Delrin® Renewable Attributed RAFG500P for Food and Potable Water Contact Applications

Delrin® RAFG500P base polymer is produced from certified sustainable resources and is ideal for food and potable water contact applications. It contains 100% bio-feedstock from waste and is accredited through the International Sustainability and Carbon Certification (ISCC) mass balance certification system. It delivers top-class mechanical properties with reduced lifecycle greenhouse gas emissions and lower fossil resource use.



Delrin® RAFG500P offers the same superior performance and quality our customers expect from Delrin® FG500P, with an improved environmental impact profile*.
It features:

- Excellent performance and durability
- High mechanical strength and stiffness
- High fatigue resistance over a wide temperature range, especially low temperatures
- Excellent creep resistance and dimensional stability

Benefits include:

- Reduced costs while increasing part lifetime
- Improved sustainability
- Complex part design
- Regulatory support for faster part qualification

* Sustainability assessment conducted using a cradle-to-gate life cycle assessment (LCA) in accordance with ISO 14040/14044 methodology.

Product overview

Delrin® Renewable Attributed (RA) FG500P is a medium viscosity, low emission acetal homopolymer grade produced from certified sustainable sources that is food contact compliant according to EU 10/2011 and U.S. FDA standards and is produced according to Good Manufacturing Practices (GMP).

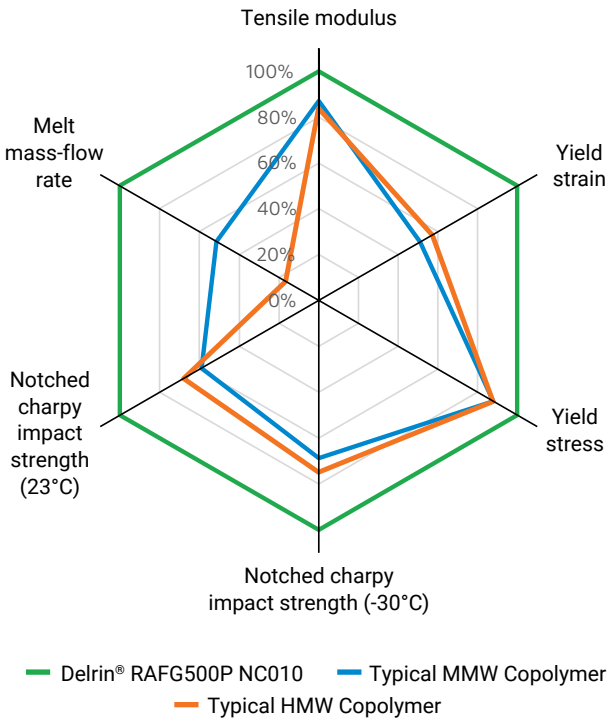
Delrin® RAFG500P supports our customers' sustainability goals with:

- Base polymer produced from 100% certified bio-feedstock from waste (ISCC mass balance)
- Bio-feedstock from second-generation sources, not in competition with the food and feed chain
- 100% certified renewable electricity used for production
- Lower product cradle-to-gate carbon footprint
- Reduction of non-renewable fossil resource usage

Properties **	Unit	Test method	Delrin® FG500P	Delrin® RAFG500P
Melt mass-flow rate (MFR 190°C, 2.16kg)	g/10min	ISO 1133	15	
Mold shrinkage (parallel/normal)	%	ISO 294-4	2.0/1.9	
Density	g/cm^3	ISO 1183	1.42	
Melting temperature, 10°C/min	°C	ISO 11357-1/-3	178	
Notched charpy at 23°C	kJ/m^2	ISO 179/1eA	9	
Notched charpy at -30°C	kJ/m^2	ISO 179/1eA	8	
Tensile strength at yield	MPa	ISO 527-1/-2	71	
Yield strain	%	ISO 527-1/-2	17	
Nominal strain at break	%	ISO 527-1/-2	30	
Tensile modulus	MPa	ISO 527-1/-2	3100	
Temp of deflection under load, 1.8MPa	°C	ISO 75-1/-2	94	

** Information in this table is based on technical data that Delrin believes to be reliable and represents typical values that relate only to the specific material designated. This information may be subject to revision as new knowledge and experience becomes available.

Source: DuPont



Source: DuPont

High performance

Delrin® RAFG500P outperforms both medium molecular weight (MMW) and high molecular weight (HMW) acetal copolymers, enabling sustainable design. These resins have been used in kitchenware, food packaging and food processing applications.

Certified sustainability

Delrin® RAFG500P base polymer is produced using 100% bio-feed-stock from waste, in accordance with mass balance principles. A mass balance approach and chain of custody utilizes separate bookkeeping from cradle to gate (feedstock to finished product) and enables supply chain traceability. Our Delrin® RA manufacturing site and supply chain are accredited through the globally recognized International Sustainability and Carbon Certification (ISCC) system.

Enable sustainable design

Delrin® RAFG500P delivers superior performance compared to competitive MMW copolymers, as well as competitive HMW copolymers. With higher tensile properties (+15%) and increased impact resistance (+30%) achieved on a significantly better flow, Delrin® RAFG500P enables the design of parts with thinner walls while maintaining full functionality.

Designing lighter parts with Delrin® RAFG500P saves energy, resources and money.

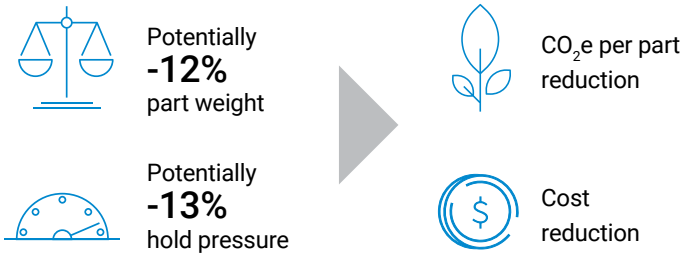
Optimize your resource efficiency

The use of reground Delrin® has almost no influence on mechanical properties and molding performance. Five passes with 100% reground material are possible without any negative effects on mechanical properties. Using Delrin helps increase your internal recycling rate and achieves substantial environmental and financial savings.

Reliable parts, made to last

In addition to the ability to make durable parts at possibly higher production rates, when you work with Delrin, you can count on consistent quality and supply stability. Plus, our design, technical and processing support helps you produce high-quality parts that deliver on their promise.

By optimizing part design, Delrin® RA enables environmental and cost savings compared to medium MW copolymer alternatives.



To learn more, contact your Delrin representative or visit 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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