

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® 103HSL NC010 is a heat stabilized, lubricated polyamide 66 resin for injection molding.

Processing/Physical Characteristics	dry / cond	Unit	Test Standard
ISO Data			
^[C] Molding shrinkage, parallel	1.3 / *	%	ISO 294-4, 2577
^[C] Molding shrinkage, normal	1.3 / *	%	ISO 294-4, 2577
^[C] Density of melt	980	kg/m ³	-
^[C] Thermal conductivity of melt	0.16	W/(m K)	-
^[C] Spec. heat capacity of melt	2790	J/(kg K)	-
^[C] Eff. thermal diffusivity	5E-8	m ² /s	-
^[C] Ejection temperature	190	°C	-

[C]: CAMPUS

Mechanical properties	dry / cond	Unit	Test Standard
ISO Data			
^[C] Tensile Modulus	3100 / 1400	MPa	ISO 527
^[C] Yield stress	85 / 55	MPa	ISO 527
^[C] Yield strain	4.3 / 25	%	ISO 527
^[C] Nominal strain at break	20 / >50	%	ISO 527
^[C] Tensile creep modulus, 1h	* / 1200	MPa	ISO 899-1
^[C] Tensile creep modulus, 1000h	* / 650	MPa	ISO 899-1
^[C] Charpy impact strength, +23°C	N / N	kJ/m ²	ISO 179/1eU
^[C] Charpy impact strength, -30°C	400 / N	kJ/m ²	ISO 179/1eU
^[C] Charpy notched impact strength, +23°C	5.5 / 12	kJ/m ²	ISO 179/1eA
^[C] Charpy notched impact strength, -30°C	4.5 / 3.5	kJ/m ²	ISO 179/1eA

ASTM Data

Tensile Strength	83 / -	MPa	ASTM D 638
Elongation at Break	55 / -	%	ASTM D 638
Flexural Modulus	2830 / -	MPa	ASTM D 790
Rockwell Hardness	R 121 /	-	ASTM D 785
Izod Impact notched, 1/8 in	53 / -	J/m	ASTM D 256

[C]: CAMPUS

Thermal properties	dry / cond	Unit	Test Standard
ISO Data			
^[C] Melting temperature, 10°C/min	262 / *	°C	ISO 11357-1/-3
^[C] Glass transition temperature, 10°C/min	60 / *	°C	ISO 11357-1/-2
^[C] Temp. of deflection under load, 1.80 MPa	70 / *	°C	ISO 75-1/-2
^[C] Temp. of deflection under load, 0.45 MPa	200 / *	°C	ISO 75-1/-2
^[C] Vicat softening temperature, B	240 / *	°C	ISO 306
^[C] Coeff. of linear therm. expansion, parallel	100 / *	E-6/K	ISO 11359-1/-2
^[C] Coeff. of linear therm. expansion, normal	110 / *	E-6/K	ISO 11359-1/-2
^[C] Burning Behav. at 1.5 mm nom. thickn.	V-2 / *	class	IEC 60695-11-10
Thickness tested	1.5 / *	mm	-
Yellow Card available	yes / *	-	-
^[C] Burning Behav. at thickness h	V-2 / *	class	IEC 60695-11-10
Thickness tested	0.7 / *	mm	-

Yellow Card available	yes / *	-	-
^[C] Oxygen index	28 / *	%	ISO 4589-1/-2
ASTM Data			
UL 94 Flame rating	V-2	-	UL 94
Thickness tested	1.5	mm	-
Coefficient of Thermal Expansion, MD	100	E-6/K	ASTM D 696
Coefficient of Thermal Expansion, TD	110	E-6/K	ASTM D 696
DTUL @ 66 psi	210	°C	ASTM D 648
DTUL @ 264 psi	65	°C	ASTM D 648
Melting Temperature	263	°C	ASTM D 3418

[C]: CAMPUS

Electrical properties	dry / cond	Unit	Test Standard
ISO Data			
^[C] Relative permittivity, 100Hz	3.8 / 12.8	-	IEC 62631-2-1
^[C] Relative permittivity, 1MHz	3.5 / 4	-	IEC 62631-2-1
^[C] Dissipation factor, 100Hz	75 / 5800	E-4	IEC 62631-2-1
^[C] Dissipation factor, 1MHz	165 / 700	E-4	IEC 62631-2-1
^[C] Volume resistivity	1E13 / 1E11	Ohm*m	IEC 62631-3-1
^[C] Electric strength	31 / 28	kV/mm	IEC 60243-1
^[C] Comparative tracking index	600 / -	-	IEC 60112
ASTM Data			
Dissipation Factor, 1 MHz	0.01 / -	-	ASTM D 150
Dielectric Constant, 1 MHz	3.5 / -	-	ASTM D 150
Volume Resistivity	1E12 / -	Ohm*cm	ASTM D 257

[C]: CAMPUS

Other properties	dry / cond	Unit	Test Standard
^[C] Water absorption	8.5 / *	%	Sim. to ISO 62
^[C] Humidity absorption	2.6 / *	%	Sim. to ISO 62
^[C] Density	1140 / -	kg/m ³	ISO 1183
Water Absorption, 24hr	1.2	%	ASTM D 570
Water Absorption, Equilibrium	8.5	%	ASTM D 570
Density	1140	kg/m ³	ASTM D 792

[C]: CAMPUS

Film Properties	dry / cond	Unit	Test Standard
ISO Data			
^[C] Strain at yield, parallel	4.5 / *	%	ISO 527-3

[C]: CAMPUS

Material specific properties	dry / cond	Unit	Test Standard
ISO Data			
^[C] Viscosity number	150 / *	cm ³ /g	ISO 307, 1157, 1628

[C]: CAMPUS

Characteristics

Processing

Injection Molding, Other Extrusion, Coating

Delivery form

Pellets, Natural Color

Additives

Lubricants, Release agent

Features

Fatigue Resistance, Thermal Stability, Weldable

Chemical Resistance

General Chemical Resistance, Grease Resistance, Oil Resistance

Applications

Automotive, Electrical and Electronical

Special Characteristics

Heat stabilized or stable to heat

Regional Availability

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