

Zytel® HTN53G60LRHF BK083

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® HTN53G60LRHF BK083 is a 60% glass reinforced, lubricated, high performance polyamide resin with improved flow. It was developed for structural applications requiring excellent surface appearance using water-heated molds.

Product information

Resin Identification	PA-GF60	ISO 1043
Part Marking Code	>PA-GF60<	ISO 11469
Part Marking Code	>PA-GF60<	SAE J1344
ISO designation	ISO 16396-PA,GF60,M1CGHR,S10-220	

Rheological properties

	dry/cond.		
Moulding shrinkage, parallel	0.1 / -	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.5 / -	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile modulus	21000 / 20000	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	265 / 225	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.2 / 2.6	%	ISO 527-1/-2
Flexural modulus	19100 / -	MPa	ISO 178
Flexural strength	400 / -	MPa	ISO 178
Charpy impact strength, 23°C	90 / 90	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	16 / 15	kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	17 / 15	kJ/m ²	ISO 179/1eA
Poisson's ratio	0.33 / 0.33		

Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	260 / *	°C	ISO 11357-1/-3
Melting temperature, first heat	260 / *	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	85 / 45	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	245 / *	°C	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	255 / *	°C	ISO 75-1/-2

Flammability

	dry/cond.		
Burning Behav. at 1.5mm nom. thickn.	HB / *	class	IEC 60695-11-10
Thickness tested	1.5 / *	mm	IEC 60695-11-10
UL recognition	yes / *		UL 94
FMVSS Class	B		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	<80	mm/min	ISO 3795 (FMVSS 302)

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Physical/Other properties

	dry/cond.		
Humidity absorption, 2mm	0.95 / *	%	Sim. to ISO 62
Water absorption, 2mm	3.4 / *	%	Sim. to ISO 62
Density	1720 / -	kg/m ³	ISO 1183

Injection

Drying Recommended	yes
Drying Temperature	100 °C
Drying Time, Dehumidified Dryer	6 - 8 h
Processing Moisture Content	≤0.1 %
Melt Temperature Optimum	290 °C
Min. melt temperature	280 °C
Max. melt temperature	300 °C
Mold Temperature Optimum	100 °C
Min. mould temperature	90 °C
Max. mould temperature	110 °C
Ejection temperature	206 °C

Characteristics

Processing	Injection Moulding
Delivery form	Pellets
Additives	Release agent
Special characteristics	Heat stabilised or stable to heat, Laser Markable

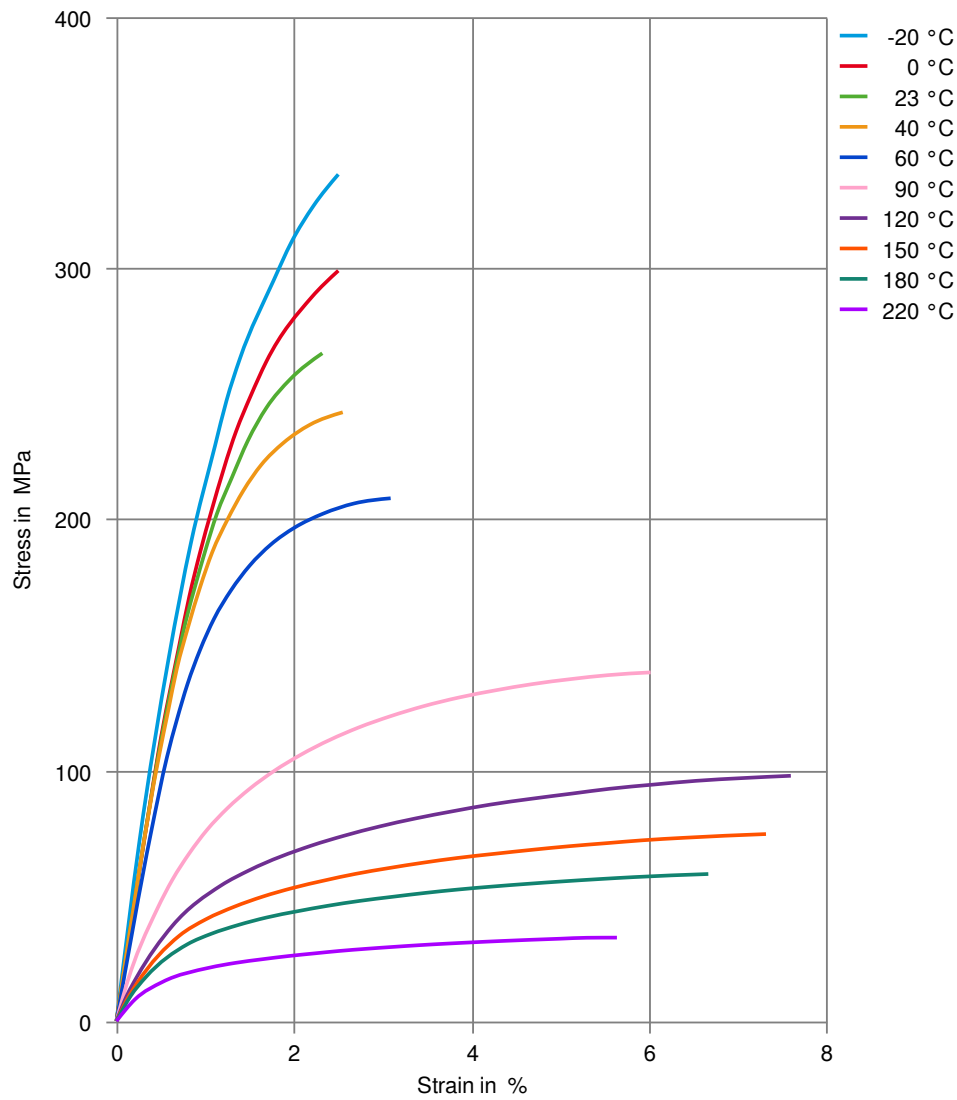
Additional information

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.
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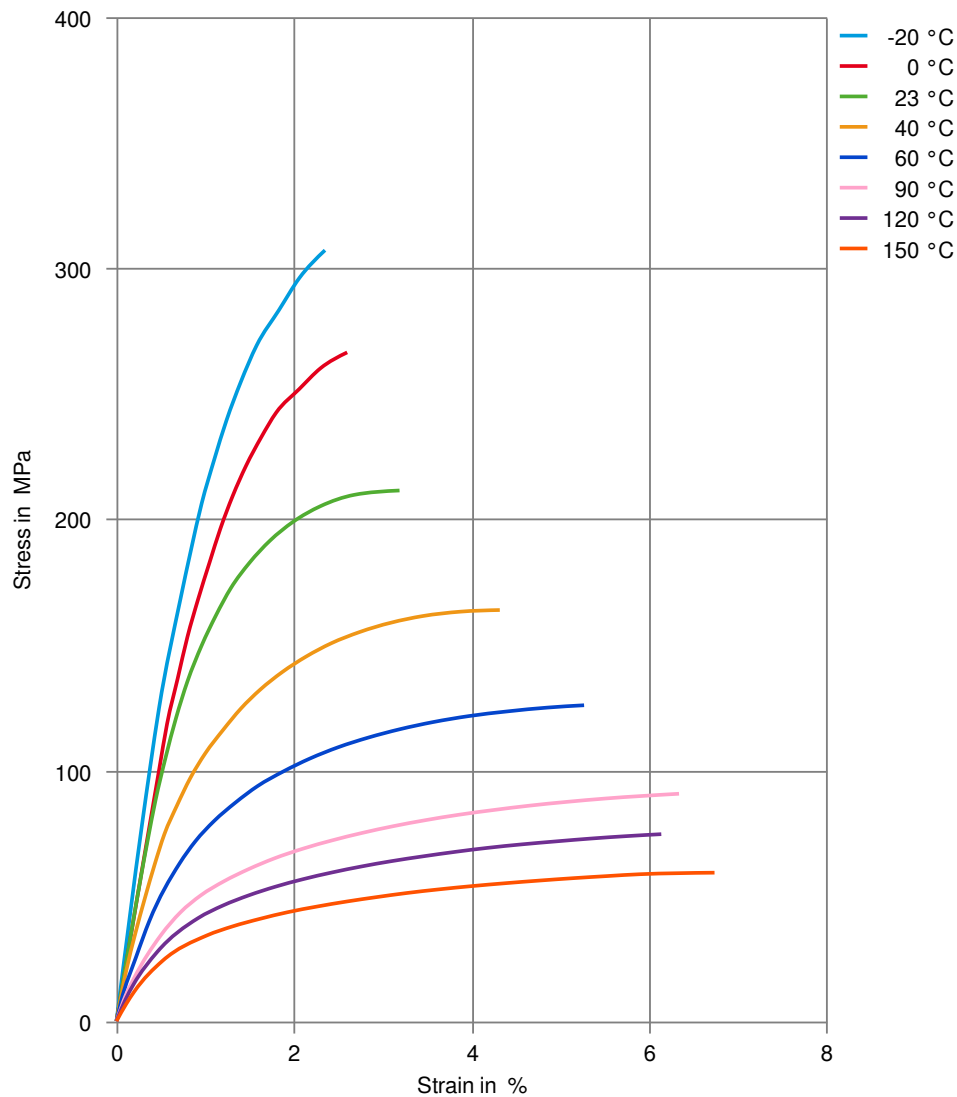
Stress-strain (dry)



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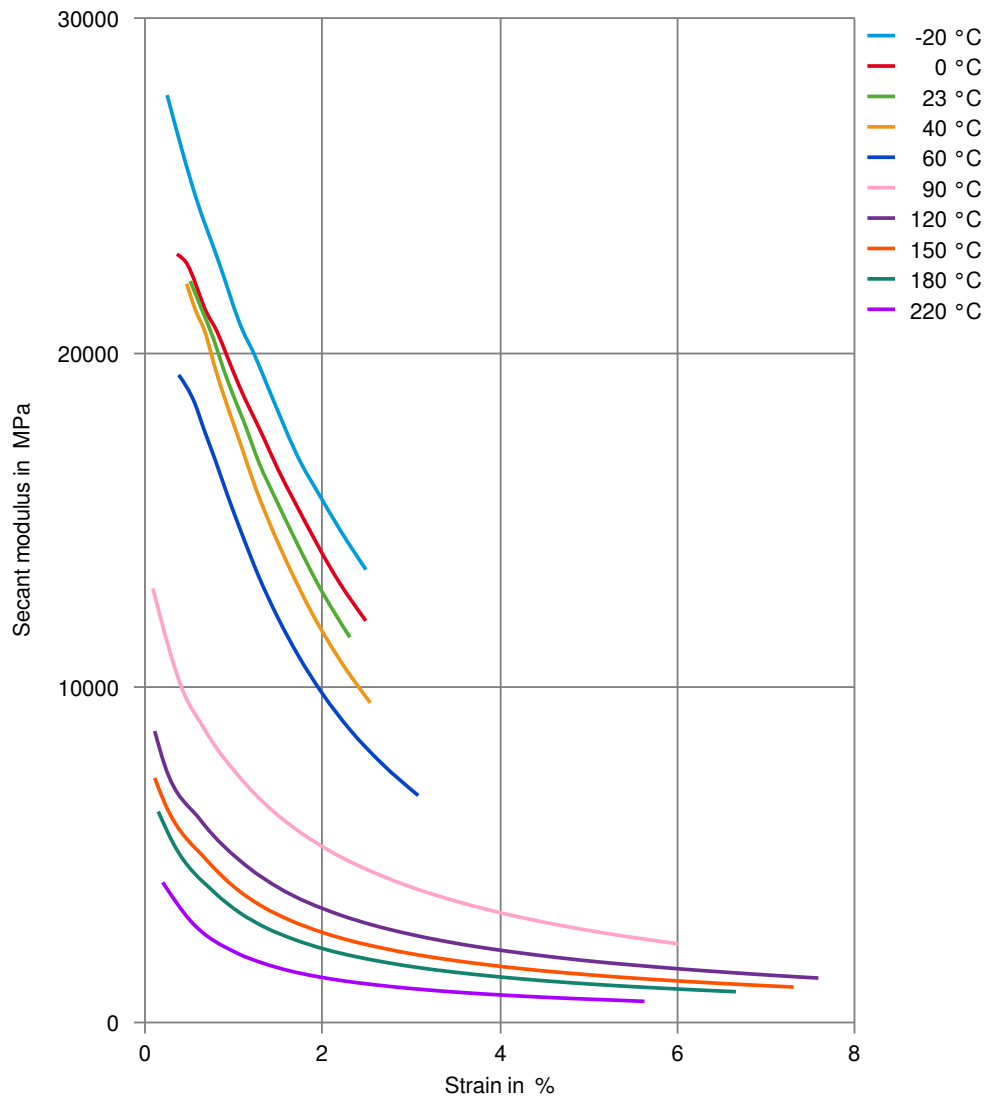
Stress-strain (cond.)



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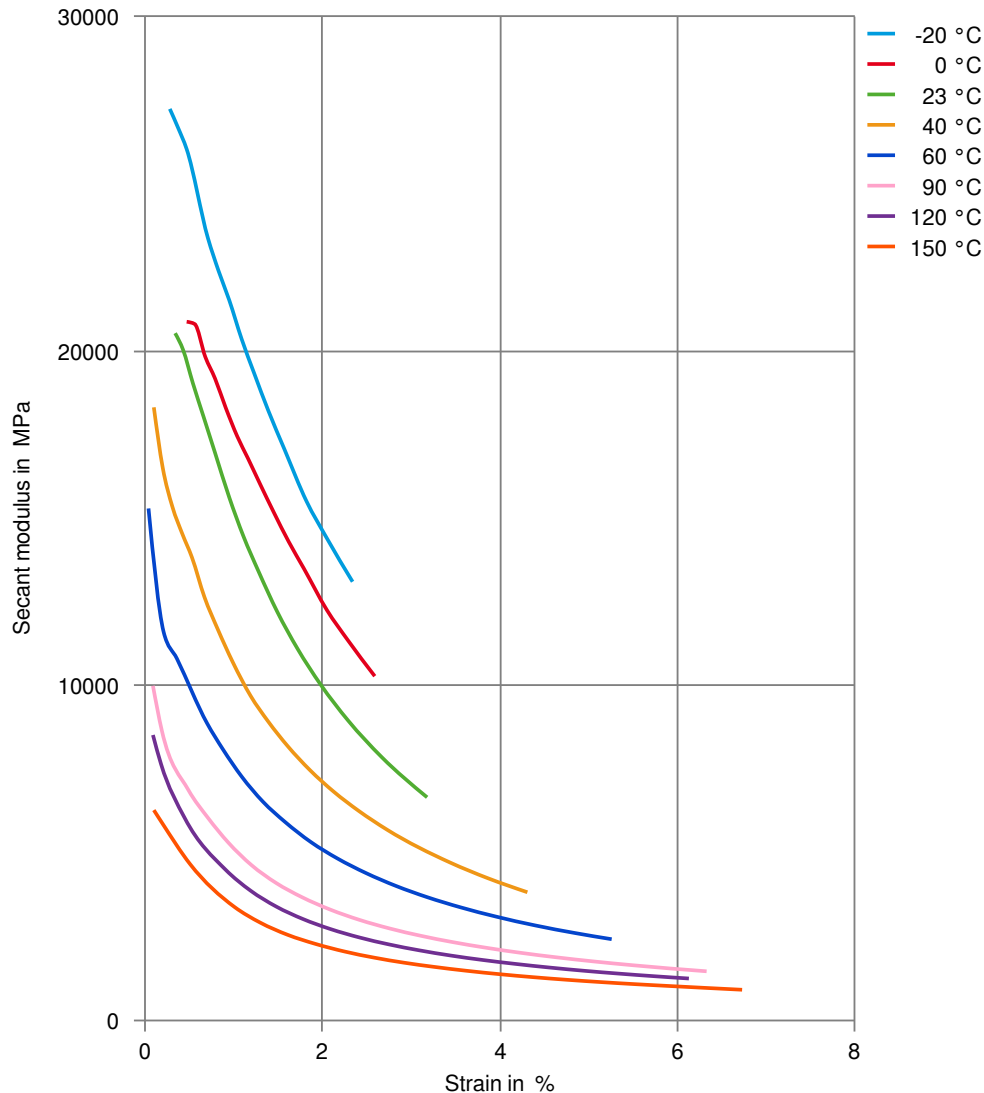
Secant modulus-strain (dry)



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Secant modulus-strain (cond.)



Printed: 2025-03-27

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Revised: 2024-07-04 Source: Celanese Materials Database

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