

MI-403 DOUBLE JUNCTION REFERENCE MICROELECTRODES OPERATING INSTRUCTIONS

The Reference Electrode Kit contains the following:

- MI-403 Electrode (assembled)
- 1 Bottle of electrolyte
- 1 Replaceable barrel
- 1 Filling tube
- 1 Set of Instructions

The MI-403 Double Junction Reference microelectrode can be used with any pH, ion-selective or redox electrode. The electrode is composed of an internal filling solution of silver-silver chloride electrode with an internal filling solution of 3 M KCl saturated with AgCl. The inner junction is silicate fiber sealed in glass. The outer junction is a ceramic frit.

Before the electrode can be placed into operation, the internal glass reference barrel must be filled with the reference solution supplied. The outer reference chamber must be filled with a suitable electrolyte.

Filling the Reference Barrel

1. The glass tube is removed from the electrode cap by grasping each end of the cap and pulling them apart. Remove the inner glass reference barrel from the outer chamber for easier filling.
2. The internal reference solution is added to the inner glass tube using the polyethylene tubing (filling fiber) provided.
3. After filling the inner glass reference barrel with the reference electrolyte, the inner reference barrel is re-inserted into the outer chamber, the silver wire is inserted into the glass tube and the electrode cap is re-assembled.
4. Slide fill hole cover from filling hole of outer chamber. Fill the outer chamber with an appropriate electrolyte solution to just below the fill hole.
5. After initial filling, allow the tip of the reference electrode to soak in the outer filling solution for 1 hour prior to use.

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 inner glass barrel containing the internal electrolyte and store the entire glass barrel in a stoppered test tube filled with the inner reference electrolyte. Store the outer reference barrel in an appropriate sized test tube filled with the electrolyte used inside the outer chamber. 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 dust off of the electrode.

Short-term: Place the tip of the electrode into a test tube or beaker containing the reference electrolyte used in the outer chamber. Our TC-10 Tissue Culture Bottles with a B-10 Stopper with hole is ideal for this purpose.

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