

DuPont™ Delrin® 500PE BK602

ACETAL RESIN

Product Information

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® 500PE is a medium viscosity acetal homopolymer, an enhanced version of Delrin® 500P with very low VOC emissions for applications in automotive interiors. It has good mechanical properties and improved processing productivity for injection moulding.

General information	Value	Unit	Test Standard
Resin Identification	POM	-	ISO 1043
Part Marking Code	POM	-	ISO 11469
Rheological properties	Value	Unit	Test Standard
Melt volume-flow rate	12	cm ³ /10min	ISO 1133
Temperature	190	°C	ISO 1133
Load	2.16	kg	ISO 1133
Melt mass-flow rate	14	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	2.0	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.8	%	ISO 294-4, 2577
Mechanical properties	Value	Unit	Test Standard
Tensile Modulus	3350	MPa	ISO 527-1/-2
Yield stress	73.5	MPa	ISO 527-1/-2
Yield strain	13	%	ISO 527-1/-2
Nominal strain at break	27	%	ISO 527-1/-2
Flexural Modulus	3150	MPa	ISO 178
Flexural Stress at 3.5%	85	MPa	ISO 178
Charpy impact strength			ISO 179/1eU
23°C	250	kJ/m ²	
-30°C	225	kJ/m ²	
Charpy notched impact strength			ISO 179/1eA
23°C	9	kJ/m ²	
-30°C	8.5	kJ/m ²	
Hardness, Rockwell, M-scale	93	-	ISO 2039-2
Hardness, Rockwell, R-scale	121	-	ISO 2039-2
Thermal properties	Value	Unit	Test Standard
Melting temperature, 10° C/min	178	°C	ISO 11357-1/-3
Temp. of deflection under load			ISO 75-1/-2
1.8 MPa	103	°C	
0.45 MPa	159	°C	
Coeff. of linear therm. expansion, parallel	100	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion			ISO 11359-1/-2
normal	100	E-6/K	
Normal, -40-23°C	90	E-6/K	
Parallel, -40-23°C	90	E-6/K	
Flammability	Value	Unit	Test Standard
FMVSS Class	B	-	ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	<100	mm/min	ISO 3795 (FMVSS 302)
Electrical properties	Value	Unit	Test Standard
Relative permittivity			IEC 62631-2-1
100Hz	3.9	-	
1MHz	3.8	-	

To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

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Dissipation factor			IEC 62631-2-1
100Hz	5	E-4	
1MHz	55	E-4	
Volume resistivity	>1E13	Ohm*m	IEC 62631-3-1
Surface resistivity	>1E15	Ohm	IEC 62631-3-2
Electric strength	43	kV/mm	IEC 60243-1
Comparative tracking index	600	-	IEC 60112
Other properties	Value	Unit	Test Standard
Humidity absorption, 2mm	0.2	%	Sim. to ISO 62
Water absorption, 2mm	0.9	%	Sim. to ISO 62
Density	1420	kg/m ³	ISO 1183
Density of melt	1200	kg/m ³	-
VDA Properties	Value	Unit	Test Standard
Emissions	<2	mg/kg	VDA 275
Fogging, G-value (condensate)	0.35	mg	ISO 6452
1: 1.1			
Injection	Value	Unit	Test Standard
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	-
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

Processing	• Injection Moulding		
Delivery form	• Pellets		
Regional Availability	• North America	• Asia Pacific	• Near East/Africa
	• Europe	• South and Central America	• Global

Processing Texts

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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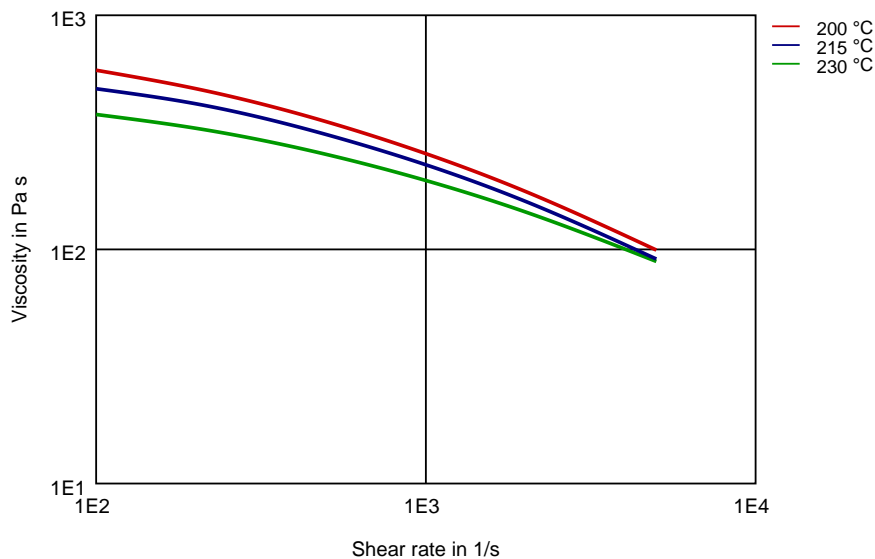


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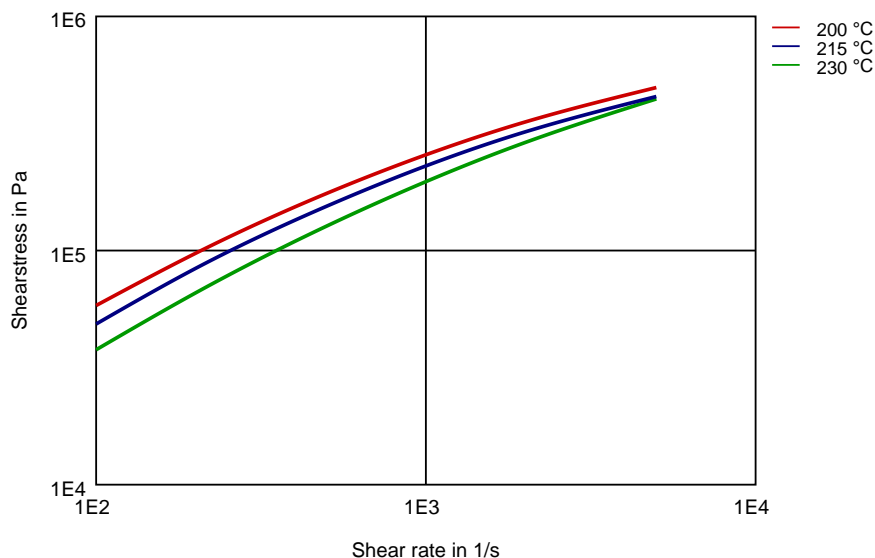
ACETAL RESIN

Diagrams

Viscosity-shear rate



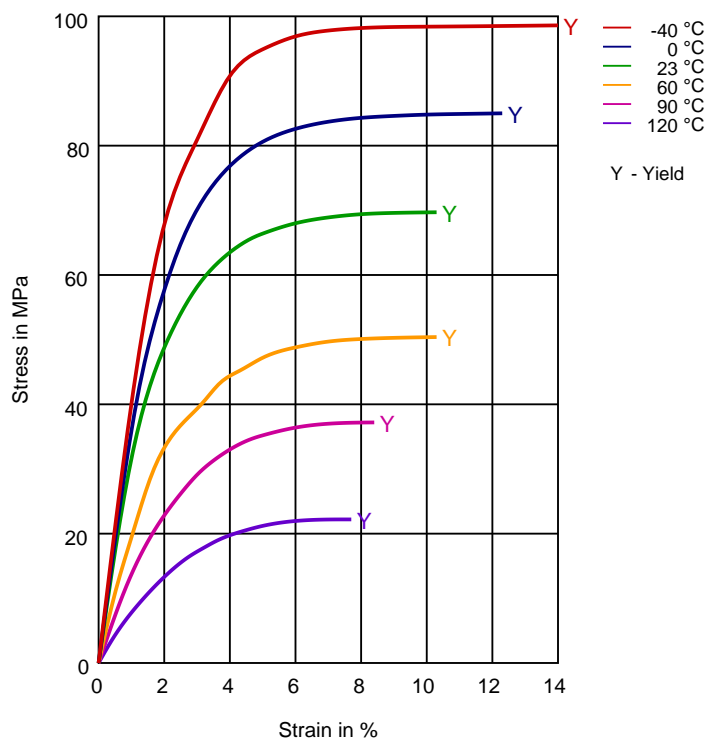
Shearstress-shear rate



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Stress-strain



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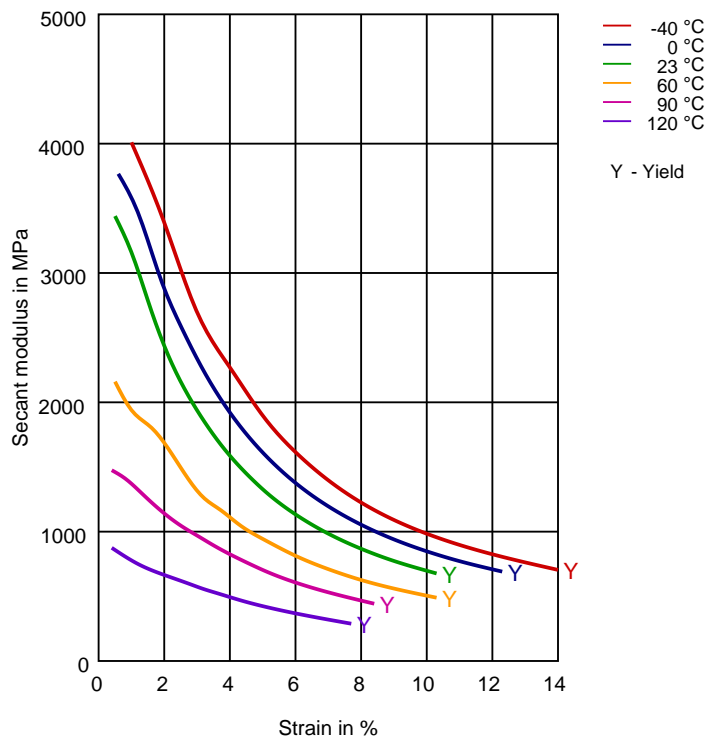


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Secant modulus-strain



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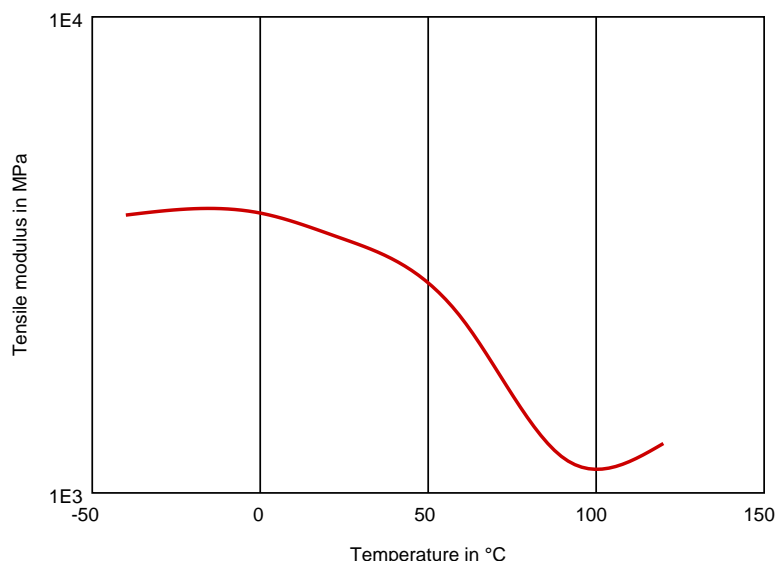
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Tensile modulus-temperature



Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc. ISO Mechanical properties measured at 4mm (Hytrel® measured at 2 mm), IEC Electrical properties measured at 2mm, all ASTM properties measured at 3.2mm, and test temperatures are 23 °C unless otherwise stated.

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