



**LEXAN™ Resin 141**  
**Americas: COMMERCIAL**

General purpose polycarbonate with melt flow rate of 10.5.

| TYPICAL PROPERTIES <sup>1</sup>              | TYPICAL VALUE | Unit                   | Standard    |
|--|---------------|------------------------|-------------|
| <b>MECHANICAL</b>                            |               |                        |             |
| Tensile Stress, yld, Type I, 50 mm/min       | 630           | kgf/cm <sup>2</sup>    | ASTM D 638  |
| Tensile Stress, brk, Type I, 50 mm/min       | 700           | kgf/cm <sup>2</sup>    | ASTM D 638  |
| Tensile Strain, yld, Type I, 50 mm/min       | 7             | %                      | ASTM D 638  |
| Tensile Strain, brk, Type I, 50 mm/min       | 130           | %                      | ASTM D 638  |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 980           | kgf/cm <sup>2</sup>    | ASTM D 790  |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 23900         | kgf/cm <sup>2</sup>    | ASTM D 790  |
| Hardness, Rockwell M                         | 70            | -                      | ASTM D 785  |
| Hardness, Rockwell R                         | 118           | -                      | ASTM D 785  |
| Taber Abrasion, CS-17, 1 kg                  | 10            | mg/1000cy              | ASTM D 1044 |
| <b>IMPACT</b>                                |               |                        |             |
| Izod Impact, unnotched, 23°C                 | 326           | cm-kgf/cm              | ASTM D 4812 |
| Izod Impact, notched, 23°C                   | 81            | cm-kgf/cm              | ASTM D 256  |
| Tensile Impact, Type S                       | 589           | cm-kgf/cm <sup>2</sup> | ASTM D 1822 |
| Falling Dart Impact (D 3029), 23°C           | 1728          | cm-kgf                 | ASTM D 3029 |
| Instrumented Impact Energy @ peak, 23°C      | 650           | cm-kgf                 | ASTM D 3763 |
| <b>THERMAL</b>                               |               |                        |             |
| Vicat Softening Temp, Rate B/50              | 154           | °C                     | ASTM D 1525 |
| HDT, 0.45 MPa, 6.4 mm, unannealed            | 137           | °C                     | ASTM D 648  |
| HDT, 1.82 MPa, 6.4 mm, unannealed            | 132           | °C                     | ASTM D 648  |
| CTE, -40°C to 95°C, flow                     | 6.84E-05      | 1/°C                   | ASTM E 831  |
| Specific Heat                                | 1.25          | J/g-°C                 | ASTM C 351  |
| Thermal Conductivity                         | 0.27          | W/m-°C                 | ASTM C 177  |
| Relative Temp Index, Elec                    | 130           | °C                     | UL 746B     |

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(3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

(4) Internal measurements according to UL standards.

(5) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

(6) Needs hard coat to consistently pass 60 sec Vertical Burn.

Source GMD, last updated:

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|---------------------------------------|---------------|--------------------|--------------|
| <b>THERMAL</b>                        |               |                    |              |
| Relative Temp Index, Mech w/impact    | 130           | °C                 | UL 746B      |
| Relative Temp Index, Mech w/o impact  | 130           | °C                 | UL 746B      |
| <b>PHYSICAL</b>                       |               |                    |              |
| Specific Gravity                      | 1.2           | -                  | ASTM D 792   |
| Specific Volume                       | 0.83          | cm <sup>3</sup> /g | ASTM D 792   |
| Density                               | 1.19          | g/cm <sup>3</sup>  | ASTM D 792   |
| Water Absorption, 24 hours            | 0.15          | %                  | ASTM D 570   |
| Water Absorption, equilibrium, 23C    | 0.35          | %                  | ASTM D 570   |
| Water Absorption, equilibrium, 100°C  | 0.58          | %                  | ASTM D 570   |
| Mold Shrinkage, flow, 3.2 mm (5)      | 0.5 - 0.7     | %                  | SABIC Method |
| Melt Flow Rate, 300°C/1.2 kgf         | 10.5          | g/10 min           | ASTM D 1238  |
| <b>OPTICAL</b>                        |               |                    |              |
| Light Transmission, 2.54 mm           | 88            | %                  | ASTM D 1003  |
| Haze, 2.54 mm                         | 1             | %                  | ASTM D 1003  |
| Refractive Index                      | 1.586         | -                  | ASTM D 542   |
| <b>ELECTRICAL</b>                     |               |                    |              |
| Volume Resistivity                    | >1.E+17       | Ohm-cm             | ASTM D 257   |
| Dielectric Strength, in air, 3.2 mm   | 14.9          | kV/mm              | ASTM D 149   |
| Relative Permittivity, 50/60 Hz       | 3.17          | -                  | ASTM D 150   |
| Relative Permittivity, 1 MHz          | 2.96          | -                  | ASTM D 150   |
| Dissipation Factor, 50/60 Hz          | 0.0009        | -                  | ASTM D 150   |
| Dissipation Factor, 1 MHz             | 0.01          | -                  | ASTM D 150   |
| Hot Wire Ignition {PLC}               | 2             | PLC Code           | UL 746A      |
| High Voltage Arc Track Rate {PLC}     | 2             | PLC Code           | UL 746A      |
| High Ampere Arc Ign, surface {PLC}    | 1             | PLC Code           | UL 746A      |
| Comparative Tracking Index (UL) {PLC} | 2             | PLC Code           | UL 746A      |

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(6) Needs hard coat to consistently pass 60 sec Vertical Burn.

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|--|---------------|------|-----------|
| <b>FLAME CHARACTERISTICS</b>               |               |      |           |
| UL Recognized, 94HB Flame Class Rating (3) | 0.71          | mm   | UL 94     |
| Radiant Panel Listing                      | YES           | -    | UL Tested |
| Oxygen Index (LOI)                         | 25            | %    | ISO 4589  |
| UV-light, water exposure/immersion         | F2            | -    | UL 746C   |

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| PROCESSING PARAMETERS       | TYPICAL VALUE | Unit |
|-----------------------------|---------------|------|
| <b>Injection Molding</b>    |               |      |
| Drying Temperature          | 120           | °C   |
| Drying Time                 | 3 - 4         | hrs  |
| Drying Time (Cumulative)    | 48            | hrs  |
| Maximum Moisture Content    | 0.02          | %    |
| Melt Temperature            | 295 - 315     | °C   |
| Nozzle Temperature          | 290 - 310     | °C   |
| Front - Zone 3 Temperature  | 295 - 315     | °C   |
| Middle - Zone 2 Temperature | 280 - 305     | °C   |
| Rear - Zone 1 Temperature   | 270 - 295     | °C   |
| Mold Temperature            | 70 - 95       | °C   |
| Back Pressure               | 0.3 - 0.7     | MPa  |
| Screw Speed                 | 40 - 70       | rpm  |
| Shot to Cylinder Size       | 40 - 60       | %    |
| Vent Depth                  | 0.025 - 0.076 | mm   |

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