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 stabilized, black polyamide 66 resin for injection molding. 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.		
Molding shrinkage, parallel	1.4 / -	%	ISO 294-4, 2577
Molding shrinkage, normal	1.2 / -	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile modulus	348000 / 160000	psi	ISO 527-1/-2
Tensile stress at yield, 50mm/min	9000 / 5800	psi	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	329000 / -	psi	ISO 178
Izod notched impact strength, 23°C	7.61 / -	ftlb/in²	ISO 180/1A
Izod notched impact strength, -40°C	4.76 / -	ftlb/in²	ISO 180/1A

Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	500 / *	°F	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	149 / *	°F	ISO 75-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	0.50 / *	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	0.556 / *	E-4/°F	ISO 11359-1/-2

Flammability

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

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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	0.0401 / -	lb/in³	ISO 1183

Injection

Drying Recommended	yes	
Drying Temperature	176	°F
Drying Time, Dehumidified Dryer	2 - 4	h
Processing Moisture Content	≤0.2	%
Melt Temperature Optimum	554	°F
Min. melt temperature	536	°F
Max. melt temperature	572	°F
Max. screw tangential speed	≤0.3	m/s
Mold Temperature Optimum	158	°F
Min. mold temperature	122	°F
Max. mold temperature	194	°F
Hold pressure range	7250 - 14500	psi
Hold pressure time	0.102	s/mil
Hold Pressure Time (h is the max. wall thickness of the part in mm)	h^2+2	s
Ejection temperature	374	°F

Automotive

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

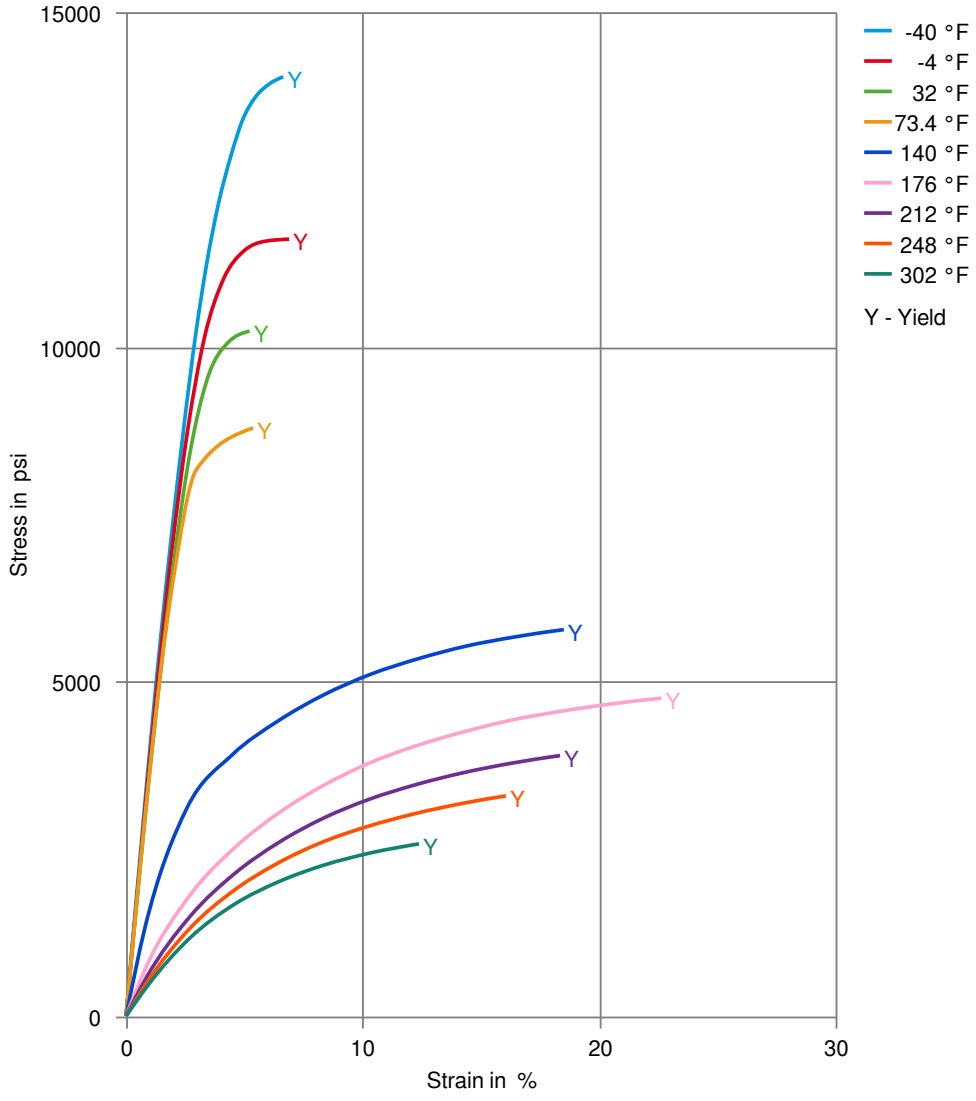
Characteristics

Processing	Injection Molding
Special characteristics	Heat stabilized or stable to heat

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Stress-strain (dry)

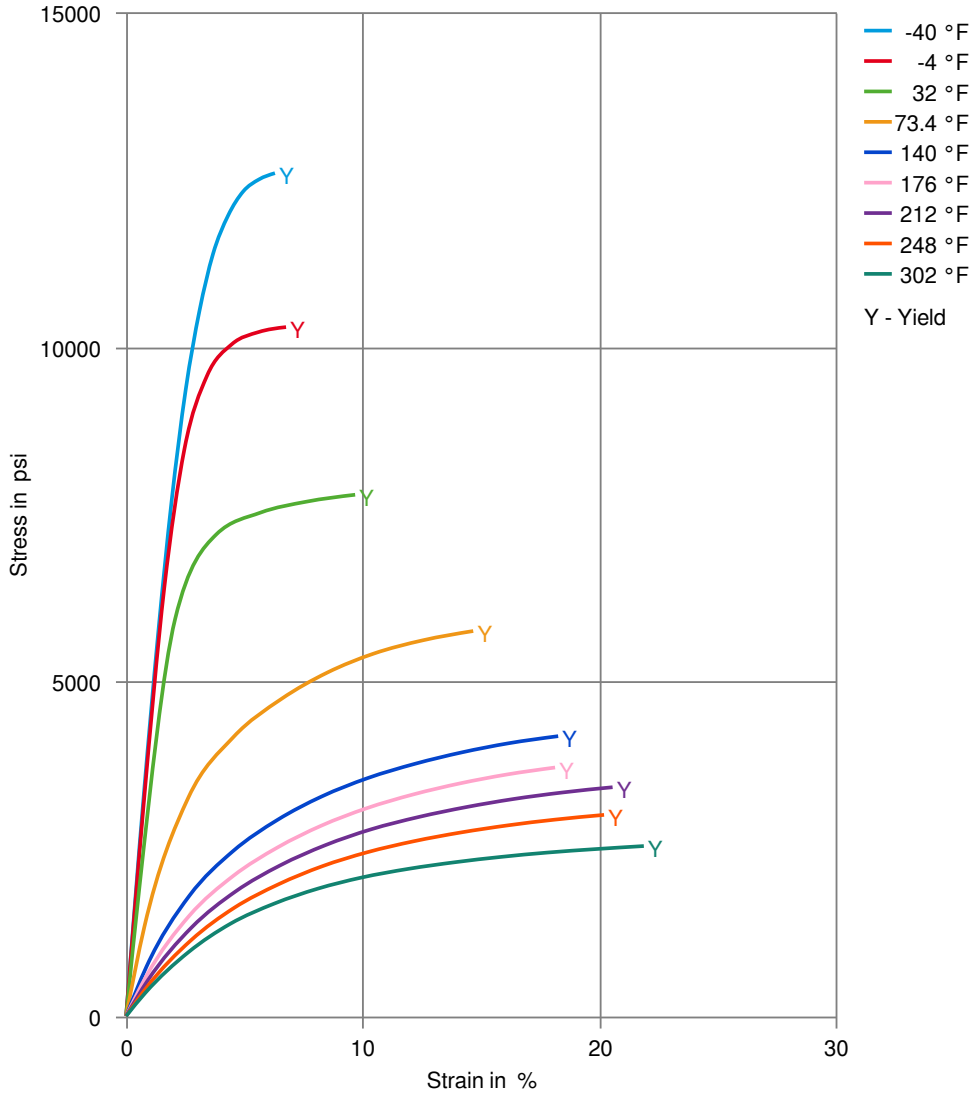


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NYLON RESIN

Stress-strain (cond.)

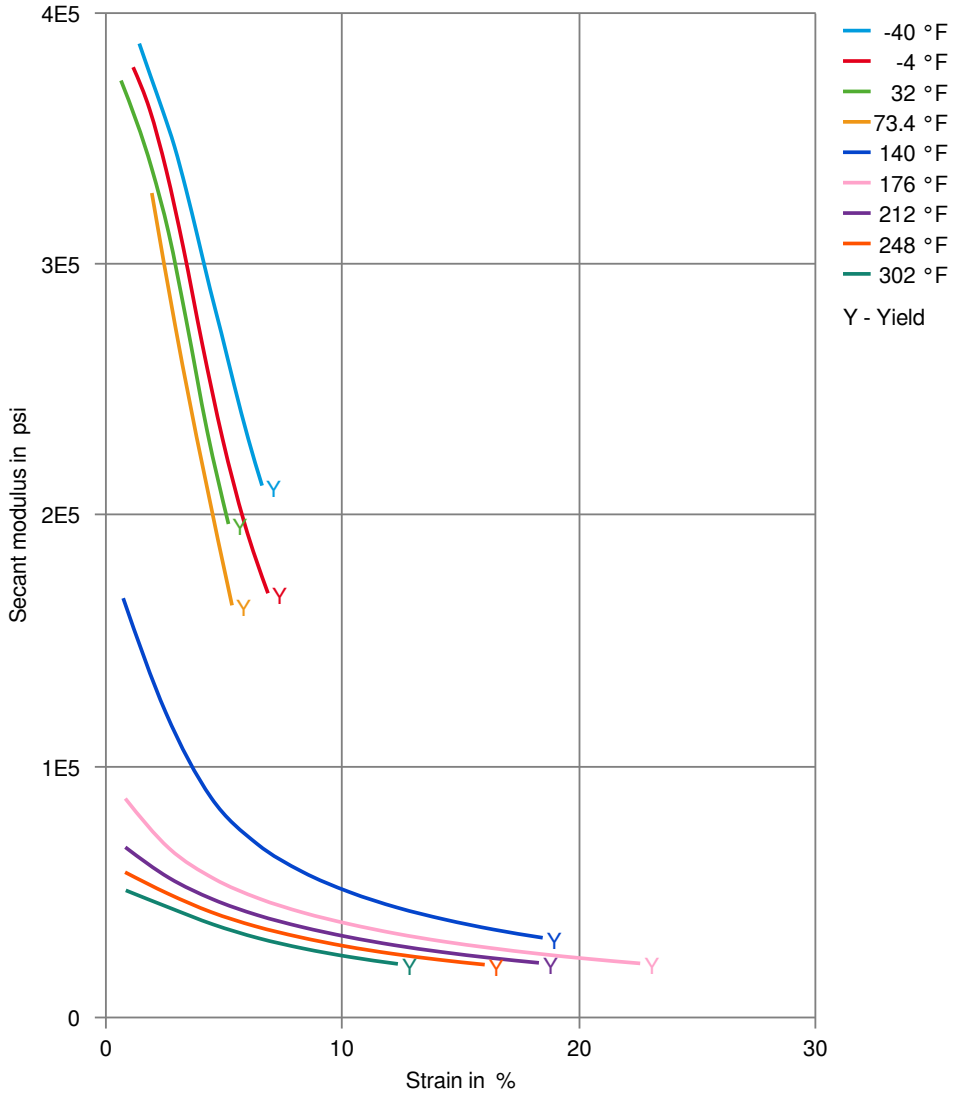


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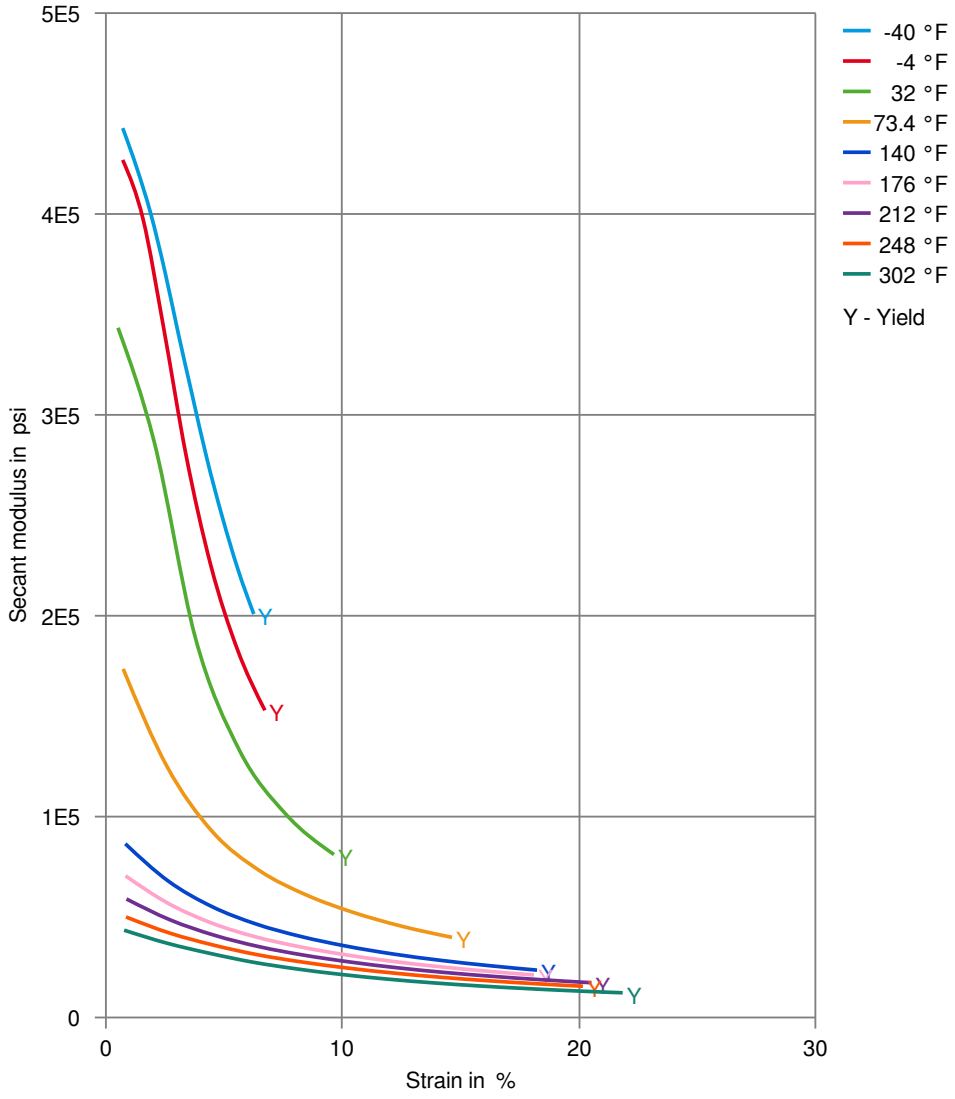
Secant modulus-strain (dry)



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Secant modulus-strain (cond.)

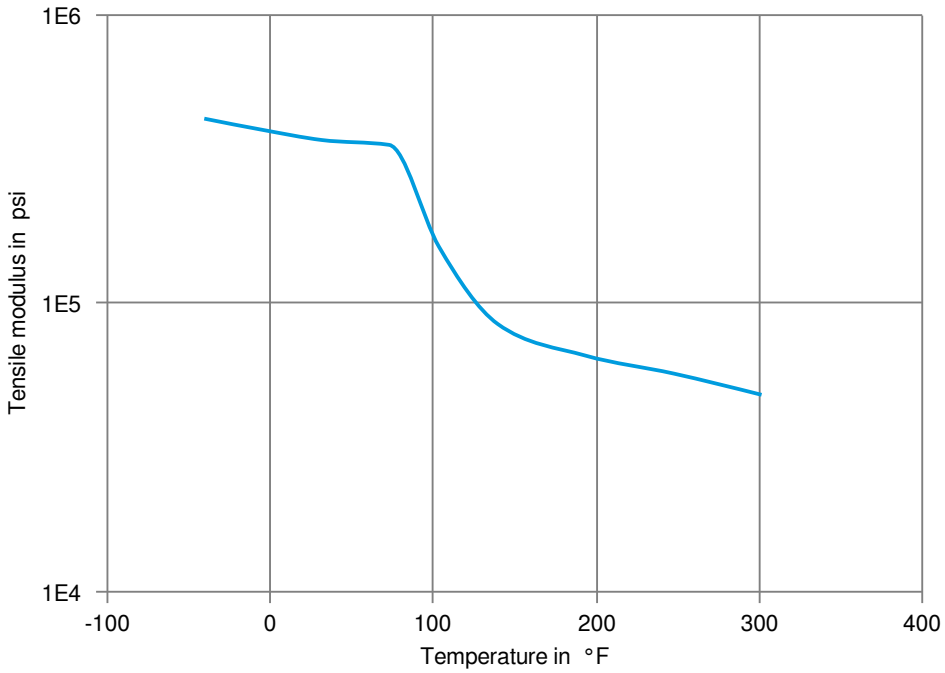


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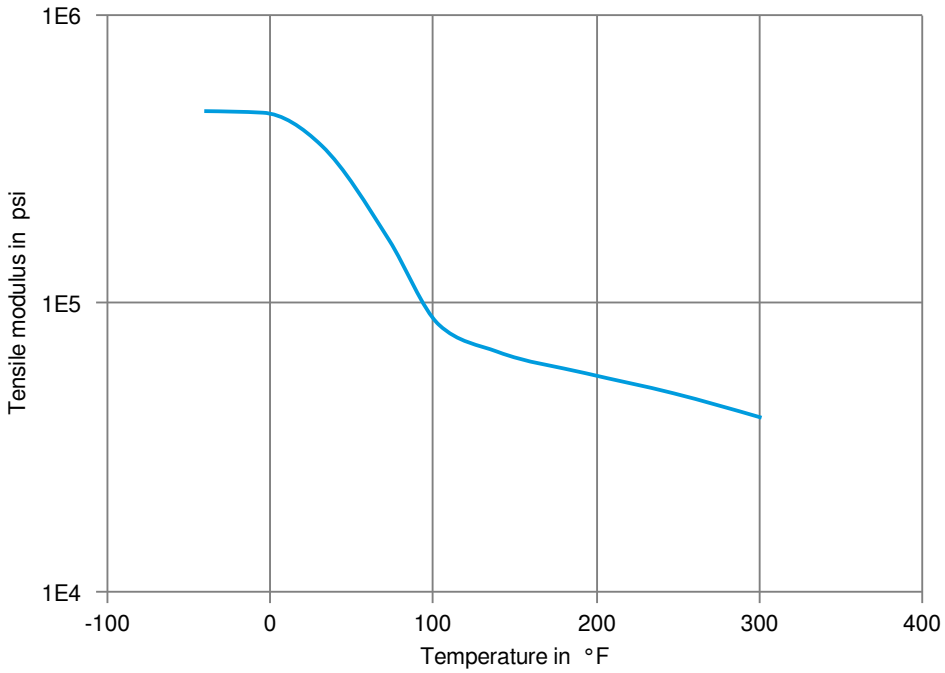
Tensile modulus-temperature (dry)



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Tensile modulus-temperature (cond.)



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