

## Overview of materials for Nylon 6, Carbon Fiber Filled

Category : Polymer , Thermoplastic , Nylon , Nylon 6 , Nylon 6 , Carbon Fiber Filled

### Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Nylon 6, Carbon Fiber 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-Carbon-Fiber-Filled.php](http://www.lookpolymers.com/polymer_Overview-of-materials-for-Nylon-6-Carbon-Fiber-Filled.php)

Physical Properties	Metric	English	Comments
Density	1.11 - 1.53 g/cc	0.0401 - 0.0553 lb/in <sup>3</sup>	Average value: 1.27 g/cc Grade Count:57
Filler Content	1.00 - 50.0 %	1.00 - 50.0 %	Average value: 25.3 % Grade Count:16
Water Absorption	0.300 - 1.50 %	0.300 - 1.50 %	Average value: 0.980 % Grade Count:30
Moisture Absorption at Equilibrium	1.80 - 2.50 %	1.80 - 2.50 %	Average value: 2.18 % Grade Count:6
Additive Loading	20.0 - 40.0 %	20.0 - 40.0 %	Average value: 30.0 % Grade Count:3
Linear Mold Shrinkage	0.000200 - 0.0350 cm/cm	0.000200 - 0.0350 in/in	Average value: 0.00376 cm/cm Grade Count:47
Linear Mold Shrinkage, Transverse	0.00590 - 0.0140 cm/cm	0.00590 - 0.0140 in/in	Average value: 0.00989 cm/cm Grade Count:11
Melt Flow	3.00 - 60.0 g/10 min	3.00 - 60.0 g/10 min	Average value: 25.9 g/10 min Grade Count:10

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	114 - 120	114 - 120	Average value: 117 Grade Count:13
Ball Indentation Hardness	90.0 - 270 MPa	13100 - 39200 psi	Average value: 191 MPa Grade Count:5
Tensile Strength, Ultimate	70.0 - 310 MPa	10200 - 45000 psi	Average value: 173 MPa Grade Count:48
Tensile Strength, Yield	138 - 221 MPa	20000 - 32000 psi	Average value: 188 MPa Grade Count:8
Elongation at Break	1.00 - 20.0 %	1.00 - 20.0 %	Average value: 3.29 % Grade Count:40
Elongation at Yield	1.00 - 4.50 %	1.00 - 4.50 %	Average value: 2.61 % Grade Count:15
Modulus of Elasticity	4.00 - 37.2 GPa	580 - 5400 ksi	Average value: 15.3 GPa Grade Count:47

Flexural Yield Strength Mechanical Properties	75.0 - 503 MPa Metric	10900 - 73000 psi English	Average value: 266 MPa Grade Count:41
Flexural Modulus	6.21 - 28.3 GPa	900 - 4100 ksi	Average value: 13.8 GPa Grade Count:44
Izod Impact, Notched	0.427 - 2.67 J/cm	0.800 - 5.00 ft-lb/in	Average value: 1.16 J/cm Grade Count:27
	1.01441 - 1.01441 J/cm  @Temperature -40.0 - - 40.0 °C	1.90041 - 1.90041 ft- lb/in  @Temperature -40.0 - - 40.0 °F	Average value: 1.01 J/cm Grade Count:1
	1.01441 - 1.01441 J/cm  @Thickness 3.17 - 3.17 mm	1.90041 - 1.90041 ft- lb/in  @Thickness 0.125 - 0.125 in	Average value: 1.01 J/cm Grade Count:1
Izod Impact, Unnotched	4.27 - 17.1 J/cm	8.00 - 32.0 ft-lb/in	Average value: 8.87 J/cm Grade Count:19
Charpy Impact Unnotched	1.70 J/cm <sup>2</sup> - NB	8.09 ft-lb/in <sup>2</sup> - NB	Average value: 5.06 J/cm <sup>2</sup> Grade Count:29
	4.00 - 6.00 J/cm <sup>2</sup>  @Temperature -30.0 - - 20.0 °C	19.0 - 28.6 ft-lb/in <sup>2</sup>  @Temperature -22.0 - - 4.00 °F	Average value: 4.87 J/cm <sup>2</sup> Grade Count:6
Charpy Impact, Notched	0.300 - 1.80 J/cm <sup>2</sup>	1.43 - 8.57 ft-lb/in <sup>2</sup>	Average value: 0.961 J/cm <sup>2</sup> Grade Count:19
	0.400 - 1.50 J/cm <sup>2</sup>  @Temperature -30.0 - - 20.0 °C	1.90 - 7.14 ft-lb/in <sup>2</sup>  @Temperature -22.0 - - 4.00 °F	Average value: 0.800 J/cm <sup>2</sup> Grade Count:3
Puncture Energy	1.70 - 1.70 J  @Temperature -30.0 - - 30.0 °C	1.25 - 1.25 ft-lb  @Temperature -22.0 - - 22.0 °F	Average value: 1.70 J Grade Count:1
Coefficient of Friction	0.150 - 0.240	0.150 - 0.240	Average value: 0.208 Grade Count:5
Coefficient of Friction, Static	0.140 - 0.210	0.140 - 0.210	Average value: 0.180 Grade Count:4

Thermal Properties	Metric	English	Comments
CTE, linear	18.0 - 80.0 µm/m-°C	10.0 - 44.4 µin/in-°F	Average value: 27.3 µm/m-°C Grade Count:19
Thermal Conductivity	0.300 - 0.500 W/m-K	2.08 - 3.47 BTU-in/hr- ft <sup>2</sup> -°F	Average value: 0.385 W/m-K Grade Count:6
Melting Point	215 - 221 °C	419 - 430 °F	Average value: 219 °C Grade Count:17
Maximum Service Temperature, Air	90.0 - 250 °C	194 - 482 °F	Average value: 133 °C Grade Count:15

Thermal Properties	Metric	English	Comments
Deflection Temperature at 0.46 MPa (0.07 psi)	210 - 260 °C	410 - 500 °F	Average value: 219 °C Grade Count:15
Deflection Temperature at 1.8 MPa (264 psi)	170 - 249 °C	338 - 480 °F	Average value: 206 °C Grade Count:35
Vicat Softening Point	165 - 220 °C	329 - 428 °F	Average value: 208 °C Grade Count:18
Flammability, UL94	HB - V-0	HB - V-0	Grade Count:24

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00 - 2.00e+13 ohm-cm	1.00 - 2.00e+13 ohm-cm	Average value: 1.25e+12 ohm-cm Grade Count:18
Surface Resistance	0.190 - 6.00e+12 ohm	0.190 - 6.00e+12 ohm	Average value: 2.86e+11 ohm Grade Count:27
Insulation Resistance	100 - 1.00e+9 ohm	100 - 1.00e+9 ohm	Average value: 2.86e+8 ohm Grade Count:14

Processing Properties	Metric	English	Comments
Processing Temperature	221 - 330 °C	430 - 626 °F	Average value: 276 °C Grade Count:19
Nozzle Temperature	270 - 340 °C	518 - 644 °F	Average value: 290 °C Grade Count:17
Melt Temperature	230 - 340 °C	446 - 644 °F	Average value: 281 °C Grade Count:36
Mold Temperature	54.4 - 120 °C	130 - 248 °F	Average value: 86.4 °C Grade Count:41
Injection Velocity	50.8 - 76.2 mm/sec	2.00 - 3.00 in/sec	Average value: 63.5 mm/sec Grade Count:3
Drying Temperature	75.0 - 110 °C	167 - 230 °F	Average value: 89.1 °C Grade Count:30
Moisture Content	0.100 - 0.200 %	0.100 - 0.200 %	Average value: 0.159 % Grade Count:15
Dew Point	-17.8 °C	0.000 °F	Average value: -17.8 °C Grade Count:6
Injection Pressure	68.9 - 130 MPa	10000 - 18900 psi	Average value: 92.2 MPa Grade Count:17
Cushion	0.635 cm	0.250 in	Average value: 0.635 cm Grade Count:3

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