

DuPont™ Delrin® 100T 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® 100T is a toughened, high viscosity acetal homopolymer with superior impact resistance. It is designed for highly stressed parts where outstanding toughness is required.

General information	Value	Unit	Test Standard
Resin Identification	POM-I	-	ISO 1043
Part Marking Code	POM-I	-	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	2.1	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	1.3	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.5	%	ISO 294-4, 2577
Mechanical properties	Value	Unit	Test Standard
Tensile Modulus	1900	MPa	ISO 527-1/-2
Yield stress	55	MPa	ISO 527-1/-2
Yield strain	25	%	ISO 527-1/-2
Nominal strain at break	>50	%	ISO 527-1/-2
Flexural Modulus	1700	MPa	ISO 178
Flexural Stress at 3.5%	52	MPa	ISO 178
Poisson's ratio	0.41	-	ISO 527-1/-2
Charpy impact strength			ISO 179/1eU
23°C	N	kJ/m ²	
-30°C	N	kJ/m ²	
Charpy notched impact strength			ISO 179/1eA
23°C	26	kJ/m ²	
-30°C	14	kJ/m ²	
Hardness, Rockwell, M-scale	59	-	ISO 2039-2
Hardness, Rockwell, R-scale	113	-	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	72	°C	
0.45 MPa	130	°C	
Vicat softening temperature, 50°C/h, 10N	173	°C	ISO 306
Coeff. of linear therm. expansion, parallel	120	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	120	E-6/K	ISO 11359-1/-2
Eff. thermal diffusivity	7E-8	m ² /s	-
RTI, electrical			UL 746B
1.5mm	100	°C	
3mm	100	°C	
RTI, impact			UL 746B
1.5mm	85	°C	
3mm	85	°C	
RTI, strength			UL 746B
1.5mm	85	°C	
3mm	85	°C	

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Flammability			
	Value	Unit	Test Standard
Burning Behav. at 1.5mm nom. thickn.	HB	class	IEC 60695-11-10
Thickness tested	1.5	mm	IEC 60695-11-10
UL recognition	UL	-	UL 94
Glow Wire Flammability Index			IEC 60695-2-12
1mm	550	°C	
2mm	550	°C	
3mm	550	°C	
FMVSS Class	B	-	ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	42	mm/min	ISO 3795 (FMVSS 302)
Electrical properties			
	Value	Unit	Test Standard
Dissipation factor, 1MHz	90	E-4	IEC 62631-2-1
Comparative tracking index	600	-	IEC 60112
Other properties			
	Value	Unit	Test Standard
Humidity absorption, 2mm	0.3	%	Sim. to ISO 62
Water absorption, 2mm	0.9	%	Sim. to ISO 62
Density	1370	kg/m ³	ISO 1183
VDA Properties			
	Value	Unit	Test Standard
Emissions	<8	mg/kg	VDA 275
1:			
Injection			
	Value	Unit	Test Standard
Drying Recommended	yes	-	-
Drying Temperature	≥80	°C	-
Drying Time, Dehumidified Dryer	4 - 8	h	-
Processing Moisture Content	≤0.05	%	-
Melt Temperature Optimum	205	°C	-
Min. melt temperature	200	°C	-
Max. melt temperature	210	°C	-
Mold Temperature Optimum	50	°C	-
Min. mould temperature	40	°C	-
Max. mould temperature	60	°C	-
Hold pressure range	60 - 80	MPa	-
Hold pressure time	7.5	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	≤0.05	%	-
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"> • Lubricants 	<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

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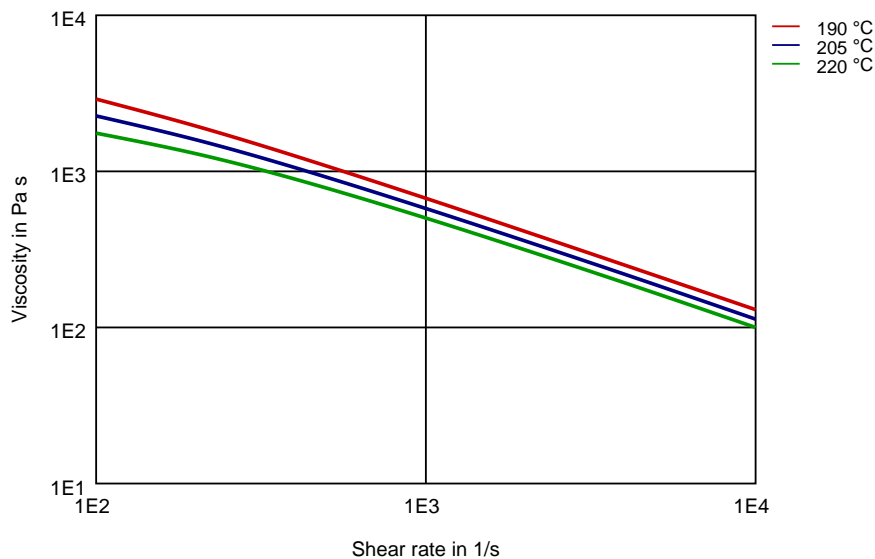
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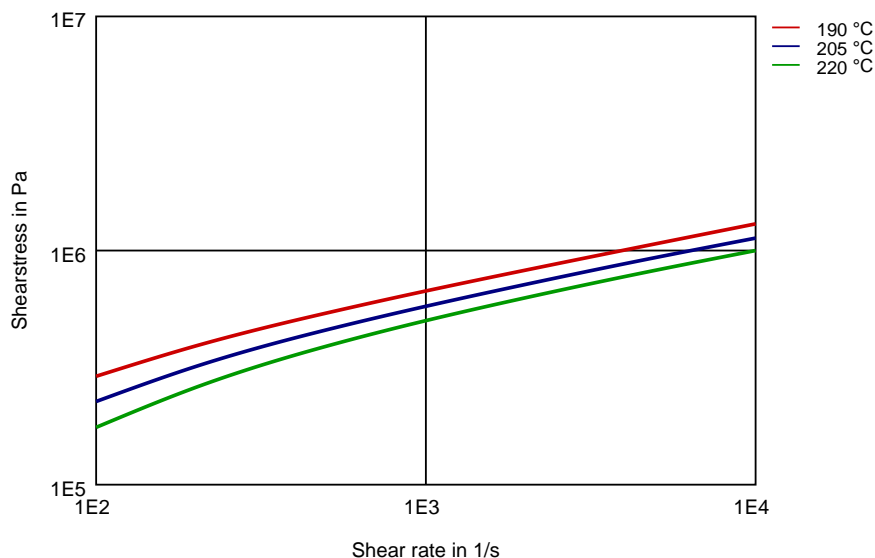
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Diagrams

Viscosity-shear rate



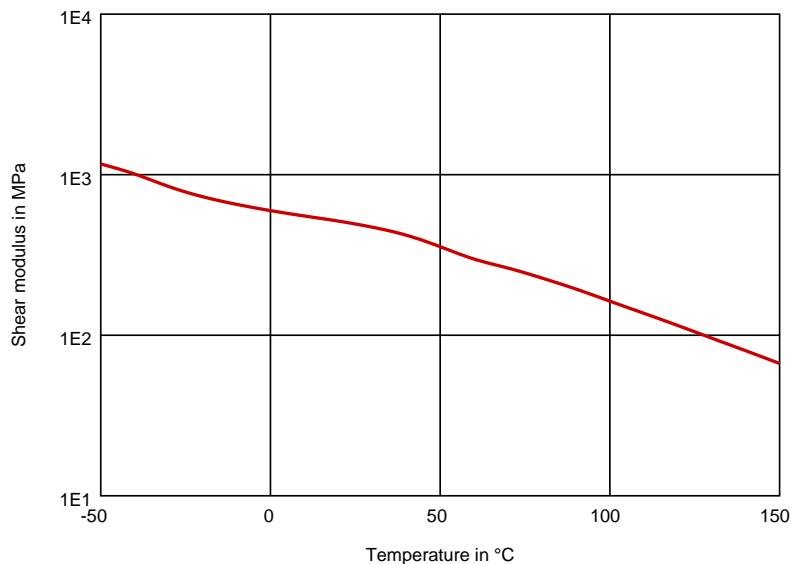
Shearstress-shear rate



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Dynamic Shear modulus-temperature



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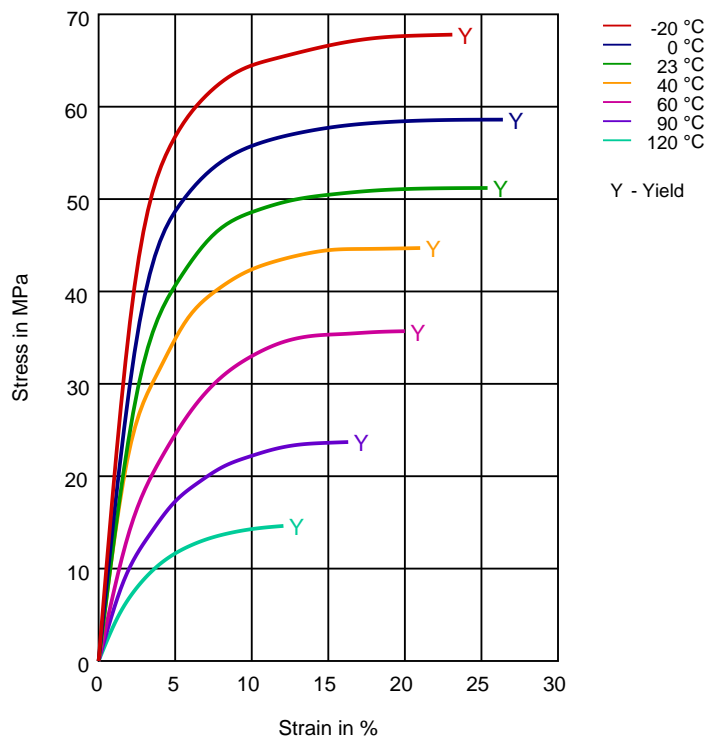
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Stress-strain



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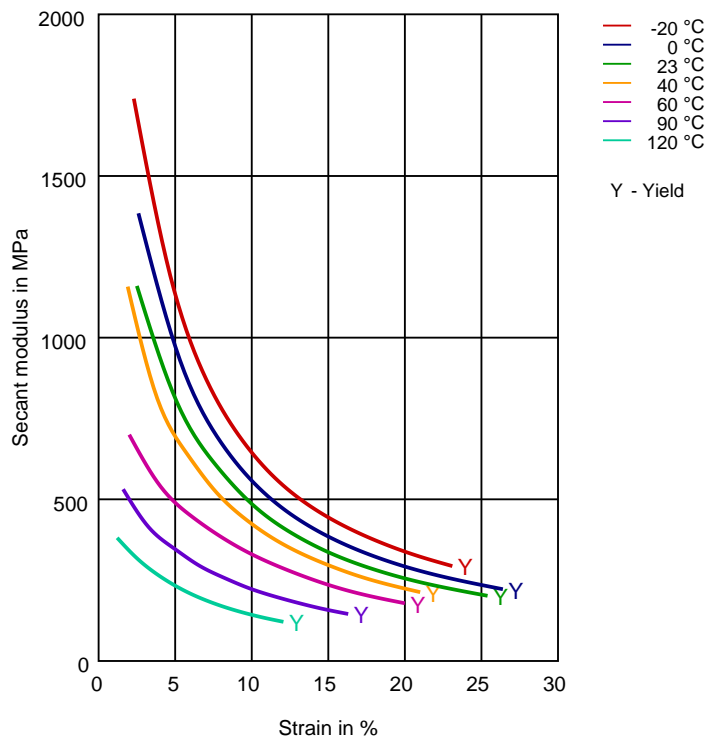


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Secant modulus-strain



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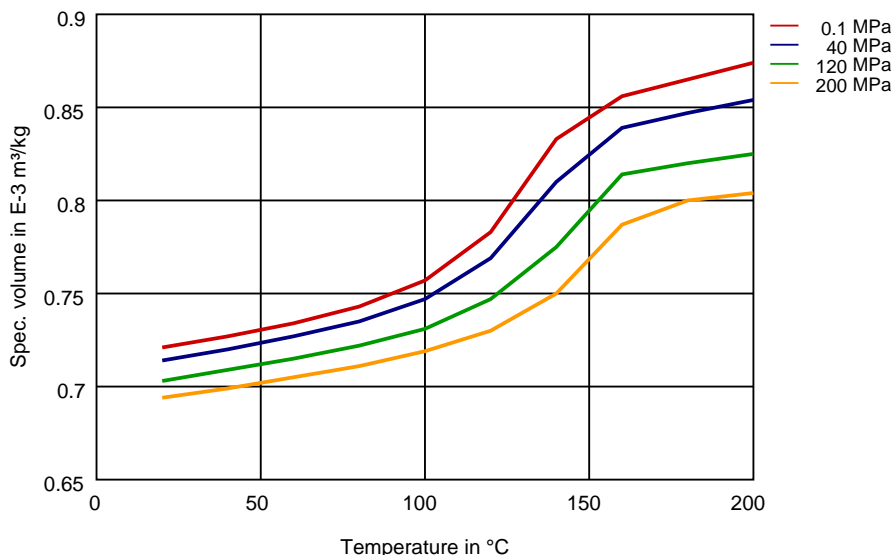
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Specific volume-temperature (pvT)



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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