

Use of the Accumet XL15 pH Meter

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Calibration

- The pH Meter should be calibrated at least once each day
 - Make sure **Auto Buffer Recognition** is selected in the Setup screen
 - Remove the electrode from the pH 4 storage buffer and gently rinse with ddH₂O
 - Place the electrode in a fresh pH 4 buffer and press **Standardize**
 - Wait for calibration; once a flashing beaker with a 4 in the middle and word "**Stable**" shows up on the screen, press **Confirm** to save the calibration
 - Gently rinse with ddH₂O and blot the electrode dry with Kimwipes
 - Place the electrode in pH 7 buffer solution and press **Standardize**
 - Wait for calibration; once the pH 7 beaker symbol and "**Stable**" shows up on the screen, press **Confirm** to save the calibration
 - Gently rinse with ddH₂O and blot (not wipe) the electrode dry with Kimwipes
- Two-point calibration confers a high degree of accuracy of pH measurement
- If samples at the basic pH range are to be measured, perform the calibration step using pH 7 and pH 10 standards
- Touch **Clear** if necessary to delete all previous standardization values and repeat calibration procedure.

Measuring pH

- Take the electrode from the pH 4 storage buffer and gently rinse with ddH₂O
- Place the electrode in the sample while the sample is stirring; wait for stabilization of the pH ("**Stable**" appears on screen)
- If the sample pH needs to be adjusted, use a base or acid solution to achieve the desired pH
- A series of NaOH and HCl solutions in different concentrations are placed close the pH meter for adjustment of pH. For some buffers, however (for example tris-maleate or tris-acetate), another stock solution is needed to adjust the pH (acetic acid for Tris-acetate, etc.)
- After the desired pH is achieved, gently rinse the electrode with ddH₂O and blot the electrode dry with a Kimwipe
- Place the electrode in pH 4 buffer solution with the VENT OPEN for long-term storage

Electrode TLC

- Be gentle with the electrode while using it
- Avoid beating the electrode against glassware or spinning stir bars
- Don't let the electrode dry out. Store in pH 4 buffer deep enough to cover junction on lower side of electrode
- Rinse immediately after use with dH₂O and blot dry gently with a Kimwipe
- Be careful especially with the bulb and don't scrape the junction off
- The electrode is filled with 3 M KCl. After use, keep the vent open during storage; add more KCl if necessary.
- Don't allow fluid to enter the electrode from the vent hole. This could happen if the electrode is immersed deeply or care is not taken rinsing the electrode. If concerned, the vent hole could be closed for a short period.

*ONLY USE FILLING SOLUTION THAT IS 3 M KCl
Some filling solutions have a different composition*