

LEXAN™ XLS1110 resin

Polycarbonate

SABIC Innovative Plastics Europe

Message:

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.

General Information			
Features	High Light Transmission		
	Good color stability		
	High liquidity		
Uses	Optical applications		
RoHS Compliance	RoHS compliance		
Processing Method	Injection molding		
Physical	Nominal Value	Unit	Test Method
Density	1.20	g/cm ³	ISO 1183
Melt Volume-Flow Rate (MVR)			ISO 1133
250°C/1.2 kg	6.00	cm ³ /10min	ISO 1133
300°C/1.2 kg	35.0	cm ³ /10min	ISO 1133
Molding Shrinkage - Flow ¹	0.50 - 0.70	%	Internal method
Water Absorption			ISO 62
Saturated, 23°C	0.35	%	ISO 62
Equilibrium, 23°C, 50% RH	0.15	%	ISO 62
Hardness	Nominal Value	Unit	Test Method
Ball Indentation Hardness (H 358/30)	95.0	MPa	ISO 2039-1
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	2350	MPa	ISO 527-2/1
Tensile Stress			ISO 527-2/50
Yield	61.0	MPa	ISO 527-2/50
Fracture	64.0	MPa	ISO 527-2/50
Tensile Strain			ISO 527-2/50
Yield	6.0	%	ISO 527-2/50
Fracture	75	%	ISO 527-2/50
Flexural Modulus ²	2300	MPa	ISO 178
Flexural Stress	90.0	MPa	ISO 178
Taber Abrasion Resistance (1000 Cycles, 1000 g, CS-17 Wheel)	10.0	mg	Internal method
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ³			ISO 179/1eA
-30°C	11	kJ/m ²	ISO 179/1eA

23°C	55	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength ⁴			ISO 179/1eU
-30°C	No Break		ISO 179/1eU
23°C	No Break		ISO 179/1eU
Notched Izod Impact ⁵			ISO 180/1A
-30°C	14	kJ/m ²	ISO 180/1A
23°C	57	kJ/m ²	ISO 180/1A
Unnotched Izod Impact Strength ⁶			ISO 180/1U
-30°C	No Break		ISO 180/1U
23°C	No Break		ISO 180/1U
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature ⁷			
0.45 MPa, unannealed, 100 mm span	133	°C	ISO 75-2/Be
1.8 MPa, unannealed, 100 mm span	122	°C	ISO 75-2/Ae
Vicat Softening Temperature			
--	144	°C	ISO 306/B50
--	145	°C	ISO 306/B120
Ball Pressure Test (125°C)	Pass		IEC 60695-10-2
CLTE - Flow (23 to 80°C)	7.0E-5	cm/cm/°C	ISO 11359-2
Thermal Conductivity	0.20	W/m/K	ISO 8302
RTI Elec	130	°C	UL 746
RTI Imp	125	°C	UL 746
RTI	125	°C	UL 746
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	> 1.0E+15	ohms	IEC 60093
Volume Resistivity	> 1.0E+15	ohms · cm	IEC 60093
Dielectric Strength (3.20 mm, in Oil)	17	kV/mm	IEC 60243-1
Relative Permittivity			IEC 60250
50 Hz	2.70		IEC 60250
60 Hz	2.70		IEC 60250
1 MHz	2.70		IEC 60250
Dissipation Factor			IEC 60250
50 Hz	1.0E-3		IEC 60250
60 Hz	1.0E-3		IEC 60250
1 MHz	0.010		IEC 60250
Comparative Tracking Index	250	V	IEC 60112
Flammability	Nominal Value	Unit	Test Method
Flame Rating (0.8 mm, Testing by SABIC)	V-2		UL 94
Glow Wire Flammability Index (1.0 mm)	850	°C	IEC 60695-2-12
Glow Wire Ignition Temperature (1.0 mm)	> 875	°C	IEC 60695-2-13
Oxygen Index	25	%	ISO 4589-2
Optical	Nominal Value	Unit	Test Method

Refractive Index	1.586	ISO 489
Transmittance		
2540 μm	> 90.0	%
2540 μm, 420 nm	> 88.0	%
5000 μm	> 89.0	%
Haze (2540 μm)	< 0.50	%
ASTM D1003		
Injection	Nominal Value	Unit
Drying Temperature	120	°C
Drying Time	2.0 - 4.0	hr
Suggested Max Moisture	0.020	%
Hopper Temperature	60 - 80	°C
Rear Temperature	260 - 280	°C
Middle Temperature	270 - 290	°C
Front Temperature	280 - 300	°C
Nozzle Temperature	270 - 290	°C
Processing (Melt) Temp	280 - 300	°C
Mold Temperature	80 - 100	°C
NOTE		
1.	Tensile Bar	
2.	2.0 mm/min	
3.	80*10*3 sp=62mm	
4.	80*10*3 sp=62mm	
5.	80*10*3	
6.	80*10*3	
7.	120*10*4 mm	

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