

# LEXAN™ FR60SG SHEET

## PRODUCT DATASHEET

### DESCRIPTION

LEXAN™ FR60SG flame-retardant sheet is a clear, thin-gauge polycarbonate sheet with polished surfaces on both sides, and a UL94 V-0 listing to meet the stringent requirements in a wide range of electrical, electronic and transportation applications. LEXAN FR60SG sheet offers ease of thermoforming, hydroforming, embossing, die-cutting, folding and bending and is very suitable for applications such as printed circuit board insulation, backlit aircraft in-flight panels and displays, business equipment insulation, computer rack partition and TV and monitor insulation.

### 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                           | 8700    | ISO 527         | MPa                     | 65    |
| Ultimate                                | ASTM D882             | psi                           | 10000   | ISO 527         | MPa                     | 70    |
| Tensile Modulus                         | ASTM D882             | psi                           | 319000  | ISO 527         | MPa                     | >2200 |
| Tensile Elongation at Break             | ASTM D882             | %                             | 100-160 | ISO 527         | %                       | >100  |
| Puncture Resistance (Dynatup)           | ASTM D3763            | ft-lb                         | 9       |                 | J                       | 12    |
| <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             | (x10 <sup>-5</sup> /°F)       | 3.2     | ISO 11359       | (x10 <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                      | 148   |
| Vicat Softening Temperature, B          | ASTM 1525-00 modified | °F                            | 347     |                 |                         | 141   |
| Heat Deflection Temp. by TMA at 1.8 Mpa |                       | °F                            | 290     | ISO 75 Modified | °C                      | 127   |
| Shrinkage at 302°F (150°C)              | ASTM D1204            | %                             | 0.09    |                 | %                       | 0.09  |
| Brittleness Temperature                 | ASTM D746             | °F                            | -211    |                 | °C                      | -135  |
| <b>PHYSICAL</b>                         |                       |                               |         |                 |                         |       |
| Density                                 | ASTM D792             | slug/ft <sup>3</sup>          | 2.647   | ISO 1183        | kg/m <sup>3</sup>       | 1.344 |
| Water Absorption, 24 hrs.               | ASTM D570             | % change                      | 0.28    | ISO 62          | % change                | 0.28  |
| Surface Energy                          | ASTM D5946-01         | -                             | 36      |                 |                         |       |
| Surface Tension                         | Dyne Pens             | Dyne                          | 38-40   |                 |                         |       |
| Pencil Hardness                         | ASTM D3363            | -                             | b-hb    |                 |                         |       |
| Taber Abrasion                          | ASTM D1044            | delta Haze                    | 25      |                 |                         |       |

| PROPERTY                      | ASTM TEST METHOD | UNITS (USCS) | VALUE  | ISO TEST METHOD | UNITS (SI) | VALUE |
|-------------------------------|------------------|--------------|--------|-----------------|------------|-------|
| <b>OPTICAL</b>                |                  |              |        |                 |            |       |
| Refractive Index @77°F (25°C) | ASTM D542A       | -            | 1.6    |                 |            |       |
| Light Transmission            | ASTM D1003       | %            | 88**   |                 |            |       |
| Haze                          | ASTM1003         |              | 0.19** |                 |            |       |

|  |                        |          |          |           |          |          |
|--|------------------------|----------|----------|-----------|----------|----------|
| <b>ELECTRICAL</b>  |                        |          |          |           |          |          |
| Dielectric Strength in oil, short time @ 72°F (23°C), 10 mils (0.25mm) | ASTM D149-97a Method A | kV/mil   | 1.5      | IEC 60243 | kV/mm    | 59       |
| Dielectric Constant  |                        |          |          |           |          |          |
| @ 60 Hz  | ASTM D150              | -        | 2.9      | IEC 60250 | -        | 2.9      |
| @1,000,000 Hz  | ASTM D150              | -        | 2.8      | IEC 60250 | -        | 2.8      |
| Dissipation Factor   |                        |          |          |           |          |          |
| @ 60 Hz  | ASTM D150              | -        | 0.0026   | IEC 60250 | -        | 0.0026   |
| @1,000,000 Hz  | ASTM D150              | -        | 0.0117   | IEC 60250 | -        | 0.0117   |
| Volume Resistivity   | ASTM D257              | Ω-cm     | 1.00E+17 | IEC 60093 | Ω-cm     | 1.00E+17 |
| Surface Resistivity  | ASTM D257              | Ω/square | 1.00E+16 | IEC 60093 | Ω/square | 1.00E+16 |
| Arc Resistance, Tungsten   |                        |          |          |           |          |          |
| Electrodes   | ASTM D495              | s        | 64       |           |          |          |

◆ These are typical properties and are not intended for specification purposes. If minimum certifiable properties are required, please contact your local SABIC representative or the SABIC Quality Services Department.

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\*\* Value based on .040" thickness.

## MANUFACTURING SPECIFICATIONS

| NOMINAL GAUGE RANGES            | MIN./MAX LIMIT OF NOMINAL |
|---------------------------------|---------------------------|
| 0.030 - 0.060 (0.760 - 0.525mm) | -/+5%                     |

Color Code: Clear - 116 (CL)

UL FILE NUMBERS: [E121562](#), [E207780](#), [E45329](#)

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