Zytel® HTNFR55G50NHLW BK046

HIGH PERFORMANCE POLYAMIDE RESIN

Zytel® HTN high performance polyamide resins feature high retention of properties upon exposure to elevated temperature, to high moisture, and to harsh chemical environments. Polymer families and grades of Zytel® HTN are tailored to optimize performance as well as processability.

Typical applications with Zytel® HTN include demanding applications in the automotive, electrical and electronics, domestic appliances, and construction industries.

Zytel® HTNFR55G50NHLW BK046 is a 50% glass reinforced, flame retardant high performance polyamide resin with improved flow and low warpage in structural applications requiring good surface appearance. It is also a PPA resin and uses a non-halogenated flame retardant.

Product information

Resin Identification	PA-GF50 FR(40)	ISO 1043
Part Marking Code	>PA-GF50 FR(40)<	ISO 11469
Part Marking Code	>PPA-GF50 FR<	SAE J1344
ISO designation	ISO 16396-PA,GF50 FR(40),M1CF1G,S10-190	
TGA curve	available	ISO 11358-1

Rheological properties

	dry/cond.		
Viscosity number	1940 / *	in^3/lb	ISO 307, 1628
Molding shrinkage, parallel	0.1 / -	%	ISO 294-4, 2577
Molding shrinkage, normal	0.2 / -	%	ISO 294-4, 2577
Flow length	6.5 / *	in	
Flow length - pressure	14500 / *	psi	
Flow length - width/thickness	0.0394 / *	in	

Typical mechanical properties

	dry/cond.		
Tensile modulus	2.61E6 / 2.77E6	psi	ISO 527-1/-2
Tensile stress at break, 5mm/min	29000 / 25500	psi	ISO 527-1/-2
Tensile strain at break, 5mm/min	1.6 / 1.3	%	ISO 527-1/-2
Flexural modulus	2.47E6 / -	psi	ISO 178
Flexural strength	45000 / -	psi	ISO 178
Charpy impact strength, 23°C	23.8 / -	$ftlb/in^2$	ISO 179/1eU
Charpy notched impact strength, 23°C	6.18 / -	$ftlb/in^2$	ISO 179/1eA

Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	565 / *	°F	ISO 11357-1/-3
Glass transition temperature, 10°C/min	234 / -	°F	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	419 / *	°F	ISO 75-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	0.07 / *	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	0.211 / *	E-4/°F	ISO 11359-1/-2
RTI, electrical, 0.4mm	149	°F	UL 746B
RTI, electrical, 0.75mm	149	°F	UL 746B
RTI, electrical, 1.5mm	149	°F	UL 746B
RTI, electrical, 3.0mm	149	°F	UL 746B

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RTI, impact, 0.4mm	149	°F	UL 746B
RTI, impact, 0.75mm	149	°F	UL 746B
RTI, impact, 1.5mm	149	°F	UL 746B
RTI, impact, 3.0mm	149	°F	UL 746B
RTI, strength, 0.4mm	149	°F	UL 746B
RTI, strength, 0.75mm	149	°F	UL 746B
RTI, strength, 1.5mm	149 / *	°F	UL 746B
RTI, strength, 3.0mm	149	°F	UL 746B

Flammability

	dry/cond.		
Burning Behav. at 1.5mm nom. thickn.	V-0 / *	class	IEC 60695-11-10
Thickness tested	0.0591 / *	in	IEC 60695-11-10
UL recognition	yes / *		UL 94
Burning Behav. at thickness h	V-0 / *	class	IEC 60695-11-10
Thickness tested	0.0157 / *	in	IEC 60695-11-10
UL recognition	yes / *		UL 94
FMVSS Class	DNI		ISO 3795 (FMVSS 302)

Electrical properties

	dry/cond.		
Electric strength	914 / -	kV/in	IEC 60243-1
Comparative tracking index	600 / -		IEC 60112
Dielectric Constant, 1 GHz	4.3 / -		ASTM D 2520 B
Dielectric Constant, 23°C, 10 GHz	4.4 / -		ASTM D 2520 B / IPC-TM-650
Dissipation Factor, 1 GHz	116 / -	E-4	ASTM D 2520 B
Dissipation Factor, 23°C, 10 GHz	122 / -	E-4	ASTM D 2520 B / IPC-TM-650

Physical/Other properties

	dry/cond.		
Water absorption, Immersion 24h	0.6 / *	%	Sim. to ISO 62
Density	0.0596 / -	lb/in^3	ISO 1183

Injection

Drying Recommended	yes	
Drying Temperature	212	°F
Drying Time, Dehumidified Dryer	6 - 8	h
Processing Moisture Content	≤0.1	%
Melt Temperature Optimum	608	°F
Min. melt temperature	599	°F
Mold Temperature Optimum	266	°F
Min. mold temperature	248	°F
Max. mold temperature	284	°F
Hold Pressure Time (h is the max. wall thickness of the part in mm)	h^2+2	s
Ejection temperature	457	°F

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Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
Renault-Nissan	UB25c, No Spec, Special Part Approval, See Your CE Account Manager.	
Stellantis	B62 0300 / 61/223E-218M/C1/C4	Technical Black

Characteristics

Processing	Injection Molding
Additives	Flame retardant, Non-halogenated/Red phosphorus free flame retardant
Special characteristics	Flame retardant

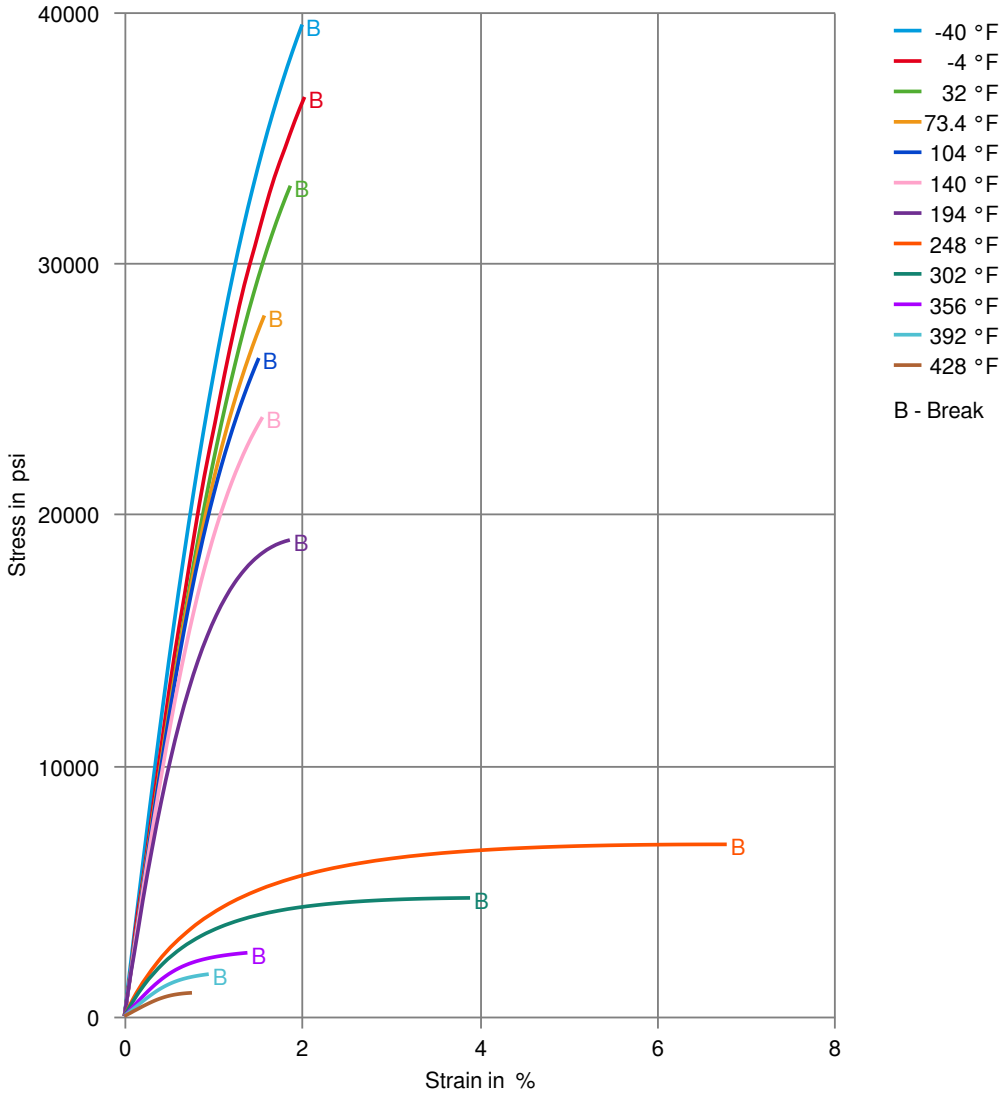
Additional information

Injection molding	For molding machine components, use corrosion resistant and wear resistant steel. For details please contact our representative. Limit the residence time of the resin in the machine. Use proper protective equipment and adequate ventilation.

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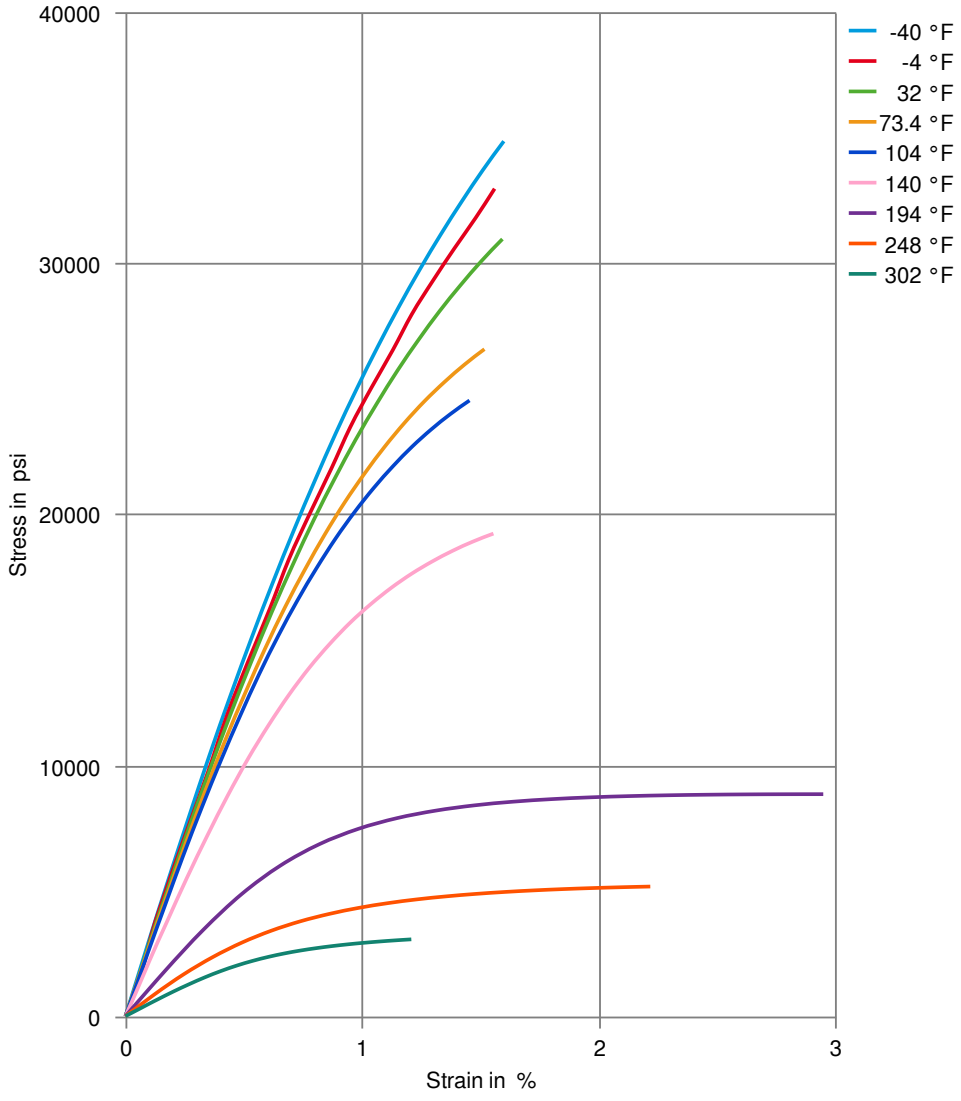
Stress-strain (dry)



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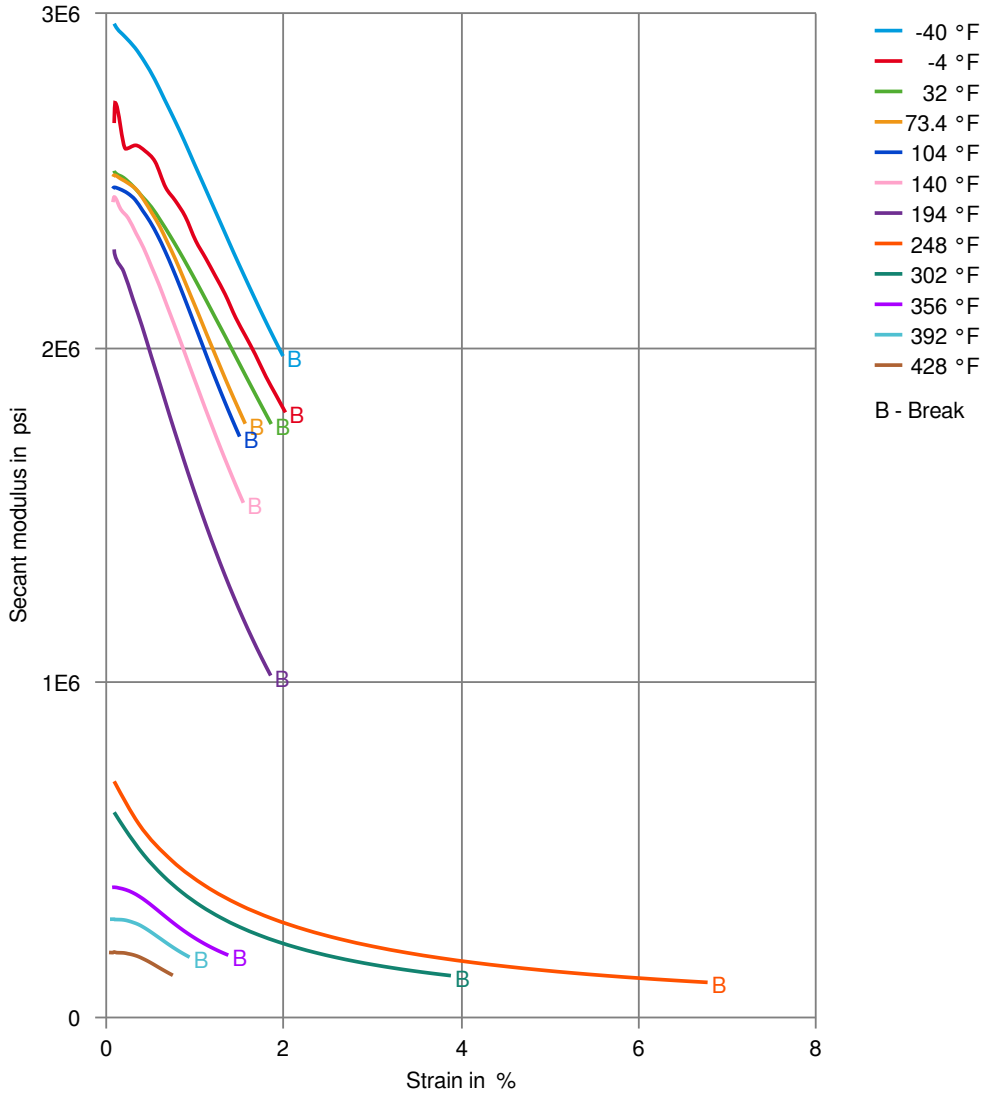
Stress-strain (cond.)



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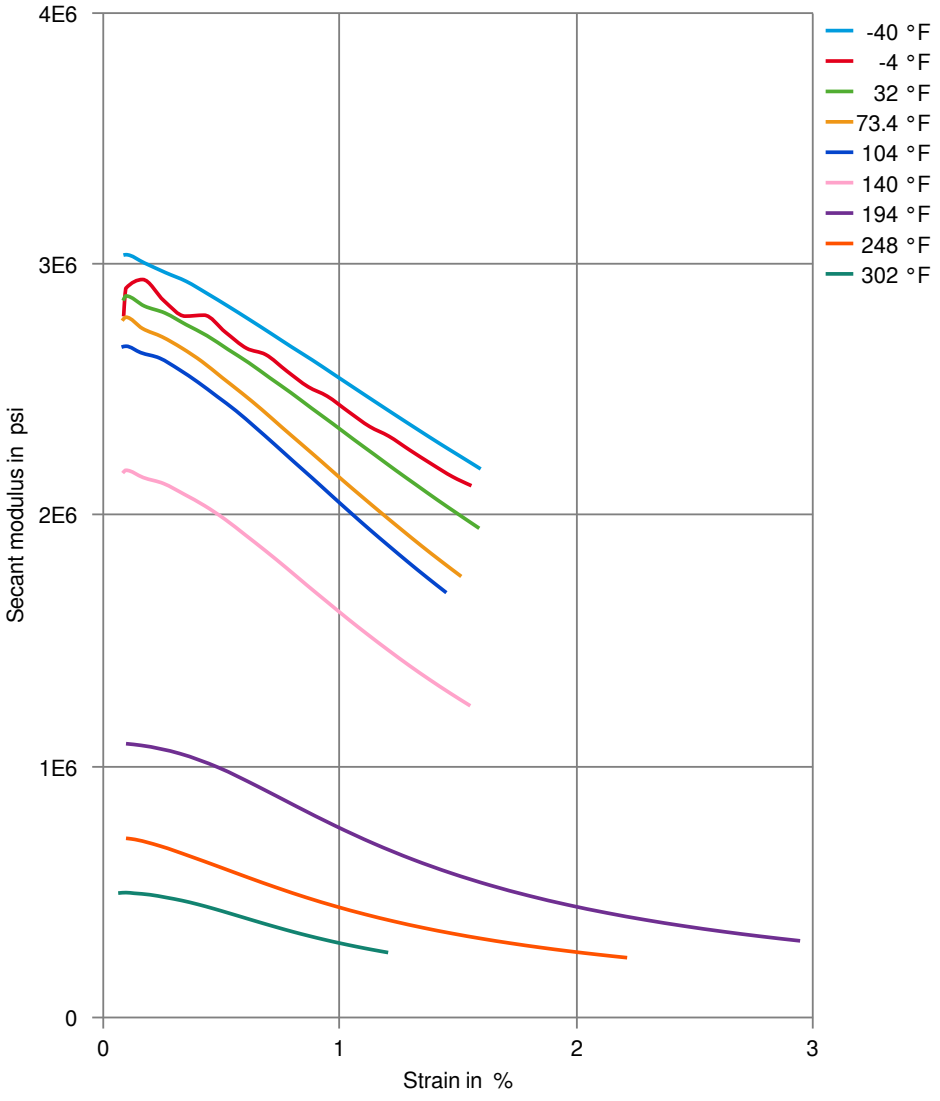
Secant modulus-strain (dry)



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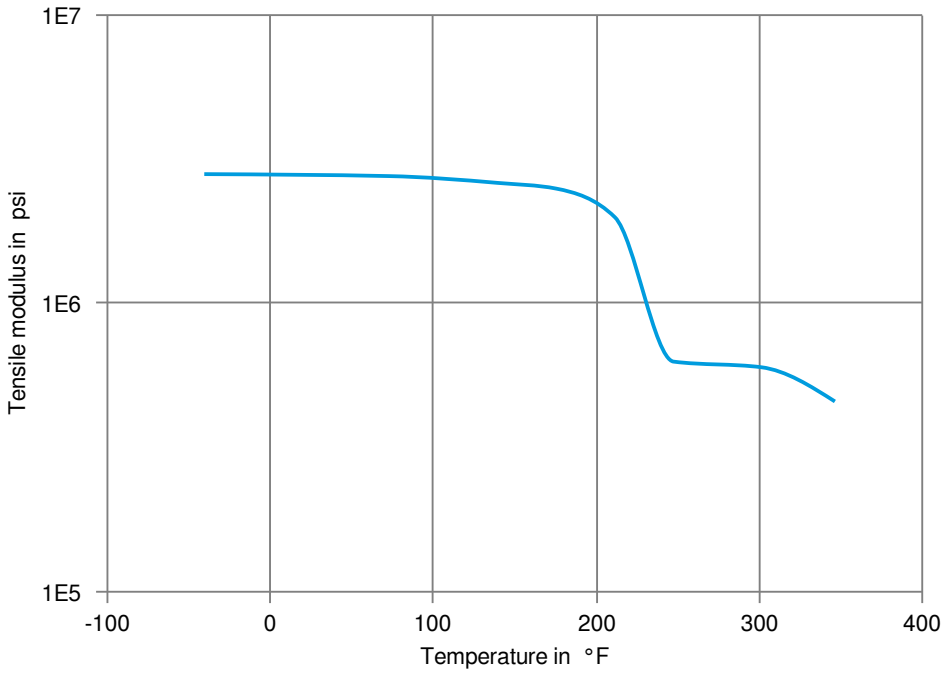
Secant modulus-strain (cond.)



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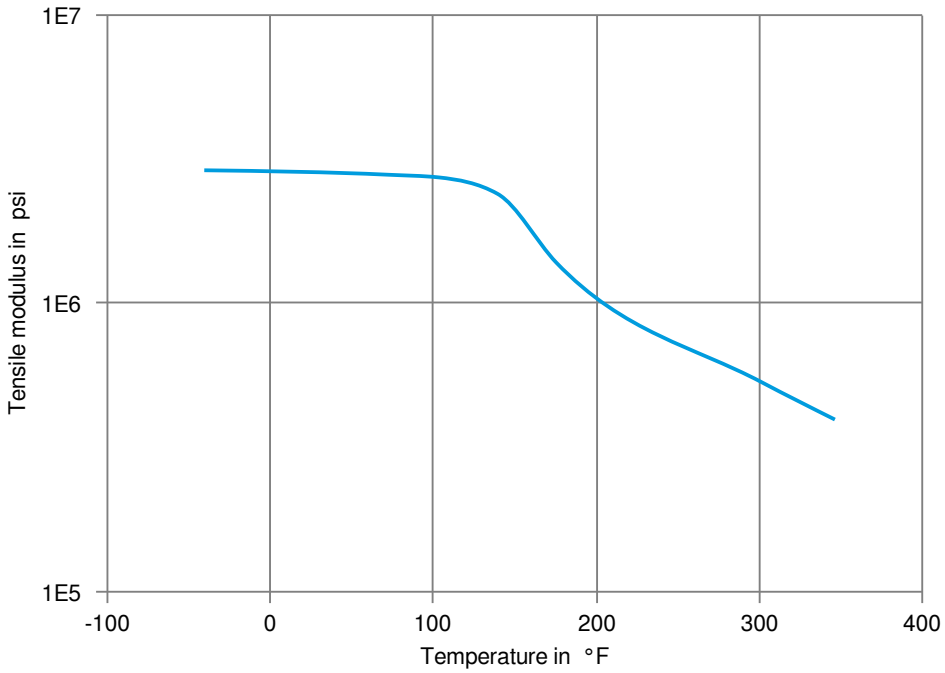
Tensile modulus-temperature (dry)



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Tensile modulus-temperature (cond.)



Revised: 2026-08-12 Source: Celanese Materials Database

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