PC-350 Polycarbonate (Bending Grade)
Static Dissipative Plastic

PC-350 Polycarbonate is a plastic sheet product designed to control static electricity for a wide range of end uses. It is a premium quality polycarbonate sheet which has been surfaced with a clear, PC-350 static dissipative surfacing. This unique technology prevents charge generation on the sheet surfaces, thereby controlling particulate attraction and preventing electrostatic discharge (ESD) events. This performance is permanent and totally independent of humidity. **PC-350 Polycarbonate** offers exceptional design versatility since it fabricates simply, is light in weight and is available in large sheet sizes. It also exhibits excellent clarity and chemical resistance, plus superior impact resistance, flame spread properties, and bending characteristics.

Applications

PC-350 Polycarbonate resists tribocharging under all circumstances and cannot generate a charge when properly grounded. This makes it ideal for use in manufacturing and assembly operations for charge sensitive electronic components where it can help prevent both immediate and latent ESD caused defects. Since it resists charge build-up it does not attract contaminants, so it can also help prevent contamination-related rejects in ultra-clean manufacturing operations. Consequently, it is suitable for use in the semi-conductor, electronic, and micro-manufacturing industries. Typical applications include contoured panels and fabricated items which require heat bending, such as: guards, covers, windows, doors, and access panels for electronic equipment, assembly machines and instruments; conveyor line covers and shields; and equipment enclosures. The product also has many general industrial uses, including protection for static charge sensitive manufacturing devices and control of spark discharge in explosive environments.

Fabrication

PC-350 Polycarbonate is easily fabricated into a variety of flat and bent configurations using the same equipment and fabrication techniques generally employed with un-surfaced polycarbonate sheet products. *This product is designed to accommodate heat bending; however, care must be taken to avoid applying too much heat to prevent damage to the PC-350 surface.* When solvent welding, it is recommended that the C-350 surface be removed to achieve the best bond strengths. For more information refer ask for Technical Information Bulletin No. PC350-SP-02.

Features and Benefits

- *Cannot be tribocharged when properly grounded.* Prevents build-up of static charge and accumulation of harmful contamination.
- *Electrostatic decay in less than 0.05 second per Federal Test Standard 101C, Method 4046.1.* Results in rapid static dissipation without arcing.
- *Surface resistivity of 106 - 108 ohms per square*. Provides for ESD control without the need for ionization.
- *Permanence in static dissipation performance*. Avoids cost of application of temporary topical anti-stats.
- *Humidity independent static charge control*. Avoids inconvenience of maintaining high levels of humidity and damage caused by such humidity.
- *Advanced technology, uniform surface treatment* Avoids conductive discontinuities (charged “hot spots”) often found with non-uniform temporary topical anti-stats.
- *Superior impact resistance*. Provides exceptional shatter resistance for safety.
- *Superior flame spread properties*. Provides additional protection for equipment in a fire.
- *Superior fabrication and bending characteristics* Provides maximum versatility and workability during part fabrication.
- *Superior chemical resistance*. Reduces risk of solvent or chemical surface damage.
- *Excellent clarity.* Premium optical quality polycarbonate with clear PC-350 surface minimizes visible distortion.

Availability

PC-350 Polycarbonate is available in clear and transparent gray and bronze tints. Other colors are available by special order.

Standard Dimensions (Nominal)
Thickness: 3mm (1/8”), 4.5mm (3/16”), 6mm (1/4”), 9mm (3/8”), 12mm (1/2”) plus films 10-90 mils
Standard Sheet Size: 48” x 96”
Other sizes and thicknesses available upon request.

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.

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PC-350 Polycarbonate (Bending Grade)

Typical Physical Properties (Typical but not guaranteed values for 0.25 inch material)

Property	Test Method	Units	PC-350 Polycarbonate
Physical			
Specific Gravity	ASTM D792	--	1.20
Pencil Hardness	ASTM D3363	Hardness Scale	2B
Mechanical			
Tensile Strength			
Ultimate	ASTM D638	psi	9,500
Elongation	ASTM D638	%	100
Tensile Modulus	ASTM D638	psi	340,000
Flexural Strength	ASTM D790	psi	13,500
Flexural Modulus	ASTM D790	psi	340,000
Compressive Strength	ASTM D695	psi	12,500
Izod Impact Strength (milled notch)	ASTM D256	ft-lb/inch of notch	16
Thermal			
Deflection Temperature (264 psi load)	ASTM D648	°F	270
Vicat Softening Point	ASTM D1525	°F	310
Maximum Continuous Service Temperature	-- ASTM	°F in/in/°F	180
Coefficient of Thermal Expansion	D696	BTU•in/hr•ft^2•°F	3.8×10^{-5}
Coefficient of Thermal Conductivity	Cenco-Fitch		1.35
Flammability			
Horizontal Burn (Flame Spread)	ASTM D635	in/min	Less than 1.0
UL 94 Rating	UL 94	UL Classification	V-2 0.118 - 0.236 in V-0 ≥ 0.236 in
Optical			
3mm Transparent Clear Transmittance - Total	ASTM D1003	%	75
Haze	ASTM D1003	%	Less than 3.0
Electrical			
Surface Resistivity	ASTM D257	ohms/sq	10^6 - 10^8
Surface Resistance	EOS/ESD S11.11	ohms	10^5 - 10^7
Electrostatic Decay	FTS 101C, Method 4046.1*	sec	Less than 0.05

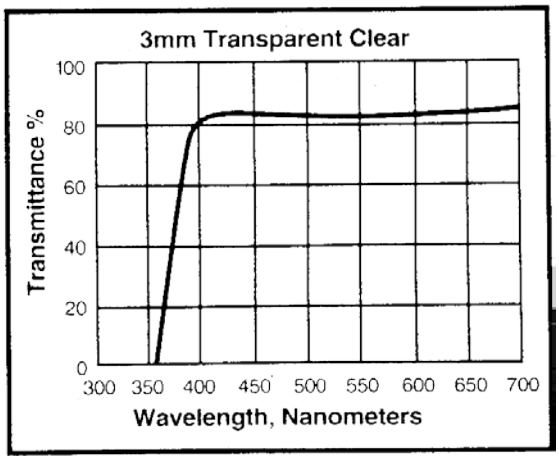
* Federal Test Standard 101C, Method 4046.1 as described in EIA-541, Appendix F, Measurement of Electrostatic Decay Properties of Dissipative Planar Materials

Chemical Resistance Data ASTM D543

Samples immersed in the specified chemicals for 24 hours at room temperature and visually examined.

Chemical	Surface Attack	Visual Evaluation
Deionized Water	None	Clear
30% Sodium Hydroxide	None	Cloudy
30% Sulfuric Acid	None	Clear
30% Nitric Acid	Some Pitting	Cloudy
48% Hydrofluoric Acid	Pitted Coating	Clear
Methanol	Slight Pitting	Clear
Ethanol	None	Clear
Isopropyl Alcohol	None	Clear
Acetone	Severe Pitting	Opaque
Methylene Chloride	Sample Dissolved	Sample Dissolved

Light Transmission Spectral Analysis



Precautions:
1. Polycarbonate plastic is a combustible thermoplastic. Avoid exposure to flame and excessive heat. Observe fire precautions appropriate for comparable forms of wood and paper.
2. For building applications, comply with applicable code regulations.
3. Clean with soap and water. Do not use abrasives. Avoid inappropriate contact with solvents.

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