

# DuPont™ Zytel® HTNFR52G30BL NC010

## HIGH PERFORMANCE POLYAMIDE RESIN

Product Information

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® HTNFR52G30BL NC010 is a 30% glass reinforced, flame retardant, lubricated high performance polyamide resin that has been developed for connector applications.**

General information	Value	Unit	Test Standard
Resin Identification	PA6T/66-GF30FR(1 6+72)	-	ISO 1043
Part Marking Code	PA6T/66-GF30FR(1 6+72)	-	ISO 11469
Part Marking Code	>PPA-GF30FR<	-	SAE J1344
Rheological properties	dry / cond	Unit	Test Standard
Molding shrinkage, parallel	0.3 / -	%	ISO 294-4, 2577
Molding shrinkage, normal	0.8 / -	%	ISO 294-4, 2577
Mechanical properties	dry / cond	Unit	Test Standard
Tensile Modulus	12000 / 11000	MPa	ISO 527-1/-2
Stress at break	170 / 150	MPa	ISO 527-1/-2
Strain at break	2 / 2	%	ISO 527-1/-2
Flexural Modulus	10500 / -	MPa	ISO 178
Flexural Strength	250 / 225	MPa	ISO 178
Charpy impact strength			ISO 179/1eU
73°F	50 / 30	kJ/m <sup>2</sup>	
-22°F	50 / 40	kJ/m <sup>2</sup>	
-40°F	40 / -	kJ/m <sup>2</sup>	
Charpy notched impact strength			ISO 179/1eA
73°F	11 / -	kJ/m <sup>2</sup>	
-22°F	11 / -	kJ/m <sup>2</sup>	
Thermal properties	dry / cond	Unit	Test Standard
Melting temperature, first heat	310 / *	°C	ISO 11357-1/-3
Temp. of deflection under load			ISO 75-1/-2
260 psi	282 / *	°C	
65 psi	300 / *	°C	
Coeff. of linear therm. expansion, parallel	20 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion			ISO 11359-1/-2
normal	63 / *	E-6/K	
Normal, -40-23°C	57 / *	E-6/K	
Normal, 55-160°C	100 / *	E-6/K	
Parallel, -40-23°C	20 / *	E-6/K	
Parallel, 55-160°C	10 / *	E-6/K	
RTI, electrical			UL 746B
60mil	140 / *	°C	
120mil	140	°C	
RTI, impact			UL 746B
60mil	120 / *	°C	
120mil	120	°C	
RTI, strength			UL 746B
60mil	120 / *	°C	
120mil	130	°C	

To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

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Flammability	dry / cond	Unit	Test Standard
Burning Behav. at 60mil nom. thickn.	V-0 / *	class	IEC 60695-11-10
Thickness tested	1.5 / *	mm	IEC 60695-11-10
UL recognition	yes / *	-	UL 94
Burning Behav. at thickness h	V-0 / *	class	IEC 60695-11-10
Thickness tested	3 / *	mm	IEC 60695-11-10
UL recognition	yes / *	-	UL 94
Burning Behav. 5V at thickness h	5VA / *	class	IEC 60695-11-20
Thickness tested	1.5 / *	mm	IEC 60695-11-20
UL recognition	yes / *	-	UL 94
Oxygen index	42 / *	%	ISO 4589-1/-2
Glow Wire Flammability Index			IEC 60695-2-1/2
30mil	960 / -	°C	
60mil	960 / -	°C	
120mil	960 / -	°C	
Glow Wire Ignition Temperature			IEC 60695-2-1/3
30mil	925 / -	°C	
60mil	925 / -	°C	
120mil	960 / -	°C	
Glow Wire Temperature, No Flame, 120mil	960 / -	°C	IEC 60335-1
FMVSS Class	DNI	-	ISO 3795 (FMVSS 302)
Electrical properties	dry / cond	Unit	Test Standard
Relative permittivity			IEC 60250
100Hz	3.5 / -	-	
1MHz	3.3 / -	-	
Dissipation factor			IEC 60250
100Hz	50 / -	E-4	
1MHz	140 / -	E-4	
Volume resistivity	>1E13 / -	Ohm*m	IEC 60093
Electric strength	34 / -	kV/mm	IEC 60243-1
Comparative tracking index			
Comparative tracking index	525 / -	-	IEC 60112
CTI, 23 °C	1 / -	PLC	UL 746A
Comparative tracking index M	175 / -	-	IEC 60112
Other properties	dry / cond	Unit	Test Standard
Density	1620 / -	kg/m <sup>3</sup>	ISO 1183
VDA Properties	dry / cond	Unit	Test Standard
Odor test	4.5	class	VDA 270
Fogging, F-value (refraction)	95 / *	%	ISO 6452
Injection	Value	Unit	Test Standard
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	-
Min. mold temperature	90	°C	-
Max. mold temperature	110	°C	-

### Characteristics

Processing	• Injection Molding		
Delivery form	• Pellets		
Additives	• Lubricants	• Release agent	
Regional Availability	• North America	• Asia Pacific	• Near East/Africa
	• Europe	• South and Central America	• Global

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## HIGH PERFORMANCE POLYAMIDE RESIN

### Processing Texts

#### Injection molding

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

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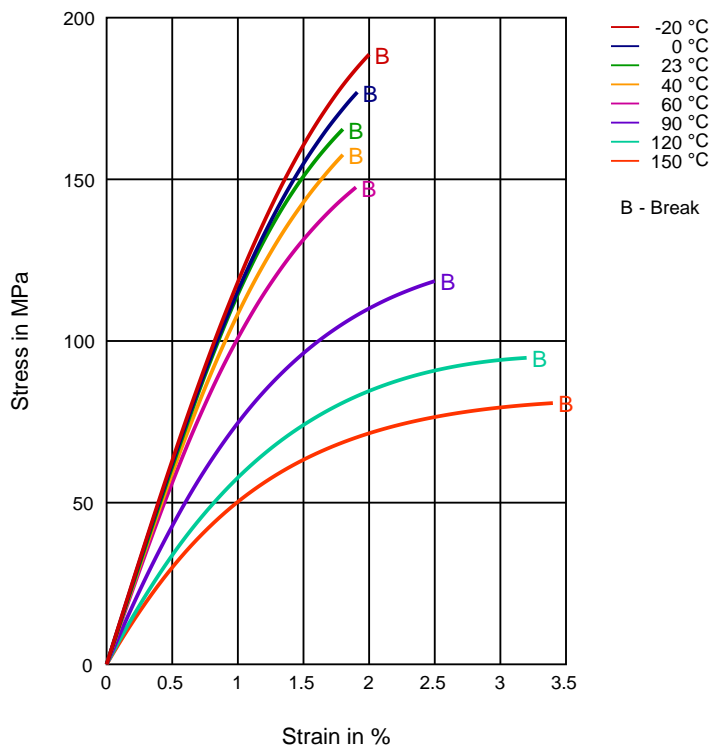


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## HIGH PERFORMANCE POLYAMIDE RESIN

Diagrams

Stress-strain (dry)



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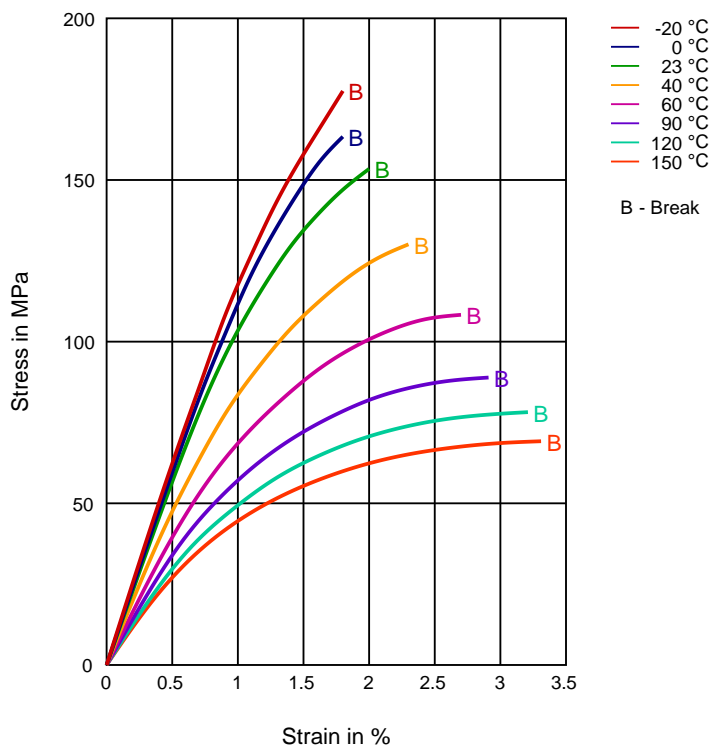


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## HIGH PERFORMANCE POLYAMIDE RESIN

Stress-strain (cond.)



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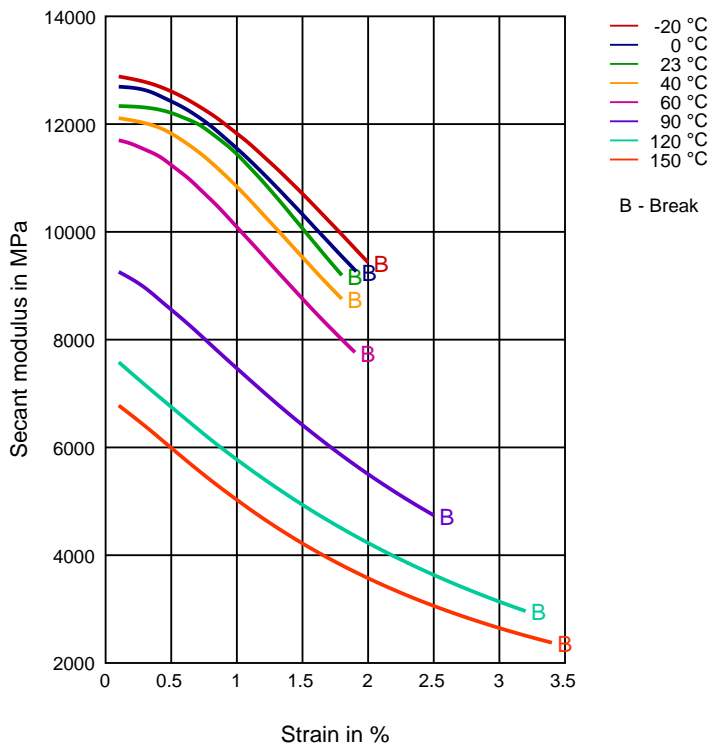
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## HIGH PERFORMANCE POLYAMIDE RESIN

Secant modulus-strain (dry)



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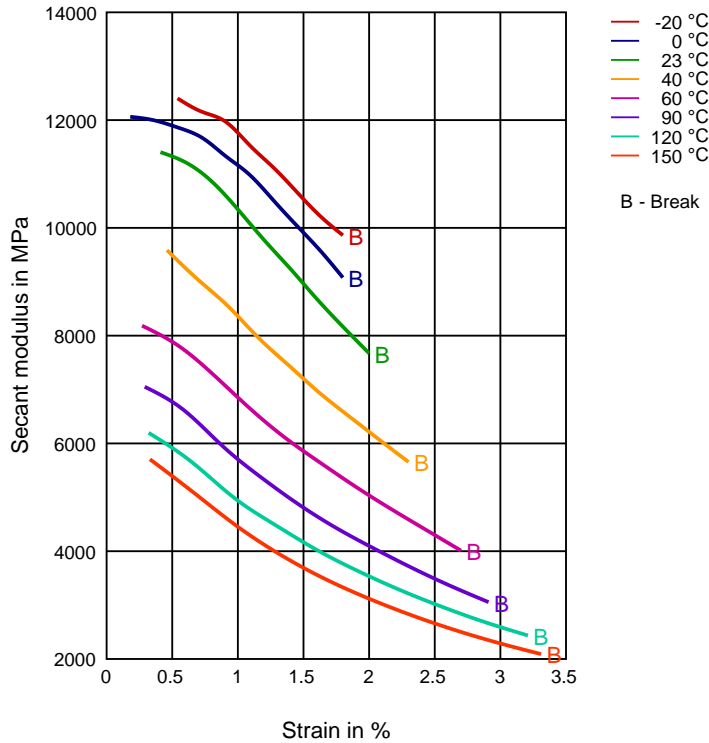
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## HIGH PERFORMANCE POLYAMIDE RESIN

Secant modulus-strain (cond.)



Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc. ISO Mechanical properties measured at 160 mil (Hytrel® measured at 80 mil), IEC Electrical properties measured at 80 mil, all ASTM properties measured at 120 mil, and test temperatures are 73°F unless otherwise stated.

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