

## Overview of materials for Nylon 6, Glass Filled, Impact Grade

Category : Polymer , Thermoplastic , Nylon , Nylon 6 , Nylon 6, Glass Filled, Impact Grade

### Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Nylon 6, Glass Filled, Impact Grade". 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-Glass-Filled-Impact-Grade.php](http://www.lookpolymers.com/polymer_Overview-of-materials-for-Nylon-6-Glass-Filled-Impact-Grade.php)

Physical Properties	Metric	English	Comments
Density	1.15 - 1.53 g/cc	0.0415 - 0.0553 lb/in <sup>3</sup>	Average value: 1.29 g/cc Grade Count:98
Filler Content	5.00 - 50.0 %	5.00 - 50.0 %	Average value: 27.0 % Grade Count:10
Water Absorption	0.600 - 7.00 %	0.600 - 7.00 %	Average value: 1.98 % Grade Count:45
Moisture Absorption at Equilibrium	1.40 - 2.50 %	1.40 - 2.50 %	Average value: 1.89 % Grade Count:34
Water Absorption at Saturation	4.80 - 8.50 %	4.80 - 8.50 %	Average value: 6.22 % Grade Count:18
Viscosity Test	150 cm <sup>3</sup> /g	150 cm <sup>3</sup> /g	Average value: 150 cm <sup>3</sup> /g Grade Count:3
Linear Mold Shrinkage	0.000600 - 0.0135 cm/cm	0.000600 - 0.0135 in/in	Average value: 0.00401 cm/cm Grade Count:82
Linear Mold Shrinkage, Transverse	0.00100 - 0.0140 cm/cm	0.00100 - 0.0140 in/in	Average value: 0.00752 cm/cm Grade Count:33
Melt Flow	1.00 - 45.0 g/10 min	1.00 - 45.0 g/10 min	Average value: 25.3 g/10 min Grade Count:4
Ash	30.0 - 30.0 % @Temperature 650 - 650 °C	30.0 - 30.0 % @Temperature 1200 - 1200 °F	Average value: 30.0 % Grade Count:1

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	76.0 - 121	76.0 - 121	Average value: 83.9 Grade Count:13
Hardness, Rockwell R	110 - 120	110 - 120	Average value: 117 Grade Count:23
Ball Indentation Hardness	55.0 - 195 MPa	7980 - 28300 psi	Average value: 126 MPa Grade Count:4
Tensile Strength, Ultimate	40.0 - 190 MPa	5800 - 27600 psi	Average value: 113 MPa Grade Count:90
			Average value: 105 MPa Grade

Tensile Strength, Yield Mechanical Properties	6.00 - 170 MPa Metric	870 - 24700 psi English	Count:16 Comments
Elongation at Break	2.20 - 28.0 %	2.20 - 28.0 %	Average value: 5.41 % Grade Count:93
Elongation at Yield	2.00 - 5.50 %	2.00 - 5.50 %	Average value: 3.94 % Grade Count:10
Modulus of Elasticity	0.930 - 13.8 GPa	135 - 2000 ksi	Average value: 6.49 GPa Grade Count:74
Flexural Yield Strength	55.0 - 290 MPa	7980 - 42100 psi	Average value: 170 MPa Grade Count:75
Flexural Modulus	2.10 - 11.7 GPa	305 - 1700 ksi	Average value: 6.03 GPa Grade Count:78
Compressive Yield Strength	62.1 - 172 MPa	9000 - 24900 psi	Average value: 119 MPa Grade Count:14
Poissons Ratio	0.350	0.350	Average value: 0.350 Grade Count:11
Shear Modulus	1.60 - 4.40 GPa	232 - 638 ksi	Average value: 3.15 GPa Grade Count:8
Izod Impact, Notched	0.640 - 2.14 J/cm	1.20 - 4.00 ft-lb/in	Average value: 1.54 J/cm Grade Count:30
Izod Impact, Unnotched	5.82 J/cm - NB	10.9 ft-lb/in - NB	Average value: 10.1 J/cm Grade Count:13
Izod Impact, Notched (ISO)	10.0 - 50.0 kJ/m <sup>2</sup>	4.76 - 23.8 ft-lb/in <sup>2</sup>	Average value: 19.1 kJ/m <sup>2</sup> Grade Count:23
	7.00 - 18.0 kJ/m <sup>2</sup> @Temperature -40.0 - - 20.0 °C	3.33 - 8.57 ft-lb/in <sup>2</sup> @Temperature -40.0 - - 4.00 °F	Average value: 11.0 kJ/m <sup>2</sup> Grade Count:18
Izod Impact, Unnotched (ISO)	45.0 - 95.0 kJ/m <sup>2</sup>	21.4 - 45.2 ft-lb/in <sup>2</sup>	Average value: 72.0 kJ/m <sup>2</sup> Grade Count:18
	35.0 - 90.0 kJ/m <sup>2</sup> @Temperature -30.0 - - 30.0 °C	16.7 - 42.8 ft-lb/in <sup>2</sup> @Temperature -22.0 - - 22.0 °F	Average value: 64.9 kJ/m <sup>2</sup> Grade Count:16
Charpy Impact Unnotched	5.00 J/cm <sup>2</sup> - NB	23.8 ft-lb/in <sup>2</sup> - NB	Average value: 8.67 J/cm <sup>2</sup> Grade Count:41
	4.50 - 11.5 J/cm <sup>2</sup> @Temperature -40.0 - - 20.0 °C	21.4 - 54.7 ft-lb/in <sup>2</sup> @Temperature -40.0 - - 4.00 °F	Average value: 7.57 J/cm <sup>2</sup> Grade Count:27
Charpy Impact, Notched	0.700 - 4.20 J/cm <sup>2</sup>	3.33 - 20.0 ft-lb/in <sup>2</sup>	Average value: 2.13 J/cm <sup>2</sup> Grade Count:47
	0.610 - 2.00 J/cm <sup>2</sup> @Temperature -30.0 - - 20.0 °C	2.90 - 9.52 ft-lb/in <sup>2</sup> @Temperature -22.0 - - 4.00 °F	Average value: 1.17 J/cm <sup>2</sup> Grade Count:30
Puncture Energy	3.80 - 32.0 J	2.80 - 23.6 ft-lb	Average value: 11.4 J Grade Count:4

Mechanical Properties	Metric	English	Comments
	2.50 - 4.80 J @Temperature -30.0 - -30.0 °C	1.84 - 3.54 ft-lb @Temperature -22.0 - -22.0 °F	Average value: 3.10 J Grade Count:4
	2.50 - 4.80 J @Load <=78.5 kg	1.84 - 3.54 ft-lb @Load <=173 lb	Average value: 3.10 J Grade Count:4

Thermal Properties	Metric	English	Comments
CTE, linear	19.0 - 52.0 µm/m-°C	10.6 - 28.9 µin/in-°F	Average value: 30.5 µm/m-°C Grade Count:29
CTE, linear, Transverse to Flow	65.0 - 180 µm/m-°C	36.1 - 100 µin/in-°F	Average value: 104 µm/m-°C Grade Count:17
Thermal Conductivity	0.200 - 0.389 W/m-K	1.39 - 2.70 BTU-in/hr-ft <sup>2</sup> -°F	Average value: 0.312 W/m-K Grade Count:3
Melting Point	205 - 225 °C	401 - 437 °F	Average value: 218 °C Grade Count:73
Deflection Temperature at 0.46 MPa (66 psi)	180 - 220 °C	356 - 428 °F	Average value: 210 °C Grade Count:63
Deflection Temperature at 1.8 MPa (264 psi)	70.0 - 213 °C	158 - 415 °F	Average value: 193 °C Grade Count:78
Vicat Softening Point	170 - 215 °C	338 - 419 °F	Average value: 198 °C Grade Count:23
Flammability, UL94	HB	HB	Grade Count:53
Glow Wire Test	550 - 650 °C	1020 - 1200 °F	Average value: 607 °C Grade Count:7

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+12 - 1.00e+15 ohm-cm	1.00e+12 - 1.00e+15 ohm-cm	Average value: 4.45e+14 ohm-cm Grade Count:35
Surface Resistance	1.00e+10 - 1.00e+16 ohm	1.00e+10 - 1.00e+16 ohm	Average value: 1.56e+15 ohm Grade Count:19
Dielectric Constant	3.20 - 14.0	3.20 - 14.0	Average value: 5.65 Grade Count:21
Dielectric Strength	19.7 - 43.0 kV/mm	500 - 1090 kV/in	Average value: 31.2 kV/mm Grade Count:24
Dissipation Factor	0.00600 - 0.300	0.00600 - 0.300	Average value: 0.0817 Grade Count:9
Dielectric Loss Index	0.0200 - 0.220	0.0200 - 0.220	Average value: 0.113 Grade Count:12
Arc Resistance	120 - 180 sec	120 - 180 sec	Average value: 150 sec Grade Count:4
Comparative Tracking Index	450 - 600 V	450 - 600 V	Average value: 557 V Grade Count:17

Processing Properties	Metric	English	Comments
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Processing Properties	Metric	English	Comments
Melt Temperature	220 - 291 °C	428 - 556 °F	Average value: 260 °C Grade Count:47
Mold Temperature	50.0 - 121 °C	122 - 250 °F	Average value: 81.6 °C Grade Count:64

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