

# LEXANT™ COPOLYMER 4504

REGION ASIA

## DESCRIPTION

High heat resistant polycarbonate copolymer, provides DTUL of 290F at 264 psi. FDA food contact compliant in limited colors. Effective January 15th, 2008 this grade will no longer be supported with biocompatibility information and should not be used for medical applications which require biocompatibility. Alternative grade HPH4504.

## TYPICAL PROPERTY VALUES

Revision 20180905

| PROPERTIES                                   | TYPICAL VALUES | UNITS              | TEST METHODS |
|--|----------------|--------------------|--------------|
| <b>MECHANICAL</b>                            |                |                    |              |
| Tensile Stress, yld, Type I, 50 mm/min       | 65             | MPa                | ASTM D 638   |
| Tensile Stress, brk, Type I, 50 mm/min       | 71             | MPa                | ASTM D 638   |
| Tensile Strain, brk, Type I, 50 mm/min       | 122            | %                  | ASTM D 638   |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 95             | MPa                | ASTM D 790   |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 2020           | MPa                | ASTM D 790   |
| Hardness, Rockwell M                         | 85             | -                  | ASTM D 785   |
| Hardness, Rockwell R                         | 122            | -                  | ASTM D 785   |
| <b>IMPACT</b>                                |                |                    |              |
| Izod Impact, unnotched, 23°C                 | 3204           | J/m                | ASTM D 4812  |
| Izod Impact, notched, 23°C                   | 640            | J/m                | ASTM D 256   |
| Tensile Impact, Type S                       | 577            | kJ/m <sup>2</sup>  | ASTM D 1822  |
| Falling Dart Impact (D 3029), 23°C           | 149            | J                  | ASTM D 3029  |
| <b>THERMAL</b>                               |                |                    |              |
| HDT, 1.82 MPa, 3.2mm, unannealed             | 143            | °C                 | ASTM D 648   |
| CTE, -40°C to 95°C, flow                     | 9.18E-05       | 1/°C               | ASTM E 831   |
| Specific Heat                                | 1.25           | J/g·°C             | ASTM C 351   |
| Thermal Conductivity                         | 0.21           | W/m·°C             | ASTM C 177   |
| Relative Temp Index, Elec                    | 125            | °C                 | UL 746B      |
| Relative Temp Index, Mech w/impact           | 125            | °C                 | UL 746B      |
| Relative Temp Index, Mech w/o impact         | 125            | °C                 | UL 746B      |
| <b>PHYSICAL</b>                              |                |                    |              |
| Specific Gravity                             | 1.2            | -                  | ASTM D 792   |
| Specific Volume                              | 0.83           | cm <sup>3</sup> /g | ASTM D 792   |
| Density                                      | 1.19           | g/cm <sup>3</sup>  | ASTM D 792   |
| Water Absorption, 24 hours                   | 0.16           | %                  | ASTM D 570   |
| Mold Shrinkage, flow, 3.2 mm                 | 0.7 – 0.8      | %                  | SABIC method |
| Melt Flow Rate, 300°C/1.2 kgf                | 3              | g/10 min           | ASTM D 1238  |
| <b>OPTICAL</b>                               |                |                    |              |
| Light Transmission, 2.54 mm                  | 85             | %                  | ASTM D 1003  |
| Haze, 2.54 mm                                | 1              | %                  | ASTM D 1003  |
| Refractive Index                             | 1.6            | -                  | ASTM D542    |
| <b>ELECTRICAL</b>                            |                |                    |              |
| Volume Resistivity                           | >2.6E+17       | Ohm-cm             | ASTM D 257   |

| PROPERTIES                              | TYPICAL VALUES | UNITS    | TEST METHODS |
|---|----------------|----------|--------------|
| Dielectric Strength, in air, 3.2 mm     | 20.2           | kV/mm    | ASTM D 149   |
| Relative Permittivity, 50/60 Hz         | 3.15           | -        | ASTM D 150   |
| Relative Permittivity, 1 MHz            | 3              | -        | ASTM D 150   |
| Dissipation Factor, 50/60 Hz            | 0.0012         | -        | ASTM D 150   |
| Dissipation Factor, 100 Hz              | 0.024          | -        | ASTM D 150   |
| Hot Wire Ignition {PLC}                 | 2              | PLC Code | UL 746A      |
| High Voltage Arc Track Rate {PLC}       | 3              | PLC Code | UL 746A      |
| High Ampere Arc Ign, surface {PLC}      | 4              | PLC Code | UL 746A      |
| Comparative Tracking Index (UL) {PLC}   | 3              | PLC Code | UL 746A      |
| <b>FLAME CHARACTERISTICS</b>            |                |          |              |
| UL Recognized, 94V-2 Flame Class Rating | 1.47           | mm       | UL 94        |
| <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                        | 340 – 360      | °C       |              |
| Nozzle Temperature                      | 330 – 355      | °C       |              |
| Front - Zone 3 Temperature              | 340 – 360      | °C       |              |
| Middle - Zone 2 Temperature             | 325 – 350      | °C       |              |
| Rear - Zone 1 Temperature               | 315 – 340      | °C       |              |
| Mold Temperature                        | 80 – 115       | °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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