

## Overview of materials for Nylon 12

Category : Polymer , Thermoplastic , Nylon , Nylon 12

### Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Nylon 12". 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.php](http://www.lookpolymers.com/polymer_Overview-of-materials-for-Nylon-12.php)

Physical Properties	Metric	English	Comments
Density	0.820 - 11.0 g/cc	0.0296 - 0.397 lb/in <sup>3</sup>	Average value: 1.42 g/cc Grade Count:484
Filler Content	10.0 - 50.0 %	10.0 - 50.0 %	Average value: 28.5 % Grade Count:29
Apparent Bulk Density	0.215 - 0.425 g/cc	0.00777 - 0.0154 lb/in <sup>3</sup>	Average value: 0.361 g/cc Grade Count:8
Water Absorption	0.0500 - 3.50 %	0.0500 - 3.50 %	Average value: 1.00 % Grade Count:219
Moisture Absorption at Equilibrium	0.000 - 2.00 %	0.000 - 2.00 %	Average value: 0.590 % Grade Count:194
Water Absorption at Saturation	0.100 - 1.80 %	0.100 - 1.80 %	Average value: 1.31 % Grade Count:63
Additive Loading	2.00 - 30.0 %	2.00 - 30.0 %	Average value: 19.5 % Grade Count:8
Particle Size	4.00 - 100 µm	4.00 - 100 µm	Average value: 50.3 µm Grade Count:20
pH	4.00 - 6.00	4.00 - 6.00	Average value: 4.25 Grade Count:8
Specific Surface Area	1.00 - 9.00 m <sup>2</sup> /g	1.00 - 9.00 m <sup>2</sup> /g	Average value: 2.44 m <sup>2</sup> /g Grade Count:8
Viscosity Test	190 cm <sup>3</sup> /g	190 cm <sup>3</sup> /g	Average value: 190 cm <sup>3</sup> /g Grade Count:5
Thickness	140 - 660 microns	5.51 - 26.0 mil	Average value: 450 microns Grade Count:3
Linear Mold Shrinkage	0.000200 - 0.0200 cm/cm	0.000200 - 0.0200 in/in	Average value: 0.00679 cm/cm Grade Count:284
Linear Mold Shrinkage, Transverse	0.000500 - 0.0400 cm/cm	0.000500 - 0.0400 in/in	Average value: 0.00932 cm/cm Grade Count:180
Melt Flow	0.500 - 190 g/10 min	0.500 - 190 g/10 min	Average value: 26.5 g/10 min Grade Count:126

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	55.0 - 120	55.0 - 120	Average value: 104 Grade Count:36
Hardness, Shore D	40.0 - 88.0	40.0 - 88.0	Average value: 71.1 Grade Count:98
Ball Indentation Hardness	20.0 - 230 MPa	2900 - 33400 psi	Average value: 122 MPa Grade Count:59
Tensile Strength, Ultimate	17.0 - 827 MPa	2470 - 120000 psi	Average value: 79.8 MPa Grade Count:368
	15.0 - 110 MPa @Temperature 60.0 - 150 °C	2180 - 16000 psi @Temperature 140 - 302 °F	Average value: 58.4 MPa Grade Count:4
Tensile Strength, Yield	9.50 - 170 MPa	1380 - 24600 psi	Average value: 45.8 MPa Grade Count:321
Elongation at Break	0.350 - 400 %	0.350 - 400 %	Average value: 53.7 % Grade Count:517
	4.50 - 16.0 % @Temperature 60.0 - 150 °C	4.50 - 16.0 % @Temperature 140 - 302 °F	Average value: 8.68 % Grade Count:3
Elongation at Yield	1.50 - 45.0 %	1.50 - 45.0 %	Average value: 11.2 % Grade Count:205
	>= 10.0 % @Temperature 60.0 - 150 °C	>= 10.0 % @Temperature 140 - 302 °F	Average value: 10.0 % Grade Count:1
Modulus of Elasticity	0.0800 - 64.1 GPa	11.6 - 9300 ksi	Average value: 5.35 GPa Grade Count:417
	2.10 - 7.20 GPa @Temperature 60.0 - 150 °C	305 - 1040 ksi @Temperature 140 - 302 °F	Average value: 4.28 GPa Grade Count:3
Tenacity	0.297 - 0.545 N/tex	3.37 - 6.17 g/denier	Average value: 0.413 N/tex Grade Count:3
Flexural Yield Strength	5.45 - 607 MPa	790 - 88000 psi	Average value: 114 MPa Grade Count:182
Flexural Modulus	0.0100 - 51.7 GPa	1.45 - 7500 ksi	Average value: 5.34 GPa Grade Count:212
	0.275 - 0.685 GPa @Temperature 60.0 - 120 °C	39.9 - 99.4 ksi @Temperature 140 - 248 °F	Average value: 0.450 GPa Grade Count:1
Compressive Yield Strength	38.0 - 110 MPa	5510 - 16000 psi	Average value: 71.0 MPa Grade Count:7
Izod Impact, Notched	0.160 - 100 J/cm	0.300 - 187 ft-lb/in	Average value: 2.23 J/cm Grade Count:170

Mechanical Properties	Metric	English	Comments
	0.410 - 1.10 J/cm	0.410 - 2.06 ft-lb/in	
	@Temperature -40.0 - -20.0 °C	@Temperature -40.0 - -4.00 °F	Average value: 0.410 J/cm Grade Count:5
Izod Impact, Unnotched	0.880 J/cm - NB	1.65 ft-lb/in - NB	Average value: 12.9 J/cm Grade Count:88
Izod Impact, Notched (ISO)	1.00 - 100000 kJ/m <sup>2</sup>	0.476 - 47600 ft-lb/in <sup>2</sup>	Average value: 13.2 kJ/m <sup>2</sup> Grade Count:40
Izod Impact, Unnotched (ISO)	8.00 kJ/m <sup>2</sup> - NB	3.81 ft-lb/in <sup>2</sup> - NB	Average value: 57.3 kJ/m <sup>2</sup> Grade Count:30
Charpy Impact Unnotched	0.500 J/cm <sup>2</sup> - NB	2.38 ft-lb/in <sup>2</sup> - NB	Average value: 6.83 J/cm <sup>2</sup> Grade Count:271
	3.40 J/cm <sup>2</sup> - NB	16.2 ft-lb/in <sup>2</sup> - NB	
	@Temperature -40.0 - 30.0 °C	@Temperature -40.0 - 86.0 °F	Average value: 7.47 J/cm <sup>2</sup> Grade Count:193
Charpy Impact, Notched	0.100 J/cm <sup>2</sup> - NB	0.476 ft-lb/in <sup>2</sup> - NB	Average value: 1.96 J/cm <sup>2</sup> Grade Count:262
	0.200 J/cm <sup>2</sup> - NB	0.952 ft-lb/in <sup>2</sup> - NB	
	@Temperature -40.0 - 30.0 °C	@Temperature -40.0 - 86.0 °F	Average value: 0.936 J/cm <sup>2</sup> Grade Count:226
Dart Drop, Total Energy	2.00 - 16.0 J	1.48 - 11.8 ft-lb	Average value: 9.54 J Grade Count:13
Falling Dart Impact	9.73 - 13.0 J	7.18 - 9.59 ft-lb	Average value: 11.2 J Grade Count:3
Coefficient of Friction	0.0200 - 0.670	0.0200 - 0.670	Average value: 0.301 Grade Count:17
Coefficient of Friction, Static	0.0800 - 0.520	0.0800 - 0.520	Average value: 0.285 Grade Count:10
Tensile Creep Modulus, 1 hour	310 - 1300 MPa	45000 - 189000 psi	Average value: 833 MPa Grade Count:8
Tensile Creep Modulus, 1000 hours	60.0 - 800 MPa	8700 - 116000 psi	Average value: 388 MPa Grade Count:12
Tear Strength Test	0.200 - 52.0	0.200 - 52.0	Average value: 19.1 Grade Count:3
K (wear) Factor	14.1 - 898 x 10 <sup>-8</sup> mm <sup>3</sup> /N-M	7.00 - 446 x 10 <sup>-10</sup> in <sup>3</sup> -min/ft-lb-hr	Average value: 131 x 10 <sup>-8</sup> mm <sup>3</sup> /N-M Grade Count:8

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00 - 1.00e+16 ohm-cm	1.00 - 1.00e+16 ohm-cm	Average value: 2.46e+14 ohm-cm Grade Count:270
Surface Resistance	1.00 - 5.20e+15 ohm	1.00 - 5.20e+15 ohm	Average value: 1.28e+14 ohm Grade Count:230
Insulation Resistance	10.0 - 1.00e+14 ohm	10.0 - 1.00e+14 ohm	Average value: 4.13e+12 ohm Grade Count:25

Electrical Properties	Metric	English	Comments
Static Decay	0.00200 - 2.00 sec	0.00200 - 2.00 sec	Average value: 1.50 sec Grade Count:4
Dielectric Constant	2.00 - 17.0	2.00 - 17.0	Average value: 4.90 Grade Count:82
Dielectric Strength	1.00 - 100 kV/mm	25.4 - 2540 kV/in	Average value: 33.0 kV/mm Grade Count:193
Dissipation Factor	0.000290 - 0.330	0.000290 - 0.330	Average value: 0.0665 Grade Count:82
Dielectric Loss Index	0.000200 - 0.0400	0.000200 - 0.0400	Average value: 0.0295 Grade Count:4
Comparative Tracking Index	60.0 - 600 V	60.0 - 600 V	Average value: 570 V Grade Count:171

## Contact Songhan Plastic Technology Co.,Ltd.

Website : [www.lookpolymers.com](http://www.lookpolymers.com)

Email : [sales@lookpolymers.com](mailto:sales@lookpolymers.com)

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China