



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 Part Marking Code Part Marking Code ISO designation	PA6T/XT-GF35 >PA6T/XT-GF35< >PPA-GF35< ISO 16396-PA6T/XT,GF35,M1CGHRW,S10-1		ISO 1043 ISO 11469 SAE J1344 CGHRW,S10-110
Rheological properties	dry/cond.		
Moulding shrinkage, parallel Moulding shrinkage, normal	0.2/- 0.5/-	% %	ISO 294-4, 2577 ISO 294-4, 2577
Typical mechanical properties	dry/cond.		
Tensile modulus Tensile stress at break, 5mm/min Tensile strain at break, 5mm/min Flexural modulus Charpy notched impact strength, 23°C Charpy notched impact strength, -30°C Charpy notched impact strength, -40°C Izod notched impact strength, -40°C Poisson's ratio	11500/- 215/- 2.6/- 10300/- 11/- 10/- 10/- 10.0/- 0.33/-	MPa MPa % MPa kJ/m² kJ/m² kJ/m²	ISO 527-1/-2 ISO 527-1/-2 ISO 527-1/-2 ISO 178 ISO 179/1eA ISO 179/1eA ISO 179/1eA ISO 180/1A
Thermal properties	dry/cond.		
Melting temperature, 10°C/min Melting temperature, first heat Glass transition temperature, 10°C/min Temperature of deflection under load, 1.8 MPa Coeff. of linear therm. expansion, parallel, -40-23°C Coefficient of linear thermal expansion (CLTE), parallel Coeff. of linear therm. expansion, parallel, 55-160°C Coeff. of linear therm. expansion, normal, -40-23°C Coefficient of linear thermal expansion (CLTE), normal	300/* 300/* 140/95 262/* 13/* 18/* 17/* 36/* 50/*	°C °C °C E-6/K E-6/K E-6/K E-6/K	ISO 11357-1/-3 ISO 11357-1/-3 ISO 11357-1/-3 ISO 75-1/-2 ISO 11359-1/-2 ISO 11359-1/-2 ISO 11359-1/-2 ISO 11359-1/-2 ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, 55-160°C Specific heat capacity of melt Specific heat capacity solid [DS]: Derived from similar grade	66/* 1820 610 ^[DS]	E-6/K J/(kg K) J/(kg K)	ISO 11359-1/-2 ISO 22007-4 ISO 22007-4

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Flammability

FMVSS Class	В	ISO 3795 (FMVSS 302)
Burning rate. Thickness 1 mm	23 mm/min	ISO 3795 (FMVSS 302)

Electrical properties dry/cond.

Physical/Other properties

Humidity absorption, 2mm 1.4/* % Sim. to ISO 62 Water absorption, 2mm 4/* % Sim. to ISO 62 Density 1460/- kg/m^3 ISO 1183

dry/cond.

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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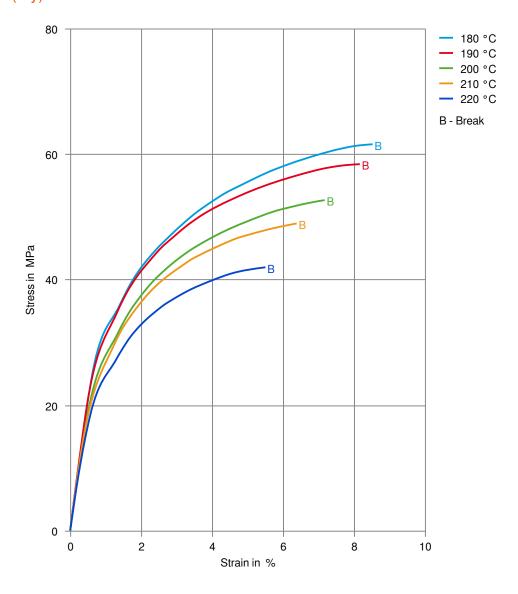


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Automotive

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

Stress-strain (dry)



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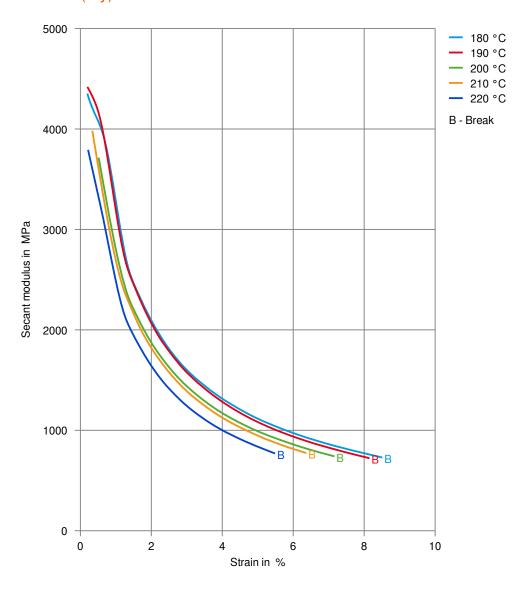
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Zytel® HTN51G35HSLR BK420J HIGH PERFORMANCE POLYAMIDE RESIN

Secant modulus-strain (dry)



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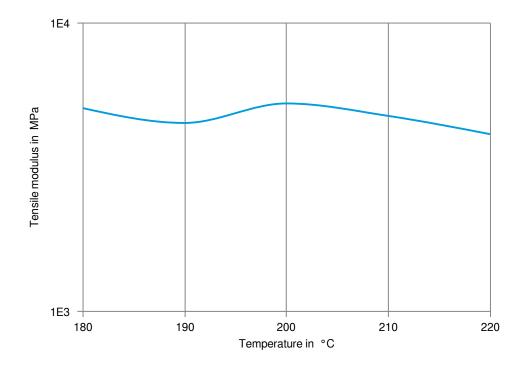
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Zytel® HTN51G35HSLR BK420J HIGH PERFORMANCE POLYAMIDE RESIN

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).

x 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).

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