

# LEXAN™ RESIN 124R

REGION AMERICAS

## DESCRIPTION

UL rated HB. 200 series recommended when V-2 rating required. 17.5 MFR, for small, intricate parts. FDA food contact compliant in limited colors. Effective January 15th, 2007 this grade will no longer be supported with biocompatibility information and should not be used for medical applications which require biocompatibility. Alternative grade HP2.

## TYPICAL PROPERTY VALUES

Revision 20170706

| PROPERTIES                                   | TYPICAL VALUES | UNITS             | TEST METHODS |
|--|----------------|-------------------|--------------|
| <b>MECHANICAL</b>                            |                |                   |              |
| Tensile Stress, yld, Type I, 50 mm/min       | 62             | MPa               | ASTM D 638   |
| Tensile Stress, brk, Type I, 50 mm/min       | 68             | MPa               | ASTM D 638   |
| Tensile Strain, yld, Type I, 50 mm/min       | 7              | %                 | ASTM D 638   |
| Tensile Strain, brk, Type I, 50 mm/min       | 125            | %                 | ASTM D 638   |
| Tensile Modulus, 50 mm/min                   | 2370           | MPa               | ASTM D 638   |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 96             | MPa               | ASTM D 790   |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 2340           | MPa               | 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  |
| Tensile Stress, yield, 50 mm/min             | 63             | MPa               | ISO 527      |
| Tensile Stress, break, 50 mm/min             | 65             | MPa               | ISO 527      |
| Tensile Strain, yield, 50 mm/min             | 6              | %                 | ISO 527      |
| Tensile Strain, break, 50 mm/min             | 100            | %                 | ISO 527      |
| Tensile Modulus, 1 mm/min                    | 2350           | MPa               | ISO 527      |
| Flexural Stress, yield, 2 mm/min             | 90             | MPa               | ISO 178      |
| Flexural Modulus, 2 mm/min                   | 2300           | MPa               | ISO 178      |
| <b>IMPACT</b>                                |                |                   |              |
| Izod Impact, unnotched, 23°C                 | 3204           | J/m               | ASTM D 4812  |
| Izod Impact, notched, 23°C                   | 694            | J/m               | ASTM D 256   |
| Tensile Impact, Type S                       | 546            | kJ/m <sup>2</sup> | ASTM D 1822  |
| Falling Dart Impact (D 3029), 23°C           | 169            | J                 | ASTM D 3029  |
| Instrumented Impact Energy @ peak, 23°C      | 62             | J                 | ASTM D 3763  |
| Izod Impact, unnotched 80*10*4 +23°C         | NA             | kJ/m <sup>2</sup> | ISO 180/1U   |
| Izod Impact, unnotched 80*10*4 -30°C         | NA             | kJ/m <sup>2</sup> | ISO 180/1U   |
| Izod Impact, notched 80*10*4 +23°C           | 12             | kJ/m <sup>2</sup> | ISO 180/1A   |

| PROPERTIES                                  | TYPICAL VALUES | UNITS                   | TEST METHODS   |
|---|----------------|-------------------------|----------------|
| Izod Impact, notched 80*10*4 -30°C          | 10             | kJ/m <sup>2</sup>       | ISO 180/1A     |
| Charpy Impact, notched, 23°C                | 35             | kJ/m <sup>2</sup>       | ISO 179/2C     |
| Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm  | NA             | kJ/m <sup>2</sup>       | ISO 179/1eU    |
| Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm | NA             | kJ/m <sup>2</sup>       | ISO 179/1eU    |
| <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           | 129            | °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                        | 0.19           | W/m-°C                  | ASTM C177      |
| Thermal Conductivity                        | 0.2            | W/m-°C                  | ISO 8302       |
| CTE, 23°C to 80°C, flow                     | 7.E-05         | 1/°C                    | ISO 11359-2    |
| Ball Pressure Test, 125°C +/- 2°C           | PASSES         | -                       | IEC 60695-10-2 |
| Vicat Softening Temp, Rate B/50             | 140            | °C                      | ISO 306        |
| Vicat Softening Temp, Rate B/120            | 141            | °C                      | ISO 306        |
| HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm     | 133            | °C                      | ISO 75/Be      |
| HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm     | 122            | °C                      | ISO 75/Ae      |
| Relative Temp Index, Elec                   | 130            | °C                      | UL 746B        |
| 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               | 17.5           | g/10 min                | ASTM D 1238    |
| Melt Volume Rate, MVR at 300°C/1.2 kg       | 16             | cm <sup>3</sup> /10 min | ISO 1133       |
| <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 D542      |
| <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     |

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|--|----------------|----------|--------------|
| 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      |
| Volume Resistivity                         | > 1.E+15       | Ohm-cm   | IEC 60093    |
| Surface Resistivity, ROA                   | > 1.E+15       | Ohm      | IEC 60093    |
| Dielectric Strength, in oil, 3.2 mm        | 17             | kV/mm    | IEC 60243-1  |
| Relative Permittivity, 1 MHz               | 2.7            | -        | IEC 60250    |
| Dissipation Factor, 50/60 Hz               | 0.001          | -        | IEC 60250    |
| Dissipation Factor, 1 MHz                  | 0.01           | -        | IEC 60250    |
| Relative Permittivity, 50/60 Hz            | 2.7            | -        | IEC 60250    |
| <b>FLAME CHARACTERISTICS</b>               |                |          |              |
| UL Recognized, 94HB Flame Class Rating (3) | 1.47           | mm       | UL 94        |
| Oxygen Index (LOI)                         | 25             | %        | ISO 4589     |
| <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                           | 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       |              |

## DISCLAIMER

The information contained herein may include typical properties of our products or their typical performances when used in certain typical applications. Actual properties of our products, in particular when used in conjunction with any third party material(s) or for any non-typical applications, may differ from typical properties.

It is the customer's responsibility to inspect and test our product(s) in order to satisfy itself as to the suitability of the product(s) for its



and its customers particular purposes. The customer is responsible for the appropriate, safe and legal use, processing and handling of all product(s) purchased from us.

Nothing herein is intended to be nor shall it constitute a warranty whatsoever, in particular, warranty of merchantability or fitness for a particular purpose.

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