

LEXAN™ HPH4704 resin

Polyphthalate Carbonate

SABIC Innovative Plastics Asia Pacific

Message:

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.

General Information			
Features	Biocompatible		
	E-beam Sterilizable		
	Ethylene Oxide Sterilizable		
	High Heat Resistance		
	Radiation Sterilizable		
	Steam Sterilizable		
Uses	Medical Devices		
	Pharmaceuticals		
Agency Ratings	ISO 10993		
	USP Class VI		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.20	g/cm ³	ASTM D792, ISO 1183
--	1.19	g/cm ³	ASTM D792
Specific Volume	0.830	cm ³ /g	ASTM D792
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	2.0	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	2.00	cm ³ /10min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	0.80 to 1.0	%	Internal Method
Water Absorption			
24 hr	0.19	%	ASTM D570
Saturation, 23°C	0.16	%	ISO 62
Equilibrium, 23°C, 50% RH	0.35	%	ISO 62
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness			ASTM D785
M-Scale	92		
R-Scale	127		
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			

-- ¹	2100	MPa	ASTM D638
--	2180	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	65.5	MPa	ASTM D638
Yield	68.0	MPa	ISO 527-2/50
Break ³	77.9	MPa	ASTM D638
Break	68.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁴	8.0	%	ASTM D638
Yield	7.0	%	ISO 527-2/50
Break ⁵	78	%	ASTM D638
Break	100	%	ISO 527-2/50
Flexural Modulus			
50.0 mm Span ⁶	2330	MPa	ASTM D790
-- ⁷	2070	MPa	ISO 178
Flexural Stress			
--	66.0	MPa	ISO 178
Yield, 50.0 mm Span ⁸	97.2	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁹ (23°C)	9.0	kJ/m ²	ISO 179/1eA
Notched Izod Impact			
-30°C	84	J/m	ASTM D256
23°C	370	J/m	ASTM D256
-30°C ¹⁰	6.0	kJ/m ²	ISO 180/1A
23°C ¹¹	7.0	kJ/m ²	ISO 180/1A
Unnotched Izod Impact (23°C)	3200	J/m	ASTM D4812
Instrumented Dart Impact (23°C, Total Energy)	74.0	J	ASTM D3763
Gardner Impact (23°C)	149	J	ASTM D3029
Tensile Impact Strength ¹²	578	kJ/m ²	ASTM D1822
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
1.8 MPa, Unannealed, 3.20 mm	149	°C	ASTM D648
1.8 MPa, Unannealed, 64.0 mm Span ¹³	150	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	173	°C	ASTM D1525 ¹⁴
--	165	°C	ISO 306/B50
--	167	°C	ISO 306/B120
CLTE			ASTM E831, ISO 11359-2
Flow : -40 to 40°C	6.0E-5	cm/cm/°C	
Transverse : -40 to 40°C	6.0E-5	cm/cm/°C	
Specific Heat	1260	J/kg/°C	ASTM C351

Thermal Conductivity	0.21	W/m/K	ASTM C177
RTI Elec	130	°C	UL 746
RTI Imp	130	°C	UL 746
RTI Str	130	°C	UL 746
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity	> 2.5E+17	ohms·cm	ASTM D257
Dielectric Strength (3.20 mm, in Air)	20	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
50 Hz	3.27		
60 Hz	3.27		
1 MHz	3.10		
Dissipation Factor			ASTM D150
50 Hz	1.6E-3		
60 Hz	1.6E-3		
100 Hz	0.026		
Arc Resistance ¹⁵	PLC 6		ASTM D495
Comparative Tracking Index (CTI)	PLC 3		UL 746
High Amp Arc Ignition (HAI)	PLC 3		UL 746
High Voltage Arc Tracking Rate (HVTR)	PLC 3		UL 746
Hot-wire Ignition (HWI)	PLC 2		UL 746
Flammability	Nominal Value	Unit	Test Method
Flame Rating (1.47 mm)	HB		UL 94
Optical	Nominal Value	Unit	Test Method
Refractive Index	1.600		ASTM D542
Transmittance (2540 µm)	85.0	%	ASTM D1003
Haze (2540 µm)	1.0	%	ASTM D1003
Injection	Nominal Value	Unit	
Drying Temperature	121	°C	
Drying Time	3.0 to 4.0	hr	
Drying Time, Maximum	48	hr	
Suggested Max Moisture	0.020	%	
Suggested Shot Size	40 to 60	%	
Rear Temperature	327 to 349	°C	
Middle Temperature	338 to 360	°C	
Front Temperature	349 to 371	°C	
Nozzle Temperature	343 to 366	°C	
Processing (Melt) Temp	349 to 371	°C	
Mold Temperature	82.2 to 116	°C	
Back Pressure	0.345 to 0.689	MPa	
Screw Speed	40 to 70	rpm	
Vent Depth	0.025 to 0.076	mm	
NOTE			

1.	5.0 mm/min
2.	Type I, 50 mm/min
3.	Type I, 50 mm/min
4.	Type I, 50 mm/min
5.	Type I, 50 mm/min
6.	1.3 mm/min
7.	2.0 mm/min
8.	1.3 mm/min
9.	80*10*4 sp=62mm
10.	80*10*4
11.	80*10*4
12.	Type S
13.	80*10*4 mm
14.	Rate B (120°C/h), Loading 2 (50 N)
15.	Tungsten Electrode

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