

Omnia Plastica PEI Polyetherimide

Category : Polymer , Thermoplastic , Polyetherimide (PEI)

Material Notes:

This high performance engineering plastic is a non-reinforced self-extinguishing amorphous polymer with high thermal, electrical and mechanical properties which are typical of a crystalline polymer. Features: Resistance to high temperature Flame resistance: self-extinguishing, low oxygen index. Mechanical properties: high tensile stress, flexural strength, E.modulus Chemical resistance Electrical properties Weak Point: The cost is higher than conventional engineering plastics. The shock resistance is not high. Application: Electrical: very good insulating and dielectric properties. It is irreplaceable in many applications in this field thanks to its self-extinguishing property and low smoke emission. Mechanical: it is used for high performance components such as bearings, precision gears, etc. at low as well as high temperatures. The dimensional stability is excellent, as is the heat resistance. Chemical: good chemical and thermal properties. Food contact: physiologically inert Information provided by Omnia Plastica s.p.a. for semifinished products such as sheet, rod, and tube.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Omnia-Plastica-PEI-Polyetherimide.php

Physical Properties	Metric	English	Comments
Density	1.27 g/cc	0.0459 lb/in ³	ISO.1183 DIN.53479
Moisture Absorption at Equilibrium	0.20 %	0.20 %	50% relative humidity
Water Absorption at Saturation	1.2 %	1.2 %	23°C

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	109	109	dry sample; ISO2039.2
Ball Indentation Hardness	170 MPa	24700 psi	ISO2039.1 DIN.53456
Tensile Strength at Break	95.0 MPa	13800 psi	ISO.527 DIN.53455
Elongation at Break	50 %	50 %	ISO.527 DIN.53455
Tensile Modulus	3.10 GPa	450 ksi	ISO.527 DIN.53455
Compressive Strength	20.0 MPa	2900 psi	1% strain over 1000 hours; ISO.899 DIN.53444
Charpy Impact Unnotched	NB	NB	7.5 J; ISO.R179 DIN.53453
Charpy Impact, Notched	8.00 J/cm ²	38.1 ft-lb/in ²	ISO179/3C DIN.53453
Coefficient of Friction, Dynamic	0.42	0.42	on dry ground steel; load =0.05MPa; speed =0.6 m/s

Thermal Properties	Metric	English	Comments
CTE, linear	50.0 μm/m-°C	27.8 μin/in-°F	
	@Temperature 23.0 -	@Temperature 73.4 -	

Thermal Properties	60.0 °C Metric	140 °F English	Comments
Thermal Conductivity	0.220 W/m-K	1.53 BTU-in/hr-ft ² -°F	DIN.52612
Maximum Service Temperature, Air	180 °C	356 °F	Maximum operating temperature continuously for 5000 hours based on a tensile stress of 50% at 23° C.
	200 °C	392 °F	short period, no load
Deflection Temperature at 1.8 MPa (264 psi)	195 °C	383 °F	ISO.75 DIN.53461
Minimum Service Temperature, Air	-30.0 °C	-22.0 °F	impact conditions and heavy loads not considered
Flammability, UL94	V-0	V-0	
Oxygen Index	47 %	47 %	ISO.4589

Electrical Properties	Metric	English	Comments
Volume Resistivity	5.90e+12 ohm-cm	5.90e+12 ohm-cm	ISO.93 DIN.53482
Dielectric Constant	3.2	3.2	ISO.250 DIN.53483
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
Dielectric Strength	33.0 kV/mm	838 kV/in	ISO.243 DIN.53481
Dissipation Factor	0.0020	0.0020	ISO.250 DIN.53483
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	

Descriptive Properties	Value	Comments
Form	Amorphous	

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