

PES (Polyethersulfone)

High resistance to heat and combustibility, low smoke emission, and transparency are the combination of properties possessed by stock shapes extruded from 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. PES stock shapes are also applicable for heat and fire safety, food service, and hospital and health care items.

The following physical property information is based on typical values of the base polyethersulfone resin (PES).

Applications Include:

- Printed circuits
- High intensity light bases
- Safety face shields
- Machine guards
- Connectors

Advantages of PES:

- Low smoke generation
- Excellent electrical properties at elevated temperatures
- Transparency
- Excellent chemical resistance
- Easily machined

Property	ASTM Test Method	Units	PES
Physical			
Specific Gravity	D792	—	1.37
Water Absorption @24 hours	D570	%	1.85
Mechanical			
Tensile Strength @yield	D638	psi	12,000
Tensile Modulus	D638	psi	385,000
Tensile Elongation @yield	D638	%	5.5
Tensile Elongation @break	D638	%	50.0-100.0
Flexural Strength @yield	D790	psi	16,100
Flexural Modulus	D790	psi	420,000
Compressive Strength @yield	D695	psi	14,500
Compressive Modulus	D695	psi	388,000
Izod Impact Strength			
Un-Notched	D256	ft-lb/in	No Break
Notched @73°F	D256	ft-lb/in	1.6
Hardness, Rockwell	D785	—	R127
Thermal			
Heat Deflection Temperature			
@66 psi	D648	°F	417
@264 psi	D648	°F	399
Coefficient of Thermal Expansion	D696	in/in/°F	2.7x10 ⁻⁵
Flammability Rating—UL94 @.031"	—	—	V-0
Thermal Conductivity	C177	(BTU•in)/(hr•ft ² •°F)	1.13
Limiting Oxygen Index	D2863	%	39.3
Electrical			
Dielectric Strength	D149	V/mil	380
Dielectric Constant @1kHz	D150	—	3.50
Dissipation Factor @1kHz	D150	—	0.0022
Volume Resistivity	D257	ohm•cm	1.7x10 ¹⁵
Optical			
Haze	D1746	%	8.0
Transparency	D1746	%	76

NOTE: The information contained herein are typical values intended for reference and comparison purposes only. They should NOT be used as a basis for design specifications or quality control. Contact us for manufacturers' complete material property datasheets. All values at 73°F (23°C) unless otherwise noted.