SABIC Innovative Plastics™

Lexan* EFR95-701 Film

Product Datasheet

Description

Lexan* EFR95-701 film is a black, one side fine matt, one side velvet Eco flame-retardant polycarbonate film with a UL94 V-0 listing at 0.38 mm and VTM0 at 0.178mm. This film has formability, excellent mechanical and electrical properties, good dimensional stability at high temperatures and a high flammability rating, making it good for applications such as power supply insulation, disc drive insulation, bus-bar insulation, TV/monitor insulation, PC board insulation, business equipment insulation and has insulation and EMI/RFI shielding when laminated with metal foil.

Typical Property Values◆

Property	ASTM Test Method	Units (USCS)	Value	ISO Test Method	Units (SI)	Value
Mechanical						
Tensile Strength (0.43mm)						
@ Yield	ASTM D882	psi	8507	ISO 527	MPa	58.7
Ultimate	ASTM D882	psi	9014	ISO 527	MPa	62.2
Tensile Modulus (0.43mm)	ASTM D882	psi	376667	ISO 527	MPa	2599
Tensile Elongation at Break (0.43mm)	ASTM D882	%	114	ISO 527	%	114
Tear Strength						
Initiation	ASTM D1004	lb/mil	0.88		kN/m	153
Propagation	ASTM D1922	g/mil	37.9		kN/m	14.65
Puncture Resistance (Dynatup)	ASTM D3763	ft-lb/in	405		J/mm	21.3
Fold Endurance (MIT)						
0.017" (0.43 mm)	ASTM D2176-69	double folds	90.5			90.5
0.020" (0.508 mm)	ASTM D2176-69	double folds	91.1			91.1
Thermal						
Coefficient of Thermal Conductivity	ASTM D5470	Btu-in/(hr-ft² -°F)	1.24		W/m-°K	0.18
Coefficient of Thermal Expansion	ASTM E831	(x10^{-5}/°F)	3.7	ISO 11359	(x10^{-5}/°C)	6.6
Specific Heat @ 25°C	ASTM E1269	Btu/lb/°F	0.29		KJ/Kg-°C	1.23
Glass Transition Temperature	ASTM D3417/D3418	°F	307	ISO 11357	°C	153
Vicat Softening Temperature, B At 50N, 120 °C	ASTM 1525-00 modified	°F	303		°C	151
Heat Deflection Temp. by TMA at 1.8 MPa		°F	267	ISO 75 modified	°C	131
Shrinkage at 302°F (150°C/0.5h)	ASTM D1204	%			%	
MD			1.25			1.25
TD			0.11			0.11
Brittleness Temperature	ASTM D746	°F	<-58		°C	<-50

UL Flammability Rating / Performance Levels

Thickness	Rating	HWI	HAI
0.007 " (0.178mm) -0.01" (0.25mm)	VTM0		
0.015" (0.380mm) -0.021" (0.55mm)	V0		
CTI: 3			
File Number	E205960		

- These are typical properties and are not intended for specification purposes. If minimum certifiable properties are required, please contact your local SABIC Innovative Plastics, Specialty Film & Sheet representative or the Quality Services Department. Reported values are based on 0.250 mm (0.010") thickness film and are tested at machine direction unless otherwise noted.

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Physical						
Density	ASTM D792	slug/ft^3	2.36	ISO 1183	kg/m^3	1230
Water Absorption, 24 hrs	ASTM D570	% change	0.34	ISO 62	% change	0.34
Surface Tension	Dyne Pens	Dyne	38-40			
Optical						
Refractive index @ 77°F (25 °C)	ASTM D542A	-	NA			
Light Transmission	ASTM D1003	%	NA			
Yellowness Index	ASTM D1925	%	NA			
Haze	ASTM D1003	%	NA			
Gloss over Flat Black @ 60°	ASTM D523-60	-	52/3.8	ISO 2813		52/3.8
Electrical						
Dielectric Strength in oil, short time @ 72°F (23°C), 17mils (0.43mm)	ASTM D149-97a Method A	kv/mil	1.2	IEC 60243	kv/mm	47
Dielectric Constant						
@ 60 Hz	ASTM D150	-	2.49	IEC 60250	-	2.49
@ 1 MHz	ASTM D150	-	2.45	IEC 60250	-	2.45
Dissipation Factor						
@ 60 Hz	ASTM D150	-	0.002	IEC 60250	-	0.002
@ 1 MHz	ASTM D150	-	0.01	IEC 60250	-	0.01
Volume Resistivity	ASTM D257	Ω-cm	1.17E+16	IEC 60093	Ω-cm	1.17E+16
Surface Resistivity	ASTM D257	Ω/square	4.4E+15	IEC 60093	Ω/square	4.4E+15
Arc Resistance, Tungsten Electrodes	ASTM D495	s	51			

Lexan*

Polycarbonate Film

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Manufacturing Specifications

Nominal Gauge Range	Min./Max Limit of Nominal
0.007-0.01 (0.178 – 0.25mm)	± 10%
0.017 - 0.021" (0.43 – 0.55mm)	± 5%

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