

Overview of materials for Nylon 6, 40% Mineral Filled

Category : Polymer , Thermoplastic , Nylon , Nylon 6 , Nylon 6, 40% Mineral Filled

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Nylon 6, 40% 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-6-40-Mineral-Filled.php

Physical Properties	Metric	English	Comments
Density	1.29 - 1.61 g/cc	0.0466 - 0.0582 lb/in ³	Average value: 1.46 g/cc Grade Count:65
	1.28 - 1.28 g/cc @Temperature >=250 °C	0.0462 - 0.0462 lb/in ³ @Temperature >=482 °F	Average value: 1.28 g/cc Grade Count:1
Filler Content	35.0 - 40.0 %	35.0 - 40.0 %	Average value: 39.5 % Grade Count:17
Water Absorption	0.700 - 6.00 %	0.700 - 6.00 %	Average value: 2.37 % Grade Count:40
Moisture Absorption at Equilibrium	0.250 - 2.30 %	0.250 - 2.30 %	Average value: 1.62 % Grade Count:27
Water Absorption at Saturation	5.70 - 7.00 %	5.70 - 7.00 %	Average value: 6.07 % Grade Count:6
Linear Mold Shrinkage	0.00100 - 0.0180 cm/cm	0.00100 - 0.0180 in/in	Average value: 0.00743 cm/cm Grade Count:56
Linear Mold Shrinkage, Transverse	0.00200 - 0.0122 cm/cm	0.00200 - 0.0122 in/in	Average value: 0.00844 cm/cm Grade Count:13
Melt Flow	3.00 - 33.0 g/10 min	3.00 - 33.0 g/10 min	Average value: 19.0 g/10 min Grade Count:5

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	90.0 - 95.0	90.0 - 95.0	Average value: 93.3 Grade Count:3
Hardness, Rockwell R	103 - 122	103 - 122	Average value: 119 Grade Count:18
Ball Indentation Hardness	85.0 - 205 MPa	12300 - 29700 psi	Average value: 140 MPa Grade Count:3
Tensile Strength, Ultimate	35.0 - 137 MPa	5080 - 19900 psi	Average value: 72.8 MPa Grade Count:45
	20.0 - 135 MPa @Temperature -40.0 - 120 °C	2900 - 19600 psi @Temperature -40.0 - 248 °F	Average value: 62.1 MPa Grade Count:7

Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	45.0 - 120 MPa	6500 - 17400 psi	Average value: 82.5 MPa Grade Count:26
	20.0 - 90.0 MPa	2900 - 13100 psi	Average value: 45.0 MPa Grade Count:1
	@Temperature -40.0 - 120 °C	@Temperature -40.0 - 248 °F	
Elongation at Break	1.50 - 40.0 %	1.50 - 40.0 %	Average value: 14.6 % Grade Count:50
	5.00 - 40.0 %	5.00 - 40.0 %	Average value: 25.6 % Grade Count:3
	@Temperature -40.0 - 120 °C	@Temperature -40.0 - 248 °F	
Elongation at Yield	2.50 - 27.0 %	2.50 - 27.0 %	Average value: 7.84 % Grade Count:16
	5.10 - 30.0 %	5.10 - 30.0 %	Average value: 20.0 % Grade Count:1
	@Temperature -40.0 - 120 °C	@Temperature -40.0 - 248 °F	
Modulus of Elasticity	2.00 - 7.58 GPa	290 - 1100 ksi	Average value: 4.70 GPa Grade Count:32
	0.600 - 8.31 GPa	87.0 - 1210 ksi	Average value: 3.50 GPa Grade Count:5
	@Temperature -40.0 - 150 °C	@Temperature -40.0 - 302 °F	
Flexural Yield Strength	50.0 - 250 MPa	7250 - 36300 psi	Average value: 117 MPa Grade Count:50
	25.0 - 207 MPa	3630 - 30000 psi	Average value: 84.2 MPa Grade Count:6
	@Temperature -40.0 - 120 °C	@Temperature -40.0 - 248 °F	
Flexural Modulus	1.50 - 7.88 GPa	218 - 1140 ksi	Average value: 5.13 GPa Grade Count:56
	0.700 - 8.60 GPa	102 - 1250 ksi	Average value: 2.76 GPa Grade Count:7
	@Temperature -40.0 - 120 °C	@Temperature -40.0 - 248 °F	
Compressive Yield Strength	69.0 - 186 MPa	10000 - 27000 psi	Average value: 124 MPa Grade Count:5
Izod Impact, Notched	0.267 - 100 J/cm	0.500 - 187 ft-lb/in	Average value: 0.664 J/cm Grade Count:36
	0.320 - 0.820 J/cm	0.599 - 1.54 ft-lb/in	Average value: 0.578 J/cm Grade Count:3
	@Temperature -40.0 - - 40.0 °C	@Temperature -40.0 - - 40.0 °F	
Izod Impact, Unnotched	0.374 - 16.4 J/cm	0.700 - 30.7 ft-lb/in	Average value: 5.72 J/cm Grade Count:9
Izod Impact, Notched (ISO)	3.90 - 10.0 kJ/m²	1.86 - 4.76 ft-lb/in²	Average value: 7.17 kJ/m² Grade Count:8

Mechanical Properties	Metric	English	Comments
	1.00 - 10.0 kJ/m ²	7.37 - 7.37 ft-lb/in ²	Average value: 7.31 kJ/m ² Grade Count:4
	@Temperature -40.0 - -20.0 °C	@Temperature -40.0 - -4.00 °F	
Izod Impact, Unnotched (ISO)	100 kJ/m ² - NB	47.6 ft-lb/in ² - NB	Average value: 117 kJ/m ² Grade Count:3
	75.0 - 85.0 kJ/m ²	35.7 - 40.4 ft-lb/in ²	Average value: 80.0 kJ/m ² Grade Count:2
	@Temperature -30.0 - -30.0 °C	@Temperature -22.0 - -22.0 °F	
Charpy Impact Unnotched	1.70 J/cm ² - NB	8.09 ft-lb/in ² - NB	Average value: 9.57 J/cm ² Grade Count:21
	1.80 J/cm ² - NB	8.57 ft-lb/in ² - NB	Average value: 7.38 J/cm ² Grade Count:8
	@Temperature -40.0 - -20.0 °C	@Temperature -40.0 - -4.00 °F	
Charpy Impact, Notched	0.300 - 1.20 J/cm ²	1.43 - 5.71 ft-lb/in ²	Average value: 0.730 J/cm ² Grade Count:22
	0.270 - 1.00 J/cm ²	1.28 - 4.76 ft-lb/in ²	Average value: 0.734 J/cm ² Grade Count:10
	@Temperature -40.0 - -20.0 °C	@Temperature -40.0 - -4.00 °F	
Puncture Energy	9.20 - 65.0 J	6.79 - 47.9 ft-lb	Average value: 37.7 J Grade Count:4
	1.60 - 3.00 J	1.18 - 2.21 ft-lb	Average value: 2.65 J Grade Count:2
	@Temperature -30.0 - -30.0 °C	@Temperature -22.0 - -22.0 °F	
	3.00 - 3.00 J	2.21 - 2.21 ft-lb	Average value: 2.65 J Grade Count:2
	@Temperature -30.0 - -30.0 °C	@Temperature -22.0 - -22.0 °F	
	3.00 - 3.00 J	2.21 - 2.21 ft-lb	Average value: 2.65 J Grade Count:2
	@Load <=74.2 kg	@Load <=164 lb	

Thermal Properties	Metric	English	Comments
CTE, linear	7.20 - 74.0 µm/m-°C	4.00 - 41.1 µin/in-°F	Average value: 49.9 µm/m-°C Grade Count:28
CTE, linear, Transverse to Flow	58.0 - 75.0 µm/m-°C	32.2 - 41.7 µin/in-°F	Average value: 66.1 µm/m-°C Grade Count:8
Specific Heat Capacity	1.94 - 2.00 J/g-°C	0.464 - 0.478 BTU/lb-°F	Average value: 1.99 J/g-°C Grade Count:6

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+9 - 1.00e+16 ohm-cm	1.00e+9 - 1.00e+16 ohm-cm	Average value: 8.66e+14 ohm-cm Grade Count:24

Electrical Properties Surface Resistance	Metric 10 - 1.00e+14 ohm	English 10 - 1.00e+14 ohm	Comments Average value: 3.04e+13 ohm Grade Count:7
Dielectric Constant	3.60 - 15.0	3.60 - 15.0	Average value: 5.63 Grade Count:9
Dielectric Strength	16.0 - 42.1 kV/mm	406 - 1070 kV/in	Average value: 26.3 kV/mm Grade Count:16
Dissipation Factor	0.0110 - 0.250	0.0110 - 0.250	Average value: 0.0597 Grade Count:8
Arc Resistance	115 - 190 sec	115 - 190 sec	Average value: 138 sec Grade Count:6
Comparative Tracking Index	400 - 600 V	400 - 600 V	Average value: 525 V Grade Count:12

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