

pH value L

331

6.5 - 8.4

PH

Phenol Red

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 200, MD 600, MD 610, MD 640, MultiDirect, PM 620, PM 630	ø 24 mm	560 nm	6.5 - 8.4
SpectroDirect, XD 7000, XD 7500	ø 24 mm	558 nm	6.5 - 8.4

Material

Required material (partly optional):

Reagents	Packaging Unit	Part Number
Phenol Red Solution	Liquid / 15 ml	471040
Phenol Red Solution	Liquid / 100 ml	471041
Phenol Red Solution in 6-pack	1 Set	471046

Application List

- Boiler Water
- Pool Water Control
- Pool Water Treatment
- Raw Water Treatment

Preperation

1. Due to differing drop sizes results can show a discrepancy in accuracy by comparison with tablets.
This can be minimised by using a pipette (0.18 ml equivalent to 6 drops).

Notes

1. After use, ensure the cuvette is once again closed with the same-coloured screw caps.
2. Reagents are to be stored in the cool at +6 °C to +10 °C.

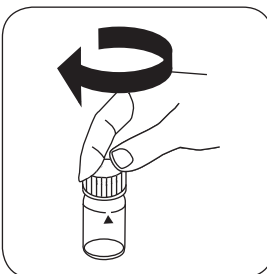
Implementation of the provision pH-value with fluid reagent

Select the method on the device

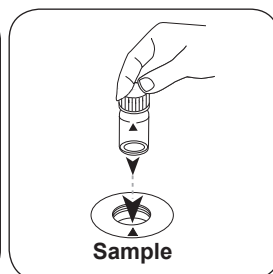
For this method, no ZERO measurements are to be carried out with the following devices: XD 7000, XD 7500



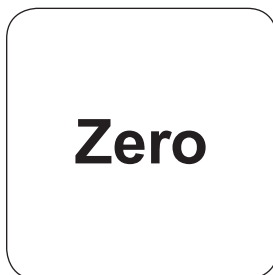
Fill 24 mm vial with **10 ml sample**.



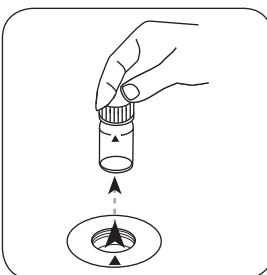
Close vial(s).



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

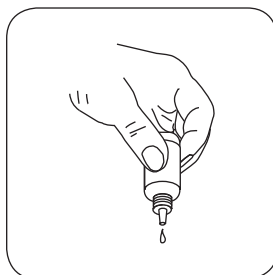


Press the **ZERO** button.

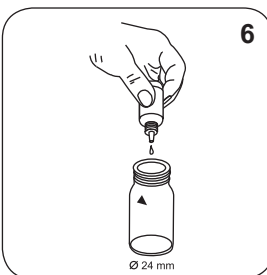


Remove the vial from the sample chamber.

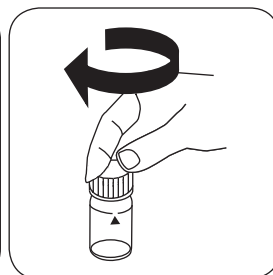
For devices that require **no ZERO measurement**, start here.



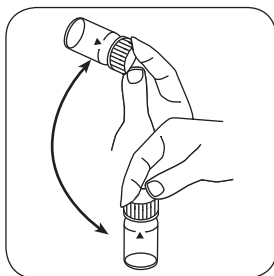
Hold cuvettes vertically and add equal drops by pressing **Lösung** slowly.



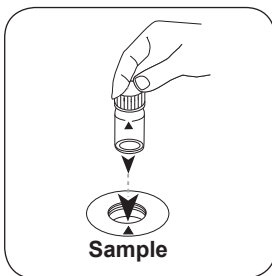
Add **6 drops PHENOL Red-**



Close vial(s).



Invert several times to mix the contents.



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



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

The result in pH value appears on the display.

Chemical Method

Phenol Red

Appendix

Interferences

Removeable Interferences

1. Salt error Correction of test results (average values) for samples with salt contents of:
- 2.

Salt content of the sample	Correction
30 g/l (seawater)	-0.15 ¹⁾
60 g/l	-0.21 ²⁾
120 g/l	-0.26 ²⁾
180 g/l	-0.29 ²⁾
¹⁾ according to Kolthoff (1922)	²⁾ according to Parson and Douglas (1926)

4. When testing chlorinated water the residual chlorine contents can influence the colour reaction of the liquid reagent. This can be avoided by adding a small crystal of Sodiumthiosulphate ($\text{Na}_2\text{S}_2\text{O}_3 \cdot 5 \text{H}_2\text{O}$) to the sample solution before adding the PHENOL RED solution.

Bibliography

Colorimetric Chemical Analytical Methods, 9th Edition, London

^{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 | ^{j)} including stirring rod, 10 cm