

# LEXANT™ COPOLYMER HPX4

REGION ASIA

## DESCRIPTION

Medium flow specialty polycarbonate - improved processability & autoclavability. For medical devices and pharmaceutical applications. Healthcare management of change, biocompatible (ISO10993 or USP Class VI). EtO and steam sterilizable.

## TYPICAL PROPERTY VALUES

Revision 20180905

| PROPERTIES                                   | TYPICAL VALUES | UNITS             | TEST METHODS |
|--|----------------|-------------------|--------------|
| <b>MECHANICAL</b>                            |                |                   |              |
| Tensile Stress, yld, Type I, 50 mm/min       | 58             | MPa               | ASTM D 638   |
| Tensile Stress, brk, Type I, 50 mm/min       | 64             | MPa               | ASTM D 638   |
| Tensile Strain, yld, Type I, 50 mm/min       | 5.8            | %                 | ASTM D 638   |
| Tensile Strain, brk, Type I, 50 mm/min       | 131.4          | %                 | ASTM D 638   |
| Tensile Modulus, 50 mm/min                   | 2210           | MPa               | ASTM D 638   |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 94             | MPa               | ASTM D 790   |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 2210           | MPa               | ASTM D 790   |
| Hardness, Rockwell L                         | 89             | -                 | ASTM D 785   |
| Tensile Stress, yield, 50 mm/min             | 57             | MPa               | ISO 527      |
| Tensile Stress, break, 50 mm/min             | 61             | MPa               | ISO 527      |
| Tensile Strain, yield, 50 mm/min             | 5.5            | %                 | ISO 527      |
| Tensile Strain, break, 50 mm/min             | 124.9          | %                 | 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                   | 2150           | MPa               | ISO 178      |
| <b>IMPACT</b>                                |                |                   |              |
| Izod Impact, notched, 23°C                   | 890            | J/m               | ASTM D 256   |
| Izod Impact, notched, -30°C                  | 795            | J/m               | ASTM D 256   |
| Instrumented Impact Total Energy, 23°C       | 82             | J                 | ASTM D 3763  |
| Instrumented Impact Total Energy, -30°C      | 85             | 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           | 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   | 65             | kJ/m <sup>2</sup> | ISO 179/1eA  |
| Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm  | 55             | 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              | 141            | °C                | ASTM D 1525  |
| HDT, 1.82 MPa, 3.2mm, unannealed             | 124            | °C                | ASTM D 648   |
| CTE, -40°C to 95°C, flow                     | 7.15E-05       | 1/°C              | ASTM E 831   |
| CTE, -40°C to 95°C, xflow                    | 7.93E-05       | 1/°C              | ASTM E 831   |
| CTE, 23°C to 80°C, flow                      | 7.15E-05       | 1/°C              | ISO 11359-2  |

| PROPERTIES                                    | TYPICAL VALUES | UNITS                   | TEST METHODS   |
|---|----------------|-------------------------|----------------|
| CTE, 23°C to 80°C, xflow                      | 7.93E-05       | 1/°C                    | ISO 11359-2    |
| Ball Pressure Test, 125°C +/- 2°C             | pass           | -                       | IEC 60695-10-2 |
| Vicat Softening Temp, Rate B/50               | 141            | °C                      | ISO 306        |
| Vicat Softening Temp, Rate B/120              | 142            | °C                      | ISO 306        |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm         | 118            | °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                  | 0.4 – 0.8      | %                       | SABIC method   |
| Mold Shrinkage, xflow, 3.2 mm                 | 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       | 2.5            | mm                      | UL 94          |
| Glow Wire Flammability Index 960°C, passes at | 3              | mm                      | IEC 60695-2-12 |
| Glow Wire Ignitability Temperature, 0.8 mm    | 825            | °C                      | IEC 60695-2-13 |
| Glow Wire Ignitability Temperature, 3.0 mm    | 825            | °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                     | 270 – 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                      |                |



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