

## Description

Lexan\* Margard\* MR5E sheet is a transparent UV and mar resistant glazing material for flat applications only. The intrinsic properties of Lexan polycarbonate combined with its dual hard coated surface provide: high impact strength and forced entry protection, graffiti resistance, excellent all weather performance, unique ten year warranty against breakage and seven (7) year limited warranty against yellowing, loss of light transmission and coating failure.

## Typical Property Values ♦

| Property   | Test Method  | Unit              | Value              |
|--|--------------|-------------------|--------------------|
| <b>Physical</b>  |              |                   |                    |
| Density  | ISO 1183     | g/cm <sup>3</sup> | 1.20               |
| Water absorption, 24 hours                             | ISO 62       | mg                | 10.0               |
| <b>Mechanical</b>                                      |              |                   |                    |
| Tensile strength, yield                                | ISO 527      | MPa               | 60                 |
| Tensile strength, break                                | ISO 527      | MPa               | 70                 |
| Tensile elongation, yield                              | ISO 527      | %                 | 6                  |
| Tensile elongation, break                              | ISO 527      | %                 | 120                |
| Tensile modulus  | ISO 527      | MPa               | 2350               |
| Flexural strength, yield                               | ISO 178      | MPa               | 90                 |
| Flexural modulus                                       | ISO 178      | MPa               | 2300               |
| Hardness   | ISO 2039/1   | MPa               | 95                 |
| Taber abrasion, CS-10F, 500 cycles, 500g <sup>¶)</sup> | ASTM D 1044  | % Haze            | 8                  |
| <b>Thermal</b>   |              |                   |                    |
| Vicat Softening Temp, Rate B / 120                     | ISO 306      | °C                | 145                |
| HDT, 0.45 MPa  | ISO 75 /Be   | °C                | 138                |
| Thermal conductivity                                   | ASTM C 177   | W/m°C             | 0.20               |
| Coeff. of Linear Therm. Expansion                      | ASTM D 696   | 1/°C              | 7x10 <sup>-5</sup> |
| Thermal Index  | UL 746B      | °C                | 100                |
| <b>Flammability</b>                                    |              |                   |                    |
| Limited Oxygen Index                                   | ISO 4589     | %                 | 25                 |
| <b>Optical</b>   |              |                   |                    |
| Light transmission (clear 112)                         | ASTM D 1003  | %                 | 84-90              |
| Imperfections <sup>#)</sup>                            | DIN 52305/AS | -                 | Pass               |

♦ These property values have been derived from Lexan resin data for the material used to produce this sheet product.

#) Passing DIN 52305/AS requirements for 3-8 mm gauge

¶) Taber abrasion conditions at 500 cycles, 500 g, CS-10F wheels. Tested for Abrasion resistance, Lexan Margard MR5E sheet exhibits significantly less hazing than uncoated polycarbonate Sheet.

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## Flat Applications

Due to its mar-resistant coating, Lexan\* Margard\* MR5E sheet can not be cold-formed. The sheet is intended for flat applications only.

## Impact Strength

Virtually unbreakable, Lexan Margard MR5E sheet has up to 250 times the impact strength of glass and 30 times that of acrylic. Lexan sheet offers outstanding impact strength and complies with the majority of international standards. With a thickness of 4 mm and upwards it complies with DIN 52290 part 4.

## DIN 52290 part 4

| Level of resistance | Drop height | Striking energy per drop (J) | Total striking energy per level (J) |
|---------------------|-------------|------------------------------|-------------------------------------|
| A1                  | 3500 mm     | 141                          | 423                                 |
| A2                  | 6500 mm     | 262                          | 786                                 |
| A3                  | 9500 mm     | 383                          | 1149                                |

## Cleaning

For cleaning instructions consult guidelines. Do not use abrasive or highly alkaline cleaners, never scrape the sheet with squeegees, razor blades or other sharp instruments. Do not clean Lexan Margard sheet products in hot sun or at elevated temperatures. For removal of paints, marking pen, inks, lipstick etc. use Butyl Cellulose. To remove labels, stickers etc. the use of kerosene, naphta, or white spirits is generally effective. Afterwards, a warm final wash should be made, using a mild soap solution and ending with a thorough rinsing with cold water.



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## Chemical Resistance

Lexan Margard MR5E sheet's unique coating provides immunity to many chemicals. Surface contact tests on Lexan Margard MR5E sheet with a wide range of chemicals have proven to have no effect on impact resistance during falling dart testing, proving the excellent fit for Lexan Margard for industrial or aggressive environments. In applications where the product will come into contact with aggressive chemicals, specific testing of the material is always advised.

## Fire Test Performance

Lexan Margard MR5E has good fire performance against many national fire codes dependent on thickness and color; please check with the local sales office for details.

## Ripple Orientation

For some applications the ripple orientation may play an important role in the optical performance of the sheet. This orientation is marked with a continuous ribbon applied to the sheet masking.

### Product Availability

**Product Code :** MR5E

**Standard Size :** 2000 x 3000 mm

**Thicknesses :** 3, 4, 5, 6, 8, 9.5 and 12 mm

**Standard Colors :** clear (code 112), bronze (code 5109)

For MR5E different colors and dimensions can be made available by prior arrangement. Such arrangements may affect prices, warranty terms and/or conditions of sale

Americas:  
SABIC Innovative Plastics  
Specialty Film & Sheet  
One Plastics Avenue  
Pittsfield, MA 01201  
USA  
Tel. (1) (413) 448 5400  
Fax. (1) (413) 448 7506  
Toll free: 1-800 451 3147

Europe:  
SABIC Innovative Plastics  
Specialty Film & Sheet  
Plasticslaan 1  
NL - 4612 PX Bergen op Zoom  
The Netherlands  
Tel. (31) (164) 292911  
Fax. (31) (164) 293272

Pacific:  
SABIC Innovative Plastics  
Specialty Film & Sheet  
1266 Nanjing Road (W)  
16th Floor, Plaza 66  
200040 Shanghai, China  
Tel. (86) 21 6288 1088  
Fax. (86) 21 6288 0818

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