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ProPell™ Ultra

Next-generation Low-friction Compounds for Advanced Catheter Performance

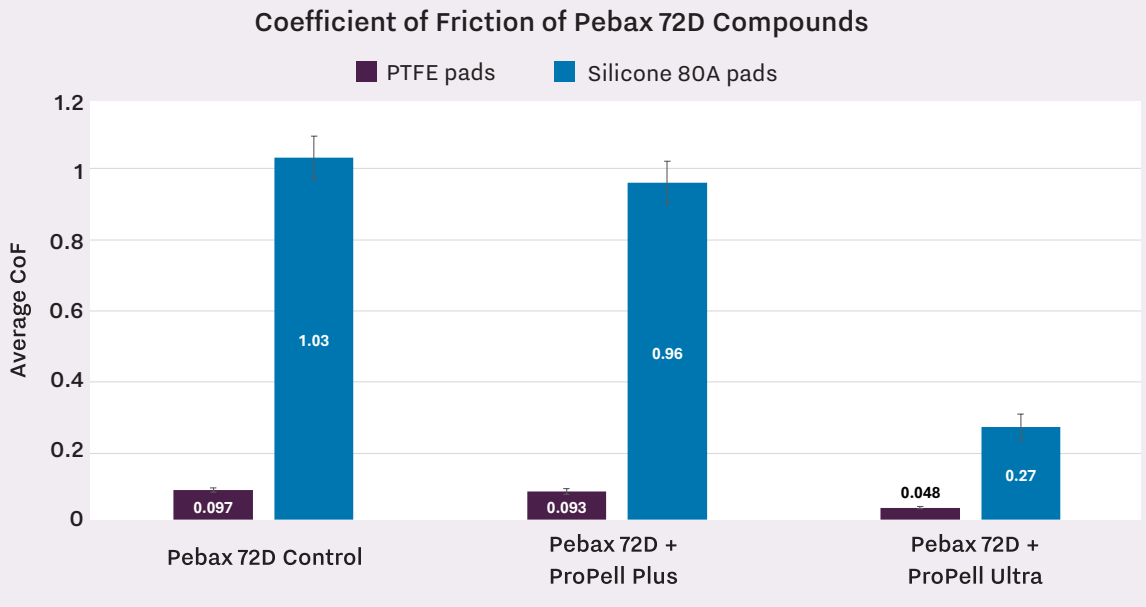


As catheter designs continue to advance, engineers need materials that balance low friction, mechanical integrity, and manufacturability. ProPell Ultra is Foster's next-generation low-friction compound, engineered to elevate catheter performance while integrating seamlessly into existing manufacturing processes.

ProPell Ultra significantly reduces the coefficient of friction while preserving the mechanical properties of medical-grade polymers. This combination supports smoother navigation, enhanced trackability, and improved device control in catheter-based procedures. By incorporating proprietary surface-enhancing additives directly into the polymer matrix, ProPell Ultra delivers meaningful friction reduction without PFAS-based chemistries or secondary liner constructions. This approach aligns with modern material expectations and expands design flexibility, particularly for applications seeking to simplify construction or move away from liner-based designs.

Whether improving device-within-device movement, reducing drag along guidewires, or enabling smoother advancement through tortuous anatomy, ProPell Ultra provides built-in low-friction performance. For softer durometer designs that require lower friction than existing materials can provide, ProPell Ultra offers a compelling next-generation alternative.

Testing conducted by Foster LLC confirms that ProPell Ultra delivers a clear low-friction performance advantage. Evaluations were performed on extruded catheter-style tubing (0.084" ID / 0.108" OD) against multiple contact surfaces, including PTFE and Silicone 80A pads. The graph below highlights average coefficient of friction results comparing neat Pebax® 72D resin, ProPell Plus, and ProPell Ultra low friction compounds, demonstrating the next-generation performance of ProPell Ultra.



The table illustrates the reduction in coefficient of friction achieved with ProPell™ Ultra and ProPell™ Plus compared to neat resin.

Average CoF Reduction Relative to Neat Pebax® 72D Resin		
TEST SURFACE	PROPELL PLUS + PEBAX 72D	PROPELL ULTRA + PEBAX 72D
PTFE pads	4%	50%
Silicone 90A pads	7%	73%

Manufacturing & Processing Performance

ProPell Ultra extrudes cleanly and consistently using standard extrusion equipment. Development trials successfully produced tubing with wall thicknesses up to 0.020" (2 thou), demonstrating suitability for both thin wall and thicker wall constructions and supporting predictable performance during scale up.

Key Benefits

- PFAS-free low-friction formulation
- Enables smoother catheter movement and improved handling
- Expands design flexibility for next-generation catheter systems
- Potential replacement for liner constructions
- Suitable for extrusion and injection molding
- Supports thin-wall catheter extrusion

Biocompatibility Status

Biocompatibility testing is currently in progress. ProPell Ultra is formulated with medical device requirements in mind and is being evaluated to support a broad range of catheter applications.

Partner with Foster

For application-specific guidance or material selection support, contact Foster's Application Development Team or your local Sales Representative.

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