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Zytel® HTN510EFT NC010

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® HTN510EFT NC010 is an unreinforced, toughened, heat stabilised high performance polyamide resin for injection moulding. It is also a PPA resin.

Product information

Resin Identification	PA6T/XT-I		ISO 1043
Part Marking Code	>PA6T/XT-I<		ISO 11469
Part Marking Code	>PPA-I<		SAE J1344

Rheological properties

	dry/cond.		
Viscosity number	84.4 / *	cm^3/g	ISO 307, 1628
Moulding shrinkage, parallel	0.8 / -	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.8 / -	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile modulus	2100 / 2400	MPa	ISO 527-1/-2
Tensile stress at yield, 50mm/min	67 / 69	MPa	ISO 527-1/-2
Tensile strain at yield, 50mm/min	6 / 4	%	ISO 527-1/-2
Nominal strain at break	21 / -	%	ISO 527-1/-2
Charpy impact strength, 23°C	N / -	kJ/m^2	ISO 179/1eU
Charpy impact strength, -30°C	N / -	kJ/m^2	ISO 179/1eU
Charpy impact strength, -40°C	N / -	kJ/m^2	ISO 179/1eU
Charpy notched impact strength, 23°C	90 / -	kJ/m^2	ISO 179/1eA
Charpy notched impact strength, -30°C	20 / -	kJ/m^2	ISO 179/1eA
Charpy notched impact strength, -40°C	15 / -	kJ/m^2	ISO 179/1eA
Poisson's ratio	0.4 / 0.38		

Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	300 / *	°C	ISO 11357-1/-3
Melting temperature, first heat	300 / *	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	140 / 95	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	124 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel, -40-23°C	65 / *	E-6/K	ISO 11359-1/-2
CLTE, Parallel, 23-55°C(73-130°F)	67 / -	E-6/K	ASTM E 831
Coeff. of linear therm. expansion, normal, -40-23°C	71 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, Normal,23-55°C (73-130°F)	75 / -	E-6/K	ASTM E 831

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Flammability

	dry/cond.		
Burning Behav. at thickness h	HB / *	class	IEC 60695-11-10
Thickness tested	0.75 / *	mm	IEC 60695-11-10
FMVSS Class	B[1]		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	28	mm/min	ISO 3795 (FMVSS 302)

[1]: 2mm nom. thick

Electrical properties

	dry/cond.		
Volume resistivity	>1E13 / >1E13	Ohm.m	IEC 62631-3-1
Electric strength	40 / 40	kV/mm	IEC 60243-1
Comparative tracking index	600 / -		IEC 60112

Physical/Other properties

	dry/cond.		
Humidity absorption, 2mm	1.9 / *	%	Sim. to ISO 62
Water absorption, 2mm	6.3 / *	%	Sim. to ISO 62
Density	1120 / -	kg/m³	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	325	°C
Min. melt temperature	320	°C
Max. melt temperature	330	°C
Mold Temperature Optimum	100	°C
Min. mould temperature	80	°C
Max. mould temperature	120	°C
Ejection temperature	242	°C

Characteristics

Processing	Injection Moulding
Delivery form	Pellets
Additives	Release agent
Special characteristics	High impact or impact modified, Heat stabilised or stable to heat, Hydrolysis resistant

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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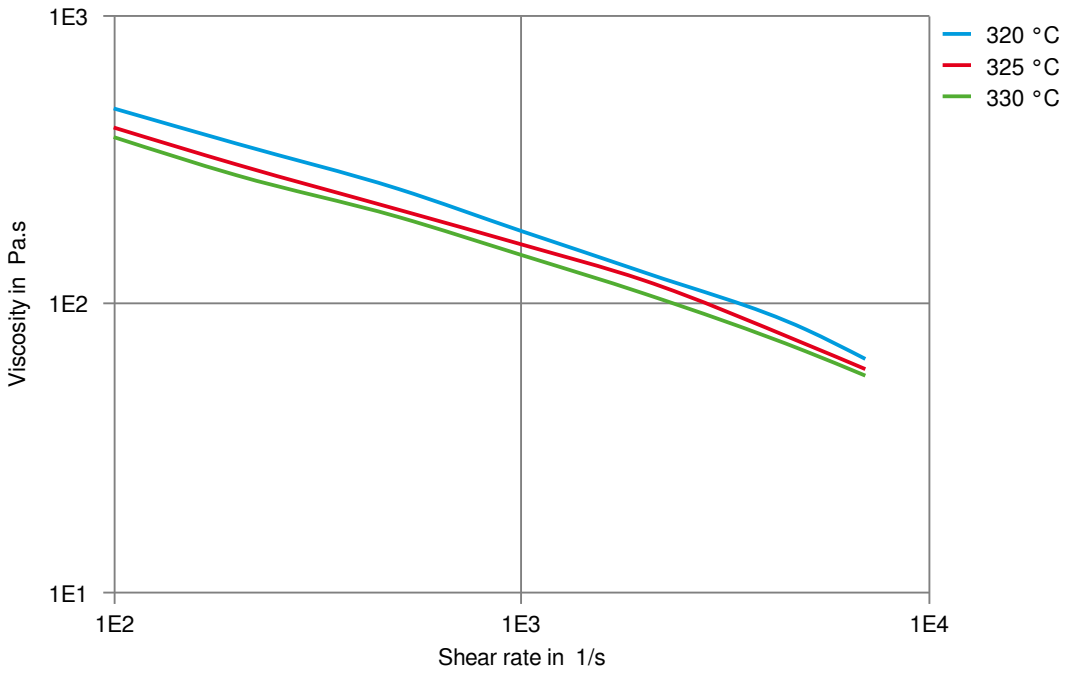
Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
Bosch	N28 BN05-OX088	
Ford	WSS-M98P14-A9	
General Motors		Natural, Special Parts Approval, See Your CE Account Representative for Further Details.
General Motors	GMW16799P-PPA-T2	Natural

Viscosity-shear rate (measured on Zytel® HTN510EFT BK010)



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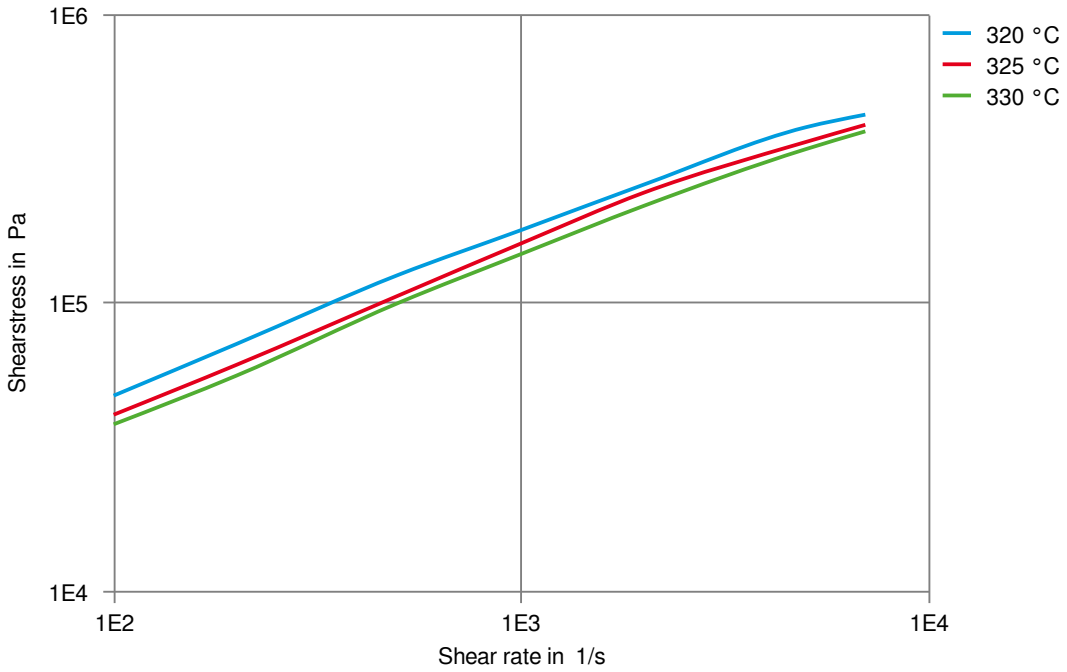
Shearstress-shear rate
(measured on Zytel® HTN510EFT BK010)



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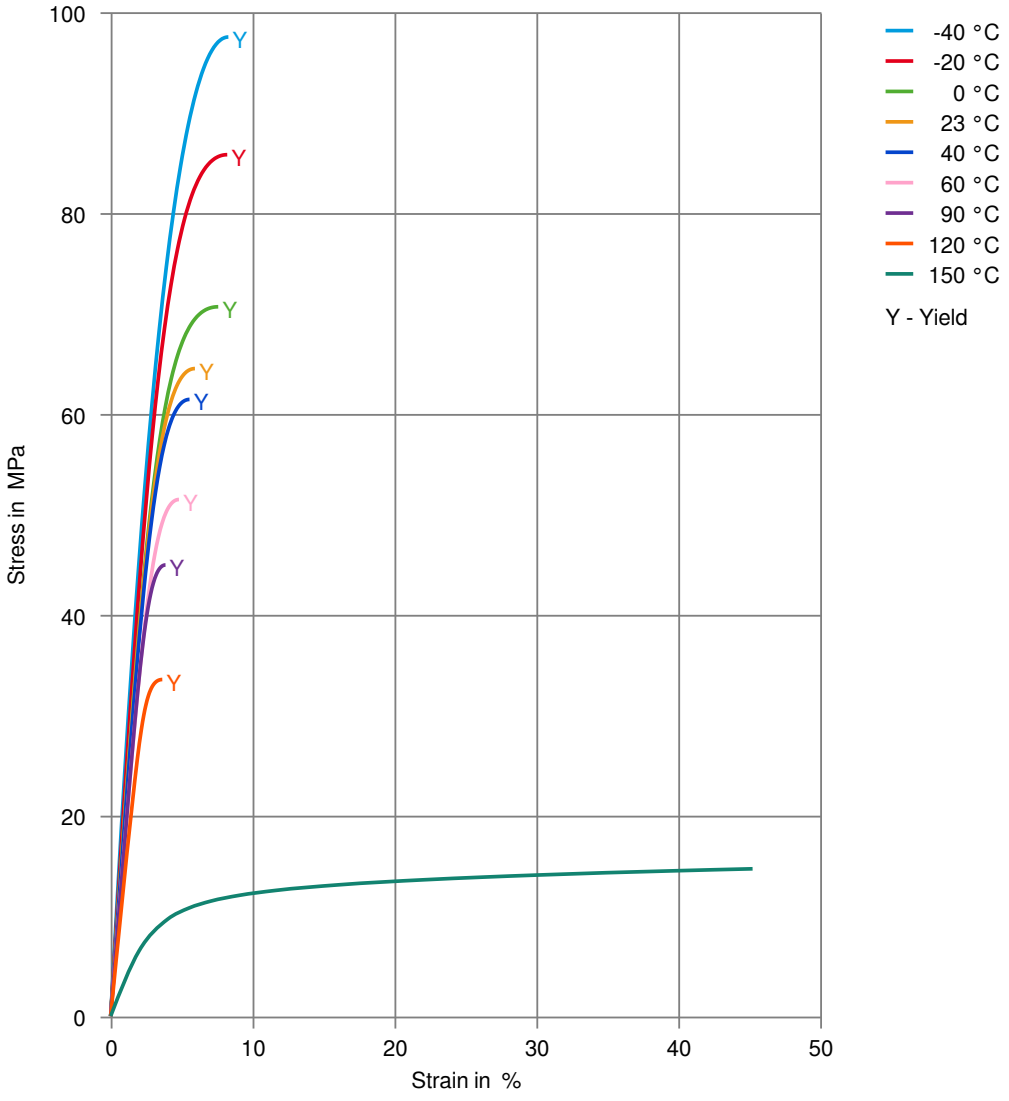
Stress-strain (dry)



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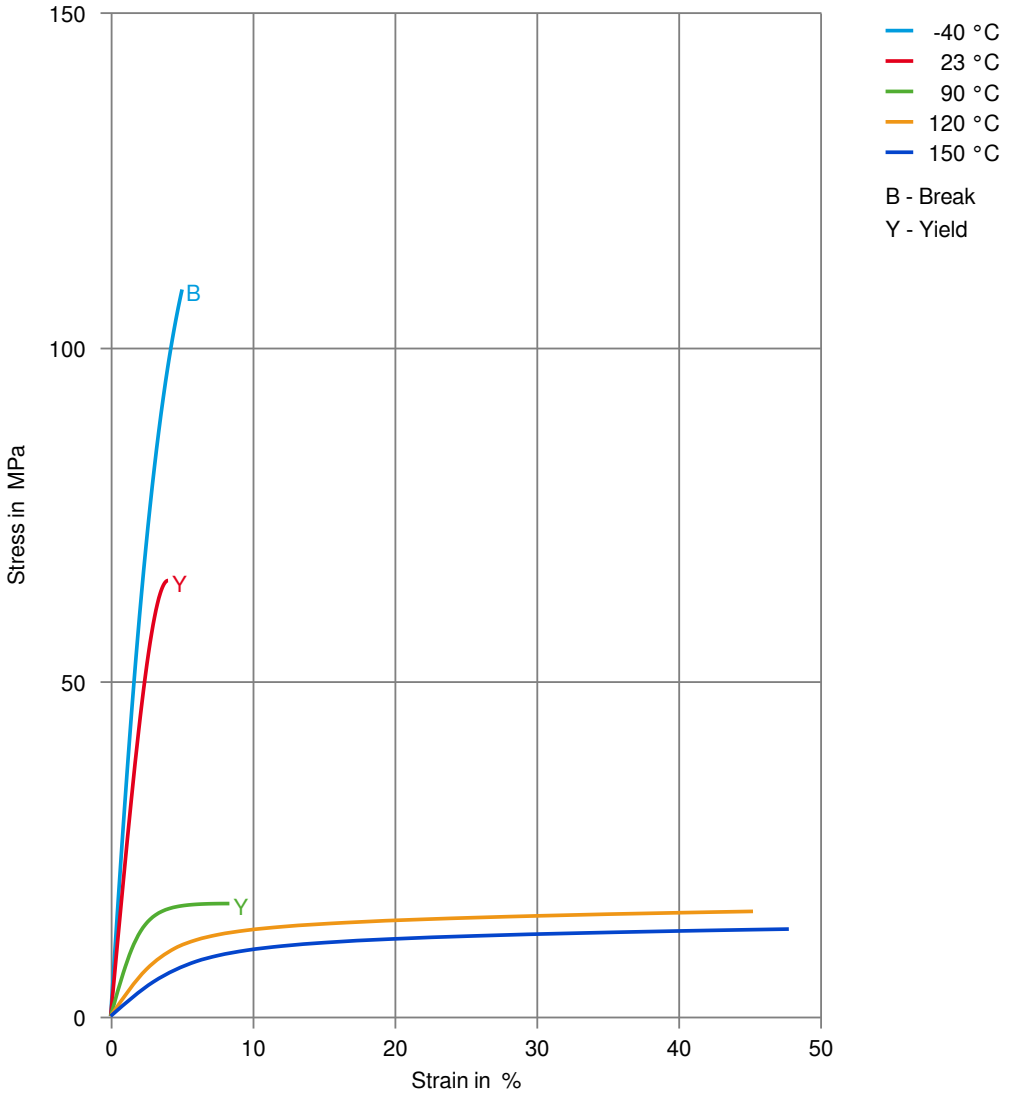
Stress-strain (cond.)



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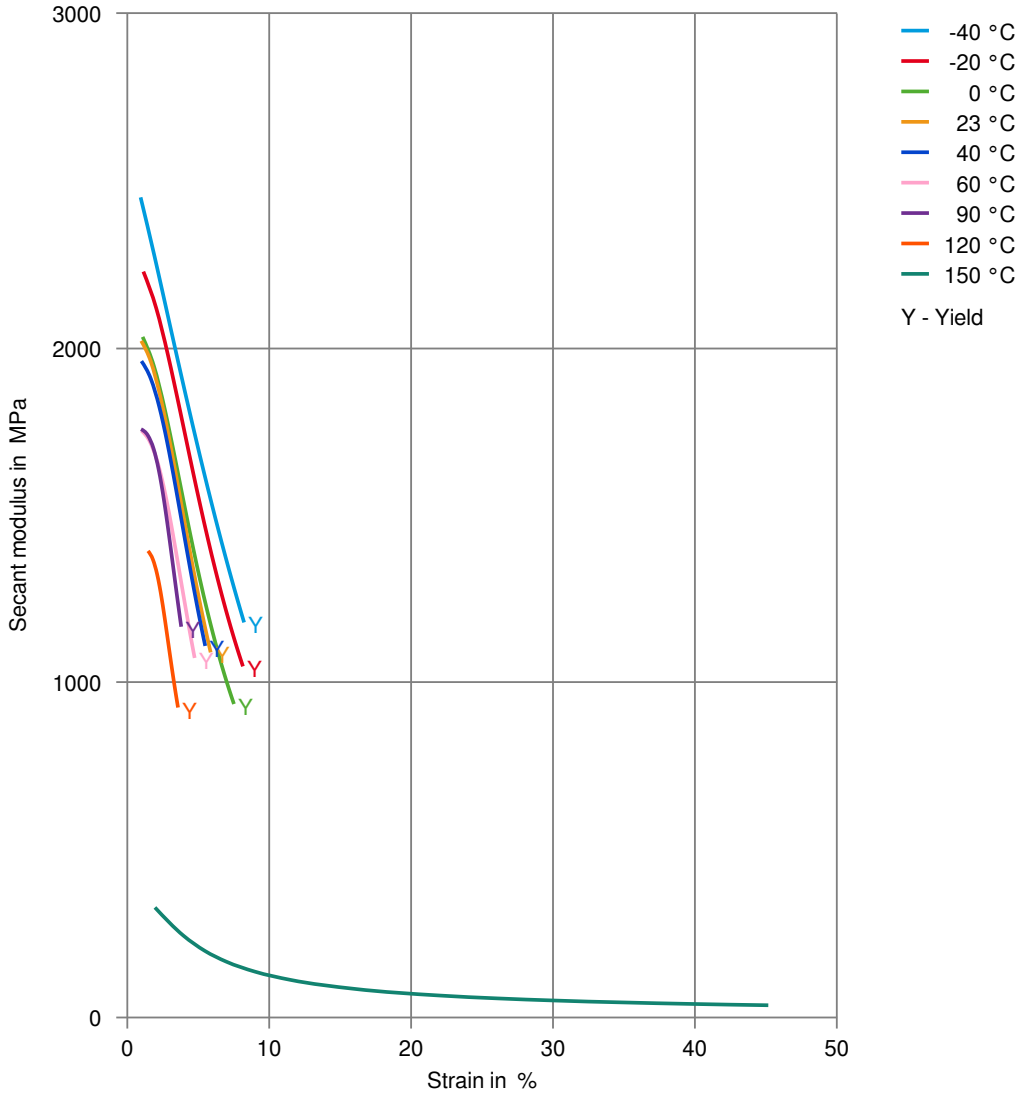
Secant modulus-strain (dry)



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Secant modulus-strain (cond.)