



Delrin® SC690 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® SC690 is a low viscosity acetal homopolymer, developed for thin-walled parts requiring high precision molding in the healthcare industry.

SPECIAL CONTROL for HEALTHCARE APPLICATIONS

This product is manufactured according to Good Manufacturing Practice (GMP) principles and generally accepted in food contact applications in Europe and the USA when meeting applicable use conditions. This product is also tested against selected ISO 10993 parts including 10993-5 and -11 as well as USP class VI. For details, individual compliance statements are available from your Delrin representative.

Product information

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

Rheological properties

Melt volume-flow rate	21 cm ³ /10min	ISO 1133
Melt mass-flow rate	25 g/10min	ISO 1133
Temperature	190 °C	ISO 1133
Load	2.16 kg	ISO 1133
Moulding shrinkage, parallel	1.9 %	ISO 294-4, 2577
Moulding shrinkage, normal	1.9 %	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	3300 MPa	ISO 527-1/-2
Yield stress	71 MPa	ISO 527-1/-2
Yield strain	12 %	ISO 527-1/-2
Nominal strain at break	23 %	ISO 527-1/-2
Flexural Modulus	3000 MPa	ISO 178
Tensile creep modulus, 1h	2800 MPa	ISO 899-1
Tensile creep modulus, 1000h	1500 MPa	ISO 899-1
Charpy impact strength, 23°C	200 kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	200 kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	8 kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	7 kJ/m ²	ISO 179/1eA
Izod notched impact strength, 23°C	7 kJ/m ²	ISO 180/1A
Izod notched impact strength, -40°C	8 kJ/m ²	ISO 180/1A



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Hardness, Rockwell, M-scale	92	ISO 2039-2
Hardness, Rockwell, R-scale	120	ISO 2039-2
Poisson's ratio	0.37	

Thermal properties

Melting temperature, 10°C/min	178 °C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	94 °C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	162 °C	ISO 75-1/-2
Vicat softening temperature, 50°C/h, 50N	160 °C	ISO 306
Coeff. of linear therm. expansion, parallel CLTE, Parallel, 23-55°C(73-130°F)	120 E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	104 E-6/K	ASTM E 831
RTI, electrical, 0.75mm	120 E-6/K	ISO 11359-1/-2
RTI, electrical, 1.5mm	50 °C	UL 746B
RTI, electrical, 3mm	110 °C	UL 746B
RTI, impact, 0.75mm	110 °C	UL 746B
RTI, impact, 1.5mm	50 °C	UL 746B
RTI, impact, 3mm	85 °C	UL 746B
RTI, strength, 0.75mm	90 °C	UL 746B
RTI, strength, 1.5mm	50 °C	UL 746B
RTI, strength, 3mm	90 °C	UL 746B
	95 °C	UL 746B

Flammability

Hot Wire Ignition, 0.75mm	8 s	UL 746A
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Electrical properties

Relative permittivity, 100Hz	3.8	IEC 62631-2-1
Relative permittivity, 1MHz	3.8	IEC 62631-2-1
Dissipation factor, 1MHz	50 E-4	IEC 62631-2-1
Volume resistivity	1E12 Ohm.m	IEC 62631-3-1
Surface resistivity	>1E15 Ohm	IEC 62631-3-2
Comparative tracking index	600	IEC 60112

Other properties

Humidity absorption, 2mm	0.3 %	Sim. to ISO 62
Water absorption, 2mm	1.4 %	Sim. to ISO 62
Density	1420 kg/m³	ISO 1183

VDA Properties

Emissions	<8 mg/kg	VDA 275
Fogging, F-value (refraction)	95 %	ISO 6452
Fogging, G-value (condensate)	0.2 mg	ISO 6452



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Injection

Drying Recommended	yes
Drying Temperature	80 °C
Drying Time, Dehumidified Dryer	2 - 4 h
Processing Moisture Content	≤0.2 %
Melt Temperature Optimum	215 °C
Min. melt temperature	210 °C
Max. melt temperature	220 °C
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

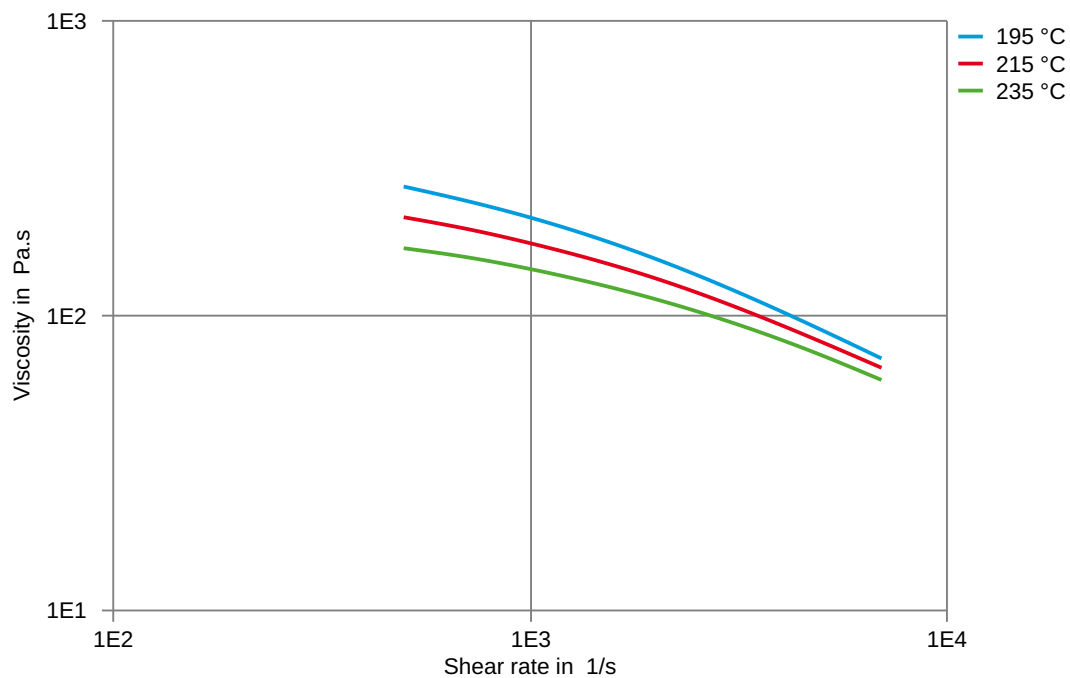
Additives	Release agent
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Viscosity-shear rate

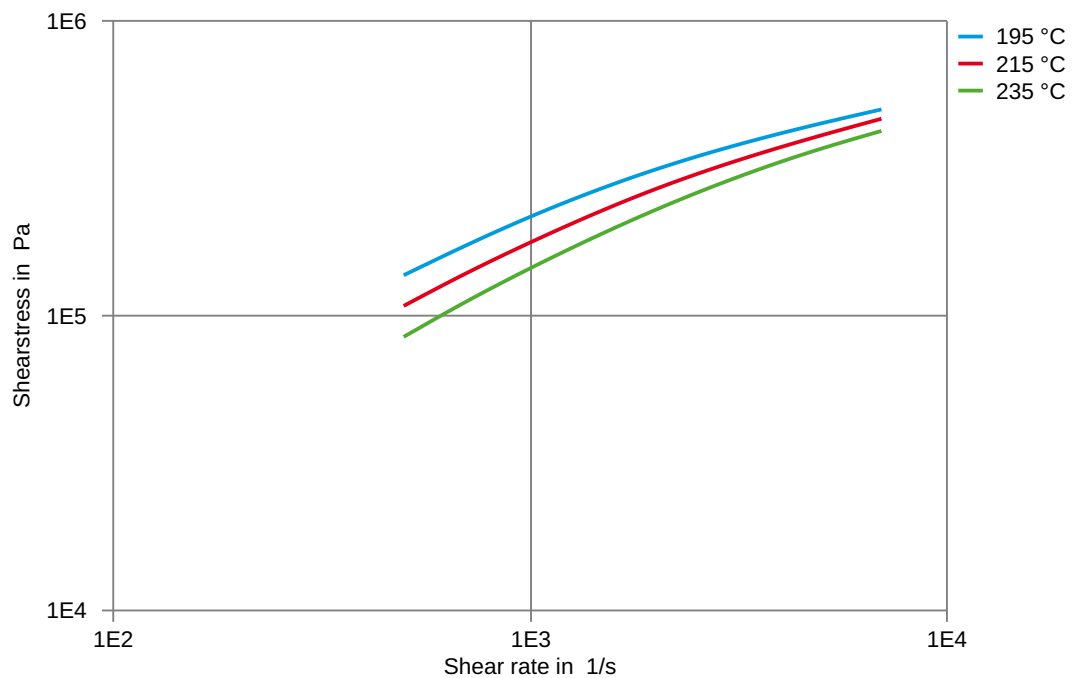




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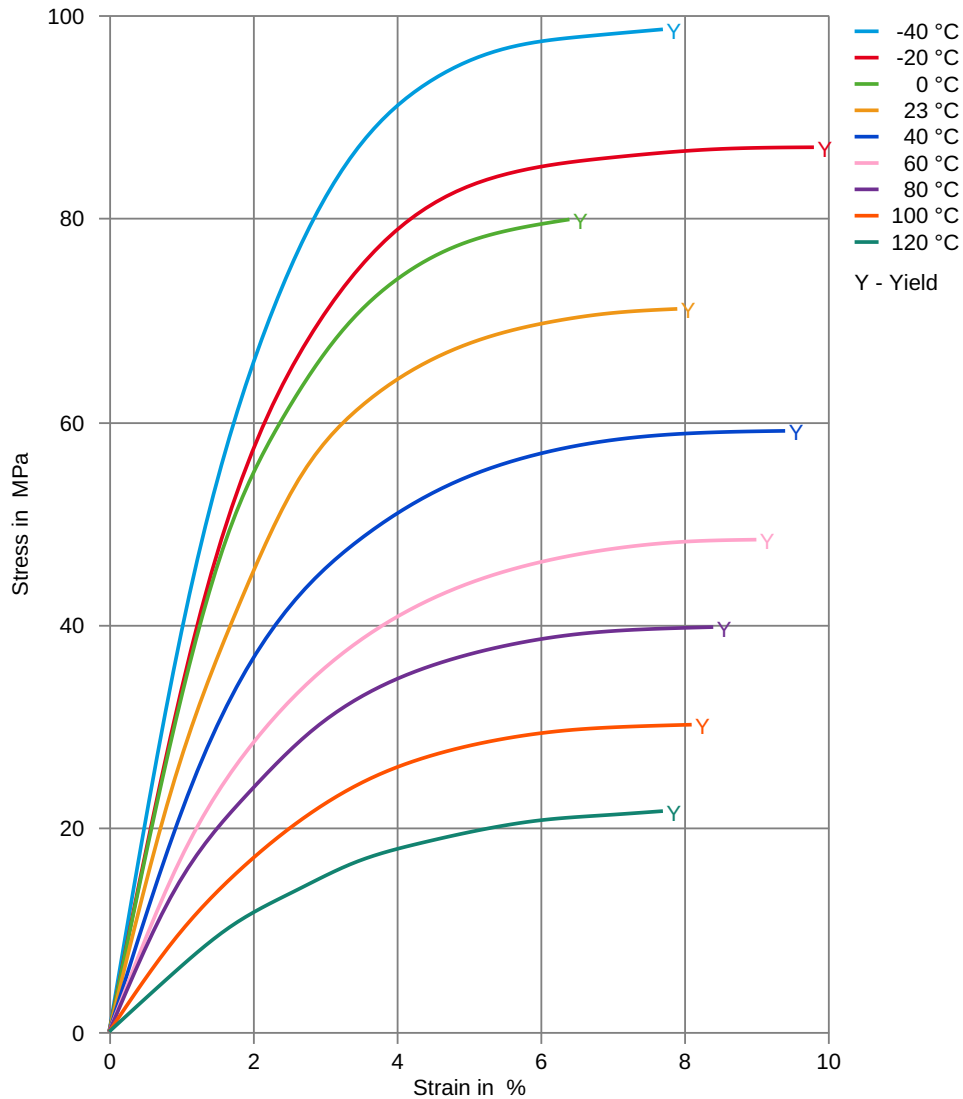
Shearstress-shear rate



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Stress-strain



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Secant modulus-strain

