

# LEXANT™ COPOLYMER HPH4504

REGION AMERICAS

## 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
<b>MECHANICAL <sup>(1)</sup></b>			
Tensile Stress, yld, Type I, 50 mm/min	65	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	71	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	7	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	122	%	ASTM D638
Tensile Modulus, 5 mm/min	2090	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	2020	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	65	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	7	%	ISO 527
Tensile Strain, break, 50 mm/min	>50	%	ISO 527
Tensile Modulus, 1 mm/min	2260	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	66	MPa	ISO 178
Flexural Modulus, 2 mm/min	2120	MPa	ISO 178
<b>IMPACT <sup>(1)</sup></b>			
Izod Impact, unnotched, 23°C	3204	J/m	ASTM D4812
Izod Impact, notched, 23°C	640	J/m	ASTM D256
Izod Impact, notched, -30°C	144	J/m	ASTM D256
Tensile Impact Strength, Type S	577	kJ/m <sup>2</sup>	ASTM D1822
Falling Dart Impact (D 3029), 23°C	149	J	ASTM D3029
Instrumented Dart Impact Total Energy, 23°C	73	J	ASTM D3763
Izod Impact, notched 80*10*4 +23°C	13	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	11	kJ/m <sup>2</sup>	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	15	kJ/m <sup>2</sup>	ISO 179/1eA
<b>THERMAL <sup>(1)</sup></b>			
Vicat Softening Temp, Rate B/50	160	°C	ASTM D1525
HDT, 1.82 MPa, 3.2mm, unannealed	143	°C	ASTM D648
CTE, -40°C to 40°C, xflow	6.E-05	1/°C	ASTM E831
CTE, -40°C to 95°C, flow	9.18E-05	1/°C	ASTM E831
Specific Heat	1.26	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

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
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	132	°C	ISO 75 /Af
PHYSICAL <sup>(1)</sup>			
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 <sup>(2)</sup>	0.7 – 0.8	%	SABIC method
Melt Flow Rate, 300°C/1.2 kgf	3	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 300°C/1.2 kg	3	cm³/10 min	ISO 1133
Melt Volume Rate, MVR at 330°C/2.16kg	12	cm³/10 min	ISO 1133
OPTICAL <sup>(1)</sup>			
Light Transmission, 2.54 mm	85	%	ASTM D1003
Haze, 2.54 mm	1	%	ASTM D1003
Refractive Index	1.6	-	ASTM D542
ELECTRICAL <sup>(1)</sup>			
Volume Resistivity	>2.6E+17	Ω.cm	ASTM D257
Dielectric Strength, in air, 3.2 mm	20.3	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 <sup>(3)</sup>			
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	

- (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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