Molybdate HR PP M252

0.3 - 40 mg/L Mo MO2

Mercaptoacetic Acid

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 100, MD 600, MD 610, MD 640, MultiDirect	ø 24 mm	430 nm	0.3 - 40 mg/L Mo
SpectroDirect, XD 7000, XD 7500	ø 24 mm	420 nm	0.3 - 40 mg/L Mo

Material

Required material (partly optional):

Reagents	Packaging Unit	Part Number
VARIO Molybdenum HR, Set F10	1 Set	535300

Application List

- Boiler Water
- Cooling Water

Preparation

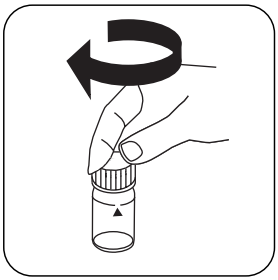
1. Turbid water samples should be passed through a membrane filter prior to analysis.
2. Strongly buffered samples or samples with extreme pH values should, prior to analysis, be set to a pH of about 7 with 1 mol/l nitric acid or 1 mol/l sodium hydroxide solution.

Determination of Molybdate HR with Vario Powder Packs

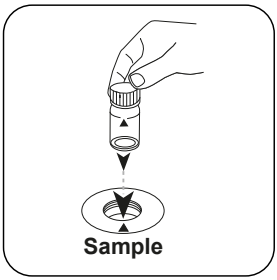
Select the method on the device.

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

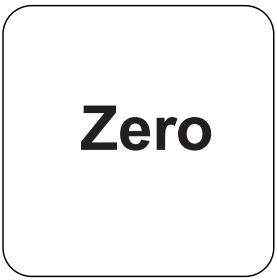
Fill 24 mm vial with **10 mL sample**.



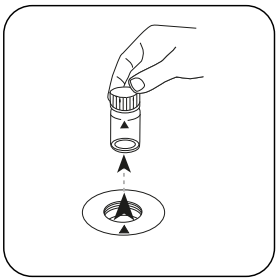
Close vial(s).



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

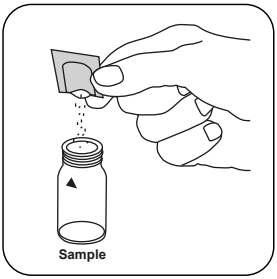


Press the **ZERO** button.

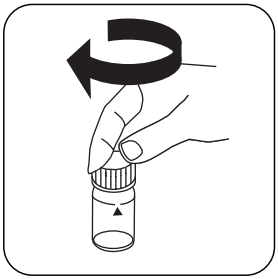


Remove the vial from the sample chamber.

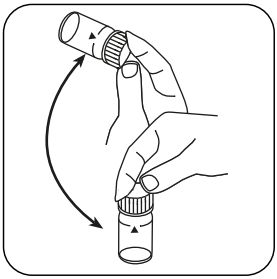
For devices that require **no ZERO measurement** , **start here**.



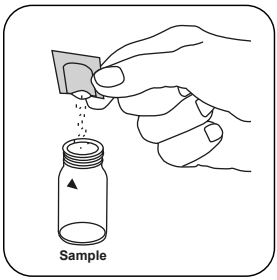
Add **Vario Molybdenum HR 1 F10 powder pack**.



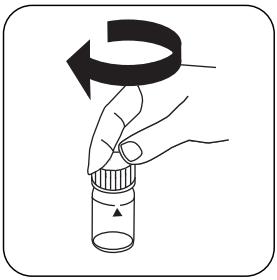
Close vial(s).



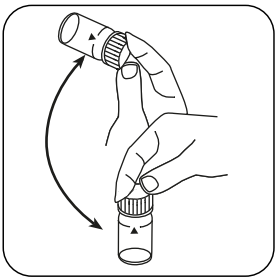
Swirl around to dissolve the powder.



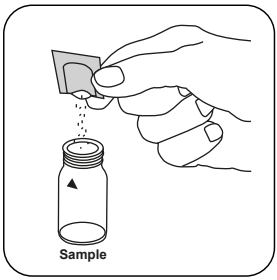
Add **Vario Molybdenum HR 2 F10 powder pack**.



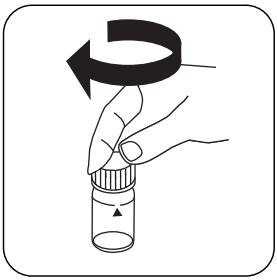
Close vial(s).



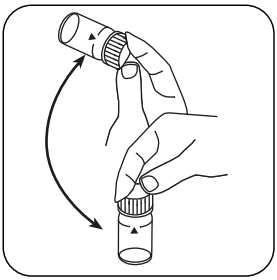
Invert several times to mix the contents.



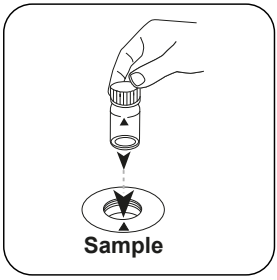
Add **Vario Molybdenum HR 3 F10 powder pack**.



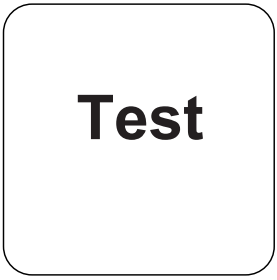
Close vial(s).



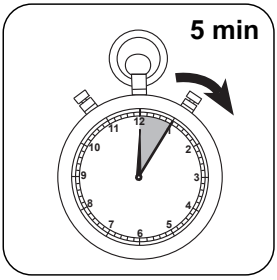
Swirl around to dissolve the powder.



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



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



Wait for **5 minute(s) reaction time**.

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

The result in mg/L Molybdate/ Molybdenum 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	MoO_4	1
mg/l	Mo	0.6
mg/l	Na_2MoO_4	1.29

Chemical Method

Mercaptoacetic Acid

Appendix

Calibration function for 3rd-party photometers

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

	ø 24 mm	□ 10 mm
a	$-1.654 \cdot 10^{-2}$	$-1.654 \cdot 10^{-2}$
b	$2.49983 \cdot 10^{+1}$	$5.37464 \cdot 10^{+1}$
c		
d		
e		
f		

Interferences

Persistant Interferences

1. At concentrations of 10 mg/L Cu, more than the specified 5 minute response time leads to higher values. A rapid test performance is therefore particularly important.

Interference	from / [mg/L]
Al	50
Cr	1000
Fe	50
Ni	50
NO_2^-	in all quantities

Method Validation

Limit of Detection	0.16 mg/L
Limit of Quantification	0.47 mg/L
End of Measuring Range	40 mg/L
Sensitivity	25.04 mg/L / Abs
Confidence Intervall	0.712 mg/L
Standard Deviation	0.294 mg/L
Variation Coefficient	1.46 %

Bibliography

Analytical Chemistry, 25(9) 1363 (1953)