Celanese
The chemistry inside innovation™

Zytel® HTN51G15HSL NC010

HIGH PERFORMANCE POLYAMIDE RESIN

Zytel® HTN51G15HSL NC010 is a 15% glass reinforced, heat stabilized, lubricated, hydrolysis resistant high performance polyamide resin. It is also a PPA resin.

Product information

Resin Identification	PA6T/XT-GF15	ISO 1043
Part Marking Code	>PA6T/XT-GF15<	ISO 11469
Part Marking Code	>PPA-GF15<	SAE J1344
ISO designation	ISO 16396-PA6T/XT,GF15,M1GHNR,S10-060	

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	6500 / -	MPa	ISO 527-1/-2
Stress at break, 5mm/min	120 / -	MPa	ISO 527-1/-2
Strain at break, 5mm/min	2.1 / -	%	ISO 527-1/-2
Flexural Modulus	5700 / -	MPa	ISO 178
Charpy impact strength, 23°C	25 / -	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	20 / -[DS]	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	6 / -	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	6 / -	kJ/m²	ISO 179/1eA
Izod notched impact strength, 23°C	6 / -	kJ/m²	ISO 180/1A
Izod notched impact strength, -40°C	6 / -	kJ/m²	ISO 180/1A
Poisson's ratio	0.35 / -		

[DS]: Derived from similar grade

Thermal properties

	dry/cond.		
Melting temperature, first heat	300 / *	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	140 / 95	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	250 / *	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	280 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel, -40-23°C	30 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, parallel	30 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, -40-23°C	57 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	64 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, 55-160°C	77 / *	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, 3mm	150	°C	UL 746B
RTI, impact, 0.75mm	125	°C	UL 746B

Printed: 2023-09-21

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RTI, impact, 1.5mm	125	°C	UL 746B
RTI, impact, 3mm	130	°C	UL 746B
RTI, strength, 0.75mm	130	°C	UL 746B
RTI, strength, 1.5mm	140 / *	°C	UL 746B
RTI, strength, 3mm	150	°C	UL 746B

Flammability

	dry/cond.		
Burning Behav. at 1.5mm nom. thickn.	HB / *	class	UL 94
Thickness tested	1.5 / *	mm	UL 94
UL recognition	yes / *		UL 94
Burning Behav. at thickness h	HB / *	class	UL 94
Thickness tested	0.75 / *	mm	UL 94
UL recognition	yes / *		UL 94
Oxygen index	23 / *	%	ISO 4589-1/-2
FMVSS Class	B		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	18	mm/min	ISO 3795 (FMVSS 302)

Electrical properties

	dry/cond.		
Volume resistivity	>1E13 / -	Ohm.m	IEC 62631-3-1
Surface resistivity	* / >1E15	Ohm	IEC 62631-3-2
Comparative tracking index	600 / -		IEC 60112

Other properties

	dry/cond.		
Humidity absorption, 2mm	2 / *	%	Sim. to ISO 62
Density	1300 / -	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	Internal
Min. melt temperature	320	°C	
Max. melt temperature	330	°C	
Mold Temperature Optimum	150	°C	
Min. mould temperature	140[1]	°C	
Max. mould temperature	180	°C	

[1]: Higher temperature needed for thinner sections.

Characteristics

Additives	Release agent

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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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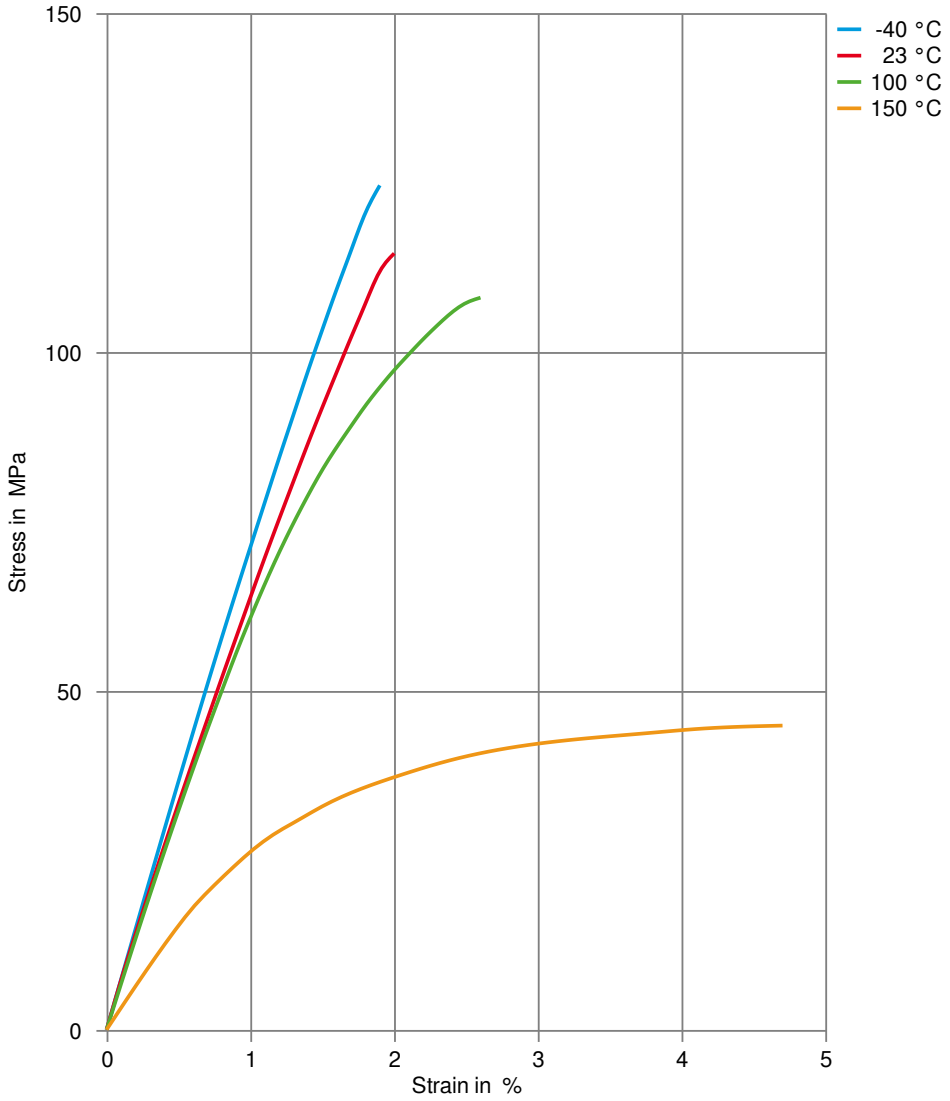
Stress-strain (dry)



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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).