Polyimide Removal from Capillaries with the MICROSOLV Window Maker - Tech Information

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What Is the Principle Behind Polyimide Removal Using the MICROSOLV Window Maker CE?

Polyimide layers are widely used in capillary electrophoresis (CE) for their mechanical strength and durability. However, certain applications—such as optical detection, specialized coatings, or precision alignment—require a clean, exposed quartz “window.” Creating this window requires safe, controlled removal of the polyimide layer without damaging the underlying fused silica.

The MICROSOLV Window Maker CE is designed specifically for this task. It provides a reliable, reproducible, and user-friendly method for removing polyimide coatings from CE capillaries and forming high-quality detection windows.

How the Removal Principle Works

The Window Maker CE uses a **chemical–thermal stripping mechanism** optimized to break down the polyimide layer while maintaining the integrity of the fused silica beneath it.

1. Controlled Chemical Softening

   The system applies a proprietary reagent that softens and loosens the polyimide coating. This step ensures that only the external polymer layer is affected, not the silica core.

2. Precision Heat Application

   Localized heating is then applied to accelerate the breakdown of the softened polyimide. Unlike manual flame-based techniques, the Window Maker uses temperature-regulated, non-destructive heating, preventing uneven etching or weakening of the capillary.

3. Mechanical Release & Clean Exposure

   As the softened coating loses adhesion, it is gently lifted away, leaving a clean, optically transparent detection window.
   The underlying fused silica remains smooth and undamaged, enabling consistent light transmission for detectors.

4. Repeatable & Uniform Results

   Because the device controls the chemical exposure, temperature, and stripping cycle, it produces uniform window lengths, essential for consistent CE performance and accurate detection alignment.

Why This Matters

A properly produced detection window plays a major role in:

- Signal stability
- Reproducible optical alignment
- Improved sensitivity in UV/Vis or fluorescence detection
- Reduced capillary failure from uneven manual stripping

The MICROSOLV Window Maker for CZE helps labs eliminate technique variability and create professional-grade windows with minimal operator training.

Click *HERE* for MICROSOLV Window Maker Ordering Information

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