

Overview of materials for Nylon 66, Glass Reinforced, Impact Grade

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

Material Notes:

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

Physical Properties	Metric	English	Comments
Density	1.12 - 1.60 g/cc	0.0405 - 0.0578 lb/in ³	Average value: 1.29 g/cc Grade Count:122
Filler Content	5.00 - 50.0 %	5.00 - 50.0 %	Average value: 23.3 % Grade Count:34
Water Absorption	0.300 - 6.40 %	0.300 - 6.40 %	Average value: 0.937 % Grade Count:71
Moisture Absorption at Equilibrium	0.450 - 2.70 %	0.450 - 2.70 %	Average value: 1.69 % Grade Count:20
Water Absorption at Saturation	4.50 - 6.50 %	4.50 - 6.50 %	Average value: 5.70 % Grade Count:5
Linear Mold Shrinkage	0.000600 - 0.0160 cm/cm	0.000600 - 0.0160 in/in	Average value: 0.00542 cm/cm Grade Count:110
Linear Mold Shrinkage, Transverse	0.00700 - 0.0130 cm/cm	0.00700 - 0.0130 in/in	Average value: 0.00929 cm/cm Grade Count:14
Ash	33.0 - 33.0 % @Temperature 650 - 650 °C	33.0 - 33.0 % @Temperature 1200 - 1200 °F	Average value: 33.0 % Grade Count:1

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	76.0 - 95.0	76.0 - 95.0	Average value: 87.1 Grade Count:14
Hardness, Rockwell R	98.0 - 122	98.0 - 122	Average value: 115 Grade Count:63
Tensile Strength, Ultimate	58.6 - 221 MPa	8500 - 32100 psi	Average value: 116 MPa Grade Count:81
Tensile Strength, Yield	46.9 - 159 MPa	6800 - 23000 psi	Average value: 116 MPa Grade Count:41
Elongation at Break	2.00 - 12.0 %	2.00 - 12.0 %	Average value: 4.27 % Grade Count:117
Elongation at Yield	3.00 - 6.00 %	3.00 - 6.00 %	Average value: 3.85 % Grade Count:4
			Average value: 6.95 GPa Grade

Modulus of Elasticity Mechanical Properties	Metric	English	Count:59 Comments
Flexural Yield Strength	16.0 - 360 MPa	2320 - 52200 psi	Average value: 166 MPa Grade Count:97
Flexural Modulus	2.07 - 36.2 GPa	300 - 5250 ksi	Average value: 6.17 GPa Grade Count:106
Compressive Yield Strength	28.0 - 179 MPa	4060 - 26000 psi	Average value: 120 MPa Grade Count:22
Izod Impact, Notched	0.374 - 6.51 J/cm	0.700 - 12.2 ft-lb/in	Average value: 1.65 J/cm Grade Count:92
	1.0678 - 1.0678 J/cm @Temperature -40.0 - - 40.0 °C	2.0004 - 2.0004 ft-lb/in @Temperature -40.0 - - 40.0 °F	Average value: 1.07 J/cm Grade Count:9
	1.0678 - 1.0678 J/cm @Thickness 3.17 - 3.17 mm	2.0004 - 2.0004 ft-lb/in @Thickness 0.125 - 0.125 in	Average value: 1.07 J/cm Grade Count:9
Izod Impact, Unnotched	4.64 - 5340 J/cm	8.69 - 10000 ft-lb/in	Average value: 8.60 J/cm Grade Count:47
Izod Impact, Notched (ISO)	2.94 - 30.0 kJ/m ²	1.40 - 14.3 ft-lb/in ²	Average value: 15.1 kJ/m ² Grade Count:17
	6.00 - 19.0 kJ/m ² @Temperature -40.0 - - 20.0 °C	2.86 - 9.04 ft-lb/in ² @Temperature -40.0 - - 4.00 °F	Average value: 11.6 kJ/m ² Grade Count:11
Izod Impact, Unnotched (ISO)	50.0 - 90.0 kJ/m ²	23.8 - 42.8 ft-lb/in ²	Average value: 79.3 kJ/m ² Grade Count:7
	50.0 - 95.0 kJ/m ² @Temperature -30.0 - - 30.0 °C	23.8 - 45.2 ft-lb/in ² @Temperature -22.0 - - 22.0 °F	Average value: 75.8 kJ/m ² Grade Count:6
Charpy Impact Unnotched	3.50 - 10.5 J/cm ²	16.7 - 50.0 ft-lb/in ²	Average value: 7.54 J/cm ² Grade Count:18
	3.50 - 8.70 J/cm ² @Temperature -30.0 - - 30.0 °C	16.7 - 41.4 ft-lb/in ² @Temperature -22.0 - - 22.0 °F	Average value: 5.29 J/cm ² Grade Count:9
Charpy Impact, Notched	0.600 - 4.00 J/cm ²	2.86 - 19.0 ft-lb/in ²	Average value: 2.15 J/cm ² Grade Count:21
	0.500 - 1.80 J/cm ² @Temperature -30.0 - - 30.0 °C	2.38 - 8.57 ft-lb/in ² @Temperature -22.0 - - 22.0 °F	Average value: 1.10 J/cm ² Grade Count:11

Thermal Properties	Metric	English	Comments
CTE, linear	13.0 - 400 µm/m-°C	7.22 - 222 µin/in-°F	Average value: 60.2 µm/m-°C Grade Count:46

Thermal Properties	Metric	English	Comments
CTE, linear, transverse to Flow	78.0 - 130 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	43.3 - 72.2 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	Average value: 103 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ Grade Count:3
Thermal Conductivity	0.300 - 0.504 W/m-K	2.08 - 3.50 BTU-in/hr-ft ² -°F	Average value: 0.422 W/m-K Grade Count:11
Melting Point	252 - 275 °C	486 - 527 °F	Average value: 258 °C Grade Count:50
Maximum Service Temperature, Air	110 - 250 °C	230 - 482 °F	Average value: 160 °C Grade Count:3
Deflection Temperature at 0.46 MPa (66 psi)	210 - 304 °C	410 - 580 °F	Average value: 248 °C Grade Count:90
Deflection Temperature at 1.8 MPa (264 psi)	75.0 - 252 °C	167 - 486 °F	Average value: 228 °C Grade Count:110
Vicat Softening Point	228 - 250 °C	442 - 482 °F	Average value: 237 °C Grade Count:12
Flammability, UL94	HB - V-0	HB - V-0	Grade Count:80

Electrical Properties	Metric	English	Comments
Electrical Resistivity	10.0 - 1.00e+15 ohm-cm	10.0 - 1.00e+15 ohm-cm	Average value: 2.03e+14 ohm-cm Grade Count:66
Surface Resistance	1.00e+6 - 1.00e+15 ohm	1.00e+6 - 1.00e+15 ohm	Average value: 4.05e+13 ohm Grade Count:30
Dielectric Constant	3.50 - 6.90	3.50 - 6.90	Average value: 4.22 Grade Count:19
Dielectric Strength	11.8 - 90.0 kV/mm	300 - 2290 kV/in	Average value: 24.1 kV/mm Grade Count:46
Dissipation Factor	0.0130 - 0.0200	0.0130 - 0.0200	Average value: 0.0152 Grade Count:10
Dielectric Loss Index	0.0120 - 0.190	0.0120 - 0.190	Average value: 0.0751 Grade Count:7
Arc Resistance	82.0 - 90.0 sec	82.0 - 90.0 sec	Average value: 85.8 sec Grade Count:8
Comparative Tracking Index	350 - 600 V	350 - 600 V	Average value: 522 V Grade Count:8

Processing Properties	Metric	English	Comments
Processing Temperature	270 - 300 °C	518 - 572 °F	Average value: 285 °C Grade Count:38
Nozzle Temperature	250 - 304 °C	482 - 580 °F	Average value: 283 °C Grade Count:4
Melt Temperature	260 - 310 °C	500 - 590 °F	Average value: 282 °C Grade Count:23
Mold Temperature	50.0 - 110 °C	122 - 230 °F	Average value: 84.9 °C Grade Count:55
Drying Temperature	73.9 - 100 °C	165 - 212 °F	Average value: 81.3 °C Grade Count:17

Processing Properties	Metric 0.180 - 1.60 %	English 0.180 - 1.60 %	Comments Average value: 0.291 % Grade Count:34
Injection Pressure	4.96 - 124 MPa	720 - 18000 psi	Average value: 93.5 MPa Grade Count:34

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