

LEXAN™ HP1HF resin

Polycarbonate
SABIC Innovative Plastics

Message:
Very high flow, biocompatible polycarbonate for healthcare applications. EtO sterilizable.

General Information			
UL YellowCard	E121562-100305113	E121562-472791	
Features	Biocompatible		
	Ethylene Oxide Sterilizable		
	High Flow		
Uses	Medical/Healthcare Applications		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.18	g/cm³	ASTM D792
--	1.19	g/cm³	ISO 1183
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	39	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	36.0	cm³/10min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	0.50 to 0.70	%	Internal Method
Water Absorption			ISO 62
Saturation, 23°C	0.27	%	
Equilibrium, 23°C, 50% RH	0.090	%	
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	2410	MPa	ASTM D638
--	2300	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	63.0	MPa	ASTM D638
Yield	60.0	MPa	ISO 527-2/50
Break ³	58.0	MPa	ASTM D638
Break	55.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁴	6.0	%	ASTM D638
Yield	5.7	%	ISO 527-2/50
Break ⁵	110	%	ASTM D638
Break	110	%	ISO 527-2/50
Flexural Modulus			

50.0 mm Span ⁶	2410	MPa	ASTM D790
-- ⁷	2300	MPa	ISO 178
Flexural Stress			
--	85.0	MPa	ISO 178
Yield, 50.0 mm Span ⁸	102	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁹			ISO 179/1eA
-30°C	10	kJ/m ²	
23°C	65	kJ/m ²	
Charpy Unnotched Impact Strength			
-30°C ¹⁰	No Break		ISO 179/1eU
-30°C	5.0	kJ/m ²	ISO 179/2U
23°C ¹¹	No Break		ISO 179/1eU
Notched Izod Impact			
-30°C	55	J/m	ASTM D256
23°C	690	J/m	ASTM D256
-30°C ¹²	10	kJ/m ²	ISO 180/1A
23°C ¹³	60	kJ/m ²	ISO 180/1A
Unnotched Izod Impact Strength ¹⁴			ISO 180/1U
-30°C	No Break		
23°C	No Break		
Instrumented Dart Impact (23°C, Total Energy)	66.0	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
1.8 MPa, Unannealed, 3.20 mm	125	°C	ASTM D648
1.8 MPa, Unannealed, 100 mm Span ¹⁵	121	°C	ISO 75-2/Ae
Vicat Softening Temperature			
--	140	°C	ASTM D1525, ISO 306/B120 11 ¹⁶
--	139	°C	ISO 306/B50
Ball Pressure Test (125°C)	Pass		IEC 60695-10-2
CLTE			ASTM E831, ISO 11359-2
Flow : -40 to 40°C	7.2E-5	cm/cm/°C	
Transverse : -40 to 40°C	7.8E-5	cm/cm/°C	
Flammability	Nominal Value		Test Method
Flame Rating (3.00 mm, Testing by SABIC)	V-2		UL 94
Optical	Nominal Value	Unit	Test Method
Transmittance (2540 µm)	88.0	%	ASTM D1003
Haze (2540 µm)	< 1.0	%	ASTM D1003
Injection	Nominal Value	Unit	
Drying Temperature	120	°C	
Drying Time	2.0 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	270 to 290	°C
Front Temperature	280 to 300	°C
Nozzle Temperature	270 to 290	°C
Processing (Melt) Temp	280 to 300	°C
Mold Temperature	80.0 to 100	°C

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*3 sp=62mm
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.	Rate B (120°C/h), Loading 2 (50 N)

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