

LEXAN™ Homopolymer HP1HF - Americas

Polycarbonate
SABIC

PROSPECTOR®

www.ulprospector.com

Technical Data

Product Description

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

General

Material Status	• Commercial: Active		
Literature ¹	• Technical Datasheet		
UL Yellow Card ²	• E121562-100305113 • E121562-472791		
Search for UL Yellow Card	• SABIC		
Availability	• Latin America	• North America	
Features	• Biocompatible	• Ethylene Oxide Sterilizable	• High Flow
Uses	• Electronic Displays • Fluid Handling	• Medical/Healthcare Applications • Pharmaceuticals	
Processing Method	• Injection Molding		
Also Available In	• Asia Pacific	• Europe	

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density / Specific Gravity			
--	1.18	1.18 g/cm ³	ASTM D792
--	1.19 g/cm ³	1.19 g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	39 g/10 min	39 g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	2.20 in ³ /10min	36.0 cm ³ /10min	ISO 1133
Molding Shrinkage - Flow (0.126 in (3.20 mm))	5.0E-3 to 7.0E-3 in/in	0.50 to 0.70 %	Internal Method
Water Absorption			ISO 62
Saturation, 73°F (23°C)	0.27 %	0.27 %	
Equilibrium, 73°F (23°C), 50% RH	0.090 %	0.090 %	

Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus			
-- ⁴	350000 psi	2410 MPa	ASTM D638
--	334000 psi	2300 MPa	ISO 527-2/1
Tensile Strength			
Yield ⁵	9140 psi	63.0 MPa	ASTM D638
Yield	8700 psi	60.0 MPa	ISO 527-2/50
Break ⁵	8410 psi	58.0 MPa	ASTM D638
Break	7980 psi	55.0 MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁵	6.0 %	6.0 %	ASTM D638
Yield	5.7 %	5.7 %	ISO 527-2/50
Break ⁵	110 %	110 %	ASTM D638
Break	110 %	110 %	ISO 527-2/50
Flexural Modulus			
1.97 in (50.0 mm) Span ⁶	350000 psi	2410 MPa	ASTM D790
-- ⁷	334000 psi	2300 MPa	ISO 178
Flexural Stress			
-- ^{7,8}	12300 psi	85.0 MPa	ISO 178
Yield, 1.97 in (50.0 mm) Span ⁶	14800 psi	102 MPa	ASTM D790

Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Notched Impact Strength ⁹			ISO 179/1eA
-22°F (-30°C)	4.8 ft·lb/in ²	10 kJ/m ²	
73°F (23°C)	31 ft·lb/in ²	65 kJ/m ²	



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Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Unnotched Impact Strength			
-22°F (-30°C) ⁹	No Break	No Break	ISO 179/1eU
-22°F (-30°C)	2.4 ft·lb/in ²	5.0 kJ/m ²	ISO 179/2U
73°F (23°C) ⁹	No Break	No Break	ISO 179/1eU
Notched Izod Impact			
-22°F (-30°C)	1.0 ft·lb/in	55 J/m	ASTM D256
73°F (23°C)	13 ft·lb/in	690 J/m	ASTM D256
-22°F (-30°C) ¹⁰	4.8 ft·lb/in ²	10 kJ/m ²	ISO 180/1A
73°F (23°C) ¹⁰	29 ft·lb/in ²	60 kJ/m ²	ISO 180/1A
Unnotched Izod Impact Strength ¹⁰			ISO 180/1U
-22°F (-30°C)	No Break	No Break	
73°F (23°C)	No Break	No Break	
Instrumented Dart Impact			ASTM D3763
73°F (23°C), Total Energy	584 in·lb	66.0 J	
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			
264 psi (1.8 MPa), Unannealed, 0.126 in (3.20 mm)	257 °F	125 °C	ASTM D648
264 psi (1.8 MPa), Unannealed, 0.157 in (4.00 mm), 3.94 in (100 mm) Span ¹¹	250 °F	121 °C	ISO 75-2/Ae
Vicat Softening Temperature			
--	284 °F	140 °C	ASTM D1525 ¹² ISO 306/B120 ¹²
--	282 °F	139 °C	ISO 306/B50
Ball Pressure Test			IEC 60695-10-2
253 to 261°F (123 to 127°C)	Pass	Pass	
CLTE			
Flow : -40 to 104°F (-40 to 40°C)	4.0E-5 in/in/°F	7.2E-5 cm/cm/°C	ASTM E831 ISO 11359-2
Transverse : -40 to 104°F (-40 to 40°C)	4.3E-5 in/in/°F	7.8E-5 cm/cm/°C	ASTM E831
Transverse : -40°F (-40°C)	4.3E-5 in/in/°F	7.8E-5 cm/cm/°C	ISO 11359-2
Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating			UL 94
0.12 in (3.0 mm), Testing by SABIC	V-2	V-2	
Optical	Nominal Value (English)	Nominal Value (SI)	Test Method
Transmittance (100 mil (2540 μm))	88.0 %	88.0 %	ASTM D1003
Haze (100 mil (2540 μm))	< 1.0 %	< 1.0 %	ASTM D1003
Injection	Nominal Value (English)	Nominal Value (SI)	
Drying Temperature	248 °F	120 °C	
Drying Time	2.0 to 4.0 hr	2.0 to 4.0 hr	
Suggested Max Moisture	0.020 %	0.020 %	
Hopper Temperature	140 to 176 °F	60 to 80 °C	
Rear Temperature	500 to 536 °F	260 to 280 °C	
Middle Temperature	518 to 554 °F	270 to 290 °C	
Front Temperature	536 to 572 °F	280 to 300 °C	
Nozzle Temperature	518 to 554 °F	270 to 290 °C	
Processing (Melt) Temp	536 to 572 °F	280 to 300 °C	
Mold Temperature	176 to 212 °F	80 to 100 °C	



Notes

¹ These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.

² A UL Yellow Card contains UL-verified flammability and electrical characteristics. UL Prospector continually works to link Yellow Cards to individual plastic materials in Prospector, however this list may not include all of the appropriate links. It is important that you verify the association between these Yellow Cards and the plastic material found in Prospector. For a complete listing of Yellow Cards, visit the UL Yellow Card Search.

³ Typical properties: these are not to be construed as specifications.

⁴ 2.0 in/min (50 mm/min)

⁵ Type I, 2.0 in/min (50 mm/min)

⁶ 0.051 in/min (1.3 mm/min)

⁷ 0.079 in/min (2.0 mm/min)

⁸ at Yield

⁹ 80*10*3 sp=62mm

¹⁰ 80*10*3 mm

¹¹ 120*10*4 mm

¹² Rate A (50°C/h), Loading 2 (50 N)

