Delrin® SC637 Acetal Resin for Medical Devices

Uniting low friction with superior mechanical strength.

Product overview

Delrin® SC637 is a friction-modified and nucleated medium-high viscosity acetal homopolymer developed for high performance parts. It delivers exceptional sliding performance while preserving the material's inherent strength and stability—enabling devices to operate smoothly, reliably, and safely with every use.





Pictured: Dry Powder Inhaler and Autoinjector devices with spring loaded parts and moving internal components.

What is SC?

The SC designation in Delrin® SC637 stands for Special Control. Delrin SC grades experience a high amount of testing, and they offer a greater degree of manufacturing control and broad regulatory compliance:

- Produced 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
- Extended change notification

Features

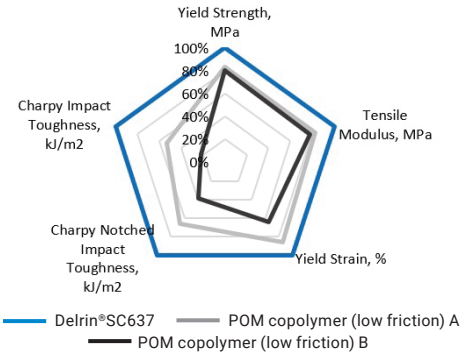
- Reduced coefficient of friction
- Enhanced tensile strength and stiffness
- Creep resistance and excellent impact toughness
- Tolerant to high fatigue loading
- Dimensional stability
- Good colorability
- Sterilizable*

*Not suitable for gamma irradiation and E-beam technology

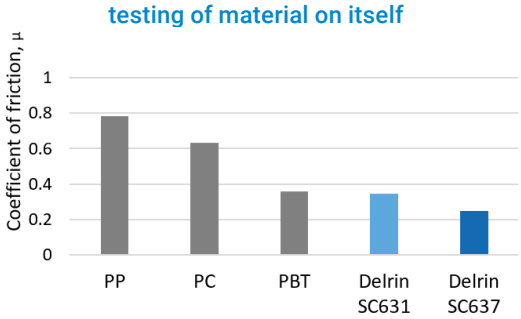
Benefits

- Smooth and precise activation of devices for easier patient operation
- Reduced risk of component wear in repeat use products
- Potential to design more compact systems
- Improved safety factors and device reliability
- Tight tolerances for complex mechanical arrangements
- Visually appealing parts

Comparison of Delrin® SC637 with low friction POM copolymer grades

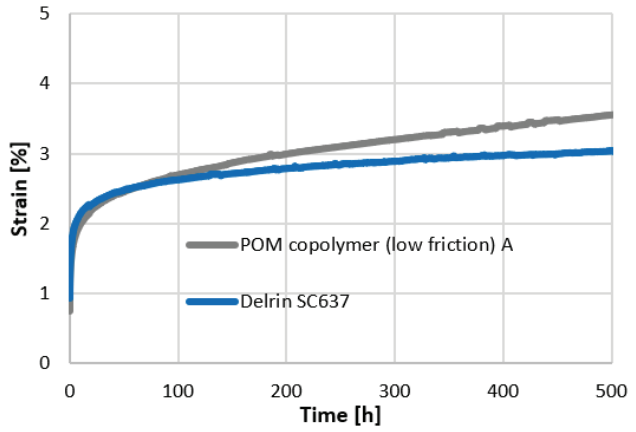


Initial friction measurements: comparative testing of material on itself



Coefficient of friction at an applied force of 20 N at a reciprocating frequency of 2.39 Hz (30 cm/s linear speed)

Real-time Tensile Creep at 40°C (20.7MPa loading)



Typical applications

- Clamps, clips and connectors
- Valves and pumps
- Diagnostics
- Dry powder inhalers
- Injector Pens
- Autoinjectors
- Fluid control and gas handling
- Prosthetics
- Surgical instruments

Delrin® SC637 NC010 acetal resin

Properties	Value	Units	Test method
Tensile modulus	3200	MPa	ISO 527-1/-2
Yield stress	70	MPa	ISO 527-1/-2
Yield strain	14	%	ISO 527-1/-2
Nominal strain at break	35	%	ISO 527-1/-2
Flexural modulus	3100	MPa	ISO 178
Charpy impact strength, 23°C	300	kJ/m^2	ISO 179/1eU
Charpy notched impact strength, 23°C	9	kJ/m^2	ISO 179/1eA
Melt mass-flow rate (190°C, 2.16kg)	7.5	g/10min	ISO 1133
Poisson's ratio	0.37	–	–
Molding shrinkage, parallel	1.9	%	ISO 294-4, 2577
Molding shrinkage, normal	1.8	%	ISO 294-4, 2577

For complete data visit Delrin® Material Data Center at https://delrin.materialdatadenter.com

To learn more, contact your Delrin representative or visit Delrin.com.

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Delrin® is an industry-leading premium industrial polymer business. Grounded in strong innovation, Delrin is a category creator with a longstanding reputation for quality, reliability, supply and product performance. The iconic Delrin brand, coupled with proprietary technology and deep application expertise make us a leader in the high-end engineering polymer market. Delrin has exciting growth prospects from exposure to automation, actuation, healthcare, mobility and consumer applications.

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