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TECHNICAL DATA SHEET
Polycarbonate
(PC)

Polycarbonate is best known for its impact resistance but has additional properties like: Optical transparency, excellent creep resistance, wide temperature range, high dimensional stability, good electrical characteristics and self-extinguishing behavior. Polycarbonate's good heat resistance offers a high melt temperature (it does require higher processing temperatures).

Polycarbonate is a tough, dimensionally stable, transparent thermoplastic that has many applications which demand high performance properties. This versatile thermoplastic maintains its properties over a wide range of temperatures, from -40"F to 280"F. It has the highest impact resistance of any Thermoplastic, transparent up to 2" in special grades, outstanding dimensional and thermal stability, exceptional machinability, stain resistant and non-toxic while having low water absorption.

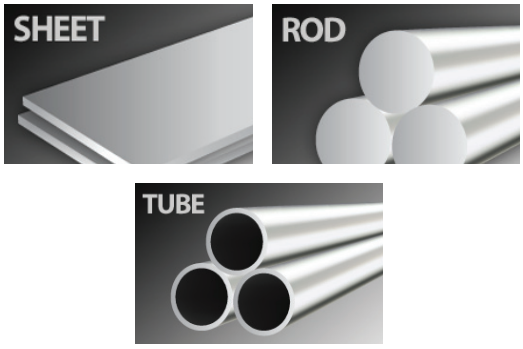
Machine Grade is relatively stress free to permit the most demanding machining. It is also available in glass-filled. This polycarbonate grade is perfect for high performance uses in tough applications over a broad temperature range.

Window Grade is optically clear, providing total luminous transmittance and a very low haze factor. The high impact strength makes it resistant to repeated blows, shattering and spalling. Glass Filled Grade
Glass-reinforced polycarbonate is primarily selected as a replacement for die-cast aluminum and zinc, when these metals are being used and an upgrade is desired. The coefficient of thermal expansion is reduced by nearly 75%, thus equaling that of some metals. While glass-reinforced has less impact strength than standard grades, it is still tougher and more impact resistant than most other plastics and die cast aluminum.

Benefits
Impact resistance
Durability
Machinability
Formability
Transparent
Easily cleaned
Scratches easily removed
Temperature range
UV stable
High dielectric strength

Applications
Medical components
Lenses
Equipment housings
Electronics
Defense
Automotive
Lighting fixtures
Vehicle windows
Structural parts
Nameplates and bezels

SHAPES AVAILABLE



SEE NEXT PAGE FOR ADDITIONAL INFORMATION

TYPICAL PROPERTIES of POLYCARBONATE

ASTM or UL test	Property	Unfilled	30% Glass
	PHYSICAL		
D792	Density (lb/in³) (g/cm³)	0.043 1.2	0.052 1.43
D570	Water Absorption, 24 hrs (%)	0.12	0.12
	MECHANICAL		
D638	Tensile Strength (psi)	9,500	19,000
D638	Tensile Modulus (psi)	320,000	-
D638	Tensile Elongation at Break (%)	60	10
D790	Flexural Strength (psi)	15,000	23,000
D790	Flexural Modulus (psi)	375,000	1,100,000
D695	Compressive Strength (psi)	12,000	18,000
D695	Compressive Modulus (psi)	240,000	500,000
D785	Hardness, Rockwell	M70 / R118	M92
D256	IZOD Notched Impact (ft-lb/in)	13	2
	THERMAL		
D696	Coefficient of Linear Thermal Expansion (x 10^{-5} in./in./°F)	3.9	1.2
D648	Heat Deflection Temp (°F / °C) at 264 psi	270 / 132	295 / 146
D3418	Glass Transition Temp (°F / °C)	293 / 145	300 / 149
-	Max Operating Temp (°F / °C)	250 / 121	270 / 132
C177	Thermal Conductivity (BTU-in/ft²-hr-°F) (x 10^{-4} cal/cm-sec-°C)	 1.3 6.9	 1.3 6.9
UL94	Flammability Rating @ less than .45" (11.5mm) thickness @ .45" (11.5mm) thickness and above	 H-B V-0	 H-B V-0
	ELECTRICAL		
D149	Dielectric Strength (V/mil) short time, 1/8" thick	390	470
D150	Dielectric Constant at 60 Hz	3.17	3.35
D150	Dissipation Factor at 60 Hz	0.0009	0.0011
D257	Volume Resistivity (ohm-cm)at 50% RH	10^{16}	10^{16}

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.