Acrylic

Acrylic Sheet, Rod and Tube Offerings

⚠️ **WARNING**: These products can potentially expose you to chemicals including, 4-Dioxane, Acetaldehyde, Acrylonitrile, Bisphenol-A, Carbon Black, Chromium, Cumene, Dichloromethane, Ethyl Acrylate, Ethylbenzene, Ethylene Glycol, Formaldehyde, Glass Fibers, Hexachlorobenzene, Lead, Methanol, Nickel, Polyvinyl Chloride, Silica-crystalline, Styrene, Tetrafluoroethylene, Titanium Dioxide, and Toluene, which are known to the state of California to cause cancer and/or birth defects or other reproductive harm. For more information, visit **www.P65Warnings.ca.gov**

Acrylic

ALRO

Acrylic

General Acrylic Overview

Acrylic plastic sheet, also known as PMMA is completely transparent, flexible and has great resistance to breakage. It is an excellent material which can replace glass for windows, doors, partitions, and skylights. Ideal for automotive and transportation it is lightweight, with only half the weight of glass, and it is virtually unaffected by nature.

Acrylic sheet is supplied in extruded, cast, continuous cast and recycled sheet formulated to meet specific physical requirements. Most formulations are supplied in a variety of transparent, translucent, and opaque colors as well as colorless transparent. The material is also supplied in a number of surface patterns. Acrylic plastic can be thermoformed or molded economically to create shapes suitable for a variety of applications.

Common Trade Names:

- Excelon® (TPI)
- Plexiglas® (Trinseo)
- Polycast® (Spartech)
- Optix® (Plaskolite, Inc.)

Advantages of Acrylic:

- **Ease of Fabrication** - When Acrylic is heated to its forming temperature (approximately 325°F) it becomes soft and pliable and can be formed into a variety of shapes. As the material cools in its formed state, it solidifies and holds the shape to which it has been formed. Because the material is formed at low pressure, molds can be made from plastic and low-cost wood. Acrylic can also be machined, drilled and sawed like wood or soft metals.

- **Excellent Electrical Properties -** Acrylic has certain unmatched electrical properties which are affected slightly by weathering or moisture. Its surface resistivity is higher than most plastic materials and its power factor decreases with increased frequency.

- **Lightweight -** Acrylic is less than 50% as heavy as glass, is 43% as heavy as aluminum and 70% as heavy as magnesium.

- **Impact Resistant** - Although it weighs less than half as much as glass, Acrylic has from 6 to 17 times greater impact resistance than ordinary glass in thicknesses of .125" to .250".

- **Weather Resistant** - Acrylic sheet withstands weather and sun exposure with almost no loss of light transmittance, clarity and strength in over a quarter century of usage.

Product Applications:

- Conveyor Shields
- Doors (entry/patio/shower/etc...)
- Electronic game faces
- Equipment enclosures
- Skylights / Sunscreens
- Printer covers

- Food sneeze guards
- Forklift shields
- Museum display cases
- Security barriers
- Vending machine windows
- Viewing ports

Acrylic

Acrylic Sheet Typical Properties

PROPERTY TESTED	ASTM	UNITS	ACRYLIC
PHYSICAL PROPERTIES			
Tensile Strength	D638	psi	10,000
Flexural Strength	D790	psi	17,000
Modulus of Elasticity	D790	psi	480,000
Compressive Strength @ yield	D695	psi	17,000
Izod Impact Strength (notch)	D256	ft•lbs/in	0.4
Hardness: Rockwell	D785	M	93
Barcol	D2583		48
Light Transmission	D1003	%	92
Specific Gravity	D792	1 = water	1.19
Water Absorption/Saturation	D570	%	0.2
THERMAL PROPERTIES			
Deflection Temp Under Load, 264 psi	D648	ºF	195
Thermal Expansion	D696	in/inºF	.0004
Flammability/Burning Rate, 0.125"	D635	in/min	1.00
Self Ignition Temperature	D1929	ºF	830
ELECTRICAL PROPERTIES			
Dielectric Strength (short time), 0.125"	D149	V/mil	430
Dielectric Constant 60 Hz	D150	---	3.6
1000 Hz	D150	---	3.3
Dissipation Factor 60 Hz	D150	---	0.06
1000 Hz	D150	---	0.04

Note: Values listed are typical and are meant only as a guide to aid in design. Values shown are for
0.250" thickness unless otherwise noted above. Some values will change with thickness.

Acrylic Sheet

Standard Thickness (inches)	**Extruded: 1/16" up to 1" thick**
	Cast: 1/8" up to 2" thick
Standard Thickness (inches)	**1/8", 3/16" and 1/4" thick**
for Whites and Solar Tints :	
Standard Sheet Size (inches) :	**48" x 96" 60" x 96" 72" x 96"**

ALRO®

Acrylic

Light Transmission: Translucent & Transparent Colors

The light transmission of each white color decreases with an increase in the thickness of the material. <u>Nominal thicknesses of a given translucent or transparent color have the same percentage of light transmission.</u> This is apparent through the adjustment of the color concentration according to sheet thickness. If colors listed below are used for a sign application, check all samples under a reflective light for color clarity and light transmission. Some colors may appear analogous under reflected light but transmit light at different rates.

COLOR NUMBER	COLOR NAME	% REFLECTED FOR THICKNESSES:		
		1/8"	3/16"	1/4"
LIGHT TRANSMISSION OF WHITE TRANSLUCENT SHEET				
*2406	white	63	---	---
*2447	white	50	37	31
*7328	white	30	21	16
LIGHT TRANSMISSION OF COLORED TRANSLUCENT SHEET				
2157	red	2	2	2
2793	red	3	3	3
2283	red	12	12	12
2119	orange	6	6	6
2037	yellow	26	26	26
2108	green	2	2	2
7235	green	3	3	3
2114	blue	2	2	2
2050	blue	1	1	1
LIGHT TRANSMISSION OF COLORED TRANSPARENT SHEET				
*2064	grey	27	27	27
*2074	grey	13	13	13
*2404	bronze	49	49	49
*2412	bronze	27	27	27
2370	bronze	10	10	10

Most readily available colors.

ALRO

Since 1987

Acrylic

Plaskolite OPTIX® Sheet Offerings

OPTIX® L Acrylic sheet

OPTIX® L is continuous cast acrylic sheet offered in thicknesses of .040" to 1.0" (1mm-25mm), in clear, colors and widths up to 104". OPTIX® combines high optical clarity with superior impact and weather resistance. The high molecular weight of OPTIX® acrylic sheet allows for ease in thermoforming, bending and flame polishing.

Typical Features:

- Dimensional stability
- Tough and durable
- Excellent clarity
- Heat and Impact resistant
- Lightweight
- Good U.V. factor
- Weather resistant
- Excellent fabrication characteristics

OPTIX® SR - Scratch Resistant sheet

The performance, durability and clarity of Plaskolite's OPTIX® SR Scratch Resistant acrylic sheets come shining through in everyday use—and even in the most rugged of conditions. Each sheet style offers maximum protection and resists wear and tear, maintaining its "like new" look that will hold up under all types of use, whether indoor or outdoor. The sheets are available with the OPTIX® SR coating on one or both sides. Plaskolite, Inc. is a leading supplier of acrylic sheets, and its products are known for their innovation and high quality.

OPTIX® NG - Non-Glare sheet

OPTIX® NG is a non-glare acrylic sheet that is ideal for glazing and picture frame applications. These sheets are formulated with a special coating to minimize the impact of various light sources on reflective surfaces. OPTIX® NG is lightweight and shatter resistant making it a great option for signage, silk-screening and POP displays as well. These sheets are available with a heavy matte finish in .060-.080 thickness or light matte finish in .080-.125 thickness. Typical sheets are 48 x 96, but custom sizes and colors available on request.

OPTIX® 95 - Matte finish, one side sheet

OPTIX® 95 acrylic sheet has a translucent matte finish on one side which provides both decoration and reductions in surface reflection. The matte finish is resistant to fingerprints and smudges. OPTIX® 95 is easily fabricated and ideal for many interior applications such as POP displays, pantry/cupboard doors and office partitions. This also makes it ideal for lighting and interior backlit signage applications.

Acrylic

Acrylic

Plaskolite OPTIX® Sheet Offerings

OPTIX® Frost - Frosted sheet

OPTIX® Frost has a frosting additive incorporated throughout the sheet, providing an elegant textured surface on both sides. OPTIX® Frost is the ideal choice for POP and store fixtures as it resists fingerprints, scratches and is virtually maintenance free.

OPTIX® G - Cell Cast sheet

OPTIX® G is a cell cast acrylic that offers excellent clarity and high light transmission. It is fabrication friendly and has an outstanding edge polishing reaction to laser cutting. It is ideal for aquarium, furniture and store fixtures applications.

OPTIX® R - Recycled sheet

OPTIX® R is an optically clear extruded sheet made with up to 95% post industrial recycled content. Optix R is used by many to reach their goals of being environmentally responsible through the use of sustainable products. It can be used in retail displays, POP signage and anywhere you would use acrylic sheet.

OPTIX® SG & LD - Sign Grade sheet

Plaskolite, Inc. offers Sign Grade **OPTIX® Acrylic** and **Duraplex®** impact modified acrylic in roll stock and oversized flat sheet sizes for the sign fabricating industry. Roll Stock provides unlimited lengths, reducing the number of seams and joints in a large sign face. It also provides efficient inventory space utilization and better total sheet usage. Plaskolite's acrylic sheet is offered in a wide range of sheet sizes, including "oversized", to best fit your production specifications.

OPTIX® DA - Digital Acrylic sheet

OPTIX® DA delivers all the benefits of continuously processed acrylic sheet providing superior strength specially formulated for printing. This sheet is designed to provide optimal adhesion of UV curing inks without adhesion promoters. Ideal for signage and graphics. It can be used in interior and exterior (outward facing non- printable side) applications.

OPTIX® E-DA - Erasable Digital Acrylic sheet

OPTIX® E-DA offers the same benefits as Optix DA sheet with direct-to-print sheets, but with anti-graffiti and markerboard capabilities. These sheets have abrasion and chemical resistance on one side and enhanced UV ink adhesion properties on the other. Ideal for offices, entertainment venues and high traffic areas.

Duraplex® Impact Modified Acrylic Sheet

Duraplex® offers superior impact strength for many applications including signage, displays, skylights, windows, doors and any interior or exterior application where durability is a requirement. It's an economical alternative to polycarbonate sheet providing superior weatherability and thermoforming capabilities.

ALRO

Acrylic

Plaskolite OPTIX® Sheet Offerings

Fabback® Acrylic Mirror Sheet

Fabback® acrylic mirror is made from Optix continuously processed acrylic sheet. Fabback® has the industry's toughest protective back-coating, which protects against scratching during fabrication. Available in clear, textures and in over 17 vibrant colors, this durable acrylic mirror is ideal for slatwalls, point-of-purchase displays, casinos, children's toys, cosmetic displays and for applications in the food service industry.

Lighting Panels

Plaskolite, Inc. offers a variety of acrylic and styrene lighting panels for residential and commercial environments. Available in cracked ice, prismatic, prisma square, flat white mist and egg crate louver patterns.

PLASKOLITE, INC.

Plaskolite Run to Size Custom sheet

OPTIX® acrylic, Duraplex® impact-modified acrylic, Fabback® acrylic mirror or polystyrene sheet can be ordered to meet the specific size requirements of each application, reducing waste, cost and prolonging the life of your equipment. Plaskolite, Inc. is the only acrylic sheet manufacturer offering the flexibility of buying acrylic sheet literally run-to-size.

Saw cut and slitter/hot knife edges available. Sheet edges may vary, please specify preferred edge cut at the time of order. The turnaround time for Plaskolite's run-to-size program is the shortest in the industry.

Run-To-Size Minimum Sheet Widths & Lengths

Acrylic Thickness	Minimum Width	Minimum Length
.060"	5"	14"
.080"	5"	14"
.100"	5"	14"
.125"	5"	14"
.177"	28"	20"
.187"	28"	20"

Acrylic Thickness	Minimum Width	Minimum Length
.236"	28"	
.250"	28"	20"
.375"	28"	20"
.500"	30"	20"
.750"	30"	30"
1.00"	30"	30"
		30"

Clear acrylic 1,000 lb minimum. Colored acrylic 3,000 lb minimum.

20,000 lb minimum for production run and patterns.

Acrylic

Acrylic

Spartech Polycast® Acrylic Sheet

Spartech Polycast® is the world's largest manufacturer of specialty cell cast acrylic sheet and a leading supplier of aircraft transparencies, marine doors, tanning bed shields, optical & biomedical components, furniture, aquariums and transparent ballistic enclosures. PolyOne™ Polycast® offers a variety of specialty acrylic products for specific applications. Listed below are some of the grades they offer.

Aerospace Products

Spartech Polycast® is known, the world over, as a leading producer of cast acrylic sheet for aircraft cabin windows, fighter canopies, windscreens, wing-tip lenses, outer laminates and instrument panels for general aviation and military aircraft. Having been manufacturing cast acrylic sheet for over 30 years, Spartech Polycast® is presently the principal supplier meeting U.S. Military Specifications MIL-PRF-5425, MIL-PRF-8184 and MIL-PRF-25690 to the United States aerospace industry.

Light Transmitting and Filtering Sheet

Polycast® manufactures a number of different specialty acrylic sheet products for transmitting and filtering UV light. Ultraviolet Transmitting Sheet (UVT) provides increased transmission of ultraviolet wavelengths between 280 and 360 nanometers. Polycast offers a full line of UV filtering acrylics to help defend previous artwork and documents against the degradation caused by exposure to UV light.

Bullet Resistant Sheet

Despite all of the improvements in security technology, bullet resistant barriers have been proven to be the only measure that deters crime before it happens. Polycast® offers a solution to these problems when one considers the four most important characteristics in choosing bullet resistant sheet (adequate protection, weight, optical clarity and value) the choice is obvious.

Spartech Polycast® offers UL level 1, UL level 2, UL level 3 and UL level 6 grade sheets of acrylic security glazing for banks, convenience stores and other high-risk areas.

Acrylic

Spartech Polycast® SAR™ - Super Abrasion Resistant

Spartech Polycast® SAR™ (super abrasion resistant) acrylic sheet is produced by applying a very hard, highly crosslinked polysilicate (a silicon polymer or polysiloxane) coating to an acrylic substrate. This coating provides Polycast® SAR™ sheet with a surface that has 45 times the abrasion resistance of uncoated acrylic, making it an attractive material for applications requiring the safety, optical and aesthetic qualities of acrylic along with a highly abrasion resistant surface.

Lightweight and fabrication flexibility cut installation costs.
At half the weight of glass, Polycast® SAR™ makes handling easier and safer, and installation less costly and time consuming. It can be cut and fabricated at the installation site using power tools. In fact, Polycast® SAR™ is ideal for replacement installations; because it is readily fitted into existing frames.

Colors, Formulations and Finishes
Polycast® SAR™ is available in a wide variety of transparent, translucent and opaque colors including industry standards such as black, gray and bronze. Ultra-violet transmitting, ultra-violet filtering formulations (including Polycast UF96, UF3 and UF4) and coated one-side sheets are also available.

Spartech Polycast® SAR™ is tough, lightweight, weatherable, cleanable and offers excellent thermal insulation. It has an impact resistance that is five times that of glass and half the weight.

Optical clarity outshines other materials
Polycast® SAR™ in 1.250" thickness transmits 93% white light, compared to 66% for an all polycarbonate sheet and 55% for bullet-resistant glass. Also, its edges are clear, avoiding the massive appearance of thick glass with its greenish tinted edge. That adds up to the sparkling clear, open look that is more appealing to customers. Tough coating endures years of cleaning without hazing.

Polycast® SAR™ Sheets

Standard Thickness (inches) :   **.060" up to 2.00"**

Standard Sheet Sizes (inches) :   **48" x 72" and 72" x 120"**

Special thicknesses and sizes quoted upon request

Acrylic

Plexiglas® Sheet Offerings

Plexiglas® MC Acrylic Sheet

Plexiglas® MC is an economical sheet produced via a property process known as melt calendering. It offers many of the same high quality features as Plexiglas® G. In addition, it has exceptional thickness tolerance and can be thermoformed to greater detail.

Plexiglas® MC Matte Finish

An industry standard, Plexiglas® MC is a continuous process acrylic sheet that offers exceptional thickness tolerance. Now available in a Matte Finish, this versatile sheet offers more design possibilities. An alternative to P95, MC Matte Finish offers fabricators a wider range of sizes to improve yield and reduce costs. It is ideal for displays, point-of-purchase items, building applications and general fabricated parts.

Plexiglas® Frosted Acrylic Sheet

Designed for use in point-of-purchase displays, illuminated signage, and as a lighting diffuser, Plexiglas® Frosted sheet is made from an acrylic resin that incorporates a frosting mechanism that is integrated throughout the sheet structure. This mechanism provides a textured finish on all surfaces, requiring no secondary finishing. Unlike surface embossed textures, Plexiglas® Frosted sheet will retain its frosted look after thermoforming.

Plexiglas® T Acrylic Sheet Impact Series

Plexiglas® T high-clarity impact-resistant acrylic sheet is now available in three grades - T, T2 and T3. Each one offers outstanding aesthetics, rigidity and weatherability in POP and display environments. All grades provide designers with flexibility, surface hardness and versatile fabrication techniques. Aesthetic appeal is retained even with displays placed in high traffic areas.

Plexiglas® SG Plus (Sign Grade)

Designed exclusively for use in the sign market, SG sheet is made by the same proprietary continuous process used to make original Plexiglas® MC. This process ensures exceptional surface finish, optical quality and thickness uniformity in addition to enhanced solvent craze resistance.

Acrylic

Acrylic

Aristech Product Offerings

Aristech (now owned by Trinseo) runs a wide range of cell-cast and continuous-cast acrylic sheets. They produce modified and highly engineered specialty acrylic for the architectural, transportation and recreation industries. They provide a full range of sizes, thicknesses, colors, and patterns.
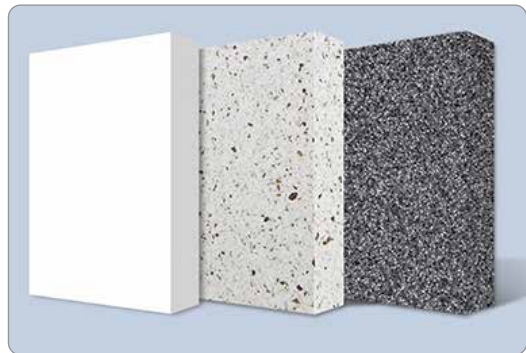
Avonite

Avonite is a solid surface acrylic blend material that has several features making it a popular choice for architects, engineers, and designers. It is thermoformable and hygienic due to its non-porous surface and seamless assembly. It is also both stain and chemical resistant. Avonite comes in a large variety of colors and textures. The material allows for careful cutouts as well as sanding which can enhance the surface sheen.

Avonite's Right Size program provides flexibility, cost savings and waste reduction. Avonite is also available in oversize sheets to reduce the number of seams, lowering adhesive and fabrication costs as well.

Product Applications:

- Countertops & Lab Tabletops
- Facades
- Furniture
- RV & Marine
- Wet Walls

Ice White, Alaskan Stone & Black Lava

Acrylic

Clear Acrylic Rod & Tube

Cast Acrylic rod has uncommon optical clarity, outstanding light transmission and excellent weatherability. It is not affected by sunlight, resists aging and keeps good stability under variable conditions of cold, heat, moisture and exposure, it will not warp, crack, craze or corrode. Cast Acrylic rod may be preferred for some industrial and commercial applications because it is more optically perfect than molded or extruded types of Acrylic products. It provides good tensile strength and excellent resistance to heat distortion.

This clear rod can be used for machining or cementing and will fabricate like wood, metal or other plastics with standard equipment. Cast Acrylic rod is half the weight of comparable glass and has good shatter resistance and durability.

Product Applications:

- P.O.P. Displays
- Electrical/Electronic parts
- Furniture components
- Lenses
- Models

Clear Acrylic Rod

Standard Diameter (inches) :	**.250" up to 9.00" diameter**
Standard Rod Length (feet) :	**.250 through 2.00 .... 8 feet**
	2.125 through 3.00 .... 6 feet
	3.25 through 6.00 .... 4 feet
	6.50 through 8.00 .... 3 feet
	9.00 .... 2 feet
Standard Rod Tolerance(s) :	**.250 through .500 .... +/-.005**
	.625 through 1.00 .... +/-.010
	1.125 through 2.00 .... +/-.015
	2.125 through 3.00 .... +/-.030
	3.25 through 6.00 .... +/-.045
	6.50 through 9.00 .... +/-.050

Since 1987

Acrylic

Clear Acrylic Rod & Tube

Spartech cast acrylic clear rods and tubes are highly polished, crystal clear and can be manufactured to the most exact specifications. The standard material is a clear, ultraviolet absorbing acrylic with a maximum continuous service temperature of 150ºF. Custom sizing and thickness are available to meet your exact specs. Acrylic tubing is manufactured in standard 6 foot lengths. Machining, drilling, milling, routing as well as many other operations are available upon request.

Typical Features:

- Crystal clarity
- Easily bonded
- Easily machined
- Transparent
- Very strong
- Weather resistant

Clear Acrylic Tube

Standard Outside Dia. (inches) :	1.25 1.50 1.625 1.75 1.875 2.00 2.25 2.375
	2.50 2.625 2.75 2.875 3.00 3.125 3.25 3.375
	3.50 3.625 3.75 3.875 4.00 4.125 4.25 4.375
	4.50 4.625 4.75 4.875 5.00 5.25 5.50 5.625
	5.75 6.00 6.093 6.25 6.50 6.75 7.00 7.25
	7.50 7.625 8.00 8.25 8.50 8.75 9.00 9.125
	9.25 9.50 10.00 10.50 10.625 11.00 11.50
	11.75 12.00 13.625 14.00 15.00 16.00 18.00
	24.00 27.625

Standard Wall Thickness (inches) : .125 .187 .250 .375 .500

Standard Tube Length (feet) : 6 foot lengths

O.D. & Wall Tolerances (inches) :

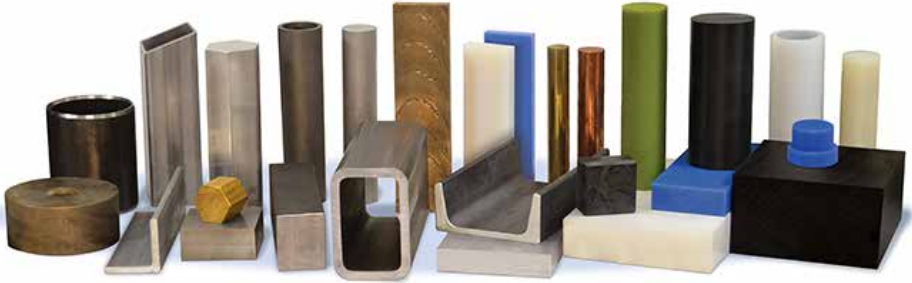|		
1.25 to 3.00 .... +/-.020 .... 1/8 wall...... +/-.018
3.125 to 3.875 ...... +/-.030 .... 3/16 wall ... +/-.019
4.00 to 6.00 .... +/-.045 .... 1/4 wall ..... +/-.025
6.25 to 12.00......... +/-.080 .... 3/8 wall ..... +/-.035
12.25 to 27.625 .... +/-.090 .... 1/2 wall ..... +/-.045

Acrylic Rod and Tube also offered in colors, please inquire about availability

Alro Online Store

MyAlro.com

Aluminum • Alloys • Carbon Steel • Stainless Steel • Red Metals • Plastics

Did you know Alro also offers online shopping and e-business solutions for all of our customers? Visit the Alro Online Store from your computer or mobile device 24 hours a day. Set up your company account and purchase metals and plastics from our vast inventory.

Alro utilizes systems technology to achieve the benefits of e-Business in raw material procurement processes.

- **Business to Business (B2B) – Helps reduce purchasing transaction costs.**
- **Web Ordering (MyAlro.com) – Helps with material selection, quoting and estimating.**
- **Automated Inventory Replenishment (APOS) – helps reduce Kan Ban replenishment costs**
- **Summary Billing – helps reduce admin costs of processing raw material payables**
- **Advance Shipping Notices – helps reduce receiving time**

Alro computers retrieve business information from customers/vendors computers via the internet. During the process we pickup and deliver electronic business documents. This process typically does not require any programming on the part of our customers, as Alro systems are designed to accept virtually any customer document format. Some examples of these documents are as follows:

- **Purchase orders**
- **Invoices**
- **Quotes**
- **POD - Electronic Proof of Delivery**
- **ACH Payment notifications**
- **Mill Certifications**
- **CAD drawings**
- **Burn prints**
- **Material releases**

Acrylic

Since 1987