

DuPont™ Delrin® 100PE NC010

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® 100PE is a high viscosity acetal homopolymer, an enhanced version of Delrin® 100P with very low VOC emissions for applications in automotive interiors. It has a great combination of strength and toughness and improved processing productivity for injection moulding.

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	1.9	cm ³ /10min	ISO 1133
Temperature	190	°C	ISO 1133
Load	2.16	kg	ISO 1133
Melt mass-flow rate	2.3	g/10min	ISO 1133
Melt mass-flow rate, Temperature	190	°C	ISO 1133
Melt mass-flow rate, Load	2.16	kg	ISO 1133
Moulding shrinkage, parallel	2.2	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.9	%	ISO 294-4, 2577
Mechanical properties	Value	Unit	Test Standard
Tensile Modulus	3100	MPa	ISO 527-1/-2
Yield stress	72	MPa	ISO 527-1/-2
Yield strain	25	%	ISO 527-1/-2
Nominal strain at break	45	%	ISO 527-1/-2
Flexural Modulus	2800	MPa	ISO 178
Flexural Stress at 3.5%	79	MPa	ISO 178
Poisson's ratio	0.37	-	ISO 527-1/-2
Charpy impact strength			ISO 179/1eU
23°C	N	kJ/m ²	
-30°C	380	kJ/m ²	
Charpy notched impact strength			ISO 179/1eA
23°C	15	kJ/m ²	
-30°C	12	kJ/m ²	
Hardness, Rockwell, M-scale	91	-	ISO 2039-2
Hardness, Rockwell, R-scale	121	-	ISO 2039-2
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	96	°C	
0.45 MPa	157	°C	
Vicat softening temperature, 50°C/h, 10N	175	°C	ISO 306
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	100	E-6/K	
Parallel, -40-23°C	100	E-6/K	
Flammability	Value	Unit	Test Standard
FMVSS Class	B	-	ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	<100	mm/min	ISO 3795 (FMVSS 302)
Electrical properties	Value	Unit	Test Standard
Relative permittivity			IEC 62631-2-1
100Hz	4	-	
1MHz	3.9	-	

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

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Dissipation factor			IEC 62631-2-1
100Hz	5	E-4	
1MHz	50	E-4	
Volume resistivity	>1E13	Ohm*m	IEC 62631-3-1
Surface resistivity	3E14	Ohm	IEC 62631-3-2
Electric strength	44	kV/mm	IEC 60243-1
Comparative tracking index	600	-	IEC 60112
Other properties	Value	Unit	Test Standard
Humidity absorption, 2mm	0.19	%	Sim. to ISO 62
Water absorption, 2mm	0.92	%	Sim. to ISO 62
Density	1420	kg/m ³	ISO 1183
Density of melt	1190	kg/m ³	-
VDA Properties	Value	Unit	Test Standard
Emissions	<2	mg/kg	VDA 275
Injection	Value	Unit	Test Standard
Drying Recommended	yes	-	-
Drying Temperature	≥80	°C	-
Drying Time, Dehumidified Dryer	2 - 4	h	-
Processing Moisture Content	≤0.2	%	-
Melt Temperature Optimum	205	°C	-
Min. melt temperature	200	°C	-
Max. melt temperature	210	°C	-
Mold Temperature Optimum	90	°C	-
Min. mould temperature	80	°C	-
Max. mould temperature	100	°C	-
Hold pressure range	90 - 110	MPa	-
Hold pressure time	8	s/mm	-
Annealing time, optional	30	min/mm	-
Annealing temperature	160	°C	-
Extrusion	Value	Unit	Test Standard
Drying Temperature	75 - 85	°C	-
Drying Time, Dehumidified Dryer	2 - 4	h	-
Processing Moisture Content	≤0.2	%	-
Melt Temperature Optimum	200	°C	-
Melt Temperature Range	195 - 205	°C	-

Characteristics

Processing	<ul style="list-style-type: none"> • Injection Moulding • Profile Extrusion 	<ul style="list-style-type: none"> • Sheet Extrusion • Other Extrusion
Delivery form	<ul style="list-style-type: none"> • Pellets 	
Additives	<ul style="list-style-type: none"> • Release agent 	
Regional Availability	<ul style="list-style-type: none"> • North America • Europe 	<ul style="list-style-type: none"> • Asia Pacific • South and Central America
		<ul style="list-style-type: none"> • Near East/Africa • Global

Processing Texts

Injection molding

Drying is recommended, but not necessary for newly opened packaging stored in a dry location.

Follow the drying guidelines above in the following cases:

- If moisture is above the Processing Moisture Content recommendation,
- When a resin container is damaged,
- When the material is not properly stored in a dry place at room temperature, or
- When packaging stays open for a significant time.

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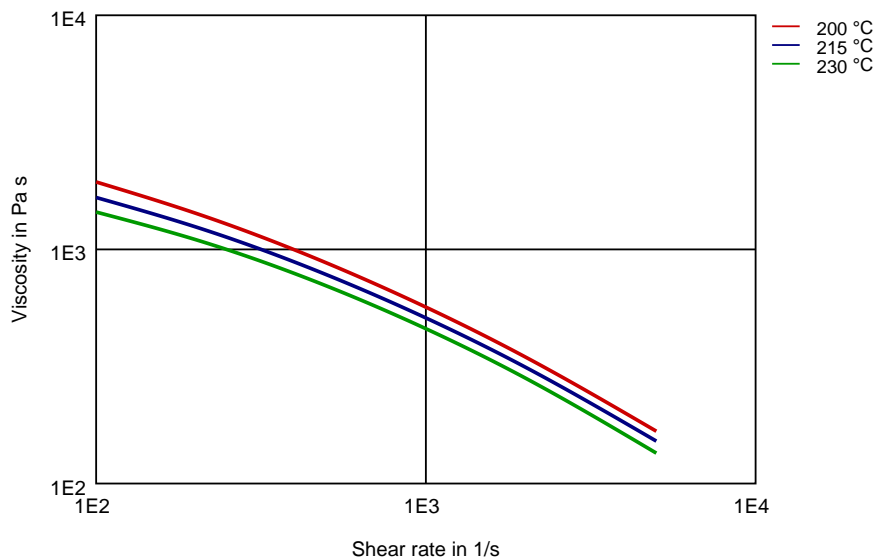
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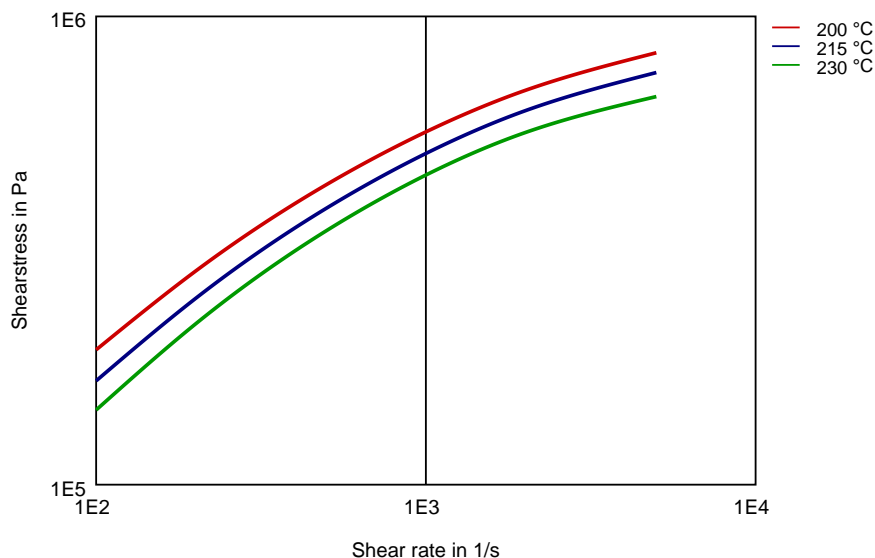
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Diagrams

Viscosity-shear rate



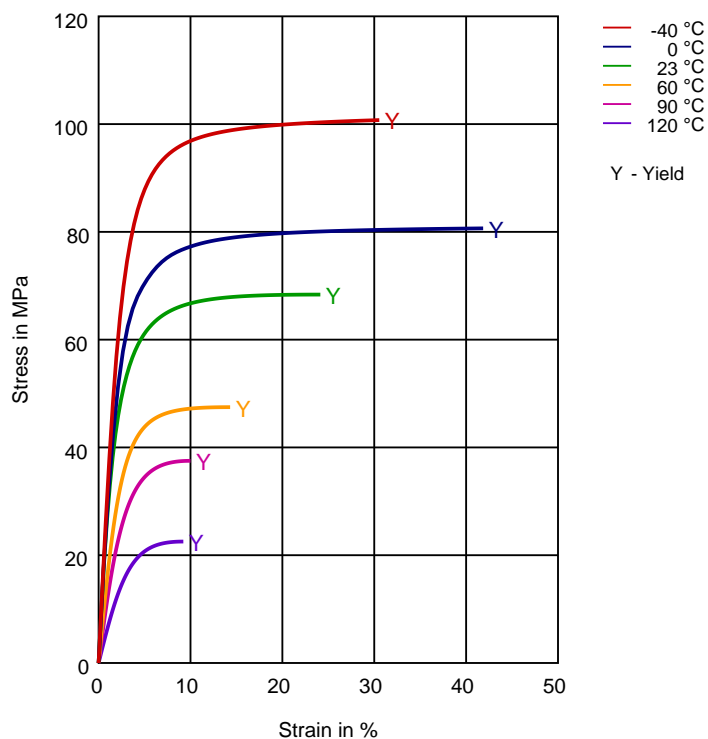
Shearstress-shear rate



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Stress-strain



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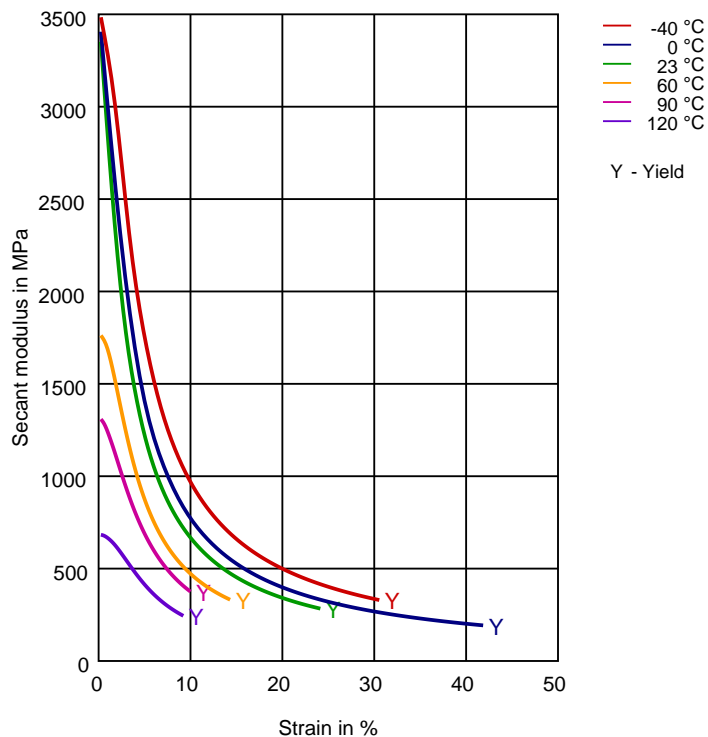


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Secant modulus-strain



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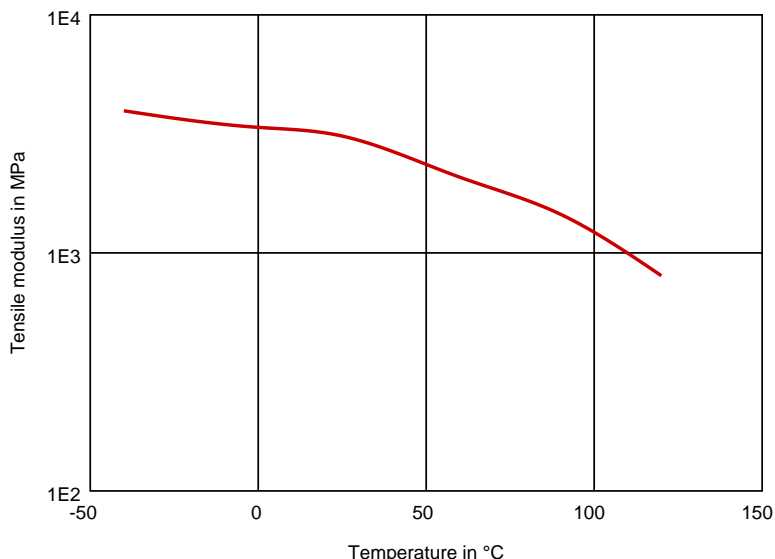
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Tensile modulus-temperature



Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc. ISO Mechanical properties measured at 4mm (Hytrel® measured at 2 mm), IEC Electrical properties measured at 2mm, all ASTM properties measured at 3.2mm, and test temperatures are 23°C unless otherwise stated.

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