

Technical Information

PLEXIGLAS® Optical hard coated matt (HCM)

PRODUCT

PLEXIGLAS® Optical hard coated matt (HCM) is the matt variant of our extruded hard-coated PMMA sheet. In addition to resistance to a number of chemicals, the material offers a soft feel and anti-reflective properties, thanks to its matt surface finish. These properties make the material particularly suitable for backprinting of images and colors.

PROPERTIES

In addition to the known and proven properties of PLEXIGLAS® such as

- outstanding light transmission
- easy processability
- high surface hardness
- low weight, only half that of glass
- high impact resistance, 11 times that of glass

PLEXIGLAS® Optical HCM has the following special features:

- silk-matt surface with excellent resistance to abrasion and chemicals
- anti-glare effect due to the matt surface
- almost complete opacity to UV

APPLICATIONS

Thanks to these properties, PLEXIGLAS® Optical HCM is particularly suitable for

- furniture making, for example as front-panel material
- shopfitting and trade-show booth construction
- large-area wall paneling
- picture glazing

PROCESSING

PLEXIGLAS® Optical HCM is processed as easily as standard PLEXIGLAS®. The following guides to processing of PLEXIGLAS® are available:

- Processing of PLEXIGLAS® (no. 311-1)
- Joining of PLEXIGLAS® (no. 311-3)
- Surface treatment of PLEXIGLAS® (no. 311-4)
- Fabricating tips for PLEXIGLAS® solid sheets (no. 311-5)

Special requirements for processing of hard coated PLEXIGLAS® variants are described in Technical Information PLEXIGLAS® Optical HC (no. 232-24).

DELIVERY FORMS

PLEXIGLAS® Optical HCM is available ex stock as sheets of 3050 x 2050 mm in thicknesses of 2 mm and 3 mm.

Further details are available in the PLEXIGLAS® Sales Handbook.

TYPICAL PROPERTIES

Chemical resistance ¹

	PLEXIGLAS® Optical hard coated matt (HCM)
Acetone ²	< 15 min
Gasoline ²	< 15 min
Disinfectant	> 24 hours
Ethanol (96%) ²	< 1 hour
Ethyl acetate and butyl acetate (1:1) ²	< 15 min
Isopropanol	> 24 hours
Methanol	> 24 hours
Sodium carbonate (10%)	> 24 hours
Sodium chloride (15%)	> 24 hours
Sodium hydroxide (30%) ²	< 1 hour
Hydrochloric acid (32%) ²	< 1 hour
Sulfuric acid (30%)	> 24 hours
Toluene ²	< 15 min
Citric acid (10%)	> 24 hours

TECHNICAL DATA

Physical properties (clear, 3 mm thickness)	Test standard	Unit	PLEXIGLAS® Optical hard coated matt (HCM)	Uncoated acrylic sheet
Mechanical properties				
Tensile strength	DIN EN ISO 527	MPa	67.5	72
Modulus of elasticity	DIN EN ISO 527	MPa	3450	3300
Charpy impact strength	DIN EN ISO 527	kJ / m ²	10	15
Optical properties				
Light transmission	DIN 5036	%	92	92
Yellowing	DIN 5036	%	< 0.5	< 0.5
Average roughness value Ra	DIN EN ISO 4287 DIN EN ISO 4288	µm	0.57	-
Gloss level (20° / 60° / 85°)	DIN EN ISO 2813	°	(6.9 / 22.9 / 54.4)	-
Thermal properties				
Vicat softening point	ISO 306, method B50	°C	106	103
Building material class	DIN 4102		B2	B2
	DIN EN 13501		E	E
Toxicity	AITM 3.0005		Requirements satisfied	Requirements satisfied
Smoke density	AITM 2.0007 / FAR 25.853		Requirements satisfied	Requirements satisfied
Abrasion resistance of coating				
Abrasion resistance by the abrasive wheel method (100 cycles, 4.9 N, CS-10F)	ISO 9352	% Haze	< 3	20 - 30
Pencil hardness	DIN EN 13523-4		5H	2H
Micro-scratch resistance	IHD-W-466		Class 1	-
Adhesion	DIN EN ISO 2409		GT 0	-

Other typical values are listed in Technical Information PLEXIGLAS® GS/XT (211-1).

¹ Chemical resistance is tested as in DIN EN 12720. The intervals between visual inspection of the sheet surfaces are 15 minutes, 1 hour, and 24 hours. The surface shows no change even after the specified time. The test surface is indistinguishable from the area around it.

² The surface of the samples showed a visible change within the specified time after contact with the undiluted medium. The material is more glossy.

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Evonik is a worldwide manufacturer of PMMA products sold under the PLEXIGLAS® trademark on the European, Asian, African and Australian continents and under the ACRYLITE® trademark in the Americas.

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