

Overview of materials for Nylon 11, Unreinforced

Category : Polymer , Thermoplastic , Nylon , Nylon 11 , Nylon 11, Unreinforced

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Nylon 11, Unreinforced". Each property range of values reported is minimum and maximum values of appropriate MatWeb entries. The comments report the average value, and number of data points used to calculate the average. The values are not necessarily typical of any specific grade, especially less common values and those that can be most affected by additives or processing methods.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Overview-of-materials-for-Nylon-11-Unreinforced.php

Physical Properties	Metric	English	Comments
Density	1.00 - 1.05 g/cc	0.0361 - 0.0379 lb/in³	Average value: 1.03 g/cc Grade Count:36
Water Absorption	0.230 - 1.90 %	0.230 - 1.90 %	Average value: 1.26 % Grade Count:19
Moisture Absorption at Equilibrium	0.750 - 1.10 %	0.750 - 1.10 %	Average value: 0.943 % Grade Count:7
Linear Mold Shrinkage	0.00400 - 0.0180 cm/cm	0.00400 - 0.0180 in/in	Average value: 0.0126 cm/cm Grade Count:4
Melt Flow	0.800 - 56.0 g/10 min	0.800 - 56.0 g/10 min	Average value: 16.7 g/10 min Grade Count:18

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	105 - 110	105 - 110	Average value: 107 Grade Count:6
Tensile Strength, Ultimate	40.0 - 68.9 MPa	5800 - 10000 psi	Average value: 52.3 MPa Grade Count:14
Tensile Strength, Yield	15.0 - 44.0 MPa	2180 - 6380 psi	Average value: 35.1 MPa Grade Count:25
Elongation at Break	10.0 - 400 %	10.0 - 400 %	Average value: 126 % Grade Count:37
Elongation at Yield	5.00 - 42.0 %	5.00 - 42.0 %	Average value: 17.1 % Grade Count:24
Modulus of Elasticity	0.185 - 1.80 GPa	26.8 - 261 ksi	Average value: 1.08 GPa Grade Count:30
Flexural Yield Strength	51.7 - 89.6 MPa	7500 - 13000 psi	Average value: 77.0 MPa Grade Count:3
Flexural Modulus	0.380 - 1.38 GPa	55.1 - 200 ksi	Average value: 0.985 GPa Grade Count:11
Izod Impact, Notched	0.400 - 8.01 J/cm	0.749 - 15.0 ft-lb/in	Average value: 2.40 J/cm Grade Count:9
	0.260 - 0.260 J/cm @Temperature -40.0 - -	0.487 - 0.487 ft-lb/in @Temperature -40.0 - -	Average value: 0.260 J/cm Grade Count:1

Mechanical Properties	40.0 °C Metric	40.0 °F English	Comments
Izod Impact, Unnotched	6.41 - 5340 J/cm	12.0 - 10000 ft-lb/in	Average value: 6.41 J/cm Grade Count:3
Charpy Impact Unnotched	1000 J/cm² - NB	4760 ft-lb/in² - NB	Grade Count:19
	999.9 - 999.9 J/cm² @Temperature -30.0 - - 30.0 °C	4759 - 4759 ft-lb/in² @Temperature -22.0 - - 22.0 °F	Grade Count:2
Charpy Impact, Notched	0.730 J/cm² - NB	3.47 ft-lb/in² - NB	Average value: 1.88 J/cm² Grade Count:18
	0.490 - 2.42 J/cm² @Temperature -30.0 - - 30.0 °C	2.33 - 11.5 ft-lb/in² @Temperature -22.0 - - 22.0 °F	Average value: 1.17 J/cm² Grade Count:18

Thermal Properties	Metric	English	Comments
CTE, linear	85.0 - 120 µm/m-°C	47.2 - 66.7 µin/in-°F	Average value: 96.4 µm/m-°C Grade Count:14
Thermal Conductivity	0.230 - 0.346 W/m-K	1.60 - 2.40 BTU-in/hr-ft²-°F	Average value: 0.276 W/m-K Grade Count:4
Melting Point	175 - 191 °C	347 - 376 °F	Average value: 183 °C Grade Count:31
Maximum Service Temperature, Air	80.0 - 150 °C	176 - 302 °F	Average value: 103 °C Grade Count:3
Deflection Temperature at 0.46 MPa (66 psi)	70.0 - 150 °C	158 - 302 °F	Average value: 140 °C Grade Count:20
Deflection Temperature at 1.8 MPa (264 psi)	40.0 - 55.0 °C	104 - 131 °F	Average value: 49.8 °C Grade Count:24
Vicat Softening Point	140 - 160 °C	284 - 320 °F	Average value: 154 °C Grade Count:11
Flammability, UL94	HB - V-2	HB - V-2	Grade Count:22
Oxygen Index	22.0 - 25.0 %	22.0 - 25.0 %	Average value: 24.0 % Grade Count:3

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+11 - 2.00e+15 ohm-cm	1.00e+11 - 2.00e+15 ohm-cm	Average value: 2.79e+14 ohm-cm Grade Count:13
Surface Resistance	5.00e+11 - 1.00e+14 ohm	5.00e+11 - 1.00e+14 ohm	Average value: 6.72e+13 ohm Grade Count:9
Dielectric Constant	3.10 - 4.00	3.10 - 4.00	Average value: 3.55 Grade Count:4
Dielectric Strength	19.7 - 40.0 kV/mm	500 - 1020 kV/in	Average value: 29.2 kV/mm Grade Count:13
Dissipation Factor	0.000325 - 0.0500	0.000325 - 0.0500	Average value: 0.00538 Grade Count:7

Electrical Properties	Metric	English	Comments
Comparative Tracking Index	600 V	600 V	Average value: 600 V Grade Count:6

Processing Properties	Metric	English	Comments
Processing Temperature	216 - 282 °C	420 - 540 °F	Average value: 251 °C Grade Count:3
Mold Temperature	25.0 - 65.6 °C	77.0 - 150 °F	Average value: 49.4 °C Grade Count:4
Drying Temperature	79.4 - 80.0 °C	175 - 176 °F	Average value: 79.8 °C Grade Count:3
Injection Pressure	68.9 - 103 MPa	10000 - 15000 psi	Average value: 86.2 MPa Grade Count:3

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