

Overview of materials for Nylon 6, 50% Glass Fiber Filled

Category : Polymer , Thermoplastic , Nylon , Nylon 6 , Nylon 6, 50% Glass Fiber Filled

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Nylon 6, 50% Glass Fiber Filled". Specific grades with glass content between 45% and 54% are included. 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-6-50-Glass-Fiber-Filled.php

Physical Properties	Metric	English	Comments
Density	1.30 - 1.80 g/cc	0.0470 - 0.0650 lb/in ³	Average value: 1.56 g/cc Grade Count:202
	1.24 - 1.33 g/cc @Temperature 270 - 290 °C	0.0448 - 0.0480 lb/in ³ @Temperature 518 - 554 °F	Average value: 1.29 g/cc Grade Count:2
Filler Content	45.0 - 60.0 %	45.0 - 60.0 %	Average value: 49.9 % Grade Count:54
Water Absorption	0.200 - 5.10 %	0.200 - 5.10 %	Average value: 2.24 % Grade Count:85
	1.20 - 1.60 % @Temperature 70.0 - 70.0 °C	1.20 - 1.60 % @Temperature 158 - 158 °F	Average value: 1.28 % Grade Count:6
Moisture Absorption at Equilibrium	0.250 - 4.80 %	0.250 - 4.80 %	Average value: 1.35 % Grade Count:67
	0.450 - 1.00 % @Temperature 70.0 - 70.0 °C	0.450 - 1.00 % @Temperature 158 - 158 °F	Average value: 0.717 % Grade Count:1
	0.450 - 1.00 % @Time 180000 - 1.44e+6 sec	0.450 - 1.00 % @Time 50.0 - 400 hour	Average value: 0.717 % Grade Count:1
Water Absorption at Saturation	3.90 - 8.00 %	3.90 - 8.00 %	Average value: 4.72 % Grade Count:28
Viscosity	100 - 400 cP @Temperature 230 - 270 °C	100 - 400 cP @Temperature 446 - 518 °F	Average value: 212 cP Grade Count:1
	100 - 400 cP @Shear Rate 100 - 1000 1/s	100 - 400 cP @Shear Rate 100 - 1000 1/s	Average value: 212 cP Grade Count:1

Physical Properties	Metric	English	Comments
Maximum Moisture Content	0.100	0.100	Average value: 0.100 Grade Count:14
Linear Mold Shrinkage	0.000200 - 0.0350 cm/cm	0.000200 - 0.0350 in/in	Average value: 0.00317 cm/cm Grade Count:150
	0.00200 - 0.00200 cm/cm @Temperature 80.0 - 80.0 °C	0.00200 - 0.00200 in/in @Temperature 176 - 176 °F	Average value: 0.00200 cm/cm Grade Count:6
Linear Mold Shrinkage, Transverse	0.000500 - 0.0141 cm/cm	0.000500 - 0.0141 in/in	Average value: 0.00707 cm/cm Grade Count:76
	0.00600 - 0.00600 cm/cm @Temperature 80.0 - 80.0 °C	0.00600 - 0.00600 in/in @Temperature 176 - 176 °F	Average value: 0.00600 cm/cm Grade Count:6
Melt Flow	1.00 - 38.8 g/10 min	1.00 - 38.8 g/10 min	Average value: 16.8 g/10 min Grade Count:14
Spiral Flow	34.0 - 50.0 cm	13.4 - 19.7 in	Average value: 43.8 cm Grade Count:12

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	65.0 - 124	65.0 - 124	Average value: 119 Grade Count:34
Hardness, Shore D	78.0 - 98.0	78.0 - 98.0	Average value: 87.5 Grade Count:10
Ball Indentation Hardness	140 - 290 MPa	20300 - 42100 psi	Average value: 237 MPa Grade Count:20
Tensile Strength, Ultimate	25.0 - 605 MPa	3630 - 87700 psi	Average value: 196 MPa Grade Count:148
	55.0 - 321.64 MPa @Temperature -40.0 - 150 °C	7980 - 46650 psi @Temperature -40.0 - 302 °F	Average value: 139 MPa Grade Count:4
	115 - 180 MPa @Temperature 70.0 - 175 °C	16700 - 26100 psi @Temperature 158 - 347 °F	Average value: 139 MPa Grade Count:4
	115 - 180 MPa @Time 180000 - 7.20e+7 sec	16700 - 26100 psi @Time 50.0 - 20000 hour	Average value: 139 MPa Grade Count:4
Tensile Strength, Yield	150 - 240 MPa	21800 - 34800 psi	Average value: 202 MPa Grade Count:48
Elongation at Break	1.00 - 8.00 %	1.00 - 8.00 %	Average value: 3.10 % Grade Count:178

Mechanical Properties	Metric	English	Comments
	2.25 - 9.00 % @Temperature 4.44 - 150 °C	2.25 - 9.00 % @Temperature 40.0 - 302 °F	Average value: 4.76 % Grade Count:3
Elongation at Yield	1.00 - 4.50 %	1.00 - 4.50 %	Average value: 2.65 % Grade Count:10
Modulus of Elasticity	0.0130 - 30.1 GPa	1.89 - 4370 ksi	Average value: 13.7 GPa Grade Count:136
	3.80 - 18.25 GPa @Temperature -40.0 - 150 °C	551 - 2647 ksi @Temperature -40.0 - 302 °F	Average value: 10.1 GPa Grade Count:5
	13.5 - 15.0 GPa @Temperature 70.0 - 70.0 °C	1960 - 2180 ksi @Temperature 158 - 158 °F	Average value: 10.1 GPa Grade Count:1
	13.5 - 15.0 GPa @Time 180000 - 1.44e+6 sec	1960 - 2180 ksi @Time 50.0 - 400 hour	Average value: 10.1 GPa Grade Count:1
Flexural Yield Strength	175 - 840 MPa	25400 - 122000 psi	Average value: 310 MPa Grade Count:127
	100 - 433.06 MPa @Temperature -40.0 - 121 °C	14500 - 62810 psi @Temperature -40.0 - 250 °F	Average value: 243 MPa Grade Count:3
Flexural Modulus	0.910 - 147 GPa	132 - 21300 ksi	Average value: 13.8 GPa Grade Count:136
	4.50 - 15.4443 GPa @Temperature -40.0 - 121 °C	653 - 2240.03 ksi @Temperature -40.0 - 250 °F	Average value: 9.91 GPa Grade Count:3
Compressive Yield Strength	160 - 274 MPa	23200 - 39700 psi	Average value: 208 MPa Grade Count:5
Shear Modulus	>= 0.528 GPa @Temperature -50.0 - 200 °C	>= 76.6 ksi @Temperature -58.0 - 392 °F	Average value: 1.35 GPa Grade Count:1
Izod Impact, Notched	0.908 - 4.97 J/cm	1.70 - 9.30 ft-lb/in	Average value: 2.10 J/cm Grade Count:60
	1.15 - 5.97968 J/cm @Temperature -40.0 - 121 °C	2.15 - 11.2024 ft-lb/in @Temperature -40.0 - 250 °F	Average value: 2.55 J/cm Grade Count:2
	1.01441 - 1.01441 J/cm @Temperature -40.0 - 40.0 °C	1.90041 - 1.90041 ft-lb/in @Temperature -40.0 - 40.0 °F	Average value: 2.55 J/cm Grade Count:1

Mechanical Properties	1.01441 - 1.01441 Metric J/cm	1.90041 - 1.90041 ft- English lb/in	Comments Average value: 2.55 J/cm Grade Count:1
	@Thickness 3.17 - 3.17 mm	@Thickness 0.125 - 0.125 in	
Izod Impact, Unnotched	1.39 - 5340 J/cm	2.60 - 10000 ft-lb/in	Average value: 11.7 J/cm Grade Count:35
Izod Impact, Notched (ISO)	12.0 - 147 kJ/m ²	5.71 - 69.8 ft-lb/in ²	Average value: 20.8 kJ/m ² Grade Count:50
	11.0 - 20.0 kJ/m ² @Temperature -40.0 - - 20.0 °C	5.23 - 9.52 ft-lb/in ² @Temperature -40.0 - - 4.00 °F	Average value: 14.6 kJ/m ² Grade Count:17
Izod Impact, Unnotched (ISO)	70.0 kJ/m ² - NB	33.3 ft-lb/in ² - NB	Average value: 89.9 kJ/m ² Grade Count:19
	75.0 kJ/m ² - NB @Temperature -30.0 - - 30.0 °C	35.7 ft-lb/in ² - NB @Temperature -22.0 - - 22.0 °F	Average value: 88.7 kJ/m ² Grade Count:10
Charpy Impact Unnotched	1.50 J/cm ² - NB	7.14 ft-lb/in ² - NB	Average value: 9.27 J/cm ² Grade Count:116
	1.40 - 999.9 J/cm ² @Temperature -40.0 - 30.0 °C	6.66 - 4759 ft-lb/in ² @Temperature -40.0 - 86.0 °F	Average value: 8.05 J/cm ² Grade Count:68
Charpy Impact, Notched	0.600 - 4.00 J/cm ²	2.86 - 19.0 ft-lb/in ²	Average value: 2.02 J/cm ² Grade Count:113

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