DuPont Performance Polymers Zytel® ST801A NC010A Nylon 66 (Unverified Data**)

Category : Polymer , Thermoplastic , Nylon , Nylon 66

Material Notes:

Zytel® ST801A NC010A is a Super Tough, high performance, polyamide 66 resin. It is partially UV stabilized and when appropriately colored offers limited protection to indirect sunlight exposure.Information provided by DuPont

Order this product through the following link:
http://www.lookpolymers.com/polymer_DuPont-Performance-Polymers-Zytel-ST801A-NC010A-Nylon-66-nbspUnverified-Data.php

Physical Properties	Metric	English	Comments
Density	1.07 g/cc	0.0387 lb/in³	DAM; ISO 1183
Water Absorption	1.1 % @Temperature 23.0 °C	1.1 % @Temperature 73.4 °F	DAM; Immersion 24h; ISO 62, Similar to
Linear Mold Shrinkage, Flow	0.020 cm/cm @Thickness 2.00 mm	0.020 in/in @Thickness 0.0787 in	DAM; ISO 294-4
Linear Mold Shrinkage, Transverse	0.017 cm/cm @Thickness 2.00 mm	0.017 in/in @Thickness 0.0787 in	DAM; ISO 294-4

Mechanical Properties	Metric	English	Comments
Tensile Stress	44.0 MPa @Strain 50.0 %, Temperature 23.0 °C	6380 psi @Strain 50.0 %, Temperature 73.4 °F	50%RH; ISO 527
	49.0 MPa @Strain 50.0 %, Temperature 23.0 °C	7110 psi @Strain 50.0 %, Temperature 73.4 °F	DAM; ISO 527
Tensile Strength, Yield	43.0 MPa @Temperature 23.0 °C	6240 psi @Temperature 73.4 °F	50%RH; ISO 527
	48.0 MPa @Temperature 23.0 °C	6960 psi @Temperature 73.4 °F	DAM; ISO 527
Elongation at Break	>= 50 % @Temperature 23.0 °C	>= 50 % @Temperature 73.4 °F	50%RH; ISO 527
	50 % @Temperature 23.0 °C	50 % @Temperature 73.4 °F	DAM; ISO 527
	20 %	20 %	

Mechanical Properties	Metric	English	Comments
Elongation at Yield	@Temperature 23.0 °C	@Temperature 73.4 °F	DAM; ISO 527
	>= 50 % @Temperature 23.0 °C	>= 50 % @Temperature 73.4 °F	50%RH; ISO 527
Tensile Modulus	0.900 GPa @Temperature 23.0 °C	131 ksi @Temperature 73.4 °F	50%RH; ISO 527
	2.00 GPa @Temperature 23.0 °C	290 ksi @Temperature 73.4 °F	DAM; ISO 527
Flexural Modulus	0.682 GPa @Temperature 23.0 °C	98.9 ksi @Temperature 73.4 °F	50%RH; ISO 178
	1.80 GPa @Temperature 23.0 °C	261 ksi @Temperature 73.4 °F	DAM; ISO 178
Izod Impact, Notched (ISO)	15.0 kJ/m² @Temperature -30.0 °C	7.14 ft-lb/in² @Temperature -22.0 °F	50%RH; ISO 180/1A
	15.0 kJ/m² @Temperature -30.0 °C	7.14 ft-lb/in² @Temperature -22.0 °F	DAM; ISO 180/1A
	17.0 kJ/m² @Temperature -40.0 °C	8.09 ft-lb/in² @Temperature -40.0 °F	50%RH; ISO 180/1A
	20.0 kJ/m² @Temperature -40.0 °C	9.52 ft-lb/in² @Temperature -40.0 °F	DAM; ISO 180/1A
	22.0 kJ/m² @Temperature -20.0 °C	10.5 ft-lb/in² @Temperature -4.00 °F	50%RH; ISO 180/1A
	23.0 kJ/m² @Temperature -20.0 °C	10.9 ft-lb/in² @Temperature -4.00 °F	DAM; ISO 180/1A
	73.0 kJ/m² @Temperature 23.0 °C	34.7 ft-lb/in² @Temperature 73.4 °F	DAM; ISO 180/1A
	93.0 kJ/m² @Temperature 23.0 °C	44.3 ft-lb/in² @Temperature 73.4 °F	50%RH; ISO 180/1A
Tensile Creep Modulus, 1 hour	800 MPa @Temperature 23.0 °C	116000 psi @Temperature 73.4 °F	50%RH; ISO 899
Tensile Creep Modulus, 1000 hours	700 MPa @Temperature 23.0 °C	102000 psi @Temperature 73.4 °F	50%RH; ISO 899

Mechanical Properties	Metric	English	Comments
Thermal Properties	**Metric**	**English**	**Comments**
CTE, linear, Parallel to Flow	110 µm/m-°C @Temperature -40.0 - 23.0 °C	61.1 µin/in-°F @Temperature -40.0 - 73.4 °F	DAM; ASTM E 831
	110 µm/m-°C @Temperature -40.0 - 23.0 °C	61.1 µin/in-°F @Temperature -40.0 - 73.4 °F	DAM; ISO 11359-1/-2
	120 µm/m-°C @Temperature -30.0 - 30.0 °C	66.7 µin/in-°F @Temperature -22.0 - 86.0 °F	DAM; ISO 11359-1/-2
	120 µm/m-°C @Temperature -30.0 - 30.0 °C	66.7 µin/in-°F @Temperature -22.0 - 86.0 °F	DAM; ASTM E 831
	140 µm/m-°C @Temperature 23.0 - 55.0 °C	77.8 µin/in-°F @Temperature 73.4 - 131 °F	DAM; ISO 11359-1/-2
	140 µm/m-°C @Temperature 23.0 - 55.0 °C	77.8 µin/in-°F @Temperature 73.4 - 131 °F	DAM; ASTM E 831
	160 µm/m-°C @Temperature 55.0 - 160 °C	88.9 µin/in-°F @Temperature 131 - 320 °F	DAM; ASTM E 831
	160 µm/m-°C @Temperature 55.0 - 160 °C	88.9 µin/in-°F @Temperature 131 - 320 °F	DAM; ISO 11359-1/-2
CTE, linear, Transverse to Flow	110 µm/m-°C @Temperature -30.0 - 30.0 °C	61.1 µin/in-°F @Temperature -22.0 - 86.0 °F	DAM; ASTM E 831
	110 µm/m-°C @Temperature -40.0 - 23.0 °C	61.1 µin/in-°F @Temperature -40.0 - 73.4 °F	DAM; ASTM E 831
	110 µm/m-°C @Temperature -30.0 - 30.0 °C	61.1 µin/in-°F @Temperature -22.0 - 86.0 °F	DAM; ISO 11359-1/-2
	110 µm/m-°C @Temperature -40.0 - 23.0 °C	61.1 µin/in-°F @Temperature -40.0 - 73.4 °F	DAM; ISO 11359-1/-2

Thermal Properties	Metric	English	Comments
	@Temperature 55.0 - 160 °C	@Temperature 131 - 320 °F	DAM; ISO 11359-1/-2
	130 µm/m-°C @Temperature 23.0 - 55.0 °C	72.2 µin/in-°F @Temperature 73.4 - 131 °F	DAM; ASTM E 831
	130 µm/m-°C @Temperature 55.0 - 160 °C	72.2 µin/in-°F @Temperature 131 - 320 °F	DAM; ASTM E 831
	130 µm/m-°C @Temperature 23.0 - 55.0 °C	72.2 µin/in-°F @Temperature 73.4 - 131 °F	DAM; ISO 11359-1/-2
Melting Point	262 °C	504 °F	DAM; 10°C/min; ISO 11357-1/-3
Deflection Temperature at 0.46 MPa (66 psi)	157 °C	315 °F	DAM; ISO 75-1/-2
Deflection Temperature at 1.8 MPa (264 psi)	63.0 °C	145 °F	DAM; ISO 75-1/-2
Glass Transition Temp, Tg	75.0 °C	167 °F	DAM; 10°C/min; ISO 11357-1/-2
UL RTI, Electrical	125 °C @Thickness 0.810 mm	257 °F @Thickness 0.0319 in	DAM; UL 746B
UL RTI, Mechanical with Impact	75.0 °C @Thickness 0.810 mm	167 °F @Thickness 0.0319 in	DAM; UL 746B
UL RTI, Mechanical without Impact	85.0 °C @Thickness 0.810 mm	185 °F @Thickness 0.0319 in	DAM; UL 746B
Flammability, UL94	HB @Thickness 0.810 mm	HB @Thickness 0.0319 in	DAM; IEC 60695-11-10
	HB @Thickness 0.810 mm	HB @Thickness 0.0319 in	DAM; UL94

Electrical Properties	Metric	English	Comments
Volume Resistivity	8.70e+12 ohm-cm @Temperature 23.0 °C	8.70e+12 ohm-cm @Temperature 73.4 °F	50%RH; IEC 60093
	3.70e+16 ohm-cm @Temperature 23.0 °C	3.70e+16 ohm-cm @Temperature 73.4 °F	DAM; IEC 60093

Electrical Properties	Metric	English	Comments
Surface Resistance	1.00e+12 ohm @Temperature 23.0 °C	1.00e+12 ohm @Temperature 73.4 °F	50%RH; IEC 60093
	1.20e+16 ohm @Temperature 23.0 °C	1.20e+16 ohm @Temperature 73.4 °F	DAM; IEC 60093
Dielectric Constant	3.3 @Frequency 1.00e+6 Hz, Temperature 23.0 °C	3.3 @Frequency 1.00e+6 Hz, Temperature 73.4 °F	DAM; IEC 60250
	3.5 @Frequency 1.00e+6 Hz, Temperature 23.0 °C	3.5 @Frequency 1.00e+6 Hz, Temperature 73.4 °F	50%RH; IEC 60250
	3.5 @Frequency 100 Hz, Temperature 23.0 °C	3.5 @Frequency 100 Hz, Temperature 73.4 °F	DAM; IEC 60250
	5.9 @Frequency 100 Hz, Temperature 23.0 °C	5.9 @Frequency 100 Hz, Temperature 73.4 °F	50%RH; IEC 60250
Dielectric Strength	25.0 kV/mm @Thickness 2.00 mm, Temperature 23.0 °C	635 kV/in @Thickness 0.0787 in, Temperature 73.4 °F	DAM; IEC 60243-1
	26.0 kV/mm @Thickness 2.00 mm, Temperature 23.0 °C	660 kV/in @Thickness 0.0787 in, Temperature 73.4 °F	50%RH; IEC 60243-1
Dissipation Factor	0.0050 @Frequency 100 Hz, Temperature 23.0 °C	0.0050 @Frequency 100 Hz, Temperature 73.4 °F	DAM; IEC 60250
	0.010 @Frequency 1.00e+6 Hz, Temperature 23.0 °C	0.010 @Frequency 1.00e+6 Hz, Temperature 73.4 °F	DAM; IEC 60250
	0.038 @Frequency 1.00e+6 Hz, Temperature 23.0 °C	0.038 @Frequency 1.00e+6 Hz, Temperature 73.4 °F	50%RH; IEC 60250
	0.158 @Frequency 100 Hz, Temperature 23.0 °C	0.158 @Frequency 100 Hz, Temperature 73.4 °F	50%RH; IEC 60250
	600 V	600 V	

Electrical Properties	Metric	English	Comments
Comparative Tracking Index	@Temperature 23.0 °C	@Temperature 73.4 °F	DAM; IEC 60112
	>= 600 V @Thickness 3.00 mm, Temperature 23.0 °C	>= 600 V @Thickness 0.118 in, Temperature 73.4 °F	DAM; UL 746A

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