

Overview of materials for Nylon 66, 10% Carbon Fiber Filled

Category : Polymer , Thermoplastic , Nylon , Nylon 66 , Nylon 66, 10% Carbon Fiber Filled

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Nylon 66, 10% Carbon Fiber Filled". Specific grades with carbon fiber content between 5% and 14% 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-66-10-Carbon-Fiber-Filled.php

Physical Properties	Metric	English	Comments
Density	1.10 - 1.45 g/cc	0.0397 - 0.0524 lb/in ³	Average value: 1.24 g/cc Grade Count:53
Filler Content	5.00 - 10.0 %	5.00 - 10.0 %	Average value: 8.75 % Grade Count:4
Water Absorption	0.450 - 2.50 %	0.450 - 2.50 %	Average value: 1.01 % Grade Count:41
Moisture Absorption at Equilibrium	2.20 - 2.70 %	2.20 - 2.70 %	Average value: 2.47 % Grade Count:3
Linear Mold Shrinkage	0.00100 - 0.0180 cm/cm	0.00100 - 0.0180 in/in	Average value: 0.00481 cm/cm Grade Count:51
Linear Mold Shrinkage, Transverse	0.00900 - 0.0110 cm/cm	0.00900 - 0.0110 in/in	Average value: 0.00967 cm/cm Grade Count:3

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	110 - 125	110 - 125	Average value: 114 Grade Count:8
Tensile Strength, Ultimate	75.0 - 320 MPa	10900 - 46400 psi	Average value: 179 MPa Grade Count:43
Tensile Strength, Yield	105 - 208 MPa	15200 - 30200 psi	Average value: 157 MPa Grade Count:11
Elongation at Break	1.00 - 6.00 %	1.00 - 6.00 %	Average value: 3.08 % Grade Count:25
Elongation at Yield	1.30 - 11.0 %	1.30 - 11.0 %	Average value: 3.21 % Grade Count:28
Modulus of Elasticity	4.69 - 34.0 GPa	680 - 4930 ksi	Average value: 13.9 GPa Grade Count:43
Flexural Yield Strength	110 - 440 MPa	16000 - 63800 psi	Average value: 252 MPa Grade Count:49
Flexural Modulus	3.59 - 29.0 GPa	520 - 4210 ksi	Average value: 11.7 GPa Grade Count:50
Izod Impact, Notched	0.370 - 2.03 J/cm	0.693 - 3.80 ft-lb/in	Average value: 0.913 J/cm Grade Count:16

Mechanical Properties	Metric	English	Comments
	0.5339 - 0.5339 J/cm	1.000 - 1.000 ft-lb/in	Average value: 0.534 J/cm Grade Count:1
	@Temperature -40.0 - -40.0 °C	@Temperature -40.0 - -40.0 °F	
	0.5339 - 0.5339 J/cm	1.000 - 1.000 ft-lb/in	Average value: 0.534 J/cm Grade Count:1
	@Thickness 3.17 - 3.17 mm	@Thickness 0.125 - 0.125 in	
Izod Impact, Unnotched	4.27 - 10.1 J/cm	8.00 - 19.0 ft-lb/in	Average value: 6.89 J/cm Grade Count:10
Izod Impact, Notched (ISO)	5.00 - 8.10 kJ/m ²	2.38 - 3.85 ft-lb/in ²	Average value: 6.58 kJ/m ² Grade Count:6
Izod Impact, Unnotched (ISO)	41.0 - 52.0 kJ/m ²	19.5 - 24.7 ft-lb/in ²	Average value: 46.3 kJ/m ² Grade Count:4
Charpy Impact Unnotched	2.20 - 9.50 J/cm ²	10.5 - 45.2 ft-lb/in ²	Average value: 5.15 J/cm ² Grade Count:32
	2.20 - 9.00 J/cm ²	10.5 - 42.8 ft-lb/in ²	Average value: 4.59 J/cm ² Grade Count:16
	@Temperature -40.0 - -30.0 °C	@Temperature -40.0 - -22.0 °F	
Charpy Impact, Notched	0.400 - 1.50 J/cm ²	1.90 - 7.14 ft-lb/in ²	Average value: 0.981 J/cm ² Grade Count:24
	0.700 - 1.10 J/cm ²	3.33 - 5.24 ft-lb/in ²	Average value: 0.960 J/cm ² Grade Count:5
	@Temperature -30.0 - -30.0 °C	@Temperature -22.0 - -22.0 °F	
Coefficient of Friction	0.180 - 0.250	0.180 - 0.250	Average value: 0.213 Grade Count:10
Coefficient of Friction, Static	0.130 - 0.180	0.130 - 0.180	Average value: 0.165 Grade Count:10

Thermal Properties	Metric	English	Comments
CTE, linear	12.0 - 79.2 µm/m-°C	6.67 - 44.0 µin/in-°F	Average value: 28.1 µm/m-°C Grade Count:23
Thermal Conductivity	0.380 - 3.50 W/m-K	2.64 - 24.3 BTU-in/hr-ft ² -°F	Average value: 0.886 W/m-K Grade Count:15
Melting Point	221 - 265 °C	430 - 509 °F	Average value: 256 °C Grade Count:11
Maximum Service Temperature, Air	90.0 - 160 °C	194 - 320 °F	Average value: 135 °C Grade Count:30
Deflection Temperature at 0.46 MPa (66 psi)	210 - 260 °C	410 - 500 °F	Average value: 247 °C Grade Count:13
Deflection Temperature at 1.8 MPa (264 psi)	177 - 259 °C	350 - 498 °F	Average value: 239 °C Grade Count:33
Vicat Softening Point	200 - 260 °C	392 - 500 °F	Average value: 248 °C Grade Count:15
Flammability, UL94	HB - V-0	HB - V-0	Grade Count:19

Thermal Properties	Metric	English	Comments
Electrical Resistivity	1.00 - 1.00e+13 ohm-cm	1.00 - 1.00e+13 ohm-cm	Average value: 4.17e+11 ohm-cm Grade Count:16
Surface Resistance	1.00 - 1.00e+13 ohm	1.00 - 1.00e+13 ohm	Average value: 2.00e+11 ohm Grade Count:40
Insulation Resistance	100 - 1.00e+12 ohm	100 - 1.00e+12 ohm	Average value: 7.14e+10 ohm Grade Count:28

Processing Properties	Metric	English	Comments
Processing Temperature	270 - 300 °C	518 - 572 °F	Average value: 289 °C Grade Count:31
Nozzle Temperature	280 - 300 °C	536 - 572 °F	Average value: 290 °C Grade Count:28
Melt Temperature	260 - 310 °C	500 - 590 °F	Average value: 294 °C Grade Count:41
Mold Temperature	60.0 - 121 °C	140 - 250 °F	Average value: 98.2 °C Grade Count:44
Drying Temperature	75.0 - 107 °C	167 - 225 °F	Average value: 88.7 °C Grade Count:39
Moisture Content	0.150 - 0.250 %	0.150 - 0.250 %	Average value: 0.200 % Grade Count:9
Dew Point	-17.8 °C	0.000 °F	Average value: -17.8 °C Grade Count:3
Injection Pressure	68.9 - 124 MPa	10000 - 18000 psi	Average value: 103 MPa Grade Count:5

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