

Overview of materials for Nylon 66, Unreinforced

Category : Polymer , Thermoplastic , Nylon , Nylon 66 , Nylon 66, Unreinforced

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Nylon 66, 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-66-Unreinforced.php

Physical Properties	Metric	English	Comments
Density	1.02 - 2.70 g/cc	0.0368 - 0.0975 lb/in ³	Average value: 1.14 g/cc Grade Count:328
	0.980 - 0.980 g/cc @Temperature 290 - 290 °C	0.0354 - 0.0354 lb/in ³ @Temperature 554 - 554 °F	Average value: 0.980 g/cc Grade Count:1
Water Absorption	0.700 - 9.00 %	0.700 - 9.00 %	Average value: 4.39 % Grade Count:170
Moisture Absorption at Equilibrium	0.100 - 8.50 %	0.100 - 8.50 %	Average value: 2.42 % Grade Count:140
Water Absorption at Saturation	1.70 - 9.00 %	1.70 - 9.00 %	Average value: 7.91 % Grade Count:35
Viscosity	2.73 - 145 cP	2.73 - 145 cP	Average value: 51.2 cP Grade Count:8
Viscosity Test	115 - 330 cm ³ /g	115 - 330 cm ³ /g	Average value: 167 cm ³ /g Grade Count:16
Linear Mold Shrinkage	0.00100 - 0.0340 cm/cm	0.00100 - 0.0340 in/in	Average value: 0.0148 cm/cm Grade Count:214
Linear Mold Shrinkage, Transverse	0.00122 - 0.0250 cm/cm	0.00122 - 0.0250 in/in	Average value: 0.0164 cm/cm Grade Count:70
Melt Flow	2.00 - 148 g/10 min	2.00 - 148 g/10 min	Average value: 44.6 g/10 min Grade Count:34
Spiral Flow	104 - 105 cm	40.9 - 41.3 in	Average value: 104 cm Grade Count:4

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	55.0 - 90.0	55.0 - 90.0	Average value: 75.0 Grade Count:27
Hardness, Rockwell R	78.0 - 121	78.0 - 121	Average value: 114 Grade Count:66
Hardness, Shore D	77.0 - 88.0	77.0 - 88.0	Average value: 81.6 Grade Count:7
			Average value: 141 MPa Grade

Ball Indentation Hardness Mechanical Properties	85.0 - 180 MPa Metric	12300 - 26100 psi English	Count:11 Comments
Tensile Strength, Ultimate	15.0 - 100 MPa	2180 - 14500 psi	Average value: 71.3 MPa Grade Count:141
	28.0 - 116 MPa @Temperature -40.0 - 80.0 °C	4060 - 16800 psi @Temperature -40.0 - 176 °F	Average value: 73.0 MPa Grade Count:2
Tensile Strength, Yield	30.0 - 98.0 MPa	4350 - 14200 psi	Average value: 72.2 MPa Grade Count:209
Elongation at Break	1.60 - 300 %	1.60 - 300 %	Average value: 54.0 % Grade Count:280
	>= 100 % @Temperature 60.0 - 150 °C	>= 100 % @Temperature 140 - 302 °F	Average value: 100 % Grade Count:1
Elongation at Yield	3.40 - 100 %	3.40 - 100 %	Average value: 14.9 % Grade Count:153
Modulus of Elasticity	0.700 - 5.00 GPa	102 - 725 ksi	Average value: 2.51 GPa Grade Count:195
	0.350 - 1.90 GPa @Temperature 60.0 - 150 °C	50.8 - 276 ksi @Temperature 140 - 302 °F	Average value: 0.850 GPa Grade Count:1
Flexural Yield Strength	11.0 - 140 MPa	1600 - 20300 psi	Average value: 93.6 MPa Grade Count:197
	29.9922 - 140 MPa @Temperature -40.0 - 90.0 °C	4350.01 - 20300 psi @Temperature -40.0 - 194 °F	Average value: 71.0 MPa Grade Count:4
Flexural Modulus	0.750 - 7.60 GPa	109 - 1100 ksi	Average value: 2.49 GPa Grade Count:236
	0.600 - 4.30 GPa @Temperature -40.0 - 90.0 °C	87.0 - 624 ksi @Temperature -40.0 - 194 °F	Average value: 1.92 GPa Grade Count:4
Compressive Yield Strength	7.00 - 100 MPa	1020 - 14500 psi	Average value: 46.3 MPa Grade Count:6
Poissons Ratio	0.380 - 0.450	0.380 - 0.450	Average value: 0.404 Grade Count:12
Shear Modulus	1.06 - 1.07 GPa	154 - 155 ksi	Average value: 1.07 GPa Grade Count:3
Shear Strength	50.0 - 65.0 MPa	7250 - 9430 psi	Average value: 58.0 MPa Grade Count:3
Izod Impact, Notched	0.300 - 8.54 J/cm	0.562 - 16.0 ft-lb/in	Average value: 1.04 J/cm Grade Count:119
	0.350 - 0.480 J/cm	0.656 - 0.899 ft-lb/in	

Mechanical Properties	Metric @ Temperature -40.0 - - 40.0 °C	English @ Temperature -40.0 - - 40.0 °F	Comments Average value: 0.427 J/cm Grade Count:1
	0.490332 - 0.490332 J/cm @Temperature 3.20 - 3.20 °C	0.918594 - 0.918594 ft-lb/in @Temperature 37.8 - 37.8 °F	Average value: 0.427 J/cm Grade Count:1
	0.490332 - 0.490332 J/cm @Thickness 23.0 - 23.0 mm	0.918594 - 0.918594 ft-lb/in @Thickness 0.906 - 0.906 in	Average value: 0.427 J/cm Grade Count:1
Izod Impact, Unnotched	0.534 J/cm - NB	1.00 ft-lb/in - NB	Average value: 9.53 J/cm Grade Count:9
Izod Impact, Notched (ISO)	3.15 kJ/m² - NB	1.50 ft-lb/in² - NB	Average value: 13.3 kJ/m² Grade Count:104
	3.00 - 50.0 kJ/m² @Temperature -40.0 - - 20.0 °C	1.43 - 23.8 ft-lb/in² @Temperature -40.0 - - 4.00 °F	Average value: 9.42 kJ/m² Grade Count:39
Izod Impact, Unnotched (ISO)	25.0 kJ/m² - NB	11.9 ft-lb/in² - NB	Average value: 67.3 kJ/m² Grade Count:9
	300 kJ/m² - NB @Temperature -30.0 - - 30.0 °C	143 ft-lb/in² - NB @Temperature -22.0 - - 22.0 °F	Average value: 300 kJ/m² Grade Count:3
Charpy Impact Unnotched	2.00 J/cm² - NB	9.52 ft-lb/in² - NB	Average value: 9.76 J/cm² Grade Count:152
	4.00 J/cm² - NB @Temperature -40.0 - - 20.0 °C	19.0 ft-lb/in² - NB @Temperature -40.0 - - 4.00 °F	Average value: 10.9 J/cm² Grade Count:98
Charpy Impact, Notched	0.100 - 1000 J/cm²	0.476 - 4760 ft-lb/in²	Average value: 1.21 J/cm² Grade Count:161
	0.100 - 3.10 J/cm² @Temperature -40.0 - - 20.0 °C	0.476 - 14.8 ft-lb/in² @Temperature -40.0 - - 4.00 °F	Average value: 0.690 J/cm² Grade Count:100
Puncture Energy	13.1 - 108 J	9.66 - 79.7 ft-lb	Average value: 36.1 J Grade Count:6
	5.10 - 60.0 J @Temperature -30.0 - - 30.0 °C	3.76 - 44.3 ft-lb @Temperature -22.0 - - 22.0 °F	Average value: 25.2 J Grade Count:6
Coefficient of Friction	0.260 - 0.550	0.260 - 0.550	Average value: 0.369 Grade Count:6
Tensile Creep Modulus, 1 hour	1000 - 3400 MPa	145000 - 493000 psi	Average value: 2320 MPa Grade Count:14
			Average value: 706 MPa Grade

Tensile Creep Modulus, 1000 hours Mechanical Properties	450 - 980 MPa Metric	65300 - 142000 psi English	Count:14 Comments
Taber Abrasion, mg/1000 Cycles	4.00 - 8.00	4.00 - 8.00	Average value: 5.88 Grade Count:8

Electrical Properties	Metric	English	Comments
Electrical Resistivity	4000 - 1.00e+19 ohm-cm	4000 - 1.00e+19 ohm-cm	Average value: 6.75e+16 ohm-cm Grade Count:139
Surface Resistance	350 - 2.50e+16 ohm	350 - 2.50e+16 ohm	Average value: 6.57e+14 ohm Grade Count:78
Dielectric Constant	1.90 - 15.0	1.90 - 15.0	Average value: 4.35 Grade Count:103
Dielectric Strength	11.8 - 120 kV/mm	300 - 3050 kV/in	Average value: 34.3 kV/mm Grade Count:109
Dissipation Factor	0.000200 - 0.320	0.000200 - 0.320	Average value: 0.0639 Grade Count:57

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