

DuPont™ Zytel® 105F BK010

NYLON RESIN

Product Information

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, DuPont recommends, as the preferred option, incineration with energy recovery (-31kJ/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® 105F BK010 is a lubricated, fast cycling, weather resistant polyamide 66 resin. Zytel® 105F BK010 contains finely dispersed carbon black.

General information	Value	Unit	Test Standard
Resin Identification	PA66	-	ISO 1043
Part Marking Code	PA66	-	ISO 11469
Rheological properties	dry / cond	Unit	Test Standard
Viscosity number	150 ⁽¹⁾ / *	cm ³ /g	ISO 307, 1157, 1628
Moulding shrinkage, parallel	1.3 / -	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.3 / -	%	ISO 294-4, 2577
1: Sulfuric acid 96%			
Mechanical properties	dry / cond	Unit	Test Standard
Tensile Modulus	3200 / 1500	MPa	ISO 527-1/-2
Yield stress	85 / 60	MPa	ISO 527-1/-2
Yield strain	4.3 / 25	%	ISO 527-1/-2
Nominal strain at break	24 / >50	%	ISO 527-1/-2
Poisson's ratio	0.37 / 0.43	-	ISO 527-1/-2
Tensile creep modulus			ISO 899-1
1h	* / 1340	MPa	
1000h	* / 600	MPa	
Charpy impact strength			ISO 179/1eU
23°C	45 / N	kJ/m ²	
-30°C	55 / 55	kJ/m ²	
Charpy notched impact strength			ISO 179/1eA
23°C	6 / 15	kJ/m ²	
-30°C	4 / 3	kJ/m ²	
Izod notched impact strength			ISO 180/1A
23°C	5 / 12	kJ/m ²	
-30°C	4 / 3	kJ/m ²	
Thermal properties	dry / cond	Unit	Test Standard
Melting temperature, 10°C/min	263 / *	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	60 / -	°C	ISO 11357-1/-2
Temp. of deflection under load			ISO 75-1/-2
1.8 MPa	70 / *	°C	
0.45 MPa	205 / *	°C	
Vicat softening temperature, 50°C/h, 50N	240 / *	°C	ISO 306
Coeff. of linear therm. expansion, parallel	100 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	110 / *	E-6/K	ISO 11359-1/-2

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RTI, electrical			UL 746B
0.75mm	125 / *	°C	
1.5mm	125 / *	°C	
3mm	125	°C	
6mm	125	°C	
RTI, impact			UL 746B
0.75mm	65	°C	
1.5mm	75 / *	°C	
3mm	75	°C	
6mm	75	°C	
RTI, strength			UL 746B
0.75mm	65	°C	
1.5mm	85 / *	°C	
3mm	85	°C	
6mm	85	°C	
Flammability	dry / cond	Unit	Test Standard
Burning Behav. at 1.5mm nom. thickn.	V-2 / *	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-2 / *	class	IEC 60695-11-10
Thickness tested	0.71 / *	mm	IEC 60695-11-10
UL recognition	yes / *	-	UL 94
Oxygen index	27 / *	%	ISO 4589-1/-2
Flammability			IEC 60695-11-10
3.0mm	V-2 / *	-	
6.0mm	V-2 / *	-	
FMVSS Class	SE	-	ISO 3795 (FMVSS 302)
Electrical properties	dry / cond	Unit	Test Standard
Relative permittivity, 1MHz	3.6 / 4.6	-	IEC 62631-2-1
Dissipation factor, 1MHz	300 / 600	E-4	IEC 62631-2-1
Comparative tracking index	600 / -	-	IEC 60112
Other properties	dry / cond	Unit	Test Standard
Humidity absorption, 2mm	2.7 / *	%	Sim. to ISO 62
Water absorption, 2mm	8.5 / *	%	Sim. to ISO 62
Density	1140 / -	kg/m³	ISO 1183
VDA Properties	dry / cond	Unit	Test Standard
Emission of organic compounds	6.6	µgC/g	VDA 277
Odour	2.5	class	VDA 270
Fogging, G-value (condensate)	0.1 / *	mg	ISO 6452
Injection	dry / cond	Unit	Test Standard
Drying Recommended	yes	-	-
Drying Temperature	≥80	°C	-
Drying Time, Dehumidified Dryer	2 - 4	h	-
Processing Moisture Content	≤0.2	%	-
Melt Temperature Optimum	290	°C	-
Min. melt temperature	280	°C	-
Max. melt temperature	300	°C	-
Max. screw tangential speed	0.4 / *	m/s	-
Mold Temperature Optimum	70	°C	-
Min. mould temperature	50	°C	-
Max. mould temperature	90	°C	-
Hold pressure range	50 - 100	MPa	-
Hold pressure time	4	s/mm	-
Ejection temperature	190	°C	-

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Characteristics

Processing	• Injection Moulding		
Delivery form	• Pellets		
Additives	• Lubricants	• Release agent	
Special characteristics	• Light stabilised or stable to light	• U.V. stabilised or stable to weather	
Regional Availability	• North America	• Asia Pacific	• Near East/Africa
	• Europe	• South and Central America	• Global

Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc. ISO Mechanical properties measured at 4mm (Hytrel® measured at 2 mm), IEC Electrical properties measured at 2mm, all ASTM properties measured at 3.2mm, and test temperatures are 23°C unless otherwise stated.

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