

PhotoLink™ coating technology

Surmodics' PhotoLink™ UV curing process initiates a covalent bond that ensures superior coating integrity and precise customized thickness from nanometers to microns. PhotoLink allows lubricious, hemocompatible and drug-delivery formulations to be combined on a single device.

PhotoLink advantages include:

- UV-based chemistry
- Covalent bonding at ambient temperature for rapid processing
- Biocompatible reagents
- Water or water/IPA
- Flexible application methods: dip, spray or in-solution

PhotoLink supports a broad range of substrates and treatments:

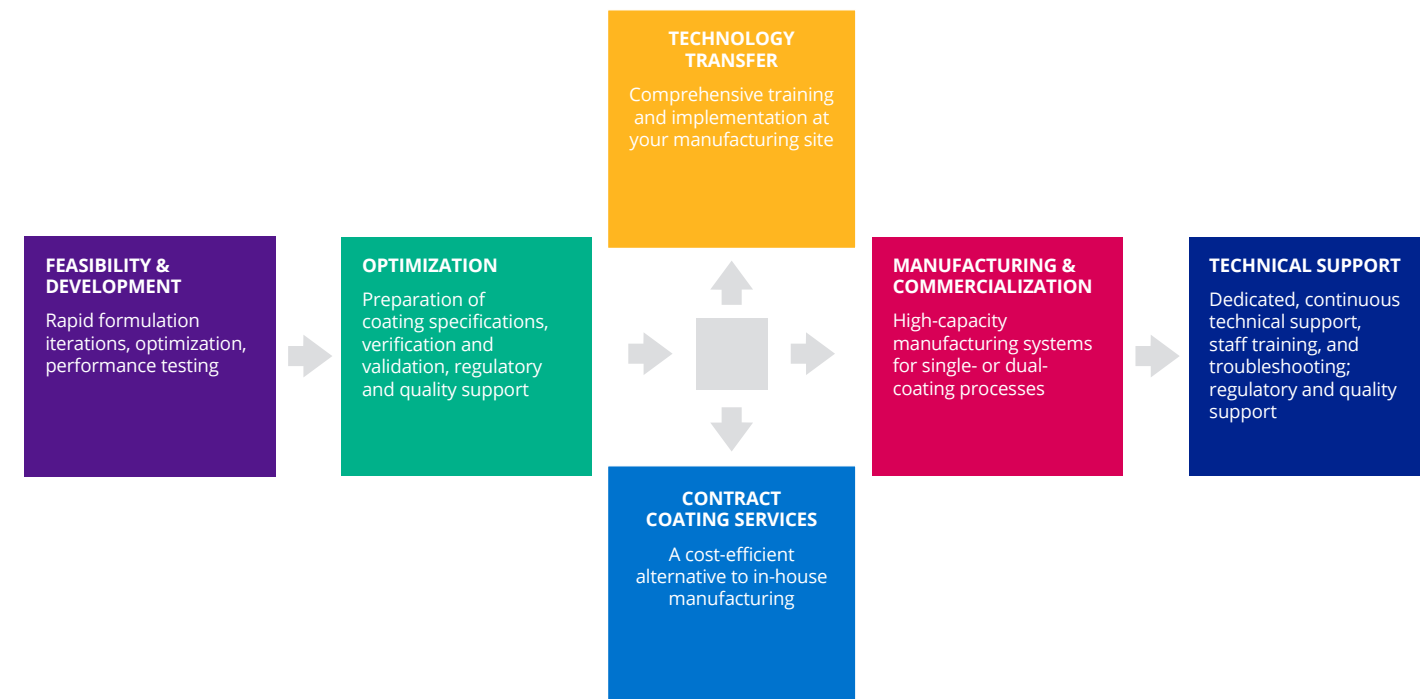
- Pebax® (multi durometer)
- Nylon
- Polyethylene
- Polyimide
- Polyurethane
- Polystyrene
- Polyvinylchloride
- Polycarbonate
- Polyester
- PMMA
- Polysulfone
- Polyvinyl alcohol
- Polypropylene
- Polyisoprene
- Parylene
- Polyamide
- PEEK
- Silicone elastomer
- Stainless steel
- Aluminum
- Titanium
- Platinum
- Nitinol
- Gold
- Glass
- Other ceramics



Comprehensive customer support

Surmodics™ partners with clients at every phase of product design, development and commercialization, from feasibility to ongoing post-launch support. We offer turnkey manufacturing solutions with in-depth training and engineering support or contract manufacturing services. Because surface technology is critical to device performance, we engage clients at the earliest possible stage to identify and optimize the ideal technology for their products while minimizing time to market.

The Surmodics™ collaborative partnership model



FOR MORE INFORMATION ON SURMODICS SOLUTIONS, OR TO INITIATE AN EVALUATION, PLEASE CALL **952-500-7000** OR VISIT **WWW.SURMODICS.COM**.

PHOTOLINK, SERENE, SURMODICS and the SURMODICS logo are trademarks of Surmodics, Inc. and/or its affiliates. PEBAX is a registered trademark of Arkema France.

SURMODICS™ SURFACE TECHNOLOGY

BREAKING THE LIMITS OF VASCULAR DEVICE INNOVATION



A partnership with Surmodics™ is about more than our advanced surface technologies. Our proven track record allows companies both large and small to rely on us for comprehensive and scalable solutions leveraging our polymer expertise, analytical and characterization tools, and experience with a wide variety of medical products and applications.



Surmodics, Inc.
9924 West 74th Street
Eden Prairie, MN 55344 USA
Toll Free 1-866-787-6639
Phone 952-500-7000
Fax 952-500-7001
www.surmodics.com

© 2019 Surmodics, Inc. All rights reserved. SRDX-MD-227 A

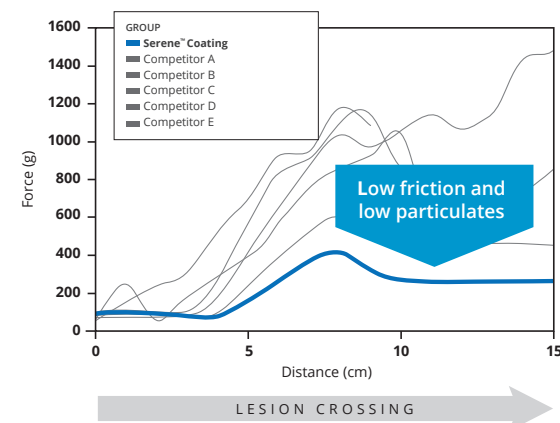
Leading the industry in key performance requirements.

Intravascular medical devices have revolutionized minimally invasive treatment of disease. To advance patient care, new devices must continue to improve vascular access and therapeutic effect while improving patient safety. Coating technology makes this possible.

Surmodics™ solutions are unmatched in every major category of coating performance:

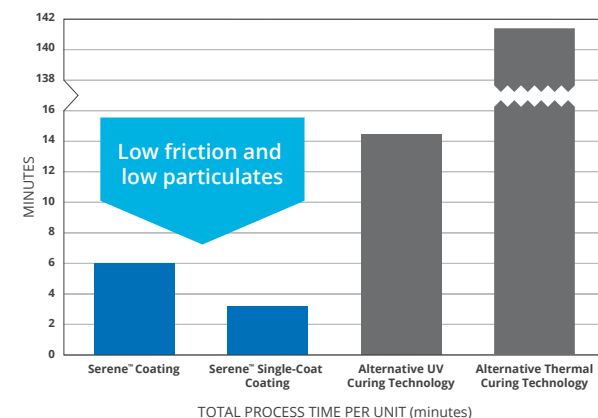
Lubricity

Hydrophilic coatings provide the lubricity needed to optimize vascular access. Surmodics coatings set the standard.



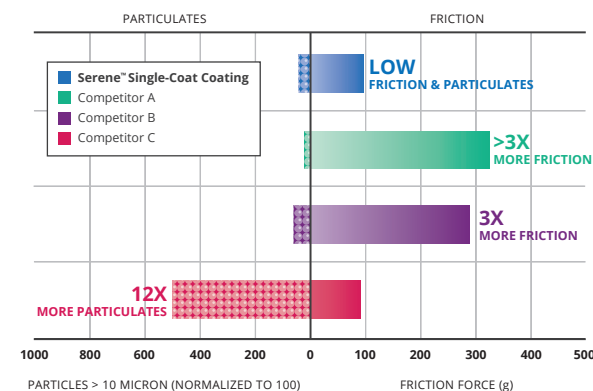
Cycle-process time

Surmodics' proprietary PhotoLink™ UV coating technology covalently bonds surface treatments to substrates at ambient temperature, markedly reducing process time.



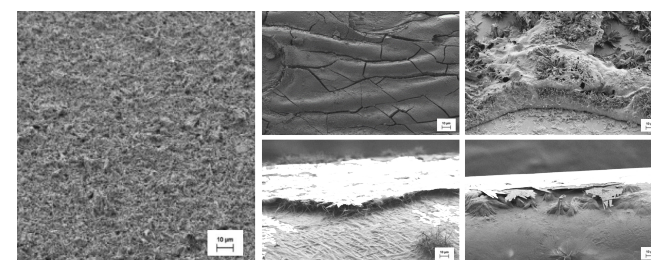
Durability and low particulates

In the past, increasing the lubricity of hydrophilic coatings meant accepting higher generation of particulates. Surmodics latest generation of hydrophilic coatings have broken this barrier.



Coating uniformity

Proprietary Surmodics processes enable more uniform application of drug coatings, enabling efficient drug transfer at low doses and low incidence of distal emboli.

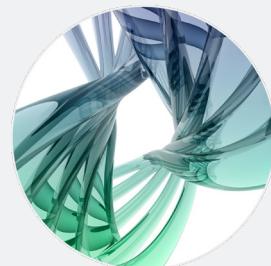


Global leadership in all major vascular categories

Surface technology is the key to advancing vascular device performance. Surmodics coatings deliver industry-best lubricity, durability and drug delivery. From access to therapy, Surmodics surface technology adds differentiated value to more than 150 medical, biotechnology and pharmaceutical product families worldwide.

Surmodics solutions are unmatched in every major category of coating performance:

The Food and Drug Administration's heightened oversight of medical device quality and safety includes Critical-to-Quality indicators for coatings that must be addressed in the regulatory approval process. Surmodics partners with clients to satisfy these requirements through robust surface characterization and analysis, including advanced simulated use, particulate and coating-integrity testing.



Hydrophilic coatings

Critical to quality: demonstrating lubricity and durability, specifically low particulates

Surmodics expertise:

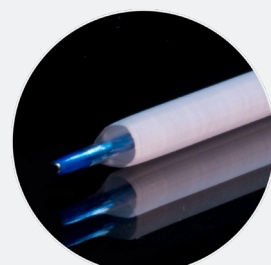
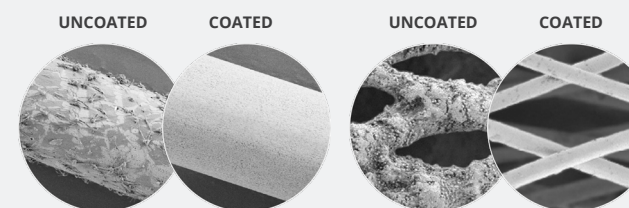
- Friction testing: basic lubricity and durability pinch force
- Catheter tracking and other simulated-use testing
- Sterilization and accelerated-aging studies

Hemocompatible coatings

Critical to quality: animal-derived material requires careful sourcing and additional testing (e.g., porcine heparin)

Surmodics expertise:

- Streamlining the regulatory pathway
- Biocompatibility studies for all commercial reagents
- Meeting compatibility and durability requirements



Drug-delivery coatings

Critical to quality: significant testing to demonstrate drug duration, benefit and safety

Surmodics expertise:

- Achieving desired biological effect
- Efficiency of drug transfer to targeted tissues
- Local and systemic safety and pharmacokinetics
- Coating integrity/particulate release; downstream tissue concentration
- Distribution of drug and drug-load testing
- Advanced process and uniformity control

