

## Overview of materials for Nylon 66, 20% Carbon Fiber Filled

Category : Polymer , Thermoplastic , Nylon , Nylon 66 , Nylon 66, 20% Carbon Fiber Filled

### Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Nylon 66, 20% Carbon Fiber Filled". Specific grades with carbon fiber content between 15% and 24% 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-66-20-Carbon-Fiber-Filled.php](http://www.lookpolymers.com/polymer_Overview-of-materials-for-Nylon-66-20-Carbon-Fiber-Filled.php)

Physical Properties	Metric	English	Comments
Density	1.14 - 1.50 g/cc	0.0412 - 0.0542 lb/in <sup>3</sup>	Average value: 1.24 g/cc Grade Count:33
Filler Content	15.0 - 20.0 %	15.0 - 20.0 %	Average value: 18.0 % Grade Count:10
Water Absorption	0.400 - 2.50 %	0.400 - 2.50 %	Average value: 0.853 % Grade Count:17
Moisture Absorption at Equilibrium	0.400 - 2.50 %	0.400 - 2.50 %	Average value: 1.86 % Grade Count:5
Water Absorption at Saturation	5.00 - 8.00 %	5.00 - 8.00 %	Average value: 6.20 % Grade Count:5
Additive Loading	15.0 - 20.0 %	15.0 - 20.0 %	Average value: 18.3 % Grade Count:3
Linear Mold Shrinkage	0.000500 - 0.0180 cm/cm	0.000500 - 0.0180 in/in	Average value: 0.00327 cm/cm Grade Count:31
Linear Mold Shrinkage, Transverse	0.00190 - 0.0110 cm/cm	0.00190 - 0.0110 in/in	Average value: 0.00698 cm/cm Grade Count:5

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	114 - 125	114 - 125	Average value: 119 Grade Count:12
Ball Indentation Hardness	160 - 270 MPa	23200 - 39200 psi	Average value: 223 MPa Grade Count:3
Tensile Strength, Ultimate	125 - 230 MPa	18100 - 33400 psi	Average value: 182 MPa Grade Count:27
	90.0 - 140 MPa @Temperature 60.0 - 150 °C	13100 - 20300 psi @Temperature 140 - 302 °F	Average value: 113 MPa Grade Count:1
Tensile Strength, Yield	152 - 230 MPa	22000 - 33400 psi	Average value: 183 MPa Grade Count:6
Elongation at Break	1.00 - 5.00 %	1.00 - 5.00 %	Average value: 2.79 % Grade Count:33

Mechanical Properties	Metric <sup>2.70 - 3.70 %</sup>	English <sup>2.70 - 3.70 %</sup>	Comments
	@Temperature 60.0 - 150 °C	@Temperature 140 - 302 °F	Average value: 3.35 % Grade Count:1
Modulus of Elasticity	9.00 - 18.6 GPa	1310 - 2700 ksi	Average value: 14.0 GPa Grade Count:26
	5.40 - 14.0 GPa	783 - 2030 ksi	Average value: 9.23 GPa Grade Count:1
	@Temperature 60.0 - 150 °C	@Temperature 140 - 302 °F	
Flexural Yield Strength	193 - 330 MPa	28000 - 47900 psi	Average value: 263 MPa Grade Count:26
Flexural Modulus	6.55 - 16.2 GPa	950 - 2350 ksi	Average value: 12.3 GPa Grade Count:28
Compressive Yield Strength	131 - 172 MPa	19000 - 25000 psi	Average value: 145 MPa Grade Count:3
Izod Impact, Notched	0.534 - 1.92 J/cm	1.00 - 3.60 ft-lb/in	Average value: 0.871 J/cm Grade Count:22
Izod Impact, Unnotched	5.34 - 9.08 J/cm	10.0 - 17.0 ft-lb/in	Average value: 6.80 J/cm Grade Count:14
Izod Impact, Notched (ISO)	5.00 - 8.00 kJ/m <sup>2</sup>	2.38 - 3.81 ft-lb/in <sup>2</sup>	Average value: 7.00 kJ/m <sup>2</sup> Grade Count:3
	3.00 - 6.00 kJ/m <sup>2</sup>	1.43 - 2.86 ft-lb/in <sup>2</sup>	Average value: 4.50 kJ/m <sup>2</sup> Grade Count:2
	@Temperature -40.0 - -20.0 °C	@Temperature -40.0 - -4.00 °F	
Charpy Impact Unnotched	2.60 - 7.20 J/cm <sup>2</sup>	12.4 - 34.3 ft-lb/in <sup>2</sup>	Average value: 4.53 J/cm <sup>2</sup> Grade Count:8
	2.50 - 4.10 J/cm <sup>2</sup>	11.9 - 19.5 ft-lb/in <sup>2</sup>	Average value: 3.03 J/cm <sup>2</sup> Grade Count:3
	@Temperature -40.0 - -20.0 °C	@Temperature -40.0 - -4.00 °F	
Charpy Impact, Notched	0.600 - 1.60 J/cm <sup>2</sup>	2.86 - 7.61 ft-lb/in <sup>2</sup>	Average value: 0.872 J/cm <sup>2</sup> Grade Count:8
	0.400 - 0.500 J/cm <sup>2</sup>	1.90 - 2.38 ft-lb/in <sup>2</sup>	Average value: 0.450 J/cm <sup>2</sup> Grade Count:2
	@Temperature -40.0 - -20.0 °C	@Temperature -40.0 - -4.00 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	17.0 - 68.4 µm/m-°C	9.44 - 38.0 µin/in-°F	Average value: 34.6 µm/m-°C Grade Count:15
Melting Point	221 - 262 °C	430 - 504 °F	Average value: 253 °C Grade Count:9
Maximum Service Temperature, Air	115 - 240 °C	239 - 464 °F	Average value: 155 °C Grade Count:4
Deflection Temperature at 0.46 MPa			Average value: 253 °C Grade Count:15

(56 psi) Thermal Properties	240 - 260 °C Metric	464 - 500 °F English	Comments
Deflection Temperature at 1.8 MPa (264 psi)	230 - 259 °C	446 - 498 °F	Average value: 248 °C Grade Count:28
Vicat Softening Point	230 - 255 °C	446 - 491 °F	Average value: 248 °C Grade Count:5
Flammability, UL94	HB - V-0	HB - V-0	Grade Count:24

Electrical Properties	Metric	English	Comments
Electrical Resistivity	10.0 - 1.00e+7 ohm-cm	10.0 - 1.00e+7 ohm-cm	Average value: 878000 ohm-cm Grade Count:26
Surface Resistance	20.0 - 1.00e+7 ohm	20.0 - 1.00e+7 ohm	Average value: 1.11e+6 ohm Grade Count:13

Processing Properties	Metric	English	Comments
Processing Temperature	270 - 300 °C	518 - 572 °F	Average value: 284 °C Grade Count:7
Melt Temperature	260 - 300 °C	500 - 572 °F	Average value: 283 °C Grade Count:14
Mold Temperature	60.0 - 110 °C	140 - 230 °F	Average value: 85.7 °C Grade Count:21
Drying Temperature	75.0 - 100 °C	167 - 212 °F	Average value: 81.0 °C Grade Count:13
Moisture Content	0.150 - 0.200 %	0.150 - 0.200 %	Average value: 0.195 % Grade Count:11
Dew Point	-17.8 °C	0.000 °F	Average value: -17.8 °C Grade Count:7
Injection Pressure	68.9 - 124 MPa	10000 - 18000 psi	Average value: 102 MPa Grade Count:14

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