

Overview of materials for Nylon 46, Glass Fiber Reinforced

Category : Polymer , Thermoplastic , Nylon , Nylon 46 , Nylon 46, Glass Fiber Reinforced

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Nylon 46, Glass Fiber Reinforced". 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-46-Glass-Fiber-Reinforced.php

Physical Properties	Metric	English	Comments
Density	1.17 - 1.87 g/cc	0.0423 - 0.0676 lb/in ³	Average value: 1.51 g/cc Grade Count:105
Filler Content	10.0 - 60.0 %	10.0 - 60.0 %	Average value: 32.3 % Grade Count:11
Water Absorption	0.900 - 9.50 %	0.900 - 9.50 %	Average value: 4.70 % Grade Count:39
Moisture Absorption at Equilibrium	1.10 - 3.15 %	1.10 - 3.15 %	Average value: 2.02 % Grade Count:52
Viscosity Test	70.0 - 150 cm ³ /g	70.0 - 150 cm ³ /g	Average value: 123 cm ³ /g Grade Count:16
Linear Mold Shrinkage	0.00200 - 0.0150 cm/cm	0.00200 - 0.0150 in/in	Average value: 0.00602 cm/cm Grade Count:69
Linear Mold Shrinkage, Transverse	0.00700 - 0.0150 cm/cm	0.00700 - 0.0150 in/in	Average value: 0.0108 cm/cm Grade Count:27

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	70.0 - 255 MPa	10200 - 37000 psi	Average value: 166 MPa Grade Count:88
	60.0 - 150 MPa @Temperature 120 - 200 °C	8700 - 21800 psi @Temperature 248 - 392 °F	Average value: 103 MPa Grade Count:7
Tensile Strength, Yield	20.7 - 231 MPa	3000 - 33500 psi	Average value: 131 MPa Grade Count:14
Elongation at Break	1.30 - 10.0 %	1.30 - 10.0 %	Average value: 4.02 % Grade Count:97
	3.50 - 12.5 % @Temperature 120 - 200 °C	3.50 - 12.5 % @Temperature 248 - 392 °F	Average value: 7.12 % Grade Count:7
Elongation at Yield	2.10 - 7.50 %	2.10 - 7.50 %	Average value: 4.09 % Grade Count:5
	2.80 - 20.7 GPa	406 - 3000 ksi	Average value: 10.4 GPa Grade

Modulus of Elasticity Mechanical Properties	Metric	English	Count:84 Comments
	3.40 - 11.0 GPa @Temperature 120 - 200 °C	493 - 1600 ksi @Temperature 248 - 392 °F	Average value: 5.89 GPa Grade Count:7
Flexural Yield Strength	96.5 - 392 MPa	14000 - 56800 psi	Average value: 238 MPa Grade Count:27
Flexural Modulus	2.90 - 19.3 GPa	420 - 2800 ksi	Average value: 8.67 GPa Grade Count:46
	3.40 - 7.30 GPa @Temperature 120 - 200 °C	493 - 1060 ksi @Temperature 248 - 392 °F	Average value: 5.26 GPa Grade Count:5
Izod Impact, Notched	0.481 - 1.92 J/cm	0.900 - 3.60 ft-lb/in	Average value: 1.04 J/cm Grade Count:25
Izod Impact, Unnotched	4.81 - 11.7 J/cm	9.00 - 22.0 ft-lb/in	Average value: 8.25 J/cm Grade Count:11
Izod Impact, Notched (ISO)	5.00 - 25.0 kJ/m ²	2.38 - 11.9 ft-lb/in ²	Average value: 15.4 kJ/m ² Grade Count:11
	4.00 - 15.0 kJ/m ² @Temperature -40.0 - - 40.0 °C	1.90 - 7.14 ft-lb/in ² @Temperature -40.0 - - 40.0 °F	Average value: 9.83 kJ/m ² Grade Count:8
Charpy Impact Unnotched	2.50 - 11.0 J/cm ²	11.9 - 52.4 ft-lb/in ²	Average value: 8.05 J/cm ² Grade Count:47
	4.00 - 10.0 J/cm ² @Temperature -30.0 - - 30.0 °C	19.0 - 47.6 ft-lb/in ² @Temperature -22.0 - - 22.0 °F	Average value: 6.87 J/cm ² Grade Count:42
Charpy Impact, Notched	0.400 - 3.00 J/cm ²	1.90 - 14.3 ft-lb/in ²	Average value: 1.42 J/cm ² Grade Count:69
	0.450 - 1.90 J/cm ² @Temperature -30.0 - - 30.0 °C	2.14 - 9.04 ft-lb/in ² @Temperature -22.0 - - 22.0 °F	Average value: 1.16 J/cm ² Grade Count:54
Tensile Creep Modulus, 1000 hours	4500 - 12000 MPa	653000 - 1.74e+6 psi	Average value: 7400 MPa Grade Count:10

Thermal Properties	Metric	English	Comments
CTE, linear	18.0 - 164 µm/m-°C	10.0 - 91.0 µin/in-°F	Average value: 32.8 µm/m-°C Grade Count:51
CTE, linear, Transverse to Flow	40.0 - 90.0 µm/m-°C	22.2 - 50.0 µin/in-°F	Average value: 73.6 µm/m-°C Grade Count:39
Melting Point	282 - 295 °C	540 - 563 °F	Average value: 295 °C Grade Count:81
Maximum Service Temperature, Air	150 - 250 °C	302 - 482 °F	Average value: 184 °C Grade Count:5

Thermal Properties	Metric	English	Comments
Deflection Temperature at 0.46 MPa (66 psi)	160 - 291 °C	320 - 555 °F	Average value: 290 °C Grade Count:16
Deflection Temperature at 1.8 MPa (264 psi)	160 - 291 °C	320 - 555 °F	Average value: 281 °C Grade Count:70
Vicat Softening Point	290 °C	554 °F	Average value: 290 °C Grade Count:16
Glass Transition Temp, Tg	75.0 °C	167 °F	Average value: 75.0 °C Grade Count:16
UL RTI, Electrical	130 - 140 °C	266 - 284 °F	Average value: 139 °C Grade Count:16
UL RTI, Mechanical with Impact	110 - 125 °C	230 - 257 °F	Average value: 117 °C Grade Count:16
UL RTI, Mechanical without Impact	110 - 130 °C	230 - 266 °F	Average value: 122 °C Grade Count:16
Flammability, UL94	HB - V-0	HB - V-0	Grade Count:43
Oxygen Index	22.0 - 37.0 %	22.0 - 37.0 %	Average value: 29.5 % Grade Count:10
Glow Wire Test	650 - 960 °C	1200 - 1760 °F	Average value: 869 °C Grade Count:11

Electrical Properties	Metric	English	Comments
Electrical Resistivity	10000 - 8.00e+15 ohm-cm	10000 - 8.00e+15 ohm-cm	Average value: 4.20e+14 ohm-cm Grade Count:56
Surface Resistance	1.00e+12 - 1.00e+14 ohm	1.00e+12 - 1.00e+14 ohm	Average value: 4.68e+13 ohm Grade Count:12
Dielectric Constant	4.00 - 16.0	4.00 - 16.0	Average value: 6.52 Grade Count:17
Dielectric Strength	20.0 - 35.0 kV/mm	508 - 889 kV/in	Average value: 26.0 kV/mm Grade Count:40
Dissipation Factor	0.000600 - 0.0700	0.000600 - 0.0700	Average value: 0.0134 Grade Count:17
Comparative Tracking Index	175 - 599 V	175 - 599 V	Average value: 339 V Grade Count:45

Processing Properties	Metric	English	Comments
Processing Temperature	293 - 321 °C	560 - 610 °F	Average value: 308 °C Grade Count:13
Mold Temperature	79.4 - 149 °C	175 - 300 °F	Average value: 117 °C Grade Count:13
Injection Pressure	68.9 - 103 MPa	10000 - 15000 psi	Average value: 86.2 MPa Grade Count:11

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