



## Polystyrene

### General Material Properties

Property	Metric	units	English	units
<b>General</b>				
Density	1.04e3 - 1.05e3	kg/m <sup>3</sup>	00.376 - 0.0379	lb/ft <sup>3</sup>
<b>Mechanical</b>				
Yield Strength	2.87e7 - 4.14e7	Pa	4.17 - 6	ksi
Tensile Strength	3.59e7 - 5.17e7	Pa	5.21 - 7.5	ksi
Elongation	0.012 - 0.025	% strain	1.2 - 2.5	% strain
Hardness (Vickers)	8.43e7 - 1.22e8	Pa	8.6 - 12.4	HV
Impact Strength (unnotched)	8.6e3 - 1.49e4	J/m <sup>2</sup>	4.09 - 7.09	ft.lbf/in <sup>2</sup>
Fracture Toughness	7e5 - 1.1e6	Pa/m <sup>0.5</sup>	0.637 - 1	ksi/in <sup>0.5</sup>
Young's Modulus	2.28e9 - 3.28e9	Pa	0.331 - 0.476	10 <sup>6</sup> psi
<b>Thermal</b>				
Max Service Temperature	75 - 90	°C	167 - 194	°F
Melting Temperature		°C		°F
Insulator or Conductor	Insulator		Insulator	
Specific Heat Capability	1.2e3 - 1.3e3	J/kg °C	0.287 - 0.31	BTU/lb. °F
Thermal Expansion Coefficient	9e-5 - 1.49e-4	strain/°C	50 - 83	μstrain/°F
<b>Eco</b>				
CO2 Footprint	2.85 - 3.15	kg/kg	2.85 - 3.15	lb/lb
Recycleable	Yes		Yes	

The information on this page is intended as general guidance only and is only accurate at the time of posting (7-30-12). Specific material properties vary by manufacturer. Please contact a Dielectric application engineer for help in choosing the optimal material for your application and budget.