

Overview of materials for Nylon 6, Heat Stabilized

Category : Polymer , Thermoplastic , Nylon , Nylon 6 , Nylon 6, Heat Stabilized

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Nylon 6, 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-6-Heat-Stabilized.php

Physical Properties	Metric	English	Comments
Density	1.04 - 1.70 g/cc	0.0376 - 0.0614 lb/in ³	Average value: 1.27 g/cc Grade Count:267
Filler Content	10.0 - 60.0 %	10.0 - 60.0 %	Average value: 28.7 % Grade Count:30
Water Absorption	0.200 - 10.0 %	0.200 - 10.0 %	Average value: 1.37 % Grade Count:154
Moisture Absorption at Equilibrium	0.250 - 2.80 %	0.250 - 2.80 %	Average value: 2.05 % Grade Count:32
Water Absorption at Saturation	3.90 - 10.0 %	3.90 - 10.0 %	Average value: 7.38 % Grade Count:38
Linear Mold Shrinkage	0.00100 - 0.0350 cm/cm	0.00100 - 0.0350 in/in	Average value: 0.00738 cm/cm Grade Count:232
Linear Mold Shrinkage, Transverse	0.00500 - 0.100 cm/cm	0.00500 - 0.100 in/in	Average value: 0.0118 cm/cm Grade Count:62
Melt Flow	1.00 - 100 g/10 min	1.00 - 100 g/10 min	Average value: 12.2 g/10 min Grade Count:19
Spiral Flow	35.0 - 107 cm	13.8 - 42.1 in	Average value: 77.5 cm Grade Count:11

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell L	113 - 123	113 - 123	Average value: 118 Grade Count:4
Hardness, Rockwell R	70.0 - 125	70.0 - 125	Average value: 114 Grade Count:122
Ball Indentation Hardness	75.0 - 290 MPa	10900 - 42100 psi	Average value: 160 MPa Grade Count:19
Tensile Strength, Ultimate	37.9 - 240 MPa	5500 - 34800 psi	Average value: 108 MPa Grade Count:88
Tensile Strength, Yield	29.0 - 234 MPa	4200 - 34000 psi	Average value: 104 MPa Grade Count:192
Elongation at Break	1.50 - 350 %	1.50 - 350 %	Average value: 36.2 % Grade Count:231

Mechanical Properties	$\geq 100\%$ Metric	$\geq 100\%$ English	Comments Average value: 100 % Grade Count:1
	@Temperature 60.0 - 150 °C	@Temperature 140 - 302 °F	
Elongation at Yield	2.00 - 200 %	2.00 - 200 %	Average value: 12.0 % Grade Count:25
Creep Strength	4.00 - 20.0 MPa	580 - 2900 psi	Average value: 11.9 MPa Grade Count:10
Modulus of Elasticity	0.470 - 21.0 GPa	68.2 - 3050 ksi	Average value: 5.79 GPa Grade Count:83
	0.300 - 0.550 GPa	43.5 - 79.8 ksi	Average value: 0.379 GPa Grade Count:1
	@Temperature 60.0 - 150 °C	@Temperature 140 - 302 °F	
Flexural Yield Strength	9.65 - 370 MPa	1400 - 53700 psi	Average value: 151 MPa Grade Count:233
Flexural Modulus	0.469 - 20.0 GPa	68.0 - 2900 ksi	Average value: 4.97 GPa Grade Count:236
Compressive Yield Strength	29.0 - 147 MPa	4210 - 21300 psi	Average value: 66.6 MPa Grade Count:12
Poissons Ratio	0.350	0.350	Average value: 0.350 Grade Count:4
Izod Impact, Notched	0.374 - 5340 J/cm	0.700 - 10000 ft-lb/in	Average value: 1.46 J/cm Grade Count:180
	0.186865 - 5338.47 J/cm	0.350075 - 10001.1 ft-lb/in	Average value: 1.56 J/cm Grade Count:19
	@Temperature -40.0 - -20.0 °C	@Temperature -40.0 - -4.00 °F	
	0.186865 - 5338.47 J/cm	0.350075 - 10001.1 ft-lb/in	Average value: 1.56 J/cm Grade Count:19
	@Thickness 1.57 - 3.17 mm	@Thickness 0.0618 - 0.125 in	
Izod Impact, Unnotched	3.20 - 5340 J/cm	6.00 - 10000 ft-lb/in	Average value: 9.89 J/cm Grade Count:45
Izod Impact, Notched (ISO)	2.50 - 100000 kJ/m ²	1.19 - 47600 ft-lb/in ²	Average value: 14.6 kJ/m ² Grade Count:33
	3.00 - 20.0 kJ/m ²	1.43 - 9.52 ft-lb/in ²	Average value: 10.0 kJ/m ² Grade Count:19
	@Temperature -40.0 - -20.0 °C	@Temperature -40.0 - -4.00 °F	
Izod Impact, Unnotched (ISO)	30.0 - 110 kJ/m ²	14.3 - 52.3 ft-lb/in ²	Average value: 67.0 kJ/m ² Grade Count:12
	30.0 - 100 kJ/m ²	14.3 - 47.6 ft-lb/in ²	Average value: 57.0 kJ/m ² Grade Count:12
	@Temperature -30.0 - -30.0 °C	@Temperature -22.0 - -22.0 °F	

Charpy Impact Unnotched Mechanical Properties	2.00 J/cm ² - NB Metric	9.52 ft-lb/in ² - NB English	Average value: 7.53 J/cm ² Grade Count:41 Comments
	1.50 J/cm ² - NB @Temperature -30.0 - - 20.0 °C	7.14 ft-lb/in ² - NB @Temperature -22.0 - - 4.00 °F	Average value: 5.64 J/cm ² Grade Count:42
Charpy Impact, Notched	0.150 - 13.0 J/cm ²	0.714 - 61.9 ft-lb/in ²	Average value: 1.44 J/cm ² Grade Count:56
	0.150 - 2.00 J/cm ² @Temperature -30.0 - - 20.0 °C	0.714 - 9.52 ft-lb/in ² @Temperature -22.0 - - 4.00 °F	Average value: 0.863 J/cm ² Grade Count:43
Gardner Impact	36.2 J	26.7 ft-lb	Average value: 36.2 J Grade Count:3
Puncture Energy	64.0 - 64.0 J @Temperature -30.0 - - 30.0 °C	47.2 - 47.2 ft-lb @Temperature -22.0 - - 22.0 °F	Average value: 64.0 J Grade Count:1
Coefficient of Friction	0.0400 - 0.390	0.0400 - 0.390	Average value: 0.204 Grade Count:14
Tear Strength Test	0.150 - 0.250	0.150 - 0.250	Average value: 0.190 Grade Count:10
K Factor (Wear Factor)	9.00e-11 - 0.440	9.00e-11 - 0.440	Average value: 0.0400 Grade Count:11

Thermal Properties	Metric	English	Comments
CTE, linear	7.20 - 150 µm/m-°C	4.00 - 83.3 µin/in-°F	Average value: 48.9 µm/m-°C Grade Count:143
CTE, linear, Transverse to Flow	80.0 - 150 µm/m-°C	44.4 - 83.3 µin/in-°F	Average value: 97.0 µm/m-°C Grade Count:12
Specific Heat Capacity	1.67 J/g-°C	0.399 BTU/lb-°F	Average value: 1.67 J/g-°C Grade Count:10
Thermal Conductivity	0.250 - 0.330 W/m-K	1.74 - 2.29 BTU-in/hr- ft ² -°F	Average value: 0.265 W/m-K Grade Count:13
Melting Point	215 - 260 °C	419 - 500 °F	Average value: 221 °C Grade Count:102
Maximum Service Temperature, Air	85.0 - 190 °C	185 - 374 °F	Average value: 147 °C Grade Count:14
Deflection Temperature at 0.46 MPa (66 psi)	95.0 - 227 °C	203 - 440 °F	Average value: 199 °C Grade Count:172
Deflection Temperature at 1.8 MPa (264 psi)	49.0 - 250 °C	120 - 482 °F	Average value: 144 °C Grade Count:231
Deflection Temperature at 8.0 MPa	55.0 - 190 °C	131 - 374 °F	Average value: 142 °C Grade Count:5

Electrical Properties	Metric	English	Comments
			Average value: 8.55e+14 ohm-cm

Electrical Properties	Metric	English	Grade Count:156 Comments
Surface Resistance	1.00 - 1.00e+16 ohm	1.00 - 1.00e+16 ohm	Average value: 9.02e+14 ohm Grade Count:59
Dielectric Constant	3.00 - 4.00	3.00 - 4.00	Average value: 3.55 Grade Count:20
Dielectric Strength	15.4 - 80.0 kV/mm	390 - 2030 kV/in	Average value: 20.4 kV/mm Grade Count:137
Dissipation Factor	0.00500 - 0.0180	0.00500 - 0.0180	Average value: 0.0114 Grade Count:7
Dielectric Loss Index	0.0300	0.0300	Average value: 0.0300 Grade Count:10
Comparative Tracking Index	350 - 600 V	350 - 600 V	Average value: 554 V Grade Count:38

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