

**Molybdate T****250****1 - 50 mg/l MoO<sub>4</sub>****Mo3****Thioglycolate**

## 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 600, MD 610, MD 640, MultiDirect	ø 24 mm	430 nm	1 - 50 mg/l MoO <sub>4</sub>
MD 100	ø 24 mm	430 nm	0.6 - 30 mg/l MoO <sub>4</sub>
SpectroDirect, XD 7000, XD 7500	ø 24 mm	366 nm	1 - 30 mg/l MoO <sub>4</sub>

## Material

Required material (partly optional):

Reagents	Packaging Unit	Part Number
Molybdate HR No. 1	Tablet / 100	513060BT
Molybdate HR No. 1	Tablet / 250	513061BT
Molybdate HR No. 2	Tablet / 100	513070BT
Molybdate HR No. 2	Tablet / 250	513071BT
Set Molybdate No. 1/No. 2 100 Pc.#	100 each	517631BT
Set Molybdate No. 1/No. 2 250 Pc.#	250 each	517632BT

## Application List

- Boiler Water
- Cooling Water

## Notes

1. The tablets must be added in the correct sequence.

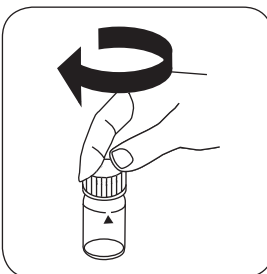
## Implementation of the provision Molybdate HR with Tablet

Select the method on the device

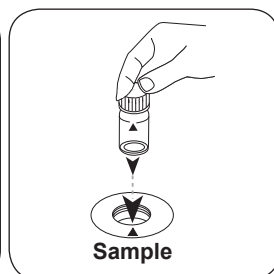
For this method, no ZERO measurements are to be carried out with the following devices: XD 7000, XD 7500



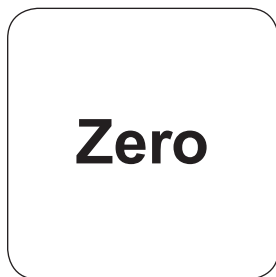
Fill 24 mm vial with **10 ml sample**.



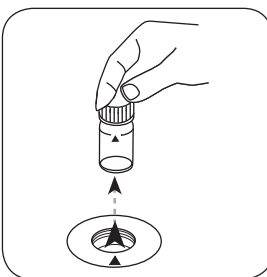
Close vial(s).



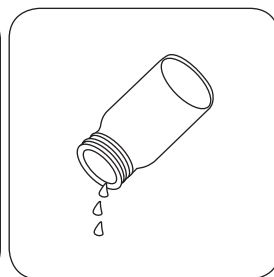
Place **sample vial** in the sample chamber. • Pay attention to the positioning.



Press the **ZERO** button.

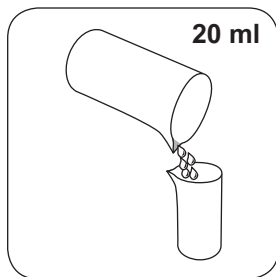


Remove the vial from the sample chamber.

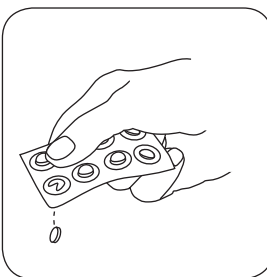


Empty vial.

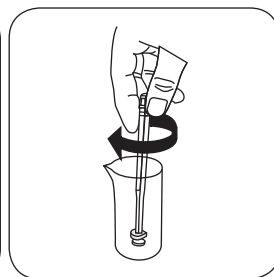
For devices that require **no ZERO measurement**, start here.



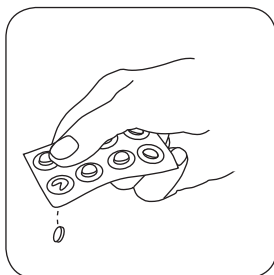
Put **20 ml sample** in 100 ml measuring beaker



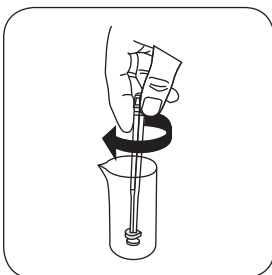
Add **MOLYBDATE HR No. 1 tablet**.



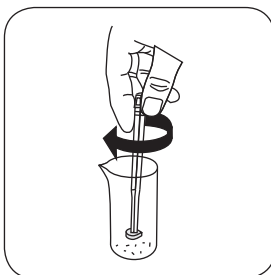
Crush tablet(s) by rotating slightly.



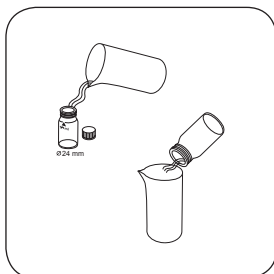
Add **MOLYBDATE HR No. 2** tablet.



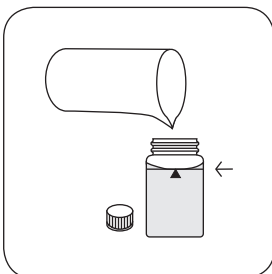
Crush tablet(s) by rotating slightly.



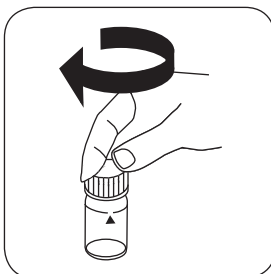
Dissolve the tablets using a clean stirring rod.



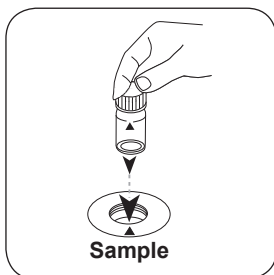
Rinse out vial with prepared sample .



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

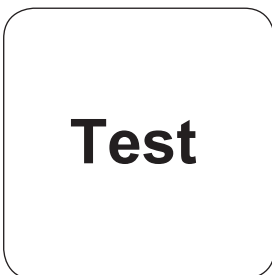


Close vial(s).



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

The result in mg/l Molybdate/ Molybdenum appears on the display.



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

# Test

Analyses

The following table identifies the output values can be converted into other citation forms.

Unit	Cite form	Scale Factor
mg/l	MoO <sub>4</sub>	1
mg/l	Mo	0.6
mg/l	Na <sub>2</sub> MoO <sub>4</sub>	1.29

Chemical Method

Thioglycolate

Appendix

Interferences

Removeable Interferences

1. Interference from niobium, tantalum, titanium, and zirconium are masked with citric acid.
2. Interference from vanadium(V) is masked with potassium fluoride.
3. Under test conditions (pH 3.8 – 3.9) iron does not react. Other metals at levels likely to be found in industrial water systems do not interfere at any significant level either.

Bibliography

Photometrische Analyse, Lange/ Vjedelek, Verlag Chemie 1980

<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