

# MI-401, MI-401F, MI-402, MI-409 & MI-409F DIP-TYPE REFERENCE MICROELECTRODES OPERATING INSTRUCTIONS

The Reference Electrode Kit contains the following:

- Electrode (assembled)
- 1 Bottle of electrolyte
- 1 Replaceable barrel
- 1 Filling tube
- 1 Set of Instructions

These Dip-type Reference microelectrodes can be used with any pH, ion-selective or redox electrode. The electrode is composed of an internal silver-silver chloride electrode with an internal filling solution of 3 M KCl saturated with AgCl. The junction is either a silicate or ceramic frit sealed in glass. Before the electrode can be placed into operation, the reference barrel must be filled with the internal reference solution.

## Filling the Reference Barrel

1. The barrel is removed from the electrode cap by unscrewing it.
2. The 3M KCl solution is added to the barrel with the filling tube attached to the nipple of the bottle. Fill the barrel within one inch from the top.
3. The Ag-AgCl wire, which is attached to the electrode cap, is then inserted into the barrel and locked in place.

## Cleaning

When using the electrode in solutions containing protein, the electrode should be soaked in an enzyme cleaning solution such as Terg-a-zyme (Alconox, Inc.) for 10 -15 seconds to remove protein from the reference junction. This will prolong the useful life of the electrode.

## Storage

**Long-term** (over 4 weeks): Remove the barrel containing the electrolyte and store the entire barrel in a stoppered test tube filled with reference electrolyte. Rinse the silver wire and electrode cap to remove the salt solution and dry using an absorbent towel. Store the electrode in its original box or any closed container to keep the dust off of the electrode.

**Short-term:** Place the tip of the electrode into a test tube or beaker containing reference electrolyte.

## MICROELECTRODES, INC

40 Harvey Road  
Bedford, New Hampshire 03110  
United States of America  
Tel. 603.668.0692 Fax 603.668.7926