

# LEXAN<sup>TM</sup> RESIN IR2240

REGION EUROPE

## DESCRIPTION

Mid-flow polycarbonate resin with mold release. FDA food contact compliant. Available in limited transparent tints, limited package types, and must meet minimum order quantity requirements.

## TYPICAL PROPERTY VALUES

Revision 20181012

| PROPERTIES                                   | TYPICAL VALUES | UNITS             | TEST METHODS   |
|----------------------------------------------|----------------|-------------------|----------------|
| <b>MECHANICAL</b>                            |                |                   |                |
| Tensile Stress, yld, Type I, 50 mm/min       | 63             | MPa               | ASTM D 638     |
| Tensile Strain, yld, Type I, 50 mm/min       | 6              | %                 | ASTM D 638     |
| Tensile Strain, brk, Type I, 50 mm/min       | >70            | %                 | ASTM D 638     |
| Tensile Modulus, 50 mm/min                   | 2350           | MPa               | ASTM D 638     |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 90             | MPa               | ASTM D 790     |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 2300           | MPa               | ASTM D 790     |
| Hardness, Rockwell R                         | 120            | -                 | ASTM D 785     |
| Tensile Stress, yield, 50 mm/min             | 63             | MPa               | ISO 527        |
| Tensile Strain, yield, 50 mm/min             | 6              | %                 | ISO 527        |
| Tensile Strain, break, 50 mm/min             | >70            | %                 | 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        |
| Hardness, Rockwell R                         | 120            | -                 | ISO 2039-2     |
| <b>IMPACT</b>                                |                |                   |                |
| Izod Impact, unnotched, 23°C                 | NB             | J/m               | ASTM D 4812    |
| Izod Impact, notched, 23°C                   | 800            | J/m               | ASTM D 256     |
| Instrumented Impact Energy @ peak, 23°C      | 65             | J                 | ASTM D 3763    |
| 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           | 70             | kJ/m <sup>2</sup> | ISO 180/1A     |
| Izod Impact, notched 80*10*3 -30°C           | 12             | kJ/m <sup>2</sup> | ISO 180/1A     |
| <b>THERMAL</b>                               |                |                   |                |
| Vicat Softening Temp, Rate B/50              | 143            | °C                | ASTM D 1525    |
| HDT, 0.45 MPa, 3.2 mm                        | 138            | °C                | ASTM D 648     |
| HDT, 1.82 MPa, 3.2 mm                        | 127            | °C                | ASTM D 648     |
| CTE, -40°C to 95°C, flow                     | 7.E-05         | 1/°C              | ASTM E 831     |
| Thermal Conductivity                         | 0.2            | 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              | 143            | °C                | ISO 306        |
| HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm       | 138            | °C                | ISO 75/Bf      |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm        | 127            | °C                | ISO 75/Af      |

| PROPERTIES                            | TYPICAL VALUES | UNITS                   | TEST METHODS |
|---------------------------------------|----------------|-------------------------|--------------|
| <b>PHYSICAL</b>                       |                |                         |              |
| Specific Gravity                      | 1.2            | -                       | ASTM D 792   |
| Water Absorption, equilibrium, 23C    | 0.35           | %                       | ASTM D 570   |
| Mold Shrinkage on Tensile Bar, flow   | 0.5 – 0.7      | %                       | SABIC method |
| Mold Shrinkage, flow, 3.2 mm          | 0.5 – 0.7      | %                       | SABIC method |
| Melt Flow Rate, 300°C/1.2 kgf         | 10             | g/10 min                | ASTM D 1238  |
| Density                               | 1.2            | g/cm <sup>3</sup>       | ISO 1183     |
| Water Absorption, (23°C/sat)          | 0.35           | %                       | ISO 62       |
| Melt Volume Rate, MVR at 300°C/1.2 kg | 9              | cm <sup>3</sup> /10 min | ISO 1133     |
| <b>OPTICAL</b>                        |                |                         |              |
| Light Transmission, 2.54 mm           | 88 – 90        | %                       | ASTM D 1003  |
| Haze, 2.54 mm                         | <0.8           | %                       | ASTM D 1003  |
| Refractive Index                      | 1.586          | -                       | ASTM D542    |
| Refractive Index                      | 1.586          | -                       | ISO 489      |
| <b>ELECTRICAL</b>                     |                |                         |              |
| Volume Resistivity                    | >1.E+15        | Ohm-cm                  | ASTM D 257   |
| Dielectric Strength, 1.6 mm           | 27             | kV/mm                   | ASTM D 149   |
| Relative Permittivity, 60 Hz          | 3              | -                       | ASTM D 150   |
| Relative Permittivity, 1 MHz          | 3              | -                       | ASTM D 150   |
| Dissipation Factor, 60 Hz             | 0.001          | -                       | ASTM D 150   |
| Dissipation Factor, 1 MHz             | 0.01           | -                       | ASTM D 150   |
| Volume Resistivity                    | >1.E+15        | Ohm-cm                  | IEC 60093    |
| Dielectric Strength, 1.6 mm           | 27             | kV/mm                   | IEC 60243-1  |
| Relative Permittivity, 60 Hz          | 3              | -                       | IEC 60250    |
| Relative Permittivity, 1 MHz          | 3              | -                       | IEC 60250    |
| Dissipation Factor, 60 Hz             | 0.001          | -                       | IEC 60250    |
| Dissipation Factor, 1 MHz             | 0.01           | -                       | IEC 60250    |
| <b>INJECTION MOLDING</b>              |                |                         |              |
| Drying Temperature                    | 120            | °C                      |              |
| Drying Time                           | 2 – 4          | hrs                     |              |
| Maximum Moisture Content              | 0.02           | %                       |              |
| Melt Temperature                      | 280 – 310      | °C                      |              |
| Nozzle Temperature                    | 270 – 290      | °C                      |              |
| Front - Zone 3 Temperature            | 280 – 310      | °C                      |              |
| Middle - Zone 2 Temperature           | 270 – 290      | °C                      |              |
| Rear - Zone 1 Temperature             | 260 – 280      | °C                      |              |
| Hopper Temperature                    | 60 – 80        | °C                      |              |
| Mold Temperature                      | 80 – 110       | °C                      |              |

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