

Overview of materials for Nylon 6, Glass Fiber Filled, Flame Retardant

Category : Polymer , Thermoplastic , Nylon , Nylon 6 , Nylon 6, Glass Fiber Filled, Flame Retardant

Material Notes:

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

Physical Properties	Metric	English	Comments
Density	1.16 - 1.82 g/cc	0.0419 - 0.0658 lb/in ³	Average value: 1.45 g/cc Grade Count:136
Filler Content	10.0 - 50.0 %	10.0 - 50.0 %	Average value: 24.3 % Grade Count:21
Water Absorption	0.600 - 6.50 %	0.600 - 6.50 %	Average value: 1.79 % Grade Count:30
Moisture Absorption at Equilibrium	0.170 - 4.00 %	0.170 - 4.00 %	Average value: 1.53 % Grade Count:19
Water Absorption at Saturation	4.00 - 9.00 %	4.00 - 9.00 %	Average value: 5.20 % Grade Count:5
Additive Loading	20.0 - 50.0 %	20.0 - 50.0 %	Average value: 32.5 % Grade Count:4
Viscosity Test	104 - 150 cm ³ /g	104 - 150 cm ³ /g	Average value: 135 cm ³ /g Grade Count:4
Linear Mold Shrinkage	0.000800 - 0.0150 cm/cm	0.000800 - 0.0150 in/in	Average value: 0.00456 cm/cm Grade Count:120
Linear Mold Shrinkage, Transverse	0.00100 - 0.0158 cm/cm	0.00100 - 0.0158 in/in	Average value: 0.00839 cm/cm Grade Count:52
Melt Flow	1.00 - 55.0 g/10 min	1.00 - 55.0 g/10 min	Average value: 13.1 g/10 min Grade Count:32

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	110 - 121	110 - 121	Average value: 118 Grade Count:20
Hardness, Shore D	80.0 - 90.0	80.0 - 90.0	Average value: 87.2 Grade Count:5
Ball Indentation Hardness	120 - 370 MPa	17400 - 53700 psi	Average value: 203 MPa Grade Count:9
Tensile Strength, Ultimate	30.0 - 210 MPa	4350 - 30500 psi	Average value: 116 MPa Grade Count:126
	10.0 - 105 MPa @Temperature 60.0 - 150 °C	1450 - 15200 psi @Temperature 140 - 302 °F	Average value: 50.2 MPa Grade Count:6

Mechanical Properties Tensile Strength, Yield	Metric 50.0 - 210 MPa	English 7200 - 30500 psi	Comments Average value: 111 MPa Grade Count:16
Elongation at Break	1.00 - 30.0 %	1.00 - 30.0 %	Average value: 3.73 % Grade Count:128
	1.20 - 15.0 % @Temperature 60.0 - 150 °C	1.20 - 15.0 % @Temperature 140 - 302 °F	Average value: 6.45 % Grade Count:6
Elongation at Yield	2.00 - 9.70 %	2.00 - 9.70 %	Average value: 3.40 % Grade Count:12
	1.70 - 4.50 % @Temperature 90.0 - 150 °C	1.70 - 4.50 % @Temperature 194 - 302 °F	Average value: 2.95 % Grade Count:2
Modulus of Elasticity	0.620 - 18.6 GPa	89.9 - 2700 ksi	Average value: 8.21 GPa Grade Count:95
	1.70 - 7.80 GPa @Temperature 60.0 - 150 °C	247 - 1130 ksi @Temperature 140 - 302 °F	Average value: 4.22 GPa Grade Count:6
Flexural Yield Strength	73.6 - 310 MPa	10700 - 45000 psi	Average value: 179 MPa Grade Count:95
Flexural Modulus	1.10 - 17.9 GPa	160 - 2600 ksi	Average value: 7.09 GPa Grade Count:96
Compressive Yield Strength	75.8 - 103 MPa	11000 - 15000 psi	Average value: 94.8 MPa Grade Count:4
Izod Impact, Notched	0.280 - 1.80 J/cm	0.525 - 3.37 ft-lb/in	Average value: 0.941 J/cm Grade Count:45
Izod Impact, Unnotched	4.81 - 10.7 J/cm	9.00 - 20.0 ft-lb/in	Average value: 7.47 J/cm Grade Count:19
Izod Impact, Notched (ISO)	2.50 - 107 kJ/m ²	1.19 - 50.9 ft-lb/in ²	Average value: 9.85 kJ/m ² Grade Count:38
	3.00 - 10.0 kJ/m ² @Temperature -40.0 - - 20.0 °C	1.43 - 4.76 ft-lb/in ² @Temperature -40.0 - - 4.00 °F	Average value: 6.70 kJ/m ² Grade Count:14
Izod Impact, Unnotched (ISO)	10.0 - 95.0 kJ/m ²	4.76 - 45.2 ft-lb/in ²	Average value: 47.8 kJ/m ² Grade Count:19
	35.0 - 67.0 kJ/m ² @Temperature -30.0 - - 30.0 °C	16.7 - 31.9 ft-lb/in ² @Temperature -22.0 - - 22.0 °F	Average value: 52.8 kJ/m ² Grade Count:5
Charpy Impact Unnotched	1.50 - 10.0 J/cm ²	7.14 - 47.6 ft-lb/in ²	Average value: 5.14 J/cm ² Grade Count:58
	1.50 - 7.90 J/cm ² @Temperature -30.0 - -	7.14 - 37.6 ft-lb/in ² @Temperature -22.0 - -	Average value: 4.28 J/cm ² Grade Count:29

Mechanical Properties	20.0 °C Metric	4.00 °F English	Comments
Charpy Impact, Notched	0.100 - 1.80 J/cm ²	0.476 - 8.57 ft-lb/in ²	Average value: 0.707 J/cm ² Grade Count:60
	0.100 - 1.00 J/cm ² @Temperature -30.0 - - 20.0 °C	0.476 - 4.76 ft-lb/in ² @Temperature -22.0 - - 4.00 °F	Average value: 0.545 J/cm ² Grade Count:32
Puncture Energy	1.90 - 1.90 J @Temperature -30.0 - - 30.0 °C	1.40 - 1.40 ft-lb @Temperature -22.0 - - 22.0 °F	Average value: 1.90 J Grade Count:1
	1.90 - 1.90 J @Load <=91.8 kg	1.40 - 1.40 ft-lb @Load <=202 lb	Average value: 1.90 J Grade Count:1

Thermal Properties	Metric	English	Comments
CTE, linear	17.0 - 82.0 µm/m-°C	9.44 - 45.6 µin/in-°F	Average value: 45.3 µm/m-°C Grade Count:22
CTE, linear, Transverse to Flow	23.0 - 105 µm/m-°C	12.8 - 58.3 µin/in-°F	Average value: 77.6 µm/m-°C Grade Count:12
Thermal Conductivity	0.303 - 0.331 W/m-K	2.10 - 2.30 BTU-in/hr- ft ² -°F	Average value: 0.321 W/m-K Grade Count:4
Melting Point	215 - 225 °C	419 - 437 °F	Average value: 221 °C Grade Count:62
Maximum Service Temperature, Air	80.0 - 200 °C	176 - 392 °F	Average value: 124 °C Grade Count:8
Hot Ball Pressure Test	123 - 127 °C	253 - 261 °F	Average value: 125 °C Grade Count:4
Deflection Temperature at 0.46 MPa (66 psi)	130 - 245 °C	266 - 473 °F	Average value: 208 °C Grade Count:60
Deflection Temperature at 1.8 MPa (264 psi)	70.0 - 230 °C	158 - 446 °F	Average value: 191 °C Grade Count:115
Vicat Softening Point	195 - 250 °C	383 - 482 °F	Average value: 208 °C Grade Count:57
UL RTI, Electrical	65.0 - 130 °C	149 - 266 °F	Average value: 89.2 °C Grade Count:9

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+12 - 1.00e+17 ohm-cm	1.00e+12 - 1.00e+17 ohm-cm	Average value: 5.95e+15 ohm-cm Grade Count:52
Surface Resistance	1.00e+8 - 8.00e+15 ohm	1.00e+8 - 8.00e+15 ohm	Average value: 8.06e+14 ohm Grade Count:38
Dielectric Constant	2.90 - 10.0	2.90 - 10.0	Average value: 3.97 Grade Count:20
Dielectric Strength	11.0 - 70.0 kV/mm	280 - 1780 kV/in	Average value: 27.9 kV/mm Grade Count:55

Electrical Properties	Metric 0.00570 - 0.300	English 0.00570 - 0.300	Average value: 0.0439 Grade Count:65
Comparative Tracking Index	200 - 600 V	200 - 600 V	Average value: 473 V Grade Count:65

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