



# LEXAN™ FR RESINS 525RU

REGION EUROPE

## DESCRIPTION

LEXAN 525RU 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, 505RU.

## TYPICAL PROPERTY VALUES

Revision 20220309

| PROPERTIES                                   | TYPICAL VALUES | UNITS             | TEST METHODS |
|----------------------------------------------|----------------|-------------------|--------------|
| MECHANICAL                                   |                |                   |              |
| Tensile Stress, yield, 5 mm/min              | 60             | MPa               | ISO 527      |
| Tensile Stress, break, 5 mm/min              | 45             | MPa               | ISO 527      |
| Tensile Strain, yield, 5 mm/min              | 5              | %                 | ISO 527      |
| Tensile Strain, break, 5 mm/min              | 10             | %                 | ISO 527      |
| Tensile Modulus, 1 mm/min                    | 3800           | MPa               | ISO 527      |
| Flexural Stress, yield, 2 mm/min             | 100            | MPa               | ISO 178      |
| Flexural Modulus, 2 mm/min                   | 3600           | MPa               | ISO 178      |
| Tensile Stress, yld, Type I, 5 mm/min        | 63             | MPa               | ASTM D638    |
| Tensile Stress, brk, Type I, 5 mm/min        | 48             | MPa               | ASTM D638    |
| Tensile Strain, yld, Type I, 5 mm/min        | 3              | %                 | ASTM D638    |
| Tensile Strain, brk, Type I, 5 mm/min        | 12             | %                 | ASTM D638    |
| Tensile Modulus, 5 mm/min                    | 3930           | MPa               | ASTM D638    |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 108            | MPa               | ASTM D790    |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 3520           | MPa               | ASTM D790    |
| Hardness, Rockwell M                         | 85             | -                 | ASTM D785    |
| Hardness, Rockwell R                         | 124            | -                 | ASTM D785    |
| IMPACT                                       |                |                   |              |
| 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         | 130            | kJ/m <sup>2</sup> | ISO 180/1U   |
| Izod Impact, notched 80*10*3 +23°C           | 10             | kJ/m <sup>2</sup> | ISO 180/1A   |
| Izod Impact, notched 80*10*3 -30°C           | 8              | kJ/m <sup>2</sup> | ISO 180/1A   |
| Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm   | 10             | kJ/m <sup>2</sup> | ISO 179/1eA  |
| Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm  | 9              | 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  | 130            | kJ/m <sup>2</sup> | ISO 179/1eU  |
| Izod Impact, notched, 23°C                   | 106            | J/m               | ASTM D256    |
| Izod Impact, unnotched, 23°C                 | NB             | J/m               | ASTM D4812   |
| THERMAL                                      |                |                   |              |
| Specific Heat                                | 1.21           | J/g°C             | ASTM C351    |
| Thermal Conductivity                         | 0.2            | W/m°C             | ASTM C177    |
| Vicat Softening Temp, Rate B/50              | 141            | °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                     | 4.70E-05       | 1/°C              | ASTM E831    |



| PROPERTIES                                    | TYPICAL VALUES | UNITS       | TEST METHODS   |
|-----------------------------------------------|----------------|-------------|----------------|
| CTE, -40°C to 40°C, xflow                     | 6.40E-05       | 1/°C        | ASTM E831      |
| CTE, 23°C to 80°C, flow                       | 4.45E-05       | 1/°C        | ISO 11359-2    |
| CTE, 23°C to 80°C, xflow                      | 9.27E-05       | 1/°C        | ISO 11359-2    |
| Vicat Softening Temp, Rate B/50               | 141            | °C          | ISO 306        |
| Vicat Softening Temp, Rate B/120              | 143            | °C          | ISO 306        |
| HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm        | 142            | °C          | ISO 75/Bf      |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm         | 136            | °C          | ISO 75/Af      |
| 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        |
| PHYSICAL                                      |                |             |                |
| Density                                       | 1.26           | g/cm³       | ISO 1183       |
| Mold Shrinkage on Tensile Bar, flow           | 0.4            | %           | SABIC method   |
| Mold Shrinkage, flow, 3.2 mm                  | 0.3            | %           | SABIC method   |
| Melt Volume Rate, MVR at 300°C/ 1.2 kg        | 9              | cm³/ 10 min | ISO 1133       |
| Water Absorption, (23°C/saturated)            | 0.31           | %           | ISO 62-1       |
| Moisture Absorption (23°C / 50% RH)           | 0.13           | %           | ISO 62         |
| ELECTRICAL                                    |                |             |                |
| Volume Resistivity                            | 1.0E+15        | Ω.cm        | IEC 60093      |
| Comparative Tracking Index                    | 175            | V           | IEC 60112      |
| Comparative Tracking Index (UL) {PLC}         | 3              | PLC Code    | UL 746A        |
| High Amp Arc Ignition, 0.8 mm                 | 0              | PLC Code    | UL 746A        |
| High Amp Arc Ignition, 1.5 mm                 | 0              | PLC Code    | UL 746A        |
| High Amp Arc Ignition, 3.0 mm                 | 0              | PLC Code    | UL 746A        |
| Hot-wire Ignition, 0.8 mm                     | 1              | PLC Code    | UL 746A        |
| Hot-wire Ignition, 1.5 mm                     | 1              | PLC Code    | UL 746A        |
| Hot-wire Ignition, 3.0 mm                     | 0              | PLC Code    | UL 746A        |
| High Voltage Arc Track Rate {PLC}             | 3              | PLC Code    | UL 746A        |
| Arc Resistance, Tungsten {PLC}                | 7              | PLC Code    | ASTM D495      |
| FLAME CHARACTERISTICS                         |                |             |                |
| UL Recognized, 94-5VA Flame Class Rating      | 3.0            | mm          | UL 94          |
| UL Recognized, 94V-0 Flame Class Rating       | 1.5            | mm          | UL 94          |
| Glow Wire Flammability Index 960°C, passes at | 0.8            | mm          | IEC 60695-2-12 |
| Glow Wire Ignitability Temperature, 0.8 mm    | 825            | °C          | IEC 60695-2-13 |
| UV-light, water exposure/immersion            | F1             | -           | UL 746C        |
| INJECTION MOLDING                             |                |             |                |
| Drying Temperature                            | 120            | °C          |                |
| Drying Time                                   | 3 – 4          | Hrs         |                |
| Maximum Moisture Content                      | 0.02           | %           |                |
| Melt Temperature                              | 290 – 320      | °C          |                |
| Nozzle Temperature                            | 280 – 310      | °C          |                |
| 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          |                |



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|------------------|----------------|-------|--------------|
| Mold Temperature | 80 – 120       | °C    |              |

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