

## pH Electrode Quick Help Guide

### General Information

The glass pH electrode is widely recognized as the most accurate method for the measurement of pH. The pH electrode actually measures the hydrogen ion *activity* in the solution. The measurement is based on a millivolt (mV) potential developed across a glass membrane that varies with the pH of the solution. This requires a second potential to compare against - this is the function of the reference electrode (combined in this probe), which provides a constant potential regardless of the hydrogen ion activity (pH).

### Using the Electrode (first use)

- Typically, the electrode will ship with a storage bottle with storage solution inside. This bottle is sealed over the sensing glass and reference junction to keep both in optimum condition and ready to use. Keep this bottle for future use – it is an excellent container to store your electrode with.
- Unscrew the cap before removing the soaker bottle. Rinse the electrode with water before use.
- Shake the electrode gently like a thermometer to remove any air bubble in the glass sensor.
- Follow your data logger instructions on calibrating the electrode.

### Maintenance

Your pH electrode is a delicate analytical tool and should be handled carefully. The electrode's glass sensor is fragile and you should not expose it to abrasive materials, or other situations that could scratch, break, or foul the glass. pH sensor glass should be kept wetted at all times – preferably with storage solution or other solutions of sufficient salt concentration to avoid leaching materials from the glass matrix.

### Cleaning

- *General Method:* Use ½ teaspoon of liquid soap per 200 mL warm water, soak the electrode for a few minutes and then gently wipe the bulb with a cotton swab, rinse thoroughly with DI water.
- *Inorganic Buildup Method:* Soak the electrode tip in 0.1M HCl for 10 minutes, then rinse thoroughly with DI water.
- *Greasy Films Method:* Rinse the electrode tip with alcohol, and then wash with the general method above.

### Storage

- Fill the provided electrode storage bottle to the half way point with pH storage solution and place over the end of the electrode (remember to rinse the electrode before reusing, and calibration is recommended after storage)