Zytel® 101 NC010

PA66 Celanese

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 (-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® 101 NC010 is a general purpose polyamide 66 resin for injection molding and extrusion.

Processing/Physical Characteristics	dry / cond	Unit	Test Standard
ISO Data			
[C] Molding shrinkage, parallel	**1.4 / ***	%	ISO 294-4, 2577
[C] Molding shrinkage, normal	**1.4 / ***	%	ISO 294-4, 2577
[C] Density of melt	**980**	kg/m³	-
[C] Thermal conductivity of melt	**0.16**	W/(m K)	-
[C] Spec. heat capacity of melt	**2790**	J/(kg K)	-
[C] Eff. thermal diffusivity	**9E-8**	m²/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	**82 / 55**	MPa	ISO 527
[C] Yield strain	**4.5 / 25**	%	ISO 527
[C] Nominal strain at break	**25 / >50**	%	ISO 527
[C] Tensile creep modulus, 1h	*** / 1200**	MPa	ISO 899-1
[C] Tensile creep modulus, 1000h	*** / 700**	MPa	ISO 899-1
[C] Charpy impact strength, +23°C	**N / N**	kJ/m²	ISO 179/1eU
[C] Charpy impact strength, -30°C	**400 / N**	kJ/m²	ISO 179/1eU
[C] Charpy notched impact strength, +23°C	**5.5 / 15**	kJ/m²	ISO 179/1eA
[C] Charpy notched impact strength, -30°C	**4.5 / 3**	kJ/m²	ISO 179/1eA
[C] Abrasion resistance	**6 / ***	mm³	ISO 4649
ASTM Data			
Tensile Strength	**83 / -**	MPa	ASTM D 638
Tensile Strength at Yield	**83 / -**	MPa	ASTM D 638
Elongation at Yield	**5 / -**	%	ASTM D 638
Elongation at Break	**60 / -**	%	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
Izod Impact notched, Low-Temperature	**32 / -**	J/m	ASTM D 256
Temperature	**-40**	°C	-

[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	**65 / ***	°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	**190 / ***	°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	**262**	°C	ASTM D 3418
Limiting Oxygen Index	**28**	%	ASTM D 2863

[C]: CAMPUS

Electrical properties	**dry / cond**	**Unit**	**Test Standard**
ISO Data			
[C] Relative permittivity, 100Hz	**3.8 / 6**	-	IEC 62631-2-1
[C] Relative permittivity, 1MHz	**3.5 / 4**	-	IEC 62631-2-1
[C] Dissipation factor, 100Hz	**80 / 2100**	E-4	IEC 62631-2-1
[C] Dissipation factor, 1MHz	**180 / 750**	E-4	IEC 62631-2-1
[C] Volume resistivity	**1E13 / 1E11**	Ohm*m	IEC 62631-3-1
[C] Surface resistivity	*** / 1E12**	Ohm	IEC 62631-3-2
[C] Electric strength	**32 / 28**	kV/mm	IEC 60243-1
[C] Comparative tracking index	**600 / -**	-	IEC 60112
ASTM Data			
Dielectric Strength, Short Time	**18.1 / -**	kV/mm	ASTM D 149
Dissipation Factor, 1 MHz	**0.02 / -**	-	ASTM D 150
Dielectric Constant, 1 MHz	**3.6 / -**	-	ASTM D 150
Volume Resistivity	**1E15 / -**	Ohm*cm	ASTM D 257

[C]: CAMPUS

Optical properties	**dry / cond**	**Unit**	**Test Standard**
ISO Data			
[C] Gloss, 60°	**90 / ***	-	ISO 2813
[C] Haze	**0.02 / ***	-	ISO 14782

[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/m³	ISO 1183
Density	**1410**	kg/m³	ASTM D 792

[C]: CAMPUS

Film Properties	**dry / cond**	**Unit**	**Test Standard**
ISO Data			
[C] Maximum stress, parallel	**80 / ***	MPa	ISO 527-3
[C] Maximum stress, normal	**75 / ***	MPa	ISO 527-3
[C] Maximum strain, parallel	**300 / ***	%	ISO 527-3
[C] Maximum strain, normal	**250 / ***	%	ISO 527-3
[C] WVTR, 23°C/85%r.h.	**8 / ***	g/(m²*d)	ISO 15106-1/-2
[C] Oxygen transmission rate, 23°C/0%r.h.	**12 / ***	cm³/(m²*d*bar)	ISO 15105-1/-2

[C] Carbon Dioxide transm. rate, 23°C/0%r.h.	**45 / ***	cm³/(m²*d*bar)	ISO 15105-1/-2
[C] Thickness of specimen	**0.1 / ***	mm	-

[C]: CAMPUS

Material specific properties	dry / cond	Unit	Test Standard
ISO Data			
[C] Viscosity number	**150 / ***	cm³/g	ISO 307, 1157, 1628

[C]: CAMPUS

Characteristics

Processing
Injection Molding, Other Extrusion

Delivery form
Pellets, Natural Color

Additives
Release agent

Features
Weldable

Chemical Resistance
General Chemical Resistance

Applications
Automotive, Electrical and Electronical, General Purpose

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

Other text information

Injection molding

POSTPROCESSING

Annealing: 30min at 200°C