

Overview of materials for Nylon 66, Heat Stabilized

Category : Polymer , Thermoplastic , Nylon , Nylon 66 , Nylon 66, Heat Stabilized

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Nylon 66, Heat Stabilized". 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-66-Heat-Stabilized.php

Physical Properties	Metric	English	Comments
Density	1.04 - 1.85 g/cc	0.0376 - 0.0668 lb/in ³	Average value: 1.31 g/cc Grade Count:378
Filler Content	15.0 - 60.0 %	15.0 - 60.0 %	Average value: 33.7 % Grade Count:34
Water Absorption	0.300 - 8.50 %	0.300 - 8.50 %	Average value: 1.15 % Grade Count:231
Moisture Absorption at Equilibrium	0.250 - 2.80 %	0.250 - 2.80 %	Average value: 1.86 % Grade Count:35
Water Absorption at Saturation	2.50 - 10.0 %	2.50 - 10.0 %	Average value: 5.90 % Grade Count:44
Linear Mold Shrinkage	0.00100 - 0.0335 cm/cm	0.00100 - 0.0335 in/in	Average value: 0.00803 cm/cm Grade Count:359
Linear Mold Shrinkage, Transverse	0.00130 - 0.0240 cm/cm	0.00130 - 0.0240 in/in	Average value: 0.0117 cm/cm Grade Count:88
Melt Flow	1.00 - 50.0 g/10 min	1.00 - 50.0 g/10 min	Average value: 6.53 g/10 min Grade Count:20
Spiral Flow	0.800 - 117 cm	0.315 - 46.1 in	Average value: 83.0 cm Grade Count:21

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell L	110 - 115	110 - 115	Average value: 113 Grade Count:8
Hardness, Rockwell M	55.0 - 119	55.0 - 119	Average value: 78.9 Grade Count:29
Hardness, Rockwell R	82.0 - 122	82.0 - 122	Average value: 114 Grade Count:189
Ball Indentation Hardness	200 - 330 MPa	29000 - 47900 psi	Average value: 255 MPa Grade Count:12
Tensile Strength, Ultimate	34.5 - 300 MPa	5000 - 43500 psi	Average value: 118 MPa Grade Count:164
	40.0 - 140 MPa @Temperature 60.0 -	5800 - 20300 psi @Temperature 140 -	Average value: 78.1 MPa Grade Count:5

Mechanical Properties	150 °C Metric	302 °F English	Comments
Tensile Strength, Yield	10.3 - 252 MPa	1500 - 36500 psi	Average value: 119 MPa Grade Count:235
	144.79 - 144.79 MPa @Temperature 93.3 - 93.3 °C	21000 - 21000 psi @Temperature 200 - 200 °F	Average value: 145 MPa Grade Count:1
Elongation at Break	1.00 - 300 %	1.00 - 300 %	Average value: 21.9 % Grade Count:331
	3.20 - 80.0 % @Temperature 60.0 - 150 °C	3.20 - 80.0 % @Temperature 140 - 302 °F	Average value: 72.6 % Grade Count:5
Elongation at Yield	2.50 - 90.0 %	2.50 - 90.0 %	Average value: 17.4 % Grade Count:40
Modulus of Elasticity	1.10 - 28.0 GPa	160 - 4060 ksi	Average value: 7.84 GPa Grade Count:105
	0.400 - 9.20 GPa @Temperature 60.0 - 150 °C	58.0 - 1330 ksi @Temperature 140 - 302 °F	Average value: 2.28 GPa Grade Count:5
Flexural Yield Strength	20.0 - 420 MPa	2900 - 60900 psi	Average value: 174 MPa Grade Count:331
	35.0 - 35.0 MPa @Temperature 90.0 - 90.0 °C	5080 - 5080 psi @Temperature 194 - 194 °F	Average value: 35.0 MPa Grade Count:1
Flexural Modulus	0.255 - 36.2 GPa	37.0 - 5250 ksi	Average value: 6.54 GPa Grade Count:334
	0.750 - 15.1685 GPa @Temperature 90.0 - 93.3 °C	109 - 2200.03 ksi @Temperature 194 - 200 °F	Average value: 7.96 GPa Grade Count:2
Compressive Yield Strength	30.3 - 110 MPa	4400 - 16000 psi	Average value: 57.0 MPa Grade Count:3
Poissons Ratio	0.350 - 0.400	0.350 - 0.400	Average value: 0.363 Grade Count:4
Shear Strength	50.0 - 76.5 MPa	7250 - 11100 psi	Average value: 61.7 MPa Grade Count:5
Izod Impact, Notched	0.320 - 10.1 J/cm	0.600 - 19.0 ft-lb/in	Average value: 1.57 J/cm Grade Count:274
	0.5339 - 2.6695 J/cm @Temperature -40.0 - - 40.0 °C	1.000 - 5.0011 ft-lb/in @Temperature -40.0 - - 40.0 °F	Average value: 1.29 J/cm Grade Count:16
	0.5339 - 2.6695 J/cm @Thickness 3.17 - 3.17	1.000 - 5.0011 ft-lb/in @Thickness 0.125 -	Average value: 1.29 J/cm Grade Count:16

Mechanical Properties	mm Metric	0.125 in English	Comments
Izod Impact, Unnotched	3.20 - 5340 J/cm	6.00 - 10000 ft-lb/in	Average value: 9.26 J/cm Grade Count:75
Izod Impact, Notched (ISO)	3.50 - 861 kJ/m ²	1.67 - 410 ft-lb/in ²	Average value: 33.0 kJ/m ² Grade Count:39
	3.50 - 17.0 kJ/m ² @Temperature -40.0 - - 20.0 °C	1.67 - 8.09 ft-lb/in ² @Temperature -40.0 - - 4.00 °F	Average value: 8.86 kJ/m ² Grade Count:31
Izod Impact, Unnotched (ISO)	30.0 - 100 kJ/m ²	14.3 - 47.6 ft-lb/in ²	Average value: 68.2 kJ/m ² Grade Count:13
	25.0 - 90.0 kJ/m ² @Temperature -30.0 - - 30.0 °C	11.9 - 42.8 ft-lb/in ² @Temperature -22.0 - - 22.0 °F	Average value: 62.5 kJ/m ² Grade Count:12
Charpy Impact Unnotched	1.30 J/cm ² - NB	6.19 ft-lb/in ² - NB	Average value: 8.32 J/cm ² Grade Count:79
	3.20 J/cm ² - NB @Temperature -30.0 - - 20.0 °C	15.2 ft-lb/in ² - NB @Temperature -22.0 - - 4.00 °F	Average value: 6.99 J/cm ² Grade Count:49
Charpy Impact, Notched	0.300 - 3.00 J/cm ²	1.43 - 14.3 ft-lb/in ²	Average value: 1.25 J/cm ² Grade Count:71
	0.200 - 1.90 J/cm ² @Temperature -40.0 - - 20.0 °C	0.952 - 9.04 ft-lb/in ² @Temperature -40.0 - - 4.00 °F	Average value: 0.924 J/cm ² Grade Count:51
Puncture Energy	2.00 - 2.00 J @Temperature -30.0 - - 30.0 °C	1.48 - 1.48 ft-lb @Temperature -22.0 - - 22.0 °F	Average value: 2.00 J Grade Count:1
Coefficient of Friction	0.100 - 0.280	0.100 - 0.280	Average value: 0.225 Grade Count:11
Coefficient of Friction, Static	0.0900 - 0.220	0.0900 - 0.220	Average value: 0.170 Grade Count:11
K (wear) Factor	16.1 - 38.3 x 10 ⁻⁸ mm ³ /N-M	8.00 - 19.0 x 10 ⁻¹⁰ in ³ - min/ft-lb-hr	Average value: 31.3 x 10 ⁻⁸ mm ³ /N-M Grade Count:11
Limiting Pressure Velocity	0.596 - 1.54 MPa- m/sec	17000 - 44000 psi- ft/min	Average value: 0.690 MPa-m/sec Grade Count:8
Taber Abrasion, mg/1000 Cycles	5.00 - 7.00	5.00 - 7.00	Average value: 6.00 Grade Count:4

Thermal Properties	Metric	English	Comments
CTE, linear	0.710 - 146 μm/m-°C	0.394 - 81.0 μin/in-°F	Average value: 44.4 μm/m-°C Grade Count:206

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00 - 1.00e+17 ohm-cm	1.00 - 1.00e+17 ohm-cm	Average value: 2.93e+15 ohm-cm Grade Count:243
Surface Resistance	1.00 - 1.00e+16 ohm	1.00 - 1.00e+16 ohm	Average value: 9.40e+14 ohm Grade Count:113
Dielectric Constant	3.20 - 13.0	3.20 - 13.0	Average value: 4.01 Grade Count:30
Dielectric Strength	15.7 - 120 kV/mm	400 - 3050 kV/in	Average value: 23.4 kV/mm Grade Count:200
Dissipation Factor	0.00680 - 0.320	0.00680 - 0.320	Average value: 0.0302 Grade Count:13
Arc Resistance	95.0 - 185 sec	95.0 - 185 sec	Average value: 127 sec Grade Count:6
Comparative Tracking Index	225 - 600 V	225 - 600 V	Average value: 477 V Grade Count:68

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