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

General Information
DuPont™ Delrin® 300CPE is a new medium-high viscosity low-emission grade in its acetal resin family, 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 new DuPont™ Delrin® 300CPE adds:
• Low emission (below 2 ppm in VDA 275)

Customer Benefits
• More design flexibility and freedom
• Consistent performance over wide temperature range
• Lower part cost
• No need for additional processing equipment (dryer)

Properties Overview

<table>
<thead>
<tr>
<th>Properties</th>
<th>Unit</th>
<th>Test method</th>
<th>300CP NC010 (reference)</th>
<th>300CPE NC010 (low-VOC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melt mass-flow rate (MFR 190°C, 2.16kg)</td>
<td>g/10min</td>
<td>ISO 1133</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Mold shrinkage (parallel / normal)</td>
<td>%</td>
<td>ISO 294-4</td>
<td>2.1 / 1.8</td>
<td>2.1 / 1.8</td>
</tr>
<tr>
<td>Density</td>
<td>g/cm³</td>
<td>ISO 1183</td>
<td>1.42</td>
<td>1.42</td>
</tr>
<tr>
<td>Melting temperature, 10°C/min</td>
<td>ºC</td>
<td>ISO 11357-1/-3</td>
<td>178</td>
<td>178</td>
</tr>
<tr>
<td>Notched Charpy at 23°C</td>
<td>kj/m²</td>
<td>ISO 179/1eA</td>
<td>10.5</td>
<td>10.5</td>
</tr>
<tr>
<td>Notched Charpy at -30°C</td>
<td>kj/m²</td>
<td>ISO 179/1eA</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Tensile strength at yield</td>
<td>MPa</td>
<td>ISO 527-1/-2</td>
<td>71</td>
<td>71</td>
</tr>
<tr>
<td>Yield strain</td>
<td>%</td>
<td>ISO 527-1/-2</td>
<td>23</td>
<td>25</td>
</tr>
<tr>
<td>Nominal strain at break</td>
<td>%</td>
<td>ISO 527-1/-2</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>Tensile modulus</td>
<td>MPa</td>
<td>ISO 527-1/-2</td>
<td>3100</td>
<td>3100</td>
</tr>
</tbody>
</table>
DuPont™ Delrin® 300CPE
Outperforms High Molecular Weight Acetal Copolymers

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

**Performance Advantages**
- Higher tensile properties (>10% vs. HMW)
- Impact resistance (45% 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, resiliency, chemical and solvent resistance, low-temperature toughness and more

**Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Delrin® 300CPE</th>
<th>HMW Copolymer</th>
<th>Ultra HMW Copolymer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile Modulus</td>
<td>100%</td>
<td>80%</td>
<td>60%</td>
</tr>
<tr>
<td>Notched Charpy Impact Strength (23°C)</td>
<td>60%</td>
<td>40%</td>
<td>20%</td>
</tr>
<tr>
<td>Melt Mass-Flow Rate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yield Strain</td>
<td>100%</td>
<td>80%</td>
<td>60%</td>
</tr>
<tr>
<td>Temperature Range</td>
<td>-30°C</td>
<td>-20°C</td>
<td>-10°C</td>
</tr>
</tbody>
</table>

**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

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

DuPont™ Delrin® design, technical, and processing support to ensure production of a high quality part that delivers on its promise.

**Potential applications**
A wide range of potential applications including:
- **Automotive components**: fasteners, seatbelt components, levers, brackets, switches, gears
- **Sporting goods**: buckles, latches, surface parts
- **Window hardware**: clips, housings
- **Irrigation components**: automatic sprinklers, commercial irrigation systems

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