# LEXAN™ COPOLYMER CFR5630D

REGION AMERICAS

## DESCRIPTION

LEXAN CFR5630D Polycarbonate (PC) is a non-filled resin, suitable for injection molding and extrusion. This non-chlorinated, non-brominated flame retardant PC resin meets FAR25.853 smoke density and 60 second vertical burn and OEM toxicity requirements. LEXAN CFR5630D resin is available in 5 prematched diffusion colors.

## TYPICAL PROPERTY VALUES

Revision 20260331

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| MECHANICAL [1] | | | |
| Tensile Stress, yld, Type I, 50 mm/min | 68 | MPa | ASTM D638 |
| Tensile Stress, brk, Type I, 50 mm/min | 52 | MPa | ASTM D638 |
| Tensile Strain, yld, Type I, 50 mm/min | 6 | % | ASTM D638 |
| Tensile Strain, brk, Type I, 50 mm/min | 51 | % | ASTM D638 |
| Tensile Modulus, 50 mm/min | 2500 | MPa | ASTM D638 |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 106 | MPa | ASTM D790 |
| Flexural Modulus, 1.3 mm/min, 50 mm span | 2400 | MPa | ASTM D790 |
| Tensile Stress, yield, 50 mm/min | 67 | MPa | ISO 527 |
| Tensile Stress, break, 50 mm/min | 52 | MPa | ISO 527 |
| Tensile Strain, yield, 50 mm/min | 6 | % | ISO 527 |
| Tensile Strain, break, 50 mm/min | 23 | % | ISO 527 |
| Tensile Modulus, 1 mm/min | 2400 | MPa | ISO 527 |
| Flexural Stress, yield, 2 mm/min | 103 | MPa | ISO 178 |
| Flexural Modulus, 2 mm/min | 2500 | MPa | ISO 178 |
| IMPACT [1] | | | |
| Izod Impact, unnotched, 23°C | NB | J/m | ASTM D4812 |
| Izod Impact, unnotched, -30°C | NB | J/m | ASTM D4812 |
| Izod Impact, notched, 23°C | 100 | J/m | ASTM D256 |
| Izod Impact, notched, -30°C | 85 | J/m | ASTM D256 |
| Instrumented Dart Impact Total Energy, 23°C | 66 | J | ASTM D3763 |
| Izod Impact, unnotched 80*10*3 +23°C | NB | kJ/m² | ISO 180/1U |
| Izod Impact, unnotched 80*10*3 -30°C | NB | kJ/m² | ISO 180/1U |
| Izod Impact, notched 80*10*3 +23°C | 10 | kJ/m² | ISO 180/1A |
| Izod Impact, notched 80*10*3 -30°C | 9 | kJ/m² | ISO 180/1A |
| Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm | 10 | kJ/m² | ISO 179/1eA |
| Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm | 9 | kJ/m² | ISO 179/1eA |
| Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm | 132 | kJ/m² | ISO 179/1eU |
| Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm | 129 | 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 | 131 | °C | ASTM D648 |
| HDT, 1.82 MPa, 3.2mm, unannealed | 120 | °C | ASTM D648 |
| CTE, -40°C to 40°C, flow | 6.6E-05 | 1/°C | ASTM E831 |
| CTE, -40°C to 40°C, xflow | 7.E-05 | 1/°C | ASTM E831 |

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| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| CTE, 23°C to 80°C, flow | 7.2E-05 | 1/°C | ISO 11359-2 |
| CTE, 23°C to 80°C, xflow | 7.6E-05 | 1/°C | ISO 11359-2 |
| Ball Pressure Test, 125°C +/- 2°C | Pass | - | IEC 60695-10-2 |
| Vicat Softening Temp, Rate B/50 | 137 | °C | ISO 306 |
| Vicat Softening Temp, Rate B/120 | 139 | °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 | 120 | °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 | 5 | g/10 min | ASTM D1238 |
| Density | 1.2 | g/cm³ | ISO 1183 |
| Water Absorption, (23°C/saturated) | 0.14 | % | ISO 62-1 |
| Moisture Absorption (23°C / 50% RH) | 0.11 | % | ISO 62 |
| Melt Volume Rate | | | |
| 300°C/1.2 kg | 5 | cm³/10 min | ISO 1133 |
| ELECTRICAL [1] | | | |
| Dielectric Constant | | | |
| 1.1 GHz | 2.79 | - | ASTM ES 7-83 |
| Dissipation Factor | | | |
| 1.1 GHz | 0.0058 | - | ASTM ES 7-83 |
| Comparative Tracking Index (UL) {PLC} | 3 | PLC Code | UL 746A |
| Hot-Wire Ignition (HWI), PLC 2 | ≥3 | mm | UL 746A |
| Hot-Wire Ignition (HWI), PLC 3 | ≥1 | mm | UL 746A |
| High Amp Arc Ignition (HAI), PLC 0 | ≥1 | mm | UL 746A |
| FLAME CHARACTERISTICS [2] | | | |
| UL Yellow Card Link | E121562-101088456 | - | - |
| UL Recognized, 94-5VA Flame Class Rating | ≥3 | mm | UL 94 |
| UL Recognized, 94V-0 Flame Class Rating | ≥1 | mm | UL 94 |
| UL Recognized, 94V-2 Flame Class Rating | ≥0.4 | mm | UL 94 |
| Glow Wire Ignitability Temperature, 3.0 mm | 850 | °C | IEC 60695-2-13 |
| Glow Wire Ignitability Temperature, 1.0 mm | 875 | °C | IEC 60695-2-13 |
| Glow Wire Flammability Index, 3.0 mm | 960 | °C | IEC 60695-2-12 |
| Glow Wire Flammability Index, 1.0 mm | 960 | °C | IEC 60695-2-12 |
| FAA Flammability, FAR 25.853 A/B | PASSES | - | FAR 25.853 |
| Vertical Burn a (60s) passes at | 5 | Seconds | FAR 25.853 |
| Vertical Burn b (12s) passes at | 5 | Seconds | FAR 25.853 |
| NBS Smoke Density, Flaming, Dmax | <100 | - | ASTM E662 |
| Oxygen Index (LOI) | 45 | % | ISO 4589 |
| UV-light, water exposure/immersion | F1 | - | UL 746C |

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|---|---|---|---|
| INJECTION MOLDING [4] | | | |
| Drying Temperature | 120 | °C | |
| Drying Time | 3 – 4 | Hrs | |
| Drying Time (Cumulative) | 48 | Hrs | |
| Maximum Moisture Content | 0.02 | % | |
| Melt Temperature | 290 – 310 | °C | |
| Nozzle Temperature | 280 – 305 | °C | |
| Front - Zone 3 Temperature | 290 – 310 | °C | |
| Middle - Zone 2 Temperature | 275 – 300 | °C | |
| Rear - Zone 1 Temperature | 265 – 290 | °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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