

LEXAN™ 144R resin

Polycarbonate

SABIC Innovative Plastics

Message:

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 Information			
UL YellowCard	E121562-220863		
Additive	Mold Release		
Features	Food Contact Acceptable		
Agency Ratings	FDA Food Contact, Unspecified Rating		
Processing Method	Injection Molding		
Multi-Point Data	Viscosity vs. Shear Rate (ASTM D3835)		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			ASTM D792
--	1.20	g/cm ³	
--	1.19	g/cm ³	
Specific Volume	0.830	cm ³ /g	ASTM D792
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	11	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	10.0	cm ³ /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	68.0	MPa	ASTM D638
Break	70.0	MPa	ISO 527-2/50

Tensile Elongation			
Yield ⁴	7.0	%	ASTM D638
Yield	6.0	%	ISO 527-2/50
Break ⁵	130	%	ASTM D638
Break	110	%	ISO 527-2/50
Flexural Modulus			
50.0 mm Span ⁶	2340	MPa	ASTM D790
-- ⁷	2300	MPa	ISO 178
Flexural Stress			
--	90.0	MPa	ISO 178
Yield, 50.0 mm Span ⁸	97.0	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 (23°C)	35	kJ/m ²	ISO 179/2C
Notched Izod Impact			
Colors	800	J/m	ASTM D256
Natural, Tints	800	J/m	ASTM D256
23°C	800	J/m	ASTM D256
-30°C ⁹	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
Instrumented Dart Impact (23°C, Energy at Peak Load)	63.0	J	ASTM D3763
Gardner Impact (23°C)	169	J	ASTM D3029
Tensile Impact Strength ¹¹	577	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 ¹²	136	°C	ISO 75-2/Be
1.8 MPa, Unannealed, 6.40 mm	132	°C	ASTM D648
1.8 MPa, Unannealed, 100 mm Span ¹³	125	°C	ISO 75-2/Ae
Vicat Softening Temperature			
--	154	°C	ASTM D1525 ¹⁴
--	153	°C	ISO 306/A50
--	141	°C	ISO 306/B50
--	142	°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 (1.47 mm)	HB		UL 94
Oxygen Index	25	%	ASTM D2863, 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	271 to 293	°C
Middle Temperature	282 to 304	°C
Front Temperature	293 to 316	°C
Nozzle Temperature	288 to 310	°C
Processing (Melt) Temp	293 to 316	°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
10.	80*10*4
11.	Type S
12.	120*10*4 mm
13.	120*10*4 mm
14.	Rate B (120°C/h), Loading 2 (50 N)

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