

Zytel® HTN51G15HSL BK083 is a 15% glass reinforced, heat stabilized, lubricated, hydrolysis resistant high performance polyamide resin. It is also a PPA resin.

Product information

Resin Identification Part Marking Code Part Marking Code ISO designation	PA6T/XT-GF15 >PA6T/XT-GF15< >PPA-GF15< ISO 16396-PA6T/XT,GF15,M1CGHR,S10-060		ISO 1043 ISO 11469 SAE J1344
Rheological properties	dry/cond.		
Moulding shrinkage, parallel Moulding shrinkage, normal	0.3/- 0.6/-	% %	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 impact strength, 23°C Charpy notched impact strength, 23°C Charpy notched impact strength, -40°C Izod notched impact strength, -40°C Izod notched impact strength, -40°C Poisson's ratio	6500/6500 110/110 2/1.9 5800/- 23/- 5/- 5/- 5/- 5/- 5.0/- 0.35/0.35	MPa MPa % MPa kJ/m ² kJ/m ² kJ/m ² kJ/m ²	ISO 527-1/-2 ISO 527-1/-2 ISO 527-1/-2 ISO 178 ISO 179/1eU ISO 179/1eA ISO 179/1eA ISO 180/1A 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 Temperature of deflection under load, 0.45 MPa Coeff. of linear therm. expansion, parallel, -40-23°C Coefficient of linear thermal expansion (CLTE), parallel	304/* 300/* 140/95 250/* 276/* 28/* 29/*	°C °C °C °C E-6/K E-6/K	ISO 11357-1/-3 ISO 11357-1/-3 ISO 11357-1/-3 ISO 75-1/-2 ISO 75-1/-2 ISO 11359-1/-2 ISO 11359-1/-2
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	24/* 54/* 60/*	E-6/K E-6/K E-6/K	ISO 11359-1/-2 ISO 11359-1/-2 ISO 11359-1/-2
Coefficient of linear thermal expansion	79/*	E-6/K	ISO 11359-1/-2
(CLTE), normal, 55-160°C RTI, electrical, 0.75mm RTI, electrical, 1.5mm RTI, electrical, 3.0mm RTI, impact, 0.75mm RTI, impact, 1.5mm	150 150 150 125 125	0° 0° 0° 0° 0°	UL 746B UL 746B UL 746B UL 746B UL 746B

Printed: 2024-04-11



HIGH PERFORMANCE POLYAMIDE RESIN

RTI, impact, 3.0mm RTI, strength, 0.75mm RTI, strength, 1.5mm RTI, strength, 3.0mm	130 130 140/* 150	°C °C °C	UL 746B UL 746B UL 746B UL 746B
Flammability	dry/cond.		
Burning Behav. at 1.5mm nom. thickn. Thickness tested UL recognition	HB/* 1.5/* yes/*	class mm	IEC 60695-11-10 IEC 60695-11-10 UL 94
Burning Behav. at thickness h Thickness tested	HB/* 0.75/*	class mm	IEC 60695-11-10 IEC 60695-11-10
UL recognition Oxygen index FMVSS Class	yes/* 23/* B	%	UL 94 ISO 4589-1/-2 ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	<80	mm/min	ISO 3795 (FMVSS 302)
Electrical properties	dry/cond.		
Relative permittivity, 1MHz Dissipation factor, 1MHz Volume resistivity Comparative tracking index	3.7/- 180/- 1E13/- 575/-	E-4 Ohm.m	IEC 62631-2-1 IEC 62631-2-1 IEC 62631-3-1 IEC 60112
Physical/Other properties	dry/cond.		
Density	1300/-	kg/m³	ISO 1183
Injection			
Drying Recommended Drying Temperature Drying Time, Dehumidified Dryer Processing Moisture Content Melt Temperature Optimum Min. melt temperature Max. melt temperature Mold Temperature Optimum Min. mould temperature Max. mould temperature	6 - 8 ≤0.1 325 320 330 145 130 ^[1] 160	*C h *C *C *C *C *C *C *C	
Ejection temperature	267	°C	

[1]: Higher temperature needed for thinner sections.

Additional information

Injection molding

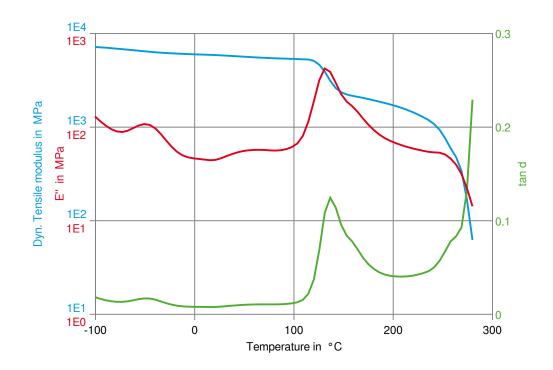
During molding, use proper protective equipment and adequate ventilation. Avoid exposure to fumes and limit the hold up time and temperature of the resin in the machine. Purge degraded resin carefully with HDPE.

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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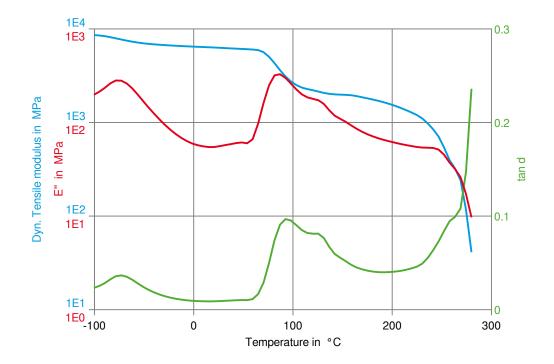
Dynamic Tensile modulus-temperature (dry)





Zytel[®] HTN51G15HSL BK083 HIGH PERFORMANCE POLYAMIDE RESIN

Dynamic Tensile modulus-temperature (cond.)





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).

Printed: 2024-04-11

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Revised: 2021-08-31 Source: Celanese Materials Database

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