Delrin® Renewable Attributed RA511CPE



Delrin used in e-bikes

Delrin® RA511CPE delivers state-of-the-art low VOC technology and top-class mechanical properties with reduced lifecycle greenhouse gas emissions and lower fossil resource use.

Product overview

Delrin® Renewable Attributed (RA) 511CPE—a nucleated medium viscosity, low emission acetal homopolymer—supports your sustainability goals with:

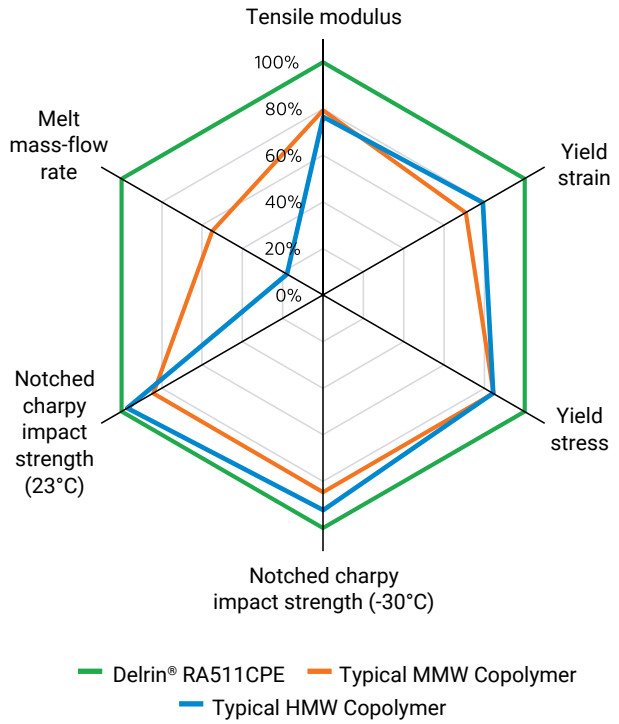
- Base polymer produced from 100% certified bio-feedstock from waste, accredited through the International Sustainability and Carbon Certification (ISCC) mass balance certification system
- Bio-feedstock from second-generation sources, not in competition with the food and feed chain
- 100% certified renewable electricity used for production
- Lower product cradle-to-gate carbon footprint
- Reduction of non-renewable fossil resource usage
- Low VOC (below 2 ppm in VDA 275)

Delrin® RA511CPE offers the same superior performance and quality as Delrin® 511CPE with an improved environmental impact profile. (Sustainability assessment conducted using a cradle-to-gate Life Cycle Assessment (LCA) in accordance with ISO 14040/14044 methodology)

Properties*	Unit	Test method	Delrin® 511CPE	Delrin® RA511CPE
Melt mass-flow rate (MFR 190°C, 2.16kg)	g/10min	ISO 1133	14	
Mold shrinkage (parallel/normal)	%	ISO 294-4	1.8/1.8	
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	7	
Notched Charpy at -30°C	kJ/m^2	ISO 179/1eA	6.5	
Tensile strength at yield	MPa	ISO 527-1/-2	77	
Yield strain	%	ISO 527-1/-2	13	
Nominal strain at break	%	ISO 527-1/-2	25	
Tensile modulus	MPa	ISO 527-1/-2	3400	
Flexural modulus	MPa	ISO 178	3200	

*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® Renewable Attributed RA511CPE outperforms both medium and high molecular weight (MW) acetal copolymers, enabling sustainable design.

Certified sustainability

Delrin® RA511CPE base polymer is produced using 100% bio-feedstock 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. The Delrin Renewable Attributed manufacturing site and supply chain are accredited through the globally-recognized International Sustainability and Carbon Certification (ISCC) certification system.

Enable sustainable design

Delrin® RA511CPE delivers superior performance compared to competitive medium MW copolymers, as well as competitive high MW copolymers. With higher tensile properties (+20%) and increased impact resistance (+15%) achieved on a significantly better flow, Delrin® RA511CPE permits the design of parts with thinner walls while maintaining full functionality.

Designing lighter parts with Delrin® RA511CPE 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 effect 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® Renewable Attributed enables environmental and cost savings compared to medium MW copolymer alternatives.

Potentially **-18%** part weight

Potentially **-23%** hold pressure time

CO_2e per part reduction

Cost reduction

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.

Copyright 2023 Delrin®

Form No. HMC1123