

Overview of materials for Nylon 12, 50% Glass Fiber Filled

Category : Polymer , Thermoplastic , Nylon , Nylon 12 , Nylon 12, 50% Glass Fiber Filled

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Nylon 12, 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-12-50-Glass-Fiber-Filled.php

Physical Properties	Metric	English	Comments
Density	1.41 - 1.70 g/cc	0.0509 - 0.0614 lb/in ³	Average value: 1.53 g/cc Grade Count:25
Water Absorption	0.0500 - 1.00 %	0.0500 - 1.00 %	Average value: 0.738 % Grade Count:20
Moisture Absorption at Equilibrium	0.300 - 0.400 %	0.300 - 0.400 %	Average value: 0.378 % Grade Count:18
Linear Mold Shrinkage	0.00100 - 0.00550 cm/cm	0.00100 - 0.00550 in/in	Average value: 0.00139 cm/cm Grade Count:21
Linear Mold Shrinkage, Transverse	0.00100 - 0.0100 cm/cm	0.00100 - 0.0100 in/in	Average value: 0.00425 cm/cm Grade Count:19
Melt Flow	1.10 - 50.0 g/10 min	1.10 - 50.0 g/10 min	Average value: 17.4 g/10 min Grade Count:3

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	82.0 - 88.0	82.0 - 88.0	Average value: 85.2 Grade Count:12
Ball Indentation Hardness	155 - 230 MPa	22500 - 33400 psi	Average value: 189 MPa Grade Count:16
Tensile Strength, Ultimate	31.0 - 210 MPa	4500 - 30500 psi	Average value: 161 MPa Grade Count:23
	55.0 - 110 MPa @Temperature 60.0 - 150 °C	7980 - 16000 psi @Temperature 140 - 302 °F	Average value: 83.8 MPa Grade Count:1
Elongation at Break	1.60 - 6.00 %	1.60 - 6.00 %	Average value: 3.86 % Grade Count:24
	6.20 - 8.60 % @Temperature 60.0 - 150 °C	6.20 - 8.60 % @Temperature 140 - 302 °F	Average value: 7.30 % Grade Count:1
	4.10 - 20.0 GPa	595 - 2900 ksi	Average value: 14.3 GPa Grade

Modulus of Elasticity Mechanical Properties	Metric	English	Count:24 Comments
	3.30 - 6.30 GPa @Temperature 60.0 - 150 °C	479 - 914 ksi @Temperature 140 - 302 °F	Average value: 4.75 GPa Grade Count:1
Flexural Yield Strength	214 - 255 MPa	31000 - 37000 psi	Average value: 241 MPa Grade Count:3
Flexural Modulus	3.10 - 11.7 GPa	450 - 1700 ksi	Average value: 7.93 GPa Grade Count:4
Izod Impact, Notched	1.55 - 96.0 J/cm	2.90 - 180 ft-lb/in	Average value: 26.0 J/cm Grade Count:4
Izod Impact, Unnotched	10.7 - 5340 J/cm	20.0 - 10000 ft-lb/in	Average value: 42.2 J/cm Grade Count:4
Charpy Impact Unnotched	6.00 - 10.0 J/cm ²	28.6 - 47.6 ft-lb/in ²	Average value: 8.00 J/cm ² Grade Count:21
	6.00 - 9.50 J/cm ² @Temperature -30.0 - 30.0 °C	28.6 - 45.2 ft-lb/in ² @Temperature -22.0 - 86.0 °F	Average value: 7.83 J/cm ² Grade Count:20
Charpy Impact, Notched	1.20 - 2.50 J/cm ²	5.71 - 11.9 ft-lb/in ²	Average value: 1.84 J/cm ² Grade Count:21
	1.00 - 2.00 J/cm ² @Temperature -30.0 - 30.0 °C	4.76 - 9.52 ft-lb/in ² @Temperature -22.0 - 86.0 °F	Average value: 1.52 J/cm ² Grade Count:20

Thermal Properties	Metric	English	Comments
CTE, linear	10.0 - 37.8 μm/m-°C	5.56 - 21.0 μin/in-°F	Average value: 16.3 μm/m-°C Grade Count:21
CTE, linear, Transverse to Flow	70.0 - 120 μm/m-°C	38.9 - 66.7 μin/in-°F	Average value: 97.2 μm/m-°C Grade Count:18
Melting Point	178 - 186 °C	352 - 367 °F	Average value: 178 °C Grade Count:17
Maximum Service Temperature, Air	80.0 - 160 °C	176 - 320 °F	Average value: 126 °C Grade Count:19
Deflection Temperature at 0.46 MPa (66 psi)	175 - 190 °C	347 - 374 °F	Average value: 181 °C Grade Count:5
Deflection Temperature at 1.8 MPa (264 psi)	115 - 185 °C	239 - 365 °F	Average value: 162 °C Grade Count:23
Deflection Temperature at 8.0 MPa	105 - 160 °C	221 - 320 °F	Average value: 131 °C Grade Count:18
Flammability, UL94	HB	HB	Grade Count:17

Electrical Properties	Metric	English	Comments
	1.00e+12 - 2.00e+14	1.00e+12 - 2.00e+14	Average value: 1.99e+13 ohm-cm

Electrical Resistivity Electrical Properties	ohm-cm Metric	ohm-cm English	Grade Count:22 Comments
Surface Resistance	1.00e+11 - 2.30e+14 ohm	1.00e+11 - 2.30e+14 ohm	Average value: 1.22e+13 ohm Grade Count:20
Dielectric Strength	17.7 - 55.0 kV/mm	450 - 1400 kV/in	Average value: 36.2 kV/mm Grade Count:20
Comparative Tracking Index	60.0 - 600 V	60.0 - 600 V	Average value: 570 V Grade Count:18

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