

Overview of materials for Nylon 66, Unreinforced, Flame Retardant

Category : Polymer , Thermoplastic , Nylon , Nylon 66 , Nylon 66, Unreinforced, Flame Retardant

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Nylon 66, Unreinforced, Flame Retardant".

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-Unreinforced-Flame-Retardant.php

Physical Properties	Metric	English	Comments
Density	1.02 - 1.67 g/cc	0.0368 - 0.0603 lb/in ³	Average value: 1.20 g/cc Grade Count:126
	1.03 - 1.03 g/cc @Temperature 290 - 290 °C	0.0372 - 0.0372 lb/in ³ @Temperature 554 - 554 °F	Average value: 1.03 g/cc Grade Count:1
Water Absorption	0.0500 - 9.00 %	0.0500 - 9.00 %	Average value: 2.15 % Grade Count:82
Moisture Absorption at Equilibrium	0.170 - 3.10 %	0.170 - 3.10 %	Average value: 2.06 % Grade Count:32
Water Absorption at Saturation	6.50 - 9.00 %	6.50 - 9.00 %	Average value: 8.01 % Grade Count:11
Viscosity Test	150 - 205 cm ³ /g	150 - 205 cm ³ /g	Average value: 178 cm ³ /g Grade Count:4
Linear Mold Shrinkage	0.00100 - 0.0280 cm/cm	0.00100 - 0.0280 in/in	Average value: 0.0135 cm/cm Grade Count:111
Linear Mold Shrinkage, Transverse	0.00100 - 0.0200 cm/cm	0.00100 - 0.0200 in/in	Average value: 0.0127 cm/cm Grade Count:19
Melt Flow	4.00 - 130 g/10 min	4.00 - 130 g/10 min	Average value: 49.8 g/10 min Grade Count:7

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	55.0 - 88.0	55.0 - 88.0	Average value: 77.3 Grade Count:11
Hardness, Rockwell R	90.0 - 125	90.0 - 125	Average value: 116 Grade Count:44
Ball Indentation Hardness	110 - 150 MPa	16000 - 21800 psi	Average value: 129 MPa Grade Count:9
Tensile Strength, Ultimate	4.00 - 137 MPa	580 - 19900 psi	Average value: 70.9 MPa Grade Count:73
	24.0 - 116 MPa @Temperature -40.0 -	3480 - 16800 psi @Temperature -40.0 -	Average value: 49.1 MPa Grade Count:6

Mechanical Properties	80.0 °C Metric	176 °F English	Comments
	10.0 - 95.0 MPa	1450 - 13800 psi	Average value: 49.1 MPa Grade Count:1
	@Temperature -20.0 - 100 °C	@Temperature -4.00 - 212 °F	
	10.0 - 95.0 MPa	1450 - 13800 psi	Average value: 49.1 MPa Grade Count:1
	@Strain 1.00 - 3.00 %	@Strain 1.00 - 3.00 %	
Tensile Strength, Yield	34.5 - 193 MPa	5000 - 28000 psi	Average value: 72.6 MPa Grade Count:65
	62.0 - 107 MPa	8990 - 15500 psi	Average value: 84.5 MPa Grade Count:1
	@Temperature -40.0 - 77.0 °C	@Temperature -40.0 - 171 °F	
Elongation at Break	2.20 - 300 %	2.20 - 300 %	Average value: 33.9 % Grade Count:104
	20.0 - 300 %	20.0 - 300 %	Average value: 97.5 % Grade Count:5
	@Temperature -40.0 - 150 °C	@Temperature -40.0 - 302 °F	
Elongation at Yield	2.00 - 25.0 %	2.00 - 25.0 %	Average value: 11.0 % Grade Count:42
	5.00 - 30.0 %	5.00 - 30.0 %	Average value: 17.5 % Grade Count:1
	@Temperature -40.0 - 77.0 °C	@Temperature -40.0 - 171 °F	
Modulus of Elasticity	1.10 - 12.4 GPa	160 - 1800 ksi	Average value: 3.02 GPa Grade Count:64
	0.400 - 3.50 GPa	58.0 - 508 ksi	Average value: 1.37 GPa Grade Count:5
	@Temperature 40.0 - 150 °C	@Temperature 104 - 302 °F	
Flexural Yield Strength	39.0 - 276 MPa	5660 - 40000 psi	Average value: 101 MPa Grade Count:94
	38.0 - 140 MPa	5510 - 20300 psi	Average value: 86.8 MPa Grade Count:2
	@Temperature -40.0 - 80.0 °C	@Temperature -40.0 - 176 °F	
Flexural Modulus	0.255 - 12.4 GPa	37.0 - 1800 ksi	Average value: 2.85 GPa Grade Count:99
	0.400 - 4.30 GPa	58.0 - 624 ksi	Average value: 2.14 GPa Grade Count:2
	@Temperature -40.0 - 80.0 °C	@Temperature -40.0 - 176 °F	
Compressive Yield Strength	34.0 - 97.0 MPa	4930 - 14100 psi	Average value: 79.5 MPa Grade Count:4
Shear Strength	56.0 - 69.0 MPa	8120 - 10000 psi	Average value: 63.0 MPa Grade Count:6

Mechanical Properties	Metric	English	Comments
Izod Impact, Notched	0.290 - 7.47 J/cm	0.0113 - 14.0 ft-lb/in	Average value: 0.937 J/cm Grade Count:13
	0.350 - 1.38814 J/cm	0.656 - 2.60056 ft-lb/in	Average value: 0.642 J/cm Grade Count:4
	@Temperature -40.0 - -40.0 °C	@Temperature -40.0 - -40.0 °F	
	0.300 - 0.427 J/cm	0.562 - 0.800 ft-lb/in	Average value: 0.642 J/cm Grade Count:2
	@Temperature -40.0 - -40.0 °C	@Temperature -40.0 - -40.0 °F	
	0.300 - 0.427 J/cm	0.562 - 0.800 ft-lb/in	Average value: 0.642 J/cm Grade Count:2
	@Thickness 1.57 - 3.17 mm	@Thickness 0.0618 - 0.125 in	
Izod Impact, Unnotched	5.34 J/cm - NB	10.0 ft-lb/in - NB	Average value: 6.71 J/cm Grade Count:7
Izod Impact, Notched (ISO)	3.00 kJ/m² - NB	1.43 ft-lb/in² - NB	Average value: 5.85 kJ/m² Grade Count:21
	3.00 - 6.00 kJ/m²	1.43 - 2.86 ft-lb/in²	Average value: 4.00 kJ/m² Grade Count:5
	@Temperature -40.0 - -20.0 °C	@Temperature -40.0 - -4.00 °F	
Izod Impact, Unnotched (ISO)	45.0 - 60.0 kJ/m²	21.4 - 28.6 ft-lb/in²	Average value: 53.8 kJ/m² Grade Count:2
	@Temperature -30.0 - -30.0 °C	@Temperature -22.0 - -22.0 °F	
Charpy Impact Unnotched	3.00 J/cm² - NB	14.3 ft-lb/in² - NB	Average value: 6.80 J/cm² Grade Count:39
	2.00 J/cm² - NB	9.52 ft-lb/in² - NB	Average value: 6.01 J/cm² Grade Count:17
	@Temperature -40.0 - -20.0 °C	@Temperature -40.0 - -4.00 °F	
Charpy Impact, Notched	0.150 J/cm² - NB	0.714 ft-lb/in² - NB	Average value: 0.663 J/cm² Grade Count:40
	0.150 J/cm² - NB	0.714 ft-lb/in² - NB	Average value: 0.311 J/cm² Grade Count:15
	@Temperature -40.0 - -20.0 °C	@Temperature -40.0 - -4.00 °F	
Tensile Creep Modulus, 1000 hours	700 MPa	102000 psi	Average value: 700 MPa Grade Count:3
Taber Abrasion, mg/1000 Cycles	5.00 - 24.0	5.00 - 24.0	Average value: 10.4 Grade Count:5

Thermal Properties	Metric	English	Comments
CTE, linear	10.0 - 100 µm/m-°C	5.56 - 55.6 µin/in-°F	Average value: 70.9 µm/m-°C Grade Count:42
	10.0 - 85.0 µm/m-°C	5.56 - 47.2 µin/in-°F	Average value: 64.0 µm/m-°C Grade

CTE, linear, Transverse to Flow Thermal Properties	Metric	English	Count:5 Comments
Electrical Properties	Metric	English	Comments
Electrical Resistivity	100 - 1.00e+18 ohm-cm	100 - 1.00e+18 ohm-cm	Average value: 4.11e+16 ohm-cm Grade Count:70
Surface Resistance	100 - 1.00e+16 ohm	100 - 1.00e+16 ohm	Average value: 5.18e+14 ohm Grade Count:35
Dielectric Constant	2.70 - 8.00	2.70 - 8.00	Average value: 3.88 Grade Count:29
Dielectric Strength	13.0 - 70.0 kV/mm	330 - 1780 kV/in	Average value: 26.1 kV/mm Grade Count:52
Dissipation Factor	0.00500 - 0.200	0.00500 - 0.200	Average value: 0.0429 Grade Count:19
Dielectric Loss Index	0.0200 - 0.300	0.0200 - 0.300	Average value: 0.128 Grade Count:6
Arc Resistance	60.0 - 179 sec	60.0 - 179 sec	Average value: 121 sec Grade Count:9
Comparative Tracking Index	225 - 600 V	225 - 600 V	Average value: 557 V Grade Count:48

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