

LEXAN™ HPH4404 resin

Polycarbonate + PPC

SABIC Innovative Plastics

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			
UL YellowCard	E121562-100967595		
Features	Biocompatible		
	E-beam Sterilizable		
	Ethylene Oxide Sterilizable		
	High Heat Resistance		
	Radiation Sterilizable		
	Steam Sterilizable		
Uses	Medical/Healthcare Applications		
	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)			ASTM D1238
300°C/1.2 kg	6.0	g/10 min	
330°C/2.16 kg	30	g/10 min	
Melt Volume-Flow Rate (MVR) (330°C/2.16 kg)	29.0	cm ³ /10min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	0.60 to 0.80	%	Internal Method
Water Absorption			
24 hr	0.16	%	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	85		

R-Scale	122		
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	2100	MPa	ASTM D638
--	2150	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	65.0	MPa	ASTM D638
Yield	65.0	MPa	ISO 527-2/50
Break ³	70.0	MPa	ASTM D638
Break	60.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁴	7.0	%	ASTM D638
Yield	7.0	%	ISO 527-2/50
Break ⁵	> 110	%	ASTM D638
Break	85	%	ISO 527-2/50
Flexural Modulus			
50.0 mm Span ⁶	2200	MPa	ASTM D790
-- ⁷	2120	MPa	ISO 178
Flexural Stress			
--	66.0	MPa	ISO 178
Yield, 50.0 mm Span ⁸	95.0	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁹			ISO 179/1eA
-30°C	13	kJ/m ²	
23°C	57	kJ/m ²	
Charpy Unnotched Impact Strength ¹⁰			ISO 179/1eU
-30°C	No Break		
23°C	No Break		
Notched Izod Impact			
23°C	600	J/m	ASTM D256
-30°C ¹¹	11	kJ/m ²	ISO 180/1A
23°C ¹²	53	kJ/m ²	ISO 180/1A
Unnotched Izod Impact			
23°C	No Break		ASTM D4812, ISO 180/1U
-30°C ¹³	No Break		ISO 180/1U
Instrumented Dart Impact (23°C, Total Energy)	120	J	ASTM D3763
Gardner Impact (23°C)	149	J	ASTM D3029
Tensile Impact Strength ¹⁴	577	kJ/m ²	ASTM D1822
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
1.8 MPa, Unannealed, 3.20 mm	142	°C	ASTM D648

1.8 MPa, Unannealed, 64.0 mm Span ¹⁵	125	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	160	°C	ASTM D1525 ¹⁶
--	154	°C	ISO 306/B50
--	155	°C	ISO 306/B120
CLTE			
Flow : -40 to 40°C	6.0E-5	cm/cm/°C	ASTM E831, ISO 11359-2
Transverse : -40 to 40°C	8.0E-5	cm/cm/°C	ASTM E831
Transverse : -40 to 40°C	6.0E-5	cm/cm/°C	ISO 11359-2
Specific Heat	1250	J/kg/°C	ASTM C351
Thermal Conductivity	0.21	W/m/K	ASTM C177
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity	> 2.6E+17	ohms·cm	ASTM D257
Dielectric Strength (3.20 mm, in Air)	20	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
50 Hz	3.15		
60 Hz	3.15		
1 MHz	3.00		
Dissipation Factor			ASTM D150
50 Hz	1.2E-3		
60 Hz	1.2E-3		
100 Hz	0.024		
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	271 to 293	°C	
Middle Temperature	282 to 304	°C	
Front Temperature	293 to 316	°C	
Nozzle Temperature	288 to 310	°C	
Processing (Melt) Temp	293 to 316	°C	
Mold Temperature	71.1 to 93.3	°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*3 sp=62mm
10.	80*10*3 sp=62mm
11.	80*10*3
12.	80*10*3
13.	80*10*3
14.	Type S
15.	80*10*4 mm
16.	Rate B (120°C/h), Loading 2 (50 N)

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