Delrin® 100STE 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® 100STE is a super-toughened, high viscosity acetal homopolymer with very low VOC emissions for applications in automotive interiors. Processing methods include injection moulding.

Product information

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

Rheological properties

Melt volume-flow rate	1.7	cm³/10min	ISO 1133
Melt mass-flow rate	2	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	0.8[DS]	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.1[DS]	%	ISO 294-4, 2577

[DS]: Derived from similar grade

Typical mechanical properties

Tensile Modulus	1300	MPa	ISO 527-1/-2
Yield stress	43	MPa	ISO 527-1/-2
Yield strain	35	%	ISO 527-1/-2
Nominal strain at break	>50	%	ISO 527-1/-2
Flexural Modulus	1250	MPa	ISO 178
Flexural Stress at 3.5%	35	MPa	ISO 178
Charpy impact strength, 23°C	N	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	N	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	90	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	17	kJ/m²	ISO 179/1eA
Hardness, Rockwell, M-scale	18.7	-	ISO 2039-2
Hardness, Rockwell, R-scale	102	-	ISO 2039-2
Poisson's ratio	0.44	-	

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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	64	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	111	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 10N	170	°C	ISO 306
Coeff. of linear therm. expansion, parallel	120	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	130	E-6/K	ISO 11359-1/-2

Flammability

FMVSS Class	B	-	ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	42	mm/min	ISO 3795 (FMVSS 302)

Other properties

Density	1330	kg/m³	ISO 1183
Density of melt	1140	kg/m³	

VDA Properties

Emissions	<2	mg/kg	VDA 275

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	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

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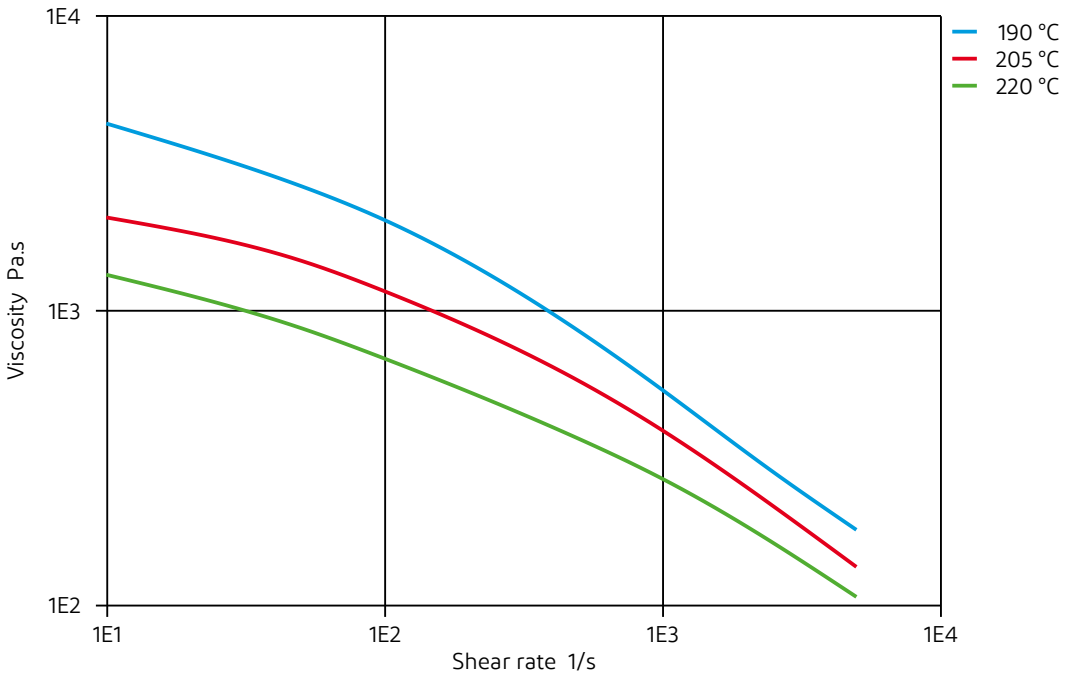
Characteristics

Additives	Release agent

Viscosity-shear rate



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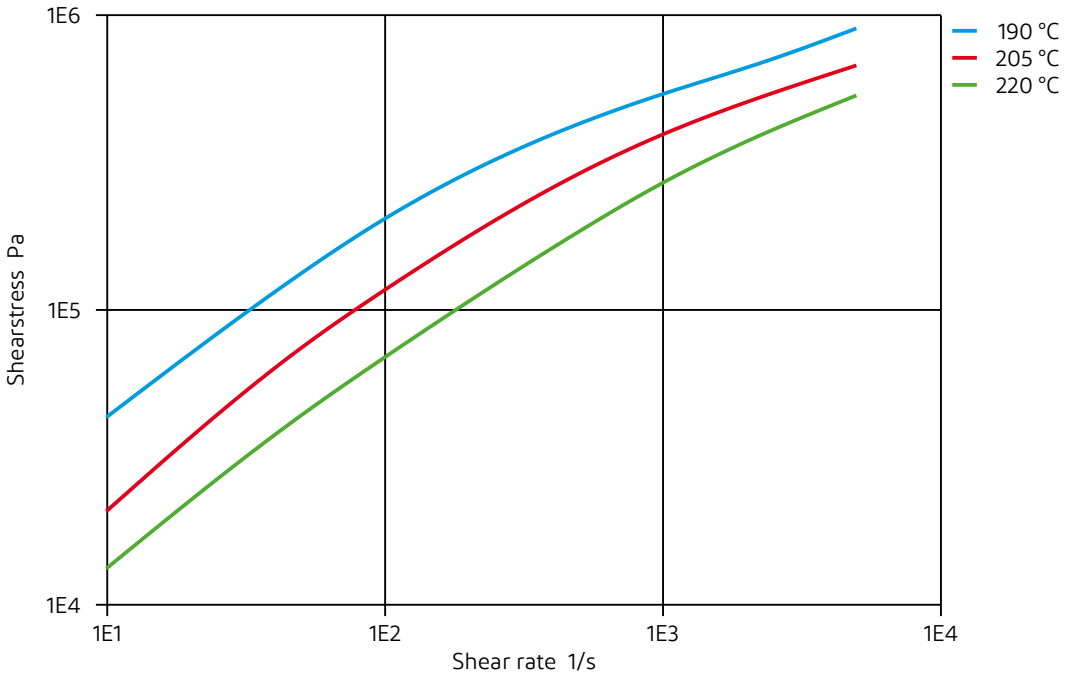
Shearstress-shear rate



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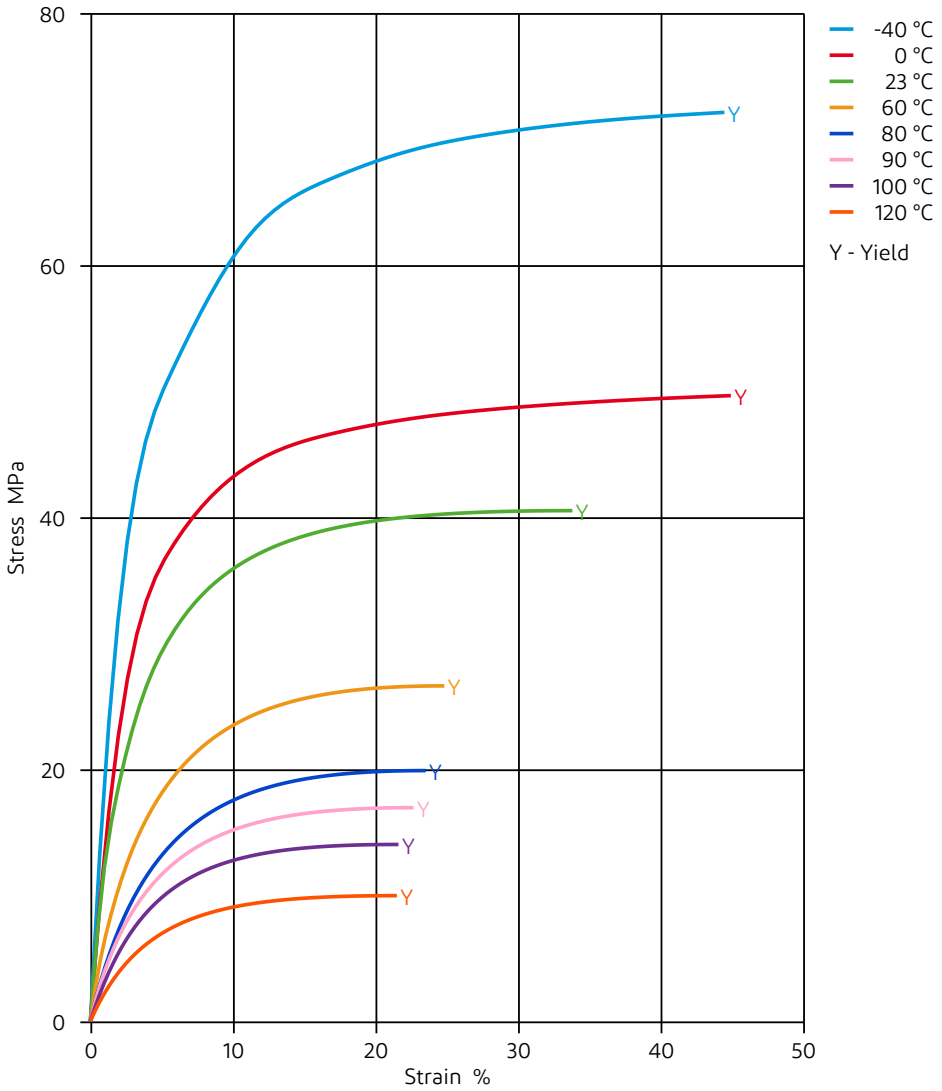
Stress-strain



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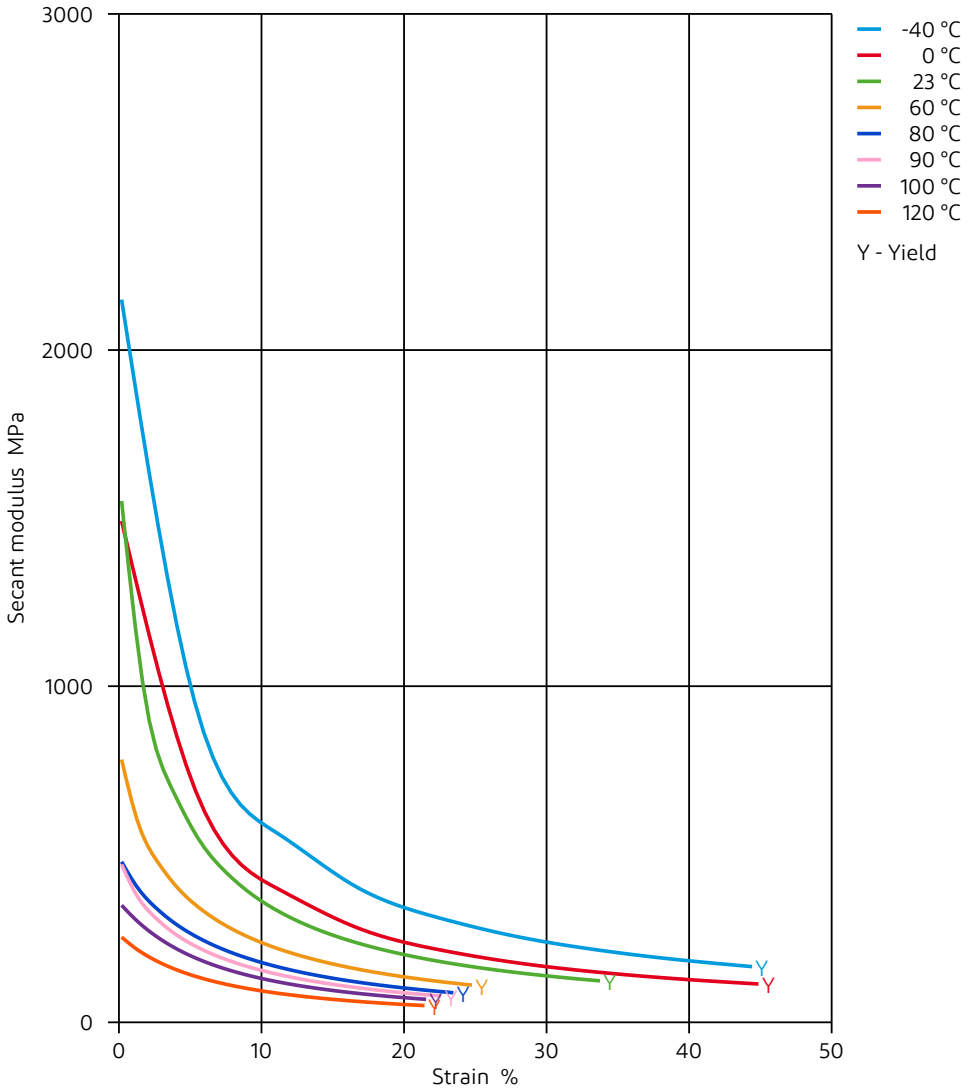
Secant modulus-strain



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