

Hardness Ca and Mg MR TT

M198

10 - 360 mg/L CaCO₃

Calmagite

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, XD 7000, XD 7500	ø 16 mm	530 nm	10 - 360 mg/L CaCO ₃

Material

Required material (partly optional):

Reagents	Packaging Unit	Part Number
Hardness Ca Mg MR TT	1 Set	2423960
Ca Mg Hardness Sol 2, 15 mL	15 mL	471200
Ca Mg Hardness Sol 3 - 5 mL	5 mL	471230
Ca Mg Hardness Sol 4 - 5 mL	5 mL	471220

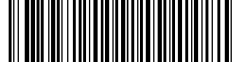
Application List

- Drinking Water Treatment
- Raw Water Treatment
- Waste Water Treatment

Notes

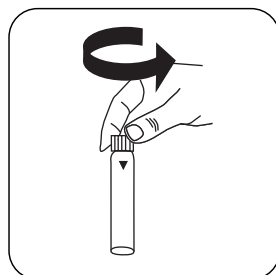
1. On the XD7x00 the method is implemented under method number M2512.



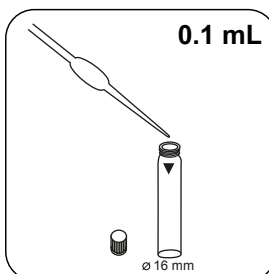


Determination of Hardness Calcium and Magnesium MR TT with liquid reagent

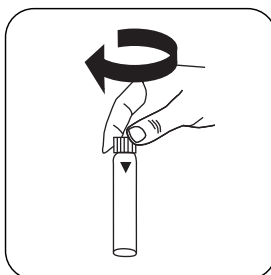
Select the method on the device.



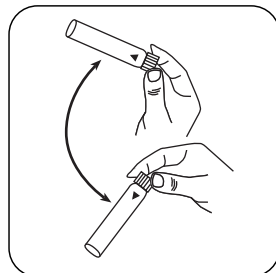
Open a **digestion vial**.



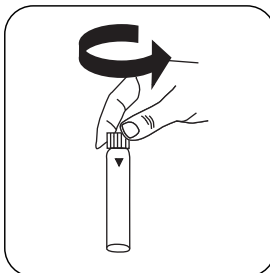
Add **0.1 mL sample**.



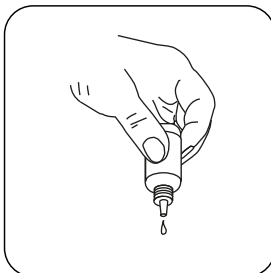
Close vial(s).



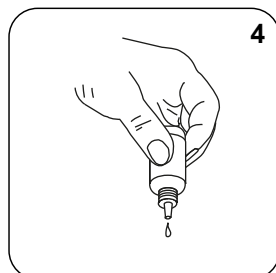
Invert several times to mix the contents (10x).



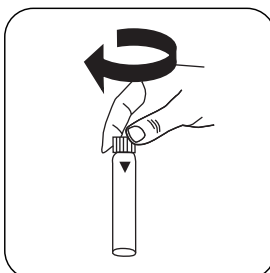
Open the sample vial.



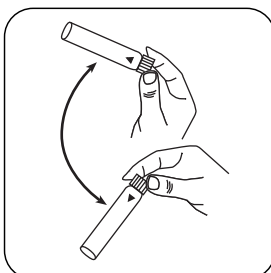
Hold cuvettes vertically and add equal drops by pressing slowly.



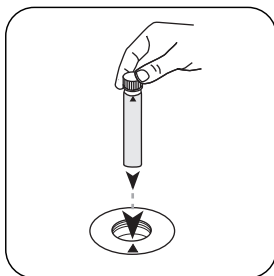
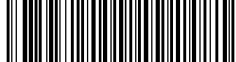
Add **4 drops Ca Mg Hardness SOL 2 (blue bottle)**.



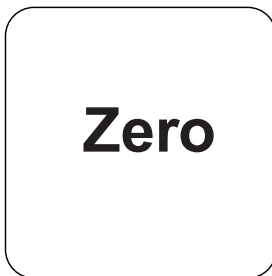
Close vial(s).



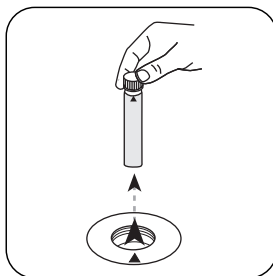
Invert several times to mix the contents (10x).



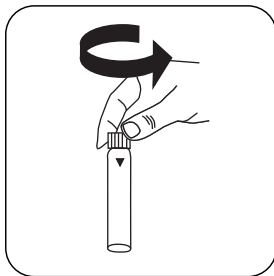
Place **sample vial** in the sample chamber. • Pay attention to the positioning.



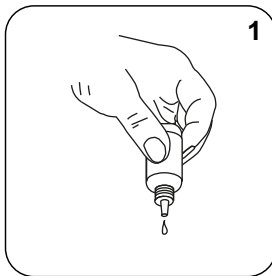
Press the **ZERO** (XD: **START**) button.



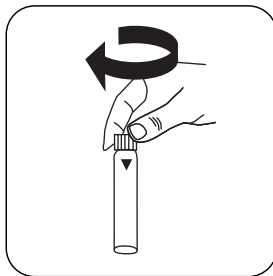
Remove **vial** from the sample chamber.



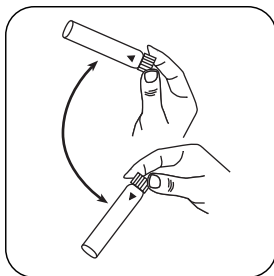
Open the sample vial.



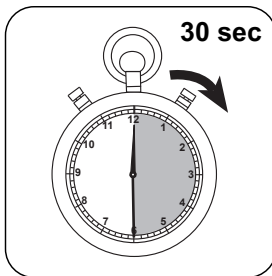
Add **1 drops Ca Mg Hardness SOL 3** (green bottle).



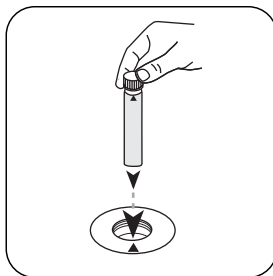
Close vial(s).



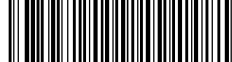
Invert several times to mix the contents (10x).



Wait for **30 second(s) reaction time**.

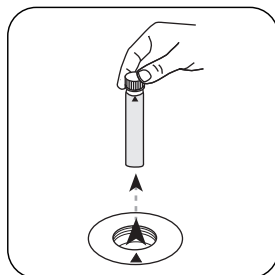


Place **sample vial** in the sample chamber. • Pay attention to the positioning.

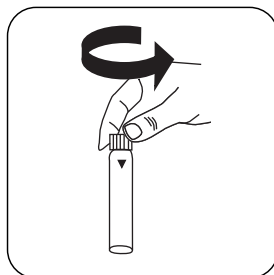


Test

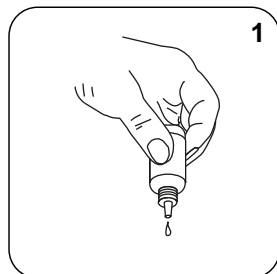
Press the **TEST** (XD:
START) button.



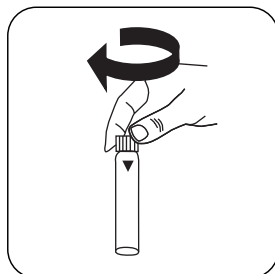
Remove **vial** from the
sample chamber.



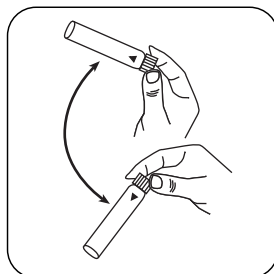
Open the sample vial.



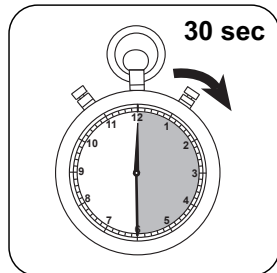
Add **1 drops Ca Mg Hard-**
ness SOL 4 (white bottle).



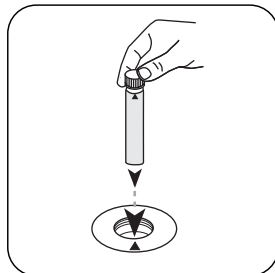
Close vial(s).



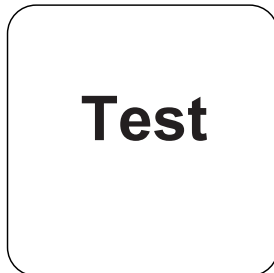
Invert several times to mix
the contents (10x).



Wait for **30 second(s)**
reaction time.



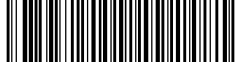
Place **sample vial** in the
sample chamber. • Pay
attention to the positioning.



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

Test

The result in **mg/L** [Ca]-CaCO₃ and [Mg]-CaCO₃ 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	CaCO ₃	1
mg/L	Ca	0.4004
mg/L	MgCO ₃	0.8424
mg/L	Mg	0.2428
	°dH	0.0560

Chemical Method

Calmagite

Interferences

Removeable Interferences

The Ca determination is disturbed by high Mg contents. For accurate Ca measurements, a dilution should be carried out.

Interference	from / [mg/L]
Al ³⁺	100
Cr ³⁺	12.5
Cr ₂ O ₇ ²⁻	12.5
Cu ²⁺	50
Fe ³⁺	150
Mn ²⁺	50
Mo ⁶⁺	110
Ni ²⁺	3
PO ₄ ³⁻	750
Zn ²⁺	10
EDTA	25