

## Proper Method for Creating Detection Windows on Controlled Flow and Zero Flow Capillaries - Tech Information

*Date: 22-NOVEMBER-2013 Last Updated: 27-FEBRUARY-2026*

### Overview

This article explains why Controlled Flow and Zero Flow capillaries cannot be laser-ablated to create a detection window. These capillaries contain a delicate, covalently bonded linear polyacrylamide (LPA) coating on the inner wall that is essential for performance and easily damaged by heat or laser energy.

Instead, the correct procedure is to chemically remove the outer polyimide layer using fuming sulfuric acid, which exposes the glass for optical detection without harming the internal coating. Ordering information is provided for users needing additional support or supplies.

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### Creating Detection Windows on Controlled Flow and Zero Flow Capillaries

Controlled Flow and Zero Flow capillaries include a highly specialized covalently bonded linear polyacrylamide (LPA) coating on the inner surface. This coating is critical to their analytical function because it suppresses electroosmotic flow, stabilizes migration times, and ensures reproducible separation profiles in capillary electrophoresis.

Due to the sensitive chemistry of this bonded layer, lasers or heat-based methods cannot be used to remove the detection window area. Laser ablation generates localized thermal stress that can break the polymer coating or chemically degrade the bonded layer. Any such damage compromises performance, leading to inconsistent results or complete capillary failure.

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### Approved Method: Chemical Removal of the Outer Polyimide Coating

While the inner coating must remain untouched, the outer polyimide coating can be selectively removed using a validated chemical procedure.

The correct window-making protocol involves:

- Applying fuming sulfuric acid directly to the designated detection-window zone.
- Allowing the acid to dissolve the polyimide coating cleanly and uniformly.
- Thoroughly rinsing and neutralizing the area per the documented procedure.
- Leaving behind a clear, exposed glass section suitable for optical detection systems.

This method protects the internal LPA layer and maintains capillary integrity while providing a precise, reliable detection window.

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### Ordering Information

For product images, specifications, and ordering details: **Click [HERE](#)**



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