Delrin® 500CPE NC010 (PRELIMINARY)

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® 500CPE is a medium viscosity acetal homopolymer with very low VOC emissions for applications in automotive interiors. It provides good mechanical performances with improved processing, thermal stability and productivity for injection moulding.

Product information

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

Rheological properties

Melt volume-flow rate	13	cm³/10min	ISO 1133
Melt mass-flow rate	15	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	2.0	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.9	%	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	3100	MPa	ISO 527-1/-2
Yield stress	72	MPa	ISO 527-1/-2
Yield strain	16	%	ISO 527-1/-2
Nominal strain at break	33	%	ISO 527-1/-2
Charpy impact strength, 23°C	N	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	340	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	10	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	8	kJ/m²	ISO 179/1eA
Poisson's ratio	0.37	-	

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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	97	°C	ISO 75-1/-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
Burning Behav. at thickness h	HB	class	IEC 60695-11-10
Thickness tested	0.8	mm	IEC 60695-11-10
UL recognition	yes	-	UL 94
FMVSS Class	B	-	ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	20	mm/min	ISO 3795 (FMVSS 302)

Other properties

Density	1420	kg/m³	ISO 1183
Density of melt	1190	kg/m³	

VDA Properties

Emissions	<2	mg/kg	VDA 275

Injection

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
Max. screw tangential speed	0.3	m/s
Mold Temperature Optimum	90	°C
Min. mould temperature	80	°C
Max. mould temperature	100	°C
Hold pressure range	80 - 100	MPa
Hold pressure time	8	s/mm
Annealing time, optional	30	min/mm
Annealing temperature	160	°C

Characteristics

Additives	Release agent

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Additional Information

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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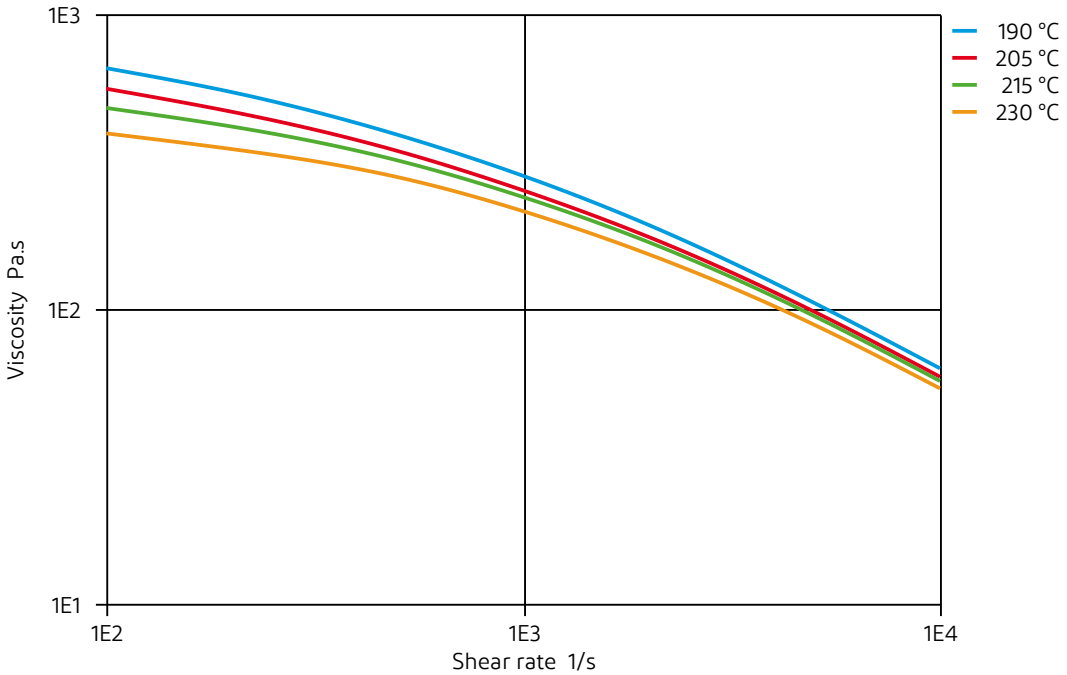
Viscosity-shear rate



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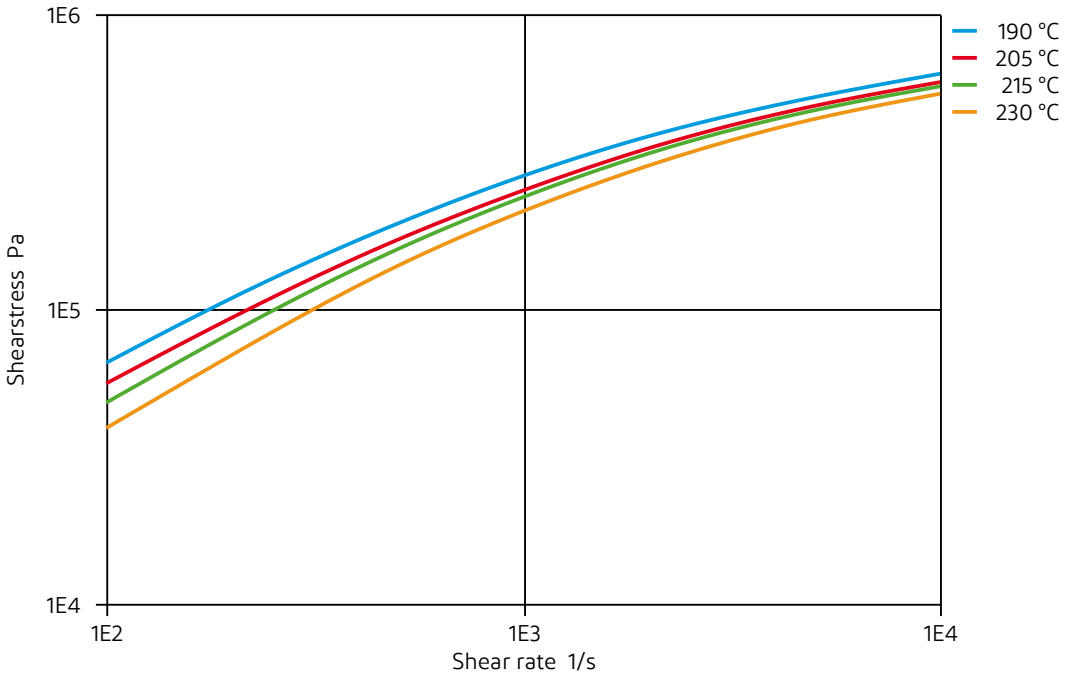
Shearstress-shear rate



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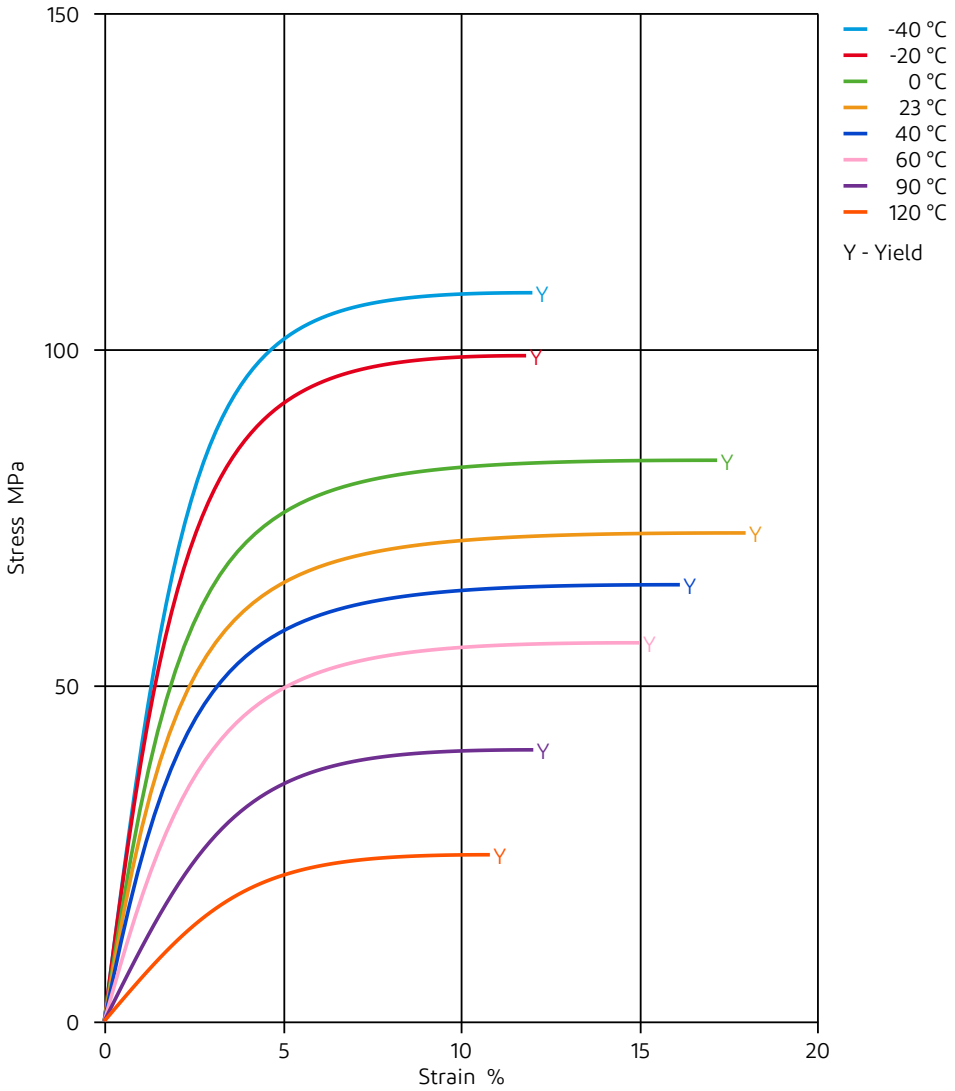
ACETAL RESIN

Stress-strain



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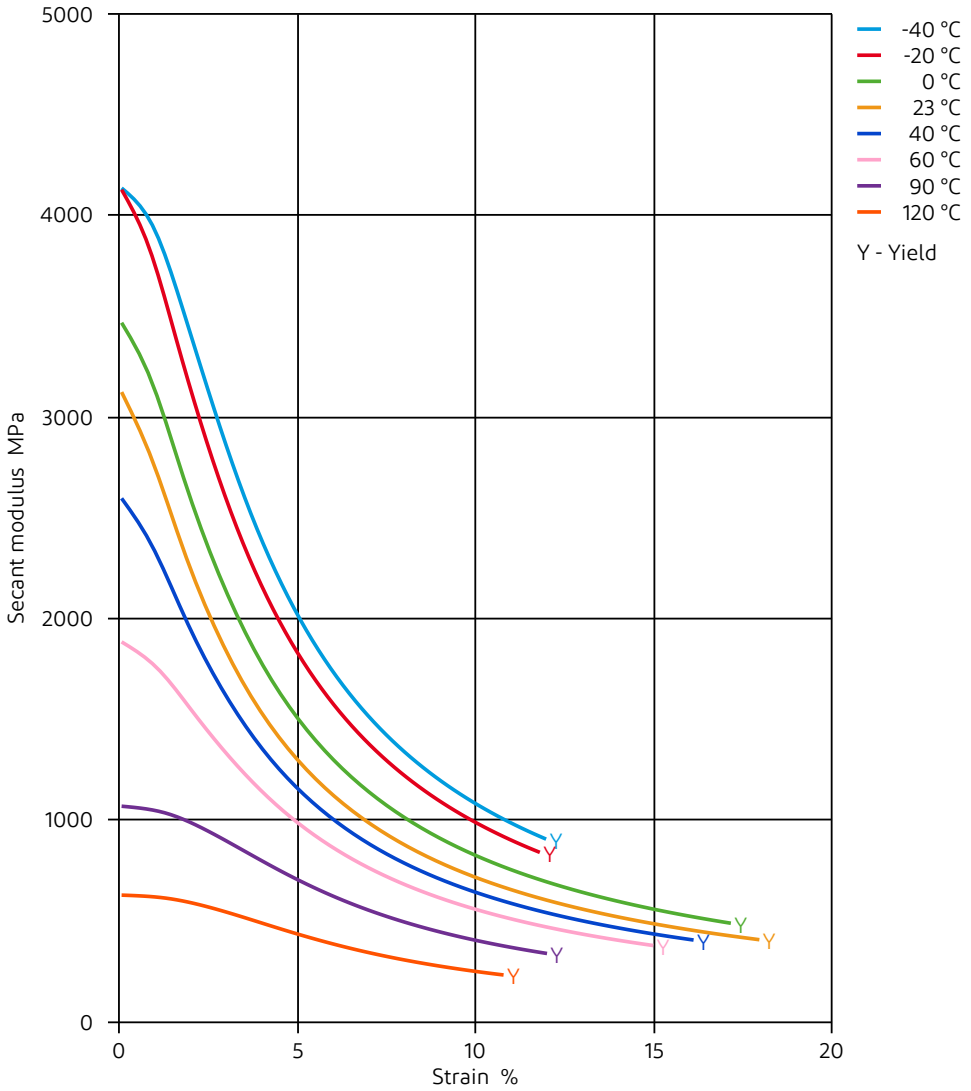
Secant modulus-strain



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