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Zytel® HTN54G15HSLR BK031

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® HTN54G15HSLR BK031 is a 15% glass reinforced, toughened, heat stabilised high performance polyamide resin. It is also a PPA resin.

Product information

Resin Identification	PA-IGF15	ISO 1043
Part Marking Code	>PA-IGF15<	ISO 11469
Part Marking Code	>PPA-IGF15<	SAE J1344
ISO designation	ISO 16396-PA-I,GF15,M1CGHRW,S10-050	

Rheological properties

	dry/cond.		
Moulding shrinkage, parallel	0.4 / -	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.7 / -	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile modulus	5500 / 6000	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	130 / 120	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	3.5 / 3	%	ISO 527-1/-2
Flexural modulus	4900 / -	MPa	ISO 178
Flexural strength	210 / -	MPa	ISO 178
Charpy impact strength, 23°C	60 / -	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	6 / -	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -40°C	5 / -	kJ/m²	ISO 179/1eA
Poisson's ratio	0.35 / 0.35		

Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	304 / *	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	120 / 65	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	230 / *	°C	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	277 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel, -40-23°C	34 / *	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	34 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, -40-23°C	70 / *	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	73 / *	E-6/K	ISO 11359-1/-2
RTI, electrical, 0.75mm	150	°C	UL 746B
RTI, electrical, 1.5mm	150	°C	UL 746B
RTI, electrical, 3.0mm	150	°C	UL 746B
RTI, impact, 0.75mm	105	°C	UL 746B
RTI, impact, 1.5mm	120	°C	UL 746B
RTI, impact, 3.0mm	130	°C	UL 746B

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RTI, strength, 0.75mm	115	°C	UL 746B
RTI, strength, 1.5mm	130 / *	°C	UL 746B
RTI, strength, 3.0mm	140	°C	UL 746B

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
Burning Behav. at thickness h	HB / *	class	IEC 60695-11-10
Thickness tested	0.8 / *	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)

Electrical properties

	dry/cond.		
Volume resistivity	1E13 / -	Ohm.m	IEC 62631-3-1

Physical/Other properties

	dry/cond.		
Density	1250 / -	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	105	°C
Min. mould temperature	85	°C
Max. mould temperature	135	°C
Ejection temperature	260	°C

Characteristics

Processing	Injection Moulding
Special characteristics	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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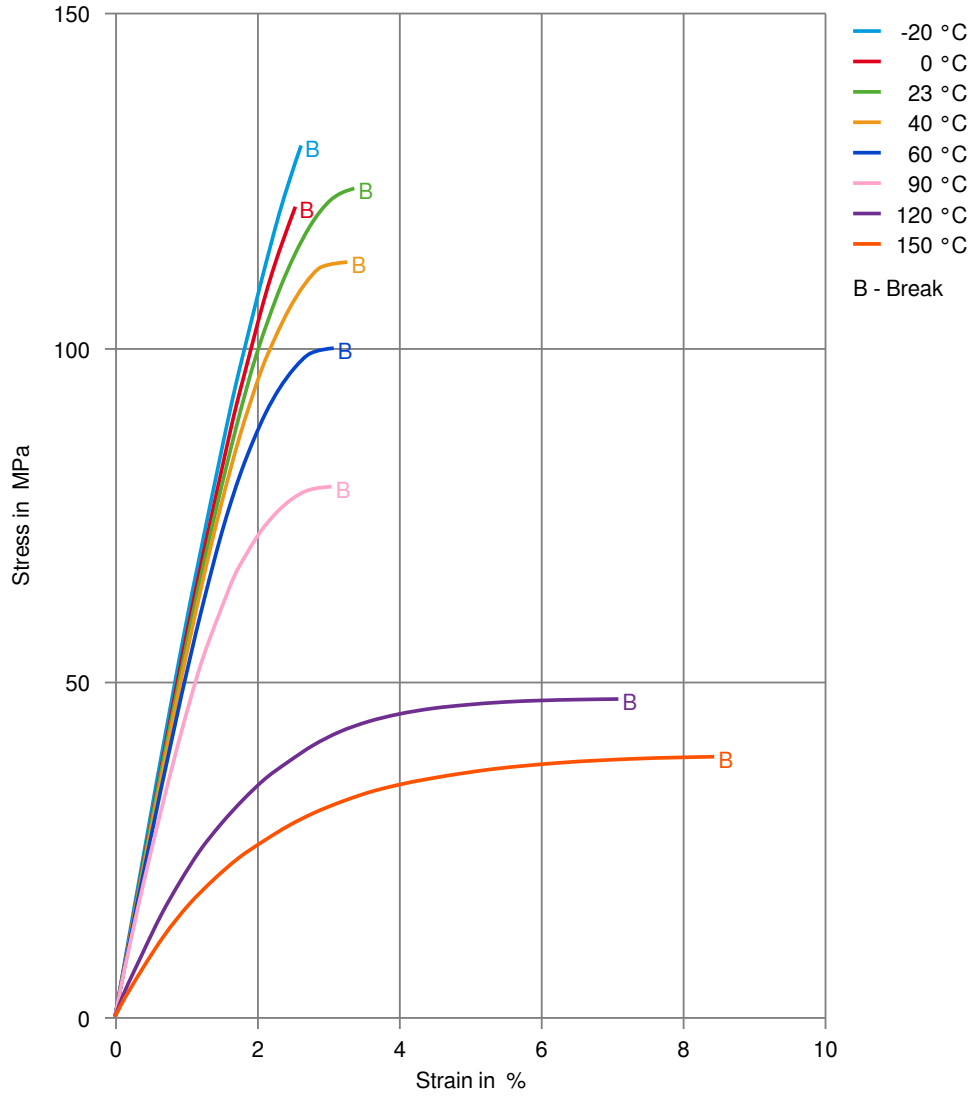
Automotive

OEM	STANDARD
Ford	WSS-M98P14-A3

Stress-strain (dry)



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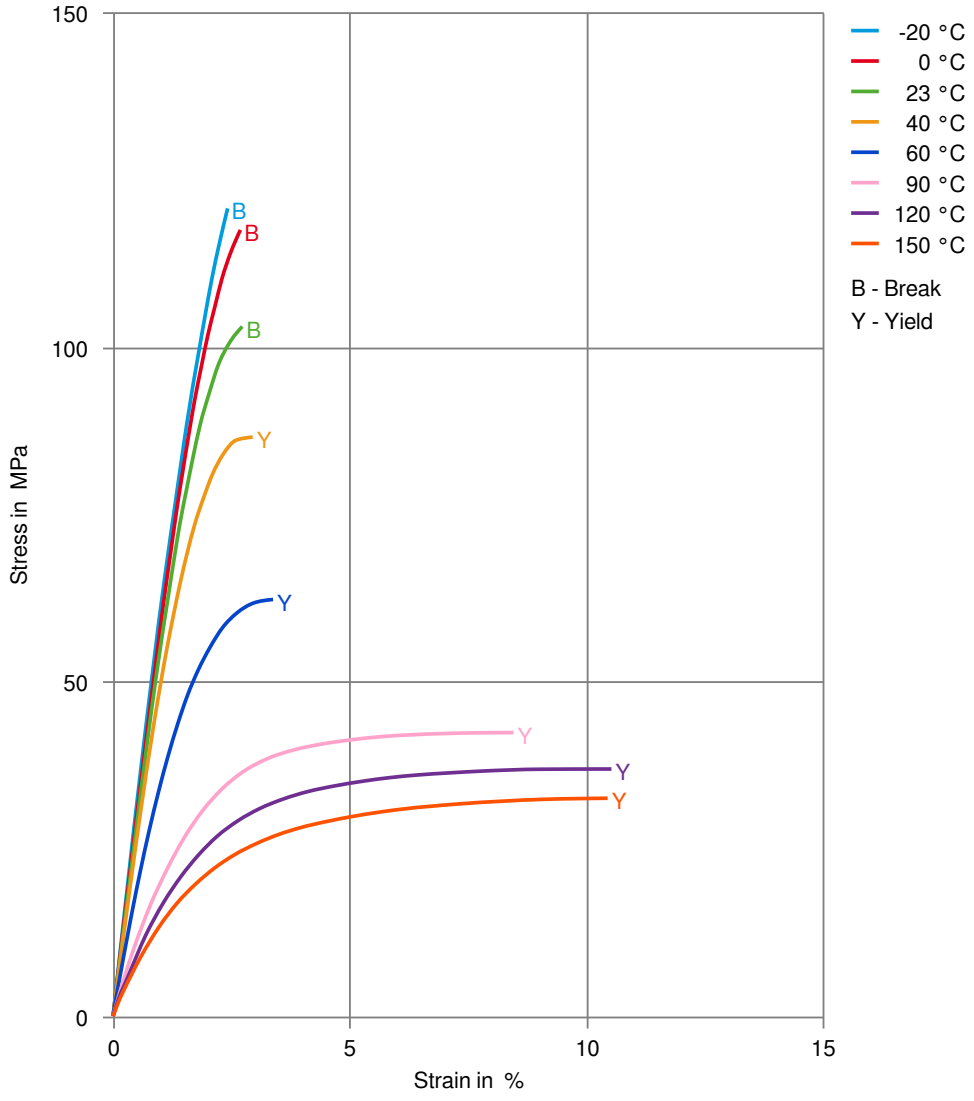
Stress-strain (cond.)



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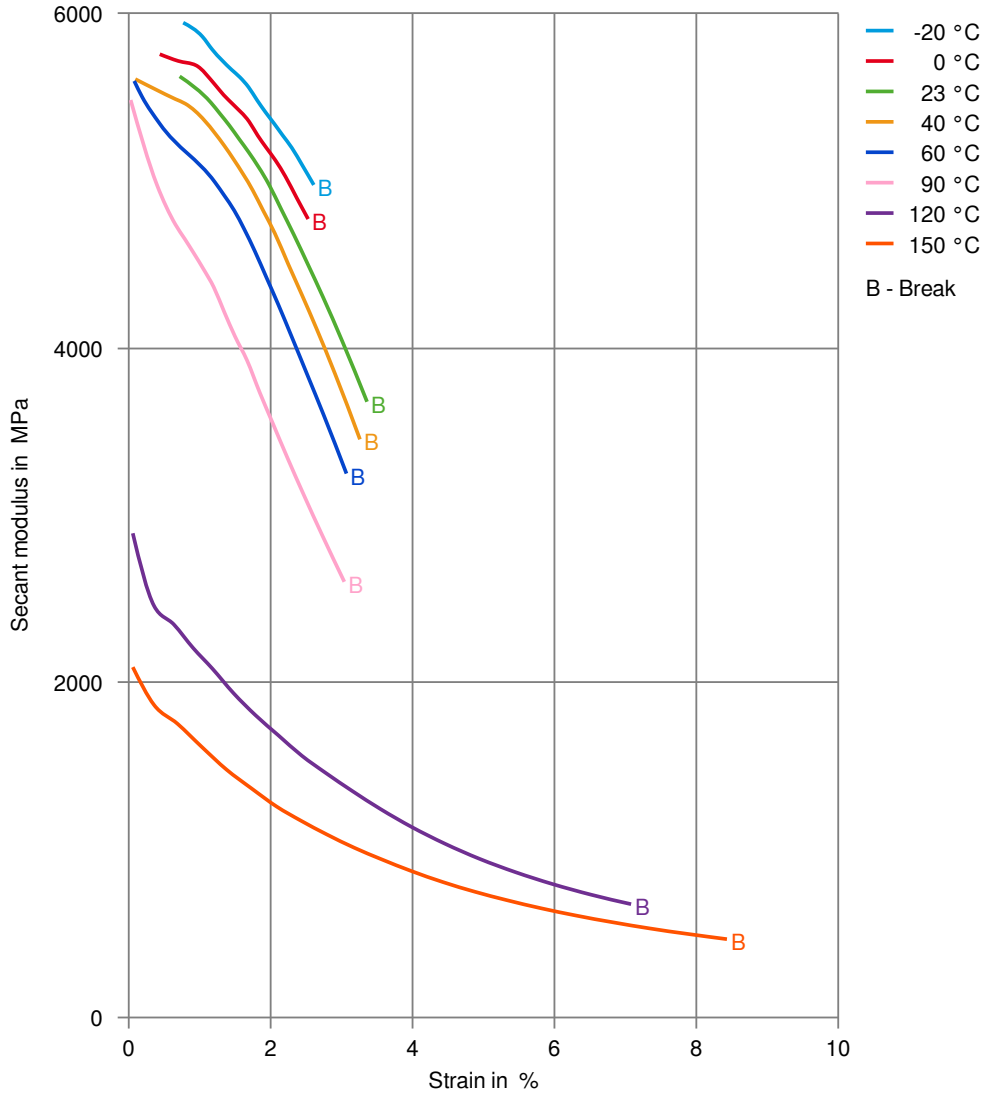
Secant modulus-strain (dry)



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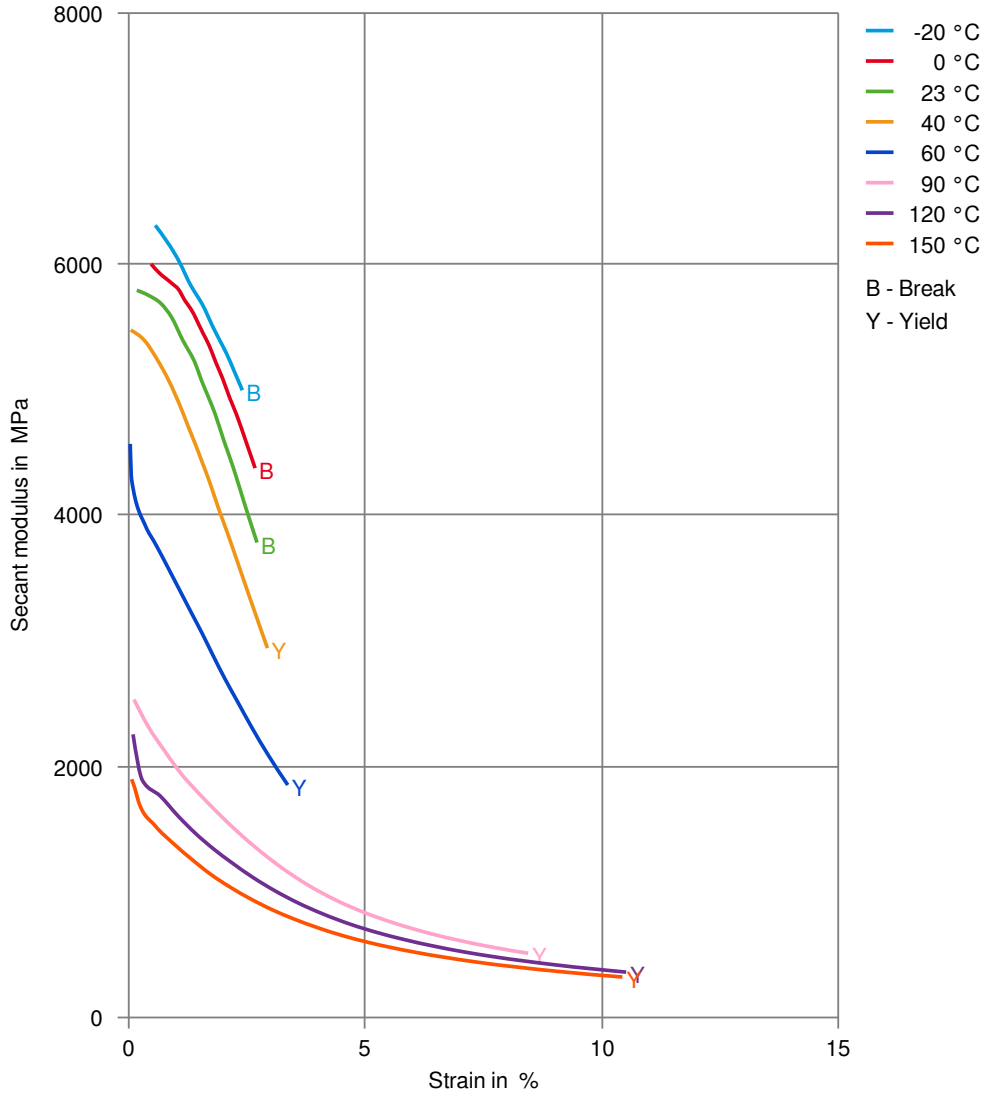
Secant modulus-strain (cond.)



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Chemical Media Resistance

Other

- ✔ Water, 23 °C
- ✘ Water, 90 °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).