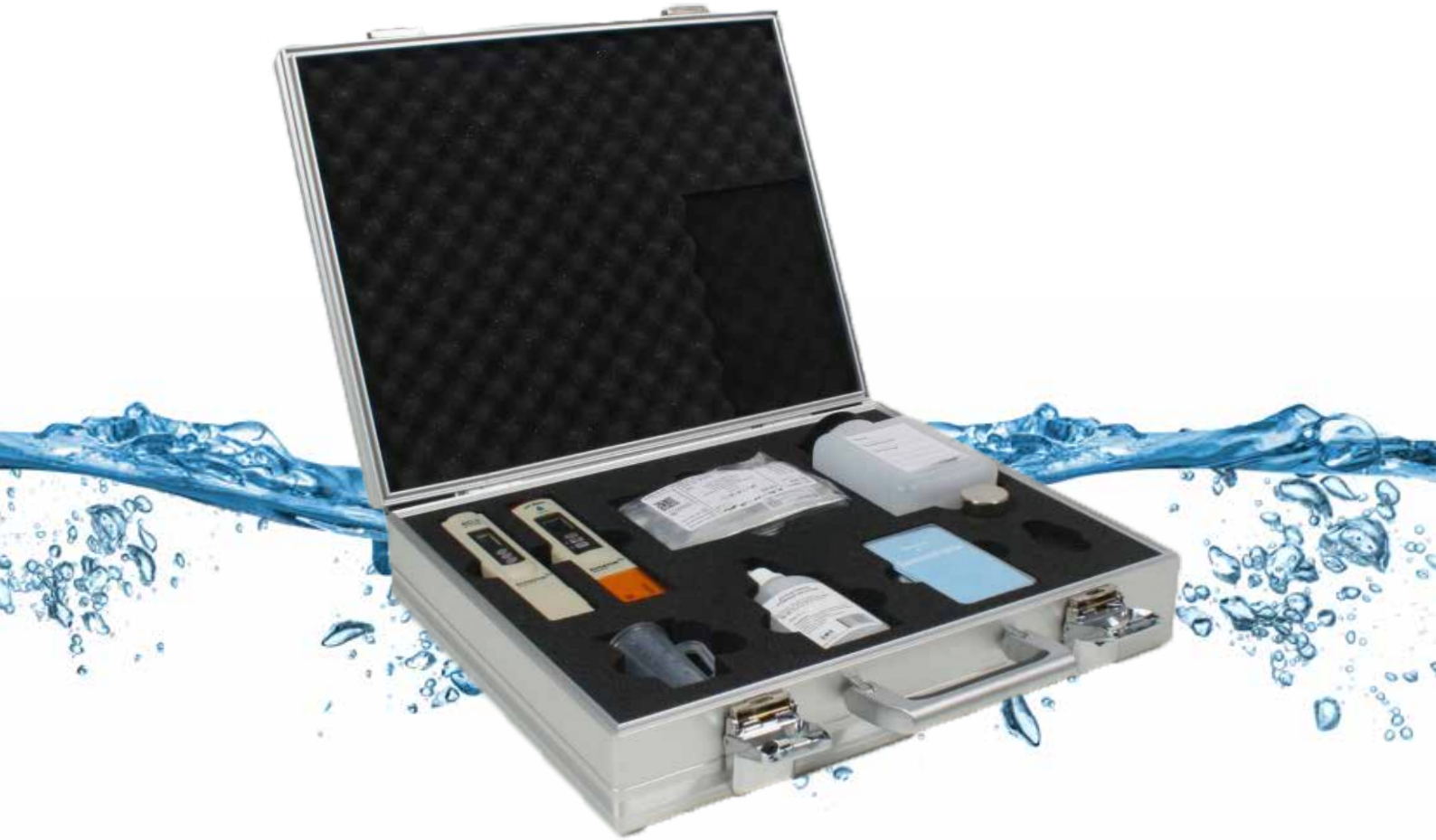
magnetic
Measuring kit
Instructions for use



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pH measuring device
and
calibration solution ph 7

pH Electrode
storage solution

The pH measuring device

The following items must be observed to always obtain exact measurement values:

Keep the measuring probe ready for use

The measuring probe must be kept moist with the electrode storage solution. That is done by simply soaking the sponge in the lid with the solution as required. Wait 15 minutes before the first use to allow the solution to take effect. Salt deposits on the edge of the lid are normal after a while

Taking a measurement

Remove the lid and press the POWER key. Stick the probe into the liquid to be measured and stir lightly until the reading is steady. That can take up to 30 seconds in case of deionized water. Press the HOLD key to be able to read the measurement value with the probe out of the liquid. The next reading is enabled after the HOLD key is pressed again. Rinse the probe with deionized water after the measurement in the case of contaminated water. Replace the lid with moist sponge (electrode storage solution) and switch off the device.

Temperature calibration

The device has a pre-calibrated thermometer for a correct pH value measurement. The thermometer must be recalibrated if it shows an unbelievable value. Simultaneously press the POWER and TEMP keys for 2 seconds whilst the measuring device is exposed to the air and switched off. Set the correct air temperature with the UP and DOWN keys and then press the ENTER key.

pH calibration

A proper calibration is absolutely necessary for exact results. The calibration should be done at least once a month. Switch on the device and stick the probe into the pH 7 buffer solution. The calibration does not need to be done if the measured result is pH 7. Calibration: Press the CAL key for 10 seconds. Select the calibration solution 7 with the UP and DOWN keys and then press the ENTER key (the device can also be calibrated with a pH 4 or pH 10 solution). The CAL indicator will flash for 5 -60 seconds until END. The measured value 7 is then displayed. This completes the calibration.

Troubleshooting

Reset to factory settings: Switch on the device, hold it in the air and then press the HOLD key for 10 seconds. Then calibrate the device to pH 7. The device must be replaced if it can no longer be calibrated.

Conductivity measuring device

The conductivity measuring device

Description

The magnetic conductivity measuring device is maintenance-free, calibrated in the factory and measures the conductivity of liquids in the range of 0 – 999 microsiemens µS with an accuracy of 1%-2%. The temperature in a range of 0 – 80 °C is also measured.

Taking a measurement

Remove the lid and press the POWER key. Stick the probe into the liquid to be measured and stir lightly until the reading is steady. Press the HOLD key to be able to read the measurement value with the probe out of the liquid. The next reading is enabled after the HOLD key is pressed again.

Calibration

The magnetic conductivity measuring device is calibrated in the factory and does normally not need to be recalibrated.

Water hardness conversion factor

The electrical conductivity is a measurement for the total mineral content in water. In case of untreated drinking water, the mineral content practically consists of only the hardness formers, calcium and magnesium. The mineral content value can therefore be converted to a water hardness value with a specific factor. The measured value in microsiemens divided by 30 gives the approximate water hardness in °dH.

Formula:

Measured value: 30 = °dH
Measured value: 17 = °fH

Corrosion in case of high conductivity

The corrosion in heating systems is caused by oxygen, acidity and dissolved minerals/salts. The speed of the corrosion is mainly determined by the electrical conductivity. The higher the electrical conductivity is, the faster the corrosion processes will be.

In case of deionized water with a conductivity value below 100 µs/cm, the oxygen content in the system water can be 5 times higher without it having a negative effect on the corrosion behaviour.

Supermagnet

The Neodym magnet

Rust particles that contain the magnetite oxidation product can be separated from other deposits in the water in a sample beaker with the aid of the super magnet. It can therefore be ascertained if the deposits are the result of iron corrosion, i.e. when they can be magnetically attracted.

Measuring set for total hardness

Measuring the total hardness

The total hardness can be directly measured in the water through titration (adding drops). 5 ml of the liquid to be measured is poured into the clean test tube. The reagent is added drop by drop whilst the test tube is carefully shaken. If the colour of the liquid changes from red to green, the number of the counted drops corresponds to the total hardness in German hardness degrees °dH.

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