

Overview of materials for Polyamide-Imide, Molded

Category : Polymer , Thermoplastic , Polyamide-imide (PAI) , Polyamide-Imide, Molded

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polyamide-Imide, Molded". 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-Polyamide-Imide-Molded.php

Physical Properties	Metric	English	Comments
Density	1.40 - 1.58 g/cc	0.0506 - 0.0571 lb/in ³	Average value: 1.48 g/cc Grade Count:7
Water Absorption	0.300 - 0.600 %	0.300 - 0.600 %	Average value: 0.388 % Grade Count:4
Water Absorption at Saturation	1.50 - 4.60 %	1.50 - 4.60 %	Average value: 2.92 % Grade Count:6

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell E	66.0 - 80.0	66.0 - 80.0	Average value: 73.2 Grade Count:5
Hardness, Rockwell M	106 - 119	106 - 119	Average value: 111 Grade Count:5
Hardness, Shore D	86.0 - 90.0	86.0 - 90.0	Average value: 88.8 Grade Count:5
Tensile Strength, Ultimate	62.1 - 150 MPa	9000 - 21800 psi	Average value: 102 MPa Grade Count:7
Elongation at Break	2.00 - 20.0 %	2.00 - 20.0 %	Average value: 5.86 % Grade Count:7
Modulus of Elasticity	3.03 - 5.52 GPa	440 - 800 ksi	Average value: 4.28 GPa Grade Count:6
Flexural Yield Strength	82.7 - 178 MPa	12000 - 25800 psi	Average value: 143 MPa Grade Count:7
Flexural Modulus	3.79 - 5.86 GPa	550 - 850 ksi	Average value: 4.79 GPa Grade Count:5
Compressive Yield Strength	34.0 - 207 MPa	4930 - 30000 psi	Average value: 106 MPa Grade Count:6
Compressive Modulus	2.41 - 4.14 GPa	350 - 600 ksi	Average value: 2.86 GPa Grade Count:4
Izod Impact, Notched	0.267 - 0.801 J/cm	0.500 - 1.50 ft-lb/in	Average value: 0.497 J/cm Grade Count:5
Coefficient of Friction	0.200 - 0.600	0.200 - 0.600	Average value: 0.290 Grade Count:6
	302 - 1010 x 10 ⁻⁸	150 - 500 x 10 ⁻¹⁰ in ³ -	Average value: 637 x 10 ^{<sup>-}

Mechanical Properties	Metric	English	Comments
Limiting Pressure Velocity	0.140 - 1.10 MPa-m/sec	4000 - 31400 psi-ft/min	Average value: 0.556 MPa-m/sec Grade Count:6

Thermal Properties	Metric	English	Comments
CTE, linear	27.0 - 50.4 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	15.0 - 28.0 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	Average value: 37.5 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ Grade Count:7
Thermal Conductivity	0.259 - 0.540 W/m-K	1.80 - 3.75 BTU-in/hr-ft ² -°F	Average value: 0.392 W/m-K Grade Count:6
Maximum Service Temperature, Air	250 - 260 °C	482 - 500 °F	Average value: 257 °C Grade Count:7
Deflection Temperature at 1.8 MPa (264 psi)	271 - 280 °C	520 - 536 °F	Average value: 278 °C Grade Count:6
Glass Transition Temp, Tg	275 - 280 °C	527 - 536 °F	Average value: 277 °C Grade Count:6
Flammability, UL94	V-0	V-0	Grade Count:7

Electrical Properties	Metric	English	Comments
Surface Resistance	1.00e+10 - 1.00e+13 ohm	1.00e+10 - 1.00e+13 ohm	Average value: 8.42e+12 ohm Grade Count:6
Dielectric Constant	3.80 - 6.00	3.80 - 6.00	Average value: 4.83 Grade Count:6
Dielectric Strength	17.7 - 24.0 kV/mm	450 - 610 kV/in	Average value: 21.0 kV/mm Grade Count:4
Dissipation Factor	0.00500 - 0.182	0.00500 - 0.182	Average value: 0.0421 Grade Count:6

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