

DuPont Performance Polymers Zytel® ST801 BK010A Nylon 66 (Unverified Data**)

Category : Polymer , Thermoplastic , Nylon , Nylon 66

Material Notes:

Super Toughened Polyamide 66 Information provided by DuPont Performance Polymers

Order this product through the following link:

http://www.lookpolymers.com/polymer_DuPont-Performance-Polymers-Zytel-ST801-BK010A-Nylon-66-nbspUnverified-Data.php

Physical Properties	Metric	English	Comments
Density	0.920 g/cc	0.0332 lb/in ³	
	1.08 g/cc	0.0390 lb/in ³	DAM; ISO 1183
Water Absorption	6.7 %	6.7 %	DAM; Sim. to ISO 62
	@Thickness 2.00 mm	@Thickness 0.0787 in	
Moisture Absorption	2.20 %	2.20 %	DAM; Sim. to ISO 62
	@Thickness 2.00 mm	@Thickness 0.0787 in	
Viscosity	78340 cP	78340 cP	ISO 11403-1 -2
	@Shear Rate 5000 1/s, Temperature 300 °C	@Shear Rate 5000 1/s, Temperature 572 °F	
	94140 cP	94140 cP	ISO 11403-1 -2
	@Shear Rate 5000 1/s, Temperature 290 °C	@Shear Rate 5000 1/s, Temperature 554 °F	
	113400 cP	113400 cP	ISO 11403-1 -2
	@Shear Rate 5000 1/s, Temperature 280 °C	@Shear Rate 5000 1/s, Temperature 536 °F	
	224640 cP	224640 cP	ISO 11403-1 -2
	@Shear Rate 500 1/s, Temperature 300 °C	@Shear Rate 500 1/s, Temperature 572 °F	
	276400 cP	276400 cP	ISO 11403-1 -2
@Shear Rate 500 1/s, Temperature 290 °C	@Shear Rate 500 1/s, Temperature 554 °F		
344660 cP	344660 cP	ISO 11403-1 -2	
@Shear Rate 500 1/s, Temperature 280 °C	@Shear Rate 500 1/s, Temperature 536 °F		
Viscosity Test	150 cm ³ /g	150 cm ³ /g	DAM; ISO 307 1157 1628
Linear Mold Shrinkage, Flow	0.018 cm/cm	0.018 in/in	DAM; ISO 294-4 2577

Linear Mold Shrinkage, Transverse Physical Properties	0.014 cm/cm Metric	0.014 in/in English	DAM; ISO 294-4 2577 Comments
Mechanical Properties	Metric	English	Comments
Tensile Stress	2.00 MPa	290 psi	50%RH; isochronous; ISO 11403-1 -2
	@Strain 0.150 %, Time 3600 sec	@Strain 0.150 %, Time 1.00 hour	
	2.00 MPa	290 psi	
	@Strain 0.200 %, Time 36000 sec	@Strain 0.200 %, Time 10.0 hour	
	2.00 MPa	290 psi	
	@Strain 0.235 %, Time 360000 sec	@Strain 0.235 %, Time 100 hour	
	2.00 MPa	290 psi	
	@Strain 0.280 %, Time 3.60e+6 sec	@Strain 0.280 %, Time 1000 hour	
	2.00 MPa	290 psi	
	@Strain 0.342 %, Time 3.60e+7 sec	@Strain 0.342 %, Time 10000 hour	
8.00 MPa	8.00 MPa	1160 psi	50%RH; isochronous; ISO 11403-1 -2
	@Strain 1.22 %, Time 360000 sec	@Strain 1.22 %, Time 100 hour	
8.00 MPa	8.00 MPa	1160 psi	50%RH; isochronous; ISO 11403-1 -2
	@Strain 1.00 %, Time 36000 sec	@Strain 1.00 %, Time 10.0 hour	
10.0 MPa	10.0 MPa	1450 psi	50%RH; isochronous; ISO 11403-1 -2
	@Time 3600 sec, Strain 1.142 %	@Time 1.00 hour, Strain 1.142 %	
10.0 MPa	10.0 MPa	1450 psi	50%RH; isochronous; ISO 11403-1 -2
	@Strain 2.23 %, Time 3.60e+6 sec	@Strain 2.23 %, Time 1000 hour	
10.0 MPa	10.0 MPa	1450 psi	50%RH; isochronous; ISO 11403-1 -2
	@Strain 2.94 %, Time 3.60e+7 sec	@Strain 2.94 %, Time 10000 hour	
Tensile Strength, Yield	43.0 MPa	6240 psi	50%RH; ISO 527-1/-2
	50.0 MPa	7250 psi	
Elongation at Break	32 %	32 %	DAM; Nominal; ISO 527-1/-2
	>= 50 %	>= 50 %	

Mechanical Properties	Metric	English	Comments
Elongation at Yield	5.7 %	5.7 %	DAM; ISO 527-1/-2
	37 %	37 %	50%RH; ISO 527-1/-2
Tensile Modulus	0.900 GPa	131 ksi	50%RH; ISO 527-1/-2
	2.00 GPa	290 ksi	DAM; ISO 527-1/-2
	0.221 GPa	32.1 ksi	50%RH; ISO 11403-1 -2
	@Temperature 120 °C	@Temperature 248 °F	
	0.2409 GPa	34.94 ksi	DAM; Dynamic; ISO 11403-1 -2
	@Temperature 170 °C	@Temperature 338 °F	
	0.267 GPa	38.7 ksi	DAM; ISO 11403-1 -2
	@Temperature 120 °C	@Temperature 248 °F	
	0.360 GPa	52.2 ksi	DAM; Dynamic; ISO 11403-1 -2
	@Temperature 110 °C	@Temperature 230 °F	
	0.568 GPa	82.4 ksi	50%RH; ISO 11403-1 -2
	@Temperature 40.0 °C	@Temperature 104 °F	
	1.647 GPa	238.9 ksi	DAM; ISO 11403-1 -2
	@Temperature 40.0 °C	@Temperature 104 °F	
	1.98 GPa	287 ksi	DAM; Dynamic; ISO 11403-1 -2
	@Temperature 30.0 °C	@Temperature 86.0 °F	
	2.13 GPa	309 ksi	DAM; Dynamic; ISO 11403-1 -2
	@Temperature -20.0 °C	@Temperature -4.00 °F	
	2.347 GPa	340.4 ksi	DAM; ISO 11403-1 -2
	@Temperature -40.0 °C	@Temperature -40.0 °F	
	2.716 GPa	393.9 ksi	50%RH; ISO 11403-1 -2
	@Temperature -40.0 °C	@Temperature -40.0 °F	
	3.22 GPa	468 ksi	DAM; Dynamic; ISO 11403-1 -2
	@Temperature -70.0 °C	@Temperature -94.0 °F	
	3.73 GPa	541 ksi	DAM; Dynamic; ISO 11403-1 -2
	@Temperature -100 °C	@Temperature -148 °F	
	0.0781 GPa	11.3 ksi	

Shear Modulus Mechanical Properties	Metric @ Temperature 160 °C	English @ Temperature 320 °F	DAM; Dynamic; ISO 11403-1 -2 Comments
	0.0992 GPa @Temperature 120 °C	14.4 ksi @Temperature 248 °F	DAM; Dynamic; ISO 11403-1 -2
	0.220 GPa @Temperature 68.0 °C	31.9 ksi @Temperature 154 °F	DAM; Dynamic; ISO 11403-1 -2
	0.6535 GPa @Temperature 20.0 °C	94.78 ksi @Temperature 68.0 °F	DAM; Dynamic; ISO 11403-1 -2
	0.719 GPa @Temperature -20.0 °C	104 ksi @Temperature -4.00 °F	DAM; Dynamic; ISO 11403-1 -2
	0.935 GPa @Temperature -50.0 °C	136 ksi @Temperature -58.0 °F	DAM; Dynamic; ISO 11403-1 -2
Charpy Impact Unnotched	NB	NB	DAM; ISO 179/1eU
	NB	NB	50%RH; ISO 179/1eU
	NB @Temperature -30.0 °C	NB @Temperature -22.0 °F	DAM; ISO 179/1eU
	NB @Temperature -30.0 °C	NB @Temperature -22.0 °F	50%RH; ISO 179/1eU
Charpy Impact, Notched	8.00 J/cm ²	38.1 ft-lb/in ²	DAM; ISO 179/1eA
	11.5 J/cm ²	54.7 ft-lb/in ²	50%RH; ISO 179/1eA
	1.70 J/cm ² @Temperature -30.0 °C	8.09 ft-lb/in ² @Temperature -22.0 °F	50%RH; ISO 179/1eA
	1.80 J/cm ² @Temperature -30.0 °C	8.57 ft-lb/in ² @Temperature -22.0 °F	DAM; ISO 179/1eA
Tensile Creep Modulus, 1 hour	588 MPa @Pressure 7.00 MPa, Temperature 60.0 °C	85300 psi @Pressure 1020 psi, Temperature 140 °F	50%RH; ISO 11403-1 -2
	621 MPa @Pressure 6.00 MPa, Temperature 60.0 °C	90100 psi @Pressure 870 psi, Temperature 140 °F	50%RH; ISO 11403-1 -2
	667 MPa @Pressure 5.00 MPa, Temperature 60.0 °C	96700 psi @Pressure 725 psi, Temperature 140 °F	50%RH; ISO 11403-1 -2

Mechanical Properties	Metric Pa	English psi	Comments
	@Pressure 4.00 MPa, Temperature 60.0 °C	@Pressure 580 psi, Temperature 140 °F	50%RH; ISO 11403-1 -2
	811 MPa	118000 psi	
	@Pressure 3.00 MPa, Temperature 60.0 °C	@Pressure 435 psi, Temperature 140 °F	50%RH; ISO 11403-1 -2
	876 MPa	127000 psi	
	@Pressure 10.0 MPa, Temperature 23.0 °C	@Pressure 1450 psi, Temperature 73.4 °F	50%RH; ISO 11403-1 -2
	936 MPa	136000 psi	
	@Pressure 2.00 MPa, Temperature 60.0 °C	@Pressure 290 psi, Temperature 140 °F	50%RH; ISO 11403-1 -2
	1020 MPa	147000 psi	
	@Pressure 8.00 MPa, Temperature 23.0 °C	@Pressure 1160 psi, Temperature 73.4 °F	50%RH; ISO 11403-1 -2
	1110 MPa	161000 psi	
	@Pressure 1.00 MPa, Temperature 60.0 °C	@Pressure 145 psi, Temperature 140 °F	50%RH; ISO 11403-1 -2
	1120 MPa	163000 psi	
	@Pressure 6.00 MPa, Temperature 23.0 °C	@Pressure 870 psi, Temperature 73.4 °F	50%RH; ISO 11403-1 -2

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