



Delrin® SC655 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® SC655 is a medium viscosity acetal homopolymer, developed for 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	13 cm ³ /10min	ISO 1133
Melt mass-flow rate	15 g/10min	ISO 1133
Temperature	190 °C	ISO 1133
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	71 MPa	ISO 527-1/-2
Yield strain	17 %	ISO 527-1/-2
Nominal strain at break	30 %	ISO 527-1/-2
Flexural Modulus	2950 MPa	ISO 178
Flexural Stress at 3.5%	80 MPa	ISO 178
Tensile creep modulus, 1h	2800 MPa	ISO 899-1
Tensile creep modulus, 1000h	1600 MPa	ISO 899-1
Charpy impact strength, 23°C	300 kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	280 kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	9 kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	8 kJ/m ²	ISO 179/1eA
Puncture - maximum force, 23°C	2000 N	ISO 6603-2



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Puncture energy, 23°C	3 J	ISO 6603-2
Izod notched impact strength, 23°C	9 kJ/m ²	ISO 180/1A
Izod notched impact strength, -30°C	8 kJ/m ²	ISO 180/1A
Izod impact strength, 23°C	280 kJ/m ²	ISO 180/1U
Izod impact strength, -30°C	250 kJ/m ²	ISO 180/1U
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	93 °C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	160 °C	ISO 75-1/-2
Vicat softening temperature, 50°C/h, 50N	155 °C	ISO 306
Ball pressure test	165 °C	IEC 60695-10-2
Coeff. of linear therm. expansion, parallel	110 E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	110 E-6/K	ISO 11359-1/-2
RTI, electrical, 0.75mm	50 °C	UL 746B
RTI, electrical, 1.5mm	110 °C	UL 746B
RTI, electrical, 3mm	110 °C	UL 746B
RTI, impact, 0.75mm	50 °C	UL 746B
RTI, impact, 1.5mm	85 °C	UL 746B
RTI, impact, 3mm	90 °C	UL 746B
RTI, strength, 0.75mm	50 °C	UL 746B
RTI, strength, 1.5mm	90 °C	UL 746B
RTI, strength, 3mm	95 °C	UL 746B

Electrical properties

Relative permittivity, 100Hz	3.8	IEC 62631-2-1
Relative permittivity, 1MHz	3.8	IEC 62631-2-1
Dissipation factor, 100Hz	90 E-4	IEC 62631-2-1
Dissipation factor, 1MHz	55 E-4	IEC 62631-2-1
Volume resistivity	2E12 Ohm.m	IEC 62631-3-1
Surface resistivity	4E14 Ohm	IEC 62631-3-2
Electric strength	44 kV/mm	IEC 60243-1
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/m ³	ISO 1183



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VDA Properties

Emissions	<8 mg/kg	VDA 275
Fogging, F-value (refraction)	90 %	ISO 6452
Fogging, G-value (condensate)	0.35 mg	ISO 6452

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

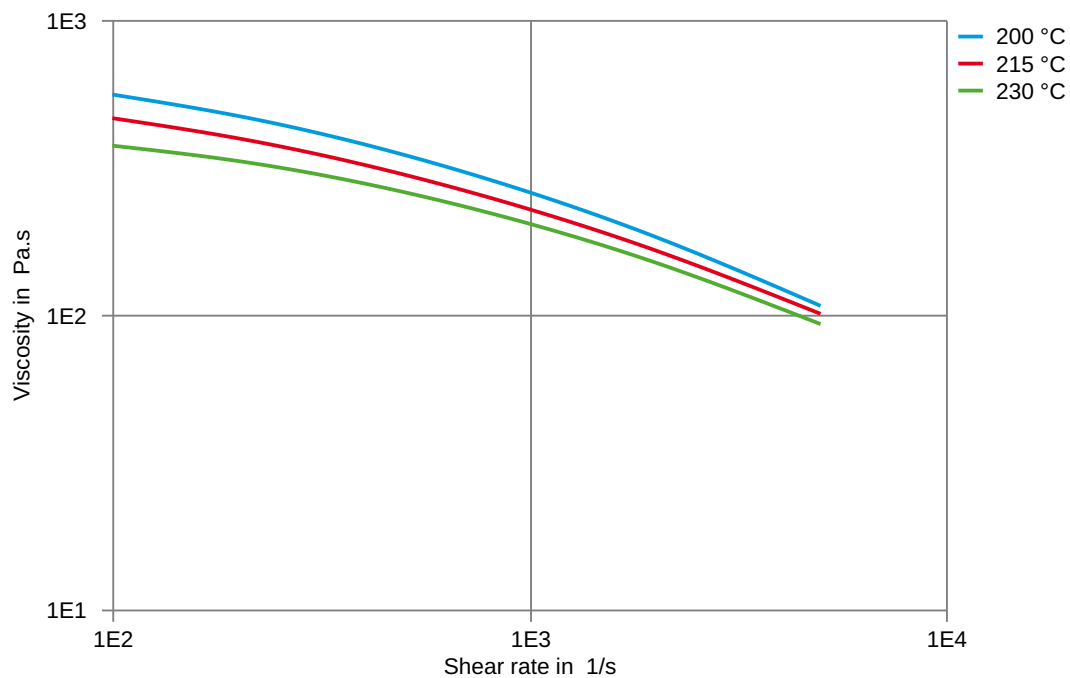
Additives	Release agent
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Viscosity-shear rate

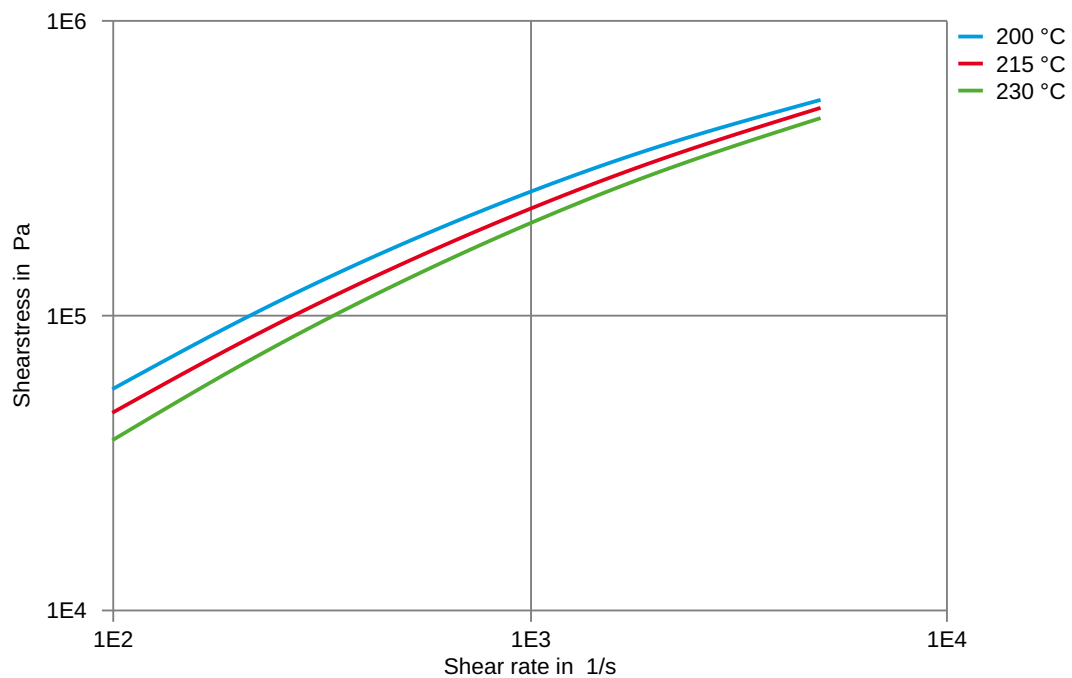




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Shearstress-shear rate

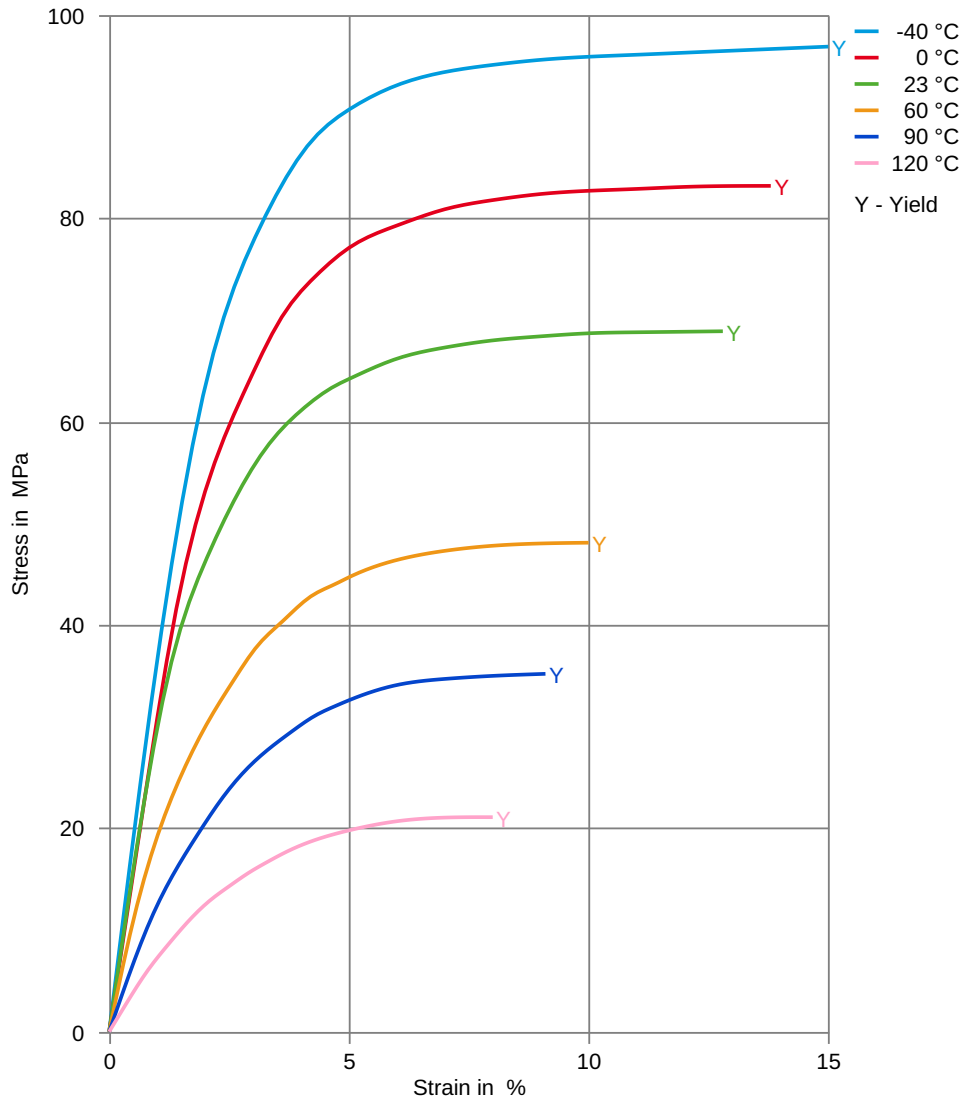




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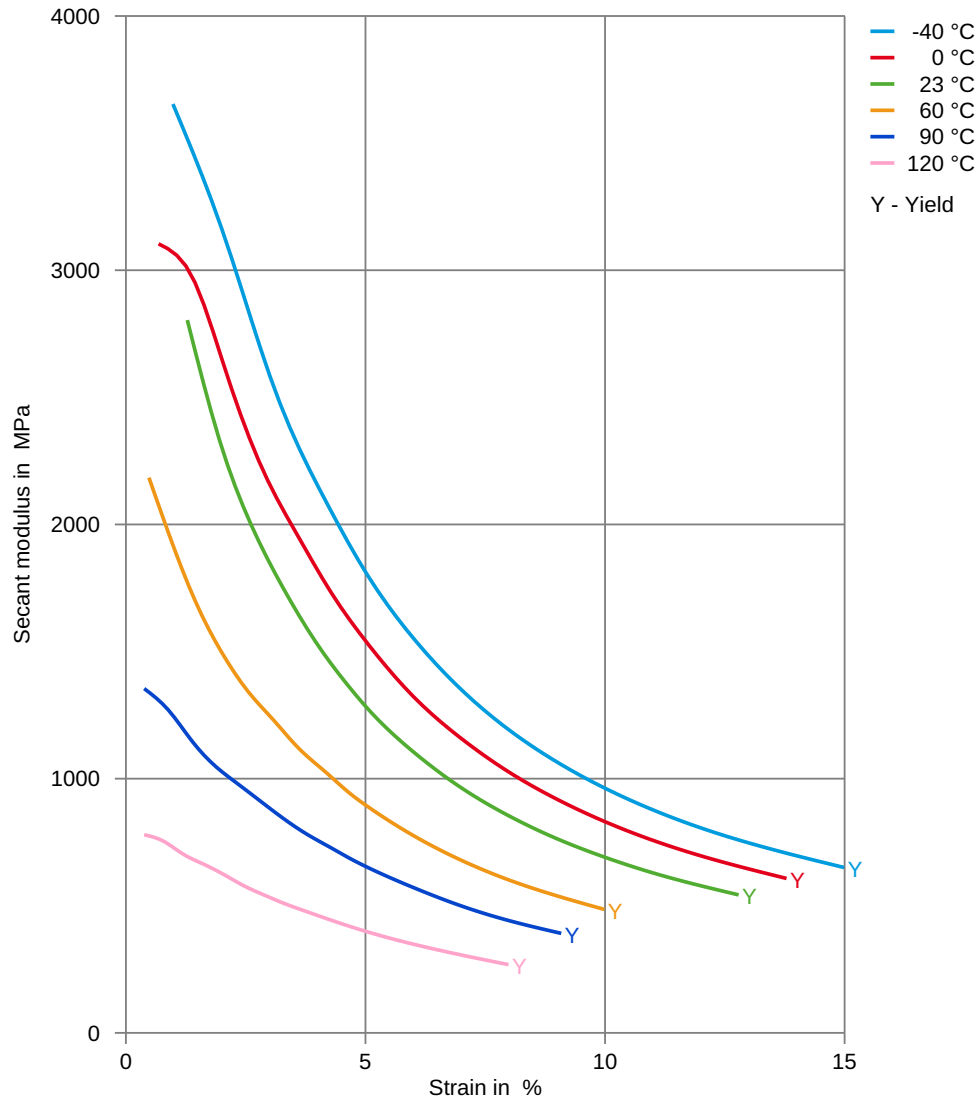
Stress-strain



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Secant modulus-strain





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Tensile modulus-temperature

