Zytel® HTNWRF51G30 NC010 (PRELIMINARY)

HIGH PERFORMANCE POLYAMIDE RESIN

Zytel® HTNWRF51G30 NC010 is a 30% Glass Reinforced PPA, PTFE Lubricated, High Performance Polyamide with Low Wear and Low Friction

Product information

Resin Identification	PA6T/XT-GF30 SD	ISO 1043
Part Marking Code	>PA6T/XT-GF30 SD<	ISO 11469
ISO designation	ISO 16396-PA6T/XT,GF30,M1GHNRS,S10-100	
Infrared spectrum	available	
TGA curve	available	ISO 11358-1

Rheological properties

	dry/cond.		
Molding shrinkage, parallel	0.2 / -	%	ISO 294-4, 2577
Molding shrinkage, normal	0.7 / -	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile modulus	1.45E6 / 1.45E6	psi	ISO 527-1/-2
Tensile stress at break, 5mm/min	27600 / 25100	psi	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.6 / 2.2	%	ISO 527-1/-2
Flexural modulus	1.35E6 / -	psi	ISO 178
Charpy impact strength, 23 °C	30.9 / -	ftlb/in²	ISO 179/1eU
Charpy notched impact strength, 23 °C	5.23 / -	ftlb/in²	ISO 179/1eA
Charpy notched impact strength, -30 °C	4.28 / -	ftlb/in²	ISO 179/1eA

Tribological properties

	dry/cond.	
Coefficient of sliding friction, 1h against steel	- / 0.25	ASTM 1894

Thermal properties

	dry/cond.		
Melting temperature, 10 °C/min	572 / *	°F	ISO 11357-1/-3
Glass transition temperature, 10 °C/min	275 / 194	°F	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	500 / *	°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), parallel, -40-23 °C	0.0889 / *	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	0.333 / *	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal, -40-23 °C	0.294 / *	E-4/°F	ISO 11359-1/-2
Thermal conductivity of melt	0.23	W/(m K)	ISO 22007-2
Specific heat capacity of melt	1740	J/(kg K)	ISO 22007-4

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Flammability

FMVSS Class	DNI	ISO 3795 (FMVSS 302)

Electrical properties

	dry/cond.		
Comparative tracking index	550 / -		IEC 60112

Physical/Other properties

	dry/cond.		
Humidity absorption, 2mm	2.3 / *	%	Sim. to ISO 62
Water absorption, Immersion 24h	0.5[1] / *	%	Sim. to ISO 62
Density	0.0563 / -	lb/in³	ISO 1183
Density of melt	84.3	lb/ft³	

[1]: 2mm thickness

Injection

Drying Recommended	yes	
Drying Temperature	212	°F
Drying Time, Dehumidified Dryer	6 - 8	h
Processing Moisture Content	≤0.1	%
Melt Temperature Optimum	617	°F
Min. melt temperature	608	°F
Max. melt temperature	626	°F
Mold Temperature Optimum	302	°F
Min. mold temperature	284	°F
Max. mold temperature	320	°F
Hold Pressure Time (h is the max. wall thickness of the part in mm)	h²+2	s
Ejection temperature	498	°F

Characteristics

Processing	Injection Molding
Additives	Release agent
Special characteristics	Heat stabilized or stable to heat, Low wear / Low friction

Additional information

Injection molding

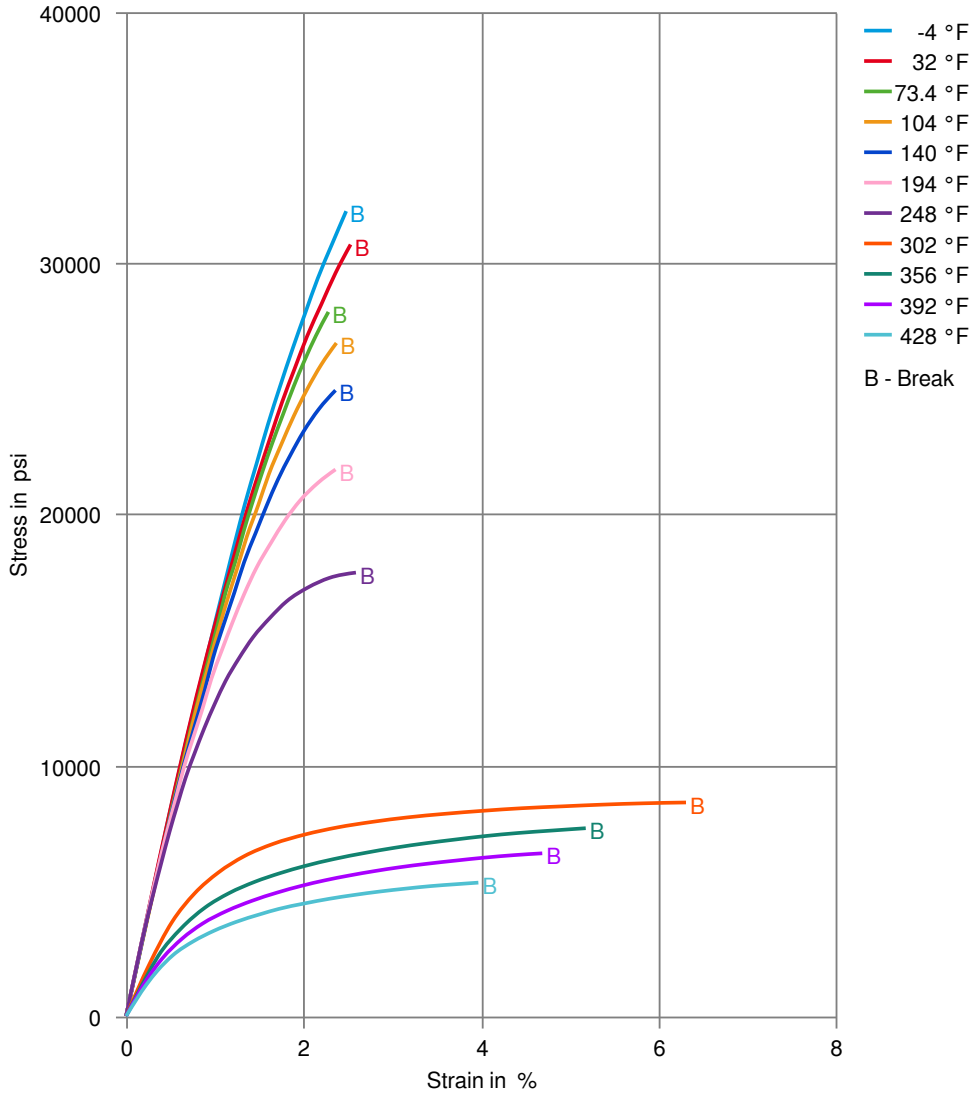
During molding, use proper protective equipment and adequate ventilation. Avoid exposure to fumes and limit the hold up time and temperature of the resin in the machine. Purge degraded resin carefully with HDPE.

When lower mold temperatures are used, the initial warpage and shrinkage may be lower, but the surface appearance and chemical resistance may be reduced, and the dimensional change may be greater when parts are subsequently heated.

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Stress-strain (dry)

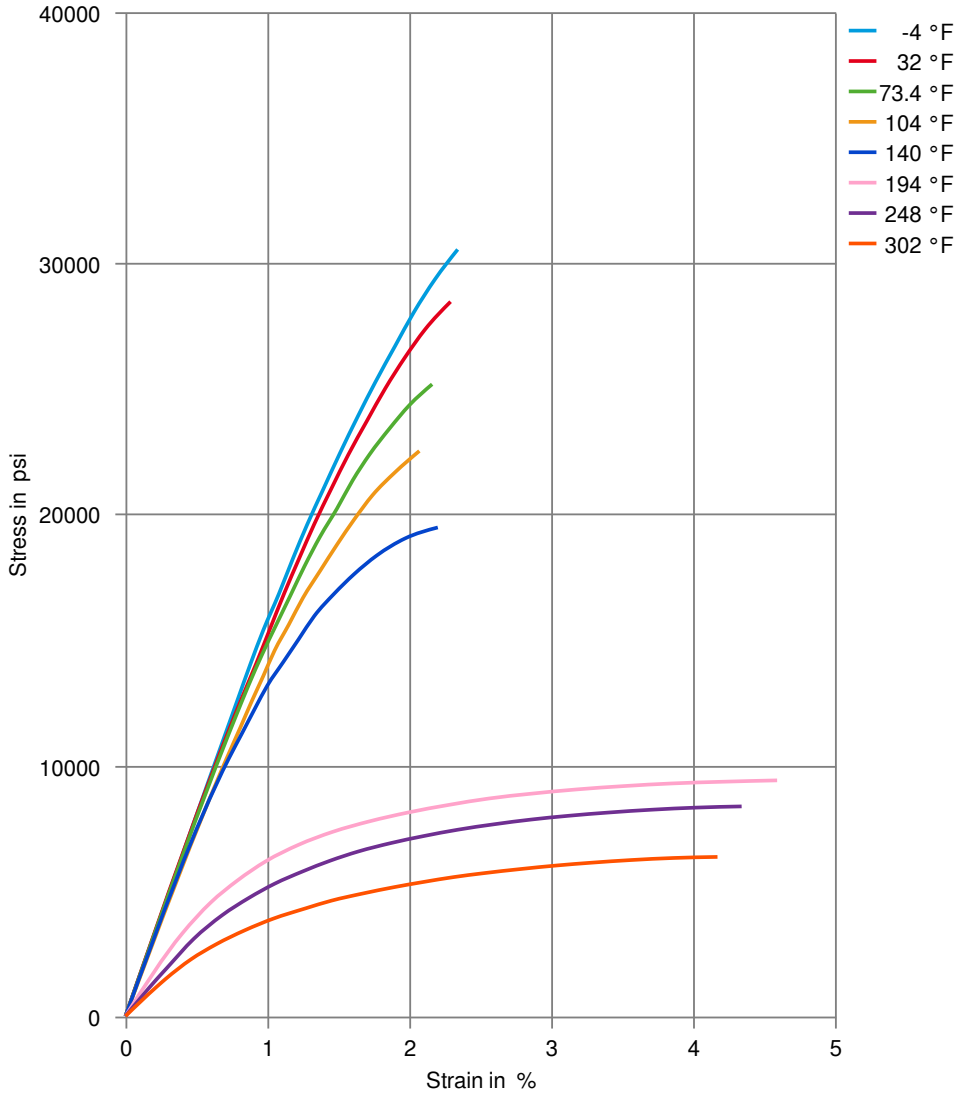


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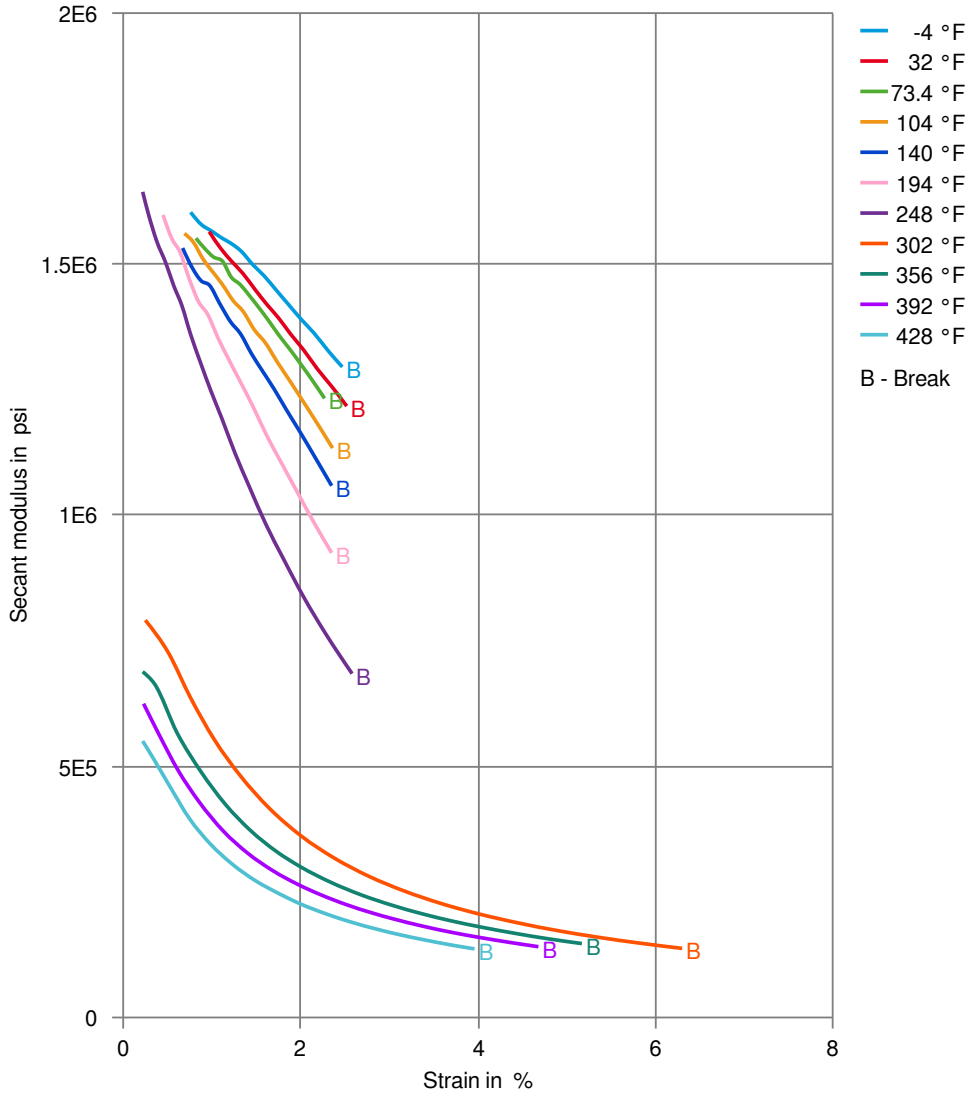
Stress-strain (cond.)



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Secant modulus-strain (dry)

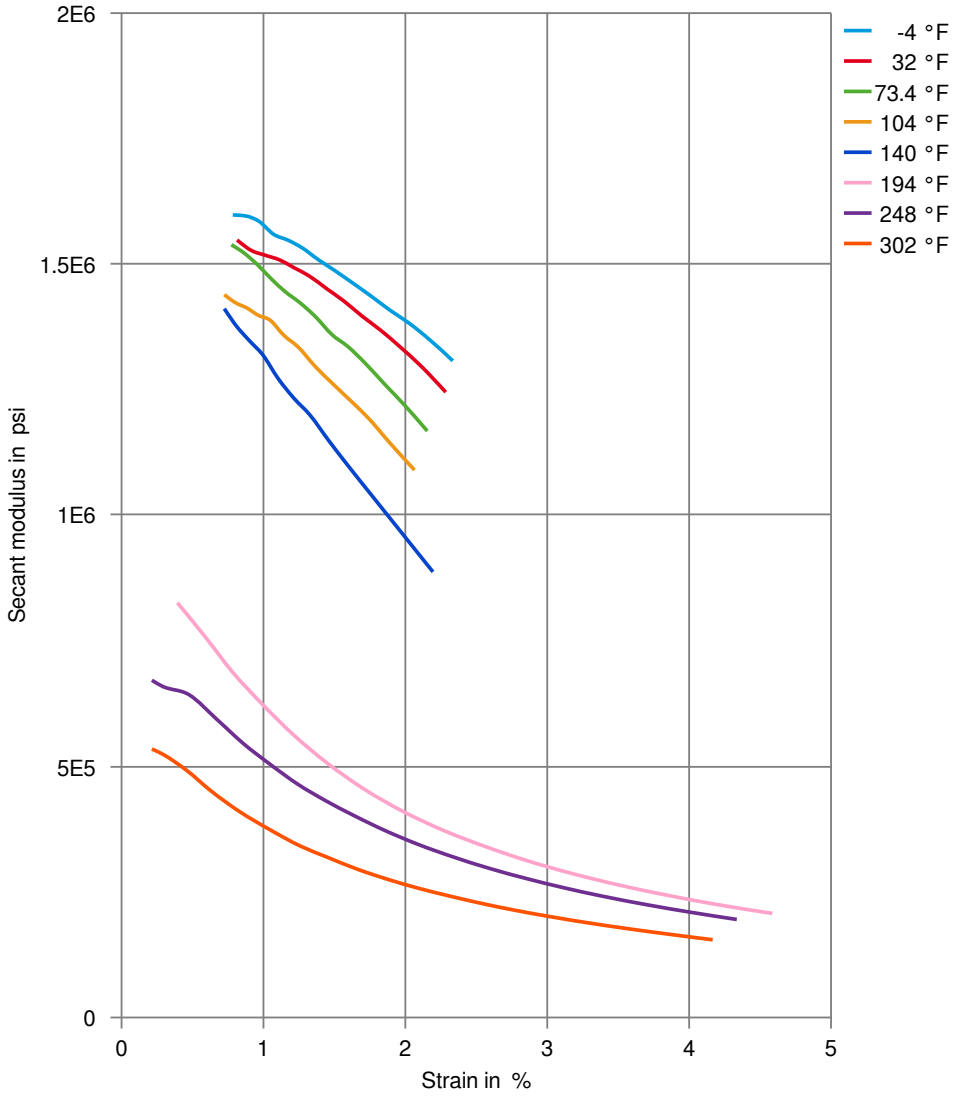


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Secant modulus-strain (cond.)



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The above data are preliminary and are subject to change as additional data are developed on subsequent lots.
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