

## Product Texts

Common features of Zytel® nylon resin include mechanical and physical properties such as high mechanical strength, excellent balance of stiffness and toughness, good high temperature performance, good electrical and flammability properties, good abrasion and chemical resistance. In addition, Zytel® nylon resins are available in different modified and reinforced grades to create a wide range of products with tailored properties for specific processes and end-uses. Zytel® nylon resin, including most flame retardant grades, offer the ability to be coloured.

The good melt stability of Zytel® nylon resin normally enables the recycling of properly handled production waste. If recycling is not possible, we recommend, as the preferred option, incineration with energy recovery (-31 kJ/g of base polymer) in appropriately equipped installations. For disposal, local regulations have to be observed.

Zytel® nylon resin typically is used in demanding applications in the automotive, furniture, domestic appliances, sporting goods and construction industry.

**Zytel® 70G33HS1L BK031 is a 33% glass fiber reinforced, heat stabilized polyamide 66 resin for injection molding.**

Processing/Physical Characteristics	dry / cond	Unit	Test Standard
<b>ISO Data</b>			
<sup>[C]</sup> Melt volume-flow rate, MVR	21 / *	cm <sup>3</sup> /10min	ISO 1133
Temperature	275 / *	°C	-
Load	5 / *	kg	-
<sup>[C]</sup> Molding shrinkage, parallel	0.3 / *	%	ISO 294-4, 2577
<sup>[C]</sup> Molding shrinkage, normal	1.1 / *	%	ISO 294-4, 2577
<sup>[C]</sup> Ejection temperature	210	°C	-
<b>ASTM Data</b>			
Mold Shrinkage, MD	0.002	mm/mm	ASTM D 955
Mold Shrinkage, TD	0.01	mm/mm	ASTM D 955

[C]: CAMPUS

Mechanical properties	dry / cond	Unit	Test Standard
<b>ISO Data</b>			
<sup>[C]</sup> Tensile Modulus	11000 / 8000	MPa	ISO 527
<sup>[C]</sup> Stress at break	200 / 140	MPa	ISO 527
<sup>[C]</sup> Strain at break	3 / 5	%	ISO 527
<sup>[C]</sup> Charpy impact strength, +23°C	75 / 80	kJ/m <sup>2</sup>	ISO 179/1eU
<sup>[C]</sup> Charpy notched impact strength, +23°C	13 / 17	kJ/m <sup>2</sup>	ISO 179/1eA
<b>ASTM Data</b>			
Tensile Strength	186 / -	MPa	ASTM D 638
Elongation at Break	3 / -	%	ASTM D 638
Flexural Modulus	8963 / -	MPa	ASTM D 790
Flexural Strength	275 / -	MPa	ASTM D 790
Izod Impact notched, 1/8 in	107 / -	J/m	ASTM D 256
Izod Impact unnotched, 1/8 in	1060 / -	J/m	ASTM D 256

[C]: CAMPUS

Thermal properties	dry / cond	Unit	Test Standard
<b>ISO Data</b>			
<sup>[C]</sup> Melting temperature, 10°C/min	262 / *	°C	ISO 11357-1/-3
<sup>[C]</sup> Glass transition temperature, 10°C/min	80 / *	°C	ISO 11357-1/-2
<sup>[C]</sup> Temp. of deflection under load, 1.80 MPa	252 / *	°C	ISO 75-1/-2
<sup>[C]</sup> Temp. of deflection under load, 0.45 MPa	261 / *	°C	ISO 75-1/-2
<sup>[C]</sup> Coeff. of linear therm. expansion, parallel	18 / *	E-6/K	ISO 11359-1/-2
<sup>[C]</sup> Coeff. of linear therm. expansion, normal	83 / *	E-6/K	ISO 11359-1/-2
<sup>[C]</sup> Burning Behav. at 1.5 mm nom. thickn.	HB / *	class	IEC 60695-11-10
Thickness tested	1.5 / *	mm	-
Yellow Card available	yes / *	-	-
<sup>[C]</sup> Burning Behav. at thickness h	HB / *	class	IEC 60695-11-10
Thickness tested	0.8 / *	mm	-
Yellow Card available	yes / *	-	-
<sup>[C]</sup> Burning rate, FMVSS, Thickness 1 mm	35	mm/min	ISO 3795 (FMVSS 302)
<b>ASTM Data</b>			

**Zytel® 70G33HS1L BK031**

PA66-GF33

Celanese

UL 94 Flame rating	<b>HB</b>	-	UL 94
Thickness tested	<b>1.5</b>	mm	-
Coefficient of Thermal Expansion, MD	<b>18</b>	E-6/K	ASTM D 696
Coefficient of Thermal Expansion, TD	<b>83</b>	E-6/K	ASTM D 696
DTUL @ 66 psi	<b>260</b>	°C	ASTM D 648
DTUL @ 264 psi	<b>248</b>	°C	ASTM D 648
Melting Temperature	<b>263</b>	°C	ASTM D 3418

[C]: CAMPUS

<b>Electrical properties</b>	<b>dry / cond</b>	<b>Unit</b>	<b>Test Standard</b>
<b>ISO Data</b>			
<sup>[C]</sup> Comparative tracking index	<b>400 / -</b>	-	IEC 60112

[C]: CAMPUS

<b>Other properties</b>	<b>dry / cond</b>	<b>Unit</b>	<b>Test Standard</b>
<sup>[C]</sup> Water absorption	<b>5.7 / *</b>	%	Sim. to ISO 62
<sup>[C]</sup> Humidity absorption	<b>1.8 / *</b>	%	Sim. to ISO 62
<sup>[C]</sup> Density	<b>1390 / -</b>	kg/m <sup>3</sup>	ISO 1183
Density	<b>1390</b>	kg/m <sup>3</sup>	ASTM D 792

[C]: CAMPUS

<b>Material specific properties</b>	<b>dry / cond</b>	<b>Unit</b>	<b>Test Standard</b>
<b>ISO Data</b>			
<sup>[C]</sup> Viscosity number	<b>143 / *</b>	cm <sup>3</sup> /g	ISO 307, 1157, 1628

[C]: CAMPUS

**Characteristics****Processing**

Injection Molding

**Delivery form**

Black

**Special Characteristics**

Heat stabilized or stable to heat

**Features**

Creep Resistance, Thermal Stability, Weldable

**Applications**

Automotive, Electrical and Electronical

**Regional Availability**

North America, Europe, Asia Pacific, South and Central America, Near East/Africa

**Other text information****Injection molding**

Maximum hold up time should be 10 minutes.