Delrin® 570 NC000

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® 570 is a medium viscosity acetal homopolymer containing 20% glass fiber filler for injection moulding. It has very high stiffness, low warpage, and good creep resistance for superior performance at elevated temperature.

Product information

Resin Identification	POM-GF20	ISO 1043
Part Marking Code	>POM-GF20<	ISO 11469

Rheological properties

Melt volume-flow rate	7	cm³/10min	ISO 1133
Temperature	190	°C	ISO 1133
Load	2.16	kg	ISO 1133
Moulding shrinkage, parallel	1.8	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.2	%	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	4900	MPa	ISO 527-1/-2
Stress at break	53	MPa	ISO 527-1/-2
Strain at break	12	%	ISO 527-1/-2
Flexural Modulus	4600	MPa	ISO 178
Charpy impact strength, 23°C	54	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	50	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	3.5	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	3	kJ/m²	ISO 179/1eA
Izod notched impact strength, 23°C	6	kJ/m²	ISO 180/1A
Ball indentation hardness, H 961/30	160	MPa	ISO 2039-1
Poisson's ratio	0.35		

Thermal properties

Melting temperature, 10°C/min	178	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	125	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	165	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h, 50N	160	°C	ISO 306
Coeff. of linear therm. expansion, parallel	60	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	85	E-6/K	ISO 11359-1/-2

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RTI, electrical, 1.5mm	105	°C	UL 746B
RTI, electrical, 3mm	105	°C	UL 746B
RTI, electrical, 6mm	105	°C	UL 746B
RTI, impact, 1.5mm	85	°C	UL 746B
RTI, impact, 3mm	85	°C	UL 746B
RTI, impact, 6mm	85	°C	UL 746B
RTI, strength, 1.5mm	90	°C	UL 746B
RTI, strength, 3mm	90	°C	UL 746B
RTI, strength, 6mm	90	°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
Burning Behav. at thickness h	HB	class	IEC 60695-11-10
Thickness tested	3	mm	IEC 60695-11-10
UL recognition	yes		UL 94
Glow Wire Flammability Index, 3mm	600	°C	IEC 60695-2-12
FMVSS Class	B		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	40	mm/min	ISO 3795 (FMVSS 302)

Electrical properties

Relative permittivity, 100Hz	3.9		IEC 62631-2-1
Relative permittivity, 1MHz	3.9		IEC 62631-2-1
Dissipation factor, 1MHz	50	E-4	IEC 62631-2-1
Volume resistivity	1E13	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	0.1	%	Sim. to ISO 62
Water absorption, 2mm	0.8	%	Sim. to ISO 62
Density	1560	kg/m³	ISO 1183

VDA Properties

Fogging, G-value (condensate)	0.5	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
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

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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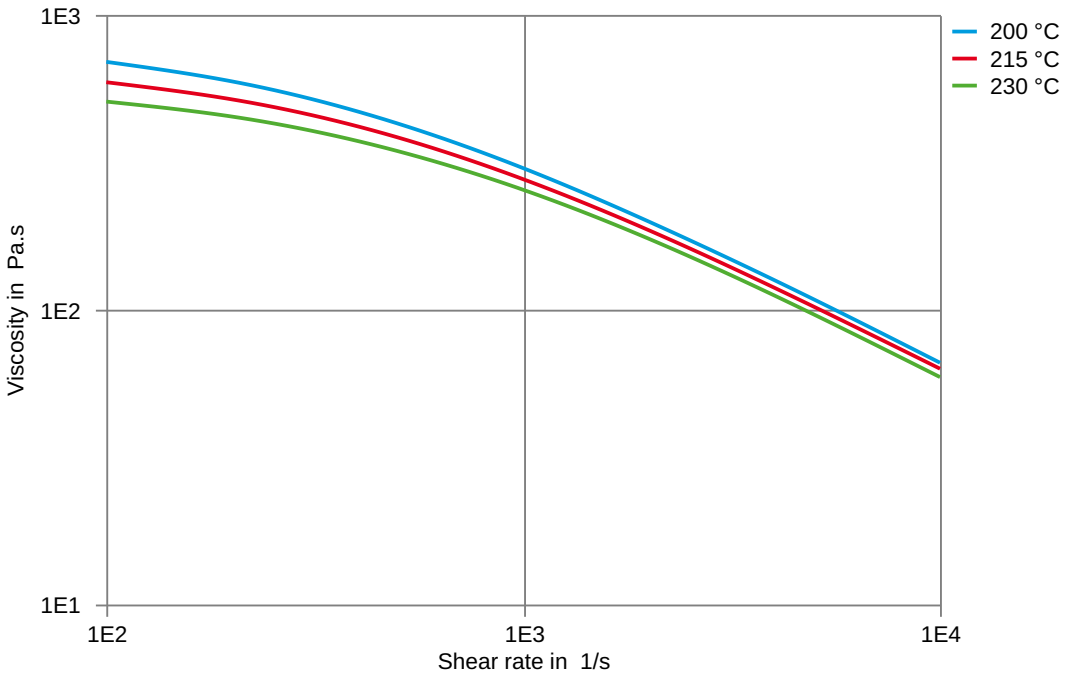
Viscosity-shear rate



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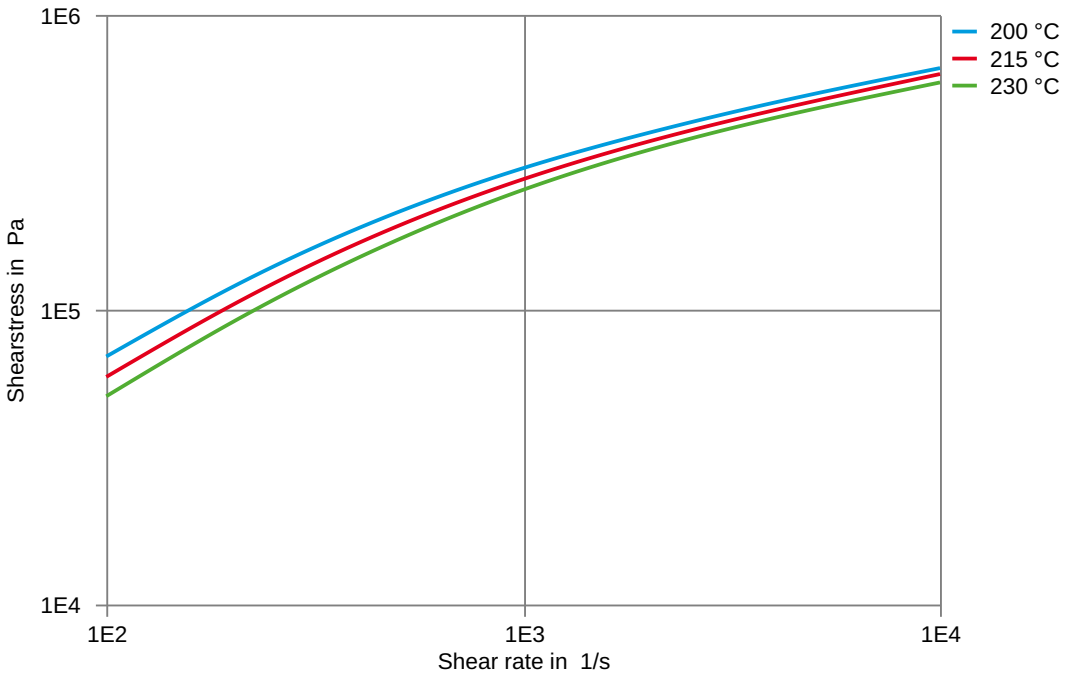
Shearstress-shear rate



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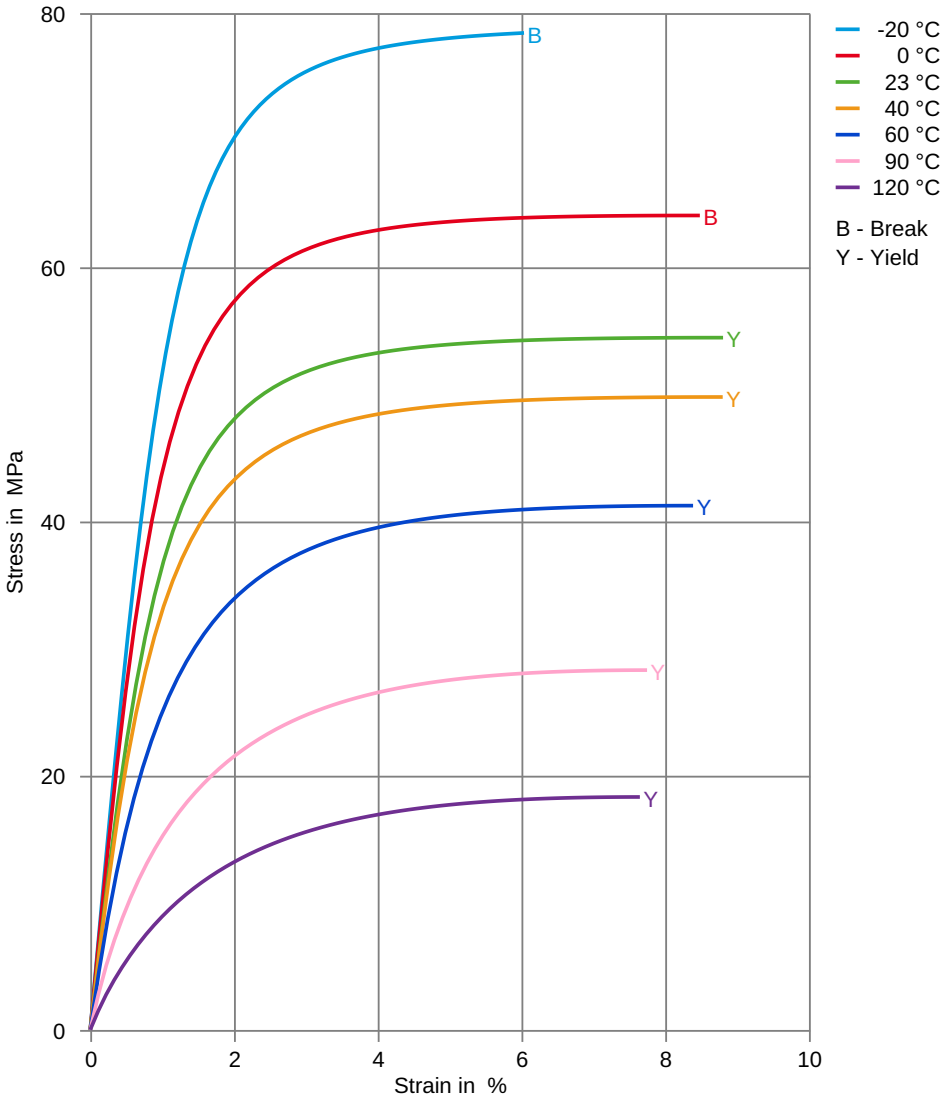
Stress-strain



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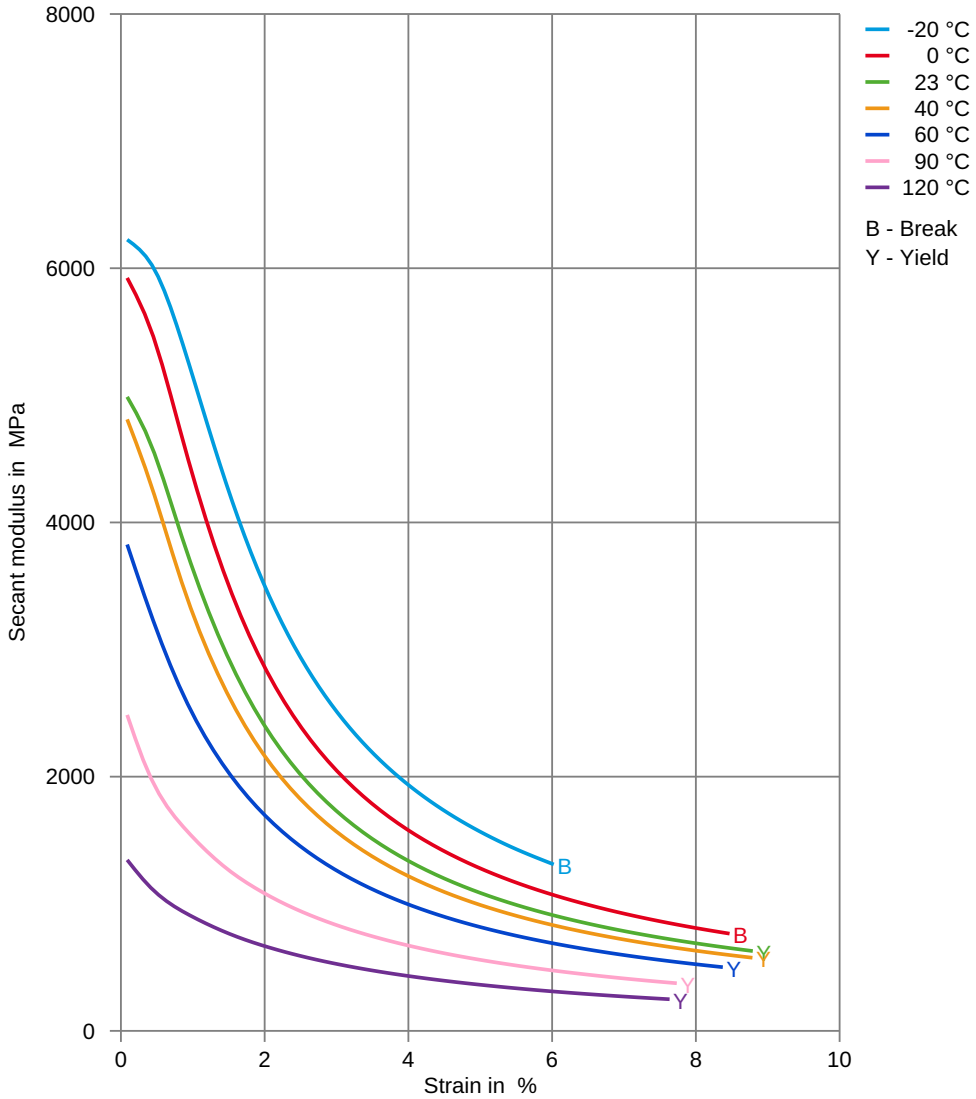
Secant modulus-strain



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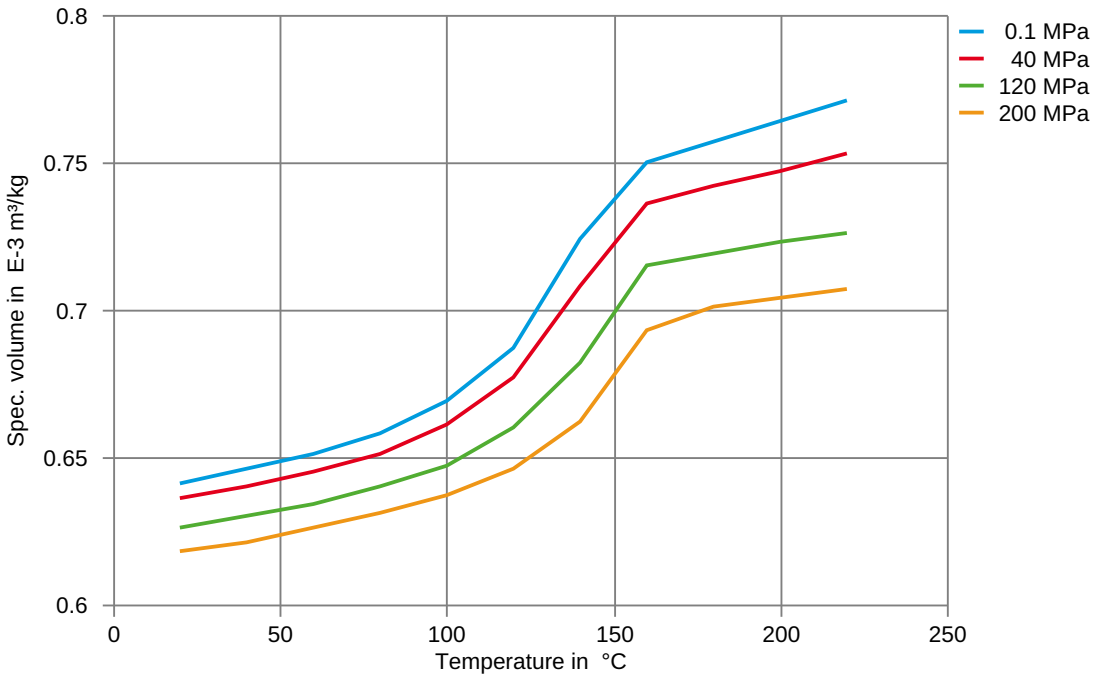
Specific volume-temperature (pvT)



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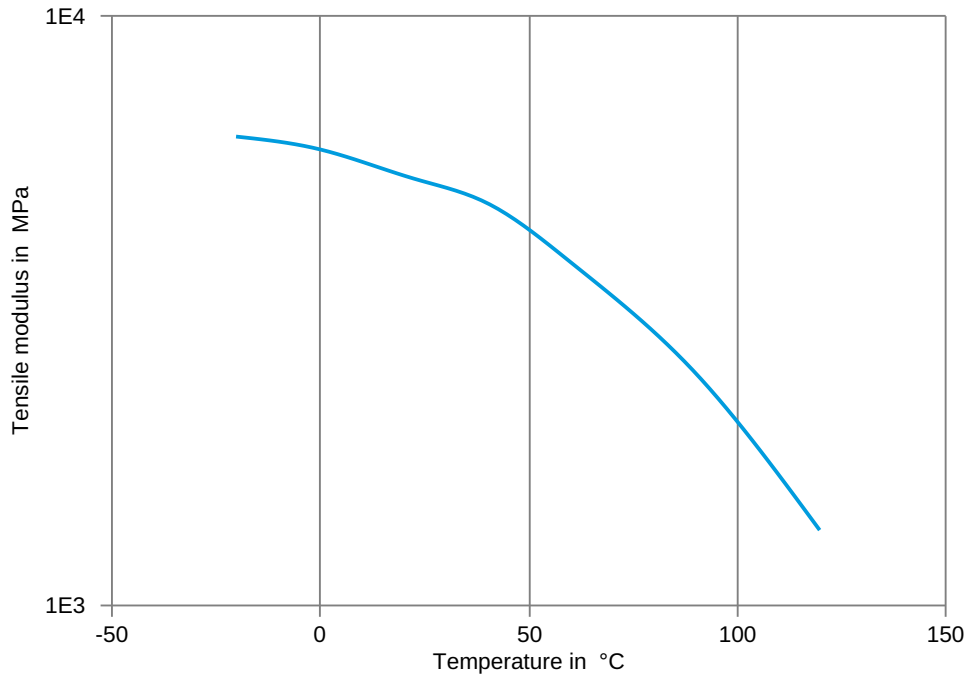
Tensile modulus-temperature



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