



# PROFESSIONAL PLASTICS, INC.

Leading Global Supplier of Engineered Plastic Shapes

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## PVC-350™ (Bending Grade) Static Dissipative Plastic Sheet

### Description

**PVC-350™** is a plastic sheet product designed to control static electricity for a wide range of end uses. It is a high quality polyvinyl chloride sheet which has been surfaced with SciCron Technologies proprietary, clear, C-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. **PVC-350** offers exceptional design versatility since it fabricates simply, is light in weight and is available in large sheet sizes. It also exhibits excellent chemical resistance, plus superior flame spread and bending characteristics.

### Applications

**PVC-350** 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 fabri-cated items which require heat bending, such as; covers, windows, doors, and access panels for electronic equip-ment, machines and instruments; fabricated desiccators, cabinets, and boxes with heat bent parts; and formed process 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

**PVC-350** is easily fabricated into a variety of flat and bent configurations using the same equipment and fabrication techniques generally employed with unsurfaced PVC 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 C-350 surface.* When solvent welding, it is recommended that the C-350 surface be removed to achieve the best bond strengths. For more information on fabrication refer to SciCron Technologies Technical Information Bulletin No. 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  $10^6$  -  $10^8$  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 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.

**Availability**

**PVC-350** is available in clear, opaque white and opaque gray colors.

Standard Dimensions (Nominal)

Thickness: 3mm (1/8"), 4.5mm (3/16"), 6mm (1/4"), 9mm (3/8"), 12mm (1/2")

Standard Sheet Size: 48" x 96"

Other sizes and thicknesses available upon request.

**Made in USA**

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

Property	Test Method	Units	PVC-350
<b>Physical</b> Specific Gravity Pencil Hardness	ASTM D792 ASTM D3363	-- Hardness Scale	1.38 F
<b>Mechanical</b> Tensile Strength Ultimate Elongation Tensile Modulus Flexural Strength Flexural Modulus Compressive Strength Izod Impact Strength (milled notch)	ASTM D638 ASTM D638 ASTM D638 ASTM D790 ASTM D790 ASTM D695 ASTM D256	psi % psi psi psi psi ft-lb/inch of notch	10,000 40 425,000 14,500 425,000 12,000 0.5
<b>Thermal</b> Deflection Temperature (264 psi load) Vicat Softening Point Maximum Continuous Service Temperature Coefficient of Thermal Expansion Coefficient of Thermal Conductivity	ASTM D648 ASTM D1525 -- ASTM D696 Cenco-Fitch	°F °F °F in/in/°F BTU•in/hr•ft <sup>2</sup> •°F	140 150 130 7.0 x 10 <sup>-5</sup> 1.1
<b>Flammability</b> Horizontal Burn (Flame Spread) UL 94 Rating	ASTM D635 UL 94	in/min UL Classification	Less than 1.0 V-0
<b>Optical</b> 3mm Transparent Clear Transmittance - Total Haze	ASTM D1003 ASTM D1003	% %	75 Less than 5.0
<b>Electrical</b> Surface Resistivity Surface Resistance Electrostatic Decay	ASTM D257 EOS/ESD S11.11 FTS 101C, Method 4046.1*	ohms/sq ohms sec	10 <sup>6</sup> - 10 <sup>8</sup> 10 <sup>5</sup> - 10 <sup>7</sup> Less than 0.05

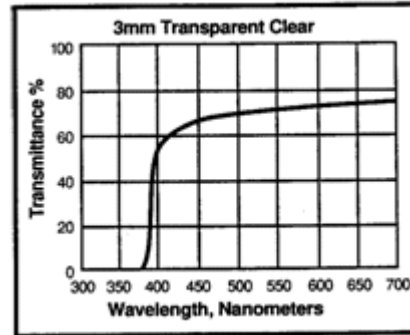
- Federal Test Standard 101C, Method 4046.1 as described in EIA-541, Appendix F, Measurement of Electrostatic Decay Properties of Dissipative Planar Materials

# Chemical Resistance 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	Clear
30% Sulfuric Acid	None	Clear
30% Nitric Acid	Slight Pitting	Clear
48% Hydrofluoric Acid	None	Clear
Methanol	Slight Pitting	Clear
Ethanol	None	Clear
Isopropyl Alcohol	None	Clear
Acetone	Severe Pitting	Plastic Attacked
Methylene Chloride	Sample Dissolved	Sample Dissolved

# Light Transmission Spectral Analysis



### Precautions:

1. PVC plastic is a combustible thermoplastic which emits toxic and corrosive gases upon combustion. 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.

The information and statements contained herein are believed to be accurate, however, users should perform their own testing and verification to determine the durability, applicability and suitability of the products for their own purposes. NOTHING CONTAINED HEREIN SHALL BE CONSTRUED AS A REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, or as permission, inducement, or recommendation to practice any patented invention without license. IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY EXCLUDED. While SciCron Technologies' surface is more mar resistant than the original substrate, the term "Permanent" or "Permanence" is not intended as a guarantee of durability in any particular application. It is used to distinguish SciCron Technologies' surface from topical anti-stats which must be reapplied on a regular basis.



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