FAQs Regarding Electrode Life Expectancy

How long should an electrode last in storage?

Fermprobes can be stored for up to one year from date of shipment with no appreciable change in their performance or expected service life. After a year, the electrodes are still good but their potential for optimum performance slowly erodes until they finally become totally non-functional. This would usually take many years of storage. Most customers try to rotate stock so electrodes are put into service prior to one year from shipment, and this would be our strong recommendation for most customers.

How long should an electrode last in actual service?

Fermprobe pH electrodes exhibit a fairly predictable "lifetime vs. temperature" performance ratio. The higher the temperature, the shorter the life; and, the longer the duration of exposure to elevated temperature, the shorter the life. Maximum temperature advisable is 135°C.

For example:

A Fermprobe may last 40 sterilization cycles at 121°C for 30minutes. (20 hours at 121°C)
A Fermprobe may last 20 sterilization cycles at 121°C for 60minutes. (20 hours at 121°C)

A Fermprobe may last 20 sterilization cycles at 135°C for 30minutes. (10 hours at 135°C)
A Fermprobe may last 10 sterilization cycles at 135°C for 60minutes. (10 hours at 135°C)

The actual service life attained will depend upon all other considerations, such as whether or not there is a CIP cycle (strong, hot caustics can dissolve the glass and the ceramic), whether or not the sensor is exposed to high pressure or fast flow rates, whether or not there are abrasives in the sample, etc.. Since there are so many variables and factors involved in determining electrode life, an operator can best determine the life for his particular vessel and set of conditions experimentally. By careful recording of when the electrodes are installed and a statistical analysis of typical life, one can determine the optimum number of cycles.

There is a normal variance in electrode life and most operators of production vessels will search out a number, perhaps 10 cycles, that gives them a maximum confidence in the ability to run a cycle without failure. It is a helpful exercise to take the cost of the electrode and divide by the number of cycles, then look at this "cost per cycle" to see if it is justifiable for a particular product.

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