



ThermoWorks

Care and Maintenance of pH Electrodes

Hydration of Electrode

1. The electrode must be properly hydrated in order to get a stable pH measurement.
2. If the electrode has been in storage for long periods of time, it should be rehydrated.
3. If pH readings become unstable or erratic, the electrode should be cleaned and then rehydrated.
4. Soak the electrode in [electrode storage solution](#) for at least one hour to rehydrate it. In some cases, it may be necessary to soak the electrode overnight.
5. If storage solution is unavailable, pH 4 buffer solution can be used although it is not as effective.

Cleaning the Electrode

1. If the electrode becomes contaminated, the meter readings may become inaccurate, erratic, or unstable.
2. Clean the electrode by soaking it in [electrode cleaning solution](#) for 10 to 30 minutes.
3. Rinse the electrode with water (deionized, reverse osmosis, or distilled water are recommended). Tap water can be used, but may cause a static charge to build on the electrode which will increase measurement errors.
4. Never soak the electrode in water for long periods of time. This will damage it.
5. Never wipe or rub the electrode.
6. After soaking the electrode in [electrode cleaning solution](#), it is necessary to rehydrate it.

Calibrating the Meter

1. pH electrodes should be calibrated daily before use in order to obtain an accurate measurement.
2. The meter should always be calibrated when the electrode is replaced.
3. If pH readings are unstable or erratic, clean and hydrate the electrode before calibration.
4. Calibration of the meter is applied by use of standardized [pH buffer solutions](#) at the calibration points of 4, 7, and 10 pH.
5. Always calibrate at pH 7 first, and then at 4 or 10, if desired.
6. If your pH meter has automatic temperature compensation (ATC), the indicated pH value on the meter will be automatically adjusted according to the temperature of the solution. Allow enough time for temperature to stabilize before taking a reading.
7. Consult your pH meter's manual for specific calibration procedures.
8. Rinse the electrode before moving to the next buffer solution.

Important to Know About pH Buffers

1. pH buffers have a finite shelf life.
2. The expiration date on the bottle is for unopened buffer solution.
3. When opening a bottle of buffer solution, it can be helpful to write the date opened on the bottle.
4. After opening, a bottle of 4 or 7 buffer solution should last approximately 3 to 6 months and a bottle of pH 10 buffer should last approximately one month.
5. pH 10 buffer is highly susceptible to CO₂ absorption which changes the pH value of the buffer over time. Refrigerating the buffer can slow this process of degradation.
6. The pH of standard buffer solutions changes with temperature; consult the chart on the bottle of the buffer solution pH values at various temperatures.

pH Meter Accessories

- Our [calibration solutions](#) are standardized against NIST-certified pH references within 0.01 pH at 77°F (25°C). Each solution is freshness dated, labeled with a pH vs. temperature table for accurate calibration (500ml bottles).
- The [TX-1011X-C1](#) zippered storage case has plenty of room to store your pH Meter.