Zytel® HTN52G45HSL 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® HTN52G45HSL BK083 is a 45% glass reinforced, heat stabilized, lubricated high performance polyamide resin that can be molded in water heated molds. It is also a PPA resin.

Product information

Resin Identification	PA6T/66-GF45	ISO 1043
Part Marking Code	>PA6T/66-GF45<	ISO 11469
Part Marking Code	>PPA-GF45<	SAE J1344
ISO designation	ISO 16396-PA6T/66,GF45,M1CGHR,S10-160	

Typical mechanical properties

	dry/cond.		
Tensile modulus	15500 / -	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	235 / -	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	2 / -	%	ISO 527-1/-2
Charpy impact strength, 23°C	65 / -	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	12 / -	kJ/m²	ISO 179/1eA
Poisson's ratio	0.33 / -		

Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	314 / *	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	90 / 45	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	283 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel, -40-23°C	17 / *	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	17 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, parallel, 55-160°C	15 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, -40-23°C	54 / *	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	58 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, 55-160°C	100 / *	E-6/K	ISO 11359-1/-2
Thermal conductivity of melt	0.26	W/(m K)	ISO 22007-2
Specific heat capacity of melt	2050	J/(kg K)	ISO 22007-4

Flammability

FMVSS Class	B		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	17	mm/min	ISO 3795 (FMVSS 302)

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Physical/Other properties

	dry/cond.		
Humidity absorption, 2mm	1.6 / *[C]	%	Sim. to ISO 62
Water absorption, 2mm	3.9 / *[C]	%	Sim. to ISO 62
Density	1560 / -	kg/m³	ISO 1183
Density of melt	1450	kg/m³	

[C]: Calculated

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	100	°C
Min. mould temperature	90	°C
Max. mould temperature	110	°C
Ejection temperature	263	°C

Characteristics

Processing	Injection Moulding
Special characteristics	Heat stabilised or stable to heat

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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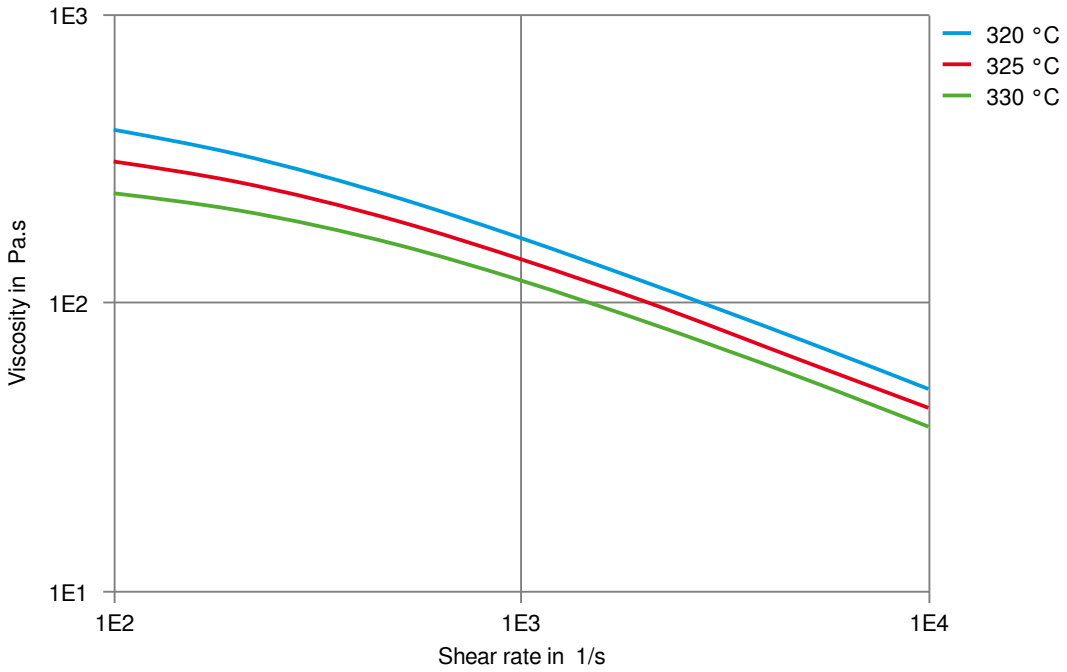
Viscosity-shear rate



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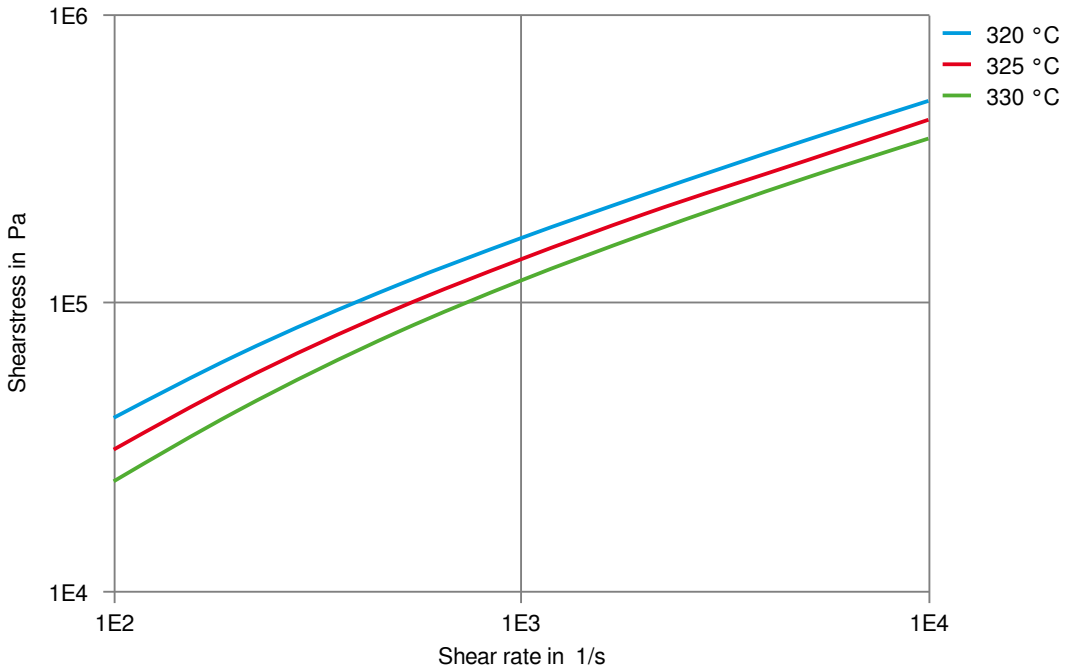
Shearstress-shear rate



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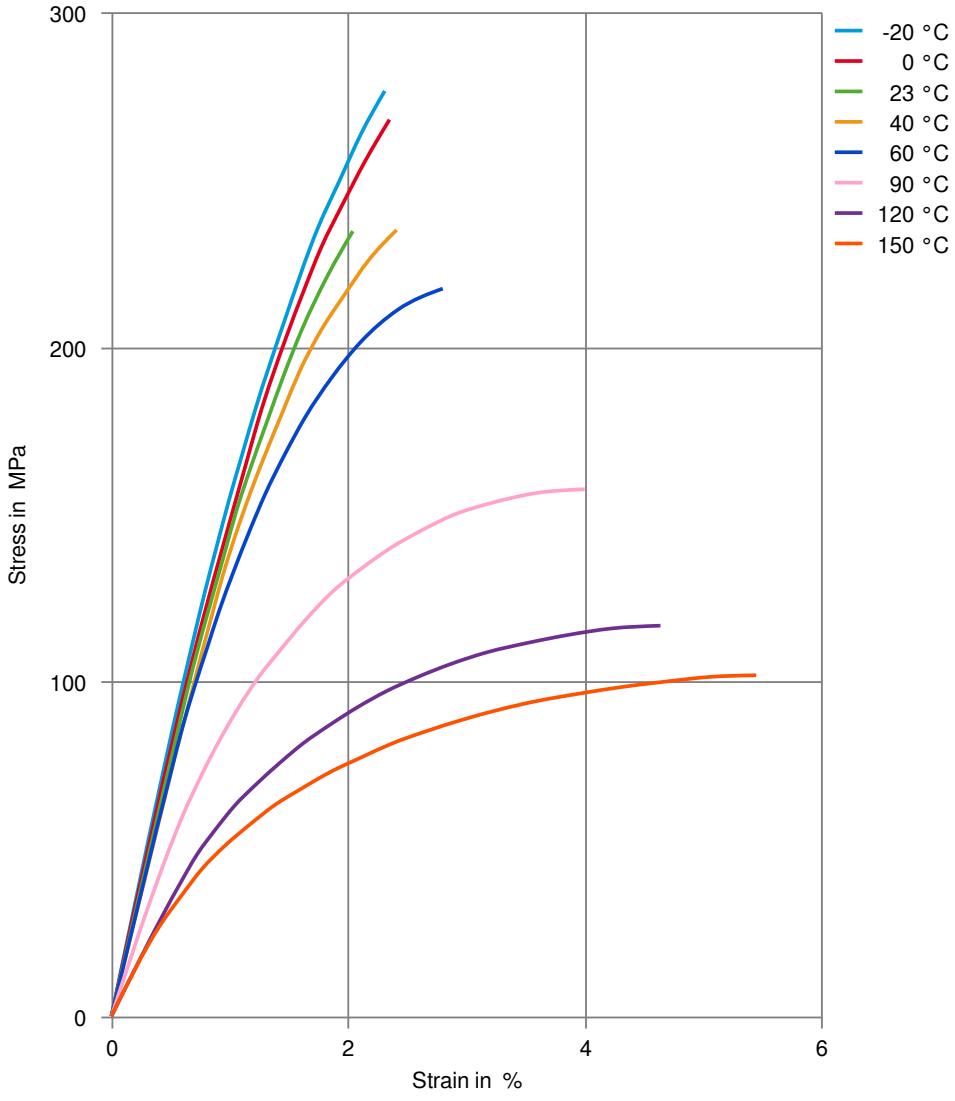
Stress-strain (dry)



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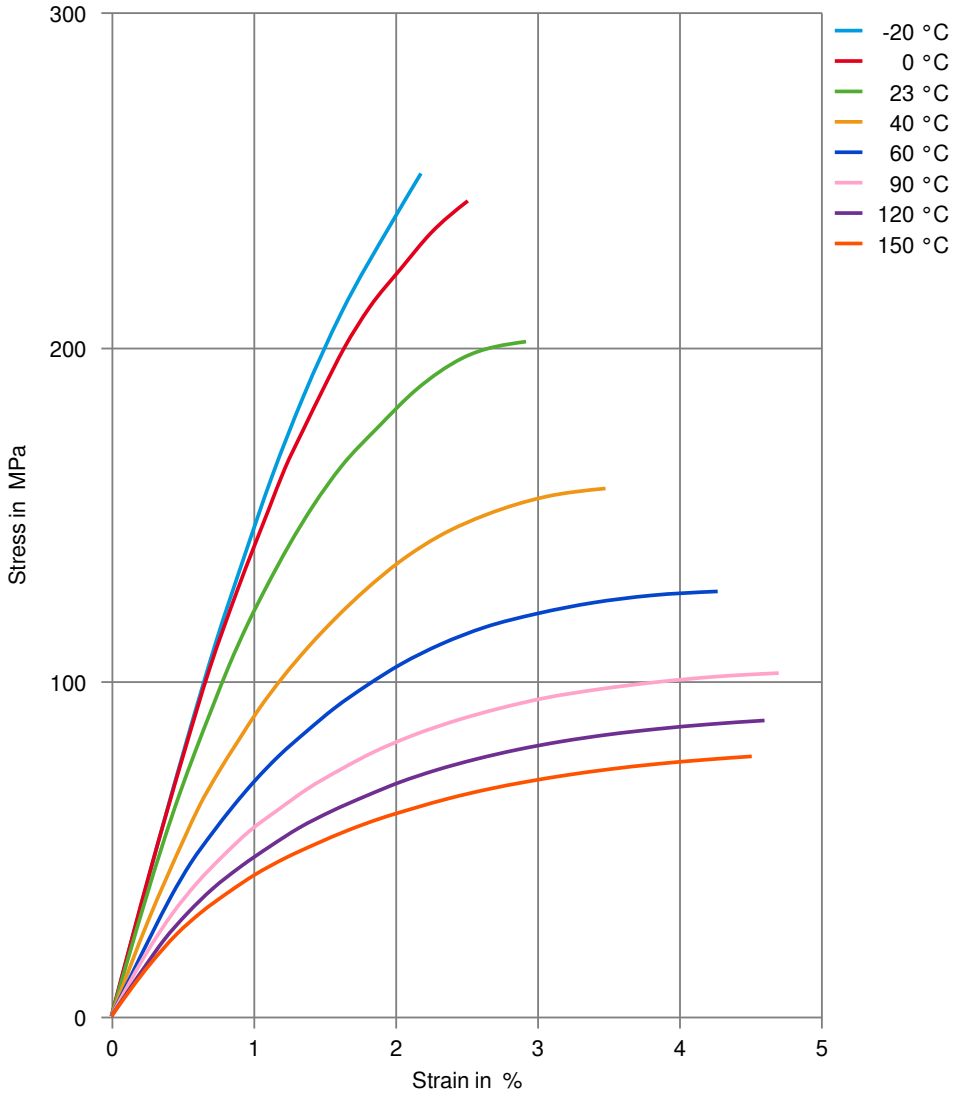
Stress-strain (cond.)



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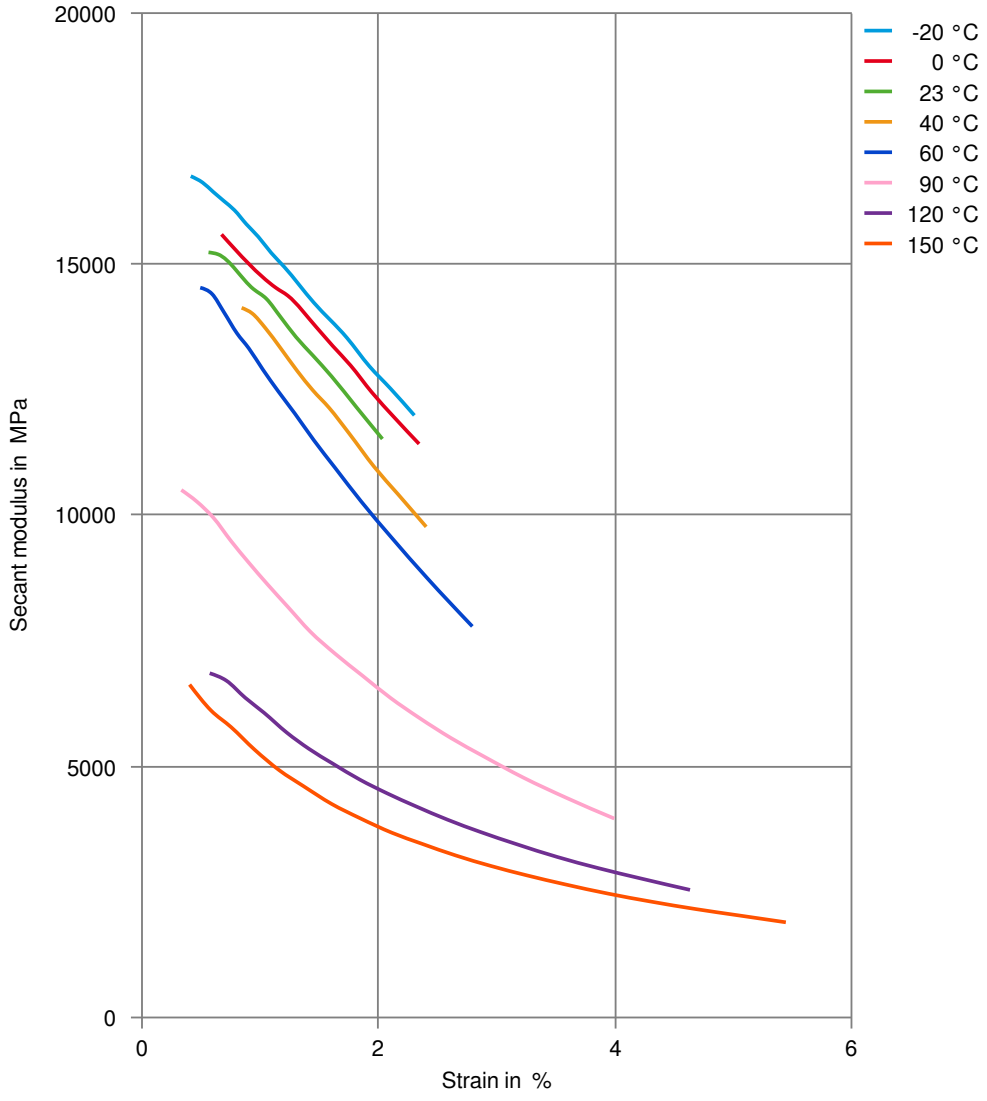
Secant modulus-strain (dry)



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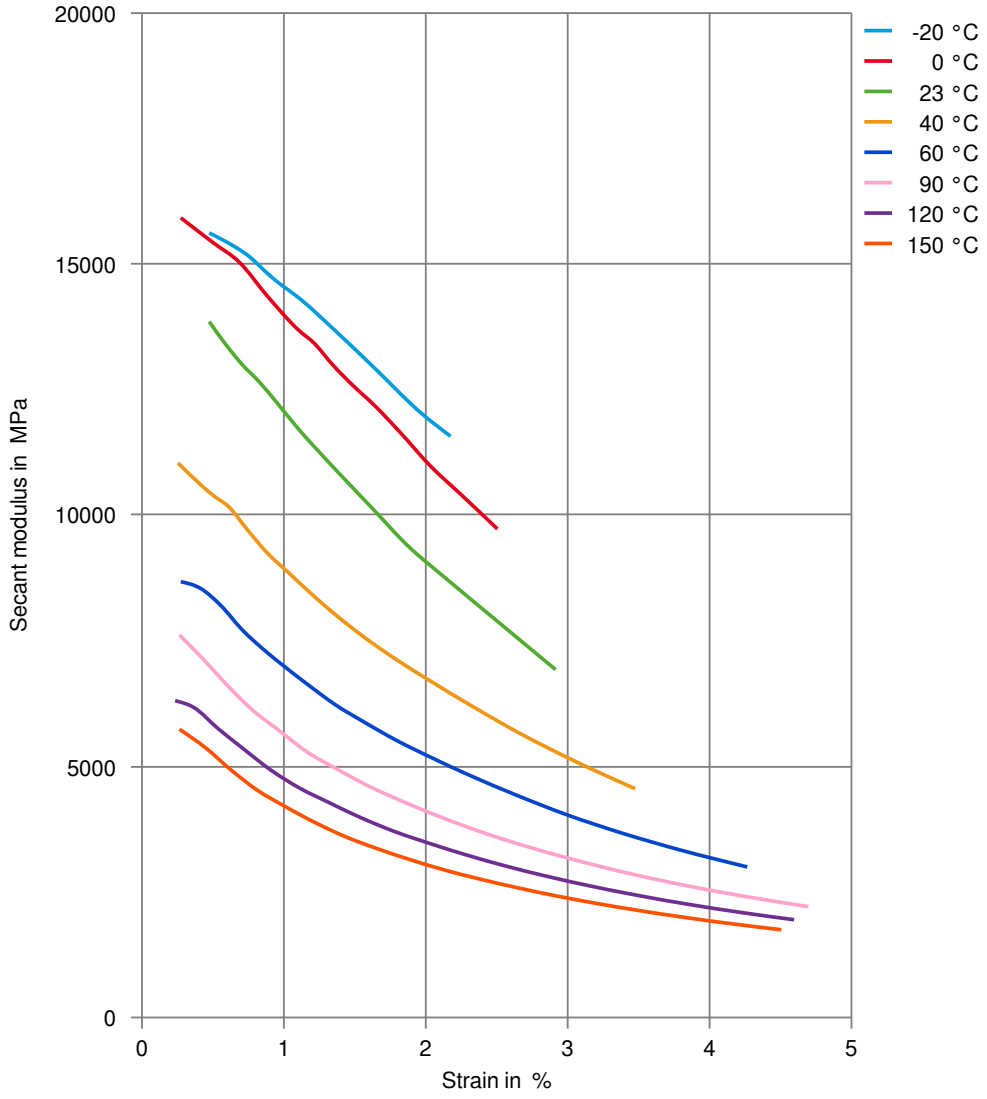
Secant modulus-strain (cond.)



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Chemical Media Resistance

Acids

- ✔ Acetic Acid (5% by mass), 23°C
- ✔ Citric Acid solution (10% by mass), 23°C
- ✔ Lactic Acid (10% by mass), 23°C

Symbols used:

✔ possibly resistant
Defined as: Supplier has sufficient indication that contact with chemical can be potentially accepted under the intended use conditions and expected service life. Criteria for assessment have to be indicated (e.g. surface aspect, volume change, property change).

✘ not recommended - see explanation
Defined as: Not recommended for general use. However, short-term exposure under certain restricted conditions could be acceptable (e.g. fast cleaning with thorough rinsing, spills, wiping, vapor exposure).

Revised: 2025-02-24 Source: Celanese Materials Database