

SABIC LEXAN™ XLS1110

Global grade. LEXAN XLS1110 is an injection molding grade especially designed for manufacturing optical parts requiring excellent flow properties combined with very high transmission and color stability.
Information provided by SABIC

Physical Properties	Metric	English	Comments
Density	1.20 g/cc	0.0434 lb/in ³	ISO 1183
Water Absorption	0.35 %	0.35 %	23°C/sat; ISO 62
Moisture Absorption	0.150 %	0.150 %	23°C / 50% RH; ISO 62
Linear Mold Shrinkage, Flow	0.0050 - 0.0070 cm/cm	0.0050 - 0.0070 in/in	SABIC method
Melt Flow	6.0 g/10 min @Load 1.20 kg, Temperature 250 °C	6.0 g/10 min @Load 2.65 lb, Temperature 482 °F	cm ³ /10 min; ISO 1133
	35 g/10 min @Load 1.20 kg, Temperature 300 °C	35 g/10 min @Load 2.65 lb, Temperature 572 °F	cm ³ /10 min; ISO 1133

Mechanical Properties	Metric	English	Comments
Ball Indentation Hardness	95.0 MPa	13800 psi	ISO 2039-1
Tensile Strength at Break	64.0 MPa	9280 psi	50 mm/min; ISO 527
Tensile Strength, Yield	61.0 MPa	8850 psi	50 mm/min; ISO 527
Elongation at Break	75 %	75 %	50 mm/min; ISO 527
Elongation at Yield	6.0 %	6.0 %	50 mm/min; ISO 527
Tensile Modulus	2.35 GPa	341 ksi	1mm/min; ISO 527
Flexural Yield Strength	90.0 MPa	13100 psi	2 mm/min; ISO 178
Flexural Modulus	2.30 GPa	334 ksi	2 mm/min; ISO 178
Izod Impact, Notched (ISO)	57.0 kJ/m ²	27.1 ft-lb/in ²	80*10*3; ISO 180/1A
	14.0 kJ/m ² @Temperature -30.0 °C	6.66 ft-lb/in ² @Temperature -22.0 °F	80*10*3; ISO 180/1A
Izod Impact, Unnotched (ISO)	NB	NB	80*10*3; ISO 180/1U
	NB @Temperature -30.0 °C	NB @Temperature -22.0 °F	80*10*3; ISO 180/1U
Charpy Impact Unnotched	NB	NB	Edgew 80*10*3 sp=62mm; ISO 179/1eU
	NB @Temperature -30.0 °C	NB @Temperature -22.0 °F	Edgew 80*10*3 sp=62mm; ISO 179/1eU
Charpy Impact, Notched	5.50 J/cm ²	26.2 ft-lb/in ²	Edgew 80*10*3 sp=62mm; ISO 179/1eA

	1.10 J/cm ² @Temperature -30.0 °C	5.23 ft-lb/in ² @Temperature -22.0 °F	Edgew 80*10*3 sp=62mm; ISO 179/1eA
Taber Abrasion, mg/1000 Cycles	10	10	CS-17, 1 kg; SABIC method

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 1.00e+15 ohm-cm	>= 1.00e+15 ohm-cm	IEC 60093
Surface Resistance	>= 1.00e+15 ohm	>= 1.00e+15 ohm	ROA; IEC 60093
Dielectric Constant	2.7 @Frequency 1e+6 Hz	2.7 @Frequency 1e+6 Hz	IEC 60250
	2.7 @Frequency 50.0 - 60.0 Hz	2.7 @Frequency 50.0 - 60.0 Hz	IEC 60250
Dielectric Strength	17.0 kV/mm @Thickness 3.20 mm	432 kV/in @Thickness 0.126 in	in oil; IEC 60243-1
Dissipation Factor	0.0010 @Frequency 50.0 - 60.0 Hz	0.0010 @Frequency 50.0 - 60.0 Hz	IEC 60250
	0.010 @Frequency 1e+6 Hz	0.010 @Frequency 1e+6 Hz	IEC 60250
Comparative Tracking Index	250 V	250 V	IEC 60112

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	70.0 µm/m-°C @Temperature 23.0 - 80.0 °C	38.9 µin/in-°F @Temperature 73.4 - 176 °F	ISO 11359-2
Thermal Conductivity	0.200 W/m-K	1.39 BTU-in/hr-ft ² -°F	ISO 8302
Hot Ball Pressure Test	125 °C	257 °F	IEC 60695-10-2
Deflection Temperature at 0.46 MPa (66 psi)	133 °C	271 °F	Edgew 120*10*4 sp=100mm; ISO 75/Be
Deflection Temperature at 1.8 MPa (264 psi)	122 °C	252 °F	1.8 MPa Edgew 120*10*4 sp=100mm; ISO 75/Ae
Vicat Softening Point	144 °C	291 °F	Rate B/50; ISO 306
	145 °C	293 °F	Rate B/120; ISO 306
UL RTI, Electrical	130 °C	266 °F	UL 746B
UL RTI, Mechanical with Impact	125 °C	257 °F	UL 746B

UL RTI, Mechanical without Impact	125 °C	257 °F	UL 746B
Flammability, UL94	V-2 @Thickness 0.800 mm	V-2 @Thickness 0.0315 in	UL 94 by SABIC-IP
Oxygen Index	25 %	25 %	ISO 4589
Glow Wire Test	850 °C @Thickness 1.00 mm	1560 °F @Thickness 0.0394 in	IEC 60695-2-12
	>= 875 °C @Thickness 1.00 mm	>= 1610 °F @Thickness 0.0394 in	IEC 60695-2-13

Optical Properties	Metric	English	Comments
Refractive Index	1.586	1.586	ISO 489
Haze	<= 0.50 % @Thickness 2.54 mm	<= 0.50 % @Thickness 0.100 in	ASTM D1003
Transmission, Visible	>= 88 % @Thickness 2.54 mm	>= 88 % @Thickness 0.100 in	420nm; SABIC method
	>= 89 % @Thickness 5.00 mm	>= 89 % @Thickness 0.197 in	SABIC method
	>= 90 % @Thickness 2.54 mm	>= 90 % @Thickness 0.100 in	ASTM D1003

Processing Properties	Metric	English	Comments
Processing Temperature	60.0 - 80.0 °C	140 - 176 °F	Hopper Temperature
Nozzle Temperature	270 - 290 °C	518 - 554 °F	Injection Molding
Zone 1	260 - 280 °C	500 - 536 °F	
Zone 2	270 - 290 °C	518 - 554 °F	
Zone 3	280 - 300 °C	536 - 572 °F	
Melt Temperature	280 - 300 °C	536 - 572 °F	
Mold Temperature	80.0 - 100 °C	176 - 212 °F	
Drying Temperature	120 °C	248 °F	Injection Molding
Dry Time	2.00 - 4.00 hour	2.00 - 4.00 hour	Injection Molding
Moisture Content	0.020 %	0.020 %	