

# DuPont™ Zytel® HTNFR52G20NH 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® HTNFR52G20NH NC010 is a 20% glass reinforced, flame retardant high performance polyamide resin. It is also a PPA resin and it uses a non-halogenated flame retardant.**

General information	Value	Unit	Test Standard
Resin Identification	PA6T/66-GF20FR(40)	-	ISO 1043
Part Marking Code	>PA6T/66-GF20FR(40)<	-	ISO 11469
Part Marking Code	>PPA-GF20FR<	-	SAE J1344
Rheological properties	dry / cond	Unit	Test Standard
Molding shrinkage, parallel	0.3 / -	%	ISO 294-4, 2577
Molding shrinkage, normal	1.1 / -	%	ISO 294-4, 2577
Mechanical properties	dry / cond	Unit	Test Standard
Tensile Modulus	8200 / 8600	MPa	ISO 527-1/-2
Stress at break	135 / 120	MPa	ISO 527-1/-2
Strain at break	2.4 / 2.2	%	ISO 527-1/-2
Flexural Modulus	7800 / 8200	MPa	ISO 178
Flexural Strength	215 / 180	MPa	ISO 178
Charpy impact strength			ISO 179/1eU
73°F	40 / 36	kJ/m <sup>2</sup>	
-22°F	40 / 30	kJ/m <sup>2</sup>	
Charpy notched impact strength			ISO 179/1eA
73°F	6 / 6	kJ/m <sup>2</sup>	
-22°F	6 / -	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, 260 psi	276 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel	25 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion			ISO 11359-1/-2
normal	68 / *	E-6/K	
Normal, -40-23°C	64 / *	E-6/K	
Normal, 55-160°C	100 / *	E-6/K	
Parallel, -40-23°C	27 / *	E-6/K	
Parallel, 55-160°C	21 / *	E-6/K	
RTI, electrical			UL 746B
15mil	65	°C	
30mil	65 / *	°C	
60mil	65 / *	°C	
120mil	65	°C	
RTI, impact			UL 746B
15mil	65	°C	
30mil	65	°C	
60mil	65 / *	°C	
120mil	65	°C	

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

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RTI, strength			UL 746B
15mil	65	°C	
30mil	65	°C	
60mil	65 / *	°C	
120mil	65	°C	
<b>Flammability</b>	<b>dry / cond</b>	<b>Unit</b>	<b>Test Standard</b>
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	0.75 / *	mm	IEC 60695-11-10
UL recognition	yes / *	-	UL 94
Oxygen index	35 / *	%	ISO 4589-1/-2
Glow Wire Flammability Index, 15mil	960 / -	°C	IEC 60695-2-12
Glow Wire Ignition Temperature, 15mil	725 / -	°C	IEC 60695-2-12
Flammability, 3.0mm	V-0 / *	-	IEC 60695-11-10
FMVSS Class	DNI	-	ISO 3795 (FMVSS 302)
<b>Electrical properties</b>	<b>dry / cond</b>	<b>Unit</b>	<b>Test Standard</b>
Volume resistivity	>1E13 / -	Ohm*m	IEC 62631-3-1
Electric strength	42 / -	kV/mm	IEC 60243-1
Comparative tracking index	600 / -	-	IEC 60112
Dielectric Constant, 23°C			ASTM D 2520 B
1 GHz	3.52 / -	-	
10 GHz	3.53 / -	-	
Dissipation Factor, 23°C			ASTM D 2520 B
1 GHz	110 / -	E-4	
10 GHz	100 / -	E-4	
<b>Other properties</b>	<b>dry / cond</b>	<b>Unit</b>	<b>Test Standard</b>
Density	1360 / -	kg/m <sup>3</sup>	ISO 1183
<b>VDA Properties</b>	<b>Value</b>	<b>Unit</b>	<b>Test Standard</b>
Odor test	3.5	class	VDA 270
<b>Injection</b>	<b>Value</b>	<b>Unit</b>	<b>Test Standard</b>
Drying Recommended	yes	-	-
Drying Temperature	≥100	°C	-
Drying Time, Dehumidified Dryer	6 - 8	h	-
Processing Moisture Content	≤0.1	%	-
Min. melt temperature	320	°C	-
Max. melt temperature	325	°C	-
Min. mold temperature	90	°C	-
Max. mold temperature	130	°C	-

### Characteristics

Processing	• Injection Molding
Delivery form	• Pellets
Additives	• Lubricants • Release agent

### Processing Texts

#### Injection molding

For molding machine components, use corrosion resistant and wear resistant steel. For details please contact your DuPont representative. Limit the residence time of the resin in the machine. Use proper protective equipment and adequate ventilation.

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North America

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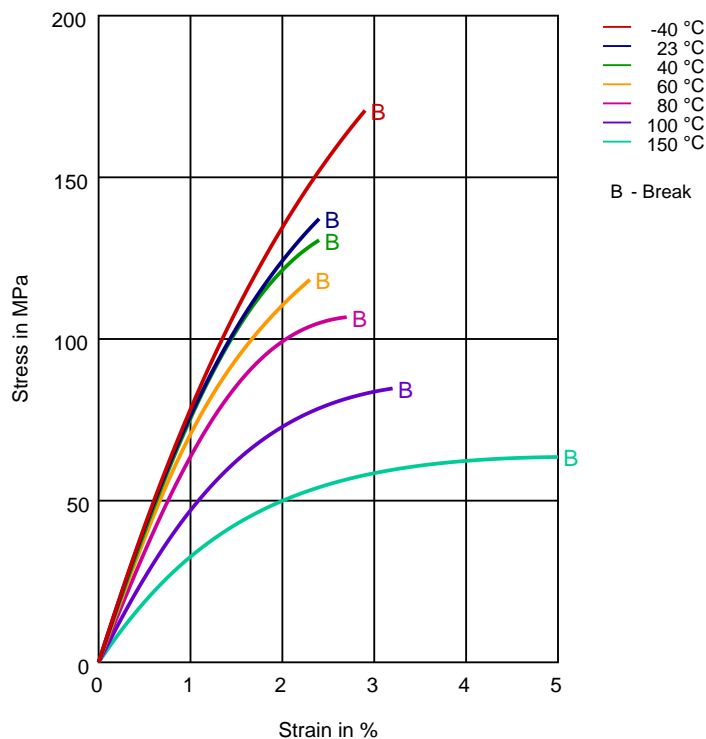


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## HIGH PERFORMANCE POLYAMIDE RESIN

Diagrams

Stress-strain (dry)



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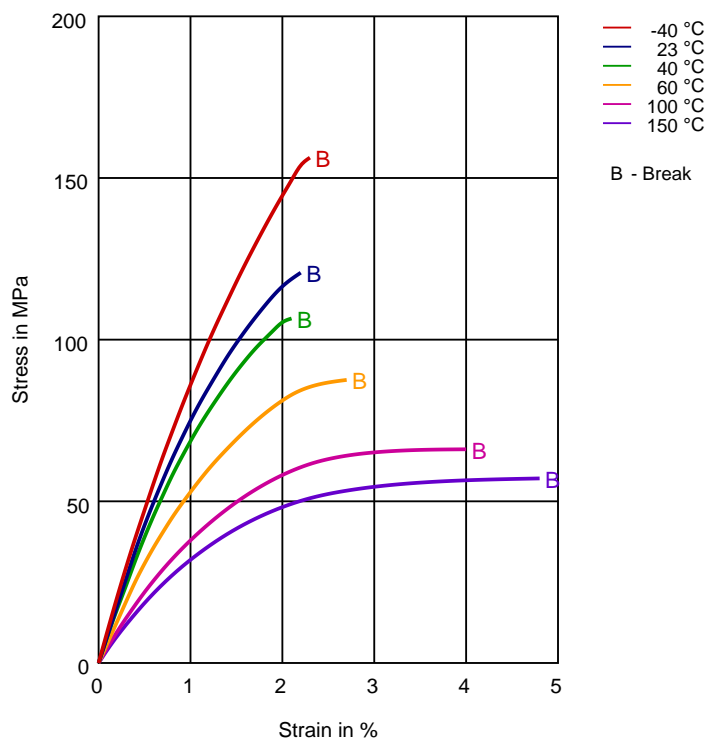
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## HIGH PERFORMANCE POLYAMIDE RESIN

Stress-strain (cond.)



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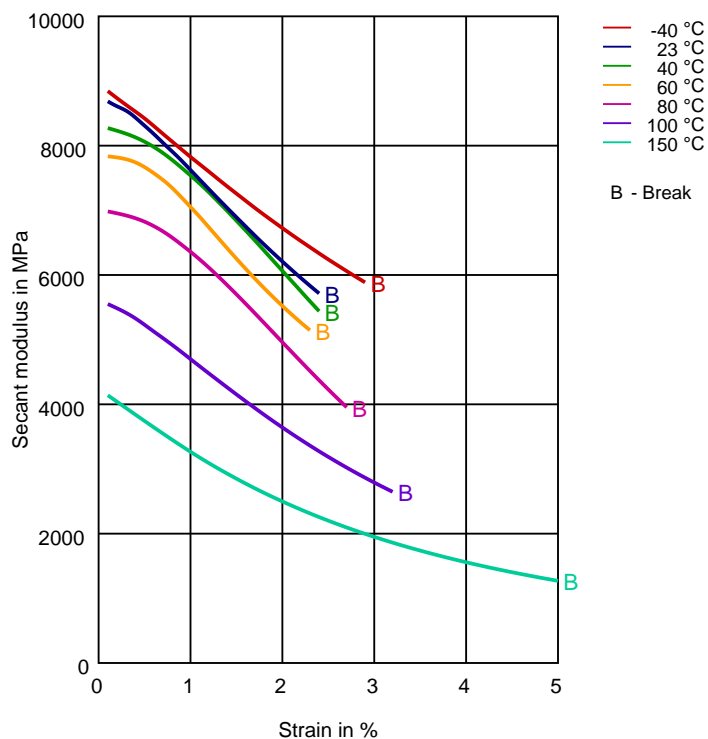
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## HIGH PERFORMANCE POLYAMIDE RESIN

Secant modulus-strain (dry)



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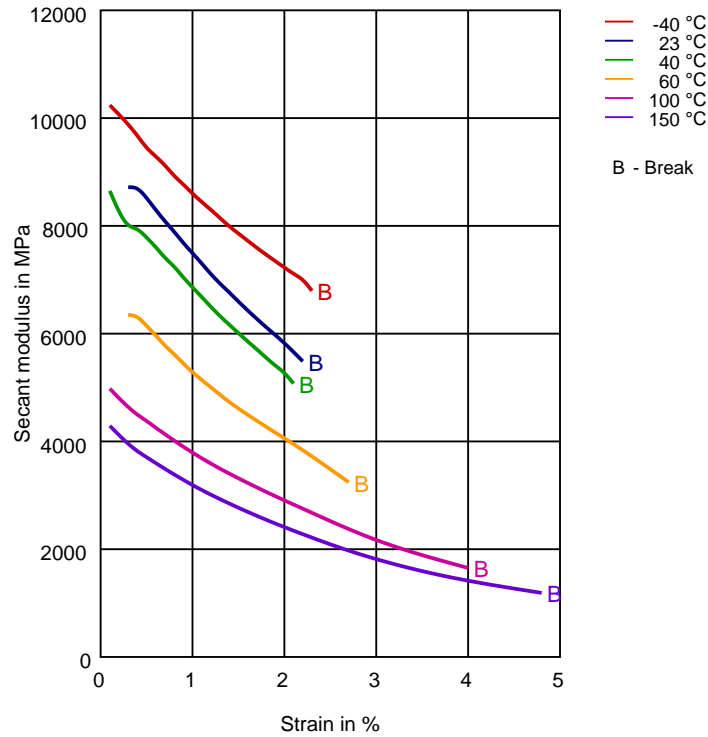
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## HIGH PERFORMANCE POLYAMIDE RESIN

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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