GE Advanced Materials
Specialty Film & Sheet

# Lexan* 8020V Film

## Product Datasheet

## DESCRIPTION

Lexan* 8020V Film polycarbonate film offers excellent custom color capability. Recent technology improvements now in effect reduce color variation by 50%. 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 8020 Film also provides a high gloss surface finish while meeting additional requirements for added UV stability. Additional enhancements allow improved gauge control (see below).

## Typical Property Values[1]

| Property | ASTM Test Method | Units (USCS) | Value | ISO Test Method | Units (SI) | Value |
|---|---|---|---|---|---|---|
| **Mechanical** | | | | | | |
| 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 | % | 100-152 | ISO 527 | % | 100-154 |
| Gardner Impact Strenght 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 |
| Propogation | 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 | | | |
| **Thermal** | | | | | | |
| Coefficient of Thermal Conductivity | ASTM D5470 | Btu/hr/ft²/°F/in | 1.35 | | W/m°K | 0.2 |
| Coefficient of Thermal Expansion | ASTM E831 | (x $10^{-5}$/°F) | 3.2 | ISO 11359 | (x $10^{-5}$/°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 |

**UL Flammability Rating / Performance Levels**

| Thickness | Rating |
|---|---|
| > 0.010" (0.250 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 Ranges | Min./Max Limit of Nominal |
|---|---|
| 0.010-0.030" (0.250-0.750 mm) | ± 10% |

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

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| Property | ASTM Test Method | Units | Value | ISO Test Method | Units | Value |
|---|---|---|---|---|---|---|
| **Physical** | | | | | | |
| Density | ASTM D792 | $slug/ft^3$ | 2.3 | ISO 1183 | $kg/m^3$ | 1200 |
| Water Absorption, 24 hrs. | ASTM D570 | % change | 0.35 | ISO 62 | % change | 0.35 |
| Surface Roughness (RMS) | ASME B46-1 | - | NA | | | |
| Surface Energy | ASTM D5946-01 | - | 34 | | | |
| Surface Tension | Dyne Pens | Dyne | 38-40 | | | |


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