

# DuPont™ Delrin® 500PE NC010 (Preliminary Data)

## ACETAL RESIN

### Product Information

Common features of Delrin® acetal resins include mechanical and physical properties such as high mechanical strength and rigidity, excellent fatigue and impact resistance, as well as resistance to moisture, gasoline, lubricants, solvents, and many other neutral chemicals. Delrin® acetal resins also have excellent dimensional stability and good electrical insulating characteristics. They are naturally resilient, self-lubricating, and available in a variety of colors and speciality grades.

Delrin® acetal resin typically is used in demanding applications in the automotive, domestic appliances, sports, industrial engineering, electronics, and consumer goods industries.

**Delrin® 500PE is a medium viscosity acetal homopolymer, an enhanced version of Delrin® 500P with very low VOC emissions for applications in automotive interiors. It has good mechanical properties and improved processing productivity for injection molding.**

General information	Value	Unit	Test Standard
Resin Identification	POM	-	ISO 1043
Part Marking Code	>POM<	-	ISO 11469
Rheological properties	Value	Unit	Test Standard
Melt volume-flow rate	12	cm <sup>3</sup> /10min	ISO 1133
Temperature	190	°C	ISO 1133
Load	2.16	kg	ISO 1133
Melt mass-flow rate	14	g/10min	ISO 1133
Melt mass-flow rate, Temperature	190	°C	-
Melt mass-flow rate, Load	2.16	kg	-
Mechanical properties	Value	Unit	Test Standard
Tensile Modulus	3200	MPa	ISO 527-1/-2
Yield stress	72	MPa	ISO 527-1/-2
Yield strain	17	%	ISO 527-1/-2
Nominal strain at break	25	%	ISO 527-1/-2
Flexural Modulus	3100	MPa	ISO 178
Charpy impact strength, 23°C	300	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength			ISO 179/1eA
23°C	9	kJ/m <sup>2</sup>	
-30°C	8	kJ/m <sup>2</sup>	
Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	178	°C	ISO 11357-1/-3
Temp. of deflection under load			ISO 75-1/-2
1.8 MPa	93	°C	
0.45 MPa	158	°C	
Coeff. of linear therm. expansion, parallel	110	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion			ISO 11359-1/-2
normal	110	E-6/K	
Normal, -40-23°C	90	E-6/K	
Parallel, -40-23°C	100	E-6/K	
Other properties	Value	Unit	Test Standard
Density	1420	kg/m <sup>3</sup>	ISO 1183
VDA Properties	Value	Unit	Test Standard
Emissions	<2	mg/kg	VDA 275

### Characteristics

Processing	• Injection Moulding
Delivery form	• Pellets
Additives	• Release agent
Regional Availability	• North America      • Asia Pacific      • Near East/Africa • Europe                • South and Central America      • Global

### Processing Texts

### Injection molding

#### PREPROCESSING

To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

#### North America

Tel: +1 302 999-4592

Toll-Free (USA): 800 441-0575

#### Asia Pacific

Tel: +81 3 5521 8600

#### Europe/Middle East/Africa

Tel: +41 22 717 51 11



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Drying temperature = 80 °C

Drying time, dehumidified dryer = 2-4 h

Processing moisture content = <0.2 %

### PROCESSING

Melt temperature optimum = 205 °C

Melt temperature range = 200-210 °C

Mold temperature optimum = 90 °C

Mold temperature range = 80-100 °C

Hold pressure range = 80-100 MPa

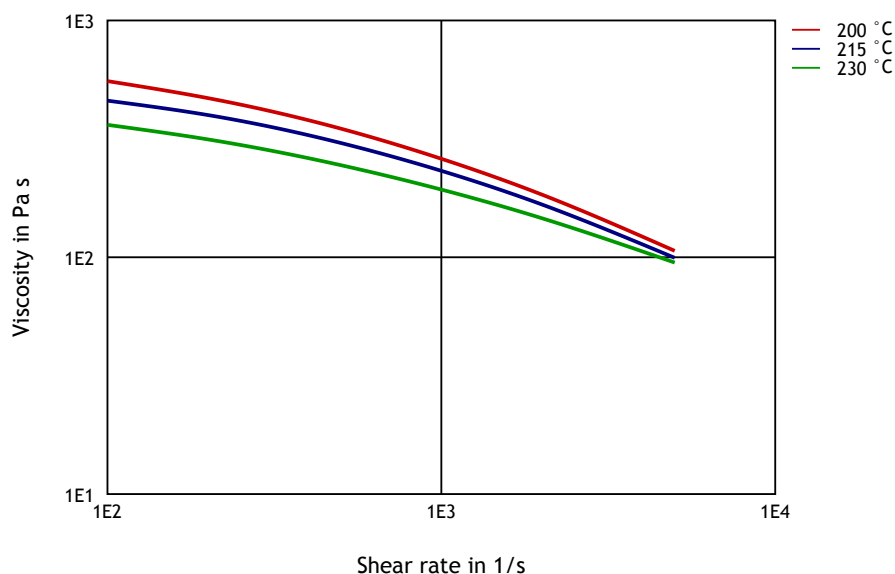
Hold pressure time = 8-10 s/mm

### POSTPROCESSING

Annealing: 30 min/mm at 160 °C

### Diagrams

#### Viscosity-shear rate



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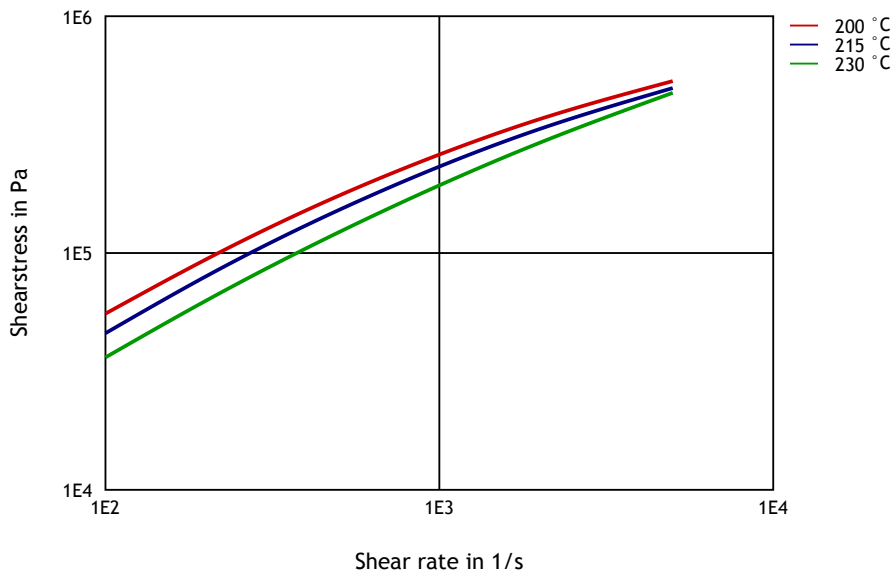
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## ACETAL RESIN

Shearstress-shear rate



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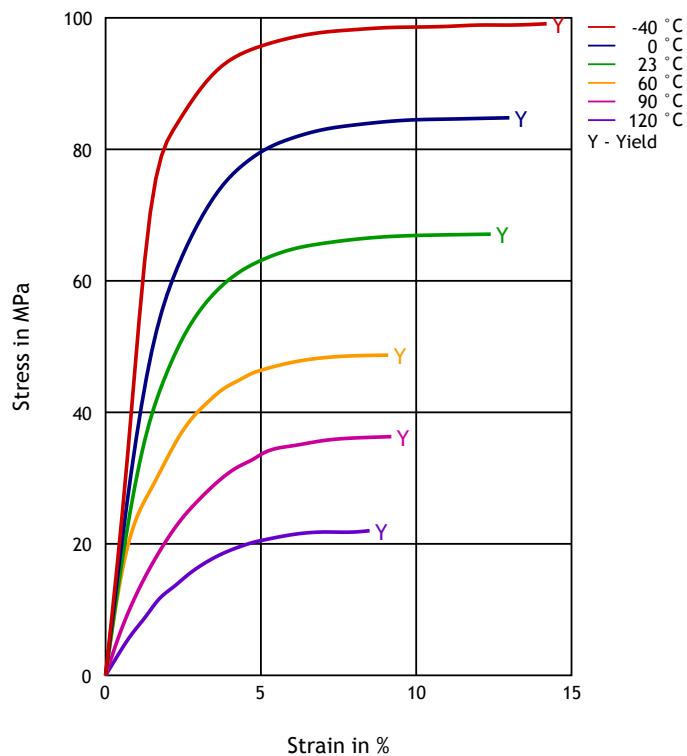
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## ACETAL RESIN

Stress-strain



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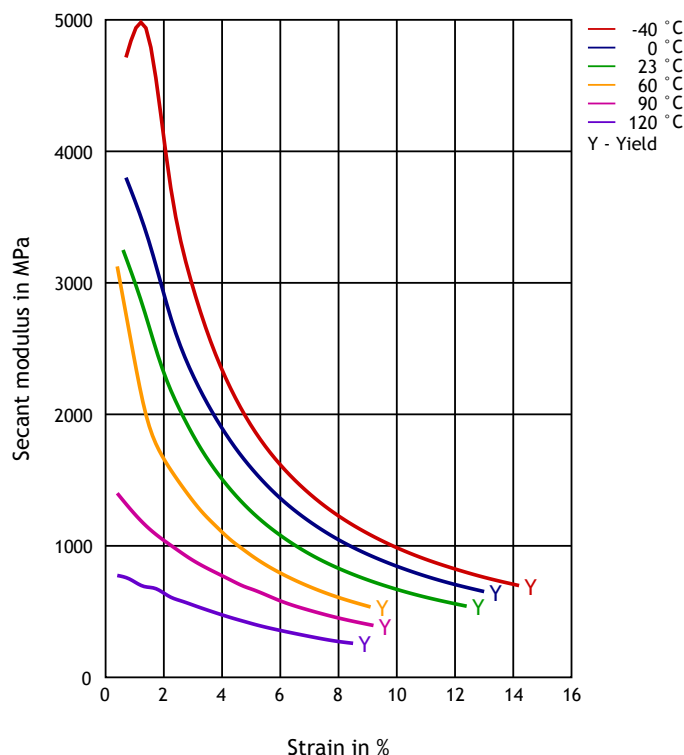
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## ACETAL RESIN

Secant modulus-strain



Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc. ISO Mechanical properties measured at 4.0mm (Hytrel® measured at 2 mm), IEC Electrical properties measured at 2.0mm, all ASTM properties measured at 3.2mm, and test temperatures are 23°C unless otherwise stated.

The information set forth herein is furnished free of charge and is based on technical data that DuPont believes to be reliable and falls within the normal range of properties. It is intended for use by persons having technical skill, at their own discretion and risk. This data should not be used to establish specification limits nor used alone as the basis of design. Handling precaution information is given with the understanding that those using it will satisfy themselves that their particular conditions of use present no health or safety hazards. Since conditions of product use and disposal are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information. As with any product, evaluation under end-use conditions prior to specification is essential. Nothing herein is to be taken as a license to operate or a recommendation to infringe on patents. Caution: Do not use in medical applications involving permanent implantation in the human body. For other medical applications, discuss with your DuPont customer representative and read Medical Caution H-50103-4.

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