

# LEXAN<sup>TM</sup> FR RESINS 916R

REGION EUROPE

## DESCRIPTION

LEXAN 916R Polycarbonate (PC) is an injection moldable non-chlorinated and non-brominated, unfilled flame retardant grade with medium/high flow and good release. It has an MVR of 18 (300°C/1.2kg) and a UL94 V0@.8mm, and is available in various opaque color options.

| INDUSTRY                   | SUB INDUSTRY                                       |
|----------------------------|----------------------------------------------------|
| Electrical and Electronics | Lighting, Electrical Components and Infrastructure |

## TYPICAL PROPERTY VALUES

| PROPERTIES                                  | TYPICAL VALUES | UNITS             | TEST METHODS   |
|---------------------------------------------|----------------|-------------------|----------------|
| <b>MECHANICAL</b>                           |                |                   |                |
| Tensile Stress, yield, 50 mm/min            | 63             | MPa               | ISO 527        |
| Tensile Stress, break, 50 mm/min            | 60             | MPa               | ISO 527        |
| Tensile Strain, yield, 50 mm/min            | 6              | %                 | ISO 527        |
| Tensile Strain, break, 50 mm/min            | 85             | %                 | 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        |
| Ball Indentation Hardness, H358/30          | 95             | MPa               | ISO 2039-1     |
| <b>IMPACT</b>                               |                |                   |                |
| Izod Impact, unnotched 80*10*3 +23°C        | NB             | kJ/m <sup>2</sup> | ISO 180/1U     |
| Izod Impact, unnotched 80*10*3 -30°C        | NB             | kJ/m <sup>2</sup> | ISO 180/1U     |
| Izod Impact, notched 80*10*3 +23°C          | 65             | kJ/m <sup>2</sup> | ISO 180/1A     |
| Izod Impact, notched 80*10*3 -30°C          | 11             | kJ/m <sup>2</sup> | ISO 180/1A     |
| Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm  | 65             | kJ/m <sup>2</sup> | ISO 179/1eA    |
| Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm | 12             | kJ/m <sup>2</sup> | ISO 179/1eA    |
| Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm  | NB             | kJ/m <sup>2</sup> | ISO 179/1eU    |
| Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm | NB             | kJ/m <sup>2</sup> | ISO 179/1eU    |
| <b>THERMAL</b>                              |                |                   |                |
| Thermal Conductivity                        | 0.2            | W/m.°C            | ISO 8302       |
| CTE, 23°C to 80°C, flow                     | 7.E-05         | 1/°C              | ISO 11359-2    |
| CTE, 23°C to 80°C, xflow                    | 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          | 120            | °C                | UL 746B        |
| Relative Temp Index, Mech w/o impact        | 125            | °C                | UL 746B        |
| <b>PHYSICAL</b>                             |                |                   |                |

| PROPERTIES                                    | TYPICAL VALUES | UNITS                   | TEST METHODS   |
|-----------------------------------------------|----------------|-------------------------|----------------|
| Mold Shrinkage on Tensile Bar, flow           | 0.5 – 0.7      | %                       | SABIC method   |
| Density                                       | 1.2            | g/cm <sup>3</sup>       | ISO 1183       |
| Water Absorption, (23°C/sat)                  | 0.35           | %                       | ISO 62         |
| Moisture Absorption (23°C / 50% RH)           | 0.15           | %                       | ISO 62         |
| Melt Volume Rate, MVR at 300°C/ 1.2 kg        | 18             | cm <sup>3</sup> /10 min | ISO 1133       |
| ELECTRICAL                                    |                |                         |                |
| Comparative Tracking Index (UL) {PLC}         | 3              | 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      |
| Comparative Tracking Index                    | 225            | V                       | IEC 60112      |
| Relative Permittivity, 50/60 Hz               | 2.7            | -                       | IEC 60250      |
| FLAME CHARACTERISTICS                         |                |                         |                |
| UL Recognized, 94V-0 Flame Class Rating       | 0.8            | mm                      | UL 94          |
| Glow Wire Flammability Index 960°C, passes at | 1.6            | mm                      | IEC 60695-2-12 |
| Glow Wire Ignitability Temperature, 0.8 mm    | 800            | °C                      | IEC 60695-2-13 |
| Oxygen Index (LOI)                            | 35             | %                       | ISO 4589       |
| INJECTION MOLDING                             |                |                         |                |
| Drying Temperature                            | 120            | °C                      |                |
| Drying Time                                   | 2 – 4          | hrs                     |                |
| Maximum Moisture Content                      | 0.02           | %                       |                |
| Melt Temperature                              | 280 – 300      | °C                      |                |
| Nozzle Temperature                            | 270 – 290      | °C                      |                |
| Front - Zone 3 Temperature                    | 280 – 300      | °C                      |                |
| Middle - Zone 2 Temperature                   | 270 – 290      | °C                      |                |
| Rear - Zone 1 Temperature                     | 260 – 280      | °C                      |                |
| Hopper Temperature                            | 60 – 80        | °C                      |                |
| Mold Temperature                              | 80 – 100       | °C                      |                |