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

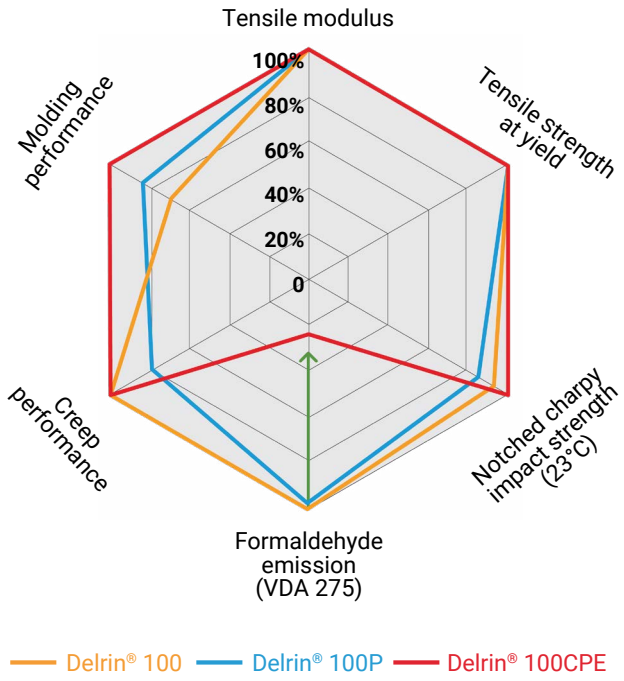
High viscosity low-emission Delrin® 100CPE is an important landmark for the plastic gears industry and other performance engineering polymer applications.

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, 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/cm³	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/m²	ISO 179/1eA	15	14	16
Notched charpy at -30°C	kJ/m²	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:

- Mold more parts before cleaning the mold
- Clean and maintain the mold more quickly
- 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.

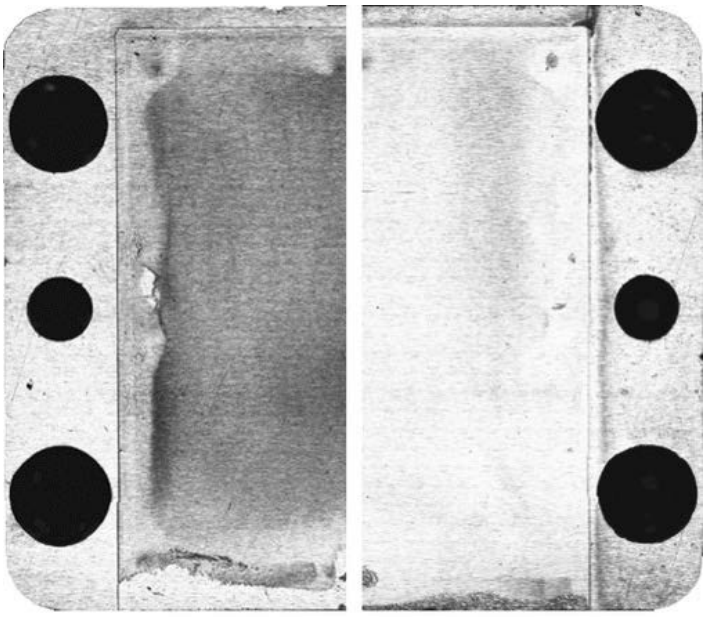
Low emission

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, a variety of Delrin grades fulfill these requirements. The flagship of these low-emission resins is Delrin® 100CPE.

Potential applications for Delrin® 100CPE

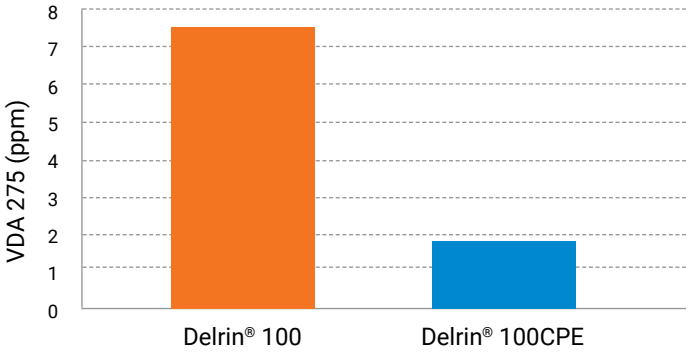
Plastic gears for window lifters, wipers, etc.
Other automotive components like fasteners, buckles, springs, pulleys, levers, brackets, seatbelt components and switches
Automotive and non-automotive parts that demand high productivity and high performance

[1] Accelerated mold deposit testing: increased screw speed, injection speed and tool temperature



Delrin® 100 Delrin® 100CPE

Mold insert after 21,000 shots accelerated[1] mold deposit testing.



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