

PRODUCT DATASHEET

LEXAN™ FR60 FILM

DESCRIPTION

LEXAN™ FR60 flame-retardant film is a clear, thin-gauge polycarbonate film with polished surfaces on both sides, and a UL94 V-0 listing to meet the stringent requirements in a wide range of electrical, electronic and transportation applications. LEXAN FR60 film offers ease of thermoforming, hydroforming, embossing, die-cutting, folding and bending and is very suitable for applications such as printed circuit board insulation, backlit aircraft in-flight panels and displays, business equipment insulation, computer rack partition and TV and monitor insulation.

TYPICAL PROPERTY VALUES*

PROPERTY	ASTM TEST METHOD	UNITS (USCS)	VALUE	ISO TEST METHOD	UNITS (SI)	VALUE
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MECHANICAL

Tensile Strength @ Yield	ASTM D882	psi	8700	ISO 527	MPa	65
Ultimate	ASTM D882	psi	10000	ISO 527	MPa	70
Tensile Modulus	ASTM D882	psi	319000	ISO 527	MPa	>2200
Tensile Elongation at Break	ASTM D882	%	100-160	ISO 527	%	>100
Gardner Impact Strength at 0.03" (0.75 mm)	ASTM D3029	ft-lb	21	ISO 6603-1	J	28
Tear Strength						
Initiation	ASTM D1004	lb/mil	1.4-1.8		kN/m	298
Propagation	ASTM D1922	g/mil	30-55		kN/m	6
Puncture Resistance (Dynatup)	ASTM D3763	ft-lb	9		J	12
Fold Endurance (MIT)						
0.010" (0.25 mm)	ASTM D2176-69	double folds	45			
0.020" (0.50 mm)	ASTM D2176-69	double folds	30			

THERMAL

Coefficient of Thermal Conductivity	ASTM D5470	Btu/hr/ft ² /°F/in	1.35		W/m ² °K	0.2
Coefficient of Thermal Expansion	ASTM E831	(x10 ⁻⁵ /°F)	3.2	ISO 11359	(x10 ⁻⁵ /°C)	5.8
Specific Heat @40°F (4°C)	ASTM E1269	Btu/lb/°F	0.3		KJ/Kg-°C	1.25
Glass Transition Temperature	ASTM D3417 / D3418	°F	307	ISO 11357	°C	148
Vicat Softening Temperature, B	ASTM 1525-00 modified	°F	347		°C	141
Heat Deflection Temp. by TMA at 1.8 Mpa		°F	290	ISO 75 Modified	°C	127
Shrinkage at 302°F (150°C)	ASTM D1204	%	0.09		%	0.09
Brittleness Temperature	ASTM D746	°F	-211		°C	-135

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PHYSICAL

Density	ASTM D792	slug/ft ³	2.647	ISO 1183	kg/m ³	1.344
Water Absorption, 24 hrs.	ASTM D570	% change	0.28	ISO 62	% change	0.28
Surface Energy	ASTM D5946-01	-	36			
Surface Tension	Dyne Pens	Dyne	38-40			
Pencil Hardness	ASTM D3363	-	b-hb			
Taber Abrasion	ASTM D1044	delta Haze	25			

OPTICAL

Refractive Index @77°F (25°C)	ASTM D542A	-	1.6			
Light Transmission	ASTM D1003	%	91			
Yellowness Index	ASTM D1925	%	0.9			
Haze	ASTM D1003	%	0.6			
Gloss over Flat Black min/max @60°	ASTM D523-60	-	171	ISO 2813	-	171

ELECTRICAL

Dielectric Strength in oil, short time @ 72°F (23°C), 10 mils (0.25 mm)	ASTM D149-97a Method A	kv/mil	15	IEC 60243	kv/mm	59
Dielectric Constant						
@ 60 Hz	ASTM D150	-	2.9	IEC 60250	-	2.9
@1,000,000	ASTM D150	-	2.8	IEC 60250	-	2.8
Dissipation Factor						
@ 60 Hz	ASTM D150	-	0.0026	IEC 60250	-	0.0026
@ 1,000,000 Hz	ASTM D150	-	0.0117	IEC 60250	-	0.0117
Volume Resistivity	ASTM D257	Ω-cm	1.00E+17	IEC 60093	Ω-cm	1.00E+17
Surface Resistivity	ASTM D257	Ω/square	1.00E+16	IEC 60093	Ω/square	1.00E+16
Arc Resistance, Tungsten						
Electrodes	ASTM D495	s	64			

*These are typical properties and are not intended for specification purposes. If minimum certifiable properties are required, please contact your local POLYVANTIS representative or the POLYVANTIS Quality Services Department.

Reported Values are based on 0.250 mm (0.010") thickness unless otherwise noted.

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MANUFACTURING SPECIFICATIONS

NOMINAL GAUGE RANGES	MIN./MAX LIMIT OF NOMINAL
≤0.010" (0.250 mm)	-/+10%
0.015 - 0.030" (0.375 - 0.750mm)	-/+5%

Color Availability:	Clear - 116
UL file#:	E539252-EUR / E539157-US & E539253-APAC

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www.polyvantis.com/lexan

