

Overview of materials for Nylon 46, Unreinforced

Category : Polymer , Thermoplastic , Nylon , Nylon 46 , Nylon 46, Unreinforced

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Nylon 46, Unreinforced". 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-46-Unreinforced.php

Physical Properties	Metric	English	Comments
Density	1.10 - 1.43 g/cc	0.0397 - 0.0517 lb/in ³	Average value: 1.21 g/cc Grade Count:40
Water Absorption	0.600 - 13.5 %	0.600 - 13.5 %	Average value: 8.91 % Grade Count:17
Moisture Absorption at Equilibrium	2.00 - 3.70 %	2.00 - 3.70 %	Average value: 3.26 % Grade Count:24
Water Absorption at Saturation	7.00 - 14.0 %	7.00 - 14.0 %	Average value: 10.0 % Grade Count:4
Viscosity Test	175 - 220 cm ³ /g	175 - 220 cm ³ /g	Average value: 187 cm ³ /g Grade Count:7
Linear Mold Shrinkage	0.00330 - 0.0200 cm/cm	0.00330 - 0.0200 in/in	Average value: 0.0188 cm/cm Grade Count:24
Linear Mold Shrinkage, Transverse	0.0150 - 0.0200 cm/cm	0.0150 - 0.0200 in/in	Average value: 0.0195 cm/cm Grade Count:11

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	92.0 - 97.0	92.0 - 97.0	Average value: 93.7 Grade Count:3
Hardness, Rockwell R	90.0 - 100	90.0 - 100	Average value: 95.0 Grade Count:4
Ball Indentation Hardness	165 - 200 MPa	23900 - 29000 psi	Average value: 172 MPa Grade Count:3
Tensile Strength, Ultimate	65.0 - 197 MPa	9430 - 28500 psi	Average value: 107 MPa Grade Count:5
Tensile Strength, Yield	45.0 - 105 MPa	6530 - 15200 psi	Average value: 72.6 MPa Grade Count:33
	30.0 - 50.0 MPa @Temperature 120 - 200 °C	4350 - 7250 psi @Temperature 248 - 392 °F	Average value: 38.8 MPa Grade Count:2
Elongation at Break	2.80 - 280 %	2.80 - 280 %	Average value: 44.8 % Grade Count:28
	>= 50.0 %	>= 50.0 %	

Mechanical Properties	Metric @ Temperature 120 - 200 °C	English @ Temperature 248 - 392 °F	Average value: 50.0 % Grade Count:2 Comments
Elongation at Yield	5.00 - 55.0 %	5.00 - 55.0 %	Average value: 27.7 % Grade Count:25
Modulus of Elasticity	0.600 - 12.1 GPa	87.0 - 1750 ksi	Average value: 2.43 GPa Grade Count:36
	0.500 - 0.800 GPa @Temperature 120 - 200 °C	72.5 - 116 ksi @Temperature 248 - 392 °F	Average value: 0.637 GPa Grade Count:2
Flexural Yield Strength	103 - 283 MPa	15000 - 41000 psi	Average value: 135 MPa Grade Count:8
Flexural Modulus	0.900 - 11.4 GPa	131 - 1650 ksi	Average value: 3.28 GPa Grade Count:12
	0.600 - 0.800 GPa @Temperature 120 - 160 °C	87.0 - 116 ksi @Temperature 248 - 320 °F	Average value: 0.700 GPa Grade Count:2
Compressive Yield Strength	23.0 - 110 MPa	3340 - 16000 psi	Average value: 66.5 MPa Grade Count:3
Izod Impact, Notched	0.320 - 0.801 J/cm	0.600 - 1.50 ft-lb/in	Average value: 0.686 J/cm Grade Count:7
	0.74746 - 0.74746 J/cm @Temperature -40.0 - - 40.0 °C	1.4003 - 1.4003 ft-lb/in @Temperature -40.0 - - 40.0 °F	Average value: 0.747 J/cm Grade Count:2
	0.74746 - 0.74746 J/cm @Thickness 3.17 - 3.17 mm	1.4003 - 1.4003 ft-lb/in @Thickness 0.125 - 0.125 in	Average value: 0.747 J/cm Grade Count:2
Izod Impact, Unnotched	4.27 - 5340 J/cm	8.00 - 10000 ft-lb/in	Average value: 8.81 J/cm Grade Count:4
Izod Impact, Notched (ISO)	8.00 - 35.0 kJ/m²	3.81 - 16.7 ft-lb/in²	Average value: 18.7 kJ/m² Grade Count:3
	4.00 - 5.00 kJ/m² @Temperature -40.0 - - 40.0 °C	1.90 - 2.38 ft-lb/in² @Temperature -40.0 - - 40.0 °F	Average value: 4.33 kJ/m² Grade Count:3
Charpy Impact Unnotched	8.50 J/cm² - NB	40.5 ft-lb/in² - NB	Average value: 9.25 J/cm² Grade Count:25
	8.50 J/cm² - NB @Temperature -30.0 - - 30.0 °C	40.5 ft-lb/in² - NB @Temperature -22.0 - - 22.0 °F	Average value: 10.1 J/cm² Grade Count:23
Charpy Impact, Notched	0.400 - 1000 J/cm²	1.90 - 4760 ft-lb/in²	Average value: 3.09 J/cm² Grade Count:31

Mechanical Properties	Metric	English	Comments
	0.300 - 3.00 J/cm ²	1.00 - 14.3 ft-lb/in ²	Average value: 1.10 J/cm ² Grade Count:24
	@Temperature -30.0 - -30.0 °C	@Temperature -22.0 - -22.0 °F	
Coefficient of Friction	0.200 - 0.600	0.200 - 0.600	Average value: 0.388 Grade Count:3
Tensile Creep Modulus, 1000 hours	500 - 850 MPa	72500 - 123000 psi	Average value: 570 MPa Grade Count:5

Thermal Properties	Metric	English	Comments
CTE, linear	72.0 - 160 µm/m-°C	40.0 - 88.9 µin/in-°F	Average value: 88.1 µm/m-°C Grade Count:26
CTE, linear, Transverse to Flow	90.0 - 180 µm/m-°C	50.0 - 100 µin/in-°F	Average value: 109 µm/m-°C Grade Count:17
Thermal Conductivity	0.300 - 0.303 W/m-K	2.08 - 2.10 BTU-in/hr-ft ² -°F	Average value: 0.301 W/m-K Grade Count:3
Melting Point	290 - 295 °C	554 - 563 °F	Average value: 295 °C Grade Count:34
Maximum Service Temperature, Air	128 - 280 °C	262 - 536 °F	Average value: 162 °C Grade Count:5
Deflection Temperature at 0.46 MPa (66 psi)	200 - 290 °C	392 - 554 °F	Average value: 261 °C Grade Count:11
Deflection Temperature at 1.8 MPa (264 psi)	90.0 - 285 °C	194 - 545 °F	Average value: 176 °C Grade Count:26
Vicat Softening Point	250 - 290 °C	482 - 554 °F	Average value: 283 °C Grade Count:7
Glass Transition Temp, Tg	75.0 - 80.0 °C	167 - 176 °F	Average value: 75.6 °C Grade Count:9
Flammability, UL94	HB - V-0	HB - V-0	Grade Count:20
Oxygen Index	24.0 - 29.0 %	24.0 - 29.0 %	Average value: 26.8 % Grade Count:5

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1000 - 1.00e+15 ohm-cm	1000 - 1.00e+15 ohm-cm	Average value: 2.65e+14 ohm-cm Grade Count:32
Surface Resistance	1.00e+6 - 1.00e+14 ohm	1.00e+6 - 1.00e+14 ohm	Average value: 1.71e+13 ohm Grade Count:9
Dielectric Constant	3.20 - 22.0	3.20 - 22.0	Average value: 6.65 Grade Count:11
Dielectric Strength	15.0 - 30.0 kV/mm	381 - 762 kV/in	Average value: 21.6 kV/mm Grade Count:26
Dissipation Factor	0.000500 - 0.0870	0.000500 - 0.0870	Average value: 0.0194 Grade Count:9
Comparative Tracking Index	325 - 600 V	325 - 600 V	Average value: 444 V Grade Count:24

Contact Songhan Plastic Technology Co.,Ltd.

Website : www.lookpolymers.com

Email : sales@lookpolymers.com

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

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