

Overview of materials for Nylon 6, Glass Bead Filled

Category : Polymer , Thermoplastic , Nylon , Nylon 6 , Nylon 6, Glass Bead Filled

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Nylon 6, Glass Bead Filled". 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-Glass-Bead-Filled.php

Physical Properties	Metric	English	Comments
Density	0.920 - 1.66 g/cc	0.0332 - 0.0600 lb/in ³	Average value: 1.35 g/cc Grade Count:109
Filler Content	10.0 - 40.0 %	10.0 - 40.0 %	Average value: 26.7 % Grade Count:6
Water Absorption	0.800 - 8.00 %	0.800 - 8.00 %	Average value: 2.53 % Grade Count:39
Moisture Absorption at Equilibrium	0.250 - 3.00 %	0.250 - 3.00 %	Average value: 1.94 % Grade Count:33
Water Absorption at Saturation	5.80 - 7.30 %	5.80 - 7.30 %	Average value: 6.54 % Grade Count:10
Viscosity Test	140 - 150 cm ³ /g	140 - 150 cm ³ /g	Average value: 145 cm ³ /g Grade Count:4
Linear Mold Shrinkage	0.00100 - 0.0200 cm/cm	0.00100 - 0.0200 in/in	Average value: 0.00906 cm/cm Grade Count:95
Linear Mold Shrinkage, Transverse	0.00200 - 0.100 cm/cm	0.00200 - 0.100 in/in	Average value: 0.0150 cm/cm Grade Count:30
Melt Flow	3.00 - 115 g/10 min	3.00 - 115 g/10 min	Average value: 39.2 g/10 min Grade Count:21

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	110 - 122	110 - 122	Average value: 118 Grade Count:13
Hardness, Shore D	80.0 - 90.0	80.0 - 90.0	Average value: 85.4 Grade Count:4
Ball Indentation Hardness	75.0 - 220 MPa	10900 - 31900 psi	Average value: 148 MPa Grade Count:10
Tensile Strength, Ultimate	30.0 - 147 MPa	4350 - 21300 psi	Average value: 73.2 MPa Grade Count:90
	20.0 - 45.0 MPa @Temperature 60.0 - 150 °C	2900 - 6530 psi @Temperature 140 - 302 °F	Average value: 31.3 MPa Grade Count:1
	35.0 - 121 MPa	5080 - 17500 psi	Average value: 81.1 MPa Grade

Tensile Strength, Yield Mechanical Properties	Metric	English	Count:24 Comments
Elongation at Break	0.500 - 155 %	0.500 - 155 %	Average value: 9.54 % Grade Count:100
	10.0 - 35.0 %	10.0 - 35.0 %	Average value: 20.0 % Grade Count:1
	@Temperature 60.0 - 150 °C	@Temperature 140 - 302 °F	
Elongation at Yield	2.70 - 15.0 %	2.70 - 15.0 %	Average value: 7.30 % Grade Count:13
	8.00 - 14.0 %	8.00 - 14.0 %	Average value: 11.5 % Grade Count:1
	@Temperature 60.0 - 150 °C	@Temperature 140 - 302 °F	
Modulus of Elasticity	1.35 - 8.96 GPa	196 - 1300 ksi	Average value: 4.18 GPa Grade Count:87
	0.580 - 2.00 GPa	84.1 - 290 ksi	Average value: 1.10 GPa Grade Count:1
	@Temperature 60.0 - 150 °C	@Temperature 140 - 302 °F	
Flexural Yield Strength	10.3 - 230 MPa	1500 - 33400 psi	Average value: 123 MPa Grade Count:74
Flexural Modulus	1.57 - 8.62 GPa	228 - 1250 ksi	Average value: 4.38 GPa Grade Count:83
Izod Impact, Notched	0.160 - 1.28 J/cm	0.300 - 2.40 ft-lb/in	Average value: 0.506 J/cm Grade Count:27
Izod Impact, Unnotched	1.33 J/cm - NB	2.50 ft-lb/in - NB	Average value: 5.25 J/cm Grade Count:21
Izod Impact, Notched (ISO)	2.50 - 12.0 kJ/m ²	1.19 - 5.71 ft-lb/in ²	Average value: 5.29 kJ/m ² Grade Count:33
	2.00 - 42.0 kJ/m ²	0.952 - 20.0 ft-lb/in ²	Average value: 10.8 kJ/m ² Grade Count:8
	@Temperature -40.0 - -30.0 °C	@Temperature -40.0 - -22.0 °F	
Izod Impact, Unnotched (ISO)	15.0 - 80.0 kJ/m ²	7.14 - 38.1 ft-lb/in ²	Average value: 34.0 kJ/m ² Grade Count:18
	25.0 - 40.0 kJ/m ²	11.9 - 19.0 ft-lb/in ²	Average value: 34.7 kJ/m ² Grade Count:5
	@Temperature -30.0 - -30.0 °C	@Temperature -22.0 - -22.0 °F	
Charpy Impact Unnotched	1.50 J/cm ² - NB	7.14 ft-lb/in ² - NB	Average value: 4.90 J/cm ² Grade Count:59
	2.00 - 9.00 J/cm ²	9.52 - 42.8 ft-lb/in ²	Average value: 4.20 J/cm ² Grade Count:26
	@Temperature -30.0 - 30.0 °C	@Temperature -22.0 - 86.0 °F	
Charpy Impact, Notched	0.200 - 1.80 J/cm ²	0.952 - 8.57 ft-lb/in ²	Average value: 0.668 J/cm ² Grade Count:57

Mechanical Properties	Metric	English	Comments
	0.105 - 1.00 J/cm ²	0.475 - 4.76 ft-lb/in ²	Average value: 0.475 J/cm ² Grade Count:23
	@Temperature -40.0 - 30.0 °C	@Temperature -40.0 - 86.0 °F	
Puncture Energy	1.70 - 1.70 J	1.25 - 1.25 ft-lb	Average value: 1.70 J Grade Count:2
	@Temperature -30.0 - -30.0 °C	@Temperature -22.0 - -22.0 °F	
	1.70 - 1.70 J	1.25 - 1.25 ft-lb	Average value: 1.70 J Grade Count:2
	@Load <=70.4 kg	@Load <=155 lb	
Tensile Creep Modulus, 1000 hours	2000 MPa	290000 psi	Average value: 2000 MPa Grade Count:3

Thermal Properties	Metric	English	Comments
CTE, linear	17.1 - 90.0 µm/m-°C	9.50 - 50.0 µin/in-°F	Average value: 48.4 µm/m-°C Grade Count:38
CTE, linear, Transverse to Flow	60.0 - 118 µm/m-°C	33.3 - 65.6 µin/in-°F	Average value: 86.3 µm/m-°C Grade Count:17
Specific Heat Capacity	1.40 J/g-°C	0.335 BTU/lb-°F	Average value: 1.40 J/g-°C Grade Count:4
Thermal Conductivity	0.340 - 0.360 W/m-K	2.36 - 2.50 BTU-in/hr-ft ² -°F	Average value: 0.344 W/m-K Grade Count:5
Melting Point	205 - 255 °C	401 - 491 °F	Average value: 220 °C Grade Count:67
Maximum Service Temperature, Air	80.0 - 200 °C	176 - 392 °F	Average value: 140 °C Grade Count:10
Deflection Temperature at 0.46 MPa (66 psi)	170 - 218 °C	338 - 424 °F	Average value: 197 °C Grade Count:53
Deflection Temperature at 1.8 MPa (264 psi)	50.0 - 230 °C	122 - 446 °F	Average value: 127 °C Grade Count:89
Vicat Softening Point	190 - 247 °C	374 - 477 °F	Average value: 204 °C Grade Count:33
Flammability, UL94	HB - V-0	HB - V-0	Grade Count:70
Oxygen Index	24.0 - 31.0 %	24.0 - 31.0 %	Average value: 27.3 % Grade Count:4
Glow Wire Test	390 - 960 °C	734 - 1760 °F	Average value: 685 °C Grade Count:19

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+10 - 1.00e+15 ohm-cm	1.00e+10 - 1.00e+15 ohm-cm	Average value: 4.78e+14 ohm-cm Grade Count:48
Surface Resistance	1.00e+10 - 1.00e+16 ohm	1.00e+10 - 1.00e+16 ohm	Average value: 7.47e+14 ohm Grade Count:31
Dielectric Constant	2.60 - 6.00	2.60 - 6.00	Average value: 4.55 Grade Count:25

Electrical Properties	Metric	English	Comments
Dielectric Strength	15.7 - 80.0 kV/mm	400 - 2030 kV/in	Average value: 33.2 kV/mm Grade Count:35
Dissipation Factor	0.0180 - 0.0700	0.0180 - 0.0700	Average value: 0.0371 Grade Count:7
Dielectric Loss Index	0.0200 - 0.200	0.0200 - 0.200	Average value: 0.110 Grade Count:16
Comparative Tracking Index	250 - 600 V	250 - 600 V	Average value: 456 V Grade Count:30

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