

Product Texts

Zytel® LCPA long chain polyamide resins provide an innovative and growing portfolio of flexible polymers with excellent thermal, chemical, and hydrolysis resistance. The diverse selection of Zytel® LCPA grades is targeted for a range of performance characteristics, balancing temperature resistance, flexibility and low permeation.

Zytel® 153HSL NC010 is a heat stabilized, lubricated polyamide 612 resin for molding and extrusion.

Processing/Physical Characteristics	dry / cond	Unit	Test Standard
ISO Data			
^[C] Molding shrinkage, parallel	1.3 / *	%	ISO 294-4, 2577
^[C] Molding shrinkage, normal	1.4 / *	%	ISO 294-4, 2577
^[C] Spec. heat capacity of melt	2770	J/(kg K)	-
^[C] Eff. thermal diffusivity	7E-8	m ² /s	-

[C]: CAMPUS

Mechanical properties	dry / cond	Unit	Test Standard
ISO Data			
^[C] Tensile Modulus	2400 / 1600	MPa	ISO 527
^[C] Yield stress	62 / 54	MPa	ISO 527
^[C] Yield strain	4.4 / 19	%	ISO 527
^[C] Nominal strain at break	30 / >50	%	ISO 527
^[C] Charpy impact strength, +23°C	N / N	kJ/m ²	ISO 179/1eU
^[C] Charpy impact strength, -30°C	N / N	kJ/m ²	ISO 179/1eU
^[C] Charpy notched impact strength, +23°C	4 / 7	kJ/m ²	ISO 179/1eA
^[C] Charpy notched impact strength, -30°C	5 / 4	kJ/m ²	ISO 179/1eA
^[C] Puncture - maximum force, +23°C	5500 / -	N	ISO 6603-2
^[C] Puncture - maximum force, -30°C	3000 / -	N	ISO 6603-2
^[C] Puncture energy, +23°C	85 / -	J	ISO 6603-2
^[C] Puncture energy, -30°C	13 / -	J	ISO 6603-2
^[C] Abrasion resistance	6 / *	mm ³	ISO 4649
^[C] Shore D hardness	78 / *	-	ISO 7619-1
ASTM Data			
Tensile Strength	61 / -	MPa	ASTM D 638
Tensile Strength at Yield	61 / -	MPa	ASTM D 638
Elongation at Yield	7 / -	%	ASTM D 638
Elongation at Break	150 / -	%	ASTM D 638
Flexural Modulus	2030 / -	MPa	ASTM D 790
Rockwell Hardness	R 114 /	-	ASTM D 785
Izod Impact notched, 1/8 in	43 / -	J/m	ASTM D 256
Izod Impact notched, Low-Temperature	43 / -	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	218 / *	°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	62 / *	°C	ISO 75-1/-2
^[C] Temp. of deflection under load, 0.45 MPa	135 / *	°C	ISO 75-1/-2
^[C] Vicat softening temperature, B	180 / *	°C	ISO 306
^[C] Coeff. of linear therm. expansion, parallel	120 / *	E-6/K	ISO 11359-1/-2
^[C] Coeff. of linear therm. expansion, normal	120 / *	E-6/K	ISO 11359-1/-2
^[C] Burning Behav. at 1.5 mm nom. thickn.	HB / *	class	IEC 60695-11-10
Thickness tested	1.5 / *	mm	-
Yellow Card available	yes / *	-	-
^[C] Burning Behav. at thickness h	HB / *	class	IEC 60695-11-10
Thickness tested	0.9 / *	mm	-
Yellow Card available	yes / *	-	-

^[C] Oxygen index	27 / *	%	ISO 4589-1/-2
ASTM Data			
UL 94 Flame rating	HB	-	UL 94
Thickness tested	1.5	mm	-
DTUL @ 264 psi	55	°C	ASTM D 648
Melting Temperature	218	°C	ASTM D 3418

[C]: CAMPUS

Electrical properties	dry / cond	Unit	Test Standard
ISO Data			
^[C] Relative permittivity, 100Hz	3.6 / 5.3	-	IEC 62631-2-1
^[C] Relative permittivity, 1MHz	3.2 / 3.4	-	IEC 62631-2-1
^[C] Dissipation factor, 100Hz	140 / 1000	E-4	IEC 62631-2-1
^[C] Dissipation factor, 1MHz	160 / 400	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	30 / 30	kV/mm	IEC 60243-1
^[C] Comparative tracking index	600 / -	-	IEC 60112
ASTM Data			
Dissipation Factor, 1 MHz	0.02 / -	-	ASTM D 150
Surface Resistivity	* / 1E15	Ohm	ASTM D 257
Volume Resistivity	1E14 / -	Ohm*cm	ASTM D 257

[C]: CAMPUS

Other properties	dry / cond	Unit	Test Standard
^[C] Water absorption	3 / *	%	Sim. to ISO 62
^[C] Humidity absorption	1.3 / *	%	Sim. to ISO 62
^[C] Density	1060 / -	kg/m ³	ISO 1183
Water Absorption, 24hr	0.25	%	ASTM D 570
Density	1060	kg/m ³	ASTM D 792

[C]: CAMPUS

Film Properties	dry / cond	Unit	Test Standard
ISO Data			
^[C] Strain at yield, parallel	4.4 / *	%	ISO 527-3

[C]: CAMPUS

Material specific properties	dry / cond	Unit	Test Standard
ISO Data			
^[C] Viscosity number	115 / *	cm ³ /g	ISO 307, 1157, 1628

[C]: CAMPUS

Characteristics

Processing

Injection Molding, Blown Film Extrusion, Film Extrusion, Pipe/Tube Extrusion, Sheet Extrusion, Wire/Cable Extrusion, Other Extrusion, Coating, Blow Molding

Delivery form

Pellets, Natural Color

Additives

Lubricants, Release agent

Features

Weldable

Chemical Resistance

General Chemical Resistance

Applications

Automotive

Regional Availability

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

Special Characteristics

Heat stabilized or stable to heat