

# **Instructions of Using Electrode Polishing Kit**

(Read it carefully and completely before you use the polishing kit)

The electrode polishing kit contains 1 bottle (20 mL) of 1.0 micron Alpha alumina powder, 1 bottle (20 mL) of 0.3 micron Alpha alumina powder, 1 big bottle (120 mL) of 0.05 micron Gamma alumina powder, 2 glass plates for polishing pads, 5 pieces of 73 mm diameter 1200 grit Carbimet disks (grey in color), 5 pieces of 73 mm diameter Nylon polishing pads (white in color), and 10 pieces of 73 mm diameter Microcloth polishing pads (brown in color).

Though the electrodes you received from us are already polished and ready to use, you need to renew the electrode surface often before running experiments. Normally, 0.05 micron alumina works very well for this purpose. However, if you see scratches on the electrode surface, you may need to go through 1.0, 0.3 and 0.05 micron alumina in a sequence. In each step, examine the electrode surface. It should be uniform. Otherwise, keep polishing with the same size of alumina. If 1.0 micron alumina can not remove the scratches, you should use the 1200 grit Carbimet disk (grey in color) first, then followed by 1.0, 0.3 and 0.05 micron alumina. After polish with 0.05 micron alumina, the surface of the electrode should be mirror shiny.

The Nylon polishing pad is for 1.0 and 0.3 micron alumina powder, and the Microcloth polishing pad (brown in color) is for 0.05 micron alumina powder. Both types of pads have adhesive on the back. Tear the paper covering the adhesive, and firmly press the polishing pad to the dry and clean glass plate. Make sure no air bubble is trapped between the pad and glass plate.

To polish, put small amount of alumina powder to the polishing pad and wet with distilled water. Hold your electrode vertically and firmly (but do not apply too much force) while polishing. If the polishing pad gets dry, add distilled water and polish again.

**Before you go to next smaller size of alumina powder, thoroughly rinse the electrode and your hands with large quantity of water. If you are not careful and bring the larger powder to the smaller powder polishing pad, you will never get the effect you expected as of using smaller powder.**

**While you handle the dry powder, you should also be very careful. Never introduce large powder into the smaller powder bottle. Do not exchange the bottle caps. To take out the alumina powder from the bottle, use different spoons for different bottles.**

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