

Get Performance You Can Rely On with DuPont™ Crastin® SC169 for Drug Delivery Devices, Biopharma Connectors & Surgical Equipment



As the healthcare industry advances with devices that make home-care and self-administration more convenient for patients, DuPont™ Crastin® SC169 opens up new design possibilities. This cost-effective PBT solution is ideal for medical applications that require the next level of flow and friction performance—without compromising mechanical properties.

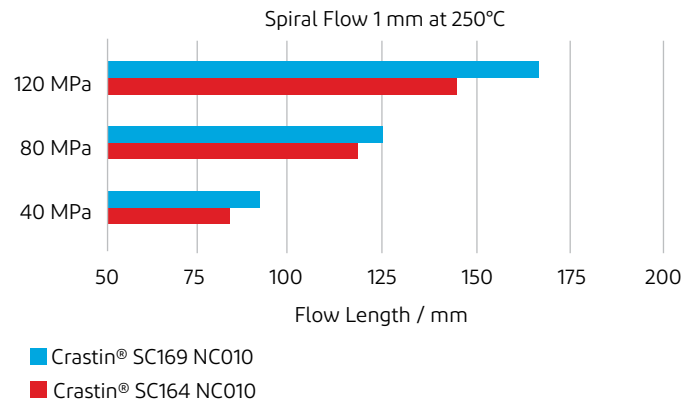
Performance You Can Rely On

Medical device OEMs are constantly working to improve patient convenience by reducing the actuation force of devices. At the same time, the environmental compatibility of raw materials is getting greater attention. Our Special Control Healthcare Grade Crastin® SC169 makes significant contributions in both areas.

Benefits of New Ultra-High-Flow Lubricated Crastin®

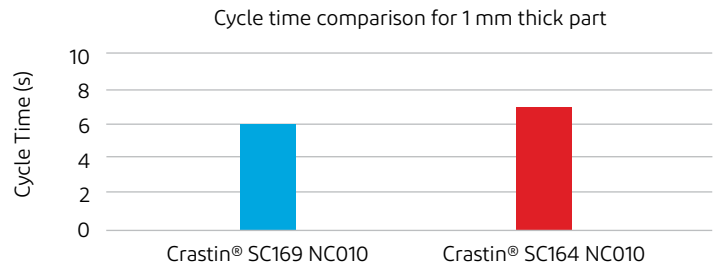
Crastin® SC169 is a new ultra-high-flow PBT resin that delivers key benefits for components that drive actuation in inhalers, auto-injectors, and prefilled insulin pens—applications where a superior balance of flow, friction, and mechanical performance are essential.

Superior Spiral Flow of Crastin® SC169



Source: DuPont

Shorter Cycle Time with Crastin® SC169



Source: DuPont

Minimum Cycle Time (Dali Tool)

What is SC?

The SC designation in Crastin® SC169 stands for special control. DuPont SC resin grades undergo extensive testing, and offer a great degree of manufacturing control and broad regulatory compliance.

- Manufactured according to Good Manufacturing Practice (GMP)
- Acquired food contact statements
- Testing against selected parts USP Class VI
- Testing against relevant parts ISO 10993
- Sterilization data
- Global availability
- Management of Change

This new material provides significant value by reducing costs in several ways:

- **Superior flow** can be translated into cycle-time reductions/ melt temperature adjustments. Crastin® SC169 also offers the potential of reduction in material consumption via thin-wall design.
- **Productivity improvements:** density advantages versus PTFE-containing resins, and typically lower burden to the environment due to lower carbon footprint (measured in GWP*). The employed lubrication technology makes Crastin® SC169 suitable for E-beam/gamma sterilization and printing.
- **Reduction of processing steps**—with Crastin® SC169, there's no need for the application of fluorosilicone fluid to reduce friction in connector assemblies.

*To be confirmed by a case-to-case comparison on three panel peer-reviewed LCA analyses.

How Crastin® Mitigates Risk

Crastin® SC169 provides pharma OEMs and medical device tier suppliers a tool to mitigate regulatory risks because PTFE is not intentionally added in the formulation.

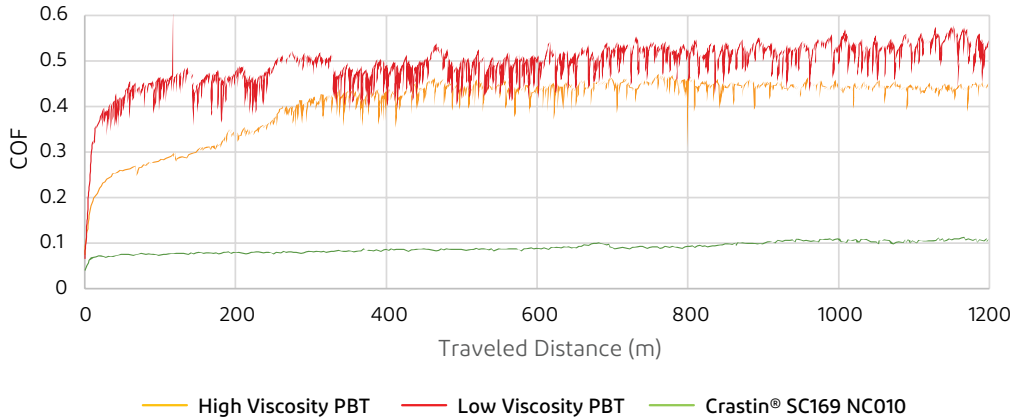
Plus, Crastin® SC169 is an effective means to minimize stick-slip with reduced static COF compared to PTFE-based materials. And its low dynamic COF values against a wide variety of counter-surfaces makes it extremely versatile.

Ideal for Many Applications

Healthcare and medical device applications for Crastin® SC169 include but are not limited to the following:

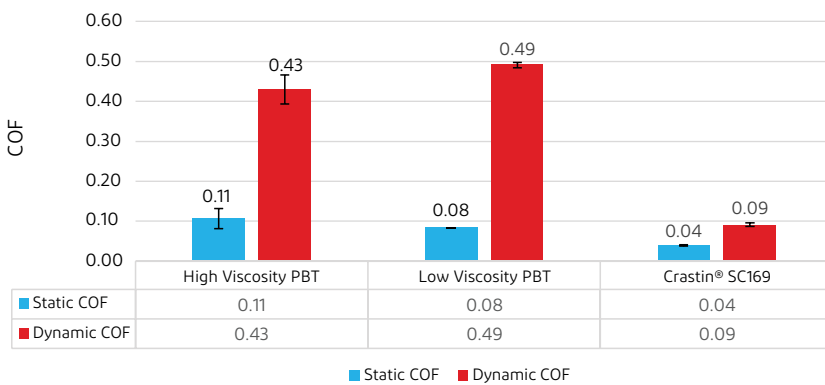
- Autoinjector and insulin pen components—number drums, screws, drive sleeves, and push buttons
- Surgical Equipment—trocar latches, surgical stapler, and laparoscopic surgical tool internal components
- Inhalers—actuators, dose counter buttons, and gear trains
- Fluid coupling quick disconnects

COF versus Traveled Distance



Internal test method against steel ball. Source: DuPont

Crastin® Dynamic and Static COF Behavior



Source: DuPont

Key Properties of Crastin® SC169 Ultra-high-flow Lubricated PBT

Rheological properties

Melt volume-flow rate	42 cm ³ /10min	ISO 1133
Temperature	250°C	ISO 1133
Load	2.16 kg	ISO 1133
Melt mass-flow rate	46 g/10min	ISO 1133
Melt mass-flow rate, Temperature	250°C	ISO 1133
Melt mass-flow rate, Load	2.16 kg	ISO 1133
Molding shrinkage, parallel	2.1%	ISO 294-4, 2577
Molding shrinkage, normal	2.2%	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	2500 MPa	ISO 527-1/-2
Yield stress	50 MPa	ISO 527-1/-2
Yield strain	3.5%	ISO 527-1/-2
Nominal strain at break	15%	ISO 527-1/-2
Charpy impact strength, 23°C	130 kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	3 kJ/m ²	ISO 179/1eA
Poisson's ratio	0.38	

Source: DuPont

Why Choose Crastin®

With more than 100 grades, Crastin® PBT is the resin of choice for cost-effective high performance across a wide range of healthcare, consumer, and industrial applications.

Crastin® PBT offers manufacturers the advantage of superior flow qualities which makes it easy to process on conventional injection molding machines. Plus, it's available in a wide range of grades designed for:

- low-warpage
- hydrolysis resistance
- blow-molding
- extrusion

With Crastin®, DuPont materials science experts help customers gain cost efficiency without compromising on performance.

Transforming industries and improving lives through materials science

The foundation of everything we do at DuPont centers around what our customers need. It's not just about the solutions we innovate, but also how we work with our customers. Through our worldwide network of innovation and technical centers, our leading researchers work in close collaboration with customers, from concept to commercialization, using a wide range of processing, prototyping technologies, and testing expertise.

Discover more

For more information about ultra-high-flow Crastin® SC169 for healthcare and medical devices, contact your DuPont representative.

dupont.com/mobility-materials



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