pH-value T

6.5 - 8.4

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.

<table>
<thead>
<tr>
<th>Instrument Type</th>
<th>Cuvette</th>
<th>λ</th>
<th>Measuring Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>MD 100, MD 110, MD 200, MD 600, MD 610, MD 640, MultiDirect, PM 600, PM 620, PM 630</td>
<td>ø 24 mm</td>
<td>560 nm</td>
<td>6.5 - 8.4</td>
</tr>
<tr>
<td>SpectroDirect, XD 7000, XD 7500</td>
<td>ø 24 mm</td>
<td>558 nm</td>
<td>6.5 - 8.4</td>
</tr>
<tr>
<td>Scuba II</td>
<td>ø 24 mm</td>
<td>530 nm</td>
<td>6.5 - 8.4</td>
</tr>
</tbody>
</table>

Application List

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

Notes

1. For photometric determination of pH values only use PHENOL RED tablets in black printed foil pack and marked with PHOTOMETER.
Implementation of the provision pH-value with Tablet

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

10 ml

Fill 24 mm vial with 10 ml sample.

Close vial(s).

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

Zero

Press the ZERO button.

Remove the vial from the sample chamber.

For devices that require no ZERO measurement, start here.

Add PHENOL RED PHOTOMETER tablet.

Crush tablet(s) by rotating slightly.

Close vial(s).
Dissolve tablet(s) by inverting.

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

Calibration function for 3rd-party photometers

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

Note
Please select items for "Fields".

Interferences

Persistant Interferences
1. Water samples with little Carbonate hardness* can lead to false pH values.
   *K_{S4,3} < 0.7 mmol/l \implies\text{total alkalinity} < 35 \text{ mg/l CaCO}_3.

Removeable Interferences
1. pH values below 6.5 and above 8.4 can produce results inside the measuring range.
   A plausibility test (pH-meter) is recommended.
2. Salt error
   For salt concentrations below 2 g/l, no significant error, is expected due to the salt concentration of the reagent tablet. For higher salt concentrations the measurement values have to be adjusted as follows:

<table>
<thead>
<tr>
<th>Salt content per sample in g/l</th>
<th>30 (seawater)</th>
<th>60</th>
<th>120</th>
<th>180</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correction</td>
<td>-0.15(^{1)}</td>
<td>-0.21(^{2)}</td>
<td>-0.26(^{2)}</td>
<td>-0.29(^{2)}</td>
</tr>
</tbody>
</table>

\(^{1)}\) according to Kolthoff (1922)
\(^{2)}\) according to Parson and Douglas (1926)

Bibliography