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Zytel® HTN51G35HSLR BK420J

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® HTN51G35HSLR BK420J is a 35% glass reinforced, heat stabilized, lubricated, hydrolysis resistant high performance polyamide resin with improved surface appearance. It is also a PPA resin.

Product information

Resin Identification	PA6T/XT-GF35	ISO 1043
Part Marking Code	>PA6T/XT-GF35<	ISO 11469
Part Marking Code	>PPA-GF35<	SAE J1344
ISO designation	ISO 16396-PA6T/XT,GF35,M1CGHRW,S10-110	

Rheological properties

	dry/cond.		
Moulding shrinkage, parallel	0.2 / -	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.5 / -	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile modulus	11500 / -	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	215 / -	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.6 / -	%	ISO 527-1/-2
Flexural modulus	10300 / -	MPa	ISO 178
Charpy notched impact strength, 23°C	11 / -	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	10 / -	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -40°C	10 / -	kJ/m²	ISO 179/1eA
Izod notched impact strength, -40°C	10.0 / -	kJ/m²	ISO 180/1A
Poisson's ratio	0.33 / -		

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	262 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel, -40-23°C	13 / *	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	18 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, parallel, 55-160°C	17 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, -40-23°C	36 / *	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	50 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, 55-160°C	66 / *	E-6/K	ISO 11359-1/-2
Specific heat capacity of melt	1820	J/(kg K)	ISO 22007-4
Specific heat capacity solid	610[DS]	J/(kg K)	ISO 22007-4

[DS]: Derived from similar grade

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Flammability

FMVSS Class	B		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	23	mm/min	ISO 3795 (FMVSS 302)

Electrical properties

	dry/cond.		
Volume resistivity	1E13 / -[DS]	Ohm.m	IEC 62631-3-1
Electric strength	34 / -[DS]	kV/mm	IEC 60243-1
Comparative tracking index	525 / -[DS]		IEC 60112

[DS]: Derived from similar grade

Physical/Other properties

	dry/cond.		
Humidity absorption, 2mm	1.4 / *	%	Sim. to ISO 62
Water absorption, 2mm	4 / *	%	Sim. to ISO 62
Density	1460 / -	kg/m³	ISO 1183

VDA Properties

Odour	4	class	VDA 270

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[1]	°C
Max. mould temperature	160	°C
Ejection temperature	256	°C

[1]: Higher temperature needed for thinner sections.

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.

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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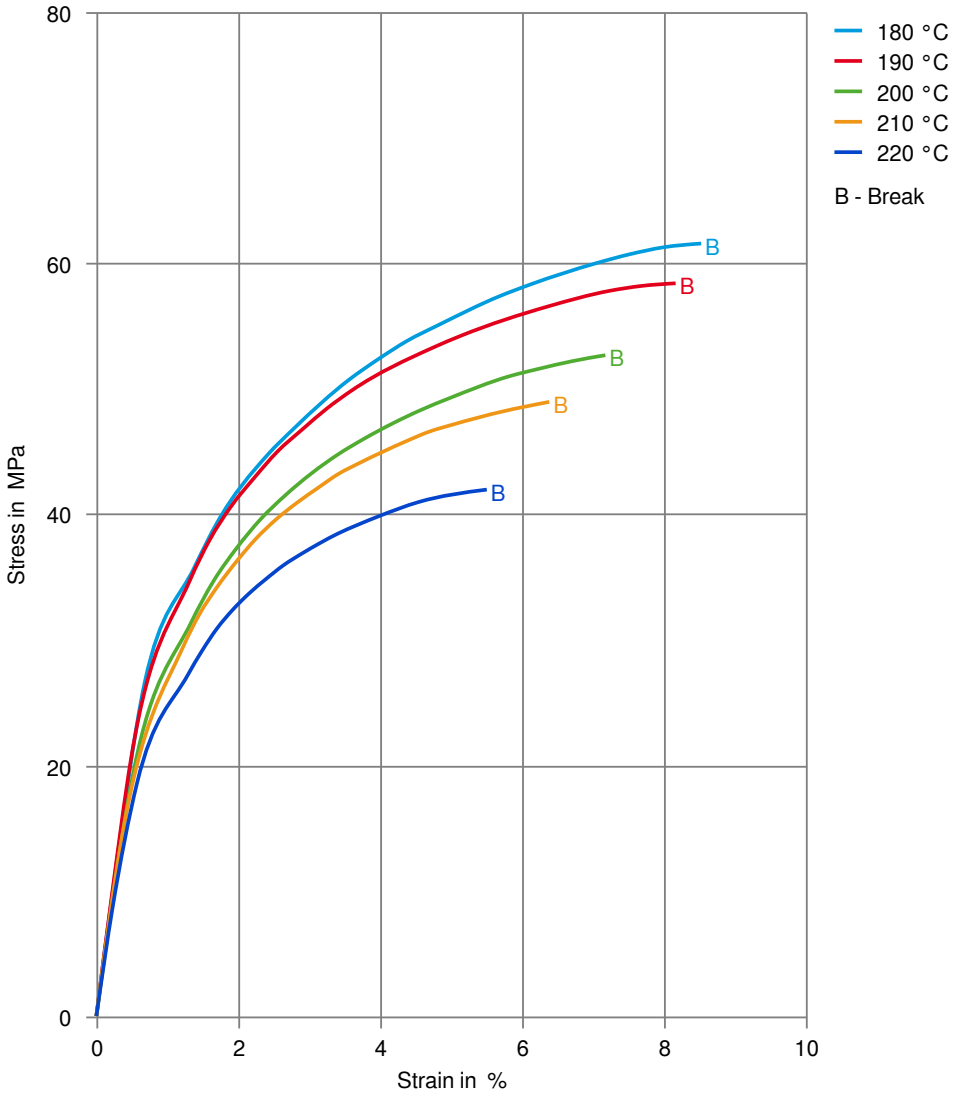
Automotive

OEM	STANDARD
Ford	WSS-M4D861-A3
General Motors	GMW16360P-PPA-GF35
Hyundai	MS211-19 Type B-1

Stress-strain (dry)



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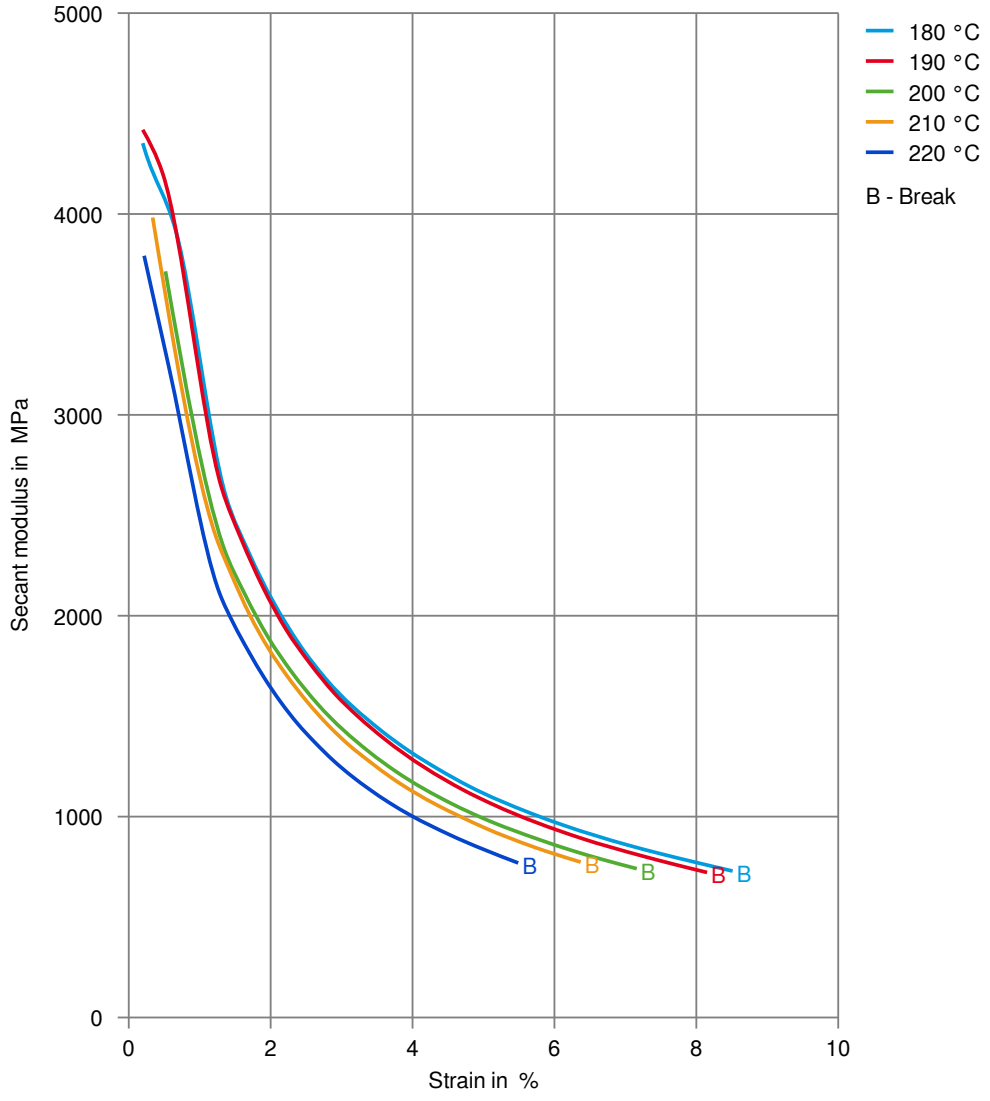
Secant modulus-strain (dry)



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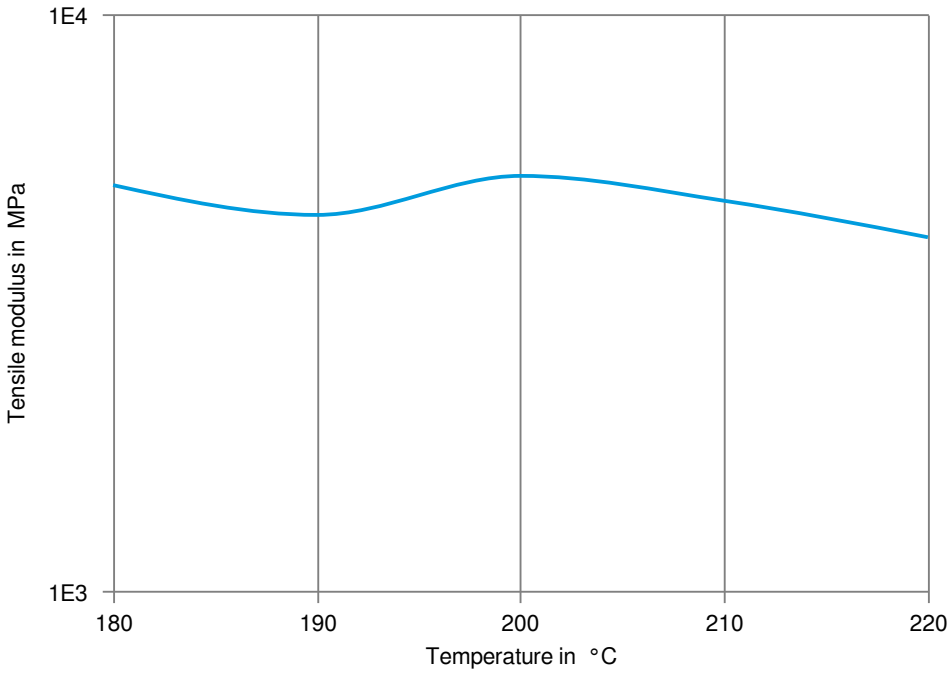
Tensile modulus-temperature (dry)



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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

Mineral oils

- ✔ SAE 10W40 multigrade motor oil, 23°C
- ✔ Insulating Oil, 23°C

Other

- ✔ Ethylene Glycol (50% by mass) in water, 108°C
- ✔ Water, 23°C
- ✔ Water, 90°C
- ✔ Coolant Glysantin G48, 1:1 in water, 125°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: 2025-04-30 Source: Celanese Materials Database