

Mitsui AURUM® PL450C Polyimide (discontinued **)

Category : Polymer , Thermoplastic , Polyimide, Thermoplastic , Thermoplastic Polyimide, Unfilled

Material Notes:

AURUM PL450C is a high performance thermoplastic polyimide for precision injection molded components and extruded products. A member of the AURUM family of advanced engineering resins, unfilled AURUM PL450C offers a unique balance of mechanical and thermal properties for superior performance in demanding automotive, business machinery, industrial equipment, aerospace, and semiconductor equipment applications. AURUM exhibits outstanding resistance to chemicals and radiation, a low coefficient of thermal expansion, ultrahigh purity, low outgassing in a vacuum, excellent electrical properties, and flame resistance. AURUM PL450C can be conventionally extruded to produce high performance wire & cable insulation, thin-wall tubing, and fiber. Applications: AURUM PL450C injection molded components are excellent replacements for metals, ceramics, and other plastics. High performance AURUM PL450C parts include heat-resistant gears, seals, ferrules and other fasteners, coil bobbins, semiconductor manufacturing and handling equipment components, and thermal and electrical insulators. Products produced from extruded AURUM PL450C resin include thin-wall tubing, wire and cable insulation, monofilament, and rod stock shapes. Information provided by DuPont

Order this product through the following link:

http://www.lookpolymers.com/polymer_Mitsui-AURUM-PL450C-Polyimide-nbspdiscontinued-.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.33 g/cc	1.33 g/cc	ASTM D792
Water Absorption	0.34 %	0.34 %	24 hrs @ 73°F; ASTM D570
Moisture Absorption at Equilibrium	0.24 %	0.24 %	73°F; 60 RH, 24hrs
Linear Mold Shrinkage	0.0083 cm/cm	0.0083 in/in	ASTM D955
Melt Flow	4.5 - 7.5 g/10 min @Load 1.05 kg, Temperature 400 °C	4.5 - 7.5 g/10 min @Load 2.31 lb, Temperature 752 °F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	92.18 MPa	13370 psi	ASTM D638
	57.9 MPa @Temperature 149 °C	8400 psi @Temperature 300 °F	ASTM D638
Elongation at Yield	90 %	90 %	ASTM D638
	90 % @Temperature 149 °C	90 % @Temperature 300 °F	ASTM D638
Modulus of Elasticity	2.76 GPa	400 ksi	ASTM D882
Flexural Strength	137 MPa	19900 psi	ASTM D790

Mechanical Properties	88.3 MPa Metric	12800 psi English	ASTM D790 Comments
	@Temperature 149 °C	@Temperature 300 °F	
Flexural Modulus	2.943 GPa	426.8 ksi	ASTM D790
	2.550 GPa	369.9 ksi	ASTM D790
	@Temperature 149 °C	@Temperature 300 °F	
Compressive Strength	76.5 MPa	11100 psi	JIS K7208
	@Temperature 149 °C	@Temperature 300 °F	
	119.7 MPa	17360 psi	JIS K7208
	@Temperature 22.8 °C	@Temperature 73.0 °F	
Izod Impact, Notched	0.908 J/cm	1.70 ft-lb/in	ASTM D256

Thermal Properties	Metric	English	Comments
CTE, linear	54.0 µm/m-°C	30.0 µin/in-°F	MD; ASTM D696
	@Temperature 22.8 °C	@Temperature 73.0 °F	
	54.0 µm/m-°C	30.0 µin/in-°F	TD; ASTM D696
	@Temperature 73.0 °C	@Temperature 163 °F	
Specific Heat Capacity	1.00 J/g-°C	0.240 BTU/lb-°F	DSC
	1.004 J/g-°C	0.2400 BTU/lb-°F	DSC
	@Temperature 100 °C	@Temperature 212 °F	
	1.423 J/g-°C	0.3400 BTU/lb-°F	DSC
	@Temperature 300 °C	@Temperature 572 °F	
Thermal Conductivity	0.174333 W/m-K	1.20987 BTU-in/hr-ft²-°F	ASTM C177
Melting Point	388 °C	730 °F	DSC
Deflection Temperature at 0.46 MPa (66 psi)	238 °C	460 °F	ASTM D648
Glass Transition Temp, Tg	250 °C	482 °F	DSC
Flammability, UL94	V-0	V-0	
	@Thickness 0.400 mm	@Thickness 0.0157 in	
	5VA	5VA	
	@Thickness 2.00 mm	@Thickness 0.0787 in	
	47 %	47 %	

Oxygen Index Thermal Properties	Metric @ Thickness 3.20 mm	English @ Thickness 0.126 in	ASTM D2863 Comments
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Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+17 - 1.00e+18 ohm-cm	1.00e+17 - 1.00e+18 ohm-cm	ASTM D257
Surface Resistance	1.00e+17 - 1.00e+18 ohm	1.00e+17 - 1.00e+18 ohm	ASTM D257
Dielectric Constant	3.1	3.1	ASTM D150
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
	3.2	3.2	ASTM D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	
Dissipation Factor	0.00090	0.00090	ASTM D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	
	0.0034	0.0034	ASTM D150
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	

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