



Plexiglas® G-UVT

High Ultraviolet (UV) Transmitting
Cell Cast Acrylic Sheet

Plexiglas®

Plexiglas® G-UVT

CELL CAST ACRYLIC SHEET

Plexiglas® G-UVT cell cast acrylic sheet from Altuglas International is designed specifically for applications where high UV transmission is required. A primary application for the material, which can be used with light fixtures containing HID (High Intensity Discharge) lamps, is for lamp covers on indoor tanning beds. Plexiglas® G-UVT acrylic sheet has excellent resistance to yellowing and haze under high temperature and UV radiation environments. Plexiglas®, a registered trademark, has been considered a standard in the plastics industry since its introduction more than 60 years ago.

Benefiting from a patent pending technology, Plexiglas® G-UVT acrylic sheet has the unique ability to resist UV radiation under an elevated temperature environment. The material has passed more than 7,000 hours of the most severe UVB weathering without loss of UV transmission or yellowing. If high UV transparent sheet is your application target, then Plexiglas® G-UVT acrylic sheet is an outstanding choice because of its ability to maintain a high UV transmission and a low degree of yellowness. The acrylic sheet outperforms other commercial UVT products in the market.

In general, the light transmission of acrylic sheet in the UVA (315-400nm), UVB (280-315nm), and a portion of UVC (200-280nm) regions is slightly affected by the sheet thickness. Thicker sheets generally have a lower UV transmission than thinner ones. Over the years, the UV power output from tanning lamps has been increasing to accommodate the consumer's needs for faster tanning. As a result, the service life of most commercial UV transparent acrylic sheets is shortened. However, the sheet life span does not shorten with Plexiglas® G-UVT cell cast acrylic sheet.

Plexiglas® G-UVT cell cast acrylic sheet, an exceptional choice for tanning beds to create the perfect tan.

- **Longevity and UV retention advantages**
- **Ideal resistance to yellowing over time**
- **Excellent craze and chemical resistance**
- **Thermal stability**
- **Superb mechanical properties**
- **Exceptional quality and ease of use**

APPLICATIONS

The cell cast product can also be used in other markets and applications which include zoo casings / exhibits, skylights and the photo resister business.

HOT FORMING

The recommended hot forming conditions for the material range from 290°F - 360°F.

COLORS

Product is available in colorless and P-95 versions.

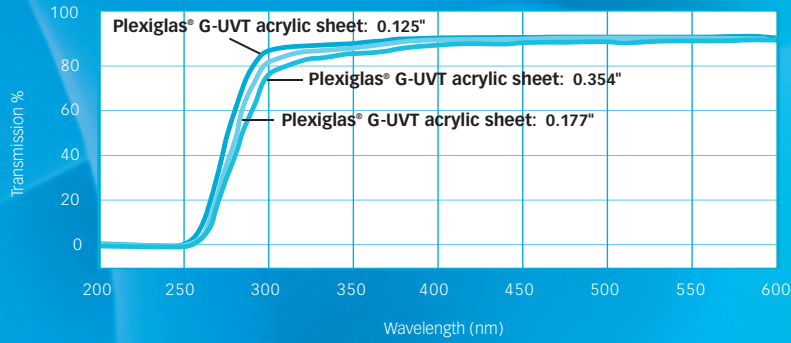
THICKNESS

Thicknesses range from 0.118" to 0.354".

SHEET SIZE

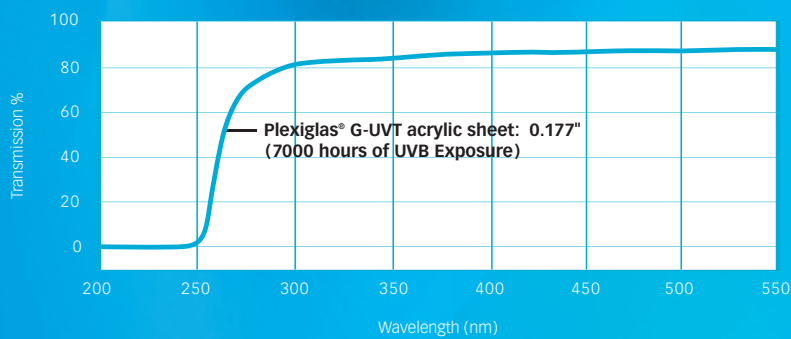
Industry Sheet sizes are available.

Plexiglas® G-UVT Acrylic Sheet Initial UV Transmission Curves



Plexiglas® G-UVT acrylic sheet light transmissions measured by a Perkin Elmer® Lambda 850 UV/Vis spectrometer.

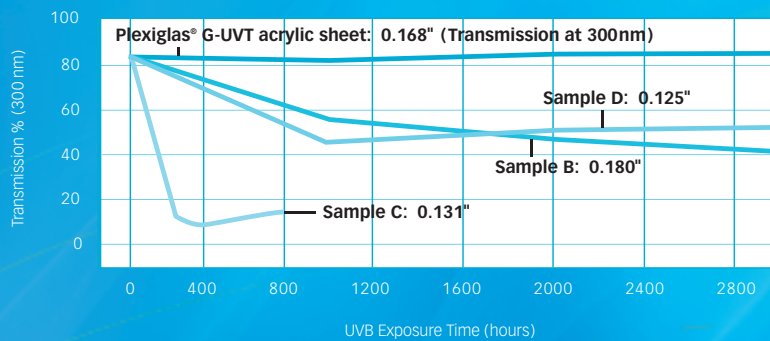
Light Transmission of Plexiglas® G-UVT Acrylic Sheet after UVB Lamp Exposure (7000 hours)



Light transmission of Plexiglas® G-UVT acrylic sheet (0.177") before and after UVB lamp exposure (7000 hours).

Reference test method: ASTM G-154

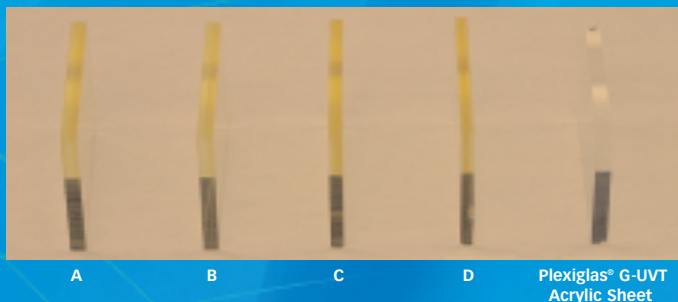
Comparison of Plexiglas® G-UVT Acrylic Sheet vs. Commercial UVT Samples



UV transmission at 300nm for Plexiglas® G-UVT acrylic sheet and various commercial UVT samples as a function of UVB exposure.

Reference test method: ASTM G-154

Edge color comparisons after UVB exposure



Edge color comparisons after UVB exposure (1200 hours). Plexiglas® G-UVT acrylic sheet showed no color change, and the competitive UVT sheets showed severe yellowness after UVB lamp exposure. Samples A, B, C, and D are various commercial UVT samples.

Reference test method: ASTM G-154

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PHYSICAL PROPERTIES

PROPERTY	METHOD	UNITS	PLEXIGLAS® G-UVT ACRYLIC SHEET (0.177")
Mechanical			
Notched Izod Impact	ASTM D 256	Ft-lb/in	0.46
Flexural			
Stress at Yield	ASTM D 790	PSI	19,800
Flexural Modulus	ASTM D 790	PSI	457,100
Tensile			
Stress at Yield	ASTM D 638	PSI	11,200
Stress at Break	ASTM D 638	PSI	11,200
Elongation at Yield	ASTM D 638	%	4.6
Elongation at Break	ASTM D 638	%	4.6
Tensile Modulus	ASTM D 638	PSI	453,700
Deflection Temperature Under Flexual Load (DTUFL) (120°C/hr)			
66 PSI	ASTM D 648	°C / °F	107 / 225
264 PSI	ASTM D 648	°C / °F	101 / 214
Vicat Softening Point (50°C/hr)			
1kg Load	ASTM D 1525	°C / °F	114 / 237
5kg Load	ASTM D 1525	°C / °F	108 / 226
Barcol Number	ASTM D 2583	NA	49
Rockwell Hardness	ASTM D 785	M Scale	101
Hot Forming Temperature		°F	290°F - 360°F
Optical			
Refractive Index	ASTM D 542	NA	1.49
Haze as Received	ASTM D 1003	%	< 0.6
Yellow Index as Received	ASTM E 313	NA	< 0.6
Luminous Transmission	ASTM D 1003	%	92
Ultraviolet Transmission at 300nm (0.125")	Perkin Elmer® Lambda 850	%	> 80
Yellow Index Δ after 3000 hours UVB-313EL Exposure	ASTM E 313 / ASTM G 154	YI	0.2
Haze % Δ after 3000 hours UVB-313EL Exposure	ASTM D 1003 / ASTM G 154	H%	1.6

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Plexiglas® acrylic plastic is a combustible thermoplastic. Observe fire precautions appropriate for comparable forms of wood and paper. For building uses, check code approvals. Impact resistance is a factor of thickness. Avoid exposure to heat or aromatic solvents. Clean with soap and water. Avoid abrasives.

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