

DuPont Performance Polymers Zytel® 7301 NC010 Nylon 6 (Unverified Data**)

Category : Polymer , Thermoplastic , Nylon , Nylon 6

Material Notes:

Zytel® 7301 NC010 is a general purpose, unlubricated polyamide 6 resin for extrusion applications. Information provided by DuPont Performance Polymers

Order this product through the following link:

http://www.lookpolymers.com/polymer_DuPont-Performance-Polymers-Zytel-7301-NC010-Nylon-6-nbspUnverified-Data.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.13 g/cc	1.13 g/cc	DAM; ASTM D792
Density	1.13 g/cc	0.0408 lb/in ³	DAM; ISO 1183
Water Absorption	3.0 %	3.0 %	Equilibrium 50%RH; DAM; ISO 62, Similar to
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	9.5 %	9.5 %	Saturation, immersed; DAM; ISO 62, Similar to
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Linear Mold Shrinkage	0.010 cm/cm	0.010 in/in	Flow; DAM
	@Thickness 3.00 mm	@Thickness 0.118 in	

Mechanical Properties	Metric	English	Comments
Tensile Strength	60.0 MPa	8700 psi	50%RH; ASTM D638
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	80.0 MPa	11600 psi	DAM; ASTM D638
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Tensile Strength, Yield	41.0 MPa	5950 psi	50%RH; ASTM D638
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	50.0 MPa	7250 psi	50%RH; ISO 527
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	80.0 MPa	11600 psi	DAM; ASTM D638
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	80.0 MPa	11600 psi	DAM; ISO 527
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Elongation at Break	25 %	25 %	DAM; nominal; ISO 527

Mechanical Properties	@Temperature 23.0 °C Metric	@Temperature 73.4 °F English	Comments
	50 %	50 %	50mm/min; DAM; ISO 527
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	60 %	60 %	DAM; ASTM D638
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	>= 100 %	>= 100 %	50mm/min; 50%RH; ISO 527
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	240 %	240 %	50%RH; ASTM D638
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Elongation at Yield	4.5 %	4.5 %	DAM; ISO 527
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	4.8 %	4.8 %	DAM; ASTM D638
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	23 %	23 %	50%RH; ASTM D638
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Tensile Modulus	1.50 GPa	218 ksi	50%RH; ISO 527
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	2.90 GPa	421 ksi	DAM; ISO 527
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Flexural Strength	27.0 MPa	3920 psi	50%RH; ASTM D790
	@Strain 5.00 %, Temperature 23.0 °C	@Strain 5.00 %, Temperature 73.4 °F	
	110 MPa	16000 psi	DAM; ASTM D790
	@Strain 5.00 %, Temperature 23.0 °C	@Strain 5.00 %, Temperature 73.4 °F	
Flexural Modulus	0.695 GPa	101 ksi	50%RH; ASTM D790
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	2.30 GPa	334 ksi	DAM; ISO 178
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	2.78 GPa	403 ksi	DAM; ASTM D790
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Izod Impact, Notched	0.620 J/cm	1.16 ft-lb/in	DAM; ASTM D256

Mechanical Properties	@Temperature 23.0 °C Metric	@Temperature 73.4 °F English	Comments
	7.50 J/cm	14.1 ft-lb/in	50%RH; ASTM D256
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Izod Impact, Unnotched	NB	NB	50%RH; ASTM D4812
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	NB	NB	DAM; ASTM D4812
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Izod Impact, Notched (ISO)	6.00 kJ/m ²	2.86 ft-lb/in ²	DAM; ISO 180/1A
	@Temperature -40.0 °C	@Temperature -40.0 °F	
	6.00 kJ/m ²	2.86 ft-lb/in ²	DAM; ISO 180/1A
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Izod Impact, Unnotched (ISO)	NB	NB	50%RH; ISO 180/1U
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Charpy Impact Unnotched	NB	NB	DAM; ISO 179/1eU
	@Temperature -40.0 °C	@Temperature -40.0 °F	
	NB	NB	50%RH; ISO 179/1eU
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	NB	NB	DAM; ISO 179/1eU
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Charpy Impact, Notched	0.600 J/cm ²	2.86 ft-lb/in ²	DAM; ISO 179/1eA
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	500 µm/m-°C	278 µin/in-°F	DAM; ASTM E 831
	@Temperature 23.0 - 55.0 °C	@Temperature 73.4 - 131 °F	
	500 µm/m-°C	278 µin/in-°F	DAM; ISO 11359-1/-2
	@Temperature 23.0 - 55.0 °C	@Temperature 73.4 - 131 °F	
CTE, linear, Transverse to Flow	100 µm/m-°C	55.6 µin/in-°F	DAM; ASTM E 831
	@Temperature 23.0 - 55.0 °C	@Temperature 73.4 - 131 °F	
	100 µm/m-°C	55.6 µin/in-°F	DAM; ISO 11359-1/-2

Thermal Properties	Metric @Temperature 23.0 - 35.0 °C	English @Temperature 73.4 - 95.0 °F	Comments
Melting Point	220 °C	428 °F	DAM; ASTM D3418
	221 °C	430 °F	10°C/min; DAM; ISO 11357-1/-3
Deflection Temperature at 0.46 MPa (66 psi)	158 °C	316 °F	DAM; ASTM D648
	160 °C	320 °F	DAM; ISO 75-1/-2
Deflection Temperature at 1.8 MPa (264 psi)	55.0 °C	131 °F	DAM; ISO 75-1/-2
	55.0 °C	131 °F	DAM; ASTM D648

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+12 ohm-cm	1.00e+12 ohm-cm	50%RH; IEC 60093
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	1.00e+15 ohm-cm	1.00e+15 ohm-cm	DAM; IEC 60093
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Surface Resistance	1.00e+10 ohm	1.00e+10 ohm	50%RH; IEC 60167
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	1.00e+13 ohm	1.00e+13 ohm	DAM; IEC 60167
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Dielectric Constant	3.5	3.5	DAM; IEC 60250
	@Frequency 1.00e+6 Hz, Temperature 23.0 °C	@Frequency 1.00e+6 Hz, Temperature 73.4 °F	
	7.0	7.0	50%RH; IEC 60250
	@Frequency 1.00e+6 Hz, Temperature 23.0 °C	@Frequency 1.00e+6 Hz, Temperature 73.4 °F	
Comparative Tracking Index	600 V	600 V	DAM; IEC 60112
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	600 V	600 V	50%RH; IEC 60112
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Processing Properties	Metric	English	Comments
Melt Temperature	230 °C	446 °F	DAM; Optimum; Extrusion

Processing Properties	230 - 240 °C Metric	446 - 464 °F English	DAM; Extrusion Comments
	260 - 280 °C	500 - 536 °F	DAM; Injection Molding
	270 °C	518 °F	DAM; Optimum; Injection Molding
Mold Temperature	70.0 °C	158 °F	DAM; optimum; Injection Molding
	50.0 - 90.0 °C	122 - 194 °F	DAM; Injection Molding
Drying Temperature	80.0 °C	176 °F	DAM; Extrusion
	80.0 °C	176 °F	DAM; Injection Molding
Dry Time	2.00 - 4.00 hour	2.00 - 4.00 hour	DAM; Injection Molding
	4.00 - 6.00 hour	4.00 - 6.00 hour	DAM; Extrusion
Moisture Content	<= 0.040 %	<= 0.040 %	DAM; Extrusion
	<= 0.20 %	<= 0.20 %	DAM; Injection Molding

Descriptive Properties	Value	Comments
Appearance	Natural Color	DAM
Drying Recommended	Yes, if moisture content of resin exceeds recommended level	DAM
Features	Chemical Resistance, Good	DAM

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