

LEXAN™ Resin 144R - Americas

Polycarbonate
SABIC

PROSPECTOR®

www.ulprospector.com

Technical Data

Product Description

UL rated HB. 200 series recommended when V-2 rating required. MFR 10.5. Internal mold release. FDA food contact compliant in limited colors. Effective January 15th, 2007 this grade will no longer be supported with biocompatibility information and should not be used for medical applications which require biocompatibility. Alternative grade HP4.

General

Material Status	• Commercial: Active
UL Yellow Card ¹	• E121562-220863
Search for UL Yellow Card	• SABIC • LEXAN™ Resin
Availability	• Latin America • North America
Additive	• Mold Release
Features	• Food Contact Acceptable
Uses	• Appliances • Fluid Handling • Construction Applications • Industrial Applications • Non-specific Food Applications • Electrical/Electronic Applications • Lighting Applications • Pharmaceuticals • Electronic Displays • Medical/Healthcare Applications • Sporting Goods
Agency Ratings	• FDA Food Contact, Unspecified Rating
Processing Method	• Injection Molding
Multi-Point Data	• Viscosity vs. Shear Rate (ASTM D3835)
Also Available In	• Asia Pacific • Europe

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density / Specific Gravity	• 1.19 • 1.20	• 1.19 • 1.20 g/cm³	ASTM D792
Specific Volume	23.0 in³/lb	0.830 cm³/g	ASTM D792
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	11 g/10 min	11 g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	12 cm³/10min	12 cm³/10min	ISO 1133
Molding Shrinkage - Flow (0.126 in (3.20 mm))	0.50 to 0.70 %	0.50 to 0.70 %	Internal Method
Water Absorption			ASTM D570
24 hr	0.15 %	0.15 %	
Equilibrium, 73°F (23°C)	0.35 %	0.35 %	
Equilibrium, 212°F (100°C)	0.58 %	0.58 %	

Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus			
-- ³	344000 psi	2370 MPa	ASTM D638
--	341000 psi	2350 MPa	ISO 527-2/1
Tensile Strength			
Yield ⁴	8990 psi	62.0 MPa	ASTM D638
Yield	9140 psi	63.0 MPa	ISO 527-2/50
Break ⁴	9860 psi	68.0 MPa	ASTM D638
Break	10200 psi	70.0 MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁴	7.0 %	7.0 %	ASTM D638
Yield	6.0 %	6.0 %	ISO 527-2/50
Break ⁴	130 %	130 %	ASTM D638
Break	110 %	110 %	ISO 527-2/50
Flexural Modulus			
1.97 in (50.0 mm) Span ⁵	339000 psi	2340 MPa	ASTM D790
-- ⁶	334000 psi	2300 MPa	ISO 178



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Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Flexural Stress			
-- 6, 7	13100 psi	90.0 MPa	ISO 178
Yield, 1.97 in (50.0 mm) Span ⁵	14100 psi	97.0 MPa	ASTM D790
Taber Abrasion Resistance			ASTM D1044
1000 Cycles, 1000 g, CS-17 Wheel	10.0 mg	10.0 mg	
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Notched Impact Strength (73°F (23°C))	17 ft·lb/in ²	35 kJ/m ²	ISO 179/2C
Charpy Unnotched Impact Strength ⁸			ISO 179/1eU
-22°F (-30°C)	No Break	No Break	
73°F (23°C)	No Break	No Break	
Notched Izod Impact			
-- 9	15 ft·lb/in	800 J/m	ASTM D256
73°F (23°C)	15 ft·lb/in	800 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	5.7 ft·lb/in ²	12 kJ/m ²	ISO 180/1A
Unnotched Izod Impact			
73°F (23°C)	60 ft·lb/in	3200 J/m	ASTM D4812
-22°F (-30°C) ¹⁰	No Break	No Break	ISO 180/1U
73°F (23°C) ¹⁰	No Break	No Break	ISO 180/1U
Instrumented Dart Impact			ASTM D3763
73°F (23°C), Energy at Peak	558 in·lb	63.0 J	
Gardner Impact (73°F (23°C))	1500 in·lb	169 J	ASTM D3029
Tensile Impact Strength ¹¹	275 ft·lb/in ²	577 kJ/m ²	ASTM D1822
Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Rockwell Hardness			ASTM D785
M-Scale	70	70	
R-Scale	118	118	
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			
66 psi (0.45 MPa), Unannealed, 0.252 in (6.40 mm)	279 °F	137 °C	ASTM D648
66 psi (0.45 MPa), Unannealed, 0.157 in (4.00 mm), 3.94 in (100 mm) Span ¹²	277 °F	136 °C	ISO 75-2/Be
264 psi (1.8 MPa), Unannealed, 0.252 in (6.40 mm)	270 °F	132 °C	ASTM D648
264 psi (1.8 MPa), Unannealed, 0.157 in (4.00 mm), 3.94 in (100 mm) Span ¹²	257 °F	125 °C	ISO 75-2/Ae
Vicat Softening Temperature			
--	309 °F	154 °C	ASTM D1525 ¹³
--	288 °F	142 °C	ISO 306/B120
--	286 °F	141 °C	ISO 306/B50
--	307 °F	153 °C	ISO 306/A50
Ball Pressure Test			IEC 60695-10-2
253 to 261°F (123 to 127°C)	Pass	Pass	
CLTE - Flow			
-40 to 203°F (-40 to 95°C)	3.8E-5 in/in/°F	6.8E-5 cm/cm/°C	ASTM E831
73 to 176°F (23 to 80°C)	3.9E-5 in/in/°F	7.0E-5 cm/cm/°C	ISO 11359-2
Specific Heat	0.299 Btu/lb/°F	1250 J/kg/°C	ASTM C351
Thermal Conductivity			
--	1.3 Btu·in/hr/ft ² /°F	0.19 W/m/K	ASTM C177
--	1.4 Btu·in/hr/ft ² /°F	0.20 W/m/K	ISO 8302
RTI Elec	266 °F	130 °C	UL 746



Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
RTI Imp	266 °F	130 °C	UL 746
RTI Str	266 °F	130 °C	UL 746
Electrical	Nominal Value (English)	Nominal Value (SI)	Test Method
Surface Resistivity	> 1.0E+15 ohms	> 1.0E+15 ohms	IEC 60093
Volume Resistivity			
--	> 1.0E+17 ohms·cm	> 1.0E+17 ohms·cm	ASTM D257
--	> 1.0E+15 ohms·cm	> 1.0E+15 ohms·cm	IEC 60093
Dielectric Strength			
0.126 in (3.20 mm), in Air	380 V/mil	15 kV/mm	ASTM D149
0.126 in (3.20 mm), in Oil	430 V/mil	17 kV/mm	IEC 60243-1
Dielectric Constant			
60 Hz	3.17	3.17	ASTM D150
50 kHz	3.17	3.17	ASTM D150
1 MHz	2.96	2.96	ASTM D150
50 Hz	2.70	2.70	IEC 60250
60 Hz	2.70	2.70	IEC 60250
1 MHz	2.70	2.70	IEC 60250
Dissipation Factor			
50 Hz	9.0E-4	9.0E-4	ASTM D150
60 Hz	9.0E-4	9.0E-4	ASTM D150
1 MHz	0.010	0.010	ASTM D150 IEC 60250
50 Hz	1.0E-3	1.0E-3	IEC 60250
60 Hz	1.0E-3	1.0E-3	IEC 60250
Comparative Tracking Index (CTI)	PLC 2	PLC 2	UL 746
High Amp Arc Ignition (HAI) ¹⁴	PLC 1	PLC 1	UL 746
High Voltage Arc Tracking Rate (HVTR)	PLC 2	PLC 2	UL 746
Hot-wire Ignition (HWI)	PLC 2	PLC 2	UL 746
Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating (0.06 in (1.5 mm))	HB	HB	UL 94
Oxygen Index	25 %	25 %	ASTM D2863 ISO 4589-2
Optical	Nominal Value (English)	Nominal Value (SI)	Test Method
Refractive Index	1.586	1.586	ASTM D542
Transmittance (100 mil (2540 µm))	88.0 %	88.0 %	ASTM D1003
Haze (100 mil (2540 µm))	1.00 %	1.00 %	ASTM D1003
Injection	Nominal Value (English)	Nominal Value (SI)	
Drying Temperature	248 °F	120 °C	
Drying Time	3.0 to 4.0 hr	3.0 to 4.0 hr	
Suggested Max Moisture	0.020 %	0.020 %	
Suggested Shot Size	40 to 60 %	40 to 60 %	
Rear Temperature	518 to 563 °F	270 to 295 °C	
Middle Temperature	536 to 581 °F	280 to 305 °C	
Front Temperature	563 to 599 °F	295 to 315 °C	
Nozzle Temperature	554 to 590 °F	290 to 310 °C	
Processing (Melt) Temp	563 to 599 °F	295 to 315 °C	
Mold Temperature	158 to 203 °F	70 to 95 °C	
Back Pressure	43.5 to 102 psi	0.300 to 0.700 MPa	
Screw Speed	40 to 70 rpm	40 to 70 rpm	
Vent Depth	9.8E-4 to 3.0E-3 in	0.025 to 0.076 mm	



Injection Notes

Injection Molding Parameters

- Drying Time (Cumulative): 48 hrs

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 2.0 in/min (50 mm/min)

⁴ Type I, 2.0 in/min (50 mm/min)

⁵ 0.051 in/min (1.3 mm/min)

⁶ 0.079 in/min (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 Rate A (50°C/h), Loading 2 (50 N)

¹⁴ 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

Hisun Chemical (HK) Limited

Telephone: +86-20-8732-0686

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

Availability: Asia Pacific

Nexeo Plastics

Telephone: 833-446-3936

Web: <https://www.nexeoplastics.com/>

Availability: North America

