

TPX® (polymethylpentene)

TPX is a lightweight, high temperature polyolefin with exceptional acoustical and electrical properties. TPX has low moisture absorption and excellent chemical resistance. It is often used for applications requiring low distortion of sound waves including sonar covers, speaker cones, and ultrasonic transducer heads. TPX is also used for electrical insulating applications requiring high dielectric strength and low dielectric constant. TPX has the lowest specific gravity of any commercially available thermoplastic (0.835), making it an excellent choice for lightweight structural parts. Additionally, natural TPX is FDA compliant for use in food processing machinery. The following physical property information is based on typical values of the base DX845 resin.

Applications Include:

- Laboratory equipment components
- Medical equipment parts
- Microwave components
- Electric and electronic components
- Acoustical devices
- Loudspeaker diaphragms
- Sonar transducer covers
- Lightweight structural parts

Advantages of TPX:

- Exceptional sound properties
- Low specific gravity
- Excellent electrical properties
- Low water absorption
- Transparent
- High heat resistance

Property	ASTM Test Method	Units	TPX®
Physical			
Specific Gravity	D792	—	0.833
Mechanical			
Hardness-Rockwell	D2240	—	R85
Yield Stress			
@ 73°F	D638	psi	3,910
@ 140°F	D638	psi	1,850
@ 248°C	D638	psi	850
Tensile Modulus			
@ 73°F	D638	psi	270,000
@ 140°F	D638	psi	87,000
@ 248°F	D638	psi	35,500
Tensile Strength			
@ 140°F	D638	psi	1,420
@ 248°F	D638	psi	1,140
Elongation @Break			
@ 73°F	D638	%	33
@ 140°F	D638	%	100
@ 248°F	D638	%	600
Thermal			
Heat Deflection Temperature @66 psi	D648	°F	194
Electrical			
Dielectric Constant @1kHz	D150	—	2.12
Volume Resistivity	D257	ohm-cm	>10 ¹⁶
Optical			
Transparency	D1746	%	90
Haze	D1746	%	2.0

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.