Molybdate LR PP 251
0.05 - 5 mg/l MoO_4 Mo1
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 600, MD 610, MD 640, MultiDirect, SpectroDirect, XD 7000, XD 7500	ø 24 mm	610 nm	0.05 - 5 mg/l MoO_4
MD 100, MD 110	ø 24 mm	610 nm	0.03 - 3 mg/l MoO_4

Material

Required material (partly optional):

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

The following accessories are required.

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

Application List

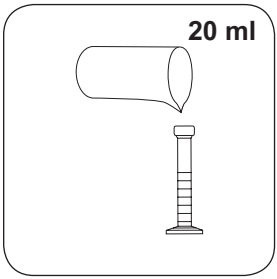
- Boiler Water
- Cooling Water

Preperation

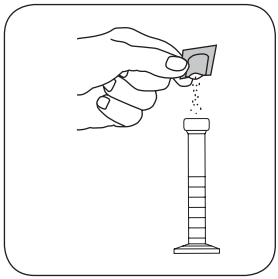
1. Strong alkaline or acidic water samples must be adjusted between pH 3 and pH 5 before the analysis (use 0.5 mol/l Sulphuric acid or 1 mol/l Sodium hydroxide).
2. To avoid errors caused by deposits, rinse the glassware with Hydrochloric acid (approx. 20%) before the analysis and then rinse with deionised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

Implementation of the provision Molybdate LR with Vario Powder Packs

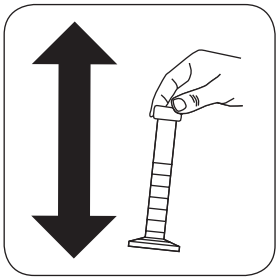
Select the method on the device



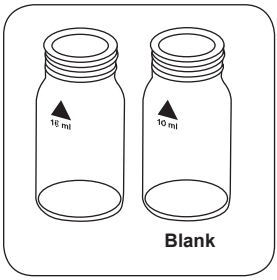
Put **20 ml sample** in 25 ml measuring cylinder



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



Stopper the mixing cylinder. Shake to dissolve the powder.



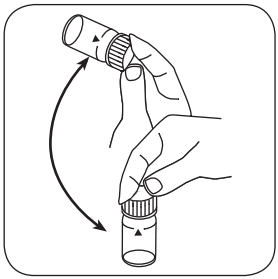
Prepare two clean 24 mm vials. Mark one as a blank.

Put **10 ml sample** in the sample vial.

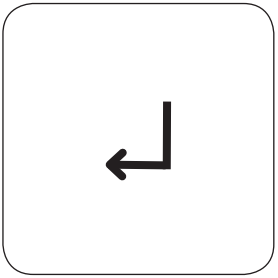
Firmly close the **blank** .

Place **0.5 ml Molybdenum 2 LR solution**in the test vial.

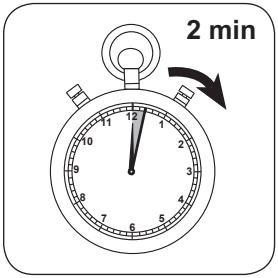
Close vial(s).



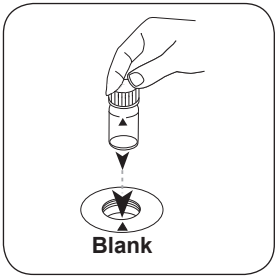
Invert several times to mix the contents.



Press the **ENTER** button.

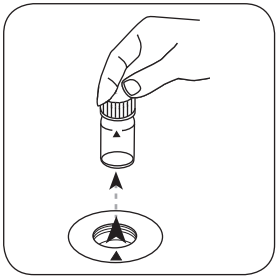


Wait for **2 minute(s) reaction time**.

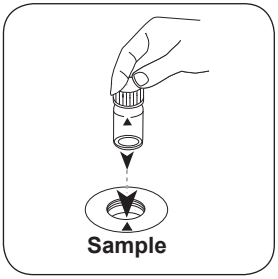


Place **blank** in the sample chamber. • Pay attention to the positioning.

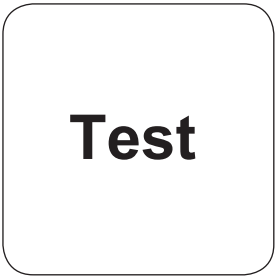
Press the **ZERO** button.



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_2MoO_4	1.29

Chemical Method

Mercaptoacetic Acid

Appendix

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)

[a] determination of free, combined and total | [b] Reactor is necessary for COD (150 °C), TOC (120 °C) and total -chromium, - phosphate, -nitrogen, (100 °C) | [c] MultiDirect: Adapter is necessary for Vacu-vials© (Order code 19 20 75) | [d] Spectroquant© is a Merck KGaA Trademark | [e] 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 | [f] additionally required for determination of bromine, chlorine dioxide and ozone in the presence of chlorine | [g] Reagent recovers most insoluble iron oxides without digestion | [h] additionally required for samples with hardness values above 300 mg/l $CaCO_3$ | [i] high range by dilution | # including stirring rod, 10 cm