

SABIC LEXAN™ 124R

UL rated HB. 200 series recommended when V-2 rating required. 17.5 MFR, for small, intricate parts. 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 HP2.
Information provided by SABIC

Physical Properties	Metric	English	Comments
Specific Gravity	1.20 g/cc	1.20 g/cc	ASTM D792
	1.20 g/cc	1.20 g/cc	ASTM D792
Density	1.19 g/cc	0.0430 lb/in ³	ASTM D792
Water Absorption	0.15 %	0.15 %	24 hours; ASTM D570
Moisture Absorption at Equilibrium	0.35 %	0.35 %	ASTM D570
	0.58 % @Temperature 100 °C	0.58 % @Temperature 212 °F	ASTM D570
Linear Mold Shrinkage, Flow	0.0050 - 0.0070 cm/cm @Thickness 3.20 mm	0.0050 - 0.0070 in/in @Thickness 0.126 in	SABIC method
Melt Flow	17.5 g/10 min @Load 1.20 kg, Temperature 300 °C	17.5 g/10 min @Load 2.65 lb, Temperature 572 °F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	70	70	ASTM D785
Hardness, Rockwell R	118	118	ASTM D785
Tensile Strength at Break	68.0 MPa	9860 psi	50 mm/min; ASTM D638
Tensile Strength, Yield	62.0 MPa	8990 psi	50 mm/min; ASTM D638
Elongation at Break	125 %	125 %	50 mm/min; ASTM D638
Elongation at Yield	7.0 %	7.0 %	50 mm/min; ASTM D638
Flexural Yield Strength	96.0 MPa	13900 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Modulus	2.34 GPa	339 ksi	1.3 mm/min, 50 mm span; ASTM D790
Izod Impact, Notched	6.94 J/cm	13.0 ft-lb/in	ASTM D256
Izod Impact, Unnotched	32.04 J/cm	60.02 ft-lb/in	ASTM D4812
Tensile Impact Strength	546 kJ/m ²	260 ft-lb/in ²	ASTM D1822
Falling Dart Impact	169 J	125 ft-lb	ASTM D3029
Taber Abrasion, mg/1000 Cycles	10	10	CS-17, 1 kg; ASTM D1044

Electrical Properties	Metric	English	Comments
-----------------------	--------	---------	----------

Volume Resistivity	$\geq 1.00\text{e}+17$ ohm-cm	$\geq 1.00\text{e}+17$ ohm-cm	ASTM D257
Dielectric Constant	2.96 @Frequency 1e+6 Hz	2.96 @Frequency 1e+6 Hz	ASTM D150
	3.17 @Frequency 50.0 - 60.0 Hz	3.17 @Frequency 50.0 - 60.0 Hz	ASTM D150
Dielectric Strength	14.9 kV/mm @Thickness 3.20 mm	378 kV/in @Thickness 0.126 in	in air; ASTM D149
Dissipation Factor	0.00090 @Frequency 50.0 - 60.0 Hz	0.00090 @Frequency 50.0 - 60.0 Hz	ASTM D150
	0.010 @Frequency 1e+6 Hz	0.010 @Frequency 1e+6 Hz	ASTM D150
Comparative Tracking Index	250 - 400 V	250 - 400 V	UL 746A
Hot Wire Ignition, HWI	30 - 60 sec	30 - 60 sec	UL 746A
High Amp Arc Ignition, HAI	60 - 120 arcs	60 - 120 arcs	UL 746A
High Voltage Arc-Tracking Rate, HVTR	25.4 - 80.0 mm/min	1.00 - 3.15 in/min	UL 746A

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	68.4 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ @Temperature -40.0 - 95.0 $^\circ\text{C}$	38.0 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$ @Temperature -40.0 - 203 $^\circ\text{F}$	ASTM E831
Specific Heat Capacity	1.25 J/g $\cdot^\circ\text{C}$	0.299 BTU/lb $\cdot^\circ\text{F}$	ASTM C 351
Thermal Conductivity	0.190 W/m-K	1.32 BTU-in/hr-ft $^2\cdot^\circ\text{F}$	ASTM C177
Deflection Temperature at 0.46 MPa (66 psi)	137 $^\circ\text{C}$ @Thickness 6.40 mm	279 $^\circ\text{F}$ @Thickness 0.252 in	unannealed; ASTM D648
Deflection Temperature at 1.8 MPa (264 psi)	129 $^\circ\text{C}$ @Thickness 6.40 mm	264 $^\circ\text{F}$ @Thickness 0.252 in	unannealed; ASTM D648
Vicat Softening Point	154 $^\circ\text{C}$	309 $^\circ\text{F}$	Rate B/50; ASTM D1525
UL RTI, Electrical	130 $^\circ\text{C}$	266 $^\circ\text{F}$	UL 746B
UL RTI, Mechanical with Impact	130 $^\circ\text{C}$	266 $^\circ\text{F}$	UL 746B
UL RTI, Mechanical without Impact	130 $^\circ\text{C}$	266 $^\circ\text{F}$	UL 746B
Flammability, UL94	HB @Thickness 1.47 mm	HB @Thickness 0.0579 in	UL 94

Optical Properties	Metric	English	Comments
Refractive Index	1.586	1.586	ASTM D542

Haze	1.0 % @Thickness 2.54 mm	1.0 % @Thickness 0.100 in	ASTM D1003
Transmission, Visible	88 % @Thickness 2.54 mm	88 % @Thickness 0.100 in	ASTM D1003

Processing Properties	Metric	English	Comments
Nozzle Temperature	275 - 300 °C	527 - 572 °F	Injection Molding
Zone 1	260 - 280 °C	500 - 536 °F	
Zone 2	270 - 295 °C	518 - 563 °F	
Zone 3	280 - 305 °C	536 - 581 °F	
Melt Temperature	280 - 305 °C	536 - 581 °F	
Mold Temperature	70.0 - 95.0 °C	158 - 203 °F	
Drying Temperature	120 °C	248 °F	Injection Molding
Dry Time	3.00 - 4.00 hour	3.00 - 4.00 hour	Injection Molding
	48.0 hour	48.0 hour	Cumulative; Injection Molding
Moisture Content	0.020 %	0.020 %	
Back Pressure	0.300 - 0.700 MPa	43.5 - 102 psi	
Shot Size	40 - 60 %	40 - 60 %	
Vent Depth	0.00250 - 0.00760 cm	0.000984 - 0.00299 in	
Screw Speed	40 - 70 rpm	40 - 70 rpm	