

SABIC LEXAN™ FR 945

LEXAN 945 Polycarbonate (PC) is an injection moldable non-chlorinated and non-brominated, unfilled flame retardant grade with medium flow. It has an MVR of 10 (300°C/1.2kg) and a UL94 V0@1.0mm, 5VA at 3.0mm rating and is available in various opaque color options.

Information provided by SABIC

Physical Properties	Metric	English	Comments
Specific Gravity	1.19 g/cc	1.19 g/cc	ASTM D792
Water Absorption	0.15 %	0.15 %	24 hours; ASTM D570
Moisture Absorption	0.150 %	0.150 %	50% RH, 24 hrs; ASTM D570
Moisture Absorption at Equilibrium	0.23 %	0.23 %	ASTM D570
Linear Mold Shrinkage, Flow	0.0060 - 0.0080 cm/cm @Thickness 3.20 mm	0.0060 - 0.0080 in/in @Thickness 0.126 in	SABIC method
Melt Flow	10 g/10 min @Load 1.20 kg, Temperature 300 °C	10 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	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	125 %	125 %	50 mm/min; ASTM D638
Elongation at Yield	6.0 %	6.0 %	50 mm/min; ASTM D638
Tensile Modulus	2.27 GPa	329 ksi	50 mm/min; ASTM D638
Flexural Yield Strength	101 MPa	14600 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	8.01 J/cm	15.0 ft-lb/in	ASTM D256
Izod Impact, Unnotched	NB	NB	ASTM D4812
Dart Drop, Total Energy	73.0 J	53.8 ft-lb	ASTM D3763

Electrical Properties	Metric	English	Comments
Arc Resistance	0.00 - 60 sec	0.00 - 60 sec	ASTM D495
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	15 - 30 arcs	15 - 30 arcs	UL 746A
High Voltage Arc-Tracking Rate, HVTR	>= 150 mm/min	>= 5.91 in/min	UL 746A

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	66.6 µm/m-°C @Temperature -40.0 - 40.0 °C	37.0 µin/in-°F @Temperature -40.0 - 104 °F	ASTM E831
CTE, linear, Transverse to Flow	66.6 µm/m-°C @Temperature -40.0 - 40.0 °C	37.0 µin/in-°F @Temperature -40.0 - 104 °F	ASTM E831
Specific Heat Capacity	1.25 J/g-°C	0.299 BTU/lb-°F	ASTM C 351
Thermal Conductivity	0.270 W/m-K	1.87 BTU-in/hr-ft²-°F	ASTM C177
Deflection Temperature at 0.46 MPa (66 psi)	137 °C @Thickness 3.20 mm	279 °F @Thickness 0.126 in	unannealed; ASTM D648
Deflection Temperature at 1.8 MPa (264 psi)	126 °C @Thickness 3.20 mm	259 °F @Thickness 0.126 in	unannealed; ASTM D648
Vicat Softening Point	143 °C	289 °F	Rate B/50; ASTM D1525

UL RTI, Electrical	130 °C	266 °F	UL 746B
UL RTI, Mechanical with Impact	120 °C	248 °F	UL 746B
UL RTI, Mechanical without Impact	130 °C	266 °F	UL 746B
Flammability, UL94	V-2	V-2	UL 94
	@Thickness 0.800 mm	@Thickness 0.0315 in	
	V-0	V-0	UL 94
	@Thickness 1.00 mm	@Thickness 0.0394 in	
	5VA	5VA	UL 94
	@Thickness 3.00 mm	@Thickness 0.118 in	
Oxygen Index	35 %	35 %	ISO 4589
Glow Wire Test	850 °C	1560 °F	IEC 60695-2-12
	@Thickness 3.00 mm	@Thickness 0.118 in	
	875 °C	1610 °F	IEC 60695-2-13
	@Thickness 1.00 mm	@Thickness 0.0394 in	
	960 °C	1760 °F	IEC 60695-2-12
	@Thickness 1.00 mm	@Thickness 0.0394 in	

Processing Properties	Metric	English	Comments
Nozzle Temperature	290 - 310 °C	554 - 590 °F	Injection Molding
Zone 1	270 - 295 °C	518 - 563 °F	
Zone 2	280 - 305 °C	536 - 581 °F	
Zone 3	295 - 315 °C	563 - 599 °F	
Melt Temperature	295 - 315 °C	563 - 599 °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	