

# DuPont™ Zytel® HTNFE8200 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® HTNFE8200 NC010 is an unreinforced, toughened, heat stabilized high performance polyamide resin for injection molding. It is also a PPA resin.**

General information	Value	Unit	Test Standard
Resin Identification	PA6T/XT-HI	-	ISO 1043
Part Marking Code	PA6T/XT-HI	-	ISO 11469
Part Marking Code	>PPA-I<	-	SAE J1344
Rheological properties	dry / cond	Unit	Test Standard
Molding shrinkage, parallel	0.8 / -	%	ISO 294-4, 2577
Molding shrinkage, normal	0.9 / -	%	ISO 294-4, 2577
Mechanical properties	dry / cond	Unit	Test Standard
Tensile Modulus	2200 / 2300	MPa	ISO 527-1/-2
Yield stress	68 / 68	MPa	ISO 527-1/-2
Yield strain	5.5 / 4.4	%	ISO 527-1/-2
Nominal strain at break	14 / 10	%	ISO 527-1/-2
Flexural Modulus	2100 / 2200	MPa	ISO 178
Charpy impact strength			ISO 179/1eU
73 °F	N / N	kJ/m <sup>2</sup>	
-22 °F	N / N	kJ/m <sup>2</sup>	
Charpy notched impact strength, 73 °F	75 / -	kJ/m <sup>2</sup>	ISO 179/1eA
Izod notched impact strength			ISO 180/1A
73 °F	75 / -	kJ/m <sup>2</sup>	
-40 °F	18 / -	kJ/m <sup>2</sup>	
Coefficient of sliding friction, 1h against steel	- / 0.4	-	ASTM 1894
Thermal properties	dry / cond	Unit	Test Standard
Melting temperature, first heat	300 / *	°C	ISO 11357-1/-3
Temp. of deflection under load			ISO 75-1/-2
260 psi	126 / *	°C	
65 psi	138 / *	°C	
Coeff. of linear therm. expansion, parallel	90 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion			ISO 11359-1/-2
normal	100 / *	E-6/K	
Normal, -40-23 °C	90 / *	E-6/K	
Parallel, -40-23 °C	90 / *	E-6/K	
Thermal conductivity of melt	0.18	W/(m K)	-
Spec. heat capacity of melt	2220	J/(kg K)	-
RTI, electrical			UL 746B
30mil	65 / *	°C	
60mil	65 / *	°C	
120mil	65	°C	
RTI, impact			UL 746B
30mil	65	°C	
60mil	65 / *	°C	
120mil	65	°C	

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

North America

Asia Pacific

Europe/Middle East/Africa

DONGGUAN FUMEI PLASTICS CO.,LTD.

TEL: +86 0769-82339888 / 87798999

EMAIL: fumei@foomx.com



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			UL 746B
RTI, strength			
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.	HB / *	class	IEC 60695-11-10
Thickness tested	1.5 / *	mm	IEC 60695-11-10
UL recognition	yes / *	-	UL 94
Burning Behav. at thickness h	HB / *	class	IEC 60695-11-10
Thickness tested	0.75 / *	mm	IEC 60695-11-10
UL recognition	yes / *	-	UL 94
FMVSS Class	B	-	ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	<100	mm/min	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
Surface resistivity	* / >1E15	Ohm	IEC 62631-3-2
<b>Other properties</b>	<b>dry / cond</b>	<b>Unit</b>	<b>Test Standard</b>
Humidity absorption, 80mil	1.9 / *	%	Sim. to ISO 62
Water absorption, 80mil	6.3 / *	%	Sim. to ISO 62
Density	1130 / -	kg/m <sup>3</sup>	ISO 1183
Density of melt	970	kg/m <sup>3</sup>	-
<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	%	-
Melt Temperature Optimum	325	°C	-
Min. melt temperature	320	°C	-
Max. melt temperature	330	°C	-
Min. mold temperature	80	°C	-
Max. mold temperature	120	°C	-
Ejection temperature	225	°C	-

Characteristics			
Processing	• Injection Molding		
Delivery form	• Pellets		
Additives	• Lubricants	• Release agent	
Special characteristics	• Heat stabilized or stable to heat		
Regional Availability	• North America • Europe	• Asia Pacific • South and Central America	• Near East/Africa • Global

### Processing Texts

#### 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.

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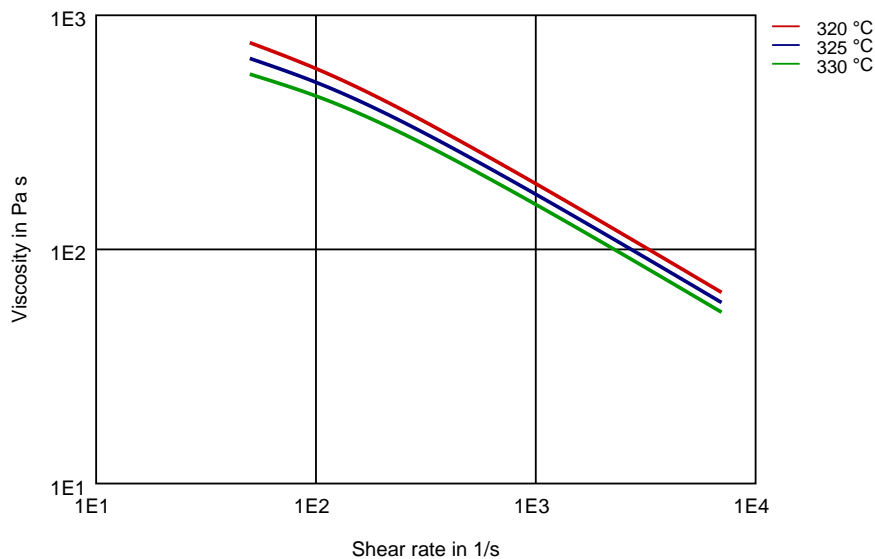


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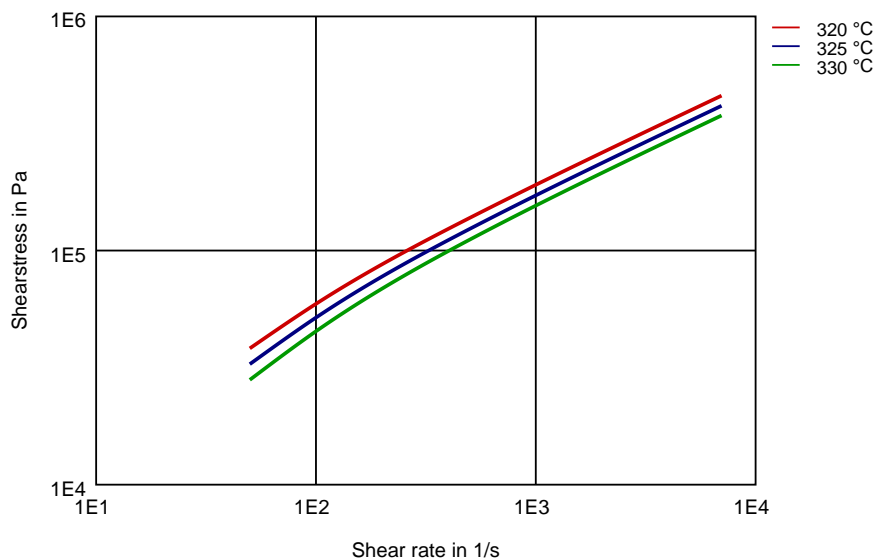
## HIGH PERFORMANCE POLYAMIDE RESIN

### Diagrams

#### Viscosity-shear rate



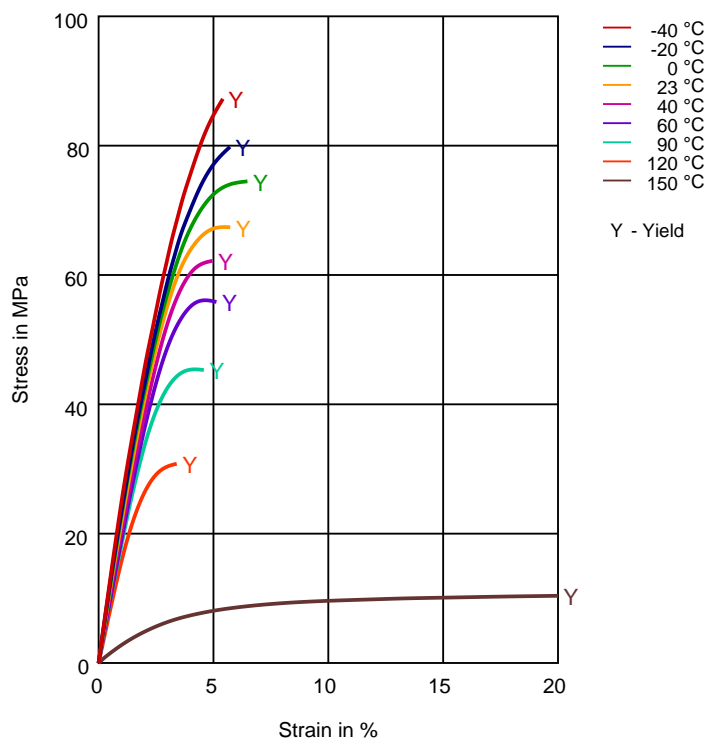
#### Shearstress-shear rate



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## HIGH PERFORMANCE POLYAMIDE RESIN

Stress-strain (dry)



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Asia Pacific

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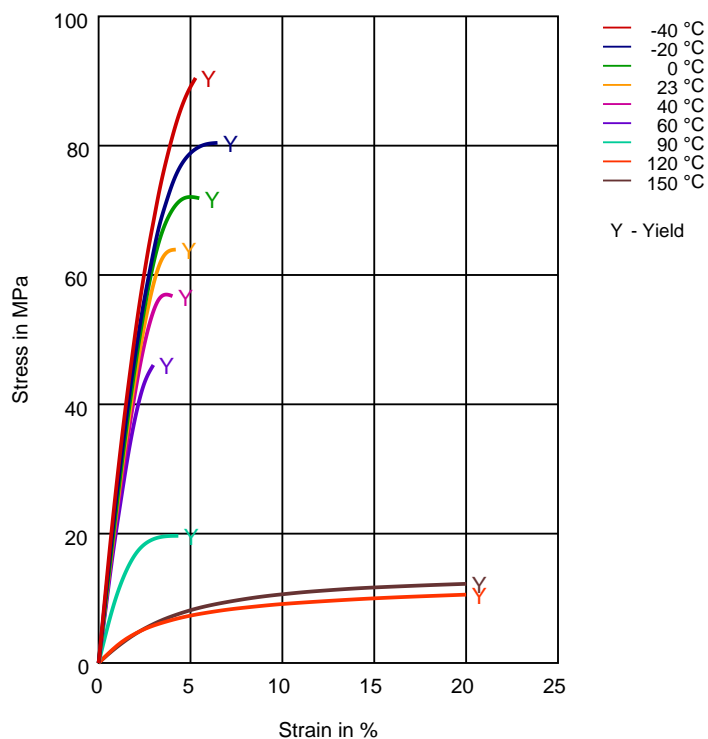
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## HIGH PERFORMANCE POLYAMIDE RESIN

Stress-strain (cond.)



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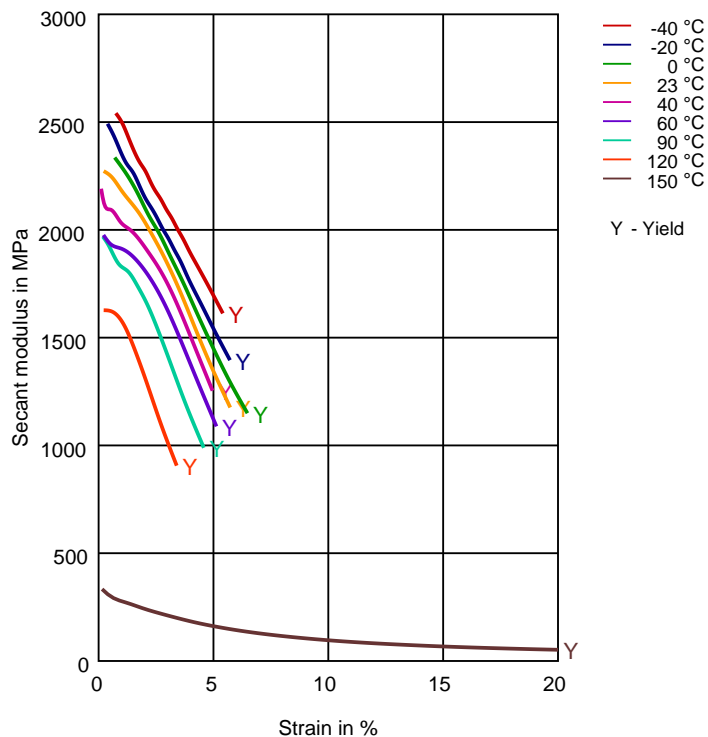
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## HIGH PERFORMANCE POLYAMIDE RESIN

Secant modulus-strain (dry)



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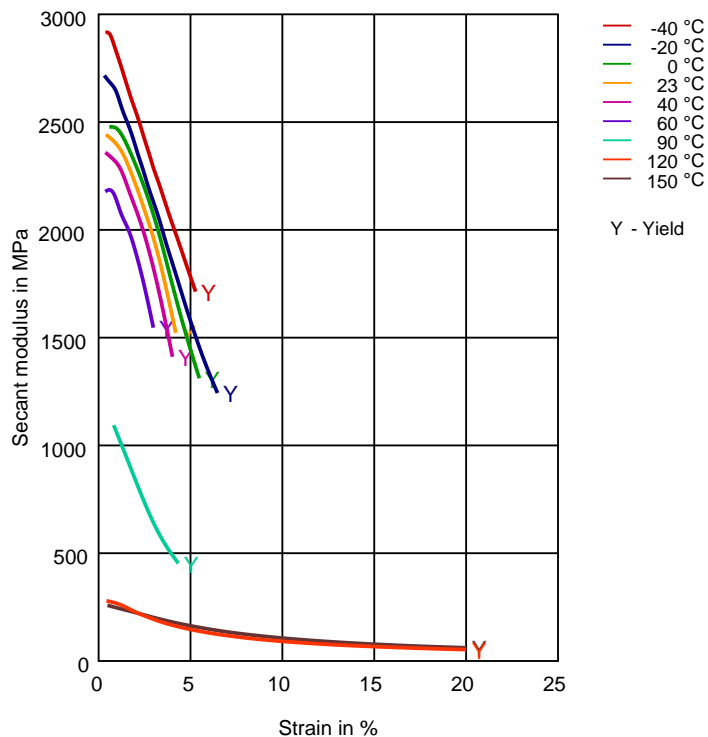
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## HIGH PERFORMANCE POLYAMIDE RESIN

Secant modulus-strain (cond.)



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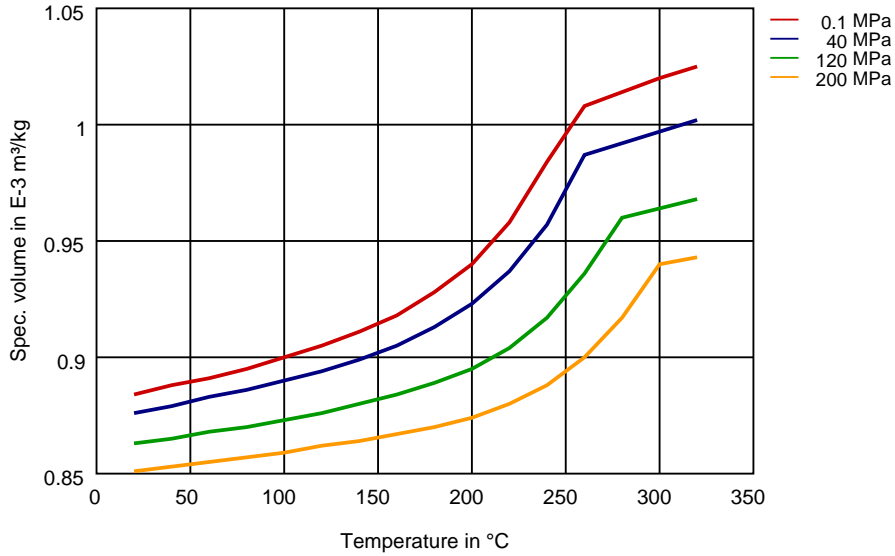
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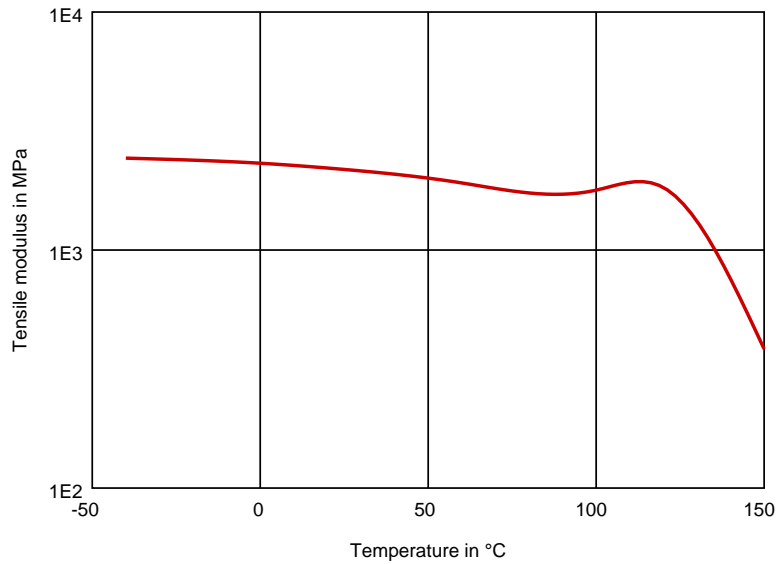
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## HIGH PERFORMANCE POLYAMIDE RESIN

Specific volume-temperature (pvT)



Tensile modulus-temperature (dry)



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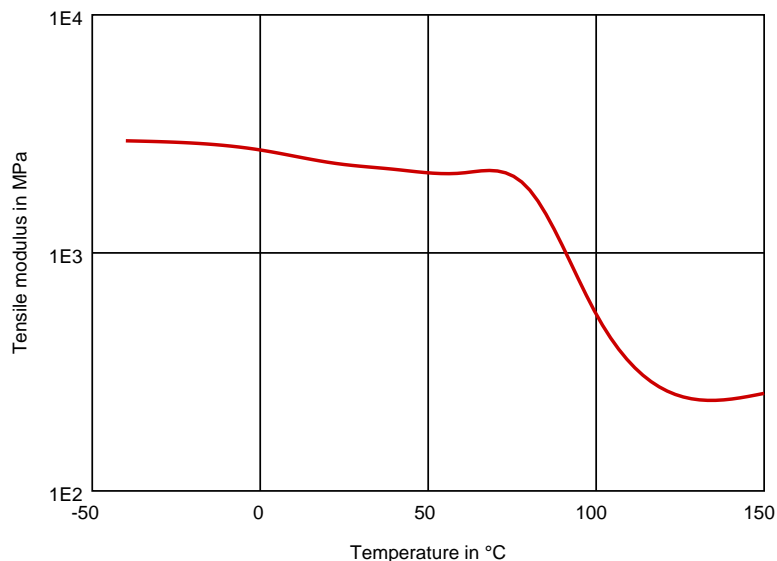




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## HIGH PERFORMANCE POLYAMIDE RESIN

Tensile modulus-temperature (cond.)



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### Chemical Media Resistance

#### Other

✓ Ethylene Glycol (50% by mass) in water (108°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).

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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