



Fact sheet

# pH measurement - instruction





## Equipment

- Portable pH meter
- pH electrode
- Storage cap with KCl solution
- Beaker
- Syringe or pipette (20 ml)



## Reagents

- Storage solution for pH electrode
- pH buffer solution (pH 7.0 and pH 4.0)



## Measurement

- Clean the pH electrode before measurement (see page 5)
- Calibrate the pH meter before measurement (every day) (see page 8)
- Pipette milk, whey or starter culture into a beaker.
- Dip the pH electrode into the testing solution.
- The pH is completed when the pH reading is stable.
- Record the pH value (and temperature if needed) by writing down or pressing the "MEMORY" button
- Clean the pH electrode between and after measurements to prevent carryover contamination of the tested solutions. (see page 6 and 7)
- Store the pH electrode in storage solution once all measurements are completed. (see page 4)

<https://www.mt.com/gb/en/home/library/guides/lab-analytical-instruments/pH-Theory-Guide.html>



## Storage of the pH electrode

- Always keep your pH electrode moist
- pH electrode should be stored in ambient conditions between 10 and 30°C.
- Protective caps and solution storage caps should be kept intact and installed on the end of the sensor.
- Store your electrode in a solution of 3 - 4 M potassium chloride (KCl). This solution provides a neutral to slightly acidic environment for the glass electrode, and will not impose a memory on the glass.
- If 3 - 4 M KCl is not available, use a pH 4 or 7 buffer solution.





## Cleaning your pH electrode

**Cleaning of the pH electrode is always necessary:**

- Before buffering (calibrating),
- Before measurement,
- After measurement.

**Initial cleaning before buffering and measurement:**

- Rinse the pH electrode thoroughly with warm tap water.
- Absorb excess water from the sensor with a clean lint free paper towel.
- Do not wipe the pH electrode or else it will generate static and affect future readings from the pH electrode.



## Cleaning your pH electrode

### Cleaning after measurement:

- Rinse the pH electrode with warm tap water.
- Mix warm tap water with 3 or 4 drops of dish detergent in a beaker.
- Soak the sensor in the solution for 5 minutes.
- Rinse the pH electrode thoroughly with warm tap water.
- Absorb excess water from the sensor with a clean lint free paper towel.
- Do not wipe the pH electrode or else it will generate static and affect future readings from the probe.



# Cleaning your pH electrode

## Removing Protein Deposits:

- Rinse the pH electrode with warm tap water.
- Soak the pH electrode in a 1% pepsin solution with 0.1 M HCl for five minutes
- Rinse the pH electrode thoroughly with warm tap water.
- Absorb excess water from the sensor with a clean lint free paper towel.
- Do not wipe the pH electrode or else it will generate static and affect future readings from the electrode.



## Calibrating your pH Meter

- Always calibrate the pH electrode before use.
- Calibrate pH electrode using fresh buffer solutions (pH 4.0 and 7.0).
- Dip the pH electrode into a 4.0 buffer solution.
- Press the **measure button** to begin reading the pH.
- The numbers will fluctuate slightly before they stabilize.
- When the pH reading is stable, hit the **standardize button** to calibrate the pH meter.
- Remove the pH electrode from the solution.
- Repeat the process with 7.0 buffer solution.

