PLEXIGLAS Gallery®

UV 100, – UV 100 AR, – UV 100 MR, – UV 100 AS
Product Description

Technical Information

Product and Benefits

PLEXIGLAS Gallery® UV 100 is an extremely weather-resistant and highly transparent extruded sheet material made from acrylic (polymethyl methacrylate, PMMA).

PLEXIGLAS Gallery® is available in product grades:

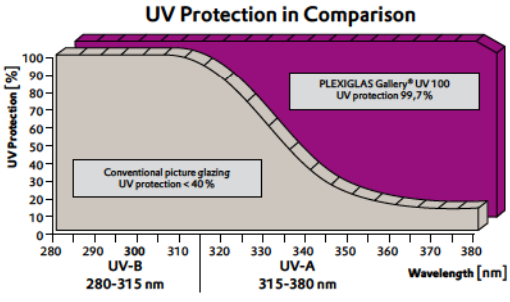
- PLEXIGLAS Gallery® UV 100,
- PLEXIGLAS Gallery® UV 100 AR (non-glare),
- PLEXIGLAS Gallery® UV 100 MR (mar-resistant),
- PLEXIGLAS Gallery® UV 100 AS (antistatic).

All PLEXIGLAS Gallery® UV 100 products have the following properties:

- Maximum UV protection,
- Complete transparency and true color rendition,
- Low weight,
- Increased break resistance.

UV Protection

Aggressive UV radiation (from sunlight or halogen light) is the main cause of color fading or aging and embrittlement of all kinds of materials. PLEXIGLAS Gallery® UV 100 offers UV protection of at least 99.7% (at a sheet thickness of 3 mm). PLEXIGLAS Gallery® therefore offers major benefits for glazing UV-sensitive artworks and objets d'art as compared with conventional picture glazing (UV protection < 40%).
The graph below illustrates the almost complete UV protection offered by PLEXIGLAS Gallery® UV 100 as against conventional picture glazing (float glass) in the UV-A and UV-B range (280-380 nm).



Transparency and True Color Rendition

PLEXIGLAS Gallery® UV 100 provides maximum light transmission in the visible wavelength of 380-780 nm. The light transmission of PLEXIGLAS Gallery® UV 100 is 92%. Moreover, PLEXIGLAS Gallery® has no inherent color (such as a greenish, yellowish or greyish tinge), unlike other glazing products. That ensures absolutely true color rendition of the art objects behind the glazing.

Low Weight

PLEXIGLAS Gallery® is a lightweight, high-performance plastic. At the same thickness, it weighs only half as much as conventional picture glass.

Increased Break Resistance

PLEXIGLAS Gallery® can be considered as safety glass. Its break resistance is up to eleven times higher than that of conventional picture glass. That prevents artworks from being damaged by broken glass.

Special Surface Properties According to Grade

Non-Glare Surface

PLEXIGLAS Gallery® UV 100 AR has a non-glare surface on one side that diffuses disturbing light reflected from windows or lamps, for example.

Mar-Resistant Surface

PLEXIGLAS Gallery® UV 100 has the highest surface hardness of all transparent plastics, even without surface treatment. However, as with all plastics, incorrect cleaning (see Cleaning and Care) may produce minor scratches on its surface.
PLEXIGLAS Gallery® UV 100 MR has a coating on both sides that provides greatly enhanced abrasion resistance.

Antistatic Surface

Transparent plastics (including PLEXIGLAS Gallery®) often have very good electric insulation properties. However, this is associated with relatively high surface and volume resistivity, which may cause electrostatic charging. One undesired side-effect may be dust deposition. Static charging may be caused by mechanical friction with solid objects or cloths (friction by dry air currents) or the removal of the masking film from the sheet.
PLEXIGLAS Gallery® UV 100 AS has a surface coating on both sides that significantly reduces electrostatic charging. Dust attraction is greatly diminished, enabling less frequent cleaning.

PLEXIGLAS®
the original from Röhm

30 Year Guarantee
PLEXIGLAS® NO YELLOWING!

Properties (The table summarizes the major physical properties typical values at 23 °C/50 % RH.)

Mechanical and Thermal Properties	PLEXIGLAS Gallery® UV 100	PLEXIGLAS Gallery® UV 100 AR	PLEXIGLAS Gallery® UV 100 MR	PLEXIGLAS Gallery® UV 100 AS	Unit	Test Standard
Density	1.19	1.19	1.19	1.19	g/cm^3	ISO 1183
Impact strength (Charpy)	15	15	12	13	kJ/m^2	ISO 179/1fu
Elastic modulus (short-term value)	3.300	3.300	3.300	3.300	MPa	ISO 527-2/1B/1
Coefficient of linear thermal expansion (0 bis 50 °C)	$7 \cdot 10^{-5}$ (0.07)	$7 \cdot 10^{-5}$ (0.07)	$7 \cdot 10^{-5}$ (0.07)	$7 \cdot 10^{-5}$ (0.07)	1/K (mm/m °C)	DIN 53752-A
Abrasion resistance in the Taber Abrader test (100 U.; 5.4 N; CS-10 F)	20–30	20–30	1.8	15–20	% Haze	ISO 9352
Abrasion resistance in the falling abrasive test (3 kg, reduced luminance)	22	22	3.6	11.5	$cd/(lx \cdot m^2)$	DIN 52348
Optical Properties						
Transmittance τ_{D65} (380–780 nm)	92	92	92	92	%	DIN 5036, Part 3
UV-transmission τ_{UV}	0.3	0.3	0	0	%	DIN EN 410
Absorption in the visible range	< 0.05	< 0.05	< 0.05	< 0.05	%	–
Refractive index	1.491	1.491	1.491	1.491		ISO 489
Electrical Properties						
Surface resistivity	$5 \cdot 10^{13}$	$5 \cdot 10^{13}$	$5 \cdot 10^{13}$	$1 \cdot 10^{11}$	Ohm	DINVDE 0303, Part 3
Maximum charge	5.000–10.000	5.000–10.000	5.000–10.000	1.400	V/cm	
Fire Behavior						
Smoke gas volume	very low	very low	very low	very low	–	DIN 4102
Smoke gas toxicity	non-toxic	non-toxic	non-toxic	non-toxic	–	DIN 53436
Smoke gas corrosiveness	non-corrosive	non-corrosive	non-corrosive	non-corrosive	–	DIN VDE 0482-267
Fire rating	B2, normally flammable	B2, normally flammable	B2, normally flammable	B2, normally flammable	–	DIN 4102

Fabrication

PLEXIGLAS Gallery® is very easy to fabricate. Both surfaces are protected by masking film, which remains on the sheet during cutting to size, and is only removed shortly before the glazing is hung up. Sheets can be cut to size with a circular saw or jigsaw, or using a scoring knife for acrylics on material up to 3mm thickness. The material is scored along a ruler and then broken off cleanly. It is advisable to debur the broken edges using a scraper. Cutting with CO^2 lasers generally provides good results on PLEXIGLAS Gallery® sheets. PLEXIGLAS Gallery® sheets with surface functionalities can only be formed or line-bent under certain conditions.

Cleaning and Care

PLEXIGLAS Gallery® is easy to clean. Dusty surfaces can be cleaned with warm water, non-abrasive household dishwashing liquid and a soft cloth or sponge. The „Anti-Statische Kunststoff-Reiniger + Pfleger (AKU)" from Burnus, Darmstadt, is highly suitable for cleaning PLEXIGLAS Gallery®.

Slightly moistened special microfiber cloths also offer a good cleaning effect. Avoid rubbing the sheet dry at all cost. The antistatic coating of PLEXIGLAS Gallery® UV 100 AS greatly reduces the need for cleaning. PLEXIGLAS Gallery® UV 100 MR with its mar-resistant surface makes cleaning much easier.

Physical Forms

The sheets in the PLEXIGLAS Gallery® range are supplied with a PE surface masking film on both sides. The standard size in grades UV 100 and UV 100 AR is 3050 x 2050 mm in thicknesses 2 and 3 mm. Grades UV 100 MR and UV 100 AS are available in standard size 2440 x 1220 mm and in 3 mm thickness. We will be pleased to inform you about other sizes (e. g. greater lengths), sizes of cut-to-size sections, thicknesses and further terms on request.

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Business Unit Performance Polymers
Evonik Röhm GmbH Kirschenallee 64293 Darmstadt, Germany.
info@plexiglas.net www.plexiglas.net www.evonik.com

EVONIK INDUSTRIES