

SABIC LEXAN™ 123R

UL rated HB as of 10/97. 200 series recommended when V-2 rating required. Nonhalogenated. 17.5 MFR, for small, intricate parts.
UV stabilized. Internal mold release.
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 %	0.58 %	ASTM D570
Linear Mold Shrinkage, Flow	@Temperature 100 °C	@Temperature 212 °F	
	0.0050 - 0.0070 cm/cm	0.0050 - 0.0070 in/in	SABIC method
Melt Flow	@Thickness 3.20 mm	@Thickness 0.126 in	
	17.5 g/10 min	17.5 g/10 min	ASTM D1238
	@Load 1.20 kg, Temperature 300 °C	@Load 2.65 lb, Temperature 572 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	70	70	ASTM D785
Hardness, Rockwell R	118	118	ASTM D785
Tensile Strength at Break	65.0 MPa	9430 psi	50 mm/min; ASTM D638
Tensile Strength, Yield	62.0 MPa	8990 psi	50 mm/min; ASTM D638
Elongation at Break	110 %	110 %	50 mm/min; ASTM D638
Elongation at Yield	7.0 %	7.0 %	50 mm/min; ASTM D638
Flexural Yield Strength	93.0 MPa	13500 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	>= 1.00e+17 ohm-cm	>= 1.00e+17 ohm-cm	ASTM D257
Dielectric Constant	2.96	2.96	ASTM D150
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
Dielectric Strength	3.17	3.17	ASTM D150
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	
Dissipation Factor	14.9 kV/mm	378 kV/in	in air; ASTM D149
	@Thickness 3.20 mm	@Thickness 0.126 in	
Dissipation Factor	0.00090	0.00090	ASTM D150
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	

	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	7.0 - 15 sec	7.0 - 15 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	1.26 J/g- $^{\circ}\text{C}$	0.301 BTU/lb- $^{\circ}\text{F}$	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)	132 $^{\circ}\text{C}$ @Thickness 6.40 mm	270 $^{\circ}\text{F}$ @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 0.760 mm	HB @Thickness 0.0299 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 $^{\circ}\text{C}$	527 - 572 $^{\circ}\text{F}$	Injection Molding
Zone 1	260 - 280 $^{\circ}\text{C}$	500 - 536 $^{\circ}\text{F}$	
Zone 2	270 - 295 $^{\circ}\text{C}$	518 - 563 $^{\circ}\text{F}$	
Zone 3	280 - 305 $^{\circ}\text{C}$	536 - 581 $^{\circ}\text{F}$	
Melt Temperature	280 - 305 $^{\circ}\text{C}$	536 - 581 $^{\circ}\text{F}$	
Mold Temperature	70.0 - 95.0 $^{\circ}\text{C}$	158 - 203 $^{\circ}\text{F}$	
Drying Temperature	120 $^{\circ}\text{C}$	248 $^{\circ}\text{F}$	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	