

## Description

Lexan 8010V polycarbonate film offers excellent clarity in all thicknesses. It provides high heat resistance and superior dimensional stability for graphic art applications which require UL94 flammability performance. Derived from one of the world's toughest polymers, Lexan 8010V film also provides high gloss surface finishes. Recent technology improvements now in effect reduce color variation by 50%. Additional enhancements allow improved gauge control (see below).

## Typical Property Values ♦

| Property                                      | ASTM Test Method      | Units (USCS)                  | Value   | ISO Test Method | Units (SI)               | Value   |
|-----------------------------------------------|-----------------------|-------------------------------|---------|-----------------|--------------------------|---------|
| <b>Mechanical</b>                             |                       |                               |         |                 |                          |         |
| Tensile Strength                              |                       |                               |         |                 |                          |         |
| @ Yield                                       | ASTM D882             | psi                           | 8500    | ISO 527         | MPa                      | 62      |
| Ultimate                                      | ASTM D882             | psi                           | 9000    | ISO 527         | MPa                      | 65      |
| Tensile Modulus                               | ASTM D882             | psi                           | 300000  | ISO 527         | MPa                      | 2506    |
| Tensile Elongation at Break                   | ASTM D882             | %                             | 100-151 | ISO 527         | %                        | 100-154 |
| Gardner Impact Strength at 0.03 in. (0.75 mm) | ASTM D3029            | ft-lb                         | 23      | ISO 6603-1      | J                        | 31      |
| Tear Strength                                 |                       |                               |         |                 |                          |         |
| Initiation                                    | ASTM D1004            | lb/mil                        | 1.4-1.8 |                 | kN/m                     | 245     |
| Propagation                                   | ASTM D1922            | g/mil                         | 30-55   |                 | kN/m                     | 10-20   |
| Puncture Resistance (Dynatup)                 | ASTM D3763            | ft-lb                         | 9       |                 | J                        | 12      |
| Fold Endurance (MIT)                          |                       |                               |         |                 |                          |         |
| 0.010 inch (0.25 mm)                          | ASTM D2176-69         | double folds                  | 130     |                 |                          |         |
| 0.020 inch (0.50 mm)                          | ASTM D2176-69         | double folds                  | 35      |                 |                          |         |
| <b>Thermal</b>                                |                       |                               |         |                 |                          |         |
| Coefficient of Thermal Conductivity           | ASTM D5470            | Btu/hr/ft <sup>2</sup> /°F/in | 1.35    |                 | W/m <sup>2</sup> K       | 0.2     |
| Coefficient of Thermal Expansion              | ASTM E831             | (x 10 <sup>-5</sup> /°F)      | 3.2     | ISO 11359       | (x 10 <sup>-5</sup> /°C) | 5.8     |
| Specific Heat @ 40 °F (4 °C)                  | ASTM E1269            | Btu/lb/°F                     | 0.3     |                 | KJ/Kg-°C                 | 1.25    |
| Glass Transition Temperature                  | ASTM D3417/D3418      | °F                            | 307     | ISO 11357       | °C                       | 153     |
| Vicat Softening Temperature, B                | ASTM 1525-00 Modified | °F                            | 323     |                 | °C                       | 160     |
| Heat Deflection Temp. by TMA at 1.8 MPa       |                       | °F                            | 290     | ISO 75 Modified | °C                       | 145     |
| Shrinkage at 302 °F (150 °C)                  | ASTM D1204            | %                             | 1.40    |                 | %                        | 1.40    |
| Brittleness Temperature                       | ASTM D746             | °F                            | -211    |                 | °C                       | -135    |
| <b>Physical</b>                               |                       |                               |         |                 |                          |         |
| Density                                       | ASTM D792             | slug/ft <sup>3</sup>          | 2.3     | ISO 1183        | kg/m <sup>3</sup>        | 1200    |
| Water Absorption, 24 hrs.                     | ASTM D570             | % change                      | 0.35    | ISO 62          | %                        | 0.35    |
| Surface Roughness (RMS)                       | ASME B46-01           | -                             | NA      |                 |                          |         |
| Surface Energy                                | ASTM D5946-01         | -                             | 34      |                 |                          |         |
| Surface Tension                               | Dyne Pens             | Dyne                          | 38-40   |                 |                          |         |
| Pencil Hardness                               | ASTM D3363            | -                             | b-hb    |                 |                          |         |
| Taber Abrasion                                | ASTM D1044            | delta Haze                    | 28      |                 |                          |         |
| <b>Optical</b>                                |                       |                               |         |                 |                          |         |
| Refractive Index @ 77 °F (25 °C)              | ASTM D542A            | -                             | 1.6     |                 |                          |         |
| Light Transmission                            | ASTM D1003            | %                             | 91      |                 |                          |         |
| Yellowness Index                              | ASTM D1925            | %                             | 0.7     |                 |                          |         |
| Haze                                          | ASTM D1003            | %                             | 0.4     |                 |                          |         |
| Gloss over Flat Black min/max @ 60°           | ASTM D523-60          | -                             | 170     | ISO 2813        | -                        | 170     |

### UL Flammability Rating / Performance Levels

| Thickness                                   | Rating  |
|---------------------------------------------|---------|
| > 0.005" (0.125 mm) and < 0.015" (0.375 mm) | UL94V-2 |
| 0.015" (0.375 mm) and greater               | UL94V-2 |
| File Number                                 | E61257  |

### Manufacturing Specifications

| Nominal Gauge<br><u>Ranges</u> | Min./Max Limit<br><u>of Nominal</u> |
|--------------------------------|-------------------------------------|
| 0.005" (0.125 mm)              | ± 10%                               |
| 0.010-0.015" (0.250-0.375 mm)  | ± 5%                                |
| 0.020-0.030" (0.500-0.750 mm)  | ± 3%                                |

♦ These are typical properties and are not intended for specification purposes. If minimum certifiable properties are required, please contact your local SABIC Innovative Plastics, Specialty Film & Sheet representative or the Quality Services Department. Reported values are based on 0.250 mm (0.010") thickness film unless otherwise noted.

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Americas:  
SABIC Innovative Plastics  
Specialty Film & Sheet  
One Plastics Avenue  
Pittsfield, MA 01201  
USA  
Tel. (1) (413) 448 7110  
Fax. (1) (413) 448 5573

Europe:  
SABIC Innovative Plastics  
Specialty Film & Sheet  
Plasticslaan 1  
NL - 4612 PX Bergen op Zoom  
The Netherlands  
Tel. (31) (164) 292911  
Fax. (31) (164) 292940

Pacific:  
SABIC Innovative Plastics  
Specialty Film & Sheet  
1468 Nanjin Road (W)  
26<sup>th</sup> Floor, United Plaza  
200040 Shanghai, China  
Tel. (86) 21 3222 4500  
Fax. (86) 21 6289 8998

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