

# LEXAN<sup>\*</sup> FR63 Film

## Product Datasheet

### DESCRIPTION

LEXAN<sup>\*</sup> FR63 flame-retardant film is a clear, thin-gauge polycarbonate film with a matte finish on one side and a polish finish on the other, and a UL94 V-0 listing to meet the stringent requirements in a wide range of electrical, electronic and transportation applications. LEXAN FR63 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 partitions, and TV and monitor insulation.

### Typical Property Values<sup>1</sup>

Property	ASTM Test Method	Units (USCS)	Value	ISO Test Method	Units (SI)	Value
<b>Mechanical</b>						
Tensile Strength						
@ Yield	ASTM D882	psi	10000	ISO 527	MPa	70
Ultimate	ASTM D882	psi	8700	ISO 527	MPa	60
Tensile Modulus	ASTM D882	psi	319000	ISO 527	MPa	2200
Tensile Elongation at Break	ASTM D882	%	100-160	ISO 527	%	100-155
Gardner Impact Strenght at 0.03 in. (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
Propogation	ASTM D1922	g/mil	30-55		g/mil	6
Puncture Resistance (Dynatup)	ASTM D3763	ft-lb	9		J	12
Fold Endurance (MIT)						
0.010 inch (0.25 mm)	ASTM D2176-69	double folds	NA			
0.020 inch (0.50 mm)	ASTM D2176-69	double folds	15			
<b>Thermal</b>						
Coefficient of Thermal Conductivity	ASTM D5470	Btu/hr/ft <sup>2</sup> /°F/in	1.35		W/m <sup>2</sup> K	0.2
Coefficient of Thermal Expansion	ASTM E831	(x 10 <sup>-5</sup> /°F)	3.2	ISO 11359	(x 10 <sup>-5</sup> /°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	153
Vicat Softening Temperature, B	ASTM 1525-00 Modified	°F	347		°C	175
Heat Deflection Temp. by TMA at 1.8 MPa		°F	350	ISO 75 Modified	°C	175
Shrinkage at 302 °F (150 °C)	ASTM D1204	%	0.02%		%	0.02%
Brittleness Temperature	ASTM D746	°F	-211		°C	-135

### UL Flammability Rating / Performance Levels

Thickness	Rating	HWI	HAI
>= 0.010" (0.250 mm) and < 0.015" (0.375 mm)	UL94V-0	1	0
> 0.015" (0.375 mm)	UL94V-0	0	0
CTI: 3			
File Number	E61257		

### Manufacturing Specifications

Nominal Gauge Ranges	Min./Max Limit of Nominal
0.010" (0.250 mm)	± 10%
0.015-0.030" (0.375-0.750 mm)	± 5%



1 These are typical properties and are not intended for specification purposes. If minimum certifiable properties are required, please contact your local GE Advanced Materials, Specialty Film & Sheet representative or the GE Advanced Materials, Specialty Film & Sheet Quality Services Department. Reported values are based on 0.010" (0.250 mm) thickness unless otherwise noted.  
\* LEXAN is a trademark of General Electric Company.

# GE Advanced Materials Specialty Film & Sheet

Property	ASTM Test Method	Units	Value	ISO Test Method	Units	Value
<b>Physical</b>						
Density	ASTM D792	slug/ft <sup>3</sup>	84	ISO 1183	kg/m <sup>3</sup>	1344
Water Absorption, 24 hrs.	ASTM D570	% change	0.28	ISO 62	% change	0.28
Surface Roughness (RMS)	ASME B46-1	-	55			
Surface Energy (1st surface / 2nd surface)	ASTM D5946-01	-	36/36			
Surface Tension (1st surface / 2nd surface)	Dyne Pens	Dyne	>44 / 38-40			
<b>Optical</b>						
Refractive Index @ 77 °F (25 °C)	ASTM D542A	-	1.6			
Light Transmission	ASTM D1003	%	88.2			
Yellowness Index	ASTM D1925	%	1.1			
Haze	ASTM D1003	%	88			
Gloss over Flat Black min/max @ 60°	ASTM D523-60	-	10	ISO 2813	-	10
<b>Electrical</b>						
Dielectric Strength in oil, short time @ 72 °F (23 °C), 10 mils (0.25 mm)	ASTM D149-97a Method A	kV/mil	1.5	IEC 60243	kV/mm	59
Dielectric Constant						
@ 60 Hz	ASTM D150	-	2.9	IEC 60250	-	2.9
@ 1,000,000 Hz	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			64

Europe:  
GE Advanced Materials  
Specialty Film & Sheet  
Plasticslaan 1  
PO Box 112  
NL - 4600 AC Bergen op Zoom  
The Netherlands  
Tel. +31 (164) 292742  
Fax. +31 (164) 291986

Americas:  
GE Advanced Materials  
Specialty Film & Sheet  
One Plastics Avenue  
Pittsfield, MA 01201  
USA  
Tel. +1 (413) 448 7110  
Fax. +1 (413) 448 7506

Pacific:  
GE Advanced Materials  
Specialty Film & Sheet  
1266 Nanjing Road (W)  
16th Floor, Plaza 66  
200040 Shanghai  
China  
Tel. +86 21 6288 1088  
Fax. +86 21 6288 0818

For more information call: (800) 451-3147

Visit us online at: [www.geadvancedmaterials.com](http://www.geadvancedmaterials.com)

©2005 General Electric Company  
All Rights Reserved

**DISCLAIMER: THE MATERIALS, PRODUCTS AND SERVICES OF THE BUSINESSES MAKING UP THE GE ADVANCED MATERIALS UNIT OF GENERAL ELECTRIC COMPANY, ITS SUBSIDIARIES AND AFFILIATES, ARE SOLD SUBJECT TO GE ADVANCED MATERIALS' STANDARD CONDITIONS OF SALE, WHICH ARE INCLUDED IN THE APPLICABLE DISTRIBUTOR OR OTHER SALES AGREEMENT, PRINTED ON THE BACK OF ORDER ACKNOWLEDGMENTS AND INVOICES, AND AVAILABLE UPON REQUEST. ALTHOUGH ANY INFORMATION, RECOMMENDATIONS, OR ADVICE CONTAINED HEREIN IS GIVEN IN GOOD FAITH, GE ADVANCED MATERIALS MAKES NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, (i) THAT THE RESULTS DESCRIBED HEREIN WILL BE OBTAINED UNDER END-USE CONDITIONS, OR (ii) AS TO THE EFFECTIVENESS OR SAFETY OF ANY DESIGN INCORPORATING GE ADVANCED MATERIALS' PRODUCTS, MATERIALS, SERVICES, RECOMMENDATIONS OR ADVICE. EXCEPT AS PROVIDED IN GE ADVANCED MATERIALS' STANDARD CONDITIONS OF SALE, GE ADVANCED MATERIALS AND ITS REPRESENTATIVES SHALL IN NO EVENT BE RESPONSIBLE FOR ANY LOSS RESULTING FROM ANY USE OF ITS MATERIALS, PRODUCTS OR SERVICES DESCRIBED HEREIN.** Each user bears full responsibility for making its own determination as to the suitability of GE Advanced Materials' products, materials, services, recommendations, or advice for its own particular use. Each user must identify and perform all tests and analyses necessary to assure that its finished parts incorporating GE Advanced Materials' products, materials, or services will be safe and suitable for use under end-use conditions. Nothing in this or any other document, nor any oral recommendation or advice, shall be deemed to alter, vary, supersede, or waive any provision of GE Advanced Materials' Standard Conditions of Sale or this Disclaimer, unless any such modification is specifically agreed to in a writing signed by GE Advanced Materials. No statement contained herein concerning a possible or suggested use of any material, product, service or design is intended, or should be construed, to grant any license under any patent or other intellectual property right of General Electric Company or any of its subsidiaries or affiliates covering such use or design, or as a recommendation for the use of such material, product, service or design in the infringement of any patent or other intellectual property right.

\* LEXAN is a trademark of General Electric Company.

