Caring for a pH Electrode

Maintaining a pH electrode is critical to ensure proper and reliable measurement of your samples. By following the few steps below, you are sure to get the most out of your Oakton® pH electrode.

Calibrating an Electrode

pH electrodes measure H^+ concentration relative to their reference half-cells, so they must be calibrated periodically to ensure accurate, repeatable measurements. Our wide selection of commercial pH calibration buffers include solutions standardized against NIST-certified pH references for calibrating meters with resolution up to 0.001 pH.

Although calibration against one pH reference buffer (one-point calibration) typically ensures accurate pH measurement, we suggest frequent two- or three-point calibrations to ensure the most reliable results. Make sure your pH system includes calibration buffers for a range of pH values.

Conditioning an Electrode

pH electrodes are shipped with the electrodes moist. Prior to using your electrode for the first time, follow these three steps to condition your electrode:

1. Remove the protective cap or bottle from the bottom of the sensor and rinse the electrode with distilled or deionized water.
2. Place the electrode in a beaker containing one of the liquids listed below (in order of ionic ability to condition the electrode). Soak for 20 minutes.

    - 4.0 M KCl (part number WD-00653-04)
    - 4.0 pH buffer (part number WD-00654-00)
    - 7.0 pH buffer (part number WD-00654-04)

    Note: Never condition a pH electrode in distilled, deionized, or reverse osmosis water—long term exposure to purified water will damage the special glass membrane.

3. After conditioning the sensor for 20 minutes, rinse the electrode with distilled or deionized water. The electrode is now ready for calibration and to measure pH.

Handling an Electrode

Electrodes should always be rinsed between samples with distilled or

deionized water. Never wipe an electrode—wiping can cause erroneous readings due to static charges. Blot the end of the electrode with lint-free paper to remove excess water.

Refillable Electrodes

The filling solution in refillable electrodes should be filled up to, but not past, the refill hole. Make sure the refill hole is left open when measuring to ensure that the fill solution flows properly through the reference junction. Choose the appropriate electrode filling solution for your electrode or application.

Storage of an Electrode

Always keep your pH electrode moist. We recommend that you store your electrode in a solution of 4 M KCl (WD-00653-04). If 4 M KCl is not available, use a pH 4 (WD-00654-00) or pH 7 (WD-00654-04) buffer solution. DO NOT store electrode in distilled or deionized water—this will cause ions to leach out of the glass bulb and render your electrode useless.

After storage, you may notice white KCl crystals forming outside your electrode. This will not interfere with measurements. Simply rinse the electrode and blot dry before use.

Electrode Storage Bottle

Most electrodes are shipped with a protective storage bottle (WD-35805-50), over the glass bulb to help prevent cracking or scratching. Remove the storage bottle before using your electrode. Keep your electrode in long-term storage with the bottle on—just fill the bottle with enough 4 M KCl solution to cover the glass bulb and replenish as needed to keep the bulb moist.