

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

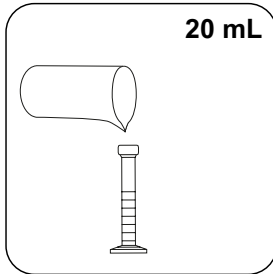
1. Strong alkaline or acidic water samples must be adjusted between pH 3 and pH 5 before the analysis (use 0.5 mol/l Sulphuric acid or 1 mol/l Sodium hydroxide).
2. To avoid errors caused by deposits, rinse the glassware with Hydrochloric acid (approx. 20%) before the analysis and then rinse with deionised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





Determination of Molybdate LR with Vario Powder Packs

Select the method on the device.

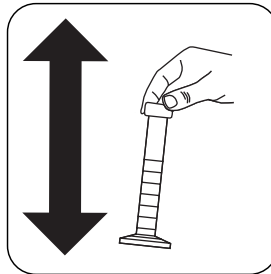


20 mL

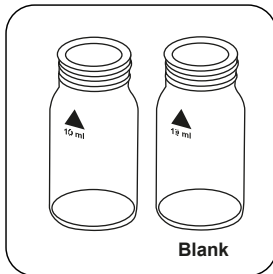
Put **20 mL sample** in
25 mL measuring cylinder.



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

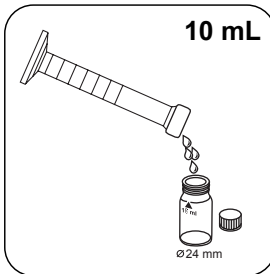


Stopper the mixing cylinder.
Shake to dissolve the
powder.



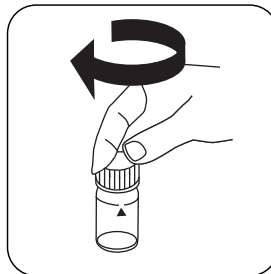
Blank

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

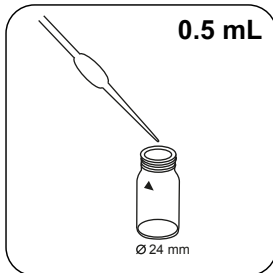


10 mL

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

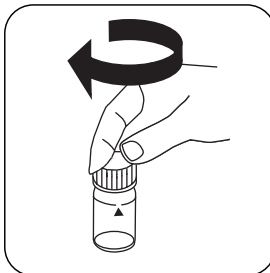


Firmly close the **blank**.

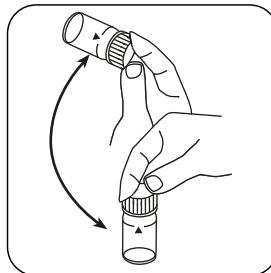


0.5 mL

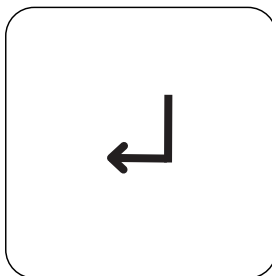
Place **0.5 mL Molybdenum 2 LR solution** in
the sample cuvette.



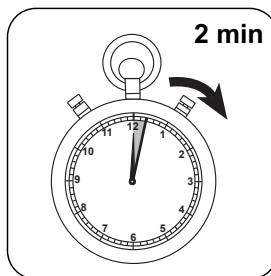
Close vial(s).



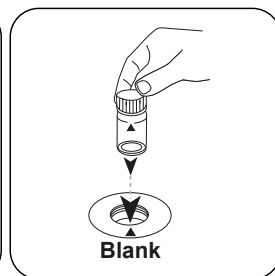
Invert several times to mix
the contents.



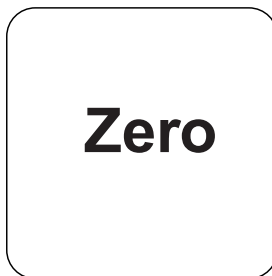
Press the **ENTER** button.



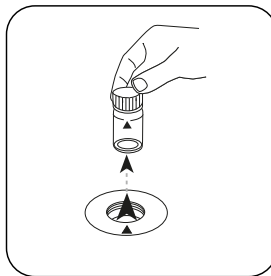
Wait for **2 minute(s) reaction time**.



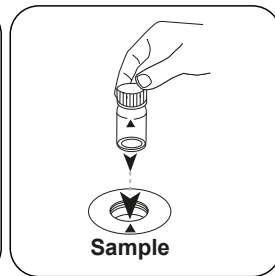
Place **blank** in the sample chamber. Pay attention to the positioning.



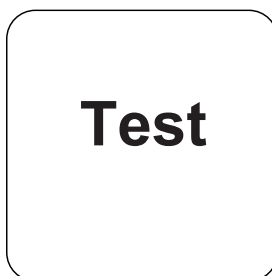
Press the **ZERO** button.



Remove the vial from the sample chamber.

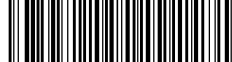


Place **sample vial** in the sample chamber. Pay attention to the positioning.



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•Abs + c•Abs² + d•Abs³ + e•Abs⁴ + f•Abs⁵

	∅ 24 mm	□ 10 mm
a	5.09465 • 10 ⁻²	5.09465 • 10 ⁻²
b	3.34565 • 10 ⁺⁰	7.19315 • 10 ⁺⁰
c	4.35719 • 10 ⁻¹	2.01411 • 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)