

DuPont™ Delrin® 500CPE

Combining the industry standard properties of a Delrin® 500P with state-of-the-art low emission technology

General Information

DuPont™ Delrin® 500CPE is a new medium-viscosity low-emission grade from the DuPont™ Delrin® 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® 500CPE adds:

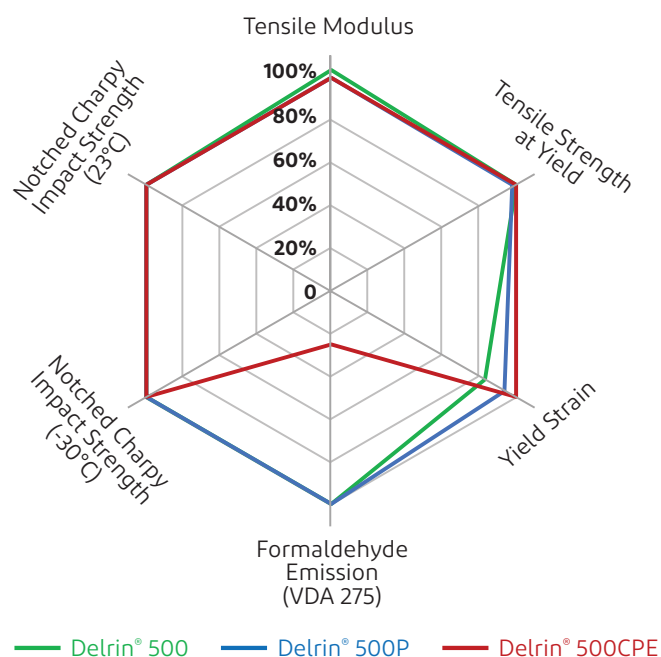
- **Low emission (below 2 ppm in VDA 275)**

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

| Properties | Unit | Test method | 500 NC10 (reference) | 500P NC10 (reference) | 500CPE NC10 (low-VOC) |
|---|-------------------|----------------|----------------------|-----------------------|-----------------------|
| Melt mass-flow rate (MFR 190°C, 2.16kg) | g/10min | ISO 1133 | 14 | 15 | 15 |
| Mold shrinkage (parallel / normal) | % | ISO 294-4 | 2.1 / 2.0 | 2.0 / 1.9 | 2.0 / 1.9 |
| Density | g/cm ³ | ISO 1183 | 1.42 | 1.42 | 1.42 |
| Melting temperature, 10°C/min | °C | ISO 11357-1/-3 | 178 | 178 | 178 |
| Notched Charpy at 23°C | kJ/m ² | ISO 179/1eA | 9 | 9 | 9 |
| Notched Charpy at -30°C | kJ/m ² | ISO 179/1eA | 8 | 8 | 8 |
| Tensile strength at yield | MPa | ISO 527-1/-2 | 72 | 71 | 72 |
| Yield strain | % | ISO 527-1/-2 | 15 | 17 | 18 |
| Nominal strain at break | % | ISO 527-1/-2 | 30 | 30 | 27 |
| Tensile modulus | MPa | ISO 527-1/-2 | 3200 | 3100 | 3100 |



DuPont™ Delrin® 500CPE

Outperforms Medium and High Molecular Weight Acetal Copolymers

DuPont™ Delrin® 500CPE delivers superior performance compared to competitive medium molecular weight (MMW) copolymers, as well as competitive high molecular weight (HMW) copolymers :

Performance Advantages

- >10% higher tensile properties
- Impact resistance (>25% higher vs. MMW) 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 HDT (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

Plus, Delrin® 500CPE offers low VOC emissions (below 2 ppm in VDA 275).

Customer Benefits

- Greater design flexibility to use lower wall thicknesses through easier tool filling, compared to high viscosity and medium viscosity grades
- Ability to make durable parts at possibly higher production rates (faster molding cycle time)
- Greater safety factor in impact resistance especially at low temperature
- Higher part performance and reliability
- Consistent part performance over wide operating temperature range

When all these benefits are taken into account, designing with Delrin® 500CPE 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.

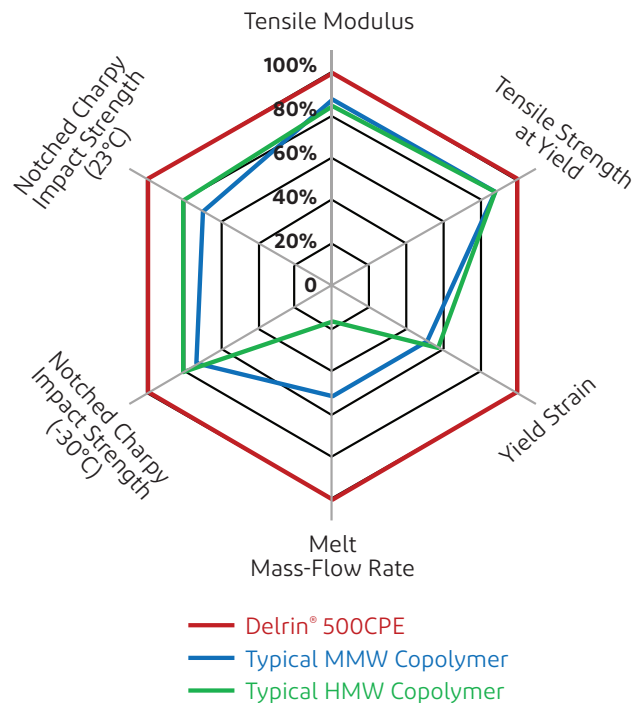
Potential applications

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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Properties



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