PROTOLABS
Manufacturing. Accelerated.

Polycarbonate (PC) - Machine Grade

Polycarbonate – Machine Grade is an amorphous, transparent engineering thermoplastic that offers excellent impact resistance, stiffness, resistance to acidic solutions, and electrical characteristics. As a result, it is desirable for semiconductors, electronics, and transparent structural applications.

Applications

PC – Machine Grade is commonly used in semiconductors, electronics, aircraft and aerospace technology, food engineering, food processing, and transparent structural applications.

Key Product Benefits

- Excellent Strength and Stiffness
- Excellent Impact Resistance and Dimensional Stability
- Low Moisture Absorption
- Great Electrical Characteristics
- Machinability
- Resistance to Acidic Solutions

Properties

Property	Test Method	Value
Flexural Modulus	ASTM D790	340,000-350,000 psi
Flexural Strength @ Yield	ASTM D790	12,000-13,000 psi
Rockwell Hardness (M Scale)	ASTM D785	70-75
Izod Impact, Notched	ASTM D256	1.5-2.5 ft-lb/in
Tensile Modulus	ASTM D638	320,000-340,000 psi
Elongation @ Break	ASTM D638	90-100%
Tensile Strength @ Yield	ASTM D638	9,300-10,500 psi
Compressive Strength	ASTM D695	10,000-11,500 psi
Coefficient of Thermal Linear Expansion	ASTM D696	3.8-3.9 x 10-5 in/in/°F
Flammability	UL 94	HB
Heat Deflection Temperature @ 264 psi	ASTM D648	270-290°F

Property (Continued)	Test Method (Continued)	Value (Continued)
Continuous Allowable Service Temperature, Air		250°F
Thermal Conductivity	ASTM C177	1.29-1.39 BTU-in/hr/ft2/°F
Dielectric Constant @ 1 MHz	ASTM D150	2.96-3.17
Dielectric Strength	ASTM D149	378-400 V/mil
Specific Gravity	ASTM D792	1.19-1.20
Water Absorption @ 24 hours	ASTM D570	0.13-0.20%
Water Absorption @ Equilibrium	ASTM D570	0.35-0.40%