

# DuPont™ Delrin® 100CPE

Combining the industry standard properties of a DELRIN® 100 with higher productivity due to low mold deposit in processing and state-of-the-art low-emission technology

## General Information

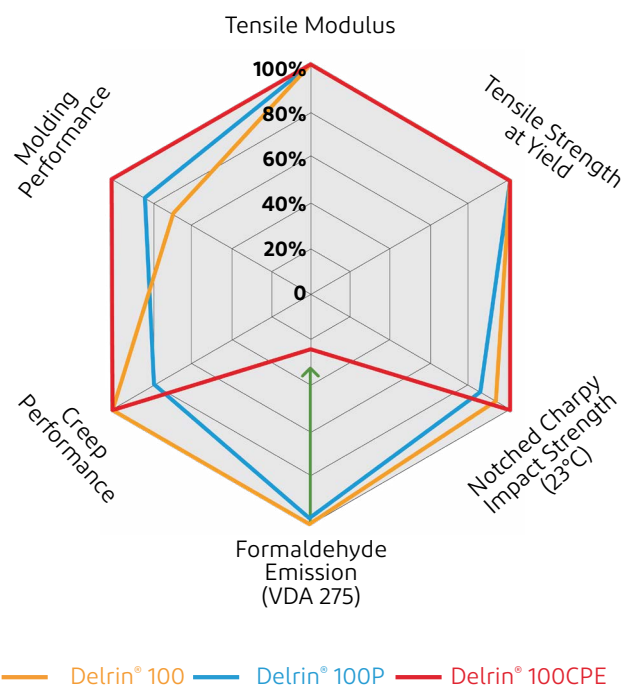
The recently introduced high viscosity low-emission grade **100CPE** to the DuPont™ Delrin® acetal resin family marks an important landmark for the plastic gears industry and other performance engineering polymer applications.

For many decades, the **Delrin® 100 series** was the industry standard for plastic gears providing superior properties, such as:

- 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® 100CPE** adds:

- **Higher productivity due to low mold deposit**
- **Low emission (below 2 ppm due to VDA 275)**



## Properties Overview

Properties	Unit	Test method	100 NC010 (reference)	100P NC010 (reference)	100CPE NC010 (low-E)
Melt mass-flow rate (MFR 190°C, 2.16kg)	g/10min	ISO 1133	2.2	2.5	2.3
Mold shrinkage (parallel / normal)	%	ISO 294-4	2.2 / 1.9	2.2 / 1.9	2.2 / 1.9
Density	g/cm <sup>3</sup>	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 <sup>2</sup>	ISO 179/1eA	15	14	16
Notched Charpy at -30°C	kJ/m <sup>2</sup>	ISO 179/1eA	13	13	13
Tensile strength at yield	MPa	ISO 527-1/-2	71	70	71
Yield strain	%	ISO 527-1/-2	26	26	28
Nominal strain at break	%	ISO 527-1/-2	45	45	45
Tensile modulus	MPa	ISO 527-1/-2	2900	2900	2900
Flexural strength at 3.5% strain	MPa	ISO 178	77	75	76
Flexural modulus	MPa	ISO 178	2800	2800	2800

## High productivity

The significant reduction in mold deposit while processing Delrin® 100CPE allows the molder to increase the production cycles with less maintenance. It is possible to:



Productivity

- mold more parts before cleaning the mold
- faster clean the mold in maintenance
- reduce quality control

The accelerated mold deposit testing shows significant reduction in mold deposit after processing Delrin® 100CPE. Further, the deposit emerging is easier to clean.

## Low emission

The requirements in terms of formaldehyde emissions for POM in automotive interior applications have increased significantly. The most demanding limits in the industry are currently emissions below 2 mg/kg (ppm) due to the VDA 275 test. With MFRs between 2 and 25 g/10min, toughening, UV stabilization, lubrication, and different colors, DuPont™ offers a variety of Delrin® grades fulfilling these requirements. The flagship of these low-emission resins is now the newly introduced **Delrin® 100CPE**.

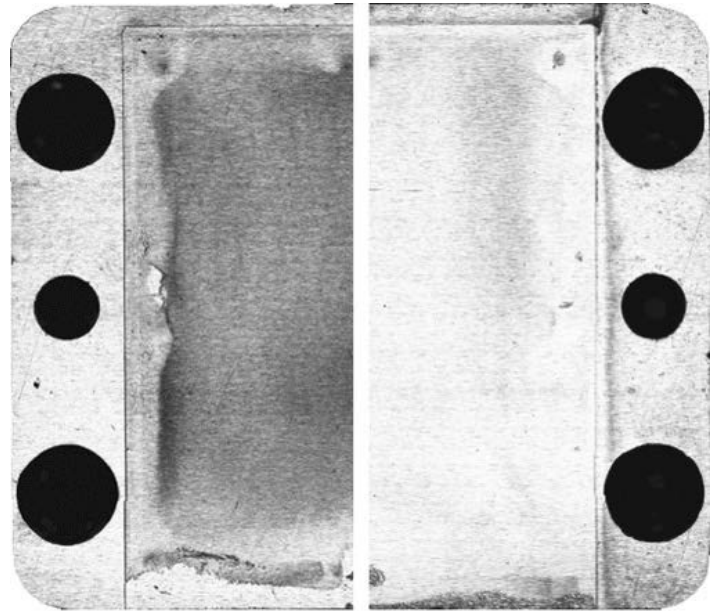
## Potential applications with Delrin® 100CPE

Plastic gears: window lifter gears, wiper gears, etc.

Other automotive components: fasteners, buckles, springs, pulleys, levers, brackets, seatbelt components, switches

Automotive and non-automotive parts that demand high productivity and high performance

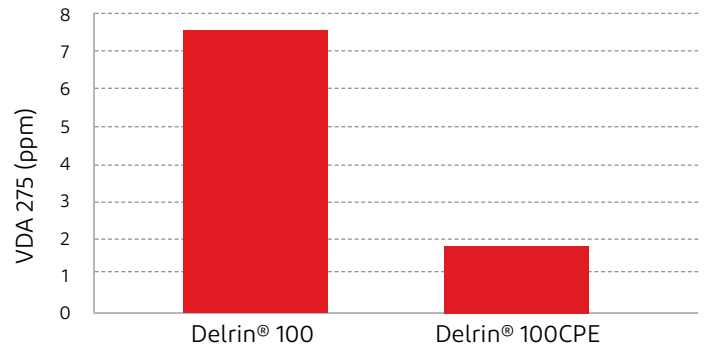
<sup>1</sup> accelerated mold deposit testing: increased screw speed, increased injection speed, increased tool temperature



Delrin® 100

Delrin® 100CPE

Mold insert after 21,000 shots accelerated<sup>1</sup> mold deposit testing.



Low Emission

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