

Overview of materials for Nylon 12, 30% Glass Fiber Filled

Category : Polymer , Thermoplastic , Nylon , Nylon 12 , Nylon 12, 30% Glass Fiber Filled

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Nylon 12, 30% Glass Fiber Filled". Specific grades with glass content between 25% and 34% 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-12-30-Glass-Fiber-Filled.php

Physical Properties	Metric	English	Comments
Density	1.17 - 1.96 g/cc	0.0423 - 0.0708 lb/in³	Average value: 1.28 g/cc Grade Count:41
Filler Content	25.0 - 30.0 %	25.0 - 30.0 %	Average value: 29.0 % Grade Count:5
Water Absorption	0.100 - 1.40 %	0.100 - 1.40 %	Average value: 0.765 % Grade Count:21
Moisture Absorption at Equilibrium	0.500 - 0.600 %	0.500 - 0.600 %	Average value: 0.569 % Grade Count:13
Water Absorption at Saturation	1.00 - 1.40 %	1.00 - 1.40 %	Average value: 1.16 % Grade Count:8
Linear Mold Shrinkage	0.00100 - 0.00700 cm/cm	0.00100 - 0.00700 in/in	Average value: 0.00290 cm/cm Grade Count:26
Linear Mold Shrinkage, Transverse	0.00500 - 0.0110 cm/cm	0.00500 - 0.0110 in/in	Average value: 0.00792 cm/cm Grade Count:13
Melt Flow	2.20 - 6.70 g/10 min	2.20 - 6.70 g/10 min	Average value: 4.57 g/10 min Grade Count:6

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	109 - 110	109 - 110	Average value: 110 Grade Count:4
Hardness, Shore D	77.0 - 83.0	77.0 - 83.0	Average value: 80.6 Grade Count:6
Ball Indentation Hardness	120 - 155 MPa	17400 - 22500 psi	Average value: 131 MPa Grade Count:7
Tensile Strength, Ultimate	60.0 - 140 MPa	8700 - 20300 psi	Average value: 110 MPa Grade Count:30
	35.0 - 95.0 MPa @Temperature 60.0 - 150 °C	5080 - 13800 psi @Temperature 140 - 302 °F	Average value: 58.8 MPa Grade Count:2
	69.0 - 130 MPa	10000 - 18900 psi	Average value: 105 MPa Grade

Tensile Strength, Yield Mechanical Properties	Metric	English	Count:11 Comments
Elongation at Break	2.00 - 12.0 %	2.00 - 12.0 %	Average value: 5.45 % Grade Count:40
	4.50 - 16.0 %	4.50 - 16.0 %	
	@Temperature 60.0 - 150 °C	@Temperature 140 - 302 °F	Average value: 9.38 % Grade Count:2
Elongation at Yield	3.00 - 6.50 %	3.00 - 6.50 %	Average value: 4.38 % Grade Count:4
	>= 10.0 %	>= 10.0 %	
	@Temperature 60.0 - 150 °C	@Temperature 140 - 302 °F	Average value: 10.0 % Grade Count:1
Modulus of Elasticity	4.00 - 15.8 GPa	580 - 2290 ksi	Average value: 7.01 GPa Grade Count:36
	2.10 - 7.20 GPa	305 - 1040 ksi	
	@Temperature 60.0 - 150 °C	@Temperature 140 - 302 °F	Average value: 4.04 GPa Grade Count:2
Flexural Yield Strength	134 - 185 MPa	19500 - 26800 psi	Average value: 156 MPa Grade Count:15
Flexural Modulus	4.00 - 7.10 GPa	580 - 1030 ksi	Average value: 5.52 GPa Grade Count:18
Compressive Yield Strength	68.9 MPa	10000 psi	Average value: 68.9 MPa Grade Count:3
Izod Impact, Notched	1.07 - 1.80 J/cm	2.00 - 3.37 ft-lb/in	Average value: 1.34 J/cm Grade Count:14
Izod Impact, Unnotched	5.34 - 5340 J/cm	10.0 - 10000 ft-lb/in	Average value: 7.32 J/cm Grade Count:9
Izod Impact, Notched (ISO)	10.0 - 17.0 kJ/m²	4.76 - 8.09 ft-lb/in²	Average value: 14.5 kJ/m² Grade Count:4
Charpy Impact Unnotched	4.50 - 10.0 J/cm²	21.4 - 47.6 ft-lb/in²	Average value: 7.98 J/cm² Grade Count:20
	4.00 - 10.0 J/cm²	19.0 - 47.6 ft-lb/in²	
	@Temperature -30.0 - 30.0 °C	@Temperature -22.0 - 86.0 °F	Average value: 7.89 J/cm² Grade Count:18
Charpy Impact, Notched	0.650 - 2.50 J/cm²	3.09 - 11.9 ft-lb/in²	Average value: 1.62 J/cm² Grade Count:20
	0.800 - 2.10 J/cm²	3.81 - 9.99 ft-lb/in²	
	@Temperature -30.0 - 30.0 °C	@Temperature -22.0 - 86.0 °F	Average value: 1.22 J/cm² Grade Count:18

Thermal Properties	Metric	English	Comments
CTE, linear	20.0 - 80.0 µm/m-°C	11.1 - 44.4 µin/in-°F	Average value: 43.3 µm/m-°C Grade Count:21

Thermal Properties	Metric	English	Comments
CTE, linear, Transverse to Flow	30.0 - 150 µm/m-°C	27.0 - 83.3 µin/in-°F	Average value: 110 µm/m-°C Grade Count:5
Thermal Conductivity	0.160 - 0.432 W/m-K	1.11 - 3.00 BTU-in/hr-ft²-°F	Average value: 0.342 W/m-K Grade Count:3
Melting Point	165 - 185 °C	329 - 365 °F	Average value: 176 °C Grade Count:27
Maximum Service Temperature, Air	90.0 - 160 °C	194 - 320 °F	Average value: 129 °C Grade Count:10
Deflection Temperature at 0.46 MPa (66 psi)	138 - 182 °C	280 - 360 °F	Average value: 172 °C Grade Count:22
Deflection Temperature at 1.8 MPa (264 psi)	130 - 177 °C	266 - 351 °F	Average value: 162 °C Grade Count:31
Deflection Temperature at 8.0 MPa	90.0 - 125 °C	194 - 257 °F	Average value: 94.4 °C Grade Count:8
Vicat Softening Point	162 - 175 °C	324 - 347 °F	Average value: 171 °C Grade Count:11
Flammability, UL94	HB - V-0	HB - V-0	Grade Count:33

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1000 - 1.00e+15 ohm-cm	1000 - 1.00e+15 ohm-cm	Average value: 1.99e+14 ohm-cm Grade Count:22
Surface Resistance	1000 - 1.00e+15 ohm	1000 - 1.00e+15 ohm	Average value: 1.54e+14 ohm Grade Count:15
Dielectric Constant	3.40 - 4.10	3.40 - 4.10	Average value: 3.86 Grade Count:6
Dielectric Strength	17.7 - 45.0 kV/mm	450 - 1140 kV/in	Average value: 37.1 kV/mm Grade Count:16
Dissipation Factor	0.000345 - 0.0650	0.000345 - 0.0650	Average value: 0.0227 Grade Count:9
Comparative Tracking Index	575 - 600 V	575 - 600 V	Average value: 599 V Grade Count:16

Processing Properties	Metric	English	Comments
Processing Temperature	216 - 266 °C	420 - 510 °F	Average value: 241 °C Grade Count:5
Melt Temperature	210 - 274 °C	410 - 525 °F	Average value: 231 °C Grade Count:5
Mold Temperature	60.0 - 104 °C	140 - 220 °F	Average value: 82.5 °C Grade Count:10
Drying Temperature	70.0 - 90.0 °C	158 - 194 °F	Average value: 79.8 °C Grade Count:5
Injection Pressure	68.9 - 103 MPa	10000 - 15000 psi	Average value: 86.2 MPa Grade Count:7

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