

# DuPont™ Zytel® HTNFR55G50NHLW BK046

## 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® HTNFR55G50NHLW BK046 is a 50% glass reinforced, flame retardant high performance polyamide resin with improved flow and low warpage in structural applications requiring good surface appearance. It is also a PPA resin and uses a non-halogenated flame retardant.

General information	Value	Unit	Test Standard
Resin Identification	PA-GF50FR(40)	-	ISO 1043
Part Marking Code	PA-GF50FR(40)	-	ISO 11469
Part Marking Code	>PPA-GF50FR<	-	SAE J1344
Rheological properties	dry / cond	Unit	Test Standard
Molding shrinkage, parallel	0.1 / -	%	ISO 294-4, 2577
Molding shrinkage, normal	0.2 / -	%	ISO 294-4, 2577
Mechanical properties	dry / cond	Unit	Test Standard
Tensile Modulus	18000 / 19100	MPa	ISO 527-1/-2
Stress at break	200 / 176	MPa	ISO 527-1/-2
Strain at break	1.6 / 1.3	%	ISO 527-1/-2
Flexural Modulus	17000 / -	MPa	ISO 178
Flexural Strength	310 / -	MPa	ISO 178
Charpy impact strength, 73°F	50 / -	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength, 73°F	13 / -	kJ/m <sup>2</sup>	ISO 179/1eA
Thermal properties	dry / cond	Unit	Test Standard
Melting temperature, first heat	298 / *	°C	ISO 11357-1/-3
Temp. of deflection under load, 260 psi	215 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel	12 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion			ISO 11359-1/-2
normal	38 / *	E-6/K	
Normal, -40-23°C	36 / *	E-6/K	
Parallel, -40-23°C	14 / *	E-6/K	
Parallel, 55-160°C	11 / *	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	
RTI, strength			UL 746B
15mil	65	°C	
30mil	65	°C	
60mil	65 / *	°C	
120mil	65	°C	
Flammability	dry / cond	Unit	Test Standard
Burning Behav. at thickness h	V-0 / *	class	IEC 60695-11-10
Thickness tested	0.4 / *	mm	IEC 60695-11-10
UL recognition	yes / *	-	UL 94

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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FMVSS Class	B	-	ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	<100	mm/min	ISO 3795 (FMVSS 302)
Electrical properties	dry / cond	Unit	Test Standard
Dielectric Constant, 23°C			ASTM D 2520 B
1 GHz	4.3 / -	-	
10 GHz	4.4 / -	-	
Dissipation Factor, 23°C			ASTM D 2520 B
1 GHz	116 / -	E-4	
10 GHz	122 / -	E-4	
Other properties	dry / cond	Unit	Test Standard
Density	1650 / -	kg/m <sup>3</sup>	ISO 1183
Injection	Value	Unit	Test Standard
Drying Recommended	yes	-	-
Drying Temperature	≥100	°C	-
Drying Time, Dehumidified Dryer	6 - 8	h	-
Processing Moisture Content	≤0.1	%	-
Min. melt temperature	300	°C	-
Max. melt temperature	315	°C	-
Min. mold temperature	70	°C	-
Max. mold temperature	130	°C	-

### Characteristics

- Processing
  - Injection Molding

### 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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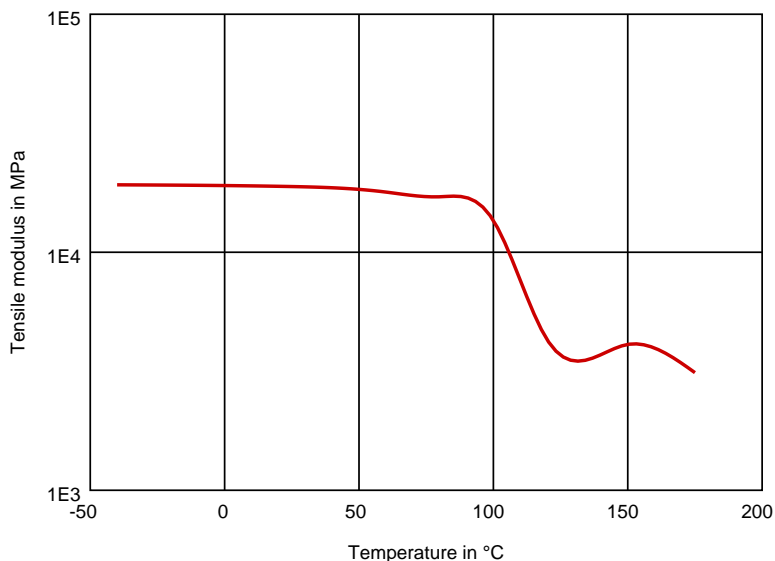


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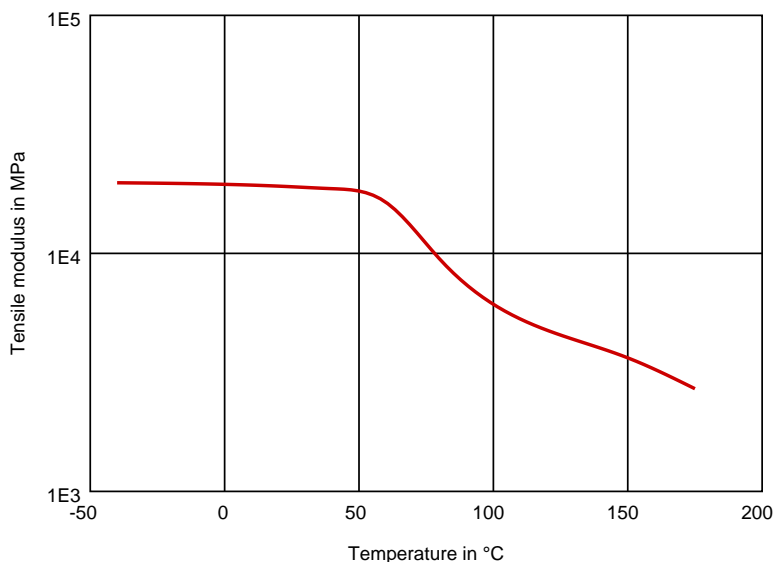
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### Diagrams

#### Tensile modulus-temperature (dry)



#### Tensile modulus-temperature (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

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measured at 120 mil, and test temperatures are 73°F unless otherwise stated.

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