# LEXAN™ COPOLYMER CFR9111

REGION ASIA

## DESCRIPTION

LEXAN CFR9111 Polycarbonate (PC) resin is a non-filled, injection moldable grade. This non-chlorinated, non-brominated flame retardant PC has an UL-94 V0 rating at 1.5 mm and good flow capability. LEXAN CFR9111 is available in clear transparent and tinted color options that is an excellent candidate for a wide variety of applications.

| GENERAL INFORMATION | |
|---|---|
| **Features** | Good Processability, Transparent/Translucent, Non Cl/Br flame retardant |
| **Fillers** | Unreinforced |
| **Polymer Types** | Polycarbonate (PC) |
| **Processing Techniques** | Injection Molding |

| INDUSTRY | SUB INDUSTRY |
|---|---|
| Building and Construction | Building Component |
| Consumer | Home Appliances |
| Electrical and Electronics | Mobile Phone - Computer - Tablets, Lighting |
| Industrial | Electrical |

## TYPICAL PROPERTY VALUES

Revision 20260805

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| **MECHANICAL** [1] | | | |
| **Tensile Stress, yld, Type I, 50 mm/min** | 67 | MPa | ASTM D638 |
| **Tensile Stress, brk, Type I, 50 mm/min** | 54 | MPa | ASTM D638 |
| **Tensile Strain, Yield** | | | |
| Type I, 50 mm/min | 6 | % | ASTM D638 |
| 50 mm/min | 6 | % | ISO 527 |
| **Tensile Strain, Break** | | | |
| Type I, 50 mm/min | 80 | % | ASTM D638 |
| 50 mm/min | 73 | % | ISO 527 |
| **Tensile Modulus, 50 mm/min** | 2400 | MPa | ASTM D638 |
| **Flexural Stress, yld, 1.3 mm/min, 50 mm span** | 103 | MPa | ASTM D790 |
| **Flexural Modulus, 1.3 mm/min, 50 mm span** | 2400 | MPa | ASTM D790 |
| **Tensile Stress, yield, 50 mm/min** | 63 | MPa | ISO 527 |
| **Tensile Stress, break, 50 mm/min** | 57 | MPa | ISO 527 |
| **Tensile Modulus, 1 mm/min** | 2300 | MPa | ISO 527 |
| **Flexural Stress, yield, 2 mm/min** | 96 | MPa | ISO 178 |
| **Flexural Modulus, 2 mm/min** | 2400 | MPa | ISO 178 |
| **IMPACT** [1] | | | |
| **Izod Impact, Unnotched** | | | |
| 23°C | N.B. | J/m | ASTM D4812 |

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| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| -30°C | N.B. | J/m | ASTM D4812 |
| 80*10*3 +23°C | N.B. | kJ/m² | ISO 180/1U |
| 80*10*3 -30°C | N.B. | kJ/m² | ISO 180/1U |
| **Izod impact, notched** | | | |
| 23°C | 600 | J/m | ASTM D256 |
| 23°C, 2mm | 707 | J/m | ASTM D256 |
| -30°C | 103 | J/m | ASTM D256 |
| 80*10*3 +23°C | 55 | kJ/m² | ISO 180/1A |
| 80*10*3 -30°C | 9 | kJ/m² | ISO 180/1A |
| **Instrumented Dart Impact Total Energy, 23°C** | 80 | J | ASTM D3763 |
| **Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm** | 59 | kJ/m² | ISO 179/1eA |
| **Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm** | 10 | kJ/m² | ISO 179/1eA |
| **Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm** | NB | kJ/m² | ISO 179/1eU |
| **Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm** | NB | kJ/m² | ISO 179/1eU |
| **THERMAL** [1] | | | |
| **Vicat Softening Temp, Rate B/50** | 136 | °C | ASTM D1525 |
| **HDT, 0.45 MPa, 3.2 mm, unannealed** | 130 | °C | ASTM D648 |
| **HDT, 1.82 MPa, 3.2mm, unannealed** | 120 | °C | ASTM D648 |
| **CTE, -40°C to 40°C, flow** | 6.8E-05 | 1/°C | ASTM E831 |
| **CTE, -40°C to 40°C, xflow** | 7.E-05 | 1/°C | ASTM E831 |
| **CTE, 23°C to 80°C, flow** | 7.7E-05 | 1/°C | ISO 11359-2 |
| **CTE, 23°C to 80°C, xflow** | 8.E-05 | 1/°C | ISO 11359-2 |
| **Ball Pressure Test, 125°C +/- 2°C** | Pass | - | IEC 60695-10-2 |
| **Vicat Softening Temp, Rate B/50** | 139 | °C | ISO 306 |
| **Vicat Softening Temp, Rate B/120** | 140 | °C | ISO 306 |
| **HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm** | 131 | °C | ISO 75/Be |
| **HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm** | 121 | °C | ISO 75/Ae |
| **Relative Temp Index, Elec** [2] | 125 | °C | UL 746B |
| **Relative Temp Index, Mech w/impact** [2] | 120 | °C | UL 746B |
| **Relative Temp Index, Mech w/o impact** [2] | 125 | °C | UL 746B |
| **PHYSICAL** [1] | | | |
| **Specific Gravity** | 1.19 | - | ASTM D792 |
| **Mold Shrinkage, flow, 3.2 mm** [3] | 0.55 – 0.75 | % | SABIC method |
| **Mold Shrinkage, xflow, 3.2 mm** [3] | 0.6 – 0.8 | % | SABIC method |
| **Melt Flow Rate** | | | |
| 300°C/1.2 kgf | 18 | g/10 min | ASTM D1238 |
| **Density** | 1.2 | g/cm³ | ISO 1183 |
| **Water Absorption, (23°C/saturated)** | 0.13 | % | ISO 62-1 |
| **Moisture Absorption (23°C / 50% RH)** | 0.11 | % | ISO 62 |
| **Melt Volume Rate** | | | |
| 300°C/1.2 kg | 17 | cm³/10 min | ISO 1133 |
| **OPTICAL** [1] | | | |
| **Light Transmission at 1.0 mm** | >90 | % | SABIC method |
| **Light Transmission at 2.0 mm** | >89 | % | SABIC method |
| **Light Transmission at 3.0 mm** | >88 | % | SABIC method |

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| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| **ELECTRICAL** [1] | | | |
| **Dielectric Constant** | | | |
| 1.1 GHz | 2.79 | - | ASTM ES 7-83 |
| **Dissipation Factor** | | | |
| 1.1 GHz | 0.0056 | - | ASTM ES 7-83 |
| **Comparative Tracking Index (UL) {PLC}** [2] | 3 | PLC Code | UL 746A |
| **Hot-Wire Ignition (HWI), PLC 0** [2] | ≥1.5 | mm | UL 746A |
| **Hot-Wire Ignition (HWI), PLC 1** [2] | ≥1.2 | mm | UL 746A |
| **Hot-Wire Ignition (HWI), PLC 3** [2] | ≥0.4 | mm | UL 746A |
| **High Amp Arc Ignition (HAI), PLC 1** [2] | ≥0.4 | mm | UL 746A |
| **FLAME CHARACTERISTICS** [1] | | | |
| **UL Yellow Card Link** [2] | E207780-100922891 | - | - |
| **UL Recognized, 94V-0 Flame Class Rating** [2] | ≥1.5 | mm | UL 94 |
| **UL Recognized, 94V-1 Flame Class Rating** [2] | ≥1.2 | mm | UL 94 |
| **UL Recognized, 94V-2 Flame Class Rating** [2] | ≥0.4 | mm | UL 94 |
| **Glow Wire Ignitability Temperature, 3.0 mm** | 850 | °C | IEC 60695-2-13 |
| **Glow Wire Ignitability Temperature, 1.5 mm** | 850 | °C | IEC 60695-2-13 |
| **Glow Wire Ignitability Temperature, 1.2 mm** | 850 | °C | IEC 60695-2-13 |
| **Glow Wire Flammability Index, 3.0 mm** | 960 | °C | IEC 60695-2-12 |
| **Glow Wire Flammability Index, 1.5 mm** | 960 | °C | IEC 60695-2-12 |
| **Glow Wire Flammability Index, 1.2 mm** | 960 | °C | IEC 60695-2-12 |
| **INJECTION MOLDING** [4] | | | |
| **Drying Temperature** | 120 | °C | |
| **Drying Time** | 3 – 4 | Hrs | |
| **Drying Time (Cumulative)** | 48 | Hrs | |
| **Maximum Moisture Content** | 0.02 | % | |
| **Melt Temperature** | 280 – 305 | °C | |
| **Nozzle Temperature** | 275 – 300 | °C | |
| **Front - Zone 3 Temperature** | 280 – 305 | °C | |
| **Middle - Zone 2 Temperature** | 270 – 295 | °C | |
| **Rear - Zone 1 Temperature** | 260 – 280 | °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 | |

(1) The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.

(2) UL Ratings shown on the technical datasheet might not cover the full range of thicknesses and colors. For details, please see the UL Yellow Card.

(3) 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.,The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.

(4) Injection Molding parameters are only mentioned as general guidelines. These may not apply or may need adjustment in specific situations such as low shot sizes, large part molding, thin wall molding and gas-assist molding.

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## MORE INFORMATION

For curve data and CAE cards, please visit and register at https://materialfinder.sabic-specialties.com

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