Celanese
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Zytel® 73G40T BK416

NYLON RESIN

Common features of Zytel® nylon resin include mechanical and physical properties such as high mechanical strength, excellent balance of stiffness and toughness, good high temperature performance, good electrical and flammability properties, good abrasion and chemical resistance. In addition, Zytel® nylon resins are available in different modified and reinforced grades to create a wide range of products with tailored properties for specific processes and end-uses. Zytel® nylon resin, including most flame retardant grades, offer the ability to be coloured.

The good melt stability of Zytel® nylon resin normally enables the recycling of properly handled production waste. If recycling is not possible, we recommend, as the preferred option, incineration with energy recovery (-31kJ/g of base polymer) in appropriately equipped installations. For disposal, local regulations have to be observed.

Zytel® nylon resin typically is used in demanding applications in the automotive, furniture, domestic appliances, sporting goods and construction industry.

Zytel® 73G40T BK416 is a 40% Glass Reinforced, Heat stabilized,Toughened, Polyamide 6 for injection molding

Product information

Resin Identification	PA6-IGF40	ISO 1043
Part Marking Code	>PA6-IGF40<	ISO 11469
ISO designation	ISO 16396-PA6-I,GF40,M1CGR,S12-120	

Rheological properties

	dry/cond.		
Viscosity number	130 / *	cm^3/g	ISO 307, 1628
Moulding shrinkage, parallel	0.2 / 0.1	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.6 / 0.3	%	ISO 294-4, 2577
Melt viscosity , @ 1000 sec-1, 280 °C	190 / *	Pa.s	ISO 11443

Typical mechanical properties

	dry/cond.		
Tensile modulus	13000 / 8000	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	210 / 150	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	3.8 / 7	%	ISO 527-1/-2
Flexural modulus	11000 / 8000	MPa	ISO 178
Flexural strength	310 / 190	MPa	ISO 178
Charpy impact strength, 23 °C	100 / 110[DS]	kJ/m^2	ISO 179/1eU
Charpy impact strength, -30 °C	80 / -	kJ/m^2	ISO 179/1eU
Charpy notched impact strength, 23 °C	19 / 23	kJ/m^2	ISO 179/1eA
Charpy notched impact strength, -30 °C	14 / 14	kJ/m^2	ISO 179/1eA
Poisson's ratio	0.33 / 0.34		

[DS]: Derived from similar grade

Thermal properties

	dry/cond.		
Melting temperature, 10 °C/min	220 / *	°C	ISO 11357-1/-3
Glass transition temperature, 10 °C/min	55 / 15	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	215 / *	°C	ISO 75-1/-2

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Flammability

FMVSS Class	B		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	<80	mm/min	ISO 3795 (FMVSS 302)

Physical/Other properties

	dry/cond.		
Humidity absorption, 2mm	1.7 / *[DS]	%	Sim. to ISO 62
Water absorption, 2mm	5.3 / *[DS]	%	Sim. to ISO 62
Density	1440 / -	kg/m³	ISO 1183

[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	270	°C
Min. melt temperature	260	°C
Max. melt temperature	280	°C
Screw tangential speed	≤0.2	m/s
Mold Temperature Optimum	100	°C
Min. mould temperature	70	°C
Max. mould temperature	120	°C
Hold pressure range	50 - 100	MPa
Hold pressure time	3	s/mm

Characteristics

Processing	Injection Moulding

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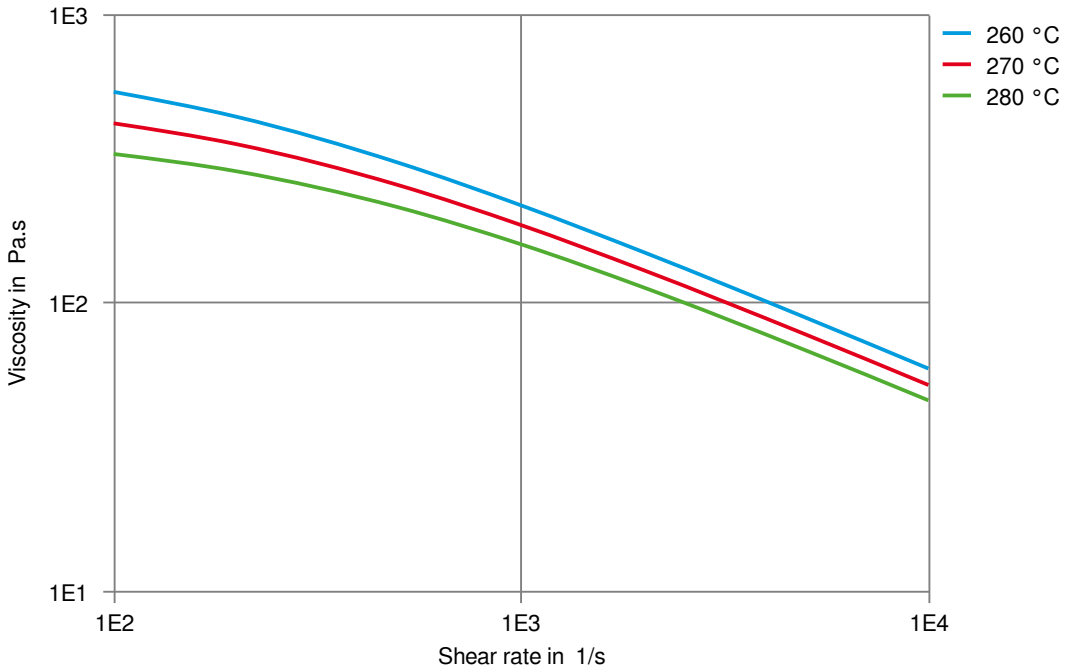
Viscosity-shear rate



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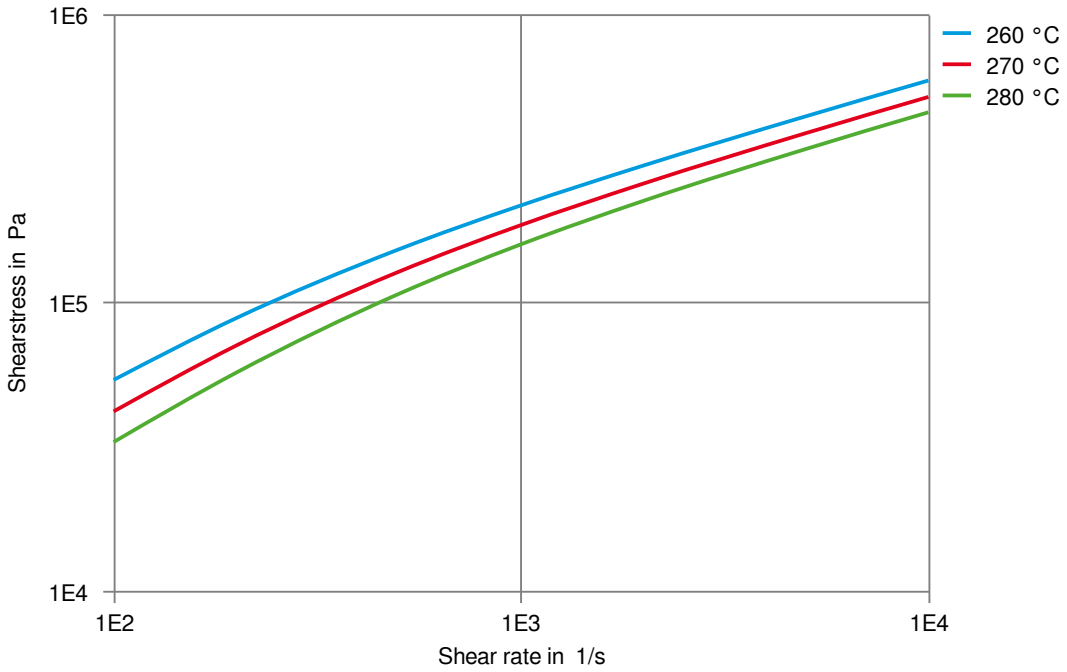
Shearstress-shear rate



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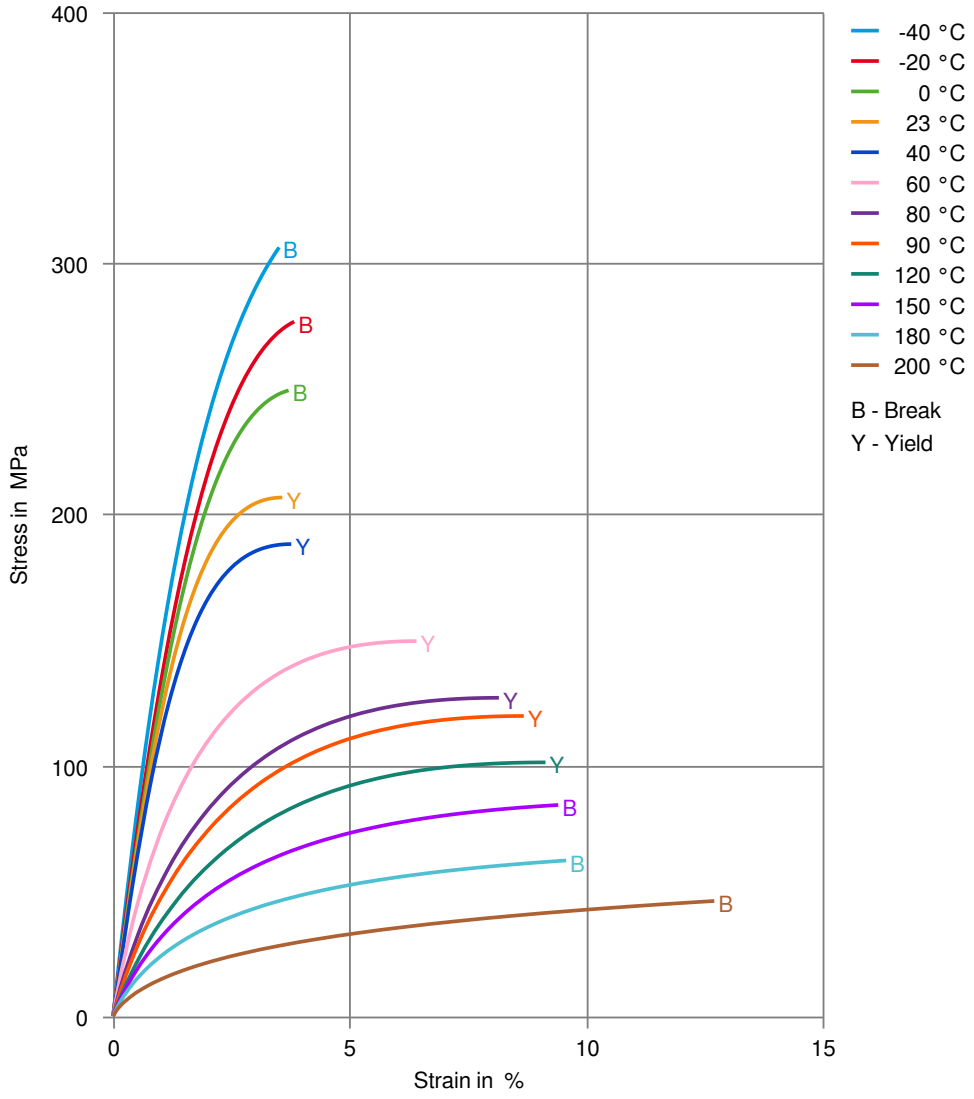
Stress-strain (dry)



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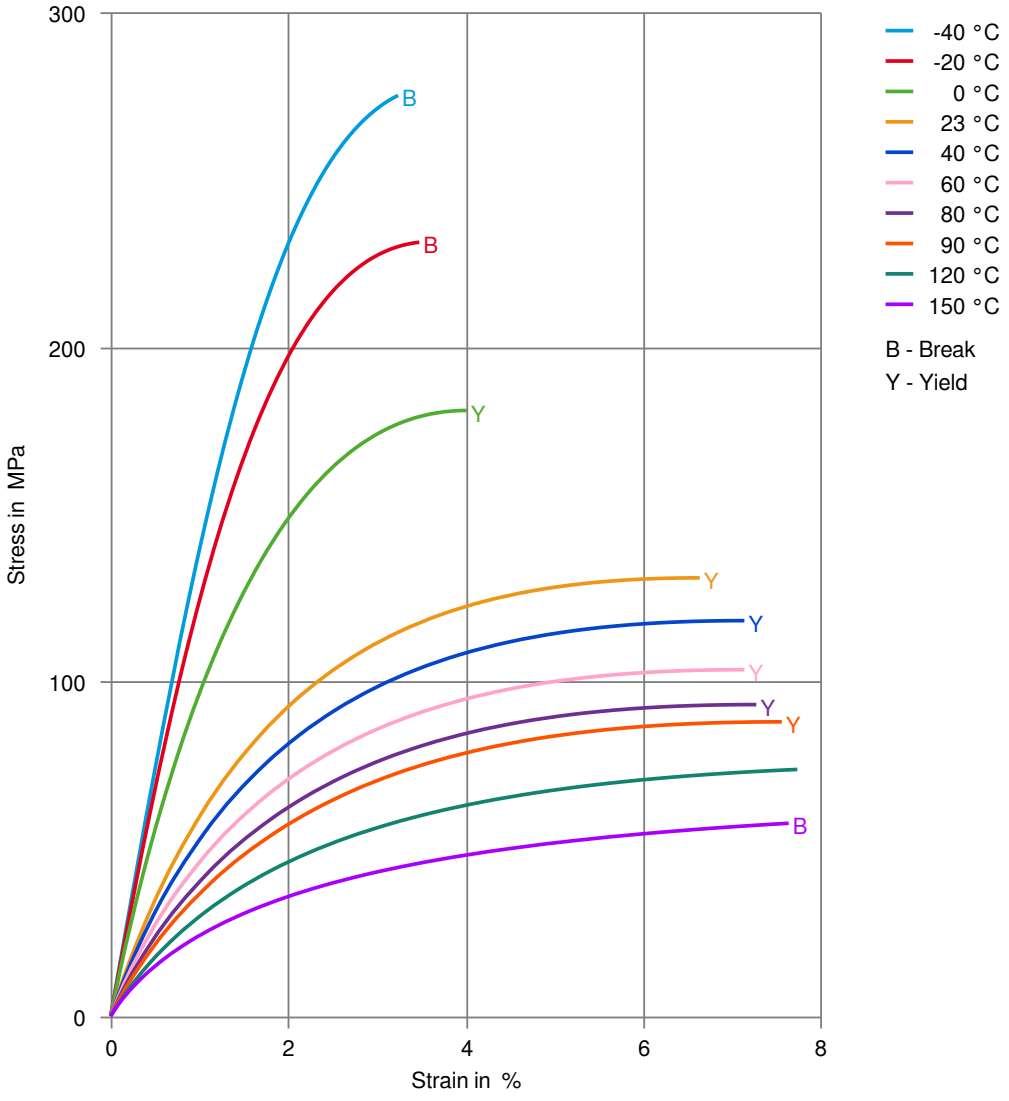
Stress-strain (cond.)



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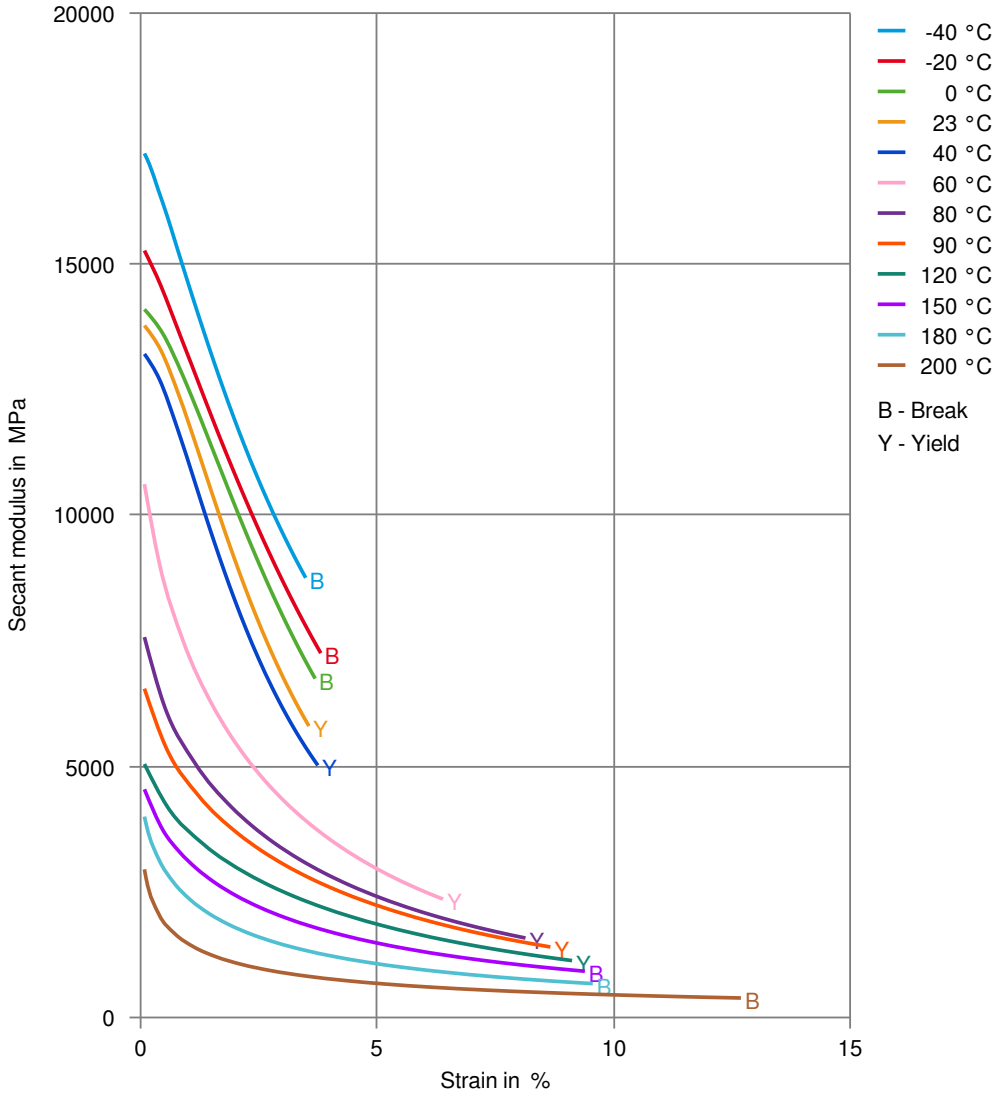
Secant modulus-strain (dry)



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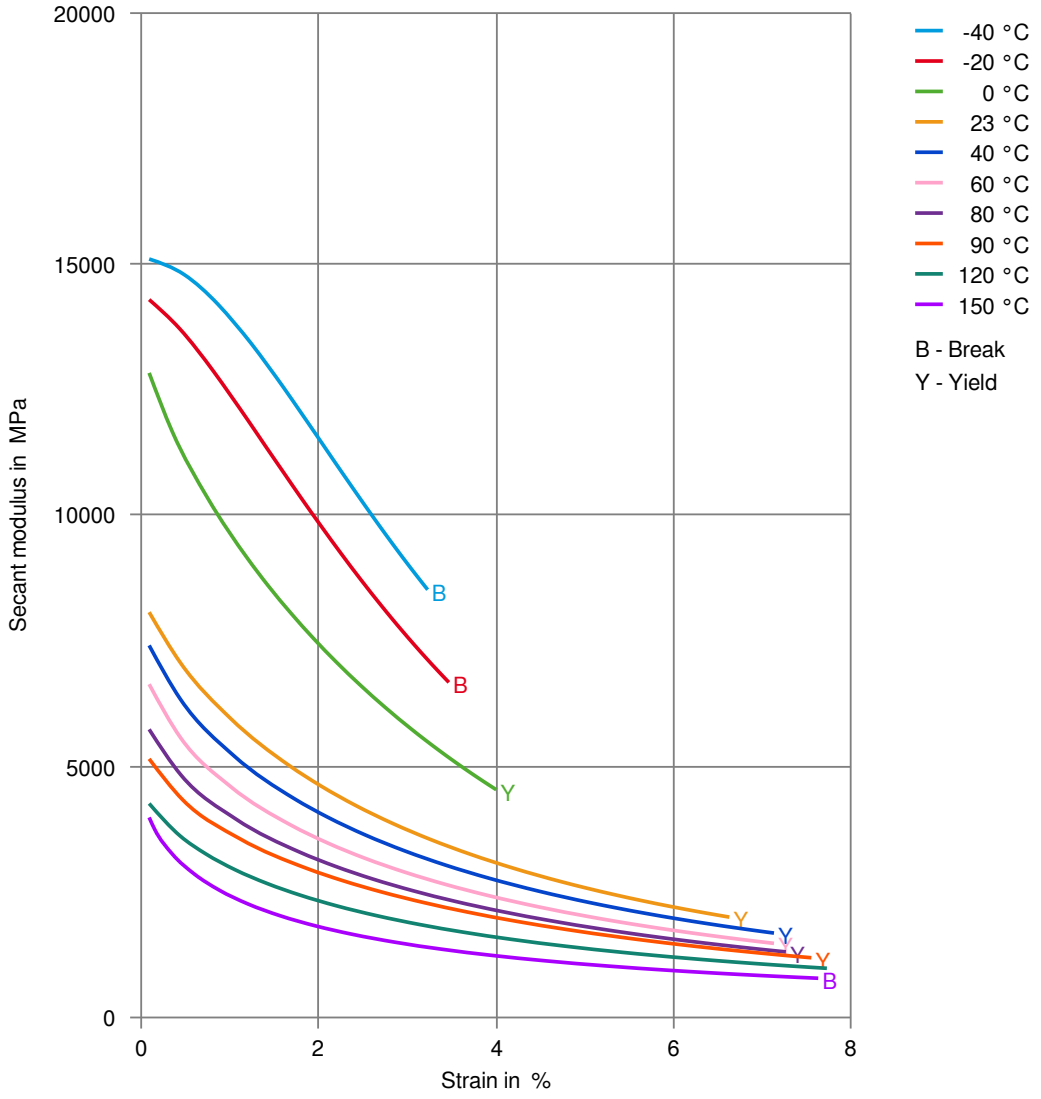
Secant modulus-strain (cond.)



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