

Overview of materials for Nylon 6, 20% Glass Fiber Filled

Category : Polymer , Thermoplastic , Nylon , Nylon 6 , Nylon 6, 20% Glass Fiber Filled

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Nylon 6, 20% Glass Fiber Filled". Specific grades with glass content between 15% and 24% 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-6-20-Glass-Fiber-Filled.php

Physical Properties	Metric	English	Comments
Density	1.14 - 1.67 g/cc	0.0412 - 0.0603 lb/in ³	Average value: 1.27 g/cc Grade Count:363
	1.07 - 1.07 g/cc @Temperature 270 - 270 °C	0.0387 - 0.0387 lb/in ³ @Temperature 518 - 518 °F	Average value: 1.07 g/cc Grade Count:1
Filler Content	15.0 - 25.0 %	15.0 - 25.0 %	Average value: 17.8 % Grade Count:75
Water Absorption	0.150 - 9.50 %	0.150 - 9.50 %	Average value: 3.65 % Grade Count:160
	2.40 - 2.90 % @Temperature 70.0 - 70.0 °C	2.40 - 2.90 % @Temperature 158 - 158 °F	Average value: 2.65 % Grade Count:4
Moisture Absorption at Equilibrium	0.170 - 8.00 %	0.170 - 8.00 %	Average value: 2.40 % Grade Count:104
Water Absorption at Saturation	5.00 - 9.00 %	5.00 - 9.00 %	Average value: 7.59 % Grade Count:39
Viscosity	300000 - 350000 cP @Temperature 280 - 280 °C	300000 - 350000 cP @Temperature 536 - 536 °F	Average value: 325000 cP Grade Count:2
	300000 - 350000 cP @Shear Rate 1000 - 1000 1/s	300000 - 350000 cP @Shear Rate 1000 - 1000 1/s	Average value: 325000 cP Grade Count:2
Viscosity Test	140 - 150 cm ³ /g	140 - 150 cm ³ /g	Average value: 148 cm ³ /g Grade Count:8
Maximum Moisture Content	0.100	0.100	Average value: 0.100 Grade Count:6
Linear Mold Shrinkage	0.00100 - 0.0200 cm/cm	0.00100 - 0.0200 in/in	Average value: 0.00511 cm/cm Grade Count:287
	0.00400 - 0.00700		

Physical Properties	cm/cm Metric	0.00400 - 0.00700 in/in English	Comments
	@Temperature 80.0 - 80.0 °C	@Temperature 176 - 176 °F	Average value: 0.00567 cm/cm Grade Count:3
Linear Mold Shrinkage, Transverse	0.00160 - 0.0197 cm/cm	0.00160 - 0.0197 in/in	Average value: 0.00903 cm/cm Grade Count:127
	0.00800 - 0.0100 cm/cm	0.00800 - 0.0100 in/in	Average value: 0.00867 cm/cm Grade Count:3
	@Temperature 80.0 - 80.0 °C	@Temperature 176 - 176 °F	
Melt Flow	1.00 - 100 g/10 min	1.00 - 100 g/10 min	Average value: 26.4 g/10 min Grade Count:55
Spiral Flow	55.0 - 100 cm	21.7 - 39.4 in	Average value: 82.4 cm Grade Count:16

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell L	110 - 123	110 - 123	Average value: 117 Grade Count:4
Hardness, Rockwell M	80.0 - 100	80.0 - 100	Average value: 91.1 Grade Count:9
Hardness, Rockwell R	90.0 - 122	90.0 - 122	Average value: 117 Grade Count:61
Hardness, Shore D	73.0 - 91.0	73.0 - 91.0	Average value: 79.5 Grade Count:11
Ball Indentation Hardness	70.0 - 200 MPa	10200 - 29000 psi	Average value: 155 MPa Grade Count:31
Tensile Strength, Ultimate	13.8 - 180 MPa	2000 - 26100 psi	Average value: 105 MPa Grade Count:277
	10.0 - 163 MPa	1450 - 23600 psi	Average value: 69.4 MPa Grade Count:8
	@Temperature -40.0 - 150 °C	@Temperature -40.0 - 302 °F	
	60.0 - 75.0 MPa	8700 - 10900 psi	Average value: 69.4 MPa Grade Count:2
	@Temperature 130 - 175 °C	@Temperature 266 - 347 °F	
	60.0 - 75.0 MPa	8700 - 10900 psi	Average value: 69.4 MPa Grade Count:2
	@Time 1.80e+7 - 7.20e+7 sec	@Time 5000 - 20000 hour	
Tensile Strength, Yield	60.0 - 195 MPa	8700 - 28300 psi	Average value: 114 MPa Grade Count:91
	53.0 - 53.0 MPa	7690 - 7690 psi	Average value: 53.0 MPa Grade Count:1
	@Temperature 80.0 - 80.0 °C	@Temperature 176 - 176 °F	
Elongation at Break	1.00 - 28.0 %	1.00 - 28.0 %	Average value: 5.10 % Grade Count:316

Mechanical Properties	Metric 5.0 %	English 5.0 %	Comments
	@Temperature -40.0 - 150 °C	@Temperature -40.0 - 302 °F	Average value: 5.57 % Grade Count:4
Elongation at Yield	2.00 - 18.0 %	2.00 - 18.0 %	Average value: 6.31 % Grade Count:27
	1.70 - 8.60 %	1.70 - 8.60 %	
	@Temperature 80.0 - 150 °C	@Temperature 176 - 302 °F	Average value: 3.76 % Grade Count:3
Modulus of Elasticity	0.0630 - 14.3 GPa	9.14 - 2070 ksi	Average value: 5.31 GPa Grade Count:238
	0.886 - 6.50 GPa	129 - 943 ksi	
	@Temperature -20.0 - 200 °C	@Temperature -4.00 - 392 °F	Average value: 3.09 GPa Grade Count:4
Flexural Yield Strength	55.0 - 300 MPa	7980 - 43500 psi	Average value: 167 MPa Grade Count:233
	45.0 - 240 MPa	6530 - 34800 psi	
	@Temperature -40.0 - 90.0 °C	@Temperature -40.0 - 194 °F	Average value: 116 MPa Grade Count:4
Flexural Modulus	1.50 - 10.3 GPa	218 - 1490 ksi	Average value: 5.11 GPa Grade Count:252
	1.70 - 8.00 GPa	247 - 1160 ksi	
	@Temperature -40.0 - 120 °C	@Temperature -40.0 - 248 °F	Average value: 3.83 GPa Grade Count:5
Compressive Yield Strength	103 - 145 MPa	14900 - 21000 psi	Average value: 127 MPa Grade Count:9
Poissons Ratio	0.350 - 0.380	0.350 - 0.380	Average value: 0.356 Grade Count:5
Shear Modulus	1.37 - 2.60 GPa	199 - 377 ksi	Average value: 2.16 GPa Grade Count:6
	>= 0.0108 GPa	>= 1.57 ksi	
	@Temperature -100 - 200 °C	@Temperature -148 - 392 °F	Average value: 1.02 GPa Grade Count:2
Izod Impact, Notched	0.300 - 2.51 J/cm	0.562 - 4.70 ft-lb/in	Average value: 0.896 J/cm Grade Count:124
	0.300 - 0.600 J/cm	0.562 - 1.12 ft-lb/in	
	@Temperature -40.0 - - 20.0 °C	@Temperature -40.0 - - 4.00 °F	Average value: 0.752 J/cm Grade Count:4
	0.588399 - 1.49492 J/cm	1.10231 - 2.80060 ft-lb/in	
	@Temperature -30.0 - - 20.0 °C	@Temperature -22.0 - - 4.00 °F	Average value: 0.752 J/cm Grade Count:5

Mechanical Properties	Metric 0.528399 - 1.49492 J/cm	English 7.12231 - 2.80060 ft- lb/in	Comments
	@Thickness 3.17 - 6.40 mm	@Thickness 0.125 - 0.252 in	Average value: 0.752 J/cm Grade Count:5
Izod Impact, Unnotched	4.81 - 10.7 J/cm	9.00 - 20.0 ft-lb/in	Average value: 6.43 J/cm Grade Count:22
Izod Impact, Notched (ISO)	4.00 - 64.0 kJ/m ²	1.90 - 30.5 ft-lb/in ²	Average value: 11.1 kJ/m ² Grade Count:73
	3.00 - 13.0 kJ/m ² @Temperature -40.0 - - 20.0 °C	1.43 - 6.19 ft-lb/in ² @Temperature -40.0 - - 4.00 °F	Average value: 7.82 kJ/m ² Grade Count:32
Izod Impact, Unnotched (ISO)	10.0 - 90.0 kJ/m ²	4.76 - 42.8 ft-lb/in ²	Average value: 54.4 kJ/m ² Grade Count:29
	30.0 - 79.0 kJ/m ² @Temperature -40.0 - - 30.0 °C	14.3 - 37.6 ft-lb/in ² @Temperature -40.0 - - 22.0 °F	Average value: 45.7 kJ/m ² Grade Count:22
Charpy Impact Unnotched	1.50 J/cm ² - NB	7.14 ft-lb/in ² - NB	Average value: 6.09 J/cm ² Grade Count:181
	1.50 J/cm ² - NB @Temperature -40.0 - 30.0 °C	7.14 ft-lb/in ² - NB @Temperature -40.0 - 86.0 °F	Average value: 4.74 J/cm ² Grade Count:124

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