

Overview of materials for Nylon 6, MoS2 Filled

Category : Polymer , Thermoplastic , Nylon , Nylon 6 , Nylon 6, MoS2 Filled

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Nylon 6, MoS2 Filled". 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-MoS2-Filled.php

Physical Properties	Metric	English	Comments
Density	1.13 - 1.47 g/cc	0.0408 - 0.0531 lb/in ³	Average value: 1.17 g/cc Grade Count:34
Water Absorption	0.200 - 3.20 %	0.200 - 3.20 %	Average value: 1.22 % Grade Count:12
Moisture Absorption at Equilibrium	2.20 - 3.00 %	2.20 - 3.00 %	Average value: 2.40 % Grade Count:10
Water Absorption at Saturation	6.00 - 10.0 %	6.00 - 10.0 %	Average value: 6.98 % Grade Count:14
Linear Mold Shrinkage	0.00100 - 0.0250 cm/cm	0.00100 - 0.0250 in/in	Average value: 0.0122 cm/cm Grade Count:14
Linear Mold Shrinkage, Transverse	0.00950 - 0.0180 cm/cm	0.00950 - 0.0180 in/in	Average value: 0.0126 cm/cm Grade Count:4
Melt Flow	15.0 - 100 g/10 min	15.0 - 100 g/10 min	Average value: 61.0 g/10 min Grade Count:5

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	80.0 - 84.0	80.0 - 84.0	Average value: 81.5 Grade Count:4
Hardness, Rockwell R	100 - 120	100 - 120	Average value: 112 Grade Count:4
Hardness, Shore D	78.0 - 85.0	78.0 - 85.0	Average value: 82.7 Grade Count:7
Ball Indentation Hardness	130 - 210 MPa	18900 - 30500 psi	Average value: 158 MPa Grade Count:14
Tensile Strength, Ultimate	44.8 - 160 MPa	6500 - 23200 psi	Average value: 87.1 MPa Grade Count:21
	33.0 - 50.0 MPa @Temperature 60.0 - 120 °C	4790 - 7250 psi @Temperature 140 - 248 °F	Average value: 41.0 MPa Grade Count:1
Tensile Strength, Yield	60.0 - 110 MPa	8700 - 16000 psi	Average value: 82.7 MPa Grade Count:13
Elongation at Break	4.00 - 60.0 %	4.00 - 60.0 %	Average value: 20.3 % Grade Count:25

Mechanical Properties	Metric	English	Comments
Creep Strength	6.00 - 20.0 MPa	870 - 2900 psi	Average value: 12.3 MPa Grade Count:6
Modulus of Elasticity	1.20 - 9.50 GPa	174 - 1380 ksi	Average value: 3.85 GPa Grade Count:28
	0.500 - 0.900 GPa @Temperature 100 - 100 °C	72.5 - 131 ksi @Temperature 212 - 212 °F	Average value: 0.700 GPa Grade Count:2
Flexural Yield Strength	40.7 - 240 MPa	5900 - 34800 psi	Average value: 112 MPa Grade Count:28
Flexural Modulus	0.993 - 3.70 GPa	144 - 537 ksi	Average value: 2.95 GPa Grade Count:26
	0.680 - 1.60 GPa @Temperature 60.0 - 120 °C	98.6 - 232 ksi @Temperature 140 - 248 °F	Average value: 1.13 GPa Grade Count:1
Compressive Yield Strength	33.0 - 145 MPa	4790 - 21000 psi	Average value: 73.9 MPa Grade Count:12
Compressive Modulus	2.70 - 3.00 GPa	392 - 435 ksi	Average value: 2.84 GPa Grade Count:5
Izod Impact, Notched	0.267 - 6.41 J/cm	0.500 - 12.0 ft-lb/in	Average value: 0.825 J/cm Grade Count:14
	0.350 - 0.350 J/cm @Temperature -40.0 - - 20.0 °C	0.656 - 0.656 ft-lb/in @Temperature -40.0 - - 4.00 °F	Average value: 0.350 J/cm Grade Count:1
Izod Impact, Unnotched	6.67 - 5340 J/cm	12.5 - 10000 ft-lb/in	Average value: 9.98 J/cm Grade Count:6
Izod Impact, Notched (ISO)	2.50 - 100000 kJ/m ²	1.19 - 47600 ft-lb/in ²	Average value: 6.56 kJ/m ² Grade Count:10
	5.00 - 5.00 kJ/m ² @Temperature -30.0 - - 30.0 °C	2.38 - 2.38 ft-lb/in ² @Temperature -22.0 - - 22.0 °F	Average value: 5.00 kJ/m ² Grade Count:1
Izod Impact, Unnotched (ISO)	NB - NB @Temperature -30.0 - - 30.0 °C	NB - NB @Temperature -22.0 - - 22.0 °F	Grade Count:1
Charpy Impact Unnotched	5.00 J/cm ² - NB	23.8 ft-lb/in ² - NB	Average value: 13.5 J/cm ² Grade Count:9
	30.0 J/cm ² - NB @Temperature -40.0 - - 20.0 °C	143 ft-lb/in ² - NB @Temperature -40.0 - - 4.00 °F	Average value: 30.0 J/cm ² Grade Count:2
Charpy Impact, Notched	0.300 - 8.50 J/cm ²	1.43 - 40.5 ft-lb/in ²	Average value: 1.41 J/cm ² Grade Count:9

Coefficient of Friction Mechanical Properties	0.0400 - 0.550 Metric	0.0400 - 0.550 English	Average value: 0.209 Grade Count:14 Comments
Tear Strength Test	0.150 - 0.200	0.150 - 0.200	Average value: 0.167 Grade Count:6
K Factor (Wear Factor)	1.00e-10	1.00e-10	Average value: 1.00e-10 Grade Count:6
K (wear) Factor	91.0 - 181 x 10 ⁻⁸ mm ³ /N-M	45.2 - 90.0 x 10 ⁻¹⁰ in ³ - min/ft-lb-hr	Average value: 134 x 10 ^{<sup>-8</sup>}
Limiting Pressure Velocity	0.0800 - 0.193 MPa- m/sec	2280 - 5500 psi-ft/min	Average value: 0.127 MPa-m/sec Grade Count:3

Thermal Properties	Metric	English	Comments
CTE, linear	70.0 - 100 µm/m-°C	38.9 - 55.6 µin/in-°F	Average value: 81.3 µm/m-°C Grade Count:16
Specific Heat Capacity	1.67 J/g-°C	0.399 BTU/lb-°F	Average value: 1.67 J/g-°C Grade Count:8
Thermal Conductivity	0.250 - 0.300 W/m-K	1.74 - 2.08 BTU-in/hr- ft ² -°F	Average value: 0.262 W/m-K Grade Count:9
Melting Point	214 - 223 °C	417 - 433 °F	Average value: 220 °C Grade Count:22
Maximum Service Temperature, Air	90.0 - 185 °C	194 - 365 °F	Average value: 134 °C Grade Count:16
Deflection Temperature at 0.46 MPa (66 psi)	110 - 260 °C	230 - 500 °F	Average value: 198 °C Grade Count:17
Deflection Temperature at 1.8 MPa (264 psi)	55.0 - 210 °C	131 - 410 °F	Average value: 101 °C Grade Count:29
Vicat Softening Point	135 - 215 °C	275 - 419 °F	Average value: 196 °C Grade Count:7
Minimum Service Temperature, Air	-100 - -40.0 °C	-148 - -40.0 °F	Average value: -52.9 °C Grade Count:11
Flammability, UL94	HB - V-2	HB - V-2	Grade Count:21

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+12 - 1.00e+16 ohm-cm	1.00e+12 - 1.00e+16 ohm-cm	Average value: 1.48e+15 ohm-cm Grade Count:15
Surface Resistance	1.00e+10 - 1.00e+13 ohm	1.00e+10 - 1.00e+13 ohm	Average value: 3.58e+12 ohm Grade Count:14
Dielectric Constant	3.60 - 12.0	3.60 - 12.0	Average value: 4.27 Grade Count:13
Dielectric Strength	15.0 - 50.0 kV/mm	381 - 1270 kV/in	Average value: 28.9 kV/mm Grade Count:12
Dissipation Factor	0.00200 - 0.150	0.00200 - 0.150	Average value: 0.0460 Grade Count:4
Dielectric Loss Index	0.0300	0.0300	Average value: 0.0300 Grade Count:6

Comparative Tracking Index Electrical Properties	550 - 604 V Metric	550 - 604 V English	Average value: 594 V Grade Count: 8 Comments
Processing Properties	Metric	English	Comments
Processing Temperature	221 - 290 °C	430 - 554 °F	Average value: 253 °C Grade Count:5
Melt Temperature	210 - 290 °C	410 - 554 °F	Average value: 257 °C Grade Count:10

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