

Delrin® 100T NC010

ACETAL RESIN

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.

Product information

Resin Identification	POM-I	ISO 1043
Part Marking Code	>POM-I<	ISO 11469

Rheological properties

Melt volume-flow rate	1.9 cm ³ /10min	ISO 1133
Melt mass-flow rate	2.1 g/10min	ISO 1133
Temperature	190 °C	ISO 1133
Load	2.16 kg	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

Typical mechanical properties

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
Charpy impact strength, 23°C	N kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	N kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	26 kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	14 kJ/m ²	ISO 179/1eA
Hardness, Rockwell, M-scale	59	ISO 2039-2
Hardness, Rockwell, R-scale	113	ISO 2039-2
Poisson's ratio	0.41	

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Thermal properties

Melting temperature, 10°C/min	178 °C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	72 °C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	130 °C	ISO 75-1/-2
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 m²/s	
RTI, electrical, 1.5mm	100 °C	UL 746B
RTI, electrical, 3mm	100 °C	UL 746B
RTI, impact, 1.5mm	85 °C	UL 746B
RTI, impact, 3mm	85 °C	UL 746B
RTI, strength, 1.5mm	85 °C	UL 746B
RTI, strength, 3mm	85 °C	UL 746B
TGA curve	available	ISO 11359-1/-2

Flammability

Burning Behav. at 1.5mm nom. thickn.	HB class	IEC 60695-11-10
Thickness tested	1.5 mm	IEC 60695-11-10
UL recognition	yes	UL 94
Glow Wire Flammability Index, 1mm	550 °C	IEC 60695-2-12
Glow Wire Flammability Index, 2mm	550 °C	IEC 60695-2-12
Glow Wire Flammability Index, 3mm	550 °C	IEC 60695-2-12
FMVSS Class	B	ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	42 mm/min	ISO 3795 (FMVSS 302)

Electrical properties

Dissipation factor, 1MHz	90 E-4	IEC 62631-2-1
Volume resistivity	6E12 Ohm.m	IEC 62631-3-1
Comparative tracking index	600	IEC 60112

Other properties

Humidity absorption, 2mm	0.3 %	Sim. to ISO 62
Water absorption, 2mm	0.9 %	Sim. to ISO 62
Density	1370 kg/m³	ISO 1183

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VDA Properties

Emissions	<8 mg/kg	VDA 275
[1]: <5		

Injection

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
Max. screw tangential speed	0.2 m/s
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

Drying Temperature	80 °C
Drying Time, Dehumidified Dryer	4 - 8 h
Processing Moisture Content	≤0.05 %
Melt Temperature Optimum	200 °C
Melt Temperature Range	195 - 205 °C

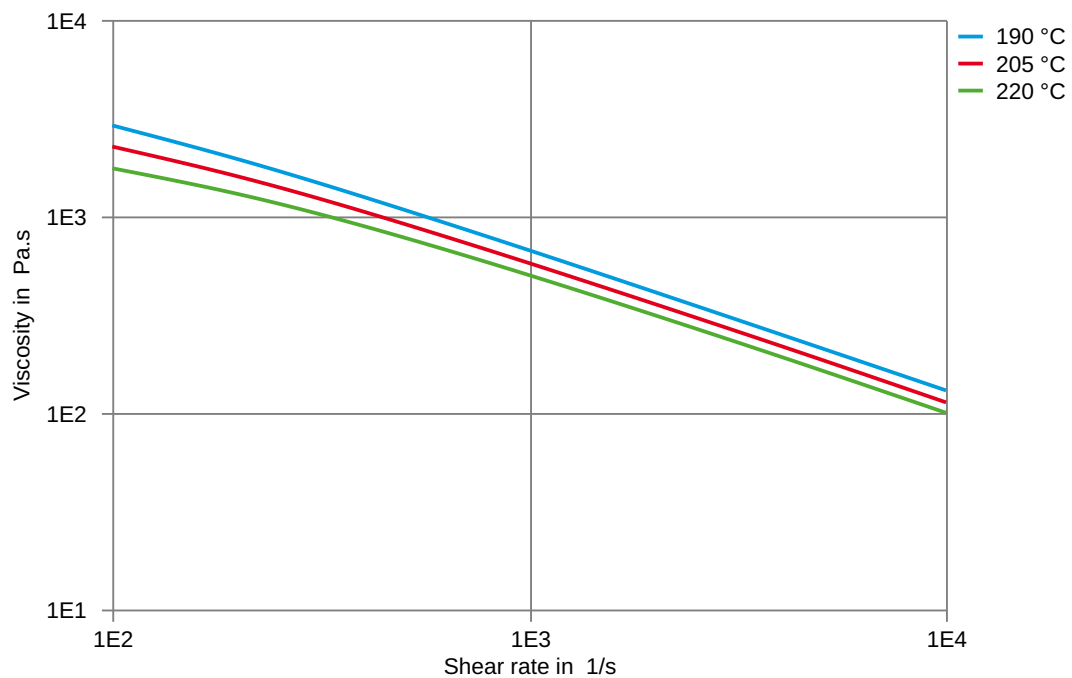
Characteristics

Additives	Release agent
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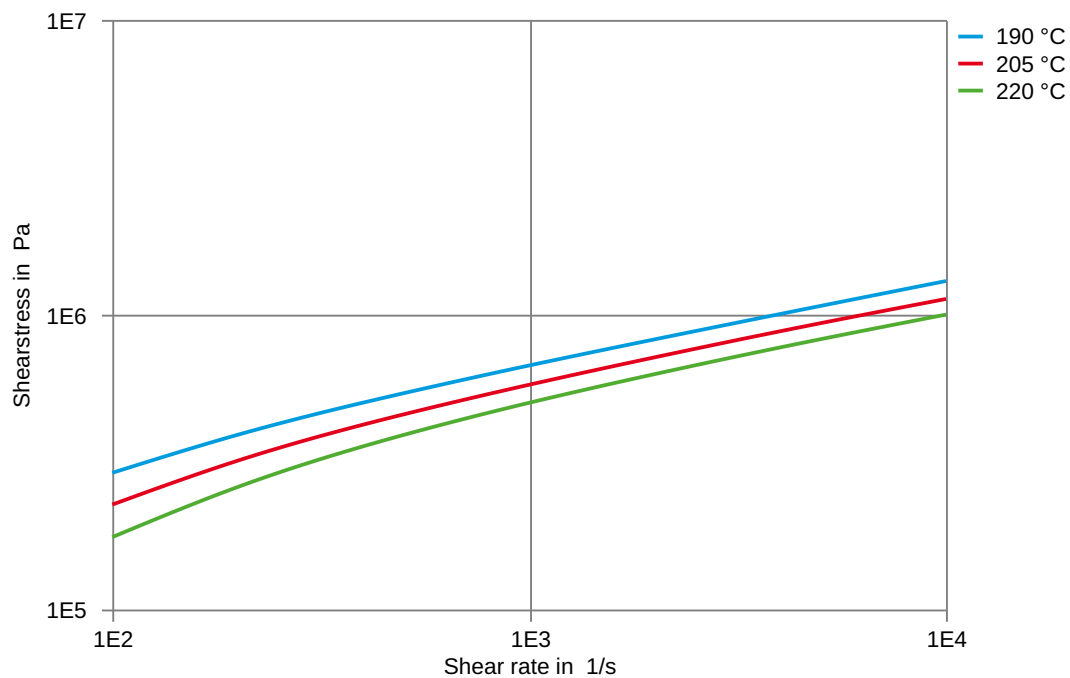
Viscosity-shear rate



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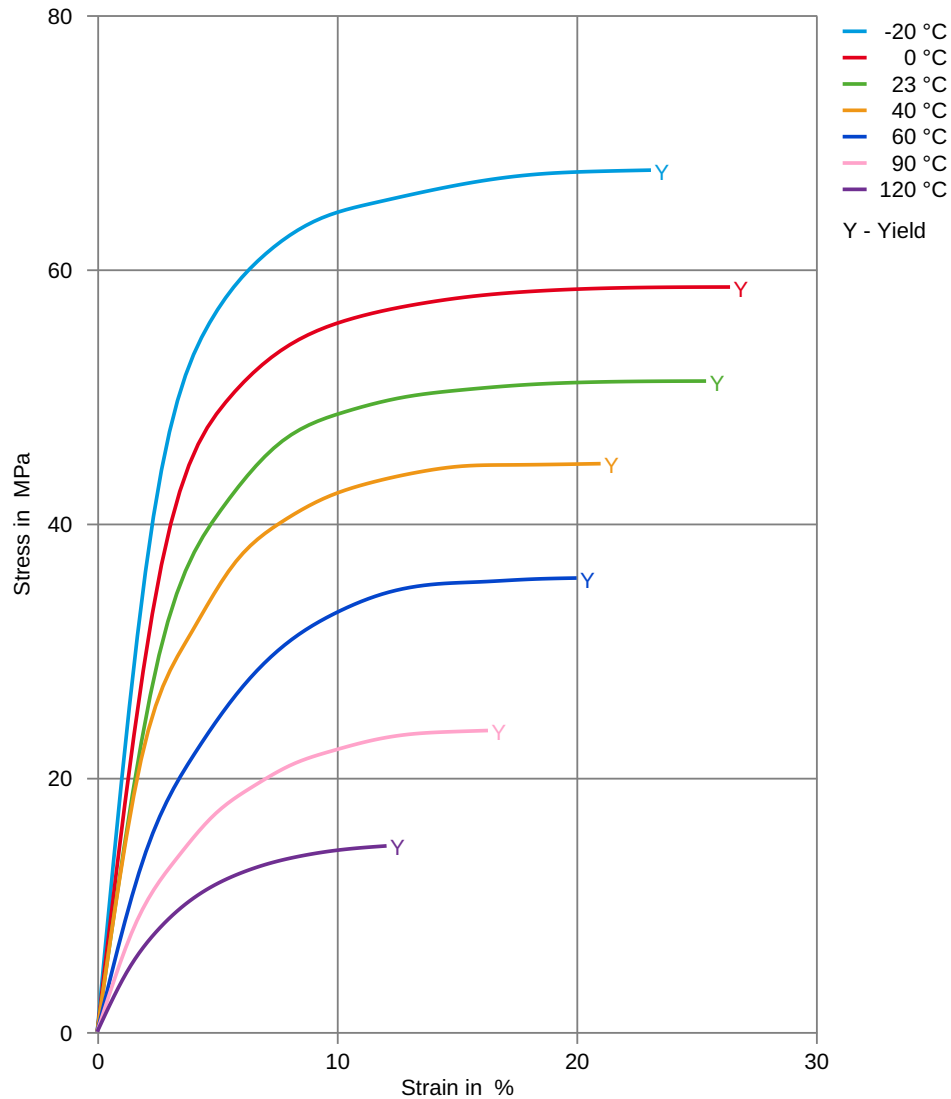
Shearstress-shear rate



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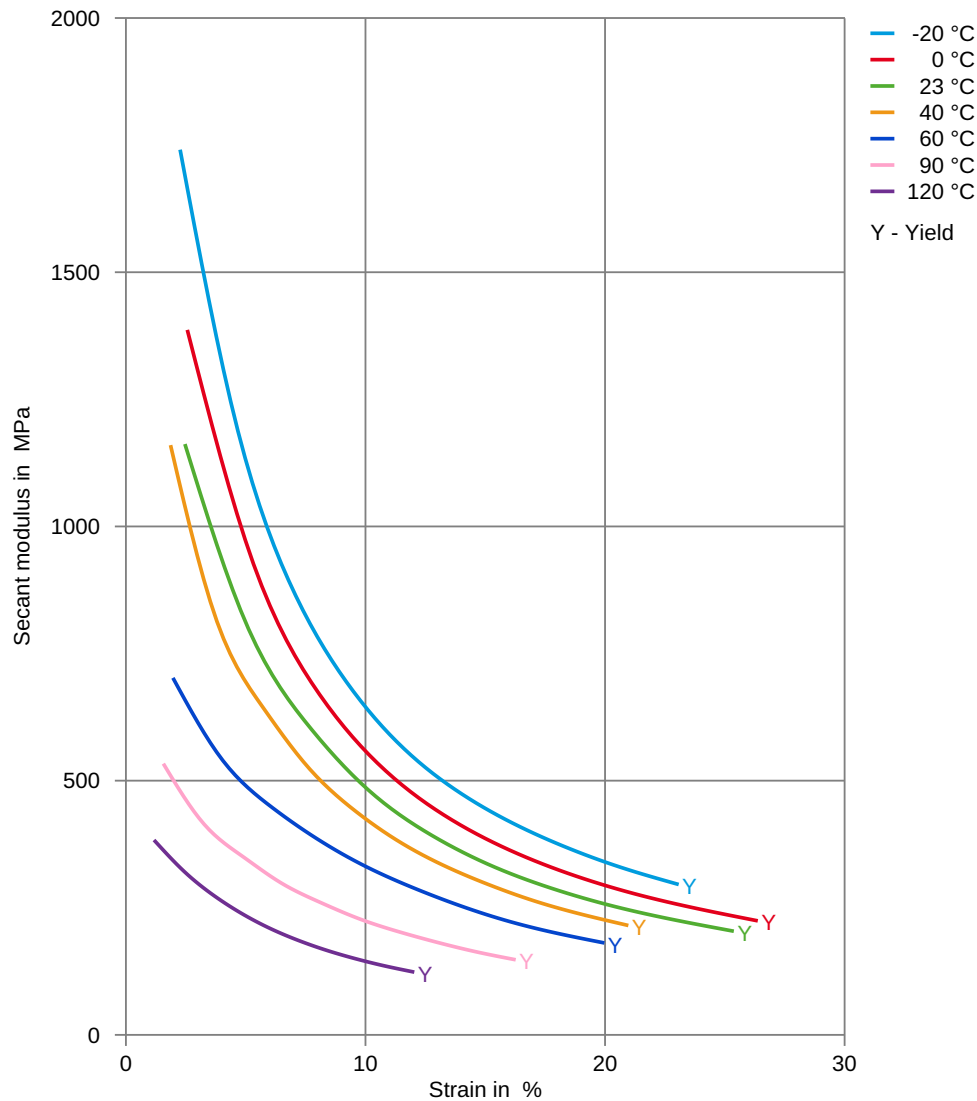
Stress-strain



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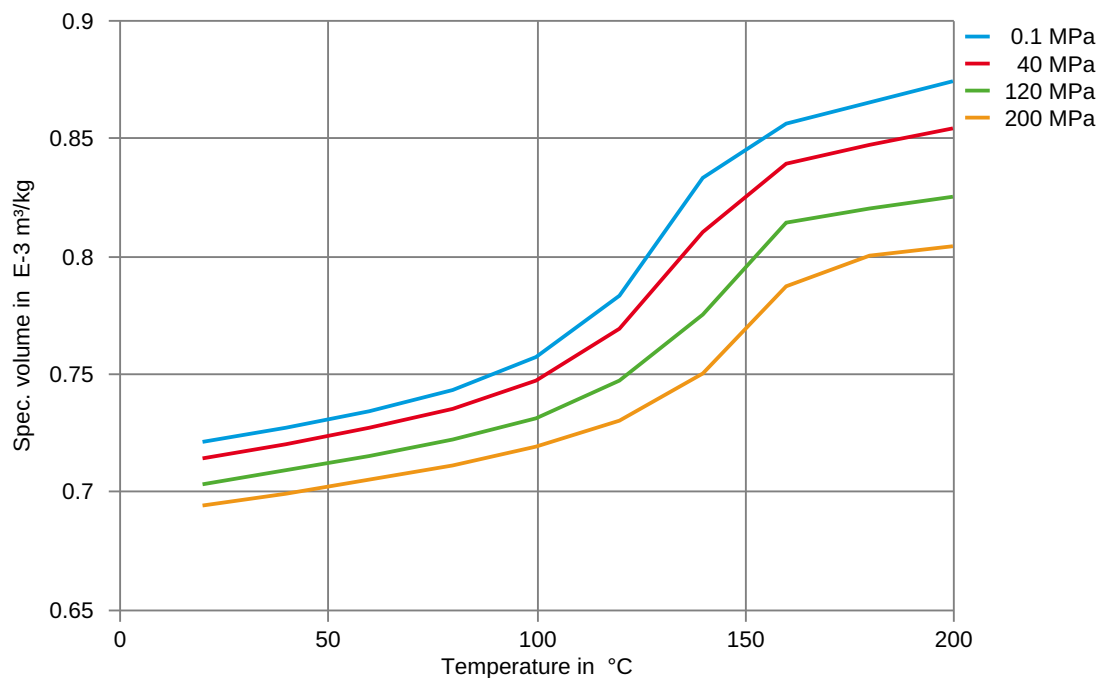
Secant modulus-strain



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Specific volume-temperature (pvT)



Delrin

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