

# DuPont™ Zytel® HTN

high performance polyamide resin

PRELIMINARY DATA

## Zytel® HTNFR52G45NHLW BK337

Zytel® HTNFR52G45NHLW BK337 is a 45% glass reinforced, flame retardant, lubricated high performance polyamide resin with excellent flow and low warp. It is also a PPA resin and it uses a non-halogenated flame retardant.

Property	Test Method	Units	Value	
			DAM	50%RH
<b>Identification</b>				
Part Marking Code	ISO 11469		>PA6T/66-G45FR<	
Part Marking Code	SAE J1344		>PPA-G45FR<	
<b>Mechanical</b>				
Stress at Break	ISO 527	MPa (kpsi)	90 (13)	85 (12)
Strain at Break	ISO 527	%	1.0	1.0
Tensile Modulus	ISO 527	MPa (kpsi)	14300 (2070)	14300 (2070)
Flexural Modulus	ISO 178	MPa (kpsi)	13600 (1970)	13600 (1970)
Flexural Strength	ISO 178	MPa (kpsi)	145 (21)	140 (20)
Notched Charpy Impact Strength	ISO 179/1eA	kJ/m <sup>2</sup>		
-30°C (-22°F)			3	3
23°C (73°F)			3	3
Unnotched Charpy Impact Strength	ISO 179/1eU	kJ/m <sup>2</sup>		
-30°C (-22°F)			13	11
23°C (73°F)			15	13

Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc. ISO Mechanical properties measured at 4.0mm, ISO Electrical properties measured at 2.0mm, and all ASTM properties measured at 3.2mm. Test temperatures are 23°C unless otherwise stated.

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.

**The above data are preliminary and are subject to change as additional data are developed on subsequent lots.**

The DuPont Oval Logo, DuPont™, The miracles of science™ and Zytel® are trademarks or registered trademarks of DuPont Company. Copyright© 2010

100827/100827

The information provided in this data sheet corresponds to our knowledge on the subject at the date of its publication. This information may be subject to revision as new knowledge and experience becomes available. The data provided fall within the normal range of product properties and relate only to the specific material designated; these data may not be valid for such material used in combination with any other materials, additives or pigments or in any process, unless expressly indicated otherwise. The data provided should not be used to establish specification limits or used alone as the basis of design; they are not intended to substitute for any testing you may need to conduct to determine for yourself the suitability of a specific material for your particular purposes. Since DuPont cannot anticipate all variations in actual end-use conditions DuPont makes no warranties and assumes no liability in connection with any use of this information. Nothing in this publication is to be considered as a license to operate under or a recommendation to infringe any patent rights. DuPont advises you to seek independent counsel for a freedom to practice opinion on the intended application or end-use of our products. CAUTION: Do not use DuPont materials in medical application involving implantation in the human body or contact with internal body fluids or tissues unless the material has been provided from DuPont under a written contract that is consistent with DuPont policy regarding medical applications and expressly acknowledges the contemplated use. For further information, please contact your DuPont representative. You may also request a copy of DuPont POLICY Regarding Medical Applications H-50103-3 and DuPont CAUTION Regarding Medical Applications ... H-50102-3

**Zytel® HTNFR52G45NHLW BK337**

Property	Test Method	Units	Value	
			DAM	50%RH
<b>Thermal</b>				
Deflection Temperature 1.80MPa	ISO 75-1/-2	°C (°F)	276 (528)	
Melting Temperature 10°C/min, First Heat	ISO 11357-1/-3	°C (°F)	310 (590)	
CLTE, Parallel -40 - 23°C (-40 - 73°F)	ISO 11359-1/-2	E-4/C (E-4/F)	0.20 (0.11)	
23 - 55°C (73 - 130°F)			0.20 (0.11)	
55 - 160°C (131 - 320°F)			0.20 (0.11)	
160 - 250°C (320 - 480°F)			0.26 (0.14)	
CLTE, Normal -40 - 23°C (-40 - 73°F)	ISO 11359-1/-2	E-4/C (E-4/F)	0.30 (0.17)	
23 - 55°C (73 - 130°F)			0.30 (0.17)	
55 - 160°C (131 - 320°F)			0.45 (0.25)	
160 - 250°C (320 - 480°F)			0.63 (0.35)	
<b>Electrical</b>				
Surface Resistivity	IEC 60093	ohm	1E17	
Volume Resistivity	IEC 60093	ohm m	1E13	
Electric Strength 1.0mm	IEC 60243-1	kV/mm (V/mil)	31 (790)	
CTI	IEC 60112	V	600	

Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc  
 ISO Mechanical properties measured at 4.0mm, ISO Electrical properties measured at 2.0mm, and all ASTM properties measured at 3.2mm.  
 Test temperatures are 23°C unless otherwise stated.

**The above data are preliminary and are subject to change as additional data are developed on subsequent lots.**

The DuPont Oval Logo, DuPont™, The miracles of science™ and Zytel® are trademarks or registered trademarks of DuPont Company. Copyright© 2010

100827/100827

The information provided in this data sheet corresponds to our knowledge on the subject at the date of its publication. This information may be subject to revision as new knowledge and experience becomes available. The data provided fall within the normal range of product properties and relate only to the specific material designated; these data may not be valid for such material used in combination with any other materials, additives or pigments or in any process, unless expressly indicated otherwise. The data provided should not be used to establish specification limits or used alone as the basis of design; they are not intended to substitute for any testing you may need to conduct to determine for yourself the suitability of a specific material for your particular purposes. Since DuPont cannot anticipate all variations in actual end-use conditions DuPont makes no warranties and assumes no liability in connection with any use of this information. Nothing in this publication is to be considered as a license to operate under or a recommendation to infringe any patent rights. DuPont advises you to seek independent counsel for a freedom to practice opinion on the intended application or end-use of our products. CAUTION: Do not use DuPont materials in medical application involving implantation in the human body or contact with internal body fluids or tissues unless the material has been provided from DuPont under a written contract that is consistent with DuPont policy regarding medical applications and expressly acknowledges the contemplated use. For further information, please contact your DuPont representative. You may also request a copy of DuPont POLICY Regarding Medical Applications H-50103-3 and DuPont CAUTION Regarding Medical Applications ... H-50102-3



## Zytel® HTNFR52G45NHLW BK337

Property	Test Method	Units	Value	
			DAM	50%RH
<b>Flammability</b>				
Flammability Classification	UL94			
0.4mm			V-0	
Oxygen Index	ISO 4589-1/-2	%	39	
Glow Wire Flammability Index	IEC 60695-2-12	°C		
0.4mm			960	
3.0mm			960	
Glow Wire Ignition Temperature	IEC 60695-2-13	°C		
0.4mm			750	
3.0mm			800	
<b>Other</b>				
Density	ISO 1183	kg/m <sup>3</sup> (g/cm <sup>3</sup> )	1630 (1.63)	
Molding Shrinkage	ISO 294-4	%		
Normal, 2.0mm			0.9	
Parallel, 2.0mm			0.5	
<b>Processing</b>				
Melt Temperature Range		°C (°F)	320-325 (605-615)	
Mold Temperature Range		°C (°F)	85-130 (185-265)	
Drying Time, Dehumidified Dryer		h	6-8	
Drying Temperature		°C (°F)	100 (210)	
Processing Moisture Content		%	<0.10	

Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc  
 ISO Mechanical properties measured at 4.0mm, ISO Electrical properties measured at 2.0mm, and all ASTM properties measured at 3.2mm.  
 Test temperatures are 23°C unless otherwise stated.

**The above data are preliminary and are subject to change as additional data are developed on subsequent lots.**

The DuPont Oval Logo, DuPont™, The miracles of science™ and Zytel® are trademarks or registered trademarks of DuPont Company. Copyright© 2010

100827/100827

The information provided in this data sheet corresponds to our knowledge on the subject at the date of its publication. This information may be subject to revision as new knowledge and experience becomes available. The data provided fall within the normal range of product properties and relate only to the specific material designated; these data may not be valid for such material used in combination with any other materials, additives or pigments or in any process, unless expressly indicated otherwise. The data provided should not be used to establish specification limits or used alone as the basis of design; they are not intended to substitute for any testing you may need to conduct to determine for yourself the suitability of a specific material for your particular purposes. Since DuPont cannot anticipate all variations in actual end-use conditions DuPont makes no warranties and assumes no liability in connection with any use of this information. Nothing in this publication is to be considered as a license to operate under or a recommendation to infringe any patent rights. DuPont advises you to seek independent counsel for a freedom to practice opinion on the intended application or end-use of our products. CAUTION: Do not use DuPont materials in medical application involving implantation in the human body or contact with internal body fluids or tissues unless the material has been provided from DuPont under a written contract that is consistent with DuPont policy regarding medical applications and expressly acknowledges the contemplated use. For further information, please contact your DuPont representative. You may also request a copy of DuPont POLICY Regarding Medical Applications H-50103-3 and DuPont CAUTION Regarding Medical Applications ... H-50102-3