# LEXAN™ COPOLYMER HPH4404

REGION EUROPE

## DESCRIPTION

High heat specialty polycarbonate. For medical devices and pharmaceutical applications. Healthcare management of change, biocompatible (ISO10993 or USP Class VI). EtO, steam, gamma and e-beam sterilizable.

## TYPICAL PROPERTY VALUES

Revision 20241028

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| MECHANICAL [1] | | | |
| Tensile Stress, yld, Type I, 50 mm/min | 65 | MPa | ASTM D638 |
| Tensile Stress, brk, Type I, 50 mm/min | 70 | MPa | ASTM D638 |
| Tensile Strain, yld, Type I, 50 mm/min | 7 | % | ASTM D638 |
| Tensile Strain, brk, Type I, 50 mm/min | >112 | % | ASTM D638 |
| Tensile Modulus, 5 mm/min | 2100 | MPa | ASTM D638 |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 95 | MPa | ASTM D790 |
| Flexural Modulus, 1.3 mm/min, 50 mm span | 2200 | MPa | ASTM D790 |
| Hardness, Rockwell M | 85 | - | ASTM D785 |
| Hardness, Rockwell R | 122 | - | ASTM D785 |
| Tensile Stress, yield, 50 mm/min | 65 | MPa | ISO 527 |
| Tensile Stress, break, 50 mm/min | 60 | MPa | ISO 527 |
| Tensile Strain, yield, 50 mm/min | 7 | % | ISO 527 |
| Tensile Strain, break, 50 mm/min | 85 | % | ISO 527 |
| Tensile Modulus, 1 mm/min | 2150 | MPa | ISO 527 |
| Flexural Stress, yield, 2 mm/min | 66 | MPa | ISO 178 |
| Flexural Modulus, 2 mm/min | 2120 | MPa | ISO 178 |
| IMPACT [1] | | | |
| Izod Impact, unnotched, 23°C | NB3200 | J/m | ASTM D4812 |
| Izod Impact, notched, 23°C | 600 | J/m | ASTM D256 |
| Izod Impact, notched, -30°C | 120 | J/m | ASTM D256 |
| Tensile Impact Strength, Type S | 577 | kJ/m² | ASTM D1822 |
| Falling Dart Impact (D 3029), 23°C | 149 | J | ASTM D3029 |
| Instrumented Dart Impact Total Energy, 23°C | 120 | J | ASTM D3763 |
| Izod Impact, unnotched 80*10*3 +23°C | NB | kJ/m² | ISO 180/1U |
| Izod Impact, unnotched 80*10*3 -30°C | NB | kJ/m² | ISO 180/1U |
| Izod Impact, notched 80*10*3 +23°C | 53 | kJ/m² | ISO 180/1A |
| Izod Impact, notched 80*10*3 -30°C | 11 | kJ/m² | ISO 180/1A |
| Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm | 57 | kJ/m² | ISO 179/1eA |
| Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm | 13 | kJ/m² | ISO 179/1eA |
| Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm | NB | kJ/m² | ISO 179/1eU |
| Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm | NB | kJ/m² | ISO 179/1eU |
| THERMAL [1] | | | |
| Vicat Softening Temp, Rate B/50 | 160 | °C | ASTM D1525 |
| HDT, 1.82 MPa, 3.2mm, unannealed | 142 | °C | ASTM D648 |

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| CTE, -40°C to 40°C, flow | 6.E-05 | 1/°C | ASTM E831 |
| CTE, -40°C to 40°C, xflow | 8.E-05 | 1/°C | ASTM E831 |
| Specific Heat | 1.25 | J/g-°C | ASTM C351 |
| Thermal Conductivity | 0.21 | W/m-°C | ASTM C177 |
| CTE, -40°C to 40°C, flow | 6.E-05 | 1/°C | ISO 11359-2 |
| CTE, -40°C to 40°C, xflow | 6.E-05 | 1/°C | ISO 11359-2 |
| Vicat Softening Temp, Rate B/50 | 154 | °C | ISO 306 |
| Vicat Softening Temp, Rate B/120 | 155 | °C | ISO 306 |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm | 125 | °C | ISO 75/Af |
| PHYSICAL [1] | | | |
| Specific Gravity | 1.2 | - | ASTM D792 |
| Specific Volume | 0.83 | cm³/g | ASTM D792 |
| Density | 1.19 | g/cm³ | ASTM D792 |
| Water Absorption, (23°C/24hrs) | 0.16 | % | ASTM D570 |
| Mold Shrinkage, flow, 3.2 mm [2] | 0.6 – 0.8 | % | SABIC method |
| Melt Flow Rate, 300°C/1.2 kgf | 6 | g/10 min | ASTM D1238 |
| Melt Flow Rate, 330°C/2.16 kgf | 30 | g/10 min | ASTM D1238 |
| Density | 1.2 | g/cm³ | ISO 1183 |
| Water Absorption, (23°C/saturated) | 0.16 | % | ISO 62-1 |
| Moisture Absorption (23°C / 50% RH) | 0.35 | % | ISO 62 |
| Melt Volume Rate, MVR at 330°C/2.16kg | 29 | cm³/10 min | ISO 1133 |
| OPTICAL [1] | | | |
| Light Transmission, 2.54 mm | 85 | % | ASTM D1003 |
| Haze, 2.54 mm | 1 | % | ASTM D1003 |
| Refractive Index | 1.6 | - | ASTM D542 |
| ELECTRICAL [1] | | | |
| Volume Resistivity | >2.6E+17 | Ω.cm | ASTM D257 |
| Dielectric Strength, in air, 3.2 mm | 20.2 | kV/mm | ASTM D149 |
| Relative Permittivity, 50/60 Hz | 3.15 | - | ASTM D150 |
| Relative Permittivity, 1 MHz | 3 | - | ASTM D150 |
| Dissipation Factor, 50/60 Hz | 0.0012 | - | ASTM D150 |
| Dissipation Factor, 100 Hz | 0.024 | - | ASTM D150 |
| INJECTION MOLDING [3] | | | |
| 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 | |

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| **Shot to Cylinder Size** | 40 – 60 | % | |
| **Vent Depth** | 0.025 – 0.076 | mm | |

(1) The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.

(2) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.,The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.

(3) Injection Molding parameters are only mentioned as general guidelines. These may not apply or may need adjustment in specific situations such as low shot sizes, large part molding, thin wall molding and gas-assist molding.

## MORE INFORMATION

For curve data and CAE cards, please visit and register at https://materialfinder.sabic-specialties.com

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