

## AC-300™ Acrylic Static Dissipative Plastic

### Description

**AC-300™ Acrylic** is a plastic sheet product designed to control static electricity for a wide range of end uses. It is a premium quality acrylic sheet which has been surfaced with SciCron Technologies proprietary, clear, C-300™ 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. **AC-300 Acrylic** offers exceptional design versatility since it fabricates simply, is light in weight and is available in large sheet sizes. It also exhibits excellent optical properties, chemical resistance, surface hardness and mar resistance.

### Applications

**AC-300 Acrylic** 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; covers, windows, doors, and access panels for electronic equipment, machines and instruments; fabricated desiccators, cabinets, and boxes; transparent room partitions and pass-thru modules; process equipment enclosures; and mini-environment glazing panels. 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

**AC-300 Acrylic** is easily fabricated into flat surface configurations using the same equipment and fabrication techniques generally employed with unsurfaced acrylic sheet products. It should not be used for heat formed bent configurations since the hard, cured C-300 surface is not designed for heat bending. When solvent welding, it is necessary to remove the C-300 surface mechanically to achieve a good bond. For more information on fabrication refer to SciCron Technologies Technical Information Bulletin No. SP-01.

### 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.
- *Excellent optical properties*  
C-300 surface provides excellent clarity for optimum use of available light.
- *Superior chemical resistance*  
Reduces risk of solvent or chemical surface damage.
- *Hard, mar resistant, durable surface*  
C-300 surface, harder than the base plastic, reduces risk of damage to the sheet surfaces.
- *Superior fabrication characteristics*  
Results in optimum workability during part fabrication.

### Availability

**AC-300 Acrylic**, in cell cast type, is available in clear and a variety of standard transparent colors including tints which filter wave-lengths that can interfere with processing operations. White translucent and colored opaque grades are also available. Continuously cast and extruded types are available in some sizes and thicknesses upon request.

**Note:** Cell cast is a premium form of acrylic plastic but it has a wider thickness variation than other acrylic types. *Therefore, continuously cast or extruded material should be specified if a narrow thickness tolerance range is required.*

Standard Dimensions (Nominal)

Thickness: 3mm (1/8"), 4.5mm (3/16"), 6mm (1/4"), 9mm (3/8"), 12mm (1/2") - Note: 9mm and 12mm - cell cast only.

Standard Sheet Size: 48" x 96"

Other sizes and thicknesses, including oversize sheets, available upon request.

**Made in USA**

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.

# AC-300™ Acrylic

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

Property	Test Method	Units	AC-300 Acrylic
<b>Physical</b>			
Specific Gravity	ASTM D792	--	1.19
Pencil Hardness	ASTM D3363	Hardness Scale	5H
<b>Mechanical</b>			
Tensile Strength Ultimate	ASTM D638	psi	10,000
Elongation	ASTM D638	%	4.2
Tensile Modulus	ASTM D638	psi	400,000
Flexural Strength	ASTM D790	psi	16,500
Flexural Modulus	ASTM D790	psi	475,000
Compressive Strength	ASTM D695	psi	18,000
Izod Impact Strength (milled notch)	ASTM D256	ft-lb/inch of notch	0.4
<b>Thermal</b>			
Deflection Temperature (264 psi load)	ASTM D648	°F	210
Vicat Softening Point	ASTM D1525	°F	239
Maximum Continuous Service Temperature	--	°F	180
Coefficient of Thermal Expansion	ASTM D696	in/in/°F	3.5 x 10 <sup>-5</sup>
Coefficient of Thermal Conductivity	Cenco-Fitch	BTU•in/hr•ft <sup>2</sup> •°F	1.3
<b>Flammability</b>			
Horizontal Burn (Flame Spread)	ASTM D635	in/min	1.1
UL 94 Rating of the Uncoated Substrate	UL 94	UL Classification	HB
<b>Optical</b>			
3mm Transparent Clear Transmittance - Total Haze	ASTM D1003 ASTM D1003	% %	80 Less than 3.0
<b>Electrical</b>			
Surface Resistivity	ASTM D257	ohms/sq	10 <sup>6</sup> - 10 <sup>8</sup>
Surface Resistance	EOS/ESD S11.11	ohms	10 <sup>5</sup> - 10 <sup>7</sup>
Electrostatic Decay	FTS 101C, Method 4046.1*	sec	Less than 0.05

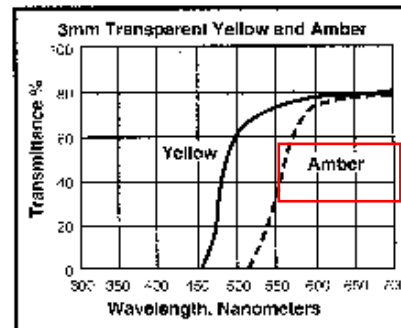
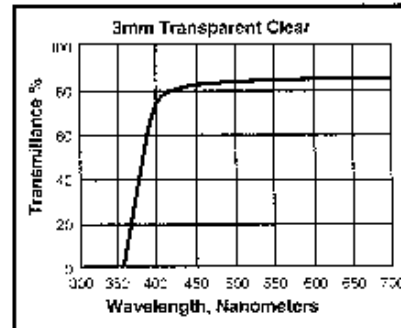
\* Federal Test Standard 101C, Method 4046.1 as described in EIA-541, Appendix F, Measurement of Electrostatic Decay Properties of Dissipative Planar Materials

## Chemical Resistance ASTM D543

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

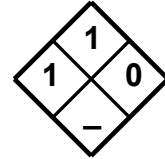
Chemical	Surface Attack	Visual Evaluation
Deionized Water	None	Clear
30% Sodium Hydroxide	None	Clear
30% Sulfuric Acid	None	Clear
30% Nitric Acid	Slight Pitting	Clear
48% Hydrofluoric Acid	Severe Attack	White, Rubbery
Methanol	Slight Pitting	Clear
Ethanol	None	Clear
Isopropyl Alcohol	None	Clear
Acetone	Severe Pitting	Coating Clear-Plastic Attacked
Methylene Chloride	Sample Dissolved	Sample Dissolved

## Light Transmission Spectral Analysis



### Precautions:

1. Acrylic 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.



NFPA RATING

Health Hazard	0
Fire Hazard	1
Physical Hazard	0
Personal Protection	B

HMIS RATING

MATERIAL SAFETY DATA SHEET

**SECTION I - PRODUCT AND COMPANY IDENTIFICATION**

TRADE NAME: StatiCon® Glazing: AC-300™ and AC-350™ Acrylic  
 Acrylic Sheet: AC-100™, AC-300™, AC-350™ Acrylic, SciCron® AS Acrylic, and Mar-Con® AS Acrylic

MSDS NUMBER SC-001

GENERIC NAME: Static Dissipative Acrylic Sheet

DATE ISSUED: March 23, 2004

MANUFACTURER: SciCron Technologies, LLC

MANUFACTURER PHONE: 806-372-8300

ADDRESS: 501 Amarillo Blvd. West

MANUFACTURER FAX: 806-372-8333

CITY, STATE, ZIP: Amarillo, TX 79107

EMERGENCY (PLANT MANAGER): 806-372-8300

**SECTION II - COMPOSITION/INFORMATION ON INGREDIENTS**

CHEMICAL NAME	CAS NUMBER	WT. %	TLV	PEL
Polymethyl Methacrylate (PMMA)	Proprietary	99 - 100	None	None
Methyl Methacrylate (MMA)*	80-62-6	<1	100ppm	100ppm

\* Indicates chemical(s) which are reportable under SARA Title III, Section 313

**SECTION III - HAZARDS IDENTIFICATION**

**EMERGENCY OVERVIEW:** There are no significant health hazards associated with exposure to this product.  
**Fabrication:** The product is a solid sheet material. Cutting and fabricating activities utilizing impact or power equipment may release small chips or shards, which are a hazard to the eyes. Grinding and sanding operations may release small quantities of dust with particles generally larger than respirable size.  
**Burning:** Toxic gases and fumes are given off during burning or thermal decomposition. Burning produces intense heat and dense smoke.

**SIGNS AND SYMPTOMS OF OVEREXPOSURE:** Overexposure to this product is not likely to cause any significant acute effect.

HMIS RATING: Health: 0      Fire: 1      Physical Hazard: 0      Personal Protection: B

**POTENTIAL HEALTH EFFECTS:**

**ROUTES OF ENTRY:** Eyes, Inhalation

**ACUTE EFFECTS:** Coarse dust, particulate and possible monomer fumes generated during fabrication can irritate eyes, nasal passages, and the upper respiratory system.

**CHRONIC EFFECTS:** Chronic effects are unlikely.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** Chronic respiratory disease.

**CARCINOGENICITY:** This product is not classified or regulated by NTP, IARC, or OSHA.

## SECTION IV - FIRST AID MEASURES

**EYE CONTACT:** To remove particulate matter, flush with large amounts of water until irritation subsides. See a physician if irritation persists.

**INHALATION:** Blow nose and rinse mouth with water to clear dust and particulate. If exposed to excessive levels of dust or fumes, remove to fresh air and get medical attention if cough or other symptoms develop.

## SECTION V - FIRE FIGHTING MEASURES

**NFPA RATING:** Health: 1                      Fire: 1                      Reactivity: 0                      Other: --

**FLASH POINT AND METHOD:** Not applicable.

**EXTINGUISHING METHOD:** Water spray and foam. Carbon dioxide and dry chemical may permit re-ignition due to lack of cooling capacity.

**NFPA FIRE FIGHTING PROCEDURES:** Use water spray or foam applied from a safe distance to avoid exposure to hazardous vapors and other decomposition products.

**FIRE OR EXPLOSION HAZARDS:** Product is a combustible thermoplastic resin. Because of the potential for dense smoke in a fire situation, fire fighters should wear approved self-contained breathing apparatus. Dust from secondary fabrication operations may form explosive mixtures in air. Consequently, storage bins and dust collectors should be adequately grounded and vented.

**HARMFUL COMBUSTION PRODUCTS:** Intense heat, smoke, irritating toxic gases, and aerosols, including carbon dioxide, carbon monoxide, methyl methacrylate and hydrocarbon fragments, may be generated by thermal decomposition when the product undergoes combustion.

## SECTION VI - ACCIDENTAL RELEASE MEASURES

**SPILL OR LEAK PROCEDURES:** Sweep or pick-up fabrication debris. Debris may usually be disposed of in a non-regulated landfill. However, prior to disposal, it is recommended that the regulations in effect for the particular area where disposal is to take place be checked to prevent improper disposal.

## SECTION VII - HANDLING AND STORAGE

**STORAGE TEMPERATURE:** Store in well ventilated areas at temperatures below 120°F (49°C).

**SPECIAL SENSITIVITY:** None

**HANDLING PRECAUTIONS:** Use good housekeeping procedures to minimize the accumulation of dust during fabrication procedures. Keep open flames, sparks and heat away from all dusty operations.

## SECTION VIII - EXPOSURE CONTROLS/PERSONAL PROTECTION

**EYE PROTECTION:** Wear safety glasses or face shields when cutting or machining.

**SKIN PROTECTION:** Gloves are recommended when fabricating due to possible sharp edges.

**RESPIRATORY PROTECTION:** For nuisance dust not otherwise regulated, observe the OSHA PEL of 15 mg/m<sup>3</sup>. When exposures over the PEL are encountered and engineering or other controls are not adequate to reduce airborne concentrations to below the PEL, use a dust mask such as 3M-8710 or equivalent. If operations are continuous and/or ventilation is inadequate, evaluate the workplace for methyl methacrylate monomer. If the fumes are over the PEL/TLV employ a half mask respirator with appropriate organic vapor cartridges.

## SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES

**PRODUCT USES:** Fabricated sheet items including glazing, display components, machine covers, and safety shields.

**PHYSICAL FORM:** Clear, tinted, translucent or opaque thermoplastic sheet.

**SPECIFIC GRAVITY:** 1.19

**MELTING POINT:** 300°F (150°C)

**SOFTENING POINT:** 170 - 250° F (77 - 121°C)

## SECTION X - REACTIVITY

**STABILITY:** Product is stable under normal conditions.

**HAZARDOUS POLYMERIZATION:** Will not occur.

**INCOMPATIBILITIES:** None in designed use.

**DECOMPOSITION PRODUCTS:** Burning or thermal decomposition may generate carbon monoxide, carbon dioxide, and methyl methacrylate. Trace amounts of aliphatic hydrocarbons, and nitrogen oxide compounds may also be formed.

**CONDITIONS TO AVOID:** Exposure to high temperatures and direct flame.

## SECTION XI - TOXICOLOGICAL INFORMATION

### TOXICOLOGICAL HAZARDS:

Methyl methacrylate (MMA): CAS 80 - 62 - 6

Oral (LD50): Acute: 8,400 mg/kg (Rat)

Liquid MMA may cause primary eye or skin irritation. Allergic skin reactions may occur by repeated direct contact. Vapor overexposure may cause irritation to the eyes or respiratory tract and may cause central nervous system depression. MMA was not carcinogenic to rats and mice when inhaled at concentrations up to 1000 ppm for 2 years in studies sponsored by the National Toxicology Program. These concentrations produced chronic nasal irritation resulting in inflammation of the nasal cavity and degeneration of the olfactory epithelium.

## SECTION XII - ECOLOGICAL INFORMATION

**ECOLOGICAL INFORMATION:** This material is not classified as dangerous to the environment.

## SECTION XIII DISPOSAL CONSIDERATIONS

Product is non-hazardous. It may be incinerated or disposed of in a landfill in compliance with federal, state and local environmental regulations. Check before disposal to determine the details of such regulations in your area.

## SECTION XIV - TRANSPORTATION CONSIDERATIONS

**DOT NAME:** Not regulated

**DOT LABEL:** Not applicable

**DOT HAZARD CLASS:** Not applicable

**UN/NA NUMBER:** None

**PACKAGING GROUP:** None

**FLAMMABILITY CLASS:** None

## SECTION XV - REGULATORY INFORMATION

**OSHA STATUS:** This product is not considered hazardous under OSHA criteria (see Section III).

**TSCA STATUS:** Components of this product are included in the TSCA inventory.

**CERCLA REPORTABLE QUANTITY:** N/A

### SARA TITLE III

**SECTION 302 EXTREMELY HAZARDOUS:** This product contains no extremely hazardous substances as defined and listed in section #302.

**SECTION 311/312 HAZARDOUS CATEGORIES:** This section requires the reporting of all substances for which an MSDS has been prepared and in quantities which exceed the reportable quantity. Check with your Local Emergency Planning Committee for reportable quantities.

**SECTION 313 TOXIC CHEMICALS:** This product does contain chemical(s) which are defined as toxic chemical(s) under and subject to the reporting requirements of, Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372. See Section II. - Methyl methacrylate

### STATE REGULATORY INFORMATION:

We have not analyzed the products covered by this MSDS, nor the raw materials used in their manufacture, for the presence of items on various state hazardous substances lists. However, to the best of our knowledge, no such substances are present at reportable concentrations, except as specifically listed below.

Massachusetts Right-to Know Substance List

Methyl methacrylate (CAS 80-62-6) <1.0%

New Jersey Right-to Know Substances List

Methyl methacrylate (CAS 80-62-6) <1.0%

Pennsylvania Environmental and Hazardous Substance Lists

Methyl methacrylate (CAS 80-62-6) <1.0%

## SECTION XVI - APPROVALS

**REASON FOR ISSUE:** General Update

**PREPARED BY:** Jack Clifford

**APPROVAL DATE:** March 23, 2004

**SUPERSEDES DATE:** May 1, 1996

## SECTION XVII - DISCLAIMER

**AS OF THE DATE OF THIS DOCUMENT, THE FOREGOING INFORMATION IS BELIEVED TO BE ACCURATE AND IS PROVIDED IN GOOD FAITH TO COMPLY WITH APPLICABLE FEDERAL AND STATE LAWS. HOWEVER, NO WARRANTY OR REPRESENTATION OF LAW OR FACT, WITH RESPECT TO SUCH INFORMATION, IS INTENDED OR GIVEN.**

**AC-300™ Acrylic**  
Static Dissipative Plastic  
Clear

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SciCron Technologies, LLC  
[www.sctech.com](http://www.sctech.com)

**AC-300™ Acrylic**

Static Dissipative Plastic  
Clear

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**StatiCon® Glazing**  
**AC-300™ Amber Acrylic**  
Static Dissipative Plastic  
for Cleanroom Construction

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