

Overview of materials for Nylon 66, Impact Grade

Category : Polymer , Thermoplastic , Nylon , Nylon 66 , Nylon 66, Impact Grade

Material Notes:

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

Physical Properties	Metric	English	Comments
Density	1.03 - 1.46 g/cc	0.0372 - 0.0527 lb/in ³	Average value: 1.11 g/cc Grade Count:301
	0.950 - 0.950 g/cc @Temperature 285 - 285 °C	0.0343 - 0.0343 lb/in ³ @Temperature 545 - 545 °F	Average value: 0.950 g/cc Grade Count:1
Water Absorption	0.400 - 8.00 %	0.400 - 8.00 %	Average value: 1.81 % Grade Count:144
Moisture Absorption at Equilibrium	0.170 - 3.10 %	0.170 - 3.10 %	Average value: 2.10 % Grade Count:76
Water Absorption at Saturation	5.50 - 9.00 %	5.50 - 9.00 %	Average value: 6.77 % Grade Count:19
Linear Mold Shrinkage	0.00150 - 0.0350 cm/cm	0.00150 - 0.0350 in/in	Average value: 0.0158 cm/cm Grade Count:263
Linear Mold Shrinkage, Transverse	0.00800 - 0.0302 cm/cm	0.00800 - 0.0302 in/in	Average value: 0.0171 cm/cm Grade Count:78
Melt Flow	1.00 - 2.00 g/10 min	1.00 - 2.00 g/10 min	Average value: 1.81 g/10 min Grade Count:10
Spiral Flow	0.800 - 77.0 cm	0.315 - 30.3 in	Average value: 51.6 cm Grade Count:3

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	60.0 - 93.0	60.0 - 93.0	Average value: 76.4 Grade Count:14
Hardness, Rockwell R	69.0 - 120	69.0 - 120	Average value: 108 Grade Count:95
Hardness, Shore D	70.0 - 81.0	70.0 - 81.0	Average value: 73.7 Grade Count:6
Ball Indentation Hardness	80.0 - 160 MPa	11600 - 23200 psi	Average value: 114 MPa Grade Count:10
Tensile Strength, Ultimate	20.7 - 331 MPa	3000 - 48000 psi	Average value: 58.7 MPa Grade Count:190
			Average value: 58.5 MPa Grade

Tensile Strength, Yield Mechanical Properties	35.0 - 155 MPa Metric	5080 - 22500 psi English	Count:161 Comments
Elongation at Break	1.00 - 260 %	1.00 - 260 %	Average value: 55.5 % Grade Count:260
	>= 100 % @Temperature 60.0 - 150 °C	>= 100 % @Temperature 140 - 302 °F	Average value: 100 % Grade Count:1
Elongation at Yield	2.00 - 210 %	2.00 - 210 %	Average value: 23.6 % Grade Count:67
Modulus of Elasticity	0.600 - 41.4 GPa	87.0 - 6000 ksi	Average value: 2.65 GPa Grade Count:125
	0.170 - 2.716 GPa @Temperature -40.0 - 150 °C	24.7 - 393.9 ksi @Temperature -40.0 - 302 °F	Average value: 0.783 GPa Grade Count:2
Flexural Yield Strength	17.0 - 507 MPa	2470 - 73500 psi	Average value: 79.8 MPa Grade Count:236
	15.0 - 15.0 MPa @Temperature 90.0 - 90.0 °C	2180 - 2180 psi @Temperature 194 - 194 °F	Average value: 15.0 MPa Grade Count:1
Flexural Modulus	0.0700 - 36.2 GPa	10.2 - 5250 ksi	Average value: 2.51 GPa Grade Count:279
	0.300 - 0.300 GPa @Temperature 90.0 - 90.0 °C	43.5 - 43.5 ksi @Temperature 194 - 194 °F	Average value: 0.300 GPa Grade Count:1
Compressive Yield Strength	30.3 - 100 MPa	4400 - 14500 psi	Average value: 63.5 MPa Grade Count:6
Shear Modulus	>= 0.0219 GPa @Temperature -50.0 - 250 °C	>= 3.18 ksi @Temperature -58.0 - 482 °F	Average value: 0.318 GPa Grade Count:1
Shear Strength	41.0 - 57.0 MPa	5950 - 8270 psi	Average value: 49.0 MPa Grade Count:4
Izod Impact, Notched	0.481 - 5340 J/cm	0.900 - 10000 ft-lb/in	Average value: 5.07 J/cm Grade Count:165
	0.300 - 5.339 J/cm @Temperature -40.0 - - 40.0 °C	0.562 - 10.00 ft-lb/in @Temperature -40.0 - - 40.0 °F	Average value: 1.51 J/cm Grade Count:5
	0.5339 - 2.6695 J/cm @Temperature -40.0 - 72.8 °C	1.000 - 5.0011 ft-lb/in @Temperature -40.0 - 163 °F	Average value: 1.51 J/cm Grade Count:18
	0.5339 - 2.6695 J/cm @Thickness 3.17 - 3.17	1.000 - 5.0011 ft-lb/in @Thickness 0.125 -	Average value: 1.51 J/cm Grade Count:18

Mechanical Properties	mm Metric	0.125 in English	Comments
Izod Impact, Unnotched	0.430 J/cm ² - NB	0.806 ft-lb/in ² - NB	Average value: 8.83 J/cm ² Grade Count:45
Izod Impact, Notched (ISO)	10.0 kJ/m ² - NB	4.76 ft-lb/in ² - NB	Average value: 47.3 kJ/m ² Grade Count:80
	8.00 - 90.0 kJ/m ² @Temperature -40.0 - - 20.0 °C	3.81 - 42.8 ft-lb/in ² @Temperature -40.0 - - 4.00 °F	Average value: 24.1 kJ/m ² Grade Count:52
Izod Impact, Unnotched (ISO)	96.0 kJ/m ² - NB	45.7 ft-lb/in ² - NB	Average value: 97.0 kJ/m ² Grade Count:12
	NB - NB @Temperature -30.0 - - 30.0 °C	NB - NB @Temperature -22.0 - - 22.0 °F	Grade Count:5
Charpy Impact Unnotched	9.00 J/cm ² - NB	42.8 ft-lb/in ² - NB	Average value: 13.2 J/cm ² Grade Count:93
	4.40 J/cm ² - NB @Temperature -40.0 - - 20.0 °C	20.9 ft-lb/in ² - NB @Temperature -40.0 - - 4.00 °F	Average value: 8.98 J/cm ² Grade Count:68
Charpy Impact, Notched	0.450 J/cm ² - NB	2.14 ft-lb/in ² - NB	Average value: 4.74 J/cm ² Grade Count:102
	0.450 - 6.50 J/cm ² @Temperature -40.0 - - 20.0 °C	2.14 - 30.9 ft-lb/in ² @Temperature -40.0 - - 4.00 °F	Average value: 2.06 J/cm ² Grade Count:72
Gardner Impact	36.2 - 38.0 J	26.7 - 28.0 ft-lb	Average value: 36.5 J Grade Count:5
	12.2024 - 12.2024 J @Temperature -40.0 - - 40.0 °C	9.00001 - 9.00001 ft-lb @Temperature -40.0 - - 40.0 °F	Average value: 12.2 J Grade Count:1
Dart Drop, Total Energy	50.0 - 50.0 J @Temperature -20.0 - - 20.0 °C	36.9 - 36.9 ft-lb @Temperature -4.00 - - 4.00 °F	Average value: 50.0 J Grade Count:1
Tensile Creep Modulus, 1000 hours	400 - 840 MPa	58000 - 122000 psi	Average value: 663 MPa Grade Count:3

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00 - 1.00e+16 ohm-cm	1.00 - 1.00e+16 ohm-cm	Average value: 1.16e+15 ohm-cm Grade Count:126
Surface Resistance	1.00 - 1.00e+16 ohm	1.00 - 1.00e+16 ohm	Average value: 8.14e+14 ohm Grade Count:69
Static Decay	1.00 - 2.00 sec	1.00 - 2.00 sec	Average value: 1.67 sec Grade Count:3

Electrical Properties	Metric	English	Comments
Dielectric Strength	9.84 - 120 kV/mm	250 - 3050 kV/in	Average value: 31.2 kV/mm Grade Count:101
Dissipation Factor	0.00670 - 0.200	0.00670 - 0.200	Average value: 0.0361 Grade Count:25
Dielectric Loss Index	0.0130 - 0.130	0.0130 - 0.130	Average value: 0.0469 Grade Count:9
Arc Resistance	60.0 - 179 sec	60.0 - 179 sec	Average value: 108 sec Grade Count:20
Comparative Tracking Index	525 - 600 V	525 - 600 V	Average value: 586 V Grade Count:61
Hot Wire Ignition, HWI	7.00 - 59.0 sec	7.00 - 59.0 sec	Average value: 14.8 sec Grade Count:14
High Amp Arc Ignition, HAI	120 arcs	120 arcs	Average value: 120 arcs Grade Count:14

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