

UBE UPILEX 75S (75 micron) Polyimide Film

Category : Polymer , Film , Thermoset , Polyimide, TS , Polyimide, Thermoset Film

Material Notes:

Description: UPILEX, the ultra-high heat-resistant polyimide film, is the product of the polycondensation reaction between biphenyltetracarboxylic dianhydride (BPDA), of which process Ube Industries originally developed, and diamine. Most notable of these characteristics is UPILEX's physical, mechanical, electrical, and chemical properties under high-temperature conditions. UPILEX-S demonstrates outstanding mechanical characteristics through a wide temperature range. UPILEX-S displays high tensile strength and modulus, and also features outstanding long-term heat resistance. Another advantage inherent in UPILEX-S is its high resistance to hydrolysis, as its properties are practically unaffected, even by immersion in boiling water for long periods of time. Information provided by UBE.

Order this product through the following link:

http://www.lookpolymers.com/polymer_UBE-UPILEX-75S-75-micron-Polyimide-Film.php

Physical Properties	Metric	English	Comments
Density	1.47 g/cc	0.0531 lb/in ³	ASTM D1505

Mechanical Properties	Metric	English	Comments
Film Tensile Strength at Yield, MD	107.9 MPa	15650 psi	200°C (Stress at 5% Elongation (MD)); ASTM D882
	205.9 MPa	29860 psi	25°C (Stress at 5% Elongation (MD)); ASTM D882
Film Elongation at Break, MD	50 %	50 %	25°C; ASTM D882
	80 %	80 %	200°C; ASTM D882
Secant Modulus, MD	3.82 GPa	554 ksi	200°C; ASTM D882
	6.96 GPa	1010 ksi	25°C; ASTM D882
Coefficient of Friction, Dynamic	0.40	0.40	25°C, film to film; ASTM D1894
Tear Strength Test	30	30	kg/mm, 25°C Tear Strength-Initiation [Graves] (MD); ASTM D1004
	430	430	g/mm, 25°C, Tear Strength-Propagation [Elmendorf] (MD); ASTM D1922
Film Tensile Strength at Break, MD	274.6 MPa	39830 psi	200°C; ASTM D882
	362.8 MPa	52620 psi	25°C; ASTM D882

Thermal Properties	Metric	English	Comments
	20.0 µm/m-°C	11.1 µin/in-°F	Values determined by minute linear

CTE linear Thermal Properties	Metric @Temperature 20.0 - 200 °C	English @Temperature 68.0 - 392 °F	expansion tester at 5 °C/min. Comments Temperature increments
Specific Heat Capacity	1.13 J/g-°C	0.270 BTU/lb-°F	Differential Scanning Calorimeter
Thermal Conductivity	0.289 W/m-K	2.00 BTU-in/hr-ft²-°F	Laser Flash Method
Maximum Service Temperature, Air	290 °C	554 °F	Heat Treatment: 20,000 Hours
Glass Transition Temp, Tg	>= 500 °C	>= 932 °F	
Flammability, UL94	V-0	V-0	VTM
Oxygen Index	66 %	66 %	JIS K7201
Shrinkage	0.0100 % @Temperature 200 °C, Time 7200 sec	0.0100 % @Temperature 392 °F, Time 2.00 hour	JIS C2318

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+16 ohm-cm @Temperature 25.0 °C	1.00e+16 ohm-cm @Temperature 77.0 °F	DC100V; ASTM D257
	1.00e+16 ohm-cm @Temperature 200 °C	1.00e+16 ohm-cm @Temperature 392 °F	DC100V; ASTM D257
Surface Resistance	1.00e+15 ohm @Temperature 200 °C	1.00e+15 ohm @Temperature 392 °F	DC100V; ASTM D257
	>= 1.00e+16 ohm @Temperature 25.0 °C	>= 1.00e+16 ohm @Temperature 77.0 °F	DC100V; ASTM D257
Dielectric Constant	3.3 @Frequency 1000 Hz	3.3 @Frequency 1000 Hz	ASTM D150
	3.2 @Frequency 1000 Hz, Temperature 200 °C	3.2 @Frequency 1000 Hz, Temperature 392 °F	ASTM D150
Dielectric Strength	150 kV/mm @Temperature 25.0 °C	3810 kV/in @Temperature 77.0 °F	50Hz, 75µm; ASTM D149
	150 kV/mm @Temperature 200 °C	3810 kV/in @Temperature 392 °F	50Hz, 75µm; ASTM D149
Dissipation Factor	0.0038 @Frequency 1000 Hz	0.0038 @Frequency 1000 Hz	ASTM D150

Electrical Properties	0.0056 Metric	0.0056 English	Comments ASTM D150
	@Frequency 1000 Hz, Temperature 200 °C	@Frequency 1000 Hz, Temperature 392 °F	

Descriptive Properties	Value	Comments
Folding endurance [MIT]	Min 25,000 Cycles	ASTM D2176, 25°C
Resistance to Organic Solvents	Excellent	
Resistance to Strong Acids	Good	
Resistance to Strong Alkalies	Good	

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