

## Overview of materials for Nylon 6, 40% Glass Fiber Filled

Category : Polymer , Thermoplastic , Nylon , Nylon 6 , Nylon 6, 40% Glass Fiber Filled

### Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Nylon 6, 40% Glass Fiber Filled". Specific grades with glass content between 35% and 44% 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-6-40-Glass-Fiber-Filled.php](http://www.lookpolymers.com/polymer_Overview-of-materials-for-Nylon-6-40-Glass-Fiber-Filled.php)

Physical Properties	Metric	English	Comments
Density	1.28 - 1.75 g/cc	0.0462 - 0.0632 lb/in <sup>3</sup>	Average value: 1.43 g/cc Grade Count:232
	1.24 - 1.24 g/cc @Temperature >=250 °C	0.0448 - 0.0448 lb/in <sup>3</sup> @Temperature >=482 °F	Average value: 1.24 g/cc Grade Count:1
Filler Content	35.0 - 45.0 %	35.0 - 45.0 %	Average value: 39.3 % Grade Count:50
Water Absorption	0.200 - 7.10 %	0.200 - 7.10 %	Average value: 3.21 % Grade Count:116
	1.50 - 2.10 % @Temperature 70.0 - 70.0 °C	1.50 - 2.10 % @Temperature 158 - 158 °F	Average value: 1.80 % Grade Count:4
Moisture Absorption at Equilibrium	0.250 - 6.20 %	0.250 - 6.20 %	Average value: 1.93 % Grade Count:74
Water Absorption at Saturation	4.80 - 7.50 %	4.80 - 7.50 %	Average value: 5.92 % Grade Count:34
Additive Loading	40.0 %	40.0 %	Average value: 40.0 % Grade Count:3
Viscosity	2.60 - 50.0 cP	2.60 - 50.0 cP	Average value: 18.4 cP Grade Count:3
	190000 - 190000 cP @Temperature 280 - 280 °C	190000 - 190000 cP @Temperature 536 - 536 °F	Average value: 190000 cP Grade Count:2
	190000 - 190000 cP @Shear Rate 1000 - 1000 1/s	190000 - 190000 cP @Shear Rate 1000 - 1000 1/s	Average value: 190000 cP Grade Count:2
Viscosity Test	140 - 150 cm <sup>3</sup> /g	140 - 150 cm <sup>3</sup> /g	Average value: 144 cm <sup>3</sup> /g Grade Count:5
Maximum Moisture Content	0.100	0.100	Average value: 0.100 Grade Count:4

Physical Properties	Metric	English	Comments
	0.00300 - 0.00300 cm/cm	0.00300 - 0.00300 in/in	Average value: 0.00391 cm/cm Grade Count:13
	@Temperature 80.0 - 80.0 °C	@Temperature 176 - 176 °F	Average value: 0.00300 cm/cm Grade Count:2
Linear Mold Shrinkage, Transverse	0.000700 - 0.0590 cm/cm	0.000700 - 0.0590 in/in	Average value: 0.00787 cm/cm Grade Count:72
	0.00600 - 0.00700 cm/cm	0.00600 - 0.00700 in/in	Average value: 0.00650 cm/cm Grade Count:2
	@Temperature 80.0 - 80.0 °C	@Temperature 176 - 176 °F	
Melt Flow	1.00 - 78.7 g/10 min	1.00 - 78.7 g/10 min	Average value: 32.5 g/10 min Grade Count:22
Spiral Flow	48.0 - 610 cm	18.9 - 240 in	Average value: 163 cm Grade Count:10

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell L	112	112	Average value: 112 Grade Count:3
Hardness, Rockwell M	88.0 - 100	88.0 - 100	Average value: 92.3 Grade Count:8
Hardness, Rockwell R	109 - 124	109 - 124	Average value: 121 Grade Count:40
Hardness, Shore D	77.0 - 91.0	77.0 - 91.0	Average value: 82.5 Grade Count:5
Ball Indentation Hardness	84.0 - 250 MPa	12200 - 36300 psi	Average value: 180 MPa Grade Count:22
Tensile Strength, Ultimate	85.0 - 237 MPa	12300 - 34400 psi	Average value: 166 MPa Grade Count:185
	77.0 - 281.306 MPa	11200 - 40800.1 psi	Average value: 104 MPa Grade Count:4
	@Temperature -40.0 - 150 °C	@Temperature -40.0 - 302 °F	
	97.5 - 102.5 MPa	14100 - 14870 psi	Average value: 104 MPa Grade Count:2
	@Temperature 130 - 175 °C	@Temperature 266 - 347 °F	
	97.5 - 102.5 MPa	14100 - 14870 psi	Average value: 104 MPa Grade Count:2
	@Time 1.80e+7 - 7.20e+7 sec	@Time 5000 - 20000 hour	
	40.0 - 160 MPa	5800 - 23200 psi	Average value: 104 MPa Grade Count:1
	@Strain 1.00 - 9.00 %	@Strain 1.00 - 9.00 %	
	40.0 - 160 MPa	5800 - 23200 psi	Average value: 104 MPa Grade

Mechanical Properties	@Temperature 60.0 - 150 °C Metric	@Temperature 140 - 302 °F English	Count:1 Comments
Tensile Strength, Yield	105 - 234 MPa	15200 - 34000 psi	Average value: 180 MPa Grade Count:55
Elongation at Break	1.00 - 11.0 %	1.00 - 11.0 %	Average value: 3.66 % Grade Count:201
	2.60 - 7.00 %	2.60 - 7.00 %	Average value: 5.09 % Grade Count:3
	@Temperature -40.0 - 150 °C	@Temperature -40.0 - 302 °F	
Elongation at Yield	2.00 - 9.50 %	2.00 - 9.50 %	Average value: 3.84 % Grade Count:25
Modulus of Elasticity	1.31 - 15.9 GPa	190 - 2300 ksi	Average value: 9.89 GPa Grade Count:162
	2.086 - 12.28 GPa	302.6 - 1781 ksi	Average value: 7.14 GPa Grade Count:5
	@Temperature -40.0 - 200 °C	@Temperature -40.0 - 392 °F	
Flexural Yield Strength	110 - 352 MPa	16000 - 51100 psi	Average value: 253 MPa Grade Count:152
	138 - 450 MPa	20000 - 65300 psi	Average value: 249 MPa Grade Count:5
	@Temperature -40.0 - 121 °C	@Temperature -40.0 - 250 °F	
Flexural Modulus	1.18 - 13.8 GPa	171 - 2000 ksi	Average value: 9.49 GPa Grade Count:167
	4.83 - 12.4795 GPa	701 - 1810.03 ksi	Average value: 6.81 GPa Grade Count:5
	@Temperature -40.0 - 121 °C	@Temperature -40.0 - 250 °F	
Compressive Yield Strength	149 - 258 MPa	21600 - 37400 psi	Average value: 184 MPa Grade Count:12
Poissons Ratio	0.350	0.350	Average value: 0.350 Grade Count:3
Shear Modulus	4.60 - 5.00 GPa	667 - 725 ksi	Average value: 4.73 GPa Grade Count:3
Izod Impact, Notched	0.427 - 3.68 J/cm	0.800 - 6.90 ft-lb/in	Average value: 1.51 J/cm Grade Count:86
	1.91 - 5.12544 J/cm	3.58 - 9.60205 ft-lb/in	Average value: 1.85 J/cm Grade Count:3
	@Temperature -40.0 - 121 °C	@Temperature -40.0 - 250 °F	
	0.74746 - 1.28136 J/cm	1.4003 - 2.40051 ft-lb/in	Average value: 1.85 J/cm Grade Count:3
	@Temperature -40.0 - 40.0 °C	@Temperature -40.0 - 40.0 °F	
	0.74746 - 1.28136	1.4003 - 2.40051 ft-	

Mechanical Properties	J/cm Metric	lb/in English	Comments
	@Thickness 3.17 - 3.17 mm	@Thickness 0.125 - 0.125 in	Average value: 1.85 J/cm Grade Count:3
Izod Impact, Unnotched	1.33 - 14.4 J/cm	2.50 - 27.0 ft-lb/in	Average value: 10.8 J/cm Grade Count:39
Izod Impact, Notched (ISO)	7.10 - 79.0 kJ/m <sup>2</sup>	3.38 - 37.6 ft-lb/in <sup>2</sup>	Average value: 18.9 kJ/m <sup>2</sup> Grade Count:57
	10.0 - 27.0 kJ/m <sup>2</sup>  @Temperature -40.0 - - 20.0 °C	4.76 - 12.8 ft-lb/in <sup>2</sup>  @Temperature -40.0 - - 4.00 °F	Average value: 13.5 kJ/m <sup>2</sup> Grade Count:21
Izod Impact, Unnotched (ISO)	11.0 - 90.0 kJ/m <sup>2</sup>	5.23 - 42.8 ft-lb/in <sup>2</sup>	Average value: 73.9 kJ/m <sup>2</sup> Grade Count:16
	10.0 - 90.0 kJ/m <sup>2</sup>  @Temperature -30.0 - - 30.0 °C	4.76 - 42.8 ft-lb/in <sup>2</sup>  @Temperature -22.0 - - 22.0 °F	Average value: 63.5 kJ/m <sup>2</sup> Grade Count:6
Charpy Impact Unnotched	3.50 J/cm <sup>2</sup> - NB	16.7 ft-lb/in <sup>2</sup> - NB	Average value: 9.02 J/cm <sup>2</sup> Grade Count:124
	3.30 J/cm <sup>2</sup> - NB  @Temperature -40.0 - 30.0 °C	15.7 ft-lb/in <sup>2</sup> - NB  @Temperature -40.0 - 86.0 °F	Average value: 7.76 J/cm <sup>2</sup> Grade Count:77

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