

Frequently Asked Questions About pH Probes

What's Inside?

The gel in a FermProbe® is a non-toxic, USP grade, organic material. Other manufacturers may use different materials such as polyacrylamide. Please call us for more information or an MSDS.

Why Is The Gel In The Probe Turning Brown?

Over time, the high temperatures of sterilization will discolor the gel in a FermProbe. This is often referred to as caramelization. It is normal, and in no way affects the performance of the electrode. This color change can also be used to approximate the age of the electrode.

What Is The Shelf Life?

FermProbes can be stored up to one year from date of shipment, with no appreciable change in their performance or expected service life. Check the date code stamped on the connector or integral cable, and rotate inventory regularly.

How Old Is This Probe?

All FermProbes have a three-digit date code stamped on the connector or integral cable. This indicates when the electrode was produced. The first digit is the year, and the last two are the month. For example, a FermProbe with a "007" date code was manufactured in July of 2000.

What Are The Crystals On The Probe?

During storage, salt crystals will often form on the electrode, around the soaker bottle. Sometimes the formation is so extensive there will be crystals under the soaker bottle and on the foam inside the box. This will not affect the performance, accuracy or life of the probe. Rinse off the crystals with water prior to use.

How Should FermProbes Be Stored?

Never store a pH electrode dry. The first choice for storing FermProbes is KCl solution. We recommend any concentration between 2.0 M and 3.8 M. Another good choice is buffer solution. A pH 4 buffer solution is best since it will keep longer, but pH 7 is also acceptable. If it is necessary to clean a FermProbe with acid, caustic, solvent or other cleaning solution, it is best to soak the electrode in KCl solution after cleaning and prior to use or calibration. This will re-condition the bulb and reference, extending the probe life and improving calibration accuracy.

How Should A pH Electrode Be Installed?

All pH electrodes (and D.O. sensors) can be mounted vertically, into a vessel headplate. Electrodes and sensors can also be installed on large vessels, through a side port. For side-entry installations, the probe must be at least 15° above horizontal to insure proper operation. Remember, there is liquid inside all pH electrodes and D.O. sensors. This slight 15° incline is enough to prevent a bubble from lodging itself at the tip of the sensor, preventing the sensor from operating properly.

What Are The Three Most Important Things To Remember During Calibration?

1) Always use fresh buffer. The pH of buffers will change quickly due to air, dilution and carry-over.

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Frequently Asked Questions About pH Probes (Continued)

2) After rinsing a pH electrode between buffers, blot the electrode dry, do not wipe it. Rubbing the electrode can build up a static charge, just like rubbing your feet on the carpet. This charge can prevent proper calibration. (If this happens, wait and let the electrode stand in solution so the charge can dissipate.)

3) Always consider the effects of temperature on the measurements. Many pH measurements are temperature dependent. Please call us for a copy of our newsletter on temperature compensation and pH measurements.

How do I achieve more accurate pH measurement?

To yield the most accurate pH measurement, it is important to compensate for temperature. Temperature has two significant effects on pH readings. The solution pH and the electrode output will both change at different temperatures. These two effects, either together or separately, can lead to errors in calibration, measurement and control.

How should I install a pH Sensor?

A pH sensor must be at least 15" above horizontal to consistently function properly. DO NOT install sensors in a port perpendicular to the vessel wall. The liquid in the sensor contains small air bubbles. If not inclined slightly above horizontal, a bubble can adhere to the pH bulb where it will affect the sensor's performance.

How is the housing length determined?

The typical insertion length is calculated from the top of the threads to the furthest point, either the guard or the sensor tip.