

Applications

- Manifolds
- Glazing
- Optical components
- Industrial equipment and housing components
- Electrical insulators and connectors
- Medical equipment components
- Machine guards, equipment covers
- Non-automotive vehicle windows

Advantages

- High impact strength
- Low moisture absorption
- Resists acids
- Transparent
- FDA compliant
- Good dielectric properties
- Good mechanical and electrical properties
- Transparent up to 2" in special grades

Grades

- Machine Grade
- Optical Grade
- Static Contro
- Glass Filled
- Flame Retardant
- Bullet Resistant

NOTE: Several grades of this material are available. For additional information regarding this plastic, contact your Emco Industrial Plastics representative or call (800) 292-9906.

Polycarbonate PC, Machine Grade [Polycarbonate, Machine Grade]

The characteristics of polycarbonate are quite like those of polymethyl methacrylate (PMMA; acrylic), but transparency, excellent toughness, thermal stability and a very good dimensional stability make polycarbonate one of the most widely used engineering thermoplastics in applications demanding high performance properties. This amorphous thermoplastic is highly transparent to visible light - it rates highest among transparent, rigid thermoplastics - and has better light transmission characteristics than many kinds of glass.

Machine grade polycarbonate exhibits superior impact strength and rigidity over a wide range of service temperatures and is often used for structural applications where transparency and impact strength are essential. Machine grade polycarbonate is stress relieved, making it ideal for close tolerance machined parts.

Clear, standard, and custom colors are available in coated, laminated, twin walled, patterned, or mirrored stock.

A large number of end use applications, i.e., special grades that provide specific properties or processing characteristics (weatherability, abrasion/ scratch resistance, heat/flame retardance, UV stability, and static dissipation) for polycarbonate are possible by tailoring grades with specific molecular properties and additives during its manufacture. Contact an Emco Industrial Plastics representative who can help you choose the correct material to meet the needs of your applications.

Brand Names

Ensicar®, Hydex® 4301, Hyzod® M, Quadrant® PC 1000, Sustanat®, Tecanat™, Tuffak®, Unicar®

Emco Industrial Plastics doesn't claim to represent all of the manufacturers or trade name products listed. This list is intended as a guide of typical materials available for purchase from Emco Industrial Plastics, Inc. For additional information, contact an Emco Industrial Plastics representative at (800) 292-9906.

Availability

TYPE	SIZE	LENGTH	COLOR
Sheet	1/4" - 6" TH	2', 4', x 2', 4'; CTS	Natural, Black
Rod	1/32" - 15" DIA	Standard lengths; CTS	Natural, Black
Tube	1/4" - 7-3/4" ID	Standard 8'; CTS	Clear

Give us your cut-to-size dimensions. We will precision-cut these plastics to your exact size. Additional sizes and colors available upon request.

Properties

PHYSICAL PROPERTIES	UNITS	ASTM RESULTS
Density	lb/in ³	D792 0.043
Water Absorption, 24 hrs	%	D570 0.012 - 0.150
MECHANICAL PROPERTIES	UNITS	ASTM RESULTS
Tensile Strength	psi	D638 9,500 - 10,000
Tensile Modulus	psi	D638 320000
Tensile Elongation @Break	%	D638 60 - 135
Flexural Strength	psi	D790 14,200 - 15,000
Flexural Modulus	psi	need
Compressive Strength	psi	D695 12000
Compressive Modulus	psi	D695 240,000 - 345,000
Hardness, Rockwell R		D785 118
IZOD Impact Strength Notched	ft-lb/in	D256 13 - 17

IZOD Impact
Strength ft-lb/in
Un-notched

D256 NB

**THERMAL
PROPERTIES**

UNITS

ASTM RESULTS

(x 10⁻⁵ in./in./°F) D256 3.9 Heat Deflection Temp at 66 psi °F D648 270 - 280
Heat Deflection Temp at 264 psi °F 270 - 293 Max Operating Temp °F 250
Thermal Conductivity BTU-in/ft²-hr-°F C177 1.3 Flammability Rating UL94
H-B/V-O **ELECTRICAL PROPERTIES** UNITS ASTM RESULTS Dielectric Strength. 1/8"
Coefficient of th. V/mil D149 390 - 965 Dielectric Constant D150 3.17 Dissipation Factor @ 60
Linear Hz D150 0.0009 Volume Resistivity ohm-cm D257 1016 **OPTICAL**
Thermal **PROPERTIES** UNITS ASTM RESULTS Haze, initial % D1003 0.01 NOTE: The
Expansion the property values presented above 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.