Limit of Quantification	0.028 mg/L
End of Measuring Range	1 mg/L
Sensitivity	1.62 mg/L / Abs
Confidence Intervall	0.009 mg/L
Standard Deviation	0.004 mg/L
Variation Coefficient	0.71 %

Bibliography

Photometrische Analyse, Lange/Vedjelek, Verlag Chemie 1980

[a] determination of free, combined and total | # including stirring rod, 10 cm