

LEXAN™ FR RESINS 505RU

REGION EUROPE

DESCRIPTION

LEXAN 505RU Polycarbonate (PC) is an injection moldable non-chlorinated and non-brominated flame retardant grade that is 10% glass fiber filled. It is UV stabilized and has a UL94 V0@1.5mm rating and is available in various opaque color options. This is an alternative to LEXAN 503R, 503R, 503RS.

| INDUSTRY | SUB INDUSTRY |
|----------------------------|---|
| Consumer | Home Appliances, Commercial Appliance |
| Electrical and Electronics | Electrical Devices and Displays, Lighting, Electrical Components and Infrastructure |
| Hydrocarbon and Energy | Electric Vehicle, Energy Storage |
| Hygiene and Healthcare | Patient Testing |
| Industrial | Servomotor, Electronic Material |
| Mass Transportation | Specialty Vehicles |

TYPICAL PROPERTY VALUES

Revision 20240613

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|--|----------------|-------------------|--------------|
| MECHANICAL | | | |
| Tensile Stress, yld, Type I, 5 mm/min | 74 | MPa | ASTM D638 |
| Tensile Stress, brk, Type I, 5 mm/min | 62 | MPa | ASTM D638 |
| Tensile Strain, yld, Type I, 5 mm/min | 4 | % | ASTM D638 |
| Tensile Strain, brk, Type I, 5 mm/min | 6 | % | ASTM D638 |
| Tensile Modulus, 5 mm/min | 3600 | MPa | ASTM D638 |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 114 | MPa | ASTM D790 |
| Flexural Modulus, 1.3 mm/min, 50 mm span | 3200 | MPa | ASTM D790 |
| Tensile Stress, yield, 5 mm/min | 72 | MPa | ISO 527 |
| Tensile Stress, break, 5 mm/min | 60 | MPa | ISO 527 |
| Tensile Strain, yield, 5 mm/min | 3 | % | ISO 527 |
| Tensile Strain, break, 5 mm/min | 6 | % | ISO 527 |
| Tensile Modulus, 1 mm/min | 3500 | MPa | ISO 527 |
| Flexural Stress, yield, 2 mm/min | 122 | MPa | ISO 178 |
| Flexural Modulus, 2 mm/min | 3500 | MPa | ISO 178 |
| IMPACT | | | |
| Izod Impact, unnotched, 23°C | 1200 | J/m | ASTM D4812 |
| Izod Impact, notched, 23°C | 90 | J/m | ASTM D256 |
| Izod Impact, notched, -30°C | 70 | J/m | ASTM D256 |
| Instrumented Dart Impact Total Energy, 23°C | 25 | J | ASTM D3763 |
| Izod Impact, unnotched 80°10'3 +23°C | NB75 | kJ/m ² | ISO 180/1U |
| Izod Impact, unnotched 80°10'3 -30°C | 73 | kJ/m ² | ISO 180/1U |
| Izod Impact, notched 80°10'3 +23°C | 10 | kJ/m ² | ISO 180/1A |
| Izod Impact, notched 80°10'3 -30°C | 8 | kJ/m ² | ISO 180/1A |
| Charpy 23°C, V-notch Edgew 80°10'3 sp=62mm | 10 | kJ/m ² | ISO 179/1eA |
| Charpy -30°C, V-notch Edgew 80°10'3 sp=62mm | 7 | kJ/m ² | ISO 179/1eA |
| Charpy 23°C, Unnotch Edgew 80°10'3 sp=62mm | NB87 | kJ/m ² | ISO 179/1eU |

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| Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm | NB85 | kJ/m ² | ISO 179/1eU |
| THERMAL | | | |
| Vicat Softening Temp, Rate B/50 | 144 | °C | ASTM D1525 |
| HDT, 0.45 MPa, 3.2 mm, unannealed | 143 | °C | ASTM D648 |
| HDT, 1.82 MPa, 3.2mm, unannealed | 136 | °C | ASTM D648 |
| CTE, -40°C to 40°C, flow | 5.E-05 | 1/°C | ASTM E831 |
| CTE, -40°C to 40°C, xflow | 7.4E-05 | 1/°C | ASTM E831 |
| CTE, -40°C to 40°C, flow | 5.E-05 | 1/°C | ISO 11359-2 |
| CTE, -40°C to 40°C, xflow | 8.5E-05 | 1/°C | ISO 11359-2 |
| Ball Pressure Test, 125°C +/- 2°C | Pass | - | IEC 60695-10-2 |
| Vicat Softening Temp, Rate B/50 | 144 | °C | ISO 306 |
| Vicat Softening Temp, Rate B/120 | 145 | °C | ISO 306 |
| HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm | 142 | °C | ISO 75/Bf |
| HDT/Bf, 0.45 MPa Flatw, Annealed 120°C, 2 hrs | 144 | °C | ISO 75/Bf |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm | 136 | °C | ISO 75/Af |
| HDT/Af, 1.8 MPa Flatw, Annealed 120°C, 2 hrs | 140 | °C | ISO 75/Af |
| PHYSICAL | | | |
| Specific Gravity | 1.26 | - | ASTM D792 |
| Mold Shrinkage, flow, 3.2 mm | 0.4 – 0.6 | % | SABIC method |
| Melt Flow Rate, 300°C/1.2 kgf | 8 | g/10 min | ASTM D1238 |
| Density | 1.26 | g/cm ³ | ISO 1183 |
| Water Absorption, (23°C/saturated) | 0.3 | % | ISO 62-1 |
| Moisture Absorption (23°C / 50% RH) | 0.15 | % | ISO 62 |
| Melt Volume Rate, MVR at 300°C/1.2 kg | 7 | cm ³ /10 min | ISO 1133 |
| ELECTRICAL | | | |
| Hot Wire Ignition {PLC} | 3 | PLC Code | UL 746A |
| High Ampere Arc Ign, surface {PLC} | 0 | PLC Code | UL 746A |
| Comparative Tracking Index (UL) {PLC} | 3 | PLC Code | UL 746A |
| Comparative Tracking Index | 175 | V | IEC 60112 |
| FLAME CHARACTERISTICS | | | |
| UL Compliant, 94V-2 Flame Class Rating | 0.75 | mm | UL 94 by SABIC-IP |
| UL Compliant, 94V-0 Flame Class Rating | 1.5 | mm | UL 94 by SABIC-IP |
| UL Compliant, 94-5VA Rating | 3 | mm | UL 94 by SABIC-IP |
| UL Compliant, 94-5VB Rating | 3 | mm | UL 94 by SABIC-IP |
| Glow Wire Flammability Index 960°C, passes at | 0.75 | mm | IEC 60695-2-12 |
| Glow Wire Ignitability Temperature, 1.0 mm | 850 | °C | IEC 60695-2-13 |
| Glow Wire Ignitability Temperature, 3.0 mm | 875 | °C | IEC 60695-2-13 |
| UV-light, water exposure/immersion | F1 | - | UL 746C |
| Oxygen Index (LOI) | 39 | % | ISO 4589 |
| INJECTION MOLDING | | | |
| Drying Temperature | 120 | °C | |
| Drying Time | 2 – 4 | Hrs | |
| Maximum Moisture Content | 0.02 | % | |
| Melt Temperature | 290 – 320 | °C | |
| Nozzle Temperature | 280 – 310 | °C | |

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|-----------------------------|----------------|-------|--------------|
| Front - Zone 3 Temperature | 290 – 320 | °C | |
| Middle - Zone 2 Temperature | 280 – 310 | °C | |
| Rear - Zone 1 Temperature | 270 – 300 | °C | |
| Hopper Temperature | 60 – 80 | °C | |
| Mold Temperature | 80 – 120 | °C | |

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