

FermProbe® Cleaning Procedures

1. Remove Bulb Coating

A. Protein Deposition

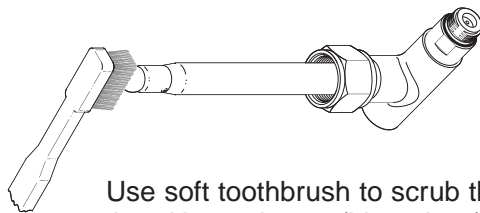
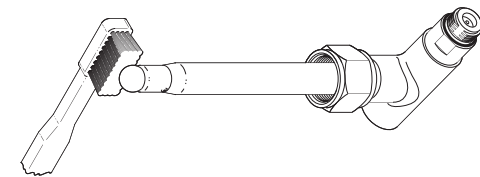
- Warm water bath with dish detergent
- Warm water bath with enzyme detergent (i.e. Terg-A-Zyme®)
- Scrub bulb and rinse

B. Inorganic Scale Deposits

- Dip only the bulb of the electrode into 0.1N hydrochloric acid
- Rinse

C. Organic Oil or Films

- Clean with acetone and rinse
- Rehydrate in KCl solution for 4 hours

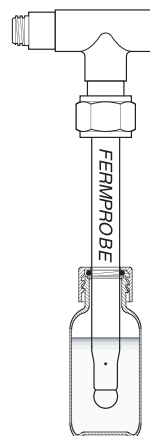


Use soft toothbrush to scrub the entire pH membrane (blue glass) and ceramic liquid junction surface areas

2. Remove Junction Coating

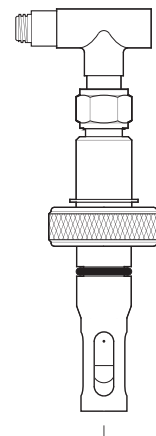
A. Plugged or Dry Junction

- Remove observed contaminant
- Place in KCl solution, 2M or stronger
- Heat slowly to 50°C
- Let cool to room temperature
- Repeat 2 or 3 times if necessary



Model F-615
pH FermProbe
shown with
soaker bottle

OR



Model 301-P109 freestanding
storage container shown
with Model F-615 pH
FermProbe and Model 330
FermProbe housing

3. Proper Storage When Not In Service

A. Keep Bulb Hydrated

- Store in 2M KCl or stronger
- Use soaker bottles or storage containers
- Do NOT use D.I. water for storage

Cleaning

FermProbes which are physically intact can often be restored to an improved level of performance by one of the following cleaning procedures:

- 1. General:** It is good practice to wash the tip of the electrode with a solution made from dish soap and/or enzyme detergent and warm clean water. An alternative is to use a caustic, such as Sodium Hydroxide, or CIP 100, typically a diluted solution and a pH of around 12 to 13 pH. Use a soft toothbrush or a clean soft cloth wetted in the solution to carefully scrub the tip of the electrode. Thoroughly rinse the electrode tip with distilled or D.I. water and soak in KCl solution, 2M or stronger, for a minimum of 30 minutes before recalibration or returning electrode to service. Do not store in distilled or D.I. water.
- 2. Inorganic Deposits:** Try to dissolve deposit by immersing the electrode bulb in 0.1N Hydrochloric acid for a few minutes followed by a thorough rinse with D.I. or clean tap water. Then proceed with the general cleaning in Step 1 of this section.
- 3. Organic Oil, Grease Films or Fingerprints:** Wash electrode bulb with the solution in Step 1 of this section. Wash the tip with acetone. Follow with the general cleaning procedure in Step 1 of this section. Note: Depending on the extent of the oil and/or grease contamination, the electrode may be damaged beyond recovery.
- 4. Plugged or Dry Ceramic Liquid Junction:** Try at least one of the previous 3 steps in this section. Place the electrode in KCl solution, 2M or stronger. Heat slowly to 50°C then let cool to room temperature. Repeat as necessary.

General Practice Information

1. Try to always store the electrode in KCl solution, 2M or stronger. Buffer solution of pH 4 is also acceptable. Do NOT store an electrode in distilled or D.I. Water.
2. Cracked or broken electrodes are not repairable.
3. Inspect cable for cuts or other holes. Torn cable insulation or kinked and knotted cables can be the cause of poor performance. Inspect the connector for signs of corrosion.

Storage

- 1. Short-Term (hours/days):** Immerse the electrode tip in KCl solution, 2M or stronger (Broadley-James Part No.AS-3120-C20-0500). Buffer solution of pH 4 is also acceptable. Do not store in distilled or D.I. water.
- 2. Long-Term (weeks or months):** Fill storage container (BJC P/N:301-P109-H070) or "soaker bottle" (BJC P/N:AM-1000) with KCl solution, 2M or stronger, and insert electrode. Wipe off any excess storage solution. Do not store in distilled or D.I. water.