

Overview of materials for Nylon 66, Carbon Fiber/PTFE Filled

Category : Polymer , Thermoplastic , Nylon , Nylon 66 , Nylon 66, Carbon Fiber/PTFE Filled

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Nylon 66, Carbon Fiber/PTFE 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-66-Carbon-FiberPTFE-Filled.php

Physical Properties	Metric	English	Comments
Density	1.18 - 1.54 g/cc	0.0426 - 0.0556 lb/in³	Average value: 1.32 g/cc Grade Count:86
Filler Content	5.00 - 50.0 %	5.00 - 50.0 %	Average value: 22.7 % Grade Count:32
Water Absorption	0.100 - 1.00 %	0.100 - 1.00 %	Average value: 0.690 % Grade Count:57
Linear Mold Shrinkage	0.000200 - 0.0160 cm/cm	0.000200 - 0.0160 in/in	Average value: 0.00278 cm/cm Grade Count:82
Linear Mold Shrinkage, Transverse	0.00100 - 0.0110 cm/cm	0.00100 - 0.0110 in/in	Average value: 0.00708 cm/cm Grade Count:6

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	110 - 120	110 - 120	Average value: 118 Grade Count:27
Tensile Strength, Ultimate	75.8 - 241 MPa	11000 - 35000 psi	Average value: 176 MPa Grade Count:75
	105 - 170 MPa @Temperature 60.0 - 150 °C	15200 - 24700 psi @Temperature 140 - 302 °F	Average value: 135 MPa Grade Count:1
Tensile Strength, Yield	112 - 200 MPa	16200 - 29000 psi	Average value: 171 MPa Grade Count:12
Elongation at Break	0.900 - 182 %	0.900 - 182 %	Average value: 5.21 % Grade Count:65
	2.50 - 3.80 % @Temperature 60.0 - 150 °C	2.50 - 3.80 % @Temperature 140 - 302 °F	Average value: 3.25 % Grade Count:1
Elongation at Yield	1.10 - 6.00 %	1.10 - 6.00 %	Average value: 2.86 % Grade Count:22
Modulus of Elasticity	3.45 - 32.4 GPa	500 - 4710 ksi	Average value: 16.1 GPa Grade Count:64
	8.30 - 22.5 GPa	1200 - 3260 ksi	

Mechanical Properties	Metric @ Temperature 60.0 - 150 °C	English @ Temperature 140 - 302 °F	Comments Average value: 14.5 GPa Grade Count:1
Flexural Yield Strength	107 - 372 MPa	15500 - 54000 psi	Average value: 260 MPa Grade Count:82
Flexural Modulus	2.76 - 24.8 GPa	400 - 3600 ksi	Average value: 12.8 GPa Grade Count:83
Compressive Yield Strength	89.6 - 172 MPa	13000 - 25000 psi	Average value: 134 MPa Grade Count:12
Izod Impact, Notched	0.320 - 2.40 J/cm	0.600 - 4.50 ft-lb/in	Average value: 0.882 J/cm Grade Count:64
Izod Impact, Unnotched	3.20 - 10.7 J/cm	6.00 - 20.0 ft-lb/in	Average value: 6.85 J/cm Grade Count:45
Izod Impact, Notched (ISO)	5.00 - 10.9 kJ/m ²	2.38 - 5.19 ft-lb/in ²	Average value: 8.52 kJ/m ² Grade Count:4
Izod Impact, Unnotched (ISO)	41.0 - 68.5 kJ/m ²	19.5 - 32.6 ft-lb/in ²	Average value: 55.2 kJ/m ² Grade Count:4
Charpy Impact Unnotched	2.60 - 6.50 J/cm ²	12.4 - 30.9 ft-lb/in ²	Average value: 4.16 J/cm ² Grade Count:20
	3.00 - 4.00 J/cm ² @Temperature -30.0 - - 20.0 °C	14.3 - 19.0 ft-lb/in ² @Temperature -22.0 - - 4.00 °F	Average value: 3.50 J/cm ² Grade Count:8
Charpy Impact, Notched	0.500 - 1.20 J/cm ²	2.38 - 5.71 ft-lb/in ²	Average value: 0.889 J/cm ² Grade Count:9
	0.600 - 0.900 J/cm ² @Temperature -30.0 - - 20.0 °C	2.86 - 4.28 ft-lb/in ² @Temperature -22.0 - - 4.00 °F	Average value: 0.713 J/cm ² Grade Count:8
Coefficient of Friction	0.0900 - 0.600	0.0900 - 0.600	Average value: 0.196 Grade Count:19
Coefficient of Friction, Static	0.0700 - 0.560	0.0700 - 0.560	Average value: 0.166 Grade Count:19
K (wear) Factor	10.1 - 30.2 x 10 ⁻⁸ mm ³ /N-M	5.00 - 15.0 x 10 ⁻¹⁰ in ³ - min/ft-lb-hr	Average value: 16.3 x 10 ^{<sup>- 8</sup>} mm ³ /N-M Grade Count:10
Limiting Pressure Velocity	0.771 - 3.30 MPa- m/sec	22000 - 94200 psi- ft/min	Average value: 1.45 MPa-m/sec Grade Count:5

Thermal Properties	Metric	English	Comments
CTE, linear	14.0 - 80.0 µm/m-°C	7.78 - 44.4 µin/in-°F	Average value: 25.5 µm/m-°C Grade Count:29
Thermal Conductivity	0.330 - 1.15 W/m-K	2.29 - 8.00 BTU-in/hr- ft ² -°F	Average value: 0.553 W/m-K Grade Count:15
Melting Point	249 - 275 °C	480 - 527 °F	Average value: 261 °C Grade Count:6

Maximum Service Temperature, Air Thermal Properties	90.0 - 160 °C Metric	194 - 320 °F English	Average value: 137 °C Grade Count:19 Comments
Deflection Temperature at 0.46 MPa (66 psi)	144 - 270 °C	292 - 518 °F	Average value: 250 °C Grade Count:34
Deflection Temperature at 1.8 MPa (264 psi)	139 - 260 °C	283 - 500 °F	Average value: 245 °C Grade Count:73
Vicat Softening Point	200 - 255 °C	392 - 491 °F	Average value: 241 °C Grade Count:13
Flammability, UL94	HB - V-2	HB - V-2	Grade Count:37

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.100 - 1.00e+8 ohm-cm	0.100 - 1.00e+8 ohm-cm	Average value: 1260 ohm-cm Grade Count:45
Surface Resistance	1.00 - 1.00e+10 ohm	1.00 - 1.00e+10 ohm	Average value: 4.17e+8 ohm Grade Count:28
Insulation Resistance	1000 - 1.00e+10 ohm	1000 - 1.00e+10 ohm	Average value: 5.56e+8 ohm Grade Count:18

Processing Properties	Metric	English	Comments
Processing Temperature	274 - 293 °C	525 - 560 °F	Average value: 287 °C Grade Count:42
Nozzle Temperature	280 - 300 °C	536 - 572 °F	Average value: 290 °C Grade Count:19
Melt Temperature	260 - 310 °C	500 - 590 °F	Average value: 296 °C Grade Count:45
Mold Temperature	65.6 - 121 °C	150 - 250 °F	Average value: 93.5 °C Grade Count:64
Drying Temperature	75.0 - 107 °C	167 - 225 °F	Average value: 87.6 °C Grade Count:43
Moisture Content	0.200 %	0.200 %	Average value: 0.200 % Grade Count:18
Dew Point	-17.8 °C	0.000 °F	Average value: -17.8 °C Grade Count:15
Injection Pressure	68.9 - 124 MPa	10000 - 18000 psi	Average value: 101 MPa Grade Count:34

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