

Polyethersulfone (PES)

KEY FEATURES

- Low Smoke Generation
- Excellent Electrical Properties at Elevated Temperatures
- Transparency
- Excellent Chemical Resistance
- Easily Machined

DESCRIPTION

High resistance to heat and combustibility, low smoke emission, and transparency are the combination of properties possessed by stock shapes extruded from Polyethersulfone (PES). These, coupled with light weight, good impact resistance, dimensional stability, and chemical resistance, make stock shapes extruded from PES resin useful in the electrical/electronics, aerospace/aircraft, automotive, and mass transit industries.

TYPICAL PROPERTY VALUES

Physical	Properties	Condition	Units	Value	ASTM Test
	Density		g/cm ³	1.37	D792
	Chemical Designation			PES	
	Filler				

Mechanical	Properties	Condition	Units	Value	ASTM Test
	Tensile Modulus	@ 73 °F	PSI	385,000	D639
	Tensile Strength	@ 73 °F	PSI	12,000	D638
	Shear Strength	@ 73 °F	PSI		
	Elongation @ Yld	@ 73 °F	%	5.5	D638
	Elongation @ Brk	@ 73 °F	%	50-100	D638
	Flexural Modulus	@ 73 °F	PSI	420,000	D790
	Flexural Strength @ Yld	@ 73 °F	PSI	16,100	D790
	Compressive Modulus	@ 73 °F	PSI	388,000	
	Compressive Strength	@ 73 °F, 10% strain	PSI	14,500	
	Izod (Charpy) Impact Strength	@ 73 °F	ft-lbs/in	1.6	D256
	Rockwell Hardness	@ 73 °F	M (R) Scale	R127	D785
Coefficient of Friction	Static				

Thermal	Properties	Condition	Units	Value	ASTM Test
	Thermal Expansion (CLTE)		in/in/°F	2.7*10 ⁻⁵	D696
	Heat Deflection Temperature	@ 66 PSI	°F	417	D648
	Heat Deflection Temperature	@ 264 PSI	°F	399	D648
	Specific Heat		BTU/lb-°F	0.28	UL746B
Limiting Oxygen Index		%	39.3	D2863	

Electrical	Properties	Condition	Units	Value	ASTM Test
	Surface Resistivity		ohms/square		
	Volume Resistivity		ohm-cm	1.7*10 ¹⁵	D257
	Dielectric Constant	50% RH		3.5	D150
	Dielectric Strength	@ 60 Hz, 73 °F	V/mil	380	D149
Dissipation Factor	@ 60 Hz, 73 °F		0.0022	D150	

Other	Properties	Condition	Units	Value	ASTM Test
	Moisture Absorption	@ 24 hrs, 73 °F	%	1.85	D570
	Moisture Absorption	@ Saturation, 73 °F	%		D570
	Flammability	UL 94		V-0	
	Food Grade			N	
Relative Cost					

• The data stated above are typical values intended for reference and comparison purposes only.
• The data should not be used as a basis for design specifications or quality control.

• The information is provided as a guide to the best of our knowledge and given without obligation or liability.
• Testing under individual application circumstances is recommended