

# Polyetheretherketone (PEEK) Film Data Sheet

Polyetheretherketone (PEEK) is a high-performance amorphous or semi-crystalline thermoplastic film with unique properties. PEEK films have high temperature resistance, excellent chemical and fatigue resistance and very high thermal stability. PEEK films exhibit superior mechanical and electrical properties at elevated temperatures in critical environments.

Thanks to its excellent chemical resistance, PEEK film is effectively used as a metal replacement in harsh environments. PEEK is inert to all common solvents and resists a wide range of organic and inorganic liquids.

PEEK can be used in hot water or steam without permanent loss in physical properties. Ajedium PEEK film carries a VTM-0 class flammability rating (27 $\mu$ ) and exhibits very low smoke and toxic gas emission when exposed to flame. For all these reasons PEEK is used in high temperature electronic circuitry manufacturing.

Moreover, due to its high strength-to-weight ratio, PEEK film has come under consideration as an aerospace structural material.

## MANUFACTURING

PEEK films are extruded by Ajedium Films in a wide range of thicknesses, widths and lengths.

*For further information on PEEK films produced by Ajedium Films, a division of Solvay Solexis, Inc., contact your Solvay Solexis representative, call Ajedium Films at (302) 452-6609 or go to [www.ajedium.com](http://www.ajedium.com).*

## PEEK FILM - TYPICAL PROPERTIES\*

Properties	Test Method	Typical Values	
		SI Units	US Customary Units
<b>Physical and Thermal Properties</b>			
Glass Transition Temperature	ASTM D-3418	143 °C	289 °F
Water Absorption @ 50°C (122°F), 75%RH, 24 hrs.	ASTM D-570	0.5 %	0.5 %
Yield	internal	776 m <sup>2</sup> /kg/μm	21,500 in <sup>2</sup> /lb/mil
<b>Mechanical Properties</b>			
		<b>MD</b>	<b>TD</b>
Stress at Yield @ 23°C (73°F)	ASTM D-882	76 MPa	72 MPa
Elongation at Yield @ 23°C (73°F)	ASTM D-882	6.8 %	6.7 %
Stress at Break @ 23°C (73°F)	ASTM D-882	109 MPa	96 MPa
Elongation at Break @ 23°C (73°F)	ASTM D-882	145 %	170 %
Modulus @ 23°C (73°F)	ASTM D-882	2,050 MPa	2,000 MPa
Tear Propagation	ASTM D-1922	21 g force	28 g force
Tear Resistance	ASTM D-1004	884 g force	857 g force
Dart Impact	ASTM D-1709	385 g	0.9 lb
<b>Electrical Properties</b>			
Breakdown voltage (50μm film)	ASTM D-149	7.5 kV	7.5 kV
Dielectric strength (50μm film)	ASTM D-149	3,800 V/mil	3,800 V/mil

\* Unless specified, reported values were measured on a 27μm thick film

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