

Overview of materials for Nylon 12, Extrusion/Tubing Grade

Category : Polymer , Thermoplastic , Nylon , Nylon 12 , Nylon 12, Extrusion/Tubing Grade

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Nylon 12, Extrusion/Tubing Grade". 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-ExtrusionTubing-Grade.php

Physical Properties	Metric	English	Comments
Density	1.00 - 1.04 g/cc	0.0361 - 0.0376 lb/in ³	Average value: 1.02 g/cc Grade Count:26
Water Absorption	1.00 - 2.30 %	1.00 - 2.30 %	Average value: 1.41 % Grade Count:9
Moisture Absorption at Equilibrium	0.500 - 0.700 %	0.500 - 0.700 %	Average value: 0.550 % Grade Count:14
Water Absorption at Saturation	1.00 - 1.50 %	1.00 - 1.50 %	Average value: 1.20 % Grade Count:6
Melt Flow	1.90 - 170 g/10 min	1.90 - 170 g/10 min	Average value: 26.4 g/10 min Grade Count:23

Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	20.0 - 76.0 MPa	2900 - 11000 psi	Average value: 39.5 MPa Grade Count:34
Elongation at Break	50.0 - 400 %	50.0 - 400 %	Average value: 86.7 % Grade Count:39
Elongation at Yield	5.00 - 32.0 %	5.00 - 32.0 %	Average value: 16.1 % Grade Count:30
Modulus of Elasticity	0.350 - 2.23 GPa	50.8 - 323 ksi	Average value: 1.05 GPa Grade Count:34
Charpy Impact Unnotched	1000 J/cm ² - NB	4760 ft-lb/in ² - NB	Grade Count:27
	NB - NB @Temperature -30.0 - - 30.0 °C	NB - NB @Temperature -22.0 - - 22.0 °F	Grade Count:12
Charpy Impact, Notched	0.400 J/cm ² - NB	1.90 ft-lb/in ² - NB	Average value: 1.85 J/cm ² Grade Count:25
	0.250 - 1.24 J/cm ² @Temperature -30.0 - - 30.0 °C	1.19 - 5.90 ft-lb/in ² @Temperature -22.0 - - 22.0 °F	Average value: 0.640 J/cm ² Grade Count:24

Thermal Properties	Metric	English	Comments
CTE, linear	50.0 - 150 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	27.8 - 83.3 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	Average value: 96.4 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ Grade Count:20
CTE, linear, Transverse to Flow	100 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	55.6 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	Average value: 100 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ Grade Count:6
Melting Point	168 - 178 $^\circ\text{C}$	334 - 352 $^\circ\text{F}$	Average value: 174 $^\circ\text{C}$ Grade Count:14
Maximum Service Temperature, Air	75.0 - 150 $^\circ\text{C}$	167 - 302 $^\circ\text{F}$	Average value: 113 $^\circ\text{C}$ Grade Count:3
Deflection Temperature at 0.46 MPa (66 psi)	90.0 - 135 $^\circ\text{C}$	194 - 275 $^\circ\text{F}$	Average value: 113 $^\circ\text{C}$ Grade Count:14
Deflection Temperature at 1.8 MPa (264 psi)	40.0 - 165 $^\circ\text{C}$	104 - 329 $^\circ\text{F}$	Average value: 56.3 $^\circ\text{C}$ Grade Count:20
Vicat Softening Point	115 - 142 $^\circ\text{C}$	239 - 288 $^\circ\text{F}$	Average value: 131 $^\circ\text{C}$ Grade Count:15
Flammability, UL94	HB - V-2	HB - V-2	Grade Count:21

Optical Properties	Metric	English	Comments
Transmission, Visible	80.0 %	80.0 %	Average value: 80.0 % Grade Count:4

Electrical Properties	Metric	English	Comments
Electrical Resistivity	2.00e+8 - 1.00e+15 ohm-cm	2.00e+8 - 1.00e+15 ohm-cm	Average value: 9.97e+13 ohm-cm Grade Count:20
Surface Resistance	1.00e+11 - 1.00e+15 ohm	1.00e+11 - 1.00e+15 ohm	Average value: 3.55e+14 ohm Grade Count:20
Dielectric Constant	3.00 - 15.0	3.00 - 15.0	Average value: 5.83 Grade Count:12
Dielectric Strength	24.0 - 50.0 kV/mm	610 - 1270 kV/in	Average value: 34.7 kV/mm Grade Count:21
Dissipation Factor	0.000304 - 0.330	0.000304 - 0.330	Average value: 0.0916 Grade Count:14
Comparative Tracking Index	575 - 600 V	575 - 600 V	Average value: 597 V Grade Count:17

Processing Properties	Metric	English	Comments
Processing Temperature	230 $^\circ\text{C}$	446 $^\circ\text{F}$	Average value: 230 $^\circ\text{C}$ Grade Count:5
Die Temperature	230 $^\circ\text{C}$	446 $^\circ\text{F}$	Average value: 230 $^\circ\text{C}$ Grade Count:5
Melt Temperature	190 - 240 $^\circ\text{C}$	374 - 464 $^\circ\text{F}$	Average value: 220 $^\circ\text{C}$ Grade Count:5
Mold Temperature	40.0 - 60.0 $^\circ\text{C}$	104 - 140 $^\circ\text{F}$	Average value: 50.0 $^\circ\text{C}$ Grade Count:5
Injection Velocity	100 mm/sec	3.94 in/sec	Average value: 100 mm/sec Grade Count:5

Processing Properties	Metric	English	Comments
Roll Temperature	50.0 °C	122 °F	Average value: 50.0 °C Grade Count:5
Drying Temperature	80.0 - 110 °C	176 - 230 °F	Average value: 96.7 °C Grade Count:5
Injection Pressure	40.0 - 50.0 MPa	5800 - 7250 psi	Average value: 45.0 MPa Grade Count:5

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