

## **Care and Maintenance of pH Electrodes.**

The Right Beginning to Fast and Accurate Measurements:

General electrode care and handling procedures are very important, because pH measurements will only be as good as the condition of the electrodes. For greater measurement accuracy and longer electrode life, there are areas of electrode care you should be familiar with.

A combination pH electrode is actually 2 electrodes in one probe body. The 2 electrodes require different maintenance procedures.

### **General Maintenance**

After measurements, remove the electrode from the sample, rinse, and blot dry. Store the pH electrode by screwing up the side cap fully, place a few drops of "pH Probe Storage Solution" in the wetting cap, and push the wetting cap into place over the bulb of the electrode.

Alternatively, for short-term storage, stand the electrode upright in distilled water, with the side cap unscrewed.

Always check that the side cap is unscrewed before measurements.

With reference electrodes, keeping the junction wet is primary to keeping it unclogged. The reference electrode filling solution should be maintained at a level that is significantly above storage or sample level. This will provide a positive head pressure, which forces the filling solution out through the junction rather than the storage solution into the probe.

### **Cleaning**

Both the glass bulb AND the porous ceramic reference junction must be clean at all times. DO NOT ALLOW fats, oils, proteins etc to dry on the membrane or reference junction.

Clean off sample material with a suitable solvent. This can be alcohol, detergents or acids, depending on the material being measured.

### **Rejuvenation of Glass pH Electrode:**

If allowed to dry out completely, the electrode response-time will be extended, or the change in response from the electrode to different pH solutions will be reduced.

This latter effect is called "loss of Slope", or "loss of Span".

If your glass electrode exhibits a slow response or poor span between two buffer values, rejuvenation may be necessary to improve its performance.

Slope (or Span) can be measured with a non-microprocessor pH meter as follows...

1. temperature.)
3. Rinse the electrodes and place them in fresh pH 4 Buffer.

If the reading is higher than pH 4.3, carry out the following rejuvenation procedure...

rinse well under running tap water.

3. In addition to providing a better response, this procedure reduces residual sodium-

### **Rejuvenation of Reference Electrode**

due to its high resistance and high junction potential.

drift.

NOTE: Continue on to each next step only if the previous step has failed.

refill with reference filling solution.

hole, or vacuum to the junction tip.

water, then slowly heat the water to boiling. Allow the water to boil for a few

4. Immerse electrode in 3 to 4 molar  $\text{NH}_4\text{OH}$  for 10 minutes.

*pH Electrode Care Kit, Part Number 121307*

**Contents**

	Part No
pH6.88 Buffer, 200mL .....	121306
pH4.00 Buffer, 200mL .....	121381
pH Electrode Storage Solution, 200mL .....	121308
pH Reference Filling Solution, 100mL .....	121326
250mL Wash Bottle.....	121304
Rejuvenation Solution.....	121314
Spare Wetting Cap .....	KPHWET
Spare Probe protector caps.....	KPHCAP
#1000 Wet & Dry Emery Paper .....	NE1000
Instructions .....	130050