

LEXAN™ HPH4504HEU resin

Polyphthalate Carbonate
SABIC Innovative Plastics Europe

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

General Information			
Features	Autoclavable		
	Autoclave Sterilizable		
	Biocompatible		
	E-beam Sterilizable		
	Ethylene Oxide Sterilizable		
	High Heat Resistance		
	Radiation Sterilizable		
	Steam Sterilizable		
Uses	Medical/Healthcare Applications		
	Pharmaceuticals		
Agency Ratings	USP Class VI		
RoHS Compliance	RoHS Compliant		
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)	3.0	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR)			ISO 1133
300°C/1.2 kg	3.00	cm ³ /10min	
330°C/2.16 kg	12.0	cm ³ /10min	
Molding Shrinkage - Flow (3.20 mm)	0.70 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	2090	MPa	ASTM D638
--	2260	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	65.5	MPa	ASTM D638
Yield	65.0	MPa	ISO 527-2/5, ISO 527-2/50
Break ³	71.7	MPa	ASTM D638
Break	65.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁴	7.0	%	ASTM D638
Yield	7.0	%	ISO 527-2/50
Break ⁵	120	%	ASTM D638
Break	7.0	%	ISO 527-2/50
Flexural Modulus			
50.0 mm Span ⁶	2030	MPa	ASTM D790
-- ⁷	2130	MPa	ISO 178
Flexural Stress			
--	66.0	MPa	ISO 178
Yield, 50.0 mm Span ⁸	95.1	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁹ (23°C)	15	kJ/m ²	ISO 179/1eA
Notched Izod Impact			
-30°C	140	J/m	ASTM D256
23°C	640	J/m	ASTM D256
-30°C ¹⁰	11	kJ/m ²	ISO 180/1A
23°C ¹¹	13	kJ/m ²	ISO 180/1A
Unnotched Izod Impact (23°C)	3200	J/m	ASTM D4812
Instrumented Dart Impact (23°C, Total Energy)	73.0	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	143	°C	ASTM D648
1.8 MPa, Unannealed, 64.0 mm Span ¹³	132	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	160	°C	ASTM D1525 ¹⁴
--	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
Flow : -40 to 95°C	9.2E-5	cm/cm/°C	ASTM E831
Transverse : -40 to 40°C	6.0E-5	cm/cm/°C	ASTM E831, ISO 11359-2
Specific Heat	1260	J/kg/°C	ASTM C351
Thermal Conductivity	0.21	W/m/K	ASTM C177
RTI Elec	125	°C	UL 746
RTI Imp	125	°C	UL 746
RTI Str	125	°C	UL 746
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		
Comparative Tracking Index (CTI)	PLC 3		UL 746
High Amp Arc Ignition (HAI)	PLC 4		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)	V-2		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	316 to 338	°C	
Middle Temperature	327 to 349	°C	
Front Temperature	338 to 360	°C	
Nozzle Temperature	332 to 354	°C	
Processing (Melt) Temp	338 to 360	°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)	

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