



# Using Parylene and Glass Coated Microelectrodes

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These electrodes have been uniformly coated with the specified thickness of Parylene C and the tips exposed for the specified length in microns ( $\pm 20\%$ ). Each electrode was microscopically inspected, surface oxide removed electrolytically, and the impedance at 1 kHz tested. Microelectrodes (except LF series) are marked on the box in the corresponding position.

## Unpacking

The electrodes are wedged in foam slits for safe shipment. To remove one, grasp near the connector end and avoid touching the tip against any surface. If damage is suspected, inspect visually under the microscope. The insulation is tough enough that the tip can be bent without change in electrical characteristics.

## Connecting

The miniature plug connector at the end is provided for your convenience and a mating female (WPI #13308) is included with your electrodes. If the connector must be removed for mounting, the insulation along the shank may be removed near the cut end by briefly passing it through a flame from a lighter or match. One method for rigidly mounting such electrodes is to put a sharp obtuse bend in the exposed shank and slide the butt end into a 23 gauge hypodermic needle so that the bend is wedged against the side walls. If an all-metal (non-disposable type) needle is used, both electrical and mechanical connection can be made by mounting the needle on the end of a banana plug. To clip directly to the shank with a flexible clip lead, use non-serrated microgator clips or use the enclosed female pin sideways as a clip by forcing the exposed shank into the split sidewalls of the connector.

## Cleaning \ Re-Use

If you intend to reuse these electrodes or if you have trouble reproducing the measured impedance values (such as after sterilization or prolonged storage), electrolytic cleaning of the surface is recommended. Apply 2 to 3 VDC between the electrode and a saline bath, with the Electrode Negative. When the electrode is lowered into the bath, a stream of electrolytic gas bubbles can be seen coming from the tip. If damage to the insulation along the shank is suspected, careful inspection for more than one stream of bubbles will reveal this. This process will not damage your Parylene insulated electrodes, which are electrostatically exposed at the factory using over 2,000 VDC. Similarly, electrodes used for lesion marking of recording tracks can continue to be used for single unit recording. The above procedures will work fine for glass electrodes as well.

## Sterilizing

If you need to sterilize your microelectrodes for chronic recording, several methods are available. In many cases, simple rinsing in 70% alcohol will be sufficient, since the tips have not been touched and are too small to cause serious contamination. If the whole electrode must be sterilized, the insulation will withstand most surgical sterilizing solutions, ethylene oxide gassing (allow adequate degassing time) and autoclaving with the electrode submerged in distilled water (use the wet cycle cool-down setting on your autoclave). Avoid Autoclaving in air and vapor sterilizing using formaldehyde, and UV light.



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### Warranty

WPI (World Precision Instruments, Inc.) warrants to the original purchaser that this equipment, including its components and parts, shall be free from defects in material and workmanship for a period of one year\* from the date of shipment. WPI's obligation under this warranty shall be limited to repair or replacement, at WPI's option, of the equipment or defective components or parts upon receipt thereof f.o.b. WPI, Sarasota, Florida U.S.A. Return of a repaired instrument shall be f.o.b. Sarasota.

The above warranty is contingent upon normal usage and does not cover products which have been modified without WPI's approval or which have been subjected to unusual physical or electrical stress or on which the original identification marks have been removed or altered. The above warranty will not apply if adjustment, repair or parts replacement is required because of accident, neglect, misuse, failure of electric power, air conditioning, humidity control, or causes other than normal and ordinary usage.

To the extent that any of its equipment is furnished by a manufacturer other than WPI, the foregoing warranty shall be applicable only to the extent of the warranty furnished by such other manufacturer. This warranty will not apply to appearance terms, such as knobs, handles, dials or the like.

The foregoing obligations set forth in this paragraph are in lieu of all obligations and liabilities, including all warranties of merchantability or otherwise, expressed or implied or statutory, and state WPI's entire and exclusive liability and purchaser's exclusive remedy for any claim of damages in connection with the sale or furnishing of all equipment, including design, suitability for use, operation, or installation. There are no warranties which extend beyond the description of the face hereof. In no event shall WPI be liable for any special or consequential damages.

**Warning: This equipment is not designed or intended for use on humans.**

*\* Electrodes, batteries and other consumable parts are warranted for 30 days only from the date on which the customer receives these items.*

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