Celanese
The chemistry inside innovation™

Zytel® 74G33W BK196

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® 74G33W BK196 is a high gloss automotive weatherable black 33% glass reinforced, heat stabilised nylon 66 and nylon 6 comelt resin.

Product information

Resin Identification	(PA66+PA6)-GF33	ISO 1043
Part Marking Code	>(PA66+PA6)-GF33<	ISO 11469
ISO designation	ISO 16396-(PA66+PA6),GF33,M1CGL1,S14-100	

Rheological properties

	dry/cond.		
Molding shrinkage, parallel	0.1 / -	%	ISO 294-4, 2577
Molding shrinkage, normal	0.7 / -	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile modulus	1.45E6 / 1.03E6	psi	ISO 527-1/-2
Tensile stress at break, 5mm/min	26800 / 18100	psi	ISO 527-1/-2
Tensile strain at break, 5mm/min	3 / 6	%	ISO 527-1/-2
Flexural modulus	1.29E6 / -	psi	ISO 178
Charpy impact strength, 23°C	38.1 / 47.6	ftlb/in²	ISO 179/1eU
Charpy impact strength, -30°C	33.3 / 30.9	ftlb/in²	ISO 179/1eU
Charpy notched impact strength, 23°C	5.71 / 8.56	ftlb/in²	ISO 179/1eA
Charpy notched impact strength, -30°C	4.76 / 4.76	ftlb/in²	ISO 179/1eA
Charpy notched impact strength, -40°C	4.76 / -	ftlb/in²	ISO 179/1eA
Izod notched impact strength, 23°C	5.71 / -	ftlb/in²	ISO 180/1A
Izod notched impact strength, -40°C	5.23 / -	ftlb/in²	ISO 180/1A
Izod impact strength, 23°C	38.1 / -	ftlb/in²	ISO 180/1U

Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	491 / *	°F	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	437 / *	°F	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	482 / *	°F	ISO 75-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	0.08 / *	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	0.6 / *	E-4/°F	ISO 11359-1/-2
RTI, electrical, 0.75mm	149	°F	UL 746B
RTI, electrical, 3.0mm	149	°F	UL 746B

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RTI, impact, 0.75mm	149	°F	UL 746B
RTI, impact, 3.0mm	149	°F	UL 746B
RTI, strength, 0.75mm	149	°F	UL 746B
RTI, strength, 3.0mm	149	°F	UL 746B

Flammability

	dry/cond.		
Burning Behav. at thickness h	HB / *	class	IEC 60695-11-10
Thickness tested	0.0295 / *	in	IEC 60695-11-10
UL recognition	yes / *		UL 94
FMVSS Class	B		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	<80	in/min	ISO 3795 (FMVSS 302)

Electrical properties

	dry/cond.		
Dissipation factor, 100Hz	290 / -[DS]	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	250 / -[DS]	E-4	IEC 62631-2-1
Volume resistivity	>1E13 / 1E11[DS]	Ohm.m	IEC 62631-3-1
Surface resistivity	* / 1E12[DS]	Ohm	IEC 62631-3-2
Electric strength	940 / -[DS]	kV/in	IEC 60243-1

[DS]: Derived from similar grade

Physical/Other properties

	dry/cond.		
Density	0.0502 / -	lb/in³	ISO 1183

Emissions

Weather stability delta E	4.7[1]	DIN 53236

[1]: Without washing

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	≤0.2	m/s
Mold Temperature Optimum	212	°F
Min. mold temperature	158	°F
Max. mold temperature	248	°F
Hold pressure range	7250 - 14500	psi
Hold pressure time	0.0762	s/mil
Hold Pressure Time (h is the max. wall thickness of the part in mm)	h²+2	s
Ejection temperature	376	°F

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Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
Ford	WSS-M98P13-E	ZHE Color
General Motors	Black; Part Specific Approval, Please Contact Your CE Representative For More Details.	
Stellantis - Chrysler	MS.50017 / CPN-3266	Black

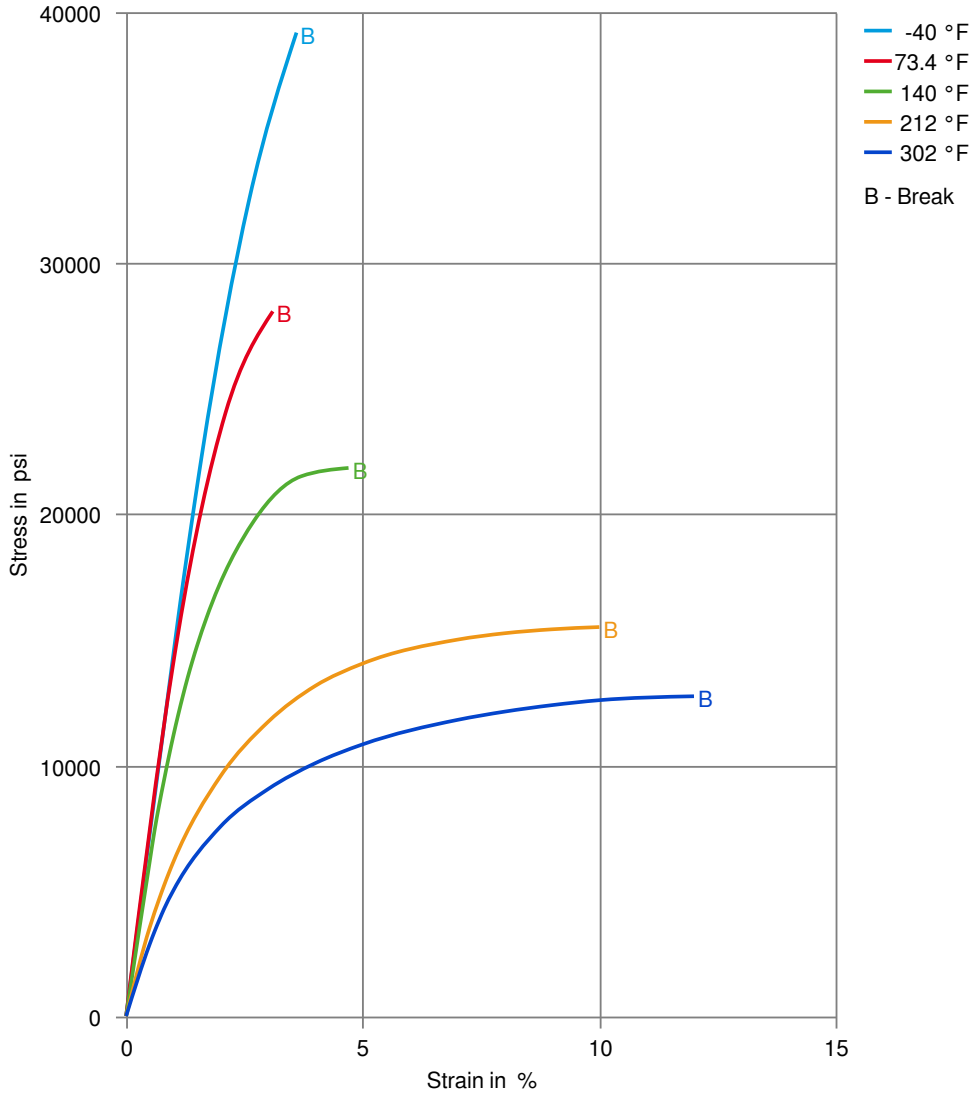
Characteristics

Processing	Injection Molding
Special characteristics	Light stabilized or stable to light, U.V. stabilized or stable to weather, Heat stabilized or stable to heat

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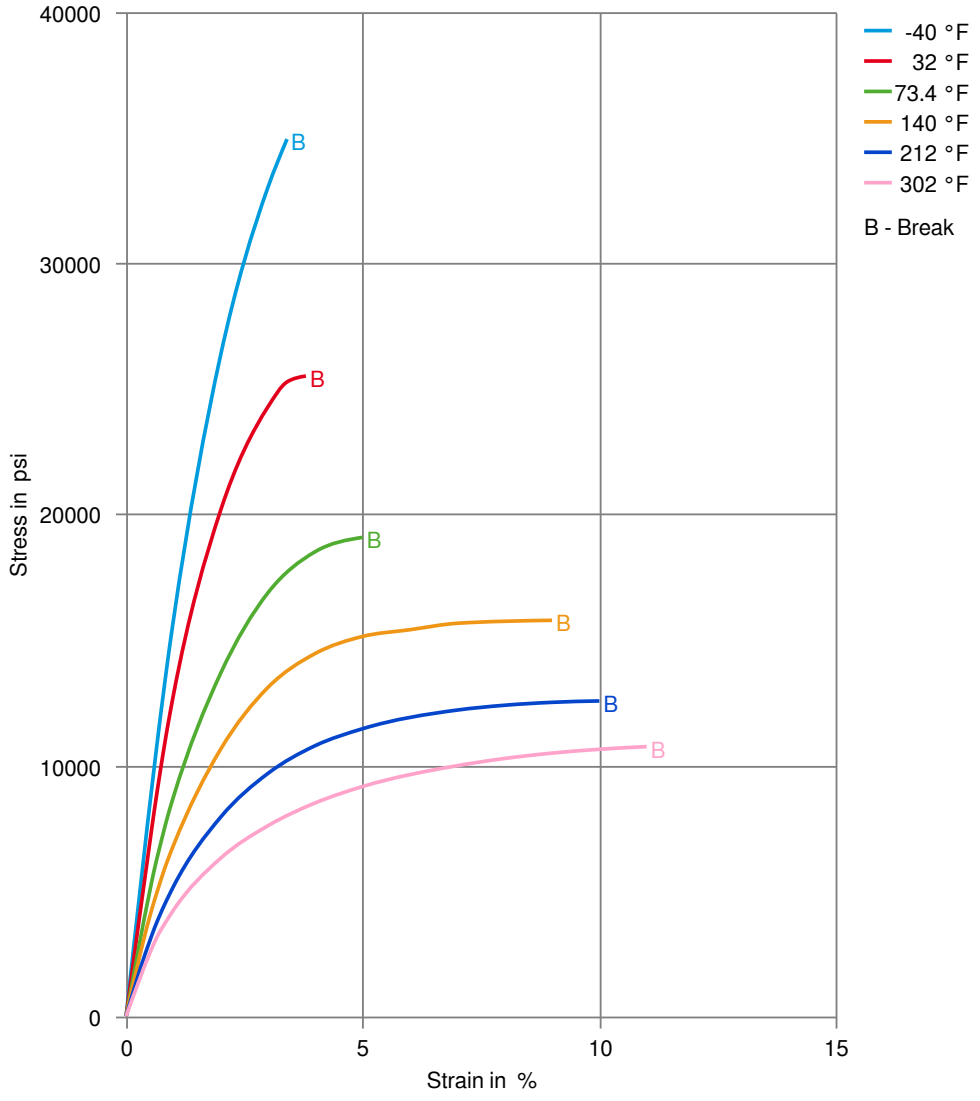
Stress-strain (dry)



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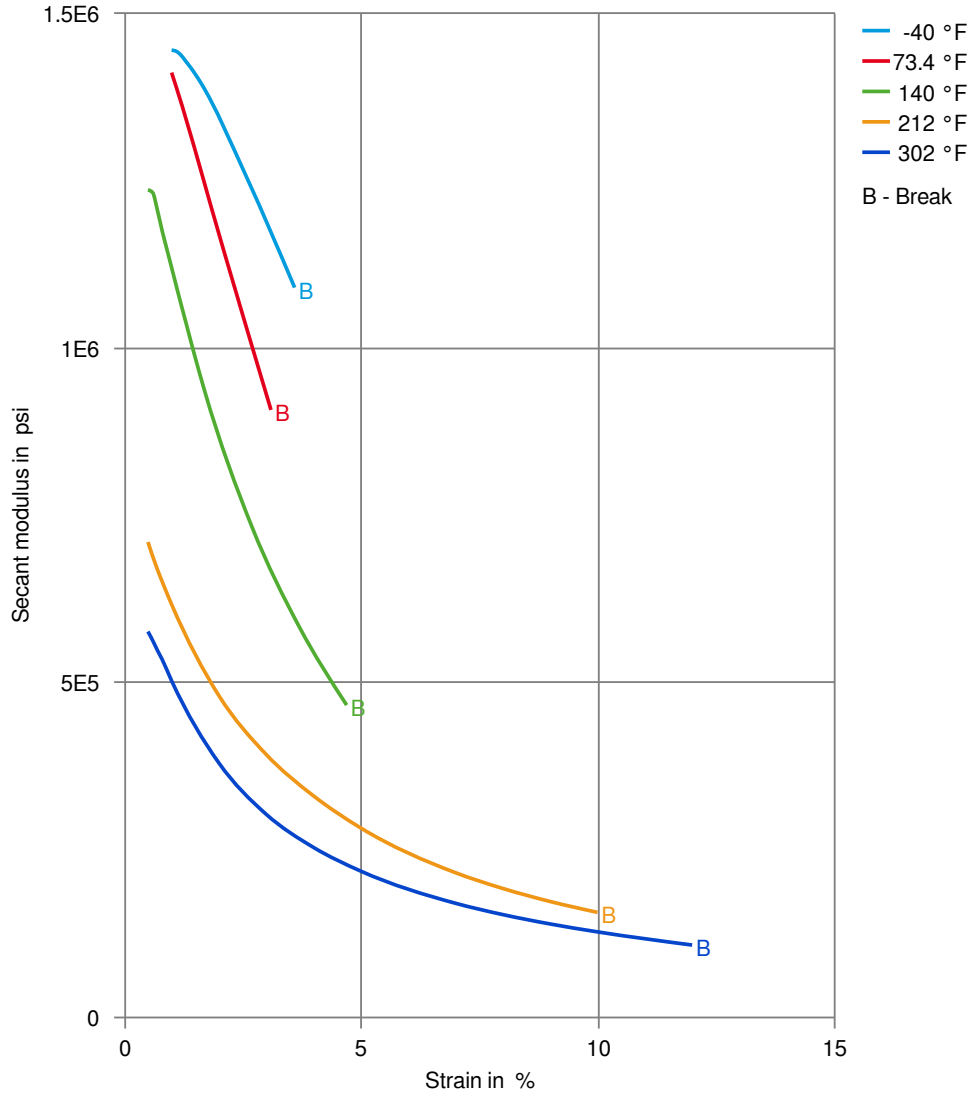
Stress-strain (cond.)



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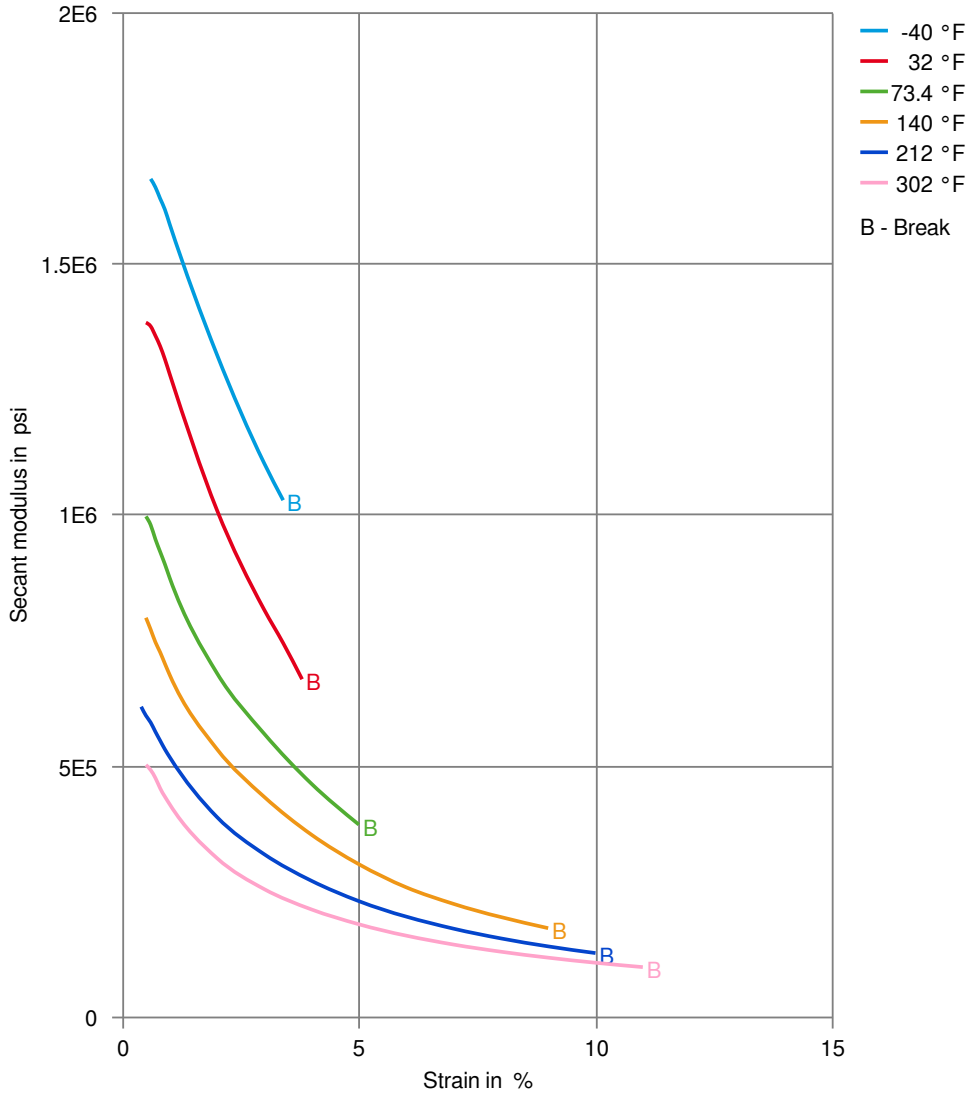
Secant modulus-strain (dry)



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Secant modulus-strain (cond.)



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