

LEXAN™ COPOLYMER EXL9414TRC

REGION ASIA

DESCRIPTION

LEXAN EXL9414TRC resin grade is a 21% PCR(Post Consumer Recycle) contain halogen-free flame retardant polycarbonate featuring transparency, -40 degree C ductility and UL-94 V0 rating for injection molding applications. Excellent impact combined with good flow, all transparent colorability for aesthetics and thin wall flame retardant makes this product an excellent candidate for thin wall applications.

TYPICAL PROPERTY VALUES

Revision 20231109

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|----------------|-------------------|--------------|
| MECHANICAL ⁽¹⁾ | | | |
| Tensile Stress, yld, Type I, 50 mm/min | 55 | MPa | ASTM D638 |
| Tensile Stress, brk, Type I, 50 mm/min | 56 | MPa | ASTM D638 |
| Tensile Strain, yld, Type I, 50 mm/min | 5.6 | % | ASTM D638 |
| Tensile Strain, brk, Type I, 50 mm/min | 96 | % | ASTM D638 |
| Tensile Modulus, 50 mm/min | 2110 | MPa | ASTM D638 |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 86 | MPa | ASTM D790 |
| Flexural Modulus, 1.3 mm/min, 50 mm span | 2160 | MPa | ASTM D790 |
| Tensile Stress, yield, 50 mm/min | 56 | MPa | ISO 527 |
| Tensile Stress, break, 50 mm/min | 54 | MPa | ISO 527 |
| Tensile Strain, yield, 50 mm/min | 5.4 | % | ISO 527 |
| Tensile Strain, break, 50 mm/min | 95 | % | ISO 527 |
| Tensile Modulus, 1 mm/min | 2170 | MPa | ISO 527 |
| IMPACT ⁽¹⁾ | | | |
| Izod Impact, notched, 23°C | 785 | J/m | ASTM D256 |
| Izod Impact, notched, -30°C | 311 | J/m | ASTM D256 |
| Instrumented Dart Impact Total Energy, 23°C | 65 | J | ASTM D3763 |
| Izod Impact, unnotched 80*10*3 +23°C | NB | kJ/m ² | ISO 180/1U |
| Izod Impact, unnotched 80*10*3 -30°C | N | kJ/m ² | ISO 180/1U |
| Izod Impact, notched 80*10*3 +23°C | 58 | kJ/m ² | ISO 180/1A |
| Izod Impact, notched 80*10*3 -30°C | 34 | kJ/m ² | ISO 180/1A |
| Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm | N | kJ/m ² | ISO 179/1eU |
| Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm | N | kJ/m ² | ISO 179/1eU |
| Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm | 64 | kJ/m ² | ISO 179/1eA |
| Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm | 24 | kJ/m ² | ISO 179/1eA |
| THERMAL ⁽¹⁾ | | | |
| Vicat Softening Temp, Rate A/50 | 135 | °C | ASTM D1525 |
| Vicat Softening Temp, Rate B/50 | 129 | °C | ISO 306 |
| HDT, 1.82 MPa, 3.2mm, unannealed | 110 | °C | ASTM D648 |
| CTE, -40°C to 95°C, flow | 6.70E-05 | 1/°C | ASTM E831 |
| CTE, -40°C to 95°C, xflow | 8.00E-05 | 1/°C | ASTM E831 |
| Relative Temp Index, Elec ⁽²⁾ | 120 | °C | UL 746B |
| Relative Temp Index, Mech w/impact ⁽²⁾ | 110 | °C | UL 746B |
| Relative Temp Index, Mech w/o impact ⁽²⁾ | 120 | °C | UL 746B |

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|-----------------------------------|--------------------------|--------------|
| PHYSICAL ⁽¹⁾ | | | |
| Specific Gravity | 1.19 | - | ASTM D792 |
| Density | 1.19 | g/cm ³ | ASTM D792 |
| Melt Flow Rate, 300°C/ 1.2 kgf | 12 | g/10 min | ASTM D1238 |
| Melt Volume Rate, MVR at 300°C/ 1.2 kg | 11 | cm ³ / 10 min | ISO 1133 |
| Mold Shrinkage, flow, 3.2 mm ⁽³⁾ | 0.4 – 0.8 | % | SABIC method |
| Water Absorption, (23°C/saturated) | 0.09 | % | ISO 62-1 |
| FLAME CHARACTERISTICS ⁽²⁾ | | | |
| UL Yellow Card Link | E207780-103258548 | - | - |
| UL Recognized, 94V-0 Flame Class Rating | ≥1.5 | mm | UL 94 |
| UL Recognized, 94V-2 Flame Class Rating | ≥1 | mm | UL 94 |
| INJECTION MOLDING ^{(4) (5)} | | | |
| Drying Temperature | 120 | °C | |
| Drying Time | 3 – 4 | 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 – 110 | °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) Molding conditions are only mentioned as general guidelines, need adjustment in specific situations such as low shot sizes, thin wall molding and gas-assist molding.

(5) 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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