**Molybdate LR PP****M251****0.03 - 3 mg/L Mo****Mo1****Ternary Complex**

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 110, MD 600, MD 610, MD 640, MultiDirect, SpectroDirect, XD 7000, XD 7500	ø 24 mm	610 nm	0.03 - 3 mg/L Mo

Material

Required material (partly optional):

Reagents	Packaging Unit	Part Number
VARIO Molybdenum LR, Set F10	1 pc.	535450

The following accessories are required.

Accessories	Packaging Unit	Part Number
Mixing cylinder, 25 ml	1 pc.	19802650

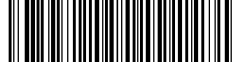
Application List

- Boiler Water
- Cooling Water

Preparation

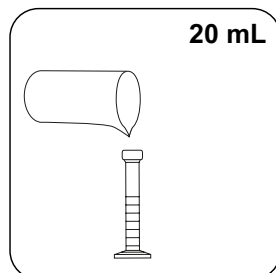
1. Strong alkaline or acidic water samples must be adjusted between pH 3 and pH 5 before the analysis (use 0.5 mol/l Sulphuric acid or 1 mol/l Sodium hydroxide).
2. To avoid errors caused by deposits, rinse the glassware with Hydrochloric acid (approx. 20%) before the analysis and then rinse with deionised water.





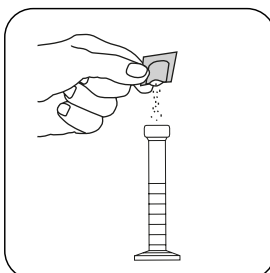
Determination of Molybdate LR with Vario Powder Packs

Select the method on the device.

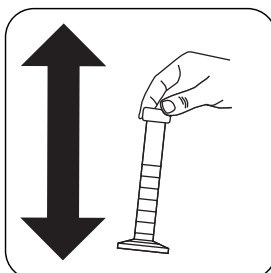


20 mL

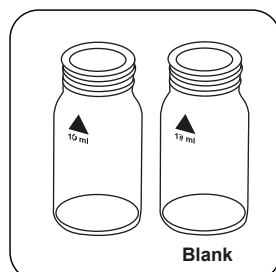
Put **20 mL sample** in
25 mL measuring cylinder.



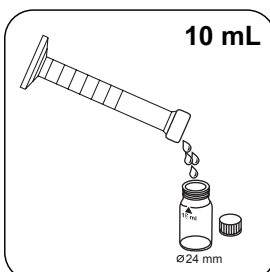
Add **Vario Molybdenum
1 LR F20 powder pack**.



Stopper the mixing cylinder.
Shake to dissolve the
powder.

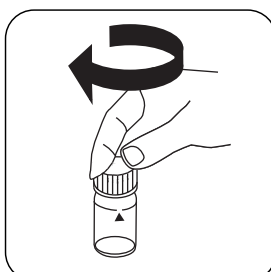


Prepare two clean 24 mm
vials. Mark one as a blank.

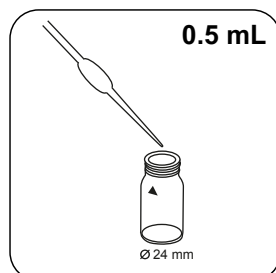


10 mL

Place **10 mL sample** in
each vial.

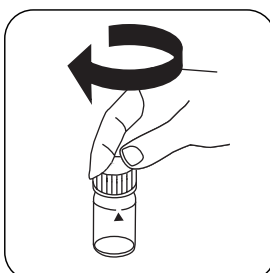


Firmly close the **blank**.

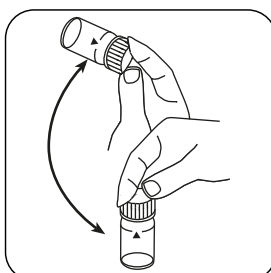


0.5 mL

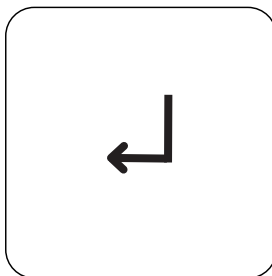
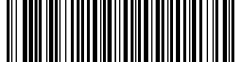
Place **0.5 mL Molyb-
denum 2 LR solution** in
the sample cuvette.



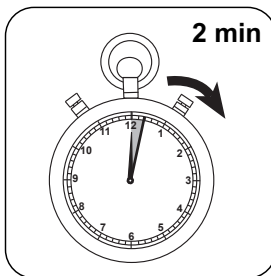
Close vial(s).



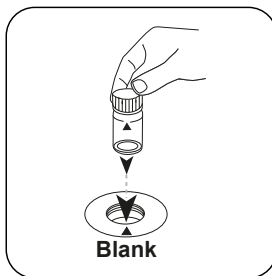
Invert several times to mix
the contents.



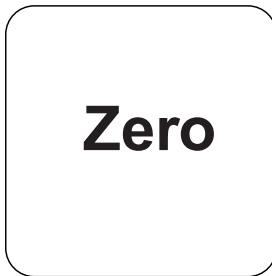
Press the **ENTER** button.



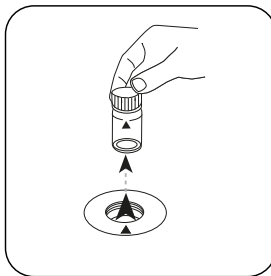
Wait for **2 minute(s) reaction time**.



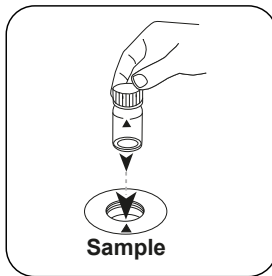
Place **blank** in the sample chamber. Pay attention to the positioning.



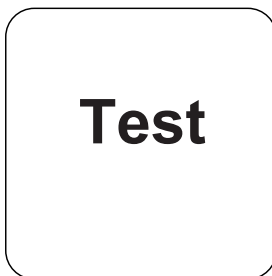
Press the **ZERO** button.



Remove the vial from the sample chamber.

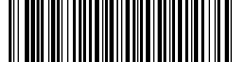


Place **sample vial** in the sample chamber. Pay attention to the positioning.



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

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 ₂ MoO ₄	1.29

Chemical Method

Ternary Complex

Appendix

Calibration function for 3rd-party photometers

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

	ø 24 mm	□ 10 mm
a	$5.09465 \cdot 10^{-2}$	$5.09465 \cdot 10^{-2}$
b	$3.34565 \cdot 10^{+0}$	$7.19315 \cdot 10^{+0}$
c	$4.35719 \cdot 10^{-1}$	$2.01411 \cdot 10^{+0}$
d		
e		
f		

Interferences

Interference	from / [mg/L]	Influence
Al	50	
Cr	1000	
Fe	50	
Ni	50	
NO ₂ ⁻	in all quantities	
Cu	10	Leads to higher readings with a response time of more than 5 minutes



Bibliography

Analytical Chemistry, 25(9) 1363 (1953)