

LEXAN™ HP1 resin

Polycarbonate
SABIC Innovative Plastics

Message:
High flow polycarbonate. For medical devices and pharmaceutical applications. Healthcare management of change, biocompatible (ISO10993 or USP Class VI). EtO sterilizable. Contains mold release.

General Information			
UL YellowCard	E121562-220945	E121562-220948	
Additive	Mold Release		
Features	Biocompatible		
	Ethylene Oxide Sterilizable		
	High Flow		
Uses	Medical/Healthcare Applications		
	Pharmaceuticals		
Agency Ratings	ISO 10993		
	USP Class VI		
Processing Method	Injection Molding		
Multi-Point Data	Elastic Modulus vs Temperature (ASTM D4065)		
	Flexural DMA (ASTM D4065)		
	Specific Heat vs. Temperature (ASTM D3417)		
	Tensile Creep (ASTM D2990)		
	Tensile Stress vs. Strain (ASTM D638)		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			ASTM D792
--	1.20	g/cm³	
--	1.19	g/cm³	
Specific Volume	0.830	cm³/g	ASTM D792
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	25	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	23.0	cm³/10min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	0.50 to 0.70	%	Internal Method
Water Absorption			ASTM D570
24 hr	0.15	%	
Equilibrium, 23°C	0.35	%	
Equilibrium, 100°C	0.58	%	
Hardness	Nominal Value	Unit	Test Method

Rockwell Hardness		ASTM D785	
M-Scale	70		
R-Scale	118		
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	2370	MPa	ASTM D638
--	2350	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	62.0	MPa	ASTM D638
Yield	63.0	MPa	ISO 527-2/50
Break ³	65.0	MPa	ASTM D638
Break	50.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁴	6.0	%	ASTM D638
Yield	6.0	%	ISO 527-2/50
Break ⁵	120	%	ASTM D638
Break	70	%	ISO 527-2/50
Flexural Modulus			
50.0 mm Span ⁶	2300	MPa	ASTM D790
-- ⁷	2300	MPa	ISO 178
Flexural Stress			
--	90.0	MPa	ISO 178
Yield, 50.0 mm Span ⁸	93.0	MPa	ASTM D790
Taber Abrasion Resistance (1000 Cycles, 1000 g, CS-17 Wheel)	10.0	mg	ASTM D1044
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁹			ISO 179/1eA
-30°C	10	kJ/m ²	
23°C	12	kJ/m ²	
Notched Izod Impact			
Natural, Tints	640	J/m	ASTM D256
23°C	640	J/m	ASTM D256
-30°C ¹⁰	10	kJ/m ²	ISO 180/1A
23°C ¹¹	12	kJ/m ²	ISO 180/1A
Unnotched Izod Impact (23°C)	3200	J/m	ASTM D4812
Instrumented Dart Impact (23°C, Energy at Peak Load)	54.0	J	ASTM D3763
Gardner Impact (23°C)	169	J	ASTM D3029
Tensile Impact Strength ¹²	378	kJ/m ²	ASTM D1822
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed, 6.40 mm	137	°C	ASTM D648
0.45 MPa, Unannealed, 100 mm Span ¹³	133	°C	ISO 75-2/Be

1.8 MPa, Unannealed, 3.20 mm	126	°C	ASTM D648
1.8 MPa, Unannealed, 6.40 mm	126	°C	ASTM D648
1.8 MPa, Unannealed, 100 mm Span ¹⁴	121	°C	ISO 75-2/Ae
Vicat Softening Temperature			
--	139	°C	ISO 306/B50
--	140	°C	ISO 306/B120
Ball Pressure Test (125°C)	Pass		IEC 60695-10-2
CLTE - Flow			
-40 to 95°C	6.8E-5	cm/cm/°C	ASTM E831
23 to 80°C	7.0E-5	cm/cm/°C	ISO 11359-2
Specific Heat	1250	J/kg/°C	ASTM C351
Thermal Conductivity			
--	0.19	W/m/K	ASTM C177
--	0.20	W/m/K	ISO 8302
RTI Elec	130	°C	UL 746
RTI Imp	130	°C	UL 746
RTI Str	130	°C	UL 746
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	> 1.0E+15	ohms	IEC 60093
Volume Resistivity			
--	> 1.0E+17	ohms·cm	ASTM D257
--	> 1.0E+15	ohms·cm	IEC 60093
Dielectric Strength			
3.20 mm, in Air	15	kV/mm	ASTM D149
3.20 mm, in Oil	17	kV/mm	IEC 60243-1
Dielectric Constant			
50 Hz	3.17		ASTM D150
60 Hz	3.17		ASTM D150
1 MHz	2.96		ASTM D150
50 Hz	2.70		IEC 60250
60 Hz	2.70		IEC 60250
1 MHz	2.70		IEC 60250
Dissipation Factor			
50 Hz	9.0E-4		ASTM D150
60 Hz	9.0E-4		ASTM D150
1 MHz	0.010		ASTM D150, IEC 60250
50 Hz	1.0E-3		IEC 60250
60 Hz	1.0E-3		IEC 60250
Comparative Tracking Index (CTI)	PLC 2		UL 746
High Amp Arc Ignition (HAI)	PLC 1		UL 746
High Voltage Arc Tracking Rate (HVTR)	PLC 2		UL 746
Hot-wire Ignition (HWI)	PLC 2		UL 746

Flammability	Nominal Value	Unit	Test Method
Flame Rating (1.09 mm)	V-2		UL 94
Oxygen Index	25	%	ISO 4589-2
Optical	Nominal Value	Unit	Test Method
Refractive Index	1.586		ASTM D542
Transmittance (2540 μm)	88.0	%	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	249 to 271	°C	
Middle Temperature	260 to 282	°C	
Front Temperature	271 to 293	°C	
Nozzle Temperature	266 to 288	°C	
Processing (Melt) Temp	271 to 293	°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.	50 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.	120*10*4 mm		
14.	120*10*4 mm		

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