

Ajedium™ Films -- Ultem 1000 polyetherimide

Films of Polyetherimide (PEI) are amorphous and suitable for high temperature applications. Additionally, they have an excellent combination of thermal, mechanical and electrical properties, along with very low flammability and low levels of smoke evolution during combustion. These features make PEI especially well suited for electrical and electronic insulators. Additionally, applications in a variety of structural components requiring high strength and rigidity at elevated temperatures have used PEI films.

radiation. Its glass transition temperature allows for use at high temperatures while maintaining the high mechanical properties.

Electrical properties show very good stability under variable temperatures, humidity and frequency conditions. Moreover, PEI films exhibit a low dissipation factor even at very low frequencies.

The color of this material is an orange amber.

Polyetherimide resists a wide range of chemicals and has good resistance to UV and gamma

General

Material Status	• Commercial: Active	
Availability	• Asia Pacific • Europe	• Latin America • North America
Features	• Chemical Resistant • Flame Retardant • Good Dimensional Stability	• Good Electrical Properties • High Heat Resistance • Low Smoke Emission
Uses	• Aircraft Interiors • Automotive Applications • Electrical/Electronic Applications	• Industrial Applications • Oil/Gas Applications
RoHS Compliance	• RoHS Compliant	
Appearance	• Amber	

Physical	Typical Value	Unit	Test method
Density / Specific Gravity	1.18		ASTM D792
Water Absorption (24 hr)	0.20	%	ASTM D570

Mechanical	Typical Value	Unit	Test method
Tear Resistance - MD	10.5	cN	ASTM D1004

Films	Typical Value	Unit	Test method
Film Thickness - Tested			
--	30	µm	
-- 1	50	µm	
-- 2	130	µm	

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Films	Typical Value	Unit	Test method
Secant Modulus			ASTM D882
MD	2850	MPa	
TD	2690	MPa	
Tensile Strength			ASTM D882
MD : Yield	103	MPa	
TD : Yield	107	MPa	
MD : Break	114	MPa	
TD : Break	128	MPa	
Tensile Elongation			ASTM D882
MD : Yield	7.0	%	
TD : Yield	7.0	%	
MD : Break	99	%	
TD : Break	140	%	
Dart Drop Impact	< 360	g	ASTM D1709B
Area Factor	152	ft ² /lb/mil	
Tear Propagation Resistance - MD	110	gf	ASTM D1922
Thermal	Typical Value	Unit	Test method
Glass Transition Temperature	220	°C	ASTM D3418
Thermal Conductivity	0.12	W/m/K	ASTM C177
Electrical	Typical Value	Unit	Test method
Surface Resistivity	2.5E+15	ohms	ASTM D257
Volume Resistivity	2.2E+16	ohms-cm	ASTM D257
Dielectric Strength			ASTM D149
--	230	kV/mm	
0.0300 mm	33	kV/mm	
Dielectric Constant			ASTM D150
1 kHz	2.87		
1 MHz	2.80		
Dissipation Factor			ASTM D150
1 kHz	2.4E-3		
1 MHz	4.5E-3		
Flammability	Typical Value	Unit	Test method
Oxygen Index	47	%	ASTM D2863
Optical	Typical Value	Unit	Test method
Light Transmittance	96.2	%	ASTM D1003
Haze	86.0	%	ASTM D1003

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Additional Information

Standard Thicknesses and Widths

- Widths are available from 22" (559 mm) to 56" (1422 mm).
- Products with widths <22 inches or >56 inches are available upon request.
- Tolerances for widths are \pm 4mm.
- For PEI film, the standard thicknesses are 25 microns (1 mil) to 1016 microns (40 mil).

Surface Finishes

- Standard surface finish is P/M (polished / matte).
- Custom finishes of P/P (polished / polished) and M/M (matte / matte) are available.

Packaging

- Film is supplied in a roll form of high quality, cardboard core of 3" (76mm) or 6" (152mm).
- PVC cores are available upon request in 3" and 6" sizes.

Labeling

- Products are labeled to comply with national and international standards.
 - Labels include product grade, unique batch number, roll length, roll width, product thickness, and net weight.
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Notes

Typical properties: these are not to be construed as specifications.

¹ Impact properties

² Tear properties

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