



Delrin® 525GR 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® 525GR is a 25% glass-reinforced acetal homopolymer for injection molding. It has very high strength, stiffness, and high deflection temperature, excellent creep resistance, and good notched impact properties.

Product information

Resin Identification	POM-GF25	ISO 1043
Part Marking Code	>POM-GF25<	ISO 11469

Rheological properties

Melt mass-flow rate	8 g/10min	ISO 1133
Melt mass-flow rate, Temperature	190 °C	ISO 1133
Melt mass-flow rate, Load	2.16 kg	ISO 1133
Moulding shrinkage, parallel	0.4 %	ISO 294-4, 2577
Moulding shrinkage, normal	1.2 %	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	9500 MPa	ISO 527-1/-2
Stress at break	160 MPa	ISO 527-1/-2
Strain at break	3 %	ISO 527-1/-2
Flexural Modulus	9150 MPa	ISO 178
Flexural Strength	245 MPa	ISO 178
Compressive strength	210 MPa	ISO 604
Tensile creep modulus, 1h	8500 MPa	ISO 899-1
Tensile creep modulus, 1000h	6000 MPa	ISO 899-1
Charpy impact strength, 23°C	60 kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	50 kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	10 kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	10 kJ/m²	ISO 179/1eA
Hardness, Rockwell, M-scale	101	ISO 2039-2
Hardness, Rockwell, R-scale	122	ISO 2039-2
Poisson's ratio	0.34	

[1]: Strain at break = 3.2%



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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	172 °C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	176 °C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel	35 E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	100 E-6/K	ISO 11359-1/-2
Thermal conductivity	0.46 W/(m K)	ISO 22007-2
RTI, electrical, 0.75mm	50 °C	UL 746B
RTI, electrical, 1.5mm	50 °C	UL 746B
RTI, electrical, 3mm	50 °C	UL 746B
RTI, impact, 0.75mm	50 °C	UL 746B
RTI, impact, 1.5mm	50 °C	UL 746B
RTI, impact, 3mm	50 °C	UL 746B
RTI, strength, 0.75mm	50 °C	UL 746B
RTI, strength, 1.5mm	50 °C	UL 746B
RTI, strength, 3mm	50 °C	UL 746B

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	0.75 mm	IEC 60695-11-10
UL recognition	yes	UL 94
FMVSS Class	B	ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	49 mm/min	ISO 3795 (FMVSS 302)

Electrical properties

Relative permittivity, 100Hz	3.7	IEC 62631-2-1
Relative permittivity, 1MHz	3.8	IEC 62631-2-1
Volume resistivity	1E12 Ohm.m	IEC 62631-3-1
Comparative tracking index	600	IEC 60112

Other properties

Humidity absorption, 2mm	0.17 %	Sim. to ISO 62
Water absorption, 2mm	1.26 %	Sim. to ISO 62
Density	1590 kg/m³	ISO 1183



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VDA Properties

Fogging, F-value (refraction)	90 ^[DS, AMin] %	ISO 6452
Fogging, G-value (condensate)	1.2 mg	ISO 6452
[DS]: Derived from similar grade		

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
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Additional information

Injection molding	Drying is recommended, but not necessary for newly opened packaging stored in a dry location.
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Follow the drying guidelines above in the following cases:

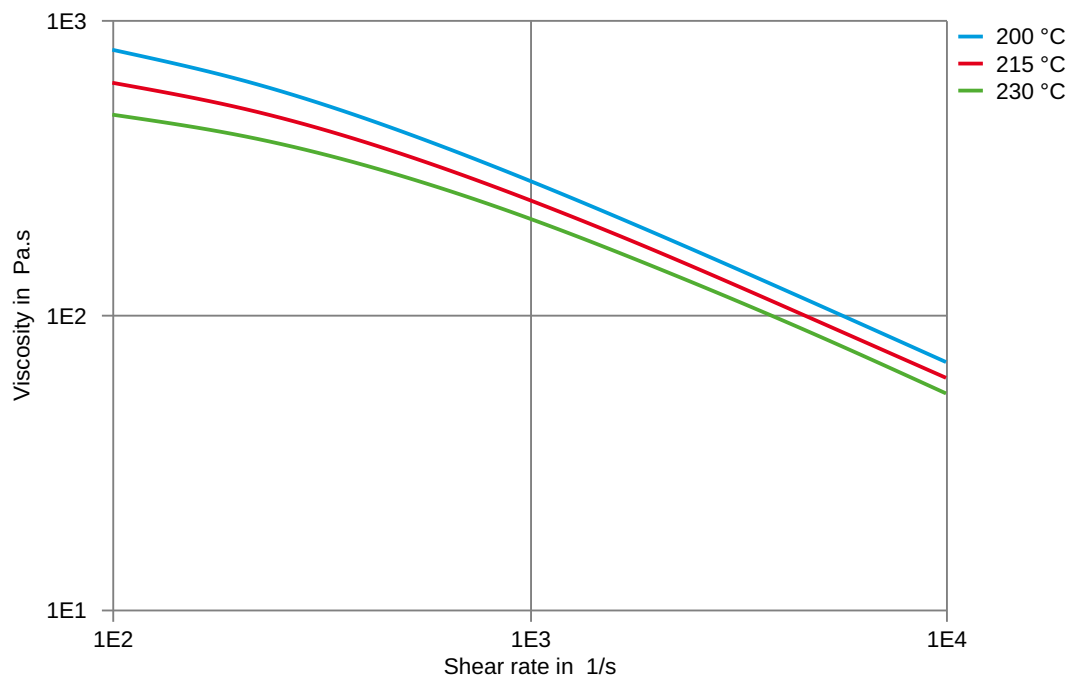
- If moisture is above the Processing Moisture Content recommendation,
- When a resin container is damaged,
- When the material is not properly stored in a dry place at room temperature, or
- When packaging stays open for a significant time.



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Viscosity-shear rate

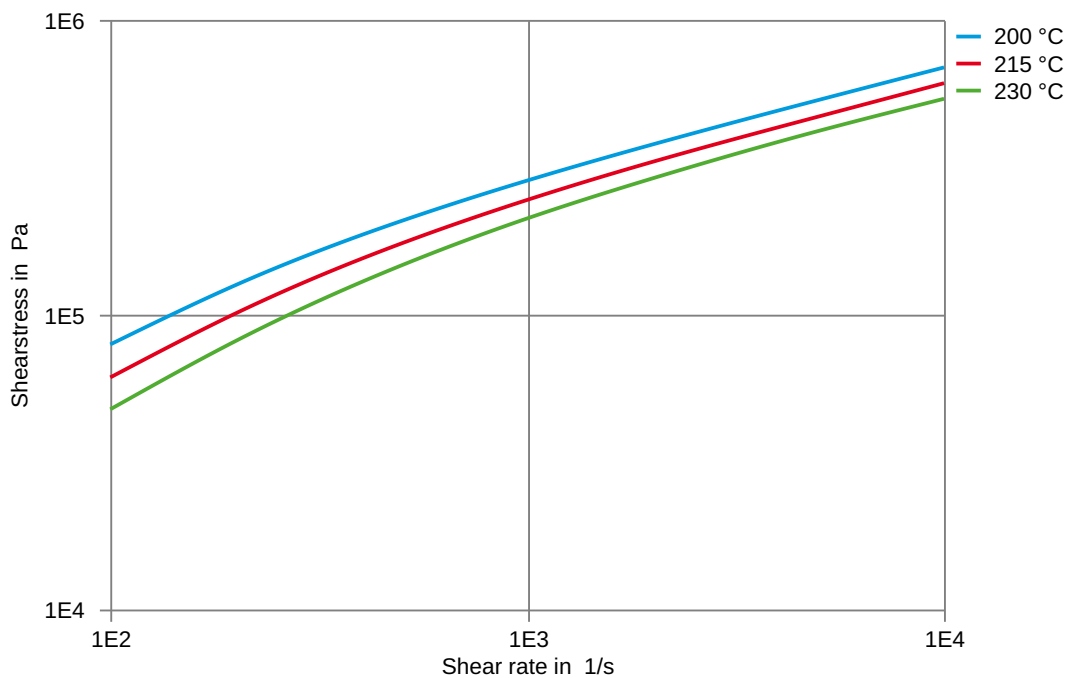




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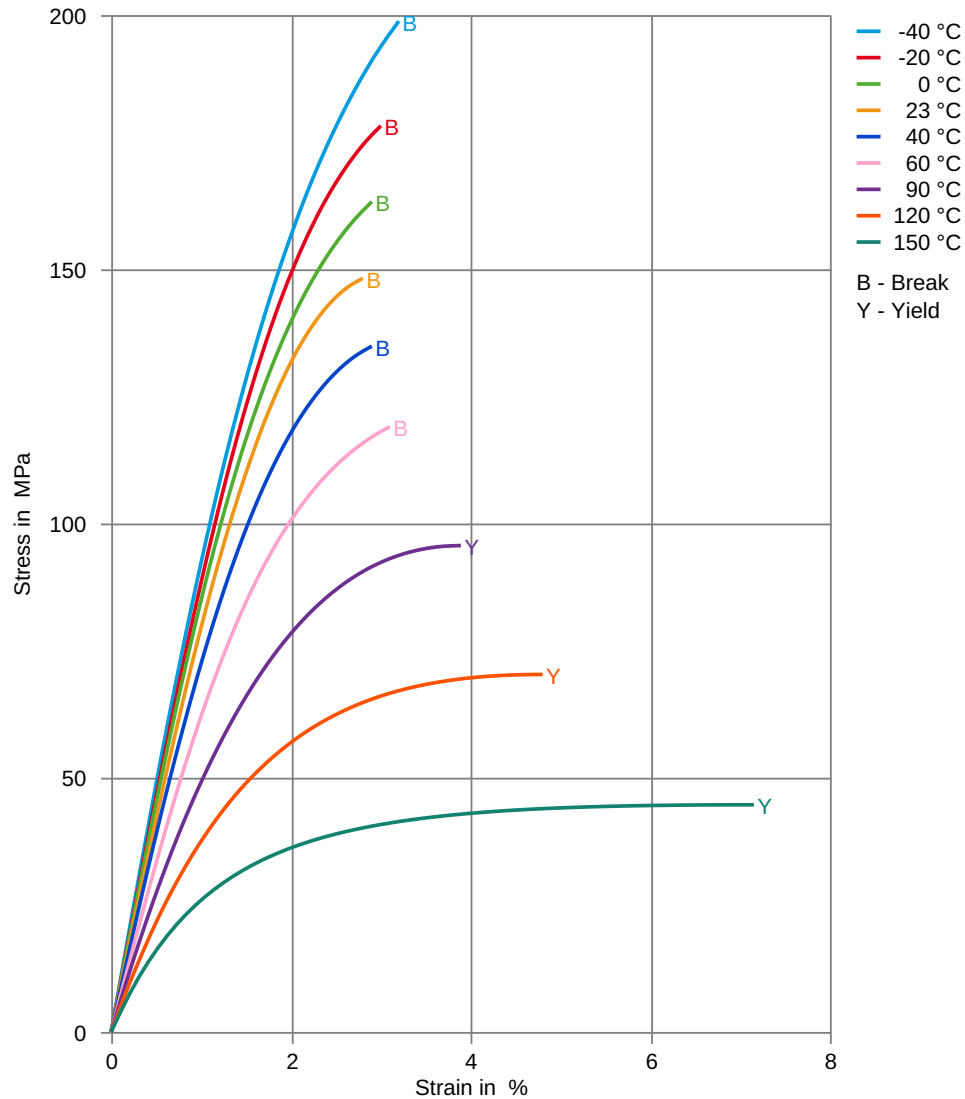
Shearstress-shear rate



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Stress-strain

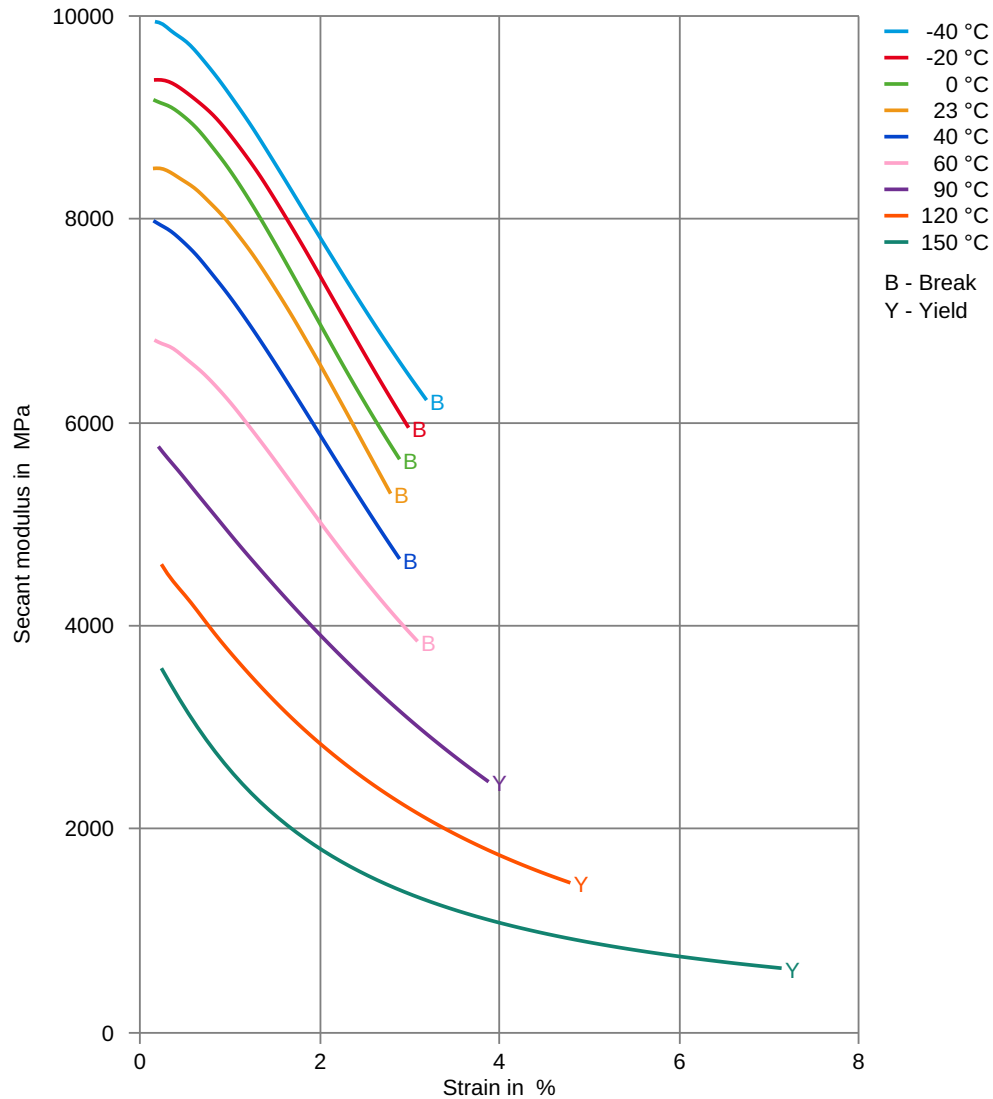




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Secant modulus-strain

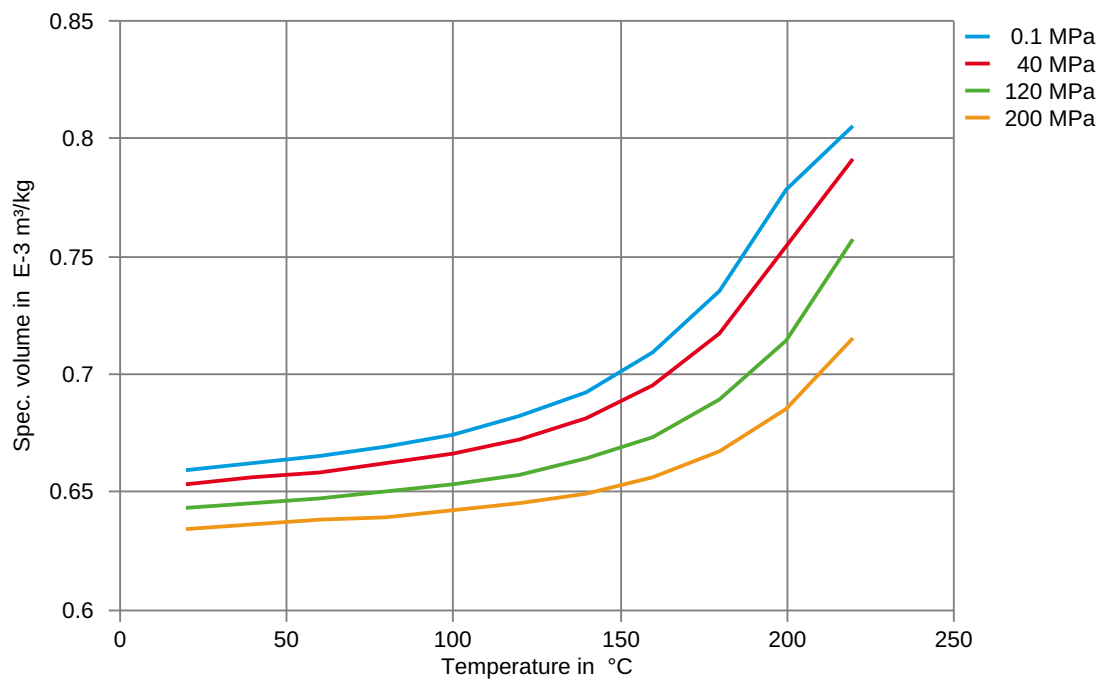




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Specific volume-temperature (pvT)





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Tensile modulus-temperature

