

Overview of materials for Nylon, Amorphous Transparent Alloy

Category : Polymer , Thermoplastic , Nylon , Nylon, Amorphous Transparent Alloy

Material Notes:

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

Physical Properties	Metric	English	Comments
Density	0.900 - 1.40 g/cc	0.0325 - 0.0506 lb/in ³	Average value: 1.07 g/cc Grade Count:7
Viscosity Test	100 - 200 cm ³ /g	100 - 200 cm ³ /g	Average value: 153 cm ³ /g Grade Count:4

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	80.0 - 89.0	80.0 - 89.0	Average value: 82.8 Grade Count:4
Ball Indentation Hardness	108 - 200 MPa	15700 - 29000 psi	Average value: 132 MPa Grade Count:4
Tensile Strength, Ultimate	50.0 - 140 MPa	7250 - 20300 psi	Average value: 72.5 MPa Grade Count:4
Tensile Strength, Yield	60.0 - 98.0 MPa	8700 - 14200 psi	Average value: 72.5 MPa Grade Count:6
Elongation at Break	2.10 - 150 %	2.10 - 150 %	Average value: 88.1 % Grade Count:7
	>= 50.0 % @Temperature 80.0 - 80.0 °C	>= 50.0 % @Temperature 176 - 176 °F	Average value: 50.0 % Grade Count:1
Elongation at Yield	3.00 - 9.00 %	3.00 - 9.00 %	Average value: 7.56 % Grade Count:6
Modulus of Elasticity	1.40 - 10.0 GPa	203 - 1450 ksi	Average value: 3.12 GPa Grade Count:6
	1.27 - 1.27 GPa @Temperature 80.0 - 80.0 °C	184 - 184 ksi @Temperature 176 - 176 °F	Average value: 1.27 GPa Grade Count:1
Flexural Yield Strength	50.0 - 190 MPa	7250 - 27600 psi	Average value: 87.1 MPa Grade Count:4
Flexural Modulus	1.65 - 12.0 GPa	239 - 1740 ksi	Average value: 4.05 GPa Grade Count:5
	7.70 J/cm ² - NB	36.6 ft-lb/in ² - NB	Average value: 7.70 J/cm ² Grade

Charpy Impact Unnotched Mechanical Properties	Metric	English	Count:5 Comments
	5.90 J/cm ² - NB @Temperature -30.0 - 0.000 °C	28.1 ft-lb/in ² - NB @Temperature -22.0 - 32.0 °F	Average value: 6.45 J/cm ² Grade Count:5
Charpy Impact, Notched	0.900 - 1.80 J/cm ²	4.28 - 8.57 ft-lb/in ²	Average value: 1.35 J/cm ² Grade Count:6
	0.600 - 1.70 J/cm ² @Temperature -30.0 - 0.000 °C	2.86 - 8.09 ft-lb/in ² @Temperature -22.0 - 32.0 °F	Average value: 1.24 J/cm ² Grade Count:6
Tensile Creep Modulus, 1 hour	1300 - 10000 MPa	189000 - 1.45e+6 psi	Average value: 4230 MPa Grade Count:3
Tensile Creep Modulus, 1000 hours	700 - 8300 MPa	102000 - 1.20e+6 psi	Average value: 3230 MPa Grade Count:3

Thermal Properties	Metric	English	Comments
CTE, linear	32.0 - 90.0 µm/m-°C	17.8 - 50.0 µin/in-°F	Average value: 67.0 µm/m-°C Grade Count:6
CTE, linear, Transverse to Flow	30.0 - 90.0 µm/m-°C	16.7 - 50.0 µin/in-°F	Average value: 75.0 µm/m-°C Grade Count:4
Melting Point	250 °C	482 °F	Average value: 250 °C Grade Count:3
Maximum Service Temperature, Air	100 °C	212 °F	Average value: 100 °C Grade Count:3
Deflection Temperature at 0.46 MPa (66 psi)	100 - 150 °C	212 - 302 °F	Average value: 123 °C Grade Count:7
Deflection Temperature at 1.8 MPa (264 psi)	93.0 - 140 °C	199 - 284 °F	Average value: 110 °C Grade Count:7
Vicat Softening Point	105 - 158 °C	221 - 316 °F	Average value: 134 °C Grade Count:6
Glass Transition Temp, Tg	108 - 150 °C	226 - 302 °F	Average value: 136 °C Grade Count:5
Flammability, UL94	HB - V-2	HB - V-2	Grade Count:5
Glow Wire Test	850 °C	1560 °F	Average value: 850 °C Grade Count:3

Optical Properties	Metric	English	Comments
Transmission, Visible	85.0 - 90.0 %	85.0 - 90.0 %	Average value: 89.2 % Grade Count:6

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+15 - 1.00e+17 ohm-cm	1.00e+15 - 1.00e+17 ohm-cm	Average value: 5.05e+16 ohm-cm Grade Count:6
Surface Resistance	1.00e+13 - 1.00e+15 ohm	1.00e+13 - 1.00e+15 ohm	Average value: 5.05e+14 ohm Grade Count:6

Electrical Properties	Metric	English	Comments
	3.00	3.00	Average value: 3.56 Grade Count:6
Dielectric Strength	21.0 - 35.0 kV/mm	533 - 889 kV/in	Average value: 27.5 kV/mm Grade Count:4
Dissipation Factor	0.0115 - 0.0325	0.0115 - 0.0325	Average value: 0.0217 Grade Count:6
Comparative Tracking Index	575 - 600 V	575 - 600 V	Average value: 589 V Grade Count:6

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