

# LEXAN™ COPOLYMER EXL1494T

REGION EUROPE

## DESCRIPTION

LEXAN EXL1494T polycarbonate (PC) siloxane copolymer resin is an injection molding grade with FDA and EU food contact compliance. This resin offers extreme low temperature (-40 C) ductility in combination with medium flow characteristics, improved release and excellent processability with opportunities for shorter IM cycle times compared to standard PC. LEXAN EXL1494T resin is available in transparent and opaque colors and is an excellent candidate for a broad range of food contact applications.

## TYPICAL PROPERTY VALUES

Revision 20170816

| PROPERTIES                                   | TYPICAL VALUES | UNITS             | TEST METHODS |
|----------------------------------------------|----------------|-------------------|--------------|
| <b>MECHANICAL</b>                            |                |                   |              |
| Tensile Stress, yld, Type I, 50 mm/min       | 57             | MPa               | ASTM D 638   |
| Tensile Stress, brk, Type I, 50 mm/min       | 59             | MPa               | ASTM D 638   |
| Tensile Strain, yld, Type I, 50 mm/min       | 5.6            | %                 | ASTM D 638   |
| Tensile Strain, brk, Type I, 50 mm/min       | 123.9          | %                 | ASTM D 638   |
| Tensile Modulus, 50 mm/min                   | 2180           | MPa               | ASTM D 638   |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 92             | MPa               | ASTM D 790   |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 2180           | MPa               | ASTM D 790   |
| Hardness, Rockwell L                         | 87             | -                 | ASTM D 785   |
| Tensile Stress, yield, 50 mm/min             | 56             | MPa               | ISO 527      |
| Tensile Stress, break, 50 mm/min             | 55             | MPa               | ISO 527      |
| Tensile Strain, yield, 50 mm/min             | 5.4            | %                 | ISO 527      |
| Tensile Strain, break, 50 mm/min             | 108.5          | %                 | ISO 527      |
| Tensile Modulus, 1 mm/min                    | 2300           | MPa               | ISO 527      |
| Flexural Stress, yield, 2 mm/min             | 88             | MPa               | ISO 178      |
| Flexural Modulus, 2 mm/min                   | 2120           | MPa               | ISO 178      |
| <b>IMPACT</b>                                |                |                   |              |
| Izod Impact, notched, 23°C                   | 824            | J/m               | ASTM D 256   |
| Izod Impact, notched, -30°C                  | 712            | J/m               | ASTM D 256   |
| Instrumented Impact Total Energy, 23°C       | 75             | J                 | ASTM D 3763  |
| Instrumented Impact Total Energy, -30°C      | 77             | 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   |

| PROPERTIES                                    | TYPICAL VALUES | UNITS                   | TEST METHODS   |
|-----------------------------------------------|----------------|-------------------------|----------------|
| 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            | 55             | kJ/m <sup>2</sup>       | ISO 180/1A     |
| Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm    | 70             | kJ/m <sup>2</sup>       | ISO 179/1eA    |
| Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm   | 60             | 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>                                |                |                         |                |
| Vicat Softening Temp, Rate A/50               | 138            | °C                      | ASTM D 1525    |
| HDT, 1.82 MPa, 3.2mm, unannealed              | 120            | °C                      | ASTM D 648     |
| CTE, -40°C to 95°C, flow                      | 6.7E-05        | 1/°C                    | ASTM E 831     |
| CTE, -40°C to 95°C, xflow                     | 8.E-05         | 1/°C                    | ASTM E 831     |
| CTE, 23°C to 80°C, flow                       | 6.7E-05        | 1/°C                    | ISO 11359-2    |
| CTE, 23°C to 80°C, xflow                      | 8.E-05         | 1/°C                    | ISO 11359-2    |
| Ball Pressure Test, 125°C +/- 2°C             | pass           | -                       | IEC 60695-10-2 |
| Vicat Softening Temp, Rate B/50               | 138            | °C                      | ISO 306        |
| Vicat Softening Temp, Rate B/120              | 139            | °C                      | ISO 306        |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm         | 116            | °C                      | ISO 75/Af      |
| Relative Temp Index, Elec                     | 130            | °C                      | UL 746B        |
| Relative Temp Index, Mech w/o impact          | 130            | °C                      | UL 746B        |
| <b>PHYSICAL</b>                               |                |                         |                |
| Specific Gravity                              | 1.19           | -                       | ASTM D 792     |
| Mold Shrinkage, flow, 3.2 mm (5)              | 0.4 – 0.8      | %                       | SABIC method   |
| Mold Shrinkage, xflow, 3.2 mm (5)             | 0.4 – 0.8      | %                       | SABIC method   |
| Melt Flow Rate, 300°C/1.2 kgf                 | 10             | g/10 min                | ASTM D 1238    |
| Density                                       | 1.19           | g/cm <sup>3</sup>       | ISO 1183       |
| Water Absorption, (23°C/sat)                  | 0.12           | %                       | ISO 62         |
| Moisture Absorption (23°C / 50% RH)           | 0.09           | %                       | 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                   | 82             | %                       | ASTM D 1003    |
| Haze, 2.54 mm                                 | 3              | %                       | ASTM D 1003    |
| <b>ELECTRICAL</b>                             |                |                         |                |
| Volume Resistivity                            | > 1.E+15       | Ohm-cm                  | ASTM D 257     |
| Surface Resistivity                           | > 1.E+15       | Ohm                     | ASTM D 257     |
| <b>FLAME CHARACTERISTICS</b>                  |                |                         |                |
| UL Recognized, 94V-2 Flame Class Rating (3)   | 3              | mm                      | UL 94          |
| Glow Wire Flammability Index 960°C, passes at | 3              | mm                      | IEC 60695-2-12 |
| Glow Wire Ignitability Temperature, 0.8 mm    | 850            | °C                      | IEC 60695-2-13 |

| PROPERTIES                                 | TYPICAL VALUES | UNITS | TEST METHODS   |
|--------------------------------------------|----------------|-------|----------------|
| Glow Wire Ignitability Temperature, 3.0 mm | 850            | °C    | IEC 60695-2-13 |
| <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                           | 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                  | 215 – 295      | °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.

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