

Product Texts

Zytel® HTN high performance polyamide resins feature high retention of properties upon exposure to elevated temperature, to high moisture, and to harsh chemical environments. Polymer families and grades of Zytel® HTN are tailored to optimize performance as well as processability.

Typical applications with Zytel® HTN include demanding applications in the automotive, electrical and electronics, domestic appliances, and construction industries.

Zytel® HTN51G35HSL NC010 is a 35% glass reinforced, heat stabilized, lubricated, hydrolysis resistant high performance polyamide resin. It is also a PPA resin.

Processing/Physical Characteristics	dry / cond	Unit	Test Standard
ISO Data			
^(C) Molding shrinkage, parallel	0.2 / *	%	ISO 294-4, 2577
^(C) Molding shrinkage, normal	0.6 / *	%	ISO 294-4, 2577
^(C) Density of melt	1230	kg/m ³	-
^(C) Thermal conductivity of melt	0.25	W/(m K)	-
^(C) Spec. heat capacity of melt	1840	J/(kg K)	-
ASTM Data			
Mold Shrinkage, MD	0.002	mm/mm	ASTM D 955
Mold Shrinkage, TD	0.009	mm/mm	ASTM D 955

^(C): CAMPUS

Mechanical properties	dry / cond	Unit	Test Standard
ISO Data			
^(C) Tensile Modulus	12000 / 12000	MPa	ISO 527
^(C) Stress at break	210 / 210	MPa	ISO 527
^(C) Strain at break	2.4 / 2.2	%	ISO 527
^(C) Tensile creep modulus, 1h	* / 11000	MPa	ISO 899-1
^(C) Tensile creep modulus, 1000h	* / 9500	MPa	ISO 899-1
^(C) Charpy impact strength, +23°C	60 / 55	kJ/m ²	ISO 179/1eU
^(C) Charpy impact strength, -30°C	60 / 50	kJ/m ²	ISO 179/1eU
^(C) Charpy notched impact strength, +23°C	11 / 11	kJ/m ²	ISO 179/1eA
^(C) Charpy notched impact strength, -30°C	10 / 10	kJ/m ²	ISO 179/1eA
ASTM Data			
Tensile Modulus	12100 / -	MPa	ASTM D 638
Tensile Strength	214 / -	MPa	ASTM D 638
Elongation at Break	2.4 / -	%	ASTM D 638
Compressive Strength	335 / -	MPa	ASTM D 695
Flexural Modulus	10300 / -	MPa	ASTM D 790
Flexural Strength	304 / -	MPa	ASTM D 790
Rockwell Hardness	R 124 /	-	ASTM D 785
Izod Impact notched, 1/8 in	112 / -	J/m	ASTM D 256
Izod Impact notched, Low-Temperature	107 / -	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	300 / *	°C	ISO 11357-1/-3
^(C) Temp. of deflection under load, 1.80 MPa	264 / *	°C	ISO 75-1/-2
^(C) Temp. of deflection under load, 0.45 MPa	284 / *	°C	ISO 75-1/-2
^(C) Vicat softening temperature, B	290 / *	°C	ISO 306
^(C) Coeff. of linear therm. expansion, parallel	18 / *	E-6/K	ISO 11359-1/-2
^(C) Coeff. of linear therm. expansion, normal	55 / *	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	0.8 / *	mm	-
Yellow Card available	yes / *	-	-
^[C] Burning rate, FMVSS, Thickness 1 mm	23	mm/min	ISO 3795 (FMVSS 302)
^[C] Oxygen index	24 / *	%	ISO 4589-1/-2
ASTM Data			
UL 94 Flame rating	HB	-	UL 94
Thickness tested	1.5	mm	-
Coefficient of Thermal Expansion, MD	18	E-6/K	ASTM D 696
Coefficient of Thermal Expansion, TD	49	E-6/K	ASTM D 696
DTUL @ 264 psi	260	°C	ASTM D 648
Melting Temperature	300	°C	ASTM D 3418
Glass Transition Temperature	140	°C	ASTM E 1356
Limiting Oxygen Index	23	%	ASTM D 2863

[C]: CAMPUS

Electrical properties	dry / cond	Unit	Test Standard
ISO Data			
^[C] Relative permittivity, 100Hz	4 / -	-	IEC 62631-2-1
^[C] Relative permittivity, 1MHz	4 / -	-	IEC 62631-2-1
^[C] Dissipation factor, 1MHz	120 / -	E-4	IEC 62631-2-1
^[C] Volume resistivity	>1E13 / 1E13	Ohm*m	IEC 62631-3-1
^[C] Surface resistivity	* / 1E14	Ohm	IEC 62631-3-2
^[C] Electric strength	36 / 36	kV/mm	IEC 60243-1
^[C] Comparative tracking index	600 / 600	-	IEC 60112
ASTM Data			
Dielectric Strength, Short Time	27 / -	kV/mm	ASTM D 149
Dissipation Factor, 1 MHz	0.02 / -	-	ASTM D 150
Dielectric Constant, 1 MHz	4 / -	-	ASTM D 150
Surface Resistivity	* / 1E14	Ohm	ASTM D 257
Volume Resistivity	>1E15 / -	Ohm*cm	ASTM D 257

[C]: CAMPUS

Other properties	dry / cond	Unit	Test Standard
^[C] Water absorption	4 / *	%	Sim. to ISO 62
^[C] Humidity absorption	1.4 / *	%	Sim. to ISO 62
^[C] Density	1470 / -	kg/m ³	ISO 1183
Water Absorption, 24hr	0.4	%	ASTM D 570
Density	1470	kg/m ³	ASTM D 792

[C]: CAMPUS

Characteristics

Processing

Injection Molding

Features

Weldable

Delivery form

Pellets, Natural Color

Chemical Resistance

General Chemical Resistance, Hydrolytically Stable

Additives

Lubricants, Release agent

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

Other text information

Injection molding

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During molding, use proper protective equipment and adequate ventilation. Avoid exposure to fumes and limit the hold up time and temperature of the resin in the machine. Purge degraded resin carefully with HDPE.

When lower mold temperatures are used, the initial warpage and shrinkage may be lower, but the surface appearance and chemical resistance may be reduced, and the dimensional change may be greater when parts are subsequently heated.