

Lexan* EFR63-NC Film

Product Datasheet

Description

Lexan EFR63-NC is a clear, one side fine matt, one side polished Eco flame-retardant polycarbonate film with a UL94 VTM-0 listing at 0.175 mm. This film has formability, excellent mechanical 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 @ Yield	ASTM D882	psi	8441	ISO 527	MPa	58.2
Ultimate	ASTM D882	psi	9674	ISO 527	MPa	66.7
Tensile Modulus	ASTM D882	psi	320000	ISO 527	MPa	2205
Tensile Elongation at Break	ASTM D882	%	>100	ISO 527	%	>100
Tear Strength						
Initiation	ASTM D1004	lb/mil	1.28		kN/m	224
Propagation	ASTM D1338	g/mil	27.2		kN/m	10.5
Puncture Resistance (Dynatup)	ASTM D3763	ft-lb/in	468		J/mm	25.0
Fold Endurance (MIT)						
0.010" (0.254 mm)	ASTM D2176-97a	double folds	57 (MD) 45 (TD)			
Thermal						
Coefficient of Thermal Conductivity @25°C	ASTM E1530	Btu-in/(hr-ft ² -°F)	1.66		W/m-K	0.24
Coefficient of Thermal Expansion	ASTM E831	(x10 ⁻⁵ /°F)	3.6	ISO 11359	(x10 ⁻⁵ /°C)	6.4
Specific Heat @ 25°C	ASTM E1269-05	Btu/(lb-°F)	0.29		KJ/Kg-°C	1.23
Glass Transition Temperature	ASTM D3418	°F	307	ISO 11357	°C	153
Vicat Softening Temperature, B @ 50N, 120°C/h	ASTM 1525	°F	303		°C	151
Heat Deflection Temp. by TMA at 1.8 Mpa	ASTM D648	°F	267	ISO 75 Modified	°C	131
Shrinkage at 302°F (150°C/0.5h)	ASTM D1204					
MD		%	2.27		%	2.27
TD		%	0.34		%	0.34
Brittleness Temperature	ASTM D1790	°F	<-112		°C	<-80
Physical						
Density	ASTM D792	slug/ft ³	2.33	ISO 1183	kg/m ³	1200
Water Absorption, 24 hrs.	ASTM D570	% change	0.14	ISO 62	% change	0.14
Surface Tension	Dyne Pens	Dyne	36			
Optical						
Refractive index @ 25 °C	ASTM D542-00		1.6			
Light Transmission	ASTM D1003	%	92.1			
Yellowness Index	ASTM E313	%	<1.0			
Haze	ASTM D1003	%	94.7			
Gloss over Flat Black @ 60° (Matte/Polished)	ASTM D523-60	-	6.7/104	ISO 2813	-	6.7/104

UL Flammability Rating / Performance Levels

Thickness	Rating	HWI	HAI
0.178 – 0.28 mm	VTM0		
0.380 – 0.42 mm	V2		
CTI: 3			
File number	E205960		

Manufacturing Specifications

Nominal Gauge Range	Min./Max Limit of Nominal
0.005 - 0.007" (0.127 - 0.178mm)	+/-10%
0.010 - 0.020" (0.254 - 0.508mm)	+/-5%

- 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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Property	ASTM Test Method	Units (USCS)	Value	ISO Test Method	Units (USCS)	Value
Electrical						
Dielectric Strength in oil, short time @ 77 F (25°C)	ASTM D 149-97a Method A	kV/mil	1.65	IEC 60243	kV/mm	65.0
Dielectric Constant @ 60 Hz	ASTM D150	-	2.45	IEC 60250	-	2.45
@1,000,000 Hz		-	2.98		-	2.98
Dissipation Factor @ 60 Hz	ASTM D150	-	0.001	IEC 60250	-	0.001
@1,000,000 Hz		-	0.007		-	0.007
Volume Resistivity	ASTM D257	Ω-cm	>1.0E+17	IEC 60093	Ω-cm	>1.0E+17
Surface Resistivity	ASTM D257	Ω/square	>1.0E+16	IEC 60093	Ω/square	>1.0E+16
Arc Resistance, Tungsten Electrodes	ASTM D495	s	121			



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