



Manufacturing Modern Medical Devices

How Science is Closing the Materials Gap

Today, medical device engineers and manufacturers are utilizing advanced performance materials to effectively address some of their design challenges. By working with a proven expert in fundamental chemistry like Chemours, leading companies in medical applications are discovering new solutions to close performance gaps in device materials. This discovery starts by taking a technical, science-based approach to solving problems.

Optimizing Performance and Application Properties

Chemistry is driving new formulas for success. For example, fluoropolymer coating systems have emerged as the preferred solution across several medical device applications because of their inert chemistry, extremely low coefficient of friction, excellent chemical resistance, and outstanding thermal and cryogenic stability.



Key characteristics of fluoropolymer coatings:

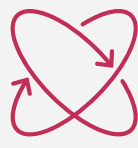
- Nonstick
- High lubricity
- Non-wetting
- Thermal stability
- Cryogenic stability
- Chemical resistance

Putting Medical Devices to the Test

Advanced performance materials are taking major strides forward as new coating formulations deliver improved outcomes. Here we look at catheters and metered dose inhalers.

Spotlight Solution #1: Catheter Guidewires

KEY CHALLENGE — IMPROVING LUBRICITY



Enable ease of movement

High lubricity reduces difficulty navigating tight tolerances and transporting additional devices



Reduce patient risk

Inert chemistry minimizes interaction with body fluid and tissue



Minimize harm

Smooth surface reduces harm to the surrounding tissue

SOLUTION

Teflon™ coatings provide a smooth, low-friction coating

- Compatible with multiple metals and application processes
- Nonstick, highly lubricious formulas
- Maintains performance after sterilization
- Wide operating temperature range
- Custom formulations available to meet customer needs



Spotlight Solution #2: Metered Dose Inhalers (MDIs)

KEY CHALLENGE — PREVENTING DRUG INTERACTION & ADHESION TO ALUMINIUM CANISTER



Deliver consistent doses

Stop drug formulations from adhering to canister walls, maximizing the number of doses available



Improve product stability

Avoid chemical interactions between the drug and the canister, maintaining stability and enhancing shelf life



Ease compliance with emerging regulations

Drug product stability and dose consistency can be easily maintained by adding a coating when working with new propellants



SOLUTION

Teflon™ coatings inside the inhaler canister provide a barrier and enable accurate dosage of the drug

- Enhance stability by preventing the drug from corroding canister wall
- Ensure consistent, repeatable dosage quantities by inhibiting adhesion to canister wall
- Eliminate reactions with fluoropolymer chemistry, which is inert when in contact with most drugs, propellants, and components of MDIs

Let's Overcome Your Medical Design Challenges

Here's what you can expect when you partner with Chemours to address your specific challenges — and help solve the seemingly unsolvable.



Chemours scientists use their deep understanding of chemistry to develop customized formulas and solutions.



The Chemours technology team works to understand customer's applications to identify the right processes and chemistries.



Formulations are tailored for specific customer needs through our knowledge of specialty polymers, binders, and pigments.



Our supply chain allows us to access source materials responsibly, with sustainable solutions always top of mind.

Partner with the experts in chemistry and do more than you thought possible

[Learn more](#)



Chemours™



Teflon™

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