Celanese
The chemistry inside innovation™

Zytel® 444AHS BK152

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® 444AHS is a toughened, heat stabilised, black polyamide 66 resin for injection moulding. It is a high flow, processing friendly material.

Product information

Resin Identification	PA66-I	ISO 1043
Part Marking Code	>PA66-I<	ISO 11469
ISO designation	ISO 16396-PA66-I,,M1CG1H,S14-020	

Rheological properties

	dry/cond.		
Moulding shrinkage, parallel	1.4 / -	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.2 / -	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile modulus	2400 / 1100	MPa	ISO 527-1/-2
Tensile stress at yield, 50mm/min	62 / 40	MPa	ISO 527-1/-2
Tensile strain at yield, 50mm/min	5.5 / 15	%	ISO 527-1/-2
Nominal strain at break	25 / >50	%	ISO 527-1/-2
Flexural modulus	2270 / -	MPa	ISO 178
Izod notched impact strength, 23°C	16 / -	kJ/m²	ISO 180/1A
Izod notched impact strength, -40°C	10.0 / -	kJ/m²	ISO 180/1A
Poisson's ratio	0.38 / 0.45		

Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	260 / *	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	65 / *	°C	ISO 75-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	90 / *	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	100 / *	E-6/K	ISO 11359-1/-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.		
Water absorption, 2mm	1.3 / *	%	Sim. to ISO 62
Water absorption, Immersion 24h	1.3 / *	%	Sim. to ISO 62
Density	1110 / -	kg/m³	ISO 1183

Injection

Drying Recommended	yes	
Drying Temperature	80	°C
Drying Time, Dehumidified Dryer	2 - 4	h
Processing Moisture Content	≤0.2	%
Melt Temperature Optimum	290	°C
Min. melt temperature	280	°C
Max. melt temperature	300	°C
Screw tangential speed	≤0.3	m/s
Mold Temperature Optimum	70	°C
Min. mould temperature	50	°C
Max. mould temperature	90	°C
Hold pressure range	50 - 100	MPa
Hold pressure time	4	s/mm
Ejection temperature	190	°C

Characteristics

Processing	Injection Moulding
Delivery form	Pellets
Special characteristics	Heat stabilised or stable to heat

Automotive

OEM	STANDARD
Ford	WSS-M4D706-B1
General Motors	Black, Part Specific Approval, Please Contact Your CE Representative For More Details.

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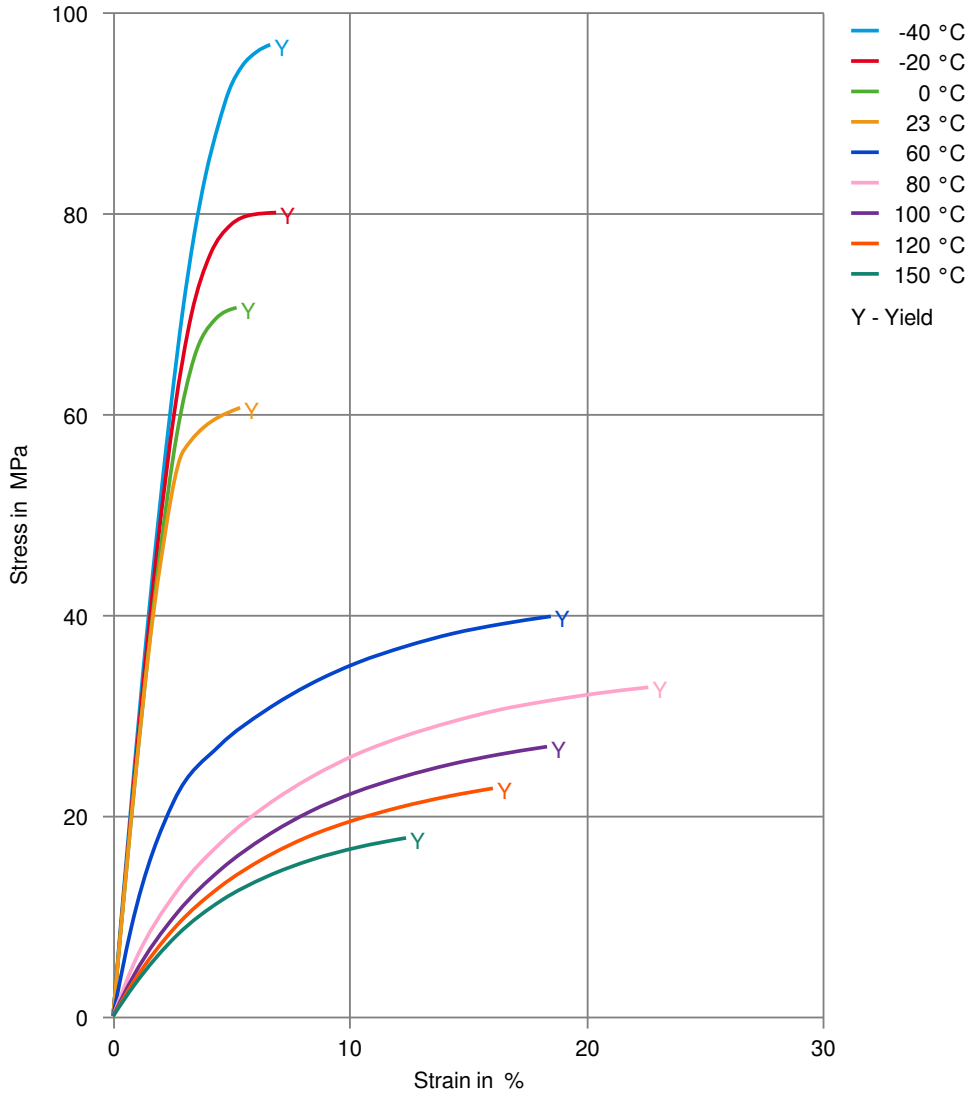
Stress-strain (dry)



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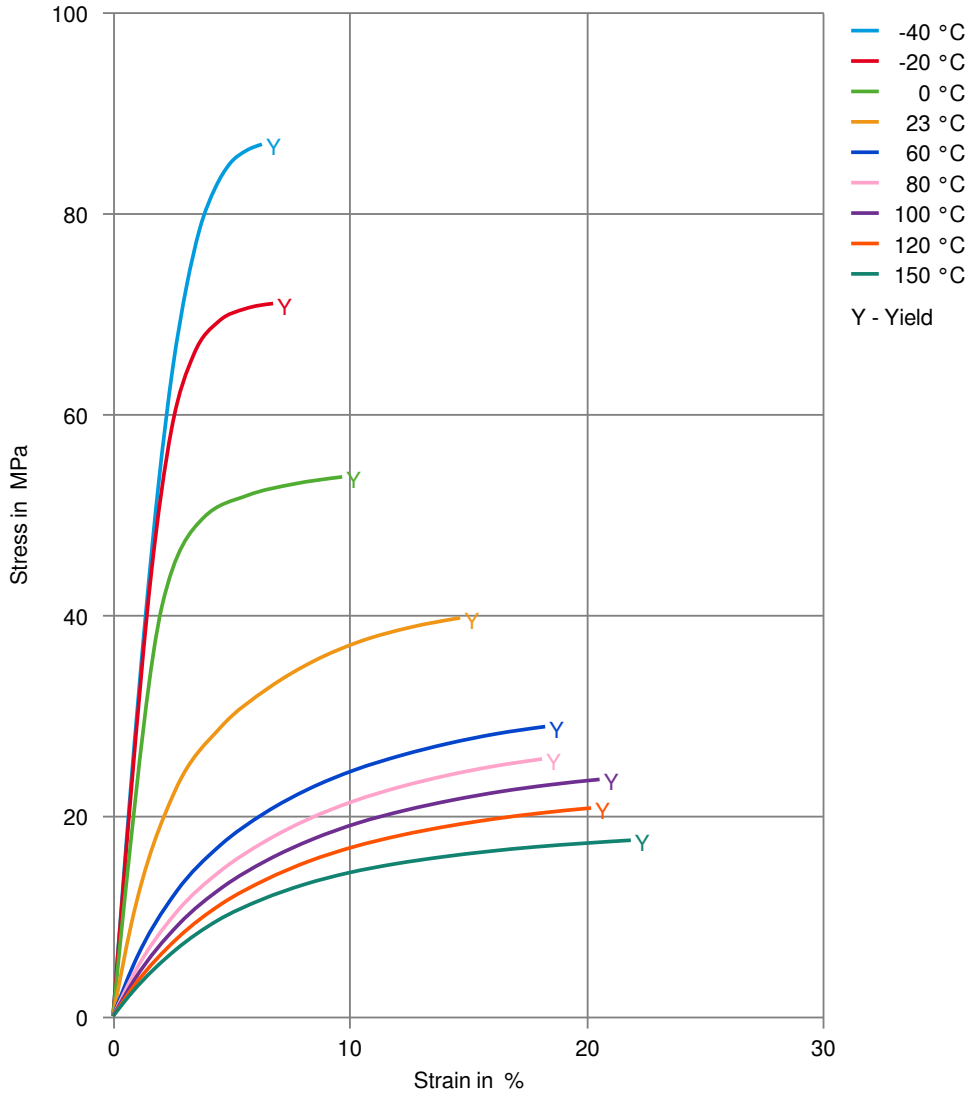
Stress-strain (cond.)



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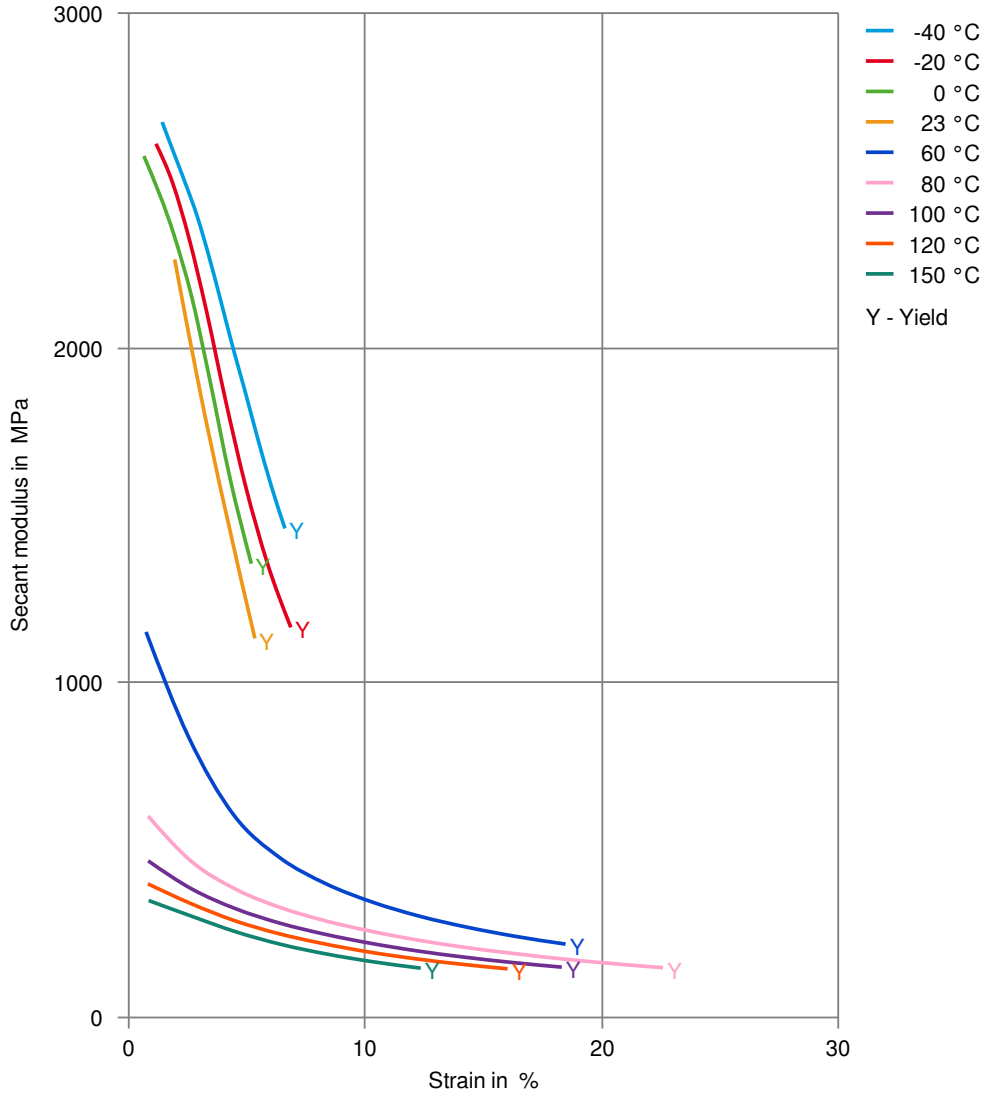
Secant modulus-strain (dry)



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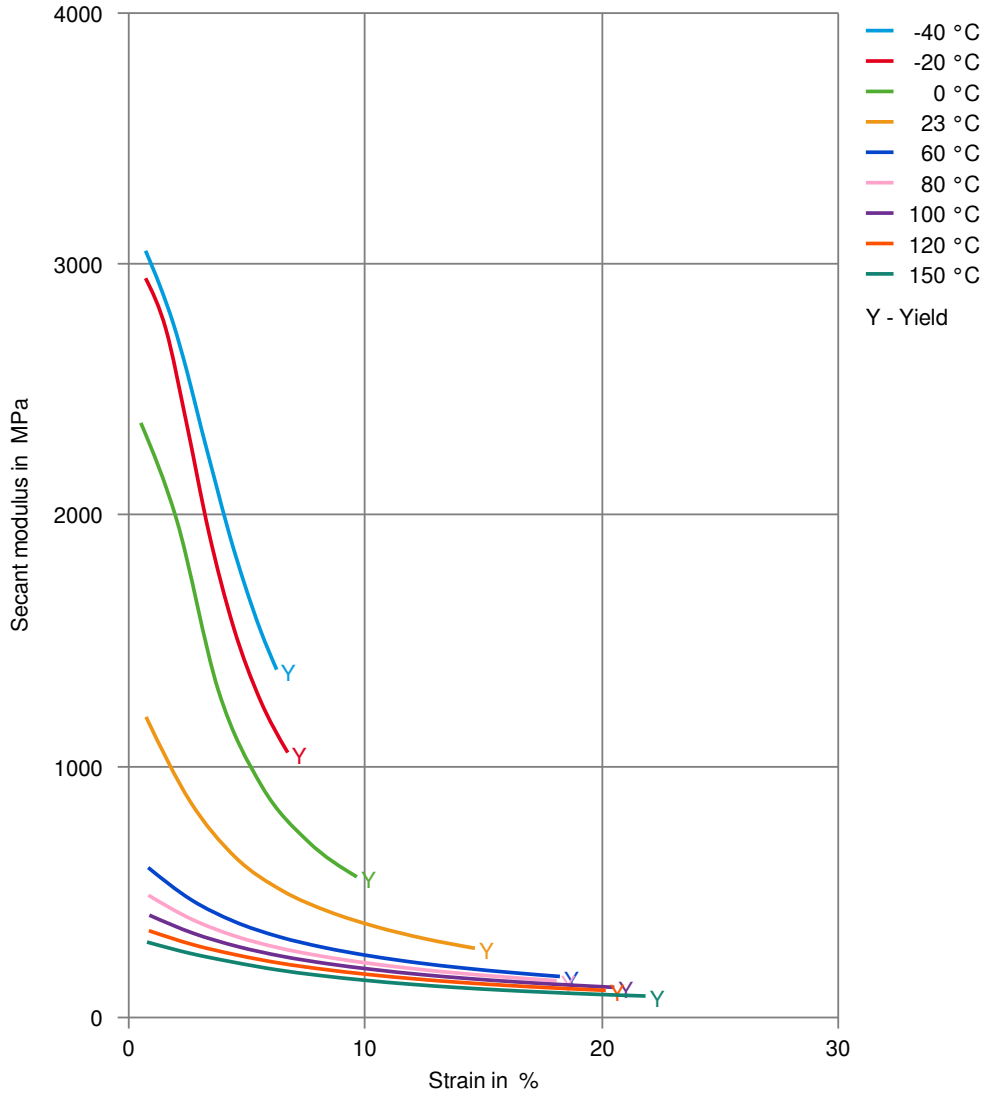
Secant modulus-strain (cond.)



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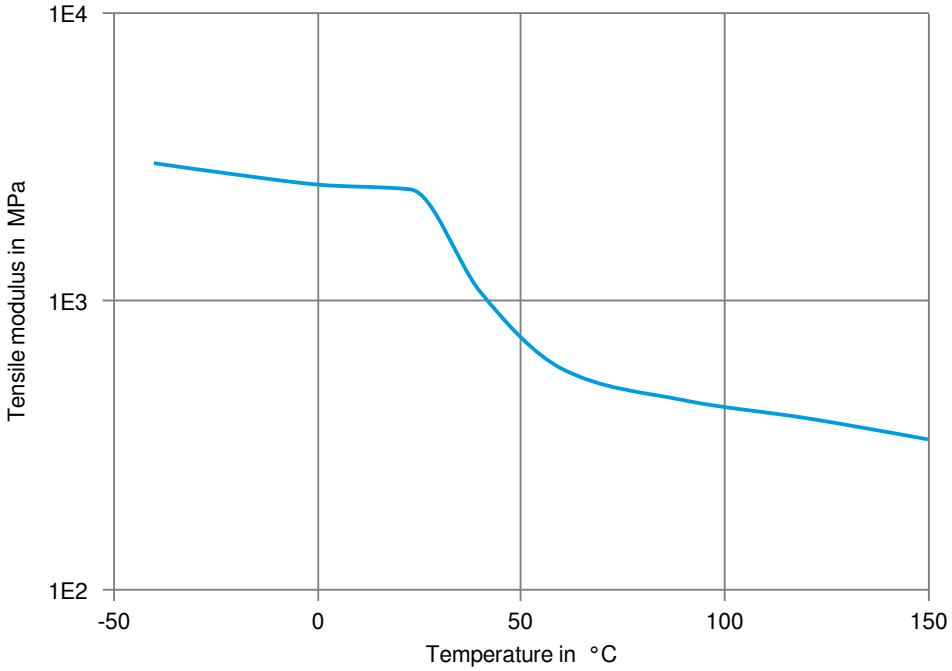
Tensile modulus-temperature (dry)



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Tensile modulus-temperature (cond.)