

UBE UPIMOL® SA101 Heat-Resistant Polyimide Shape

Category : Polymer , Thermoset , Polyimide, TS

Material Notes:

Description: UPIMOL® SA101 is an excellent heat-resistant polyimide shape, based on Biphenyl tetracarboxylic dianhydride(BPDA) originally developed by UBE. UPIMOL® SA101 has improved high durability for oxygen plasma, vacuum degassing properties, low water absorption and good processability. Heat distortion temperature is 470°C. **Applications:** Semiconductor production equipment parts Vacuum equipment parts Precisely processed parts Heat and chemical resistant gaskets and sealing materials **Features:** Super high heat resistance (Heat distortion temperature: 470°C) Excellent plasma resistance Low out gas Good processability Very low impurities Low water absorption Information provided by UBE.

Order this product through the following link:

http://www.lookpolymers.com/polymer_UBE-UPIMOL-SA101-Heat-Resistant-Polyimide-Shape.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.48 g/cc	1.48 g/cc	23°C; ASTM D792
Water Absorption	0.030 %	0.030 %	23°C for 24 hr; ASTM D570

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	115	115	ASTM D785
Tensile Strength, Ultimate	110 MPa	16000 psi	ASTM D638
	47.0 MPa	6820 psi	ASTM D638
	@Temperature 260 °C	@Temperature 500 °F	
Elongation at Break	4.0 %	4.0 %	ASTM D638
	3.0 %	3.0 %	ASTM D638
	@Temperature 260 °C	@Temperature 500 °F	
Flexural Strength	135 MPa	19600 psi	ASTM D790
	51.0 MPa	7400 psi	ASTM D790
	@Temperature 260 °C	@Temperature 500 °F	
Flexural Modulus	7.50 GPa	1090 ksi	ASTM D790
	3.60 GPa	522 ksi	ASTM D790
	@Temperature 260 °C	@Temperature 500 °F	
Izod Impact, Notched	0.200 J/cm	0.375 ft-lb/in	ASTM D256
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Limiting Pressure Velocity	3.53 MPa-m/sec	101000 psi-ft/min	0.1 m/sec; S45C

Mechanical Properties	Metric	English	Comments
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Thermal Properties	Metric	English	Comments
CTE, linear	35.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$ @Temperature 25.0 - 450 $^{\circ}\text{C}$	19.4 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$ @Temperature 77.0 - 842 $^{\circ}\text{F}$	ASTM E233
Thermal Conductivity	0.407 W/m-K	2.82 BTU-in/hr-ft ² - $^{\circ}\text{F}$	
Maximum Service Temperature, Air	470 $^{\circ}\text{C}$	878 $^{\circ}\text{F}$	Heat Distortion Temp, Load Unknown; ASTM D648
Decomposition Temperature	623 $^{\circ}\text{C}$	1150 $^{\circ}\text{F}$	10% Weight Loss Temp

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.90e+16 ohm-cm	1.90e+16 ohm-cm	ASTM D257
Surface Resistance	8.50e+16 ohm	8.50e+16 ohm	ASTM D257
Dielectric Constant	3.7	3.7	ASTM D150
Dielectric Strength	22.7 kV/mm	577 kV/in	Breakdown Voltage; ASTM D149
Dissipation Factor	0.0013	0.0013	ASTM D150
Arc Resistance	135 sec	135 sec	23 $^{\circ}\text{C}$; ASTM D495

Descriptive Properties	Value	Comments
Durability for O2 Plasma	6.6 micro gr/cm ² hr	Etching Rate Test at 145-150 $^{\circ}\text{C}$
Vacuum Degassing	5.5 x 10 ⁻⁴ Torr x l/sec x cm ²	TDS Analysis at 200 $^{\circ}\text{C}$
	7.6 x 10 ⁻⁴ Torr x l/sec x cm ²	TDS Analysis at 300 $^{\circ}\text{C}$

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