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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-GF30SD	ISO 1043
Part Marking Code	>PA6T/XT-GF30SD<	ISO 11469
ISO designation	ISO 16396-PA6T/XT,GF30,M1GHNRS,S10-100	

Rheological properties

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

Typical mechanical properties

	dry/cond.		
Tensile modulus	10000 / 10000	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	190 / 173	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.6 / 2.2	%	ISO 527-1/-2
Flexural modulus	9300 / -	MPa	ISO 178
Charpy impact strength, 23°C	65 / -	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	11 / -	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	9 / -	kJ/m²	ISO 179/1eA
Poisson's ratio	0.34 / 0.34		

Tribological properties

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

Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	300 / *	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	140 / 90	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	260 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel, -40-23°C	16 / *	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	15 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, -40-23°C	53 / *	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	60 / *	E-6/K	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
TGA curve	available		ISO 11359-1/-2

Flammability

FMVSS Class	DNI	ISO 3795 (FMVSS 302)

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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	1560 / -	kg/m³	ISO 1183
Density of melt	1350	kg/m³	

[1]: 2mm thickness

Injection

Drying Recommended	yes	
Drying Temperature	100	°C
Drying Time, Dehumidified Dryer	6 - 8	h
Processing Moisture Content	≤0.1	%
Melt Temperature Optimum	325	°C
Min. melt temperature	320	°C
Max. melt temperature	330	°C
Mold Temperature Optimum	150	°C
Min. mould temperature	140	°C
Max. mould temperature	160	°C
Ejection temperature	259	°C

Characteristics

Processing	Injection Moulding
Delivery form	Pellets
Additives	Release agent
Special characteristics	Heat stabilised 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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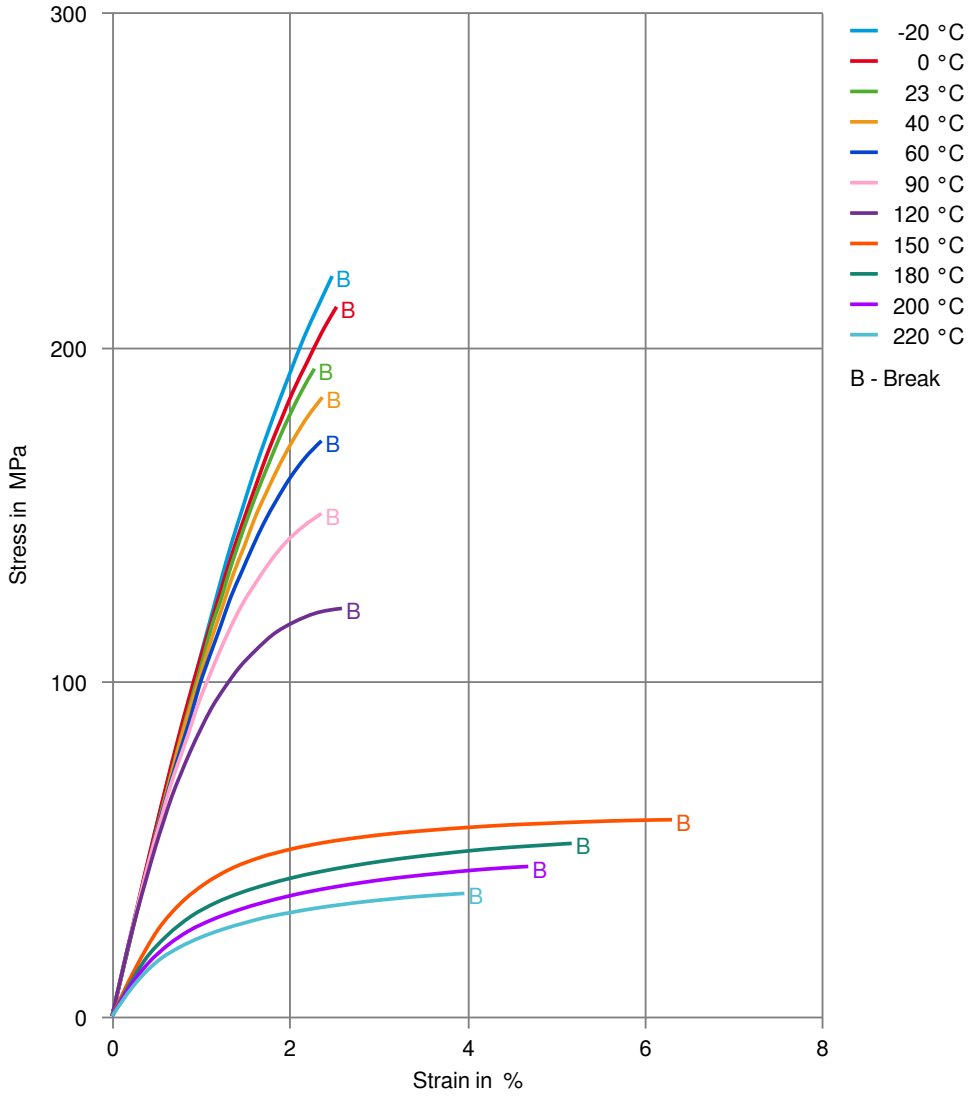
Stress-strain (dry)



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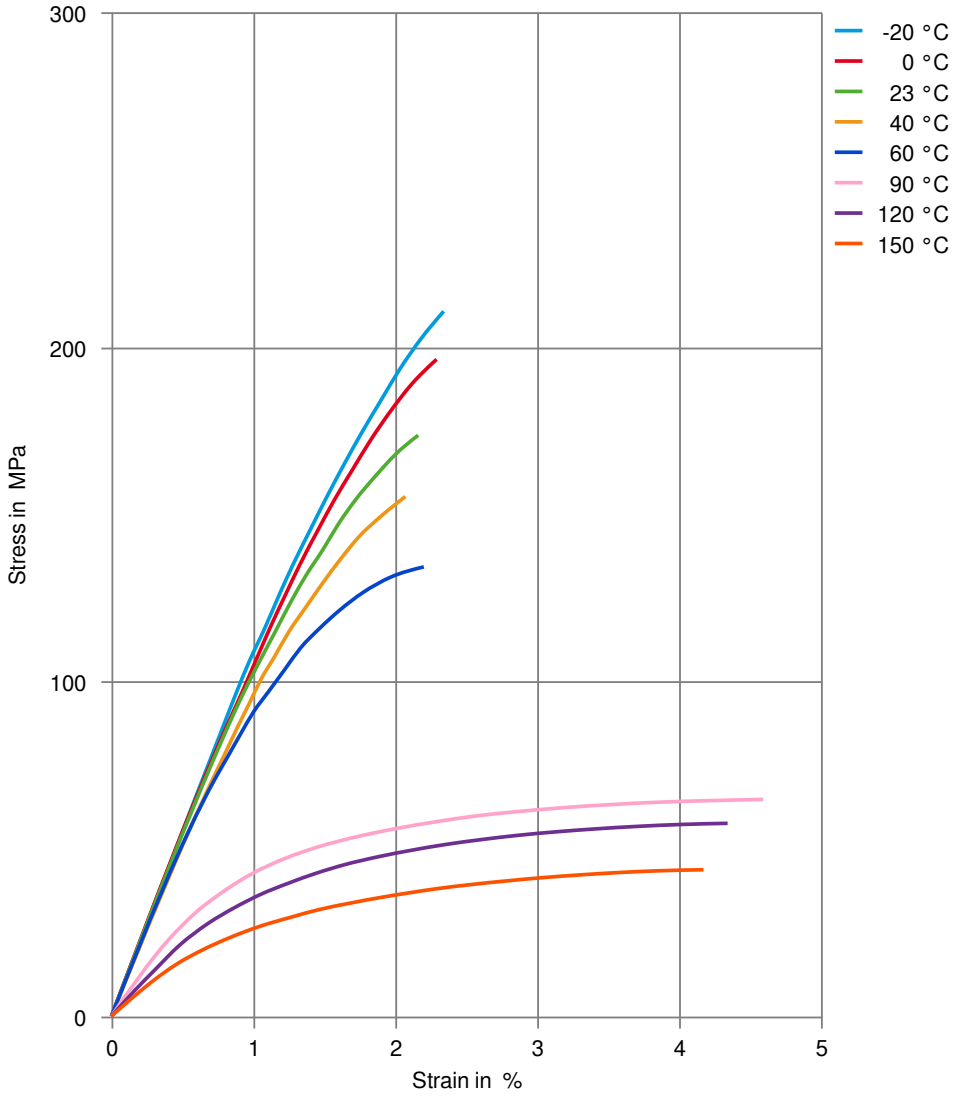
Stress-strain (cond.)



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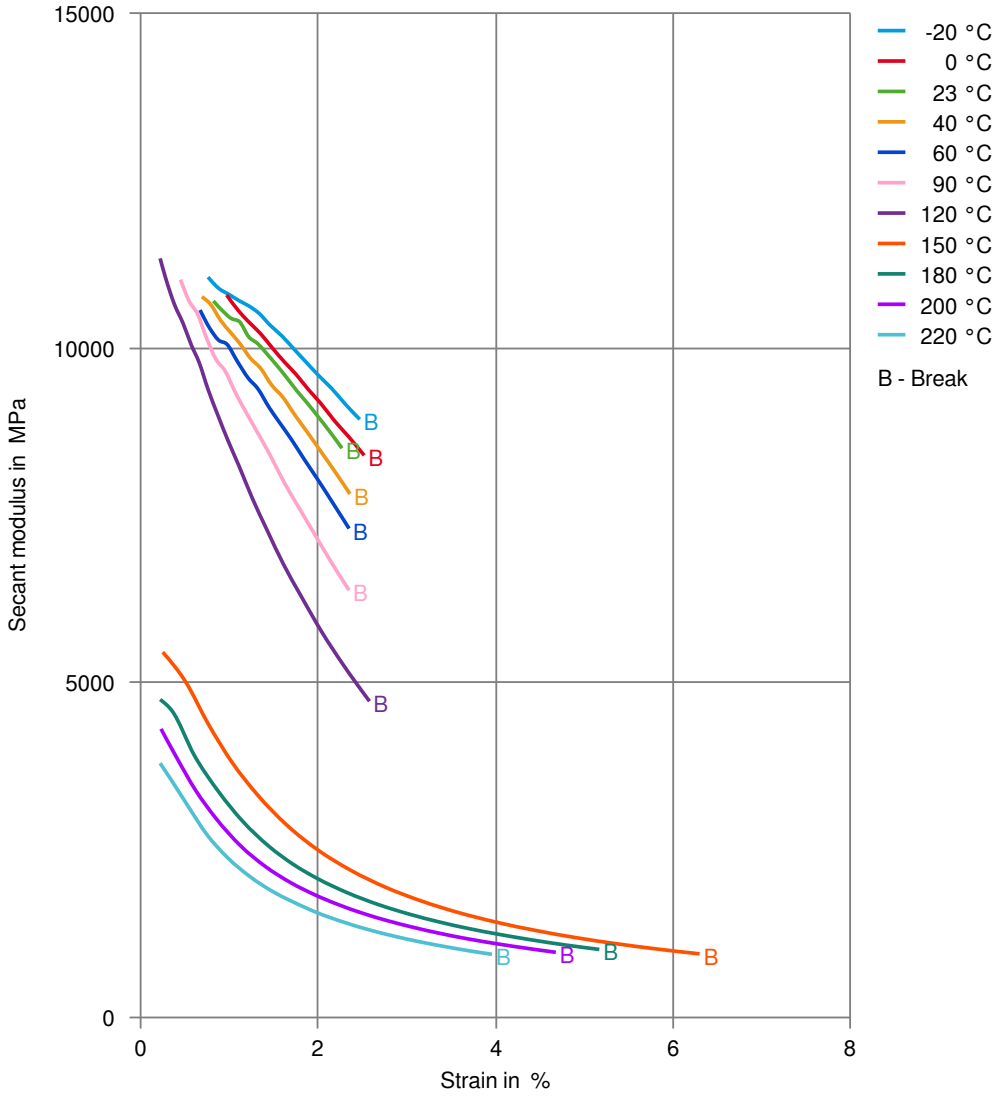
Secant modulus-strain (dry)



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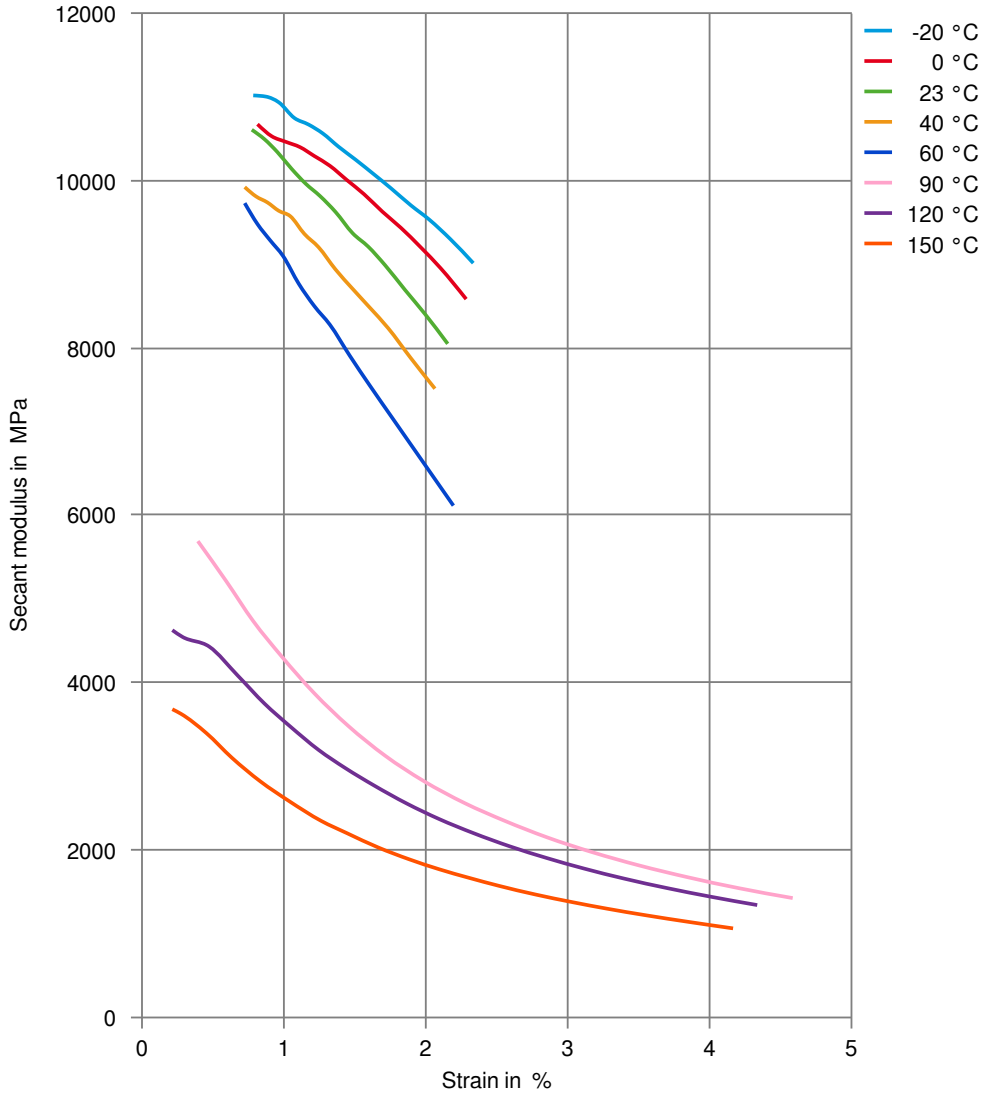
Secant modulus-strain (cond.)



Revised: 2025-04-23 Source: Celanese Materials Database