

LEXAN™ HPB3144 resin

Polycarbonate

SABIC Innovative Plastics

Message:

Standard flow, transparent, high purity polycarbonate copolymer resin with reduced oxygen permeability and water vapor transmission rate. For medical devices and pharmaceutical applications. Healthcare management of change, biocompatible (ISO 10993 or USP Class VI), food contact compliant.

General Information			
Features	Biocompatible		
	Copolymer		
	Food Contact Acceptable		
	High Purity		
	Low Moisture Vapor Transmission		
Uses	Medical Devices		
	Pharmaceuticals		
Agency Ratings	ISO 10993		
	USP Class VI		
Appearance	Clear/Transparent		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.20	g/cm ³	ASTM D792
--	1.17	g/cm ³	ISO 1183, ASTM D792
Specific Volume	0.850	cm ³ /g	ASTM D792
Erichson Scratch Depth - 6N	14.0	µm	Internal Method
Pencil Hardness ¹	H		ASTM D3363
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	15	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	13.0	cm ³ /10min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	0.50 to 0.80	%	Internal Method
Water Absorption			
24 hr	0.080	%	ASTM D570
24 hr, 50% RH	0.040	%	ASTM D570
Saturation, 23°C	0.27	%	ISO 62
Equilibrium, 23°C	0.28	%	ASTM D570
Equilibrium, 50% RH	0.13	%	ASTM D570
Equilibrium, 23°C, 50% RH	0.13	%	ISO 62
Hardness	Nominal Value	Unit	Test Method

Rockwell Hardness		ASTM D785	
L-Scale	108		
M-Scale	93		
Ball Indentation Hardness (H 358/30)	128	MPa	ISO 2039-1
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ²	2900	MPa	ASTM D638
--	2450	MPa	ISO 527-2/1
Tensile Strength			
Yield ³	80.0	MPa	ASTM D638
Yield	80.0	MPa	ISO 527-2/50
Break ⁴	65.0	MPa	ASTM D638
Break	60.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁵	7.0	%	ASTM D638
Yield	7.0	%	ISO 527-2/50
Break ⁶	70	%	ASTM D638
Break	40	%	ISO 527-2/50
Flexural Modulus			
50.0 mm Span ⁷	2600	MPa	ASTM D790
-- ⁸	2450	MPa	ISO 178
Flexural Stress			
--	108	MPa	ISO 178
Yield, 50.0 mm Span ⁹	120	MPa	ASTM D790
Taber Abrasion Resistance			
1000 Cycles, 1000 g, CS-17 Wheel	10.0	mg	ASTM D1044
1000 Cycles, 1000 g, CS-17 Wheel	10.0	mg	Internal Method
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ¹⁰			ISO 179/1eA
-30°C	3.0	kJ/m ²	
23°C	3.0	kJ/m ²	
Charpy Unnotched Impact Strength ¹¹			ISO 179/1eU
-30°C	47	kJ/m ²	
23°C	No Break		
Notched Izod Impact			
-30°C	30	J/m	ASTM D256
23°C	30	J/m	ASTM D256
-30°C ¹²	4.0	kJ/m ²	ISO 180/1A
23°C ¹³	5.0	kJ/m ²	ISO 180/1A
Unnotched Izod Impact			
23°C	No Break		ASTM D4812, ISO 180/1U
-30°C ¹⁴	45	kJ/m ²	ISO 180/1U

Instrumented Dart Impact (23°C, Total Energy)	30.0	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed, 3.20 mm	133	°C	ASTM D648
0.45 MPa, Unannealed, 100 mm Span ¹⁵	131	°C	ISO 75-2/Be
1.8 MPa, Unannealed, 3.20 mm	119	°C	ASTM D648
1.8 MPa, Unannealed, 100 mm Span ¹⁶	118	°C	ISO 75-2/Ae
Vicat Softening Temperature			
--	139	°C	ASTM D1525 ¹⁷
--	138	°C	ISO 306/B50
--	140	°C	ISO 306/B120
Ball Pressure Test			IEC 60695-10-2
125°C	Pass		
140°C ¹⁸	Pass		
CLTE			
Flow : -40 to 95°C	7.0E-5	cm/cm/°C	ASTM E831
Flow : 23 to 80°C	7.0E-5	cm/cm/°C	ISO 11359-2
Transverse : -40 to 95°C	7.0E-5	cm/cm/°C	ASTM E831
Transverse : 23 to 80°C	7.0E-5	cm/cm/°C	ISO 11359-2
Specific Heat	1400	J/kg/°C	ASTM C351
Thermal Conductivity	0.20	W/m/K	ASTM C177, ISO 8302
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity	> 1.0E+17	ohms · cm	ASTM D257
Dielectric Constant			ASTM D150
50 Hz	2.90		
60 Hz	2.90		
1 MHz	2.80		
Comparative Tracking Index (CTI)	PLC 2		UL 746
Optical	Nominal Value	Unit	Test Method
Refractive Index	1.584		ASTM D542, ISO 489
Transmittance (2540 µm)	88.0	%	ASTM D1003
Haze (2540 µm)	< 0.80	%	ASTM D1003
Injection	Nominal Value	Unit	
Drying Temperature	120	°C	
Drying Time	3.0 to 4.0	hr	
Suggested Max Moisture	0.020	%	
Hopper Temperature	60.0 to 80.0	°C	
Rear Temperature	260 to 280	°C	
Middle Temperature	280 to 305	°C	
Front Temperature	295 to 315	°C	
Nozzle Temperature	290 to 310	°C	

Processing (Melt) Temp	295 to 315	°C
Mold Temperature	70.0 to 95.0	°C
NOTE		
1.	1 kgf	
2.	5.0 mm/min	
3.	Type I, 50 mm/min	
4.	Type I, 50 mm/min	
5.	Type I, 50 mm/min	
6.	Type I, 50 mm/min	
7.	1.3 mm/min	
8.	2.0 mm/min	
9.	1.3 mm/min	
10.	80*10*3 sp=62mm	
11.	80*10*3 sp=62mm	
12.	80*10*3	
13.	80*10*3	
14.	80*10*3	
15.	120*10*4 mm	
16.	120*10*4 mm	
17.	Rate B (120°C/h), Loading 2 (50 N)	
18.	Approximate maximum	

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