

LEXAN™ Healthcare Resin HP1 - Americas

Polycarbonate
SABIC

PROSPECTOR®

www.ulprospector.com

Technical Data

Product Description

LEXAN HP1 is a high flow polycarbonate (PC) with an MVR (300°C/1.2kg) of 25. This is a biocompatible (ISO10993 or USP Class VI) grade for medical devices and pharmaceutical applications. It is EtO and steam sterilizable, contains mold release and adheres to our healthcare management of change policy.

General

Material Status	• Commercial: Active
UL Yellow Card ¹	• E121562-220948 • E121562-220945
Search for UL Yellow Card	• SABIC
Availability	• Latin America • North America
Uses	<ul style="list-style-type: none"> • Additive Manufacturing (3D Printing) • Electrical Parts • Electrical/Electronic Applications • Electronic Displays • Fluid Handling • Lighting Applications • Medical Devices • Medical/Healthcare Applications • Pharmaceuticals
Multi-Point Data	<ul style="list-style-type: none"> • 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)
Also Available In	• Asia Pacific • Europe

Physical

	Nominal Value Unit	Test Method
Density / Specific Gravity	1.19 1.20 g/cm ³	ASTM D792
Specific Volume	0.830 cm ³ /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 cm ³ /10min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	0.50 to 0.70 %	Internal Method
Water Absorption		ASTM D570
24 hr, 23°C	0.15 %	
Saturation, 23°C	0.35 %	
Equilibrium, 100°C	0.58 %	

Mechanical

	Nominal Value Unit	Test Method
Tensile Modulus		
-- ³	2370 MPa	ASTM D638
--	2350 MPa	ISO 527-1/1
Tensile Strength		
Yield ⁴	62.0 MPa	ASTM D638
Yield	63.0 MPa	ISO 527-2/50
Break ⁴	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 ⁴	120 %	ASTM D638
Break	70 %	ISO 527-2/50
Flexural Modulus		
50.0 mm Span ⁵	2300 MPa	ASTM D790
-- ⁶	2300 MPa	ISO 178
Flexural Stress		
-- ^{6,7}	90.0 MPa	ISO 178
Yield, 50.0 mm Span ⁵	93.0 MPa	ASTM D790



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Mechanical	Nominal Value Unit	Test Method
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 ⁸ -30°C	10 kJ/m ²	ISO 179/1eA
23°C	12 kJ/m ²	
Notched Izod Impact -- ⁹	640 J/m	ASTM D256
23°C	640 J/m	ASTM D256
-30°C ¹⁰	10 kJ/m ²	ISO 180/1A
23°C ¹⁰	12 kJ/m ²	ISO 180/1A
Unnotched Izod Impact 23°C	3200 J/m	ASTM D4812
-30°C ¹⁰	No Break	ISO 180/1U
23°C ¹⁰	No Break	ISO 180/1U
Instrumented Dart Impact 23°C, Energy at Peak	54.0 J	ASTM D3763
Gardner Impact (23°C)	169 J	ASTM D3029
Tensile Impact Strength ¹¹	378 kJ/m ²	ASTM D1822
Hardness	Nominal Value Unit	Test Method
Rockwell Hardness M-Scale	70	ASTM D785
R-Scale	118	
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, 4.00 mm, 100 mm Span ¹²	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, 4.00 mm, 100 mm Span ¹²	121 °C	ISO 75-2/Ae
Vicat Softening Temperature --	140 °C	ISO 306/B120
--	139 °C	ISO 306/B50
Ball Pressure Test (123 to 127°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 746B
RTI Imp	130 °C	UL 746B
RTI Str	130 °C	UL 746B
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



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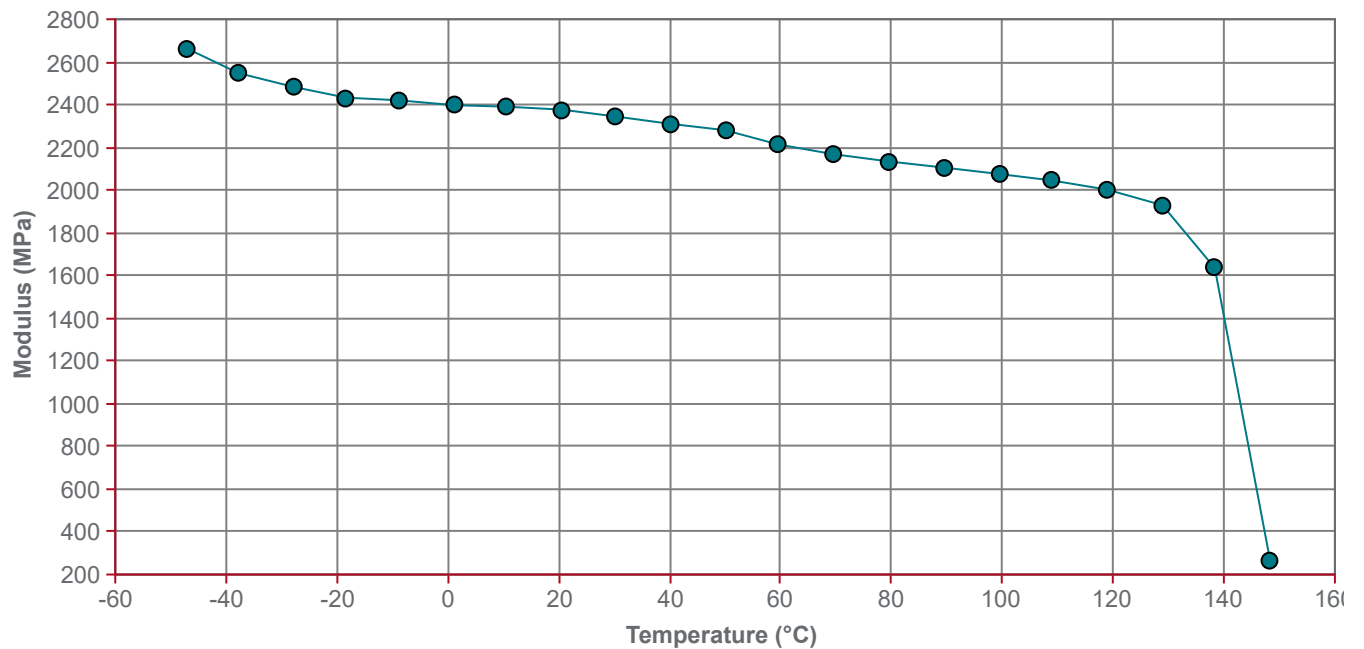
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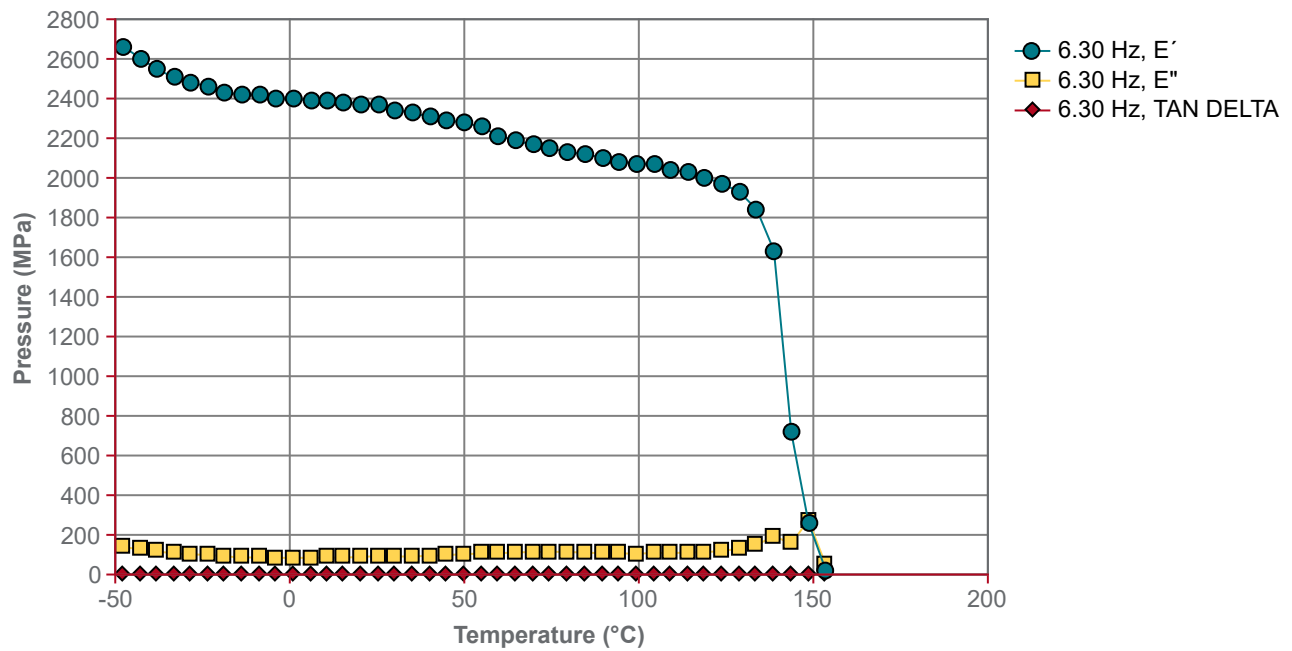
Electrical	Nominal Value Unit	Test Method
Dielectric Constant		
60 Hz	3.17	ASTM D150
50 kHz	3.17	ASTM D150
1 MHz	2.96	ASTM D150
50 Hz	2.70	IEC 60250
60 Hz	2.70	IEC 60250
1 MHz	2.70	IEC 60250
Dissipation Factor		
50 Hz	9.0E-4	ASTM D150
60 Hz	9.0E-4	ASTM D150
1 MHz	0.010	ASTM D150 IEC 60250
50 Hz	1.0E-3	IEC 60250
60 Hz	1.0E-3	IEC 60250
Comparative Tracking Index (CTI)	PLC 2	UL 746A
High Amp Arc Ignition (HAI) ¹³	PLC 1	UL 746A
High Voltage Arc Resistance to Ignition (HVAR)	PLC 2	UL 746A
Hot-wire Ignition (HWI)	PLC 2	UL 746A
Flammability	Nominal Value Unit	Test Method
Flame Rating (1.1 mm)	V-2	UL 94
Oxygen Index	25 %	ISO 4589-2
Optical	Nominal Value Unit	Test Method
Refractive Index	1.586	ASTM D542
Light Transmittance (2540 μm)	88.0 %	ASTM D1003
Haze (2540 μm)	1.00 %	ASTM D1003
Injection	Nominal Value Unit	
Drying Temperature	120 °C	
Drying Time	3.0 to 4.0 hr	
Suggested Max Moisture	0.020 %	
Suggested Shot Size	40 to 60 %	
Rear Temperature	250 to 270 °C	
Middle Temperature	260 to 280 °C	
Front Temperature	270 to 295 °C	
Nozzle Temperature	265 to 290 °C	
Processing (Melt) Temp	270 to 295 °C	
Mold Temperature	70 to 95 °C	
Back Pressure	0.300 to 0.700 MPa	
Screw Speed	40 to 70 rpm	
Vent Depth	0.025 to 0.076 mm	
Injection Notes		
• Drying Time (Cumulative): 48 hr		



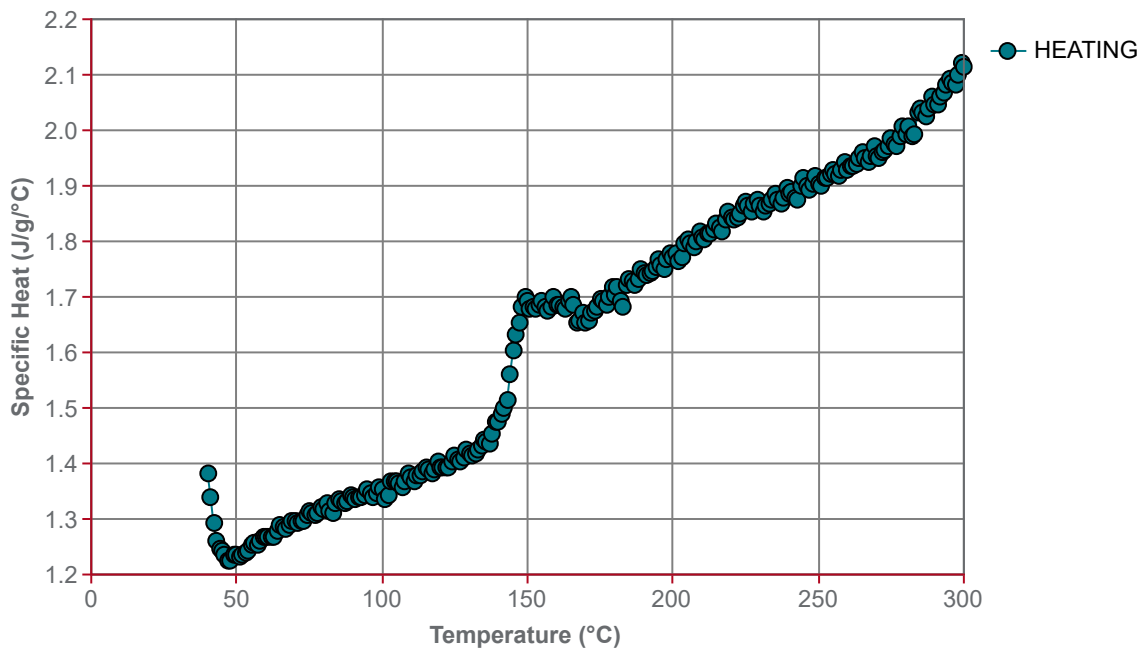
Elastic Modulus vs Temperature (ASTM D4065)



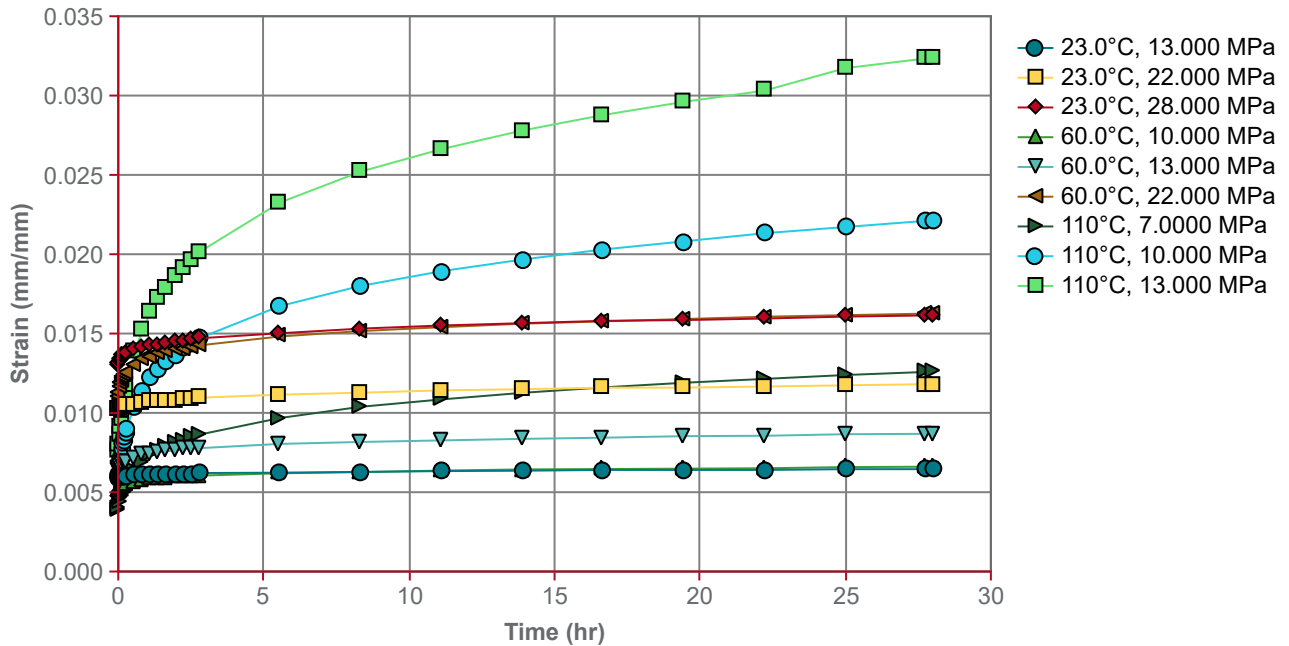
Flexural DMA (ASTM D4065)



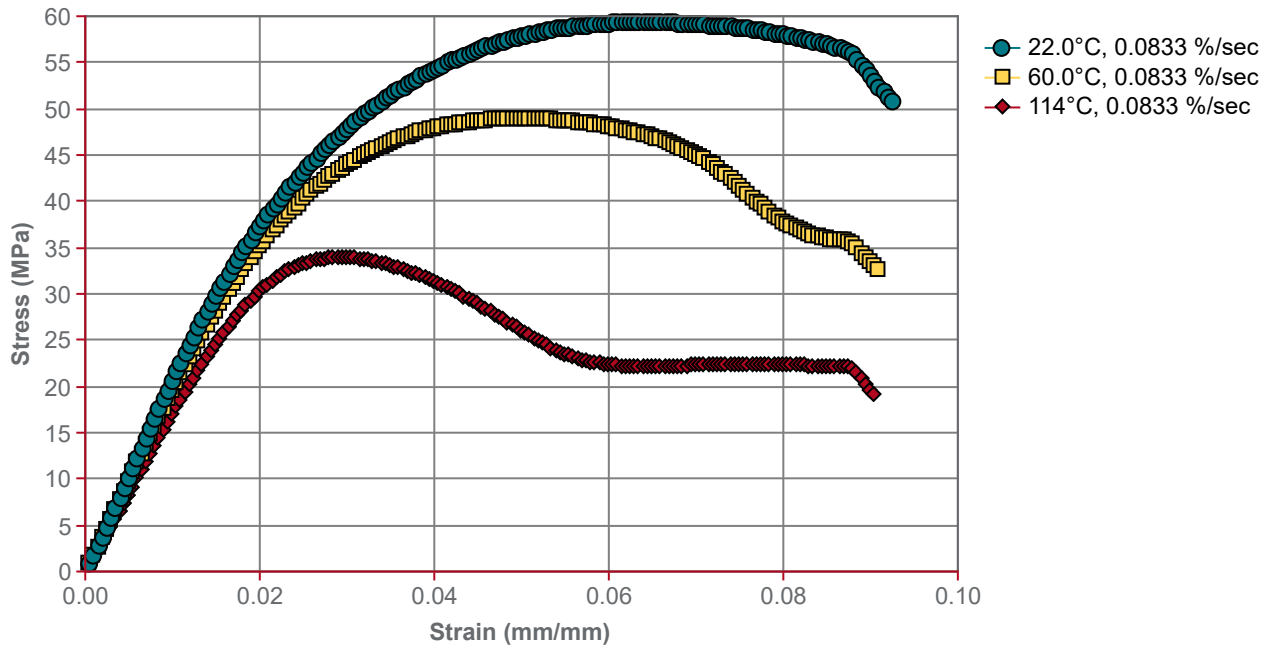
Specific Heat vs. Temperature (ASTM D3417)



Tensile Creep (ASTM D2990)



Tensile Stress vs. Strain (ASTM D638)



Notes

¹ 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.

² Typical properties: these are not to be construed as specifications.

³ 50 mm/min

⁴ Type I, 50 mm/min

⁵ 1.3 mm/min

⁶ 2.0 mm/min

⁷ at Yield

⁸ 80*10*4 sp=62mm

⁹ Natural, Tints

¹⁰ 80*10*4 mm

¹¹ Type S

¹² 120*10*4 mm

¹³ Surface



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Where to Buy

Supplier

SABIC

Web: <http://www.sabic.com/>

Distributor

3Polymer (Guangzhou) Chemical Technology Co., Ltd.

Telephone: +86-20-3466-7988

Web: <http://3polymer.com>

Availability: China

Bamberger Polymers, Inc.

Bamberger Polymers is a global distribution company. Contact Bamberger Polymers for availability of individual products by country.

Telephone: 516-622-3600

Web: <http://www.bambergerpolymers.com/>

Availability: Canada, Mexico, United States

Nexeo Plastics

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Telephone: 833-446-3936

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Availability: North America

