

# LEXAN<sup>TM</sup> COPOLYMER 4704

REGION ASIA

## DESCRIPTION

High heat resistant polycarbonate copolymer, provides DTUL of 300F 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 HPH4704.

## TYPICAL PROPERTY VALUES

Revision 20190718

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	77	MPa	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	78	%	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	97	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2330	MPa	ASTM D 790
Hardness, Rockwell M	92	-	ASTM D 785
Hardness, Rockwell R	127	-	ASTM D 785
<b>IMPACT</b>			
Izod Impact, unnotched, 23°C	3204	J/m	ASTM D 4812
Izod Impact, notched, 23°C	373	J/m	ASTM D 256
Tensile Impact Strength, 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	148	°C	ASTM D 648
CTE, -40°C to 95°C, flow	8.1E-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 <sup>(1)</sup>	130	°C	UL 746B
Relative Temp Index, Mech w/impact <sup>(1)</sup>	130	°C	UL 746B
Relative Temp Index, Mech w/o impact <sup>(1)</sup>	130	°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	0.19	%	ASTM D 570
Mold Shrinkage, flow, 3.2 mm	0.8 – 1	%	SABIC method
Melt Flow Rate, 300°C/1.2 kgf	2	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	>2.5E+17	Ohm-cm	ASTM D 257

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Dielectric Strength, in air, 3.2 mm	20	kV/mm	ASTM D 149
Relative Permittivity, 50/60 Hz	3.27	-	ASTM D 150
Relative Permittivity, 1 MHz	3.1	-	ASTM D 150
Dissipation Factor, 50/60 Hz	0.0016	-	ASTM D 150
Dissipation Factor, 100 Hz	0.026	-	ASTM D 150
Comparative Tracking Index (UL) {PLC}	3	PLC Code	UL 746A
Hot-Wire Ignition (HWI), PLC 1	≥6	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 2	≥3	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 3	≥1.5	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 3	≥3	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 4	≥1.5	mm	UL 746A
High Voltage Arc Track Rate {PLC}	3	PLC Code	UL 746A
Arc Resistance, Tungsten {PLC}	6	PLC Code	ASTM D 495
<b>FLAME CHARACTERISTICS <sup>(1)</sup></b>			
UL Yellow Card Link	<a href="#">E207780-101218623</a>	-	-
UL Recognized, 94HB Flame Class Rating	≥1.5	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	350 – 370	°C	
Nozzle Temperature	345 – 365	°C	
Front - Zone 3 Temperature	350 – 370	°C	
Middle - Zone 2 Temperature	340 – 360	°C	
Rear - Zone 1 Temperature	325 – 350	°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) UL Ratings shown on the technical datasheet might not cover the full range of thicknesses and colors. For details, please see the UL Yellow Card.

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