Delrin® 300CPE vs. High Molecular Weight Acetal Copolymers

Combining the industry standard properties of a Delrin® 300CP with state-of-the-art low emission technology

General information

Delrin® 300CPE is a medium-high viscosity low emission grade acetal resin family and is part of the low-emission CPE group.

Excellent balance of properties

- Tensile modulus (stiff without the use of fibers)
- Yield Strength
- Impact Strength (including low temperatures)
- Creep resistance
- Fatigue resistance

Without compromising performance, the emissions of Delrin® 300CPE are below 2 ppm in VDA 275.

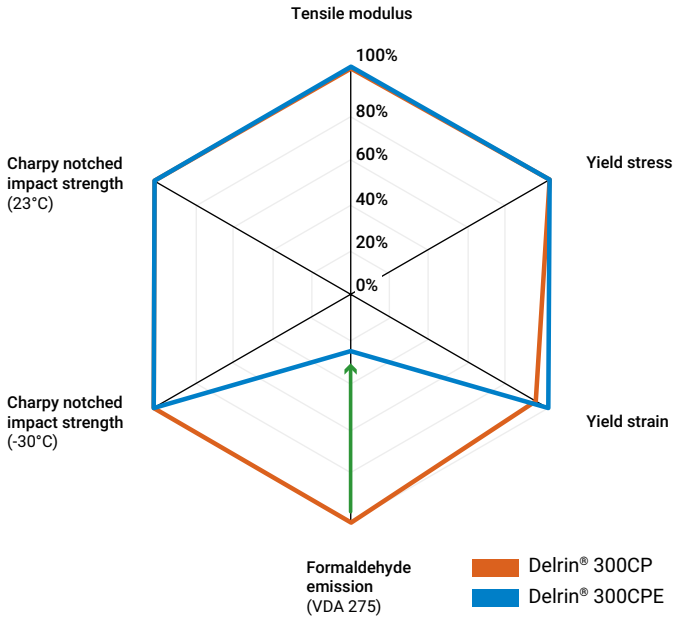
Customer benefits

Greater design flexibility to use lower wall thicknesses through easier tool filling

- Ability to make durable parts at possibly higher production rates (faster molding cycle time)
- Greater safety factor in impact resistance
- Higher part performance and reliability
- Consistent part performance over wide operating temperature range
- No need for additional processing equipment (dryer)

When all these benefits are considered, designing with Delrin® 300CPE will lead to lower cost per part.

Additionally, the Delrin technical team provides design, technical and processing support to ensure production of high-quality, high-performance parts.



Properties overview

Properties	Unit	Test method	Delrin® 300CP NC010 (reference)	Delrin® 300CPE NC010 (low-VOC)
Melt mass-flow rate (MFR 190°C, 2.16kg)	g/10min	ISO 1133	7	7
Mold shrinkage (parallel/normal)	%	ISO 294-4	2.1 / 1.8	2.1 / 1.8
Density	g/cm³	ISO 1183	1.42	1.42
Melting temperature, 10°C/min	°C	ISO 11357-1/-3	178	178
Charpy notched at 23°C	kJ/m²	ISO 179/1eA	10.5	10.5
Charpy notched at -30°C	kJ/m²	ISO 179/1eA	10	10
Yield stress	MPa	ISO 527-1/-2	71	71
Yield strain	%	ISO 527-1/-2	23	25
Nominal strain at break	%	ISO 527-1/-2	40	40
Tensile modulus	MPa	ISO 527-1/-2	3100	3100

Delrin® 300CPE outperforms high molecular weight acetal copolymers

Delrin® 300CPE delivers superior performance compared to competitive high molecular weight (HMW) copolymers.

Performance advantages

- Higher tensile properties (>10% vs. HMW)
- Impact resistance (40% higher vs. HMW) over a large temperature range
- Significantly better flow, which permits:
  - better fill of thinner-wall cavities
  - more effective design of thin-wall parts
- Superior fatigue resistance
- Higher heat deflection temperature
- Retention of all the other typical properties of Delrin®:
  - low wear and friction
  - chemical and solvent resistance
  - low-temperature toughness

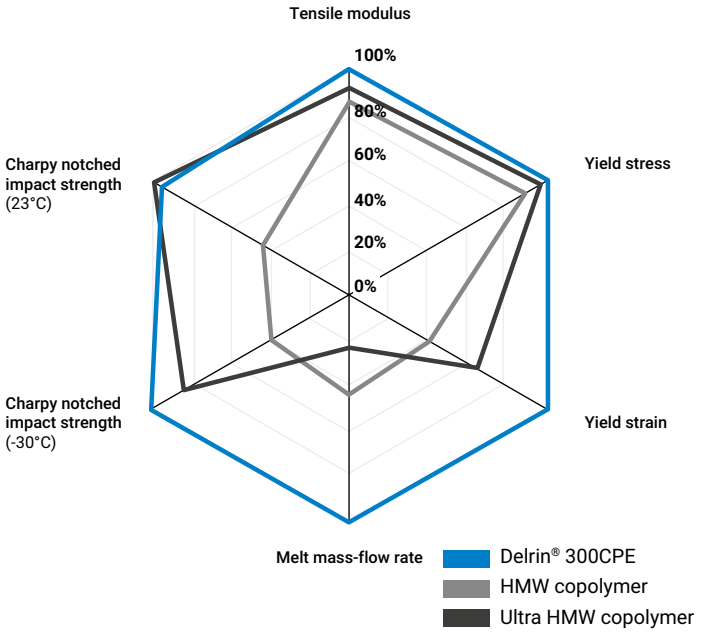
Plus, Delrin® 300CPE offers low VOC emissions (below 2 ppm in VDA 275).

Potential applications

Delrin® 300CPE is suitable for a wide range of applications including but not limited to:

- **Automotive components:** fasteners, seatbelt components, levers, brackets, switches and gears
- **Sporting goods:** buckles, latches and e-bike parts
- **Window hardware:** clips and housings
- **Irrigation components:** automatic sprinklers and commercial irrigation systems

Properties



For complete data visit Delrin® Material Data Center at https://delrin.materialdatacenter.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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Form no. HMC0924