

Overview of materials for Nylon 66, Glass/Mineral Filled

Category : Polymer , Thermoplastic , Nylon , Nylon 66 , Nylon 66, Glass/Mineral Filled

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Nylon 66, Glass/Mineral 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-GlassMineral-Filled.php

Physical Properties	Metric	English	Comments
Density	1.23 - 1.73 g/cc	0.0444 - 0.0625 lb/in ³	Average value: 1.45 g/cc Grade Count:117
	1.25 - 1.28 g/cc @Temperature 250 - 270 °C	0.0452 - 0.0462 lb/in ³ @Temperature 482 - 518 °F	Average value: 1.26 g/cc Grade Count:2
Filler Content	10.0 - 45.0 %	10.0 - 45.0 %	Average value: 27.9 % Grade Count:26
Water Absorption	0.350 - 5.40 %	0.350 - 5.40 %	Average value: 1.22 % Grade Count:51
Moisture Absorption at Equilibrium	1.10 - 2.00 %	1.10 - 2.00 %	Average value: 1.49 % Grade Count:10
Viscosity	30.0 - 120 cP @Temperature 280 - 300 °C	30.0 - 120 cP @Temperature 536 - 572 °F	Average value: 70.7 cP Grade Count:1
	30.0 - 120 cP @Shear Rate 100 - 1000 1/s	30.0 - 120 cP @Shear Rate 100 - 1000 1/s	Average value: 70.7 cP Grade Count:1
Linear Mold Shrinkage	0.00150 - 0.0500 cm/cm	0.00150 - 0.0500 in/in	Average value: 0.00641 cm/cm Grade Count:111
Linear Mold Shrinkage, Transverse	0.00500 - 0.0140 cm/cm	0.00500 - 0.0140 in/in	Average value: 0.00930 cm/cm Grade Count:32
Melt Flow	2.00 - 44.4 g/10 min	2.00 - 44.4 g/10 min	Average value: 19.4 g/10 min Grade Count:5

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	74.0 - 98.0	74.0 - 98.0	Average value: 93.4 Grade Count:7
Hardness, Rockwell R	112 - 122	112 - 122	Average value: 120 Grade Count:35
Tensile Strength, Ultimate	50.0 - 165 MPa	7250 - 23900 psi	Average value: 111 MPa Grade Count:83

Mechanical Properties	Metric ^{70.0 MPa}	English ^{10200 psi}	Comments
	@Temperature 60.0 - 150 °C	@Temperature 140 - 302 °F	Average value: 50.9 MPa Grade Count:2
	22.0 - 80.0 MPa	3190 - 11600 psi	Average value: 50.9 MPa Grade Count:1
	@Temperature 80.0 - 120 °C	@Temperature 176 - 248 °F	
	22.0 - 80.0 MPa	3190 - 11600 psi	Average value: 50.9 MPa Grade Count:1
	@Strain 1.00 - 8.00 %	@Strain 1.00 - 8.00 %	
Tensile Strength, Yield	71.7 - 175 MPa	10400 - 25400 psi	Average value: 121 MPa Grade Count:42
Elongation at Break	1.00 - 12.0 %	1.00 - 12.0 %	Average value: 3.45 % Grade Count:112
	2.70 - 20.0 %	2.70 - 20.0 %	Average value: 8.90 % Grade Count:2
	@Temperature 60.0 - 150 °C	@Temperature 140 - 302 °F	
Elongation at Yield	2.30 - 6.00 %	2.30 - 6.00 %	Average value: 4.36 % Grade Count:4
	5.00 - 10.0 %	5.00 - 10.0 %	Average value: 7.33 % Grade Count:1
	@Temperature 90.0 - 150 °C	@Temperature 194 - 302 °F	
Modulus of Elasticity	3.70 - 13.1 GPa	537 - 1900 ksi	Average value: 8.03 GPa Grade Count:45
	0.485 - 8.00 GPa	70.3 - 1160 ksi	Average value: 4.72 GPa Grade Count:4
	@Temperature -140 - 250 °C	@Temperature -220 - 482 °F	
Flexural Yield Strength	90.0 - 260 MPa	13100 - 37700 psi	Average value: 176 MPa Grade Count:91
Flexural Modulus	3.10 - 12.5 GPa	450 - 1810 ksi	Average value: 7.42 GPa Grade Count:113
Compressive Yield Strength	138 - 255 MPa	20000 - 37000 psi	Average value: 179 MPa Grade Count:6
Poissons Ratio	0.260 - 0.470	0.260 - 0.470	Average value: 0.383 Grade Count:1
	@Temperature -40.0 - 121 °C	@Temperature -40.0 - 250 °F	
Shear Modulus	1.96 - 2.68 GPa	285 - 388 ksi	Average value: 2.37 GPa Grade Count:3
	>= 0.173 GPa	>= 25.1 ksi	Average value: 1.40 GPa Grade Count:2
	@Temperature -100 - 250 °C	@Temperature -148 - 482 °F	
	0.267 - 1.33 J/cm	0.500 - 2.50 ft-lb/in	Average value: 0.536 J/cm Grade

Izod Impact Notched Mechanical Properties	Metric	English	Count:76 Comments
Izod Impact, Unnotched	0.427 - 9.08 J/cm	0.800 - 17.0 ft-lb/in	Average value: 5.03 J/cm Grade Count:32
Izod Impact, Notched (ISO)	2.60 - 16.0 kJ/m ²	1.24 - 7.61 ft-lb/in ²	Average value: 5.20 kJ/m ² Grade Count:31
	2.00 - 7.50 kJ/m ² @Temperature -40.0 - - 20.0 °C	0.952 - 3.57 ft-lb/in ² @Temperature -40.0 - - 4.00 °F	Average value: 3.76 kJ/m ² Grade Count:8
Izod Impact, Unnotched (ISO)	40.0 - 50.0 kJ/m ² @Temperature -30.0 - - 30.0 °C	19.0 - 23.8 ft-lb/in ² @Temperature -22.0 - - 22.0 °F	Average value: 45.0 kJ/m ² Grade Count:1
Charpy Impact Unnotched	2.00 - 9.00 J/cm ²	9.52 - 42.8 ft-lb/in ²	Average value: 4.88 J/cm ² Grade Count:24
	2.00 - 5.00 J/cm ² @Temperature -30.0 - - 20.0 °C	9.52 - 23.8 ft-lb/in ² @Temperature -22.0 - - 4.00 °F	Average value: 4.00 J/cm ² Grade Count:11
Charpy Impact, Notched	0.200 - 1.60 J/cm ²	0.952 - 7.61 ft-lb/in ²	Average value: 0.569 J/cm ² Grade Count:28
	0.200 - 0.700 J/cm ² @Temperature -40.0 - - 20.0 °C	0.952 - 3.33 ft-lb/in ² @Temperature -40.0 - - 4.00 °F	Average value: 0.391 J/cm ² Grade Count:15

Thermal Properties	Metric	English	Comments
CTE, linear	10.0 - 500 µm/m-°C	5.56 - 278 µin/in-°F	Average value: 55.8 µm/m-°C Grade Count:37
CTE, linear, Transverse to Flow	50.0 - 100 µm/m-°C	27.8 - 55.6 µin/in-°F	Average value: 75.3 µm/m-°C Grade Count:8
Specific Heat Capacity	1.50 - 2.10 J/g-°C	0.359 - 0.502 BTU/lb-°F	Average value: 1.70 J/g-°C Grade Count:5
Thermal Conductivity	0.250 - 0.504 W/m-K	1.74 - 3.50 BTU-in/hr-ft ² -°F	Average value: 0.374 W/m-K Grade Count:7
Melting Point	220 - 275 °C	428 - 527 °F	Average value: 259 °C Grade Count:64
Maximum Service Temperature, Air	115 - 254 °C	239 - 489 °F	Average value: 179 °C Grade Count:5
Deflection Temperature at 0.46 MPa (66 psi)	210 - 263 °C	410 - 505 °F	Average value: 249 °C Grade Count:65

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+9 - 1.00e+17 ohm-cm	1.00e+9 - 1.00e+17 ohm-cm	Average value: 2.75e+15 ohm-cm Grade Count:44

Electrical Properties	Metric	English	Comments
Dielectric Constant	3.00 - 13.9	3.00 - 13.9	Average value: 4.82 Grade Count:14
Dielectric Strength	15.7 - 40.0 kV/mm	400 - 1020 kV/in	Average value: 24.5 kV/mm Grade Count:33
Dissipation Factor	0.0100 - 0.540	0.0100 - 0.540	Average value: 0.0642 Grade Count:8
Dielectric Loss Index	0.0150 - 0.150	0.0150 - 0.150	Average value: 0.0825 Grade Count:4
Arc Resistance	125 - 130 sec	125 - 130 sec	Average value: 128 sec Grade Count:4
Comparative Tracking Index	375 - 600 V	375 - 600 V	Average value: 436 V Grade Count:14

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