

Lexan* Resin HPX4

Americas: COMMERCIAL

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 PROPERTIES ¹ | TYPICAL VALUE | UNIT | STANDARD |
|--|---------------|---------------------|-------------|
| MECHANICAL | | | |
| Tensile Stress, yld, Type I, 50 mm/min | 590 | kgf/cm ² | ASTM D 638 |
| Tensile Stress, brk, Type I, 50 mm/min | 650 | kgf/cm ² | 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 | 22500 | kgf/cm ² | ASTM D 638 |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 960 | kgf/cm ² | ASTM D 790 |
| Flexural Modulus, 1.3 mm/min, 50 mm span | 22500 | kgf/cm ² | 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 |
| IMPACT | | | |
| Izod Impact, notched, 23°C | 90 | cm-kgf/cm | ASTM D 256 |
| Izod Impact, notched, -30°C | 81 | cm-kgf/cm | ASTM D 256 |
| Instrumented Impact Total Energy, 23°C | 840 | cm-kgf | ASTM D 3763 |
| Instrumented Impact Total Energy, -30°C | 866 | cm-kgf | ASTM D 3763 |
| Izod Impact, unnotched 80*10*3 +23°C | NB | kJ/m ² | ISO 180/1U |
| Izod Impact, unnotched 80*10*3 -30°C | NB | kJ/m ² | ISO 180/1U |

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2) Only typical data for material selection purpose. Not to be used for part or tool design.
3) This rating is not intended to reflect hazards presented this or any other material under actual fire conditions.
4) Own measurement according to UL.

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| TYPICAL PROPERTIES ¹ | TYPICAL VALUE | UNIT | STANDARD |
|---|---------------|-------------------|----------------|
| IMPACT | | | |
| Izod Impact, notched 80*10*3 +23°C | 65 | kJ/m ² | ISO 180/1A |
| Izod Impact, notched 80*10*3 -30°C | 55 | kJ/m ² | ISO 180/1A |
| Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm | 65 | kJ/m ² | ISO 179/1eA |
| Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm | 55 | kJ/m ² | ISO 179/1eA |
| Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm | NB | kJ/m ² | ISO 179/1eU |
| Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm | NB | kJ/m ² | ISO 179/1eU |
| THERMAL | | | |
| 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 |
| 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 |
| PHYSICAL | | | |
| 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 ³ | ISO 1183 |

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| TYPICAL PROPERTIES ¹ | TYPICAL VALUE | UNIT | STANDARD |
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| PHYSICAL | | | |
| 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 ³ /10 min | ISO 1133 |
| OPTICAL | | | |
| Light Transmission, 2.54 mm | 82 | % | ASTM D 1003 |
| Haze, 2.54 mm | 3 | % | ASTM D 1003 |
| ELECTRICAL | | | |
| Volume Resistivity | >1.E+15 | Ohm-cm | ASTM D 257 |
| Surface Resistivity | >1.E+15 | Ohm | ASTM D 257 |
| FLAME CHARACTERISTICS | | | |
| UL Recognized, 94V-2 Flame Class Rating (3) | 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 |

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| PROCESSING PARAMETERS | TYPICAL VALUE | UNIT |
|-----------------------------|---------------|------|
| Injection Molding | | |
| 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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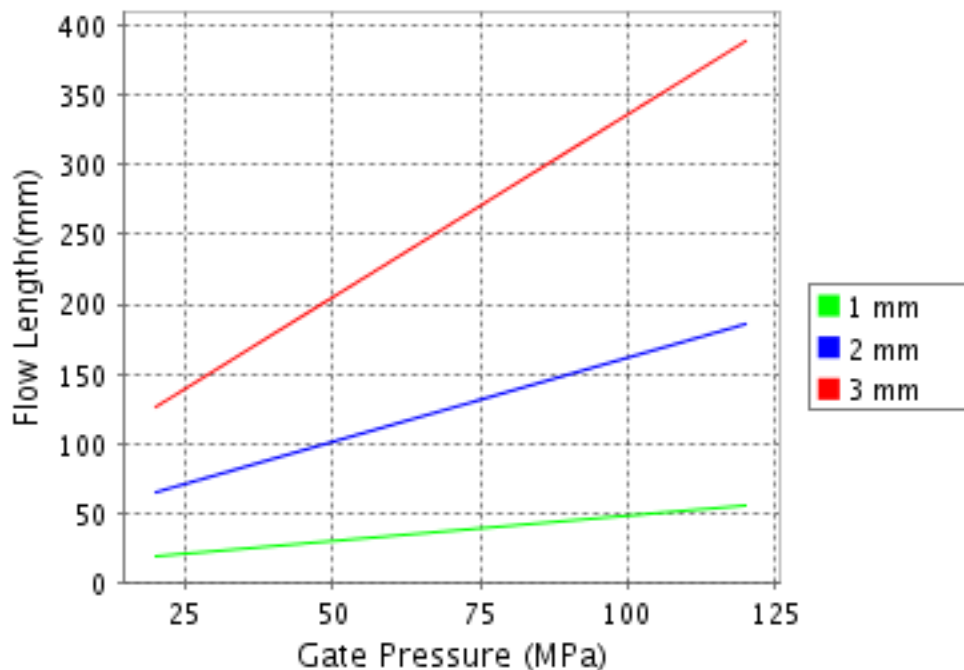
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CALCULATED FLOW LENGTH INDICATION
Moldflow® Radial Flow Analysis

Lexan* HPX4
Melt Temperature : 305°C
Mold Temperature : 85°C



Note: Technical support is recommended if Gate Pressure is greater than 80 MPa. Contact your local representative.
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