

Delrin® for High-quality Home Appliances

Design and develop more efficient, sustainable and durable home appliance systems to meet and exceed customer expectations.



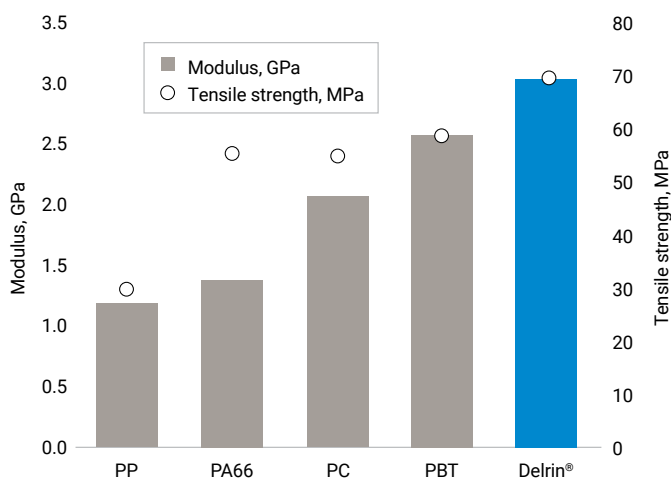
Delrin® Polymers Enable Smarter Home Appliance Solutions

Delrin® acetal homopolymer—with its balance of strength, lubricity and toughness—is a key component in innovative home appliance systems.

Working with Delrin can give your products an extra competitive edge and offer advantages that customers want and need. Key performance benefits include:

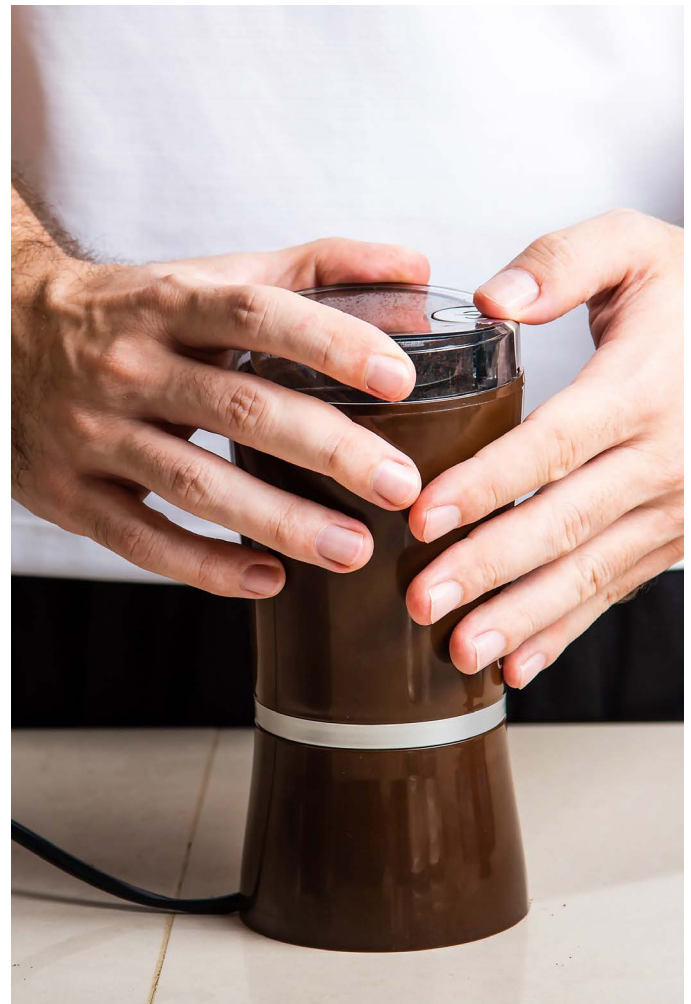
- Lighter weight
- Wide operative temperature range (-30°C to 90°C)
- Self-lubrication and wear resistance
- Reduced vibration and noise
- Lower molding costs
- Excellent dimensional stability for precision components

Modulus and tensile strength comparison



Source: DuPont

From longer-lasting gears in coffee machines to robust components in major appliances and vacuum cleaners, you can count on Delrin to support your next design challenge and product launch.



Superior Design Flexibility and Performance

Delrin® behaves more like metal than other unreinforced plastics thanks to its very high crystallinity. It's the first choice for designers seeking:

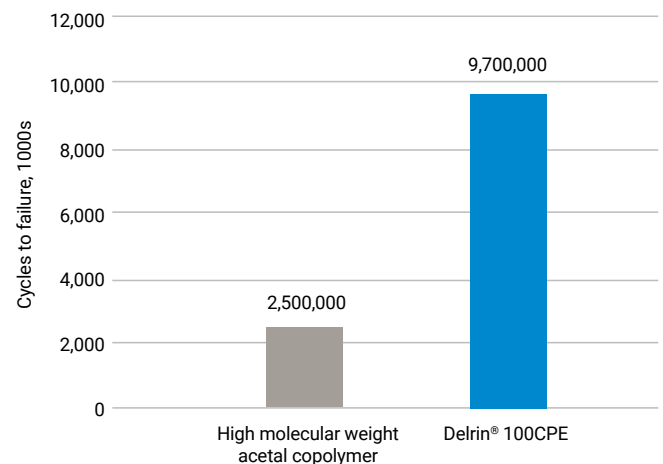
- Long-lasting mechanical performance
- Strength and rigidity without glass reinforcement
- Excellent molding characteristics

This balance is key to designing components that offer maximum reliability, safety and manufacturability.



Door latches, hinges, and bearings made with Delrin operate smoothly and can significantly outlast competitive materials, increase safety factors and extend service lives of essential everyday products.

Fatigue loading assessment of Delrin versus acetal copolymer



Test standard: ASTM D671 80°C, 220 kg/cm², 30Hz

Source: DuPont



A Problem-solver for Reliable, Long-lasting Moving Parts

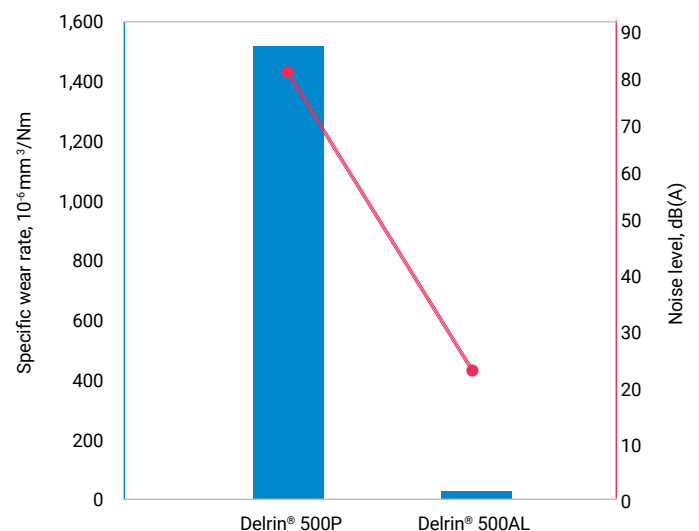
Delrin® offers one of the lowest coefficients of friction, wear rates and noise when compared with other polymers. With a wide range of internally lubricated grades, Delrin delivers better acoustics, minimal wear and superior friction performance so dynamic systems, like robotic vacuum cleaners, can keep running with ease.



In a dynamic assembly, Delrin parts can move at higher speeds with greater efficiency and minimal noise generation.



Wear rate and noise reduction with Delrin® 500AL



Delrin against self

$PV = 0.0524 \text{ MPa} \cdot \text{m/s}$ ($V = 0.084 \text{ m/s}$)

Source: DuPont

Assured Safety and Durability in Food Contact

Delrin® food-contact-compliant grades meet industry regulations.* For mechanical parts in food contact, Delrin can survive repeated use in processing equipment thanks to its superior strength and wear resistance. Combined with low temperature toughness, Delrin can also be used for components in ice making as well as dispensing systems for cold drinks and ice cream.



Combining strength and stiffness with low moisture absorption, Delrin offers robust and consistent performance for food processing applications.

*Compliant with FDA, EU10/2011 and GMP (EC) 2023/2006.

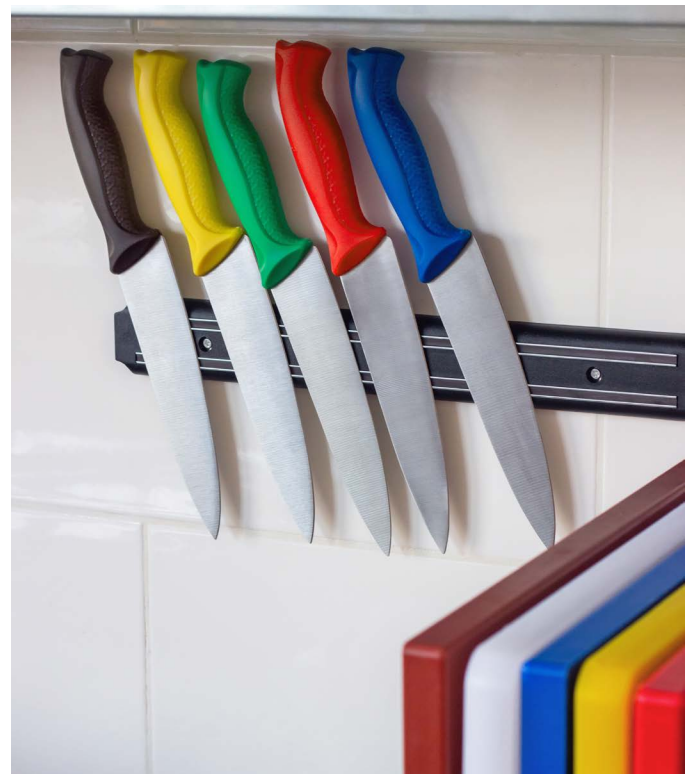
**Clorox Healthcare®, Lysol®, Sani-Cloth® and Virex® are trademarks of their respective companies.

Delrin resists stains and stands up to the harshest cleaning agents, helping avoid premature failure from aggressive chemical cleaning agents, including:

- 2.5% bleach solution
- Ethanol
- 3% peroxide solution
- Quaternary ammonium solution
- Clorox Healthcare®** Bleach Germicidal Cleaner
- Lysol®** Mold and Mildew Remover
- Sani-Cloth®** AF3 Germicidal Disposable Wipes
- Virex®** Tb Disinfectant Cleaner

When used with these cleaners, the tensile strength of Delrin was greater than 80% retention after 96 hours of exposure.

Source: DuPont



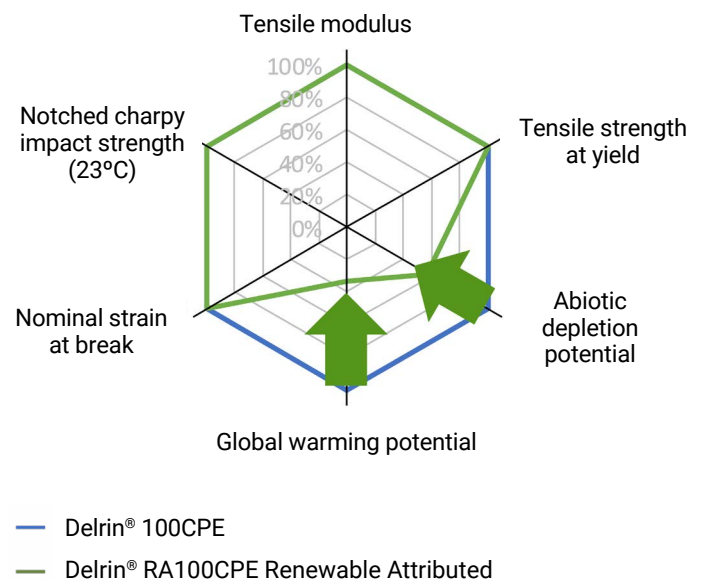
Contributing to Your Sustainability Journey

Sustainability is a global driving force. Today's product developers are working to reduce or eliminate negative environmental impacts through thoughtful selection of materials and designs. By working with Delrin® Renewable Attributed (RA), significant reductions in carbon footprint are achievable without compromising on performance.

The base polymer for Delrin® RA is produced using 100% bio-feedstock from waste in accordance with ISCC mass balance certification. All Delrin® RA products are manufactured with 100% certified renewable electricity and offer up to a 75% lower carbon footprint versus fossil-based Delrin.



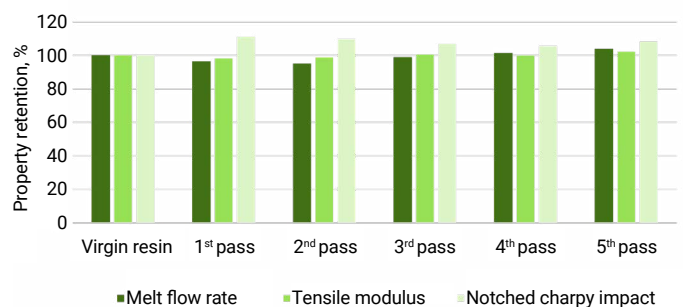
Improved eco-profile. Identical properties.



Source: DuPont

To reduce overall material usage, designers can take advantage of the superior properties of Delrin to make component sections thinner. Delrin also has the potential (if and where infrastructure exists) to be 100% recycled to support circularity initiatives.

Mechanical properties retention after five passes of 100% regrind



Source: DuPont

A Complete Portfolio

Select from a wide variety of grades to gain extra advantages for your product performance.

	Portfolio category	General characteristics	Products*
Flow/moldability	100 series High-viscosity acetal homopolymer	For use in easy-to-fill molds (thick walls). Injection moldable and exhibits sufficient melt strength for extrusion. Best combination of strength, toughness, and creep resistance without modification.	Delrin® FG150 Delrin® FG100P Delrin® FG111P Delrin® 100CPE
	300 series Medium-high-viscosity acetal homopolymer	An outstanding balance of ease of processing and mechanical performance.	Delrin® FG311DP Delrin® 311DP Delrin® 300CPE
	500 series Medium-viscosity acetal homopolymer	General purpose with an optimum combination of flow and mechanical properties.	Delrin® FG500P Delrin® FG511DP Delrin® 500CPE
	900 series Low-viscosity acetal homopolymer	For multi-cavity and thin wall molding. Easy-filling resin with slightly lower toughness than the 500 family.	Delrin® FG900P Delrin® 900P
Specialty	Low wear/low friction	Advanced lubrication designed for enhanced tribological performance and low noise.	Delrin® 100AL Delrin® 500AL Delrin® FG500AL
	Enhanced stiffness	For high heat deflection temperature, excellent creep and fatigue resistance, and higher stiffness and strength.	Delrin® 510GR Delrin® 525GR Delrin® 570
	Impact modified	Toughened for impact resistance in highly stressed parts. Useful for reducing noise, vibration and harshness.	Delrin® 100ST Delrin® 500T
	Renewable Attributed	Produced using 100% bio-feedstock in accordance with ISCC mass balance certification.	Delrin® RA100CPE Delrin® RA500CPE Delrin® RAFG500P

*Selected products for illustration purposes. Contact your Delrin representative for a full list of available grades.

FG denotes food contact grades with compliance to FDA, EU10/2011 and GMP (EC) 2023/2006.

Partnering on Your Next Project

With years of success in the development and design of home appliances, Delrin® parts help create products that delight customers.

By involving Delrin specialists as part of the design team, you'll have access to a wide variety of product grades as well as a wealth of knowledge and resources, including:

- Worldwide support for polymer research and development backed by more than 60 years of experience and innovation in acetal homopolymers
- Computer-aided engineering tools and finite element analysis to inform optimal part design and function
- Extensive experience in testing, materials selection, and processing support to ensure optimal part development for success in demanding applications



Customer applications of Delrin® acetal homopolymer

- | | | |
|--------------------|-----------------------|----------------------------|
| • Air conditioners | • Fans | • Refrigerators |
| • Air purifiers | • Food processors | • Robotic cleaning systems |
| • Coffee machines | • Microwaves | • Vacuum cleaners |
| • Dishwashers | • Pepper grinders | • Washing machines |
| • Drink dispensers | • Personal care items | • Water softeners |

To learn more, contact your Delrin representative or visit [Delrin.com](https://www.delrin.com).



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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