LEXAN®

Polycarbonate Graphic Films

LEXAN® HP

Coated Graphic Films

LEXAN® FR

Flame Retardant Insulating Films

VALOX®

Polybutylene Terephthalate Insulating Film

VALOX PTX™

Polyester Film

ULTEM®

Polyetherimide Film

GE Films

Premier Products from the Engineering Plastics Leader

General Electric Plastics' world headquarters is located in Pittsfield, Massachusetts.

GE Structured Products manufactures engineered film products for a wide range of industries and uses, including graphic screenprinting, weatherable applications and high-temperature electrical applications, among others.

Application and product development activities are conducted at GE Plastics' four-acre Polymer Processing Development Center (PPDC), located near the company's worldwide headquarters in Pittsfield, MA. It's here, in our state-of-the-art Screenprint Development Laboratory, that printing and forming equipment and injection-molding machinery make it possible for our engineers, designers and technologists to explore and extend the boundaries of film application development and Insert Mold Decoration (IMD) technology for the benefit of our customers.

Around the globe, GE Structured Products delivers value to customers through innovative products, superior customer responsiveness and hands-on technical assistance.

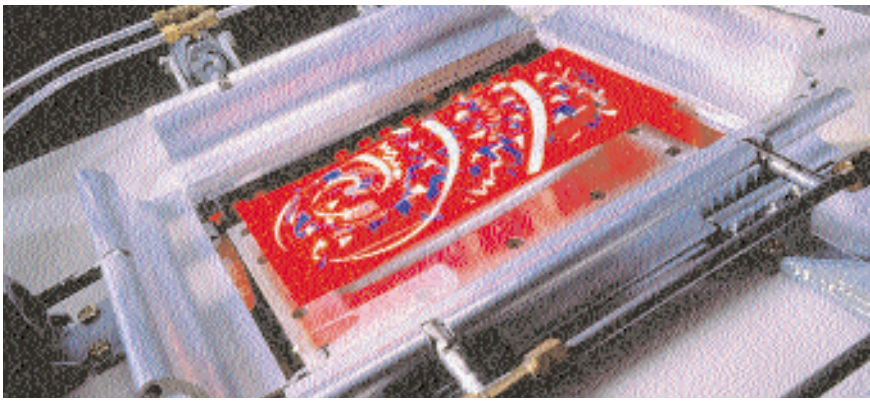
Category		Surface Finishes	Film Designation
Graphic Arts	Polished	Polished / Polished (UV-Stabilized)	8010**
	Textured	Matte / Polished	8A13
		Fine Matte / Polished	8A13F
		Velvet / Polished	8A35
		Velvet / Matte	8B35
		Velvet / Fine Matte	8B35F
		Suede / Matte	8B36
	Light Diffusing	Matte / Polished	8A73
	Optical Clarity / High Gloss		VALOX PTX
Colored Films	Polished	Polished / Polished	8020
	Textured	Matte / Polished	8A23
Coated Films	S = Selective Texturable	Polished / Polished	HP92S, H or W
(Provide added mar /	H = Hard	Fine Matte / Polished	HP40S or H
chemical resistance)	W = Weatherable	Matte / Polished	HP12S, H or W
	WP = Weatherable / Selective Texturable	Polished / Polished	HP92WP
		Ultra Fine Matte / Polished	HP60S or H
Flame-Retardant Films	Polished	Polished / Polished	FR60
(UL94 V-0*, VTM-0*)	Textured	Matte / Polished	FR63
		Velvet / Matte	FR65
		Suede / Matte	FR66
		Smooth / Ultra Fine Matte	FR83
		Matte / Polished (Opaque)	VALOX® FR1 Film
		Matte / Polished	ULTEM® Film
		Velvet / Fine Matte (Black)	FR700
Specialty Films	UV-Stabilized	Polished / Polished	8030
	FDA Grade	Polished / Polished (Non-UV Stabilized)	8040

* This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.
** Masking required.

LEXAN® Polycarbonate Graphic Film

Superior Performance for Demanding Applications

In-mold decorating applications for the automotive industry incorporate dead-front graphics.



LEXAN graphic films offer excellent formability for design flexibility.

Our family of LEXAN polycarbonate graphic extruded films are specially designed to meet the diverse performance requirements of screen printers and end-users alike.

The film's exceptional clarity and strength enhance the use of color in protected, second-surface printing with no loss of depth or vividness. The film is a durable, easy substrate to print on, offering excellent ink adhesion without pretreatment.

In addition, LEXAN film is more economical, simpler to process and significantly more versatile than metal. It also offers many more design options in a wide range of standard and high-performance grades with a variety of surface finishes and textures.

Processing options

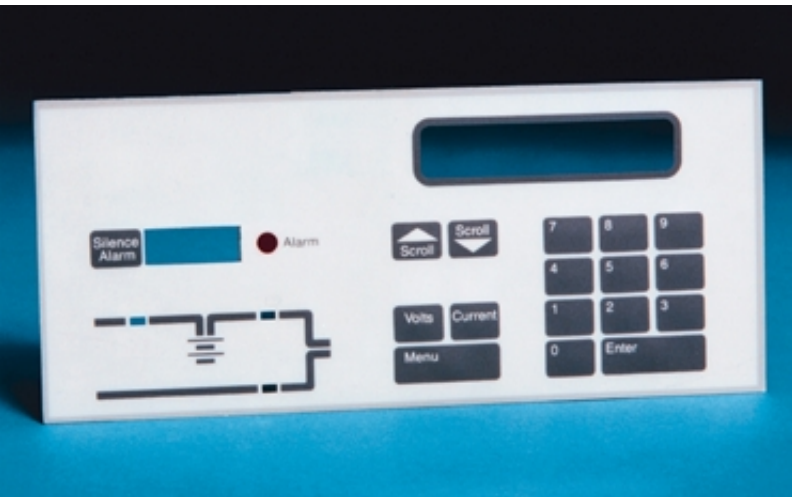
- Selective texturing provides enhanced mar resistance, low glare and design flexibility.
- Embossing in a variety of configurations for tactile identifications or decoration.
- Dead-front graphics for crisp, clean and highly readable displays.
- Transparent colors for design flexibility and cost-effective production of LED/LCD windows and backlit displays.
- Sharp, high-precision die-cutting.
- Deep-draw thermoformable.

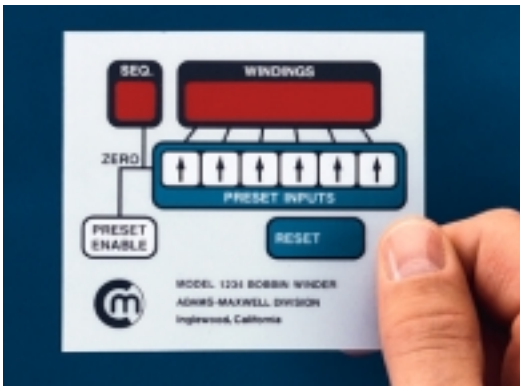
LEXAN Film Features	Screen Printer Benefits	End-User Benefits
Clarity	Virtually haze-free, regardless of thickness. Shows true colors in reverse printing regardless of gauge.	Excellent for LED/LCD windows. Protects second-surface printing, even in heavy gauges.
Printability	Easily screen printed with no surface preparation or special inks required. Compatible with many UV and conventional solvent-based inks.	Offers unlimited possibilities to achieve a variety of graphic effects. Allows intricate graphic designs.
Heat Stability	Allows close-tolerance registration after repeated heat and drying cycles.	Permits close proximity to illumination sources. Excellent in-use performance to 270°F (Continuous Use Temperature of 185°F).
Textures	Abrasion-resistant and anti-reflective textures resist scratching during processing and help reduce static-related problems.	Prevents marring and excessive glare.
Flammability	LEXAN graphic films have various UL ratings and FR rated (UL94* V-0 and VTM-0) films are available.	Compliance with UL and other flammability codes.

* This test is not intended to reflect hazards presented by this or any other material under actual fire conditions.

LEXAN® Uncoated Film

Design Flexibility, Aesthetic Appeal





LEXAN film is available in a wide variety of surface finishes and textures to meet the needs of both screen printers and end users.

Features
- Clarity
- High quality optical properties
- Wide selection of textures
- Available as flame retardant (UL94 V-0 or VTM-0)
- Capable of meeting the most stringent quality specifications in the industry
- Easy to process
- Single or double rolls
- Sheeted films
- Custom colors and sizes
- Light diffusing

Applications
- Nameplates
- Membrane switch overlays
- Dead-front instrument clusters
- POP displays
- Appliance appliqués

LEXAN films meet or exceed the most stringent performance specifications in the industry.

Gauge Tolerance:
0.020" and up — +/-3%
0.010" - 0.015" — +/-5%
0.007" and below — +/-10%
Flatness: Able to meet .10" flatness specifications (for .020" gauge and above) from roll stock on 24" x 24" sample.
Color Consistency: Reduced yellow variability by 30%
Texture: Improved RMS variability by 20%

Availability*

Designation	Surface Finishes	Gauges (in.)
Uncoated		
8010	Polished / Polished	0.005 - 0.030
8A13	Matte / Polished	0.005 - 0.025
8A13F	Fine Matte / Polished	0.005 - 0.020
8A35	Velvet / Polished	0.005 - 0.020
8B35	Velvet / Matte	0.005 - 0.020
8B35F	Velvet / Fine Matte	0.010 - 0.030
8B36	Suede / Matte	0.010 - 0.020
8A73	Matte / Polished	0.010 - 0.020
Colored Films		
8020	Polished / Polished	0.007 - 0.030
8A23	Matte / Polished	0.010, 0.015, 0.020

* Custom products may be available upon request.

LEXAN® High-Performance (HP) Film

Toughness Where It's Needed Most

Features
- Clarity
- First- and second-surface printability
- Gloss control
- Highest quality hard coat
- Four gloss levels
- Chemical and abrasion resistance
- Weatherable grades
- Enhanced color stability
- Enhanced adhesion – inks and molding

Applications
- Appliances
- Industrial nameplates
- Business and communication equipment
- Medical and diagnostic equipment
- Automotive interior
- Outdoor

A family of hard-coated films, LEXAN HP films offer superior performance and increased productivity when compared with post-coating. These films are available in four gloss levels, ranging from glass-like to matte in appearance. In addition, LEXAN HP films are available in two levels of chemical and abrasion resistance. For applications requiring weatherability and UV resistance, weatherable coated films HP92W and HP12W also are available along with HP92WP for first-surface printability.

LEXAN HP films are designed to meet the most demanding requirements. Typical applications include dishwasher fronts and medical and diagnostic equipment where abrasion and chemical resistance are important considerations.

Availability

Designation	Surface Finishes	Gauges (in.)
Coated Films		
HP12S, H or W	Matte / Polished	0.007 - 0.030 (0.007 - 0.025 for W)
HP40S or H	Matte / Polished	0.007 - 0.030
HP60S, H	Matte Polished	0.007 - 0.030
HP92S, H or W	Polished / Polished	0.007 - 0.030 (0.007 - 0.025 for W)
HP92WP	Polished / Polished	0.007 - 0.025

Appliance overlays require the chemical and abrasion resistant properties of LEXAN HP films.

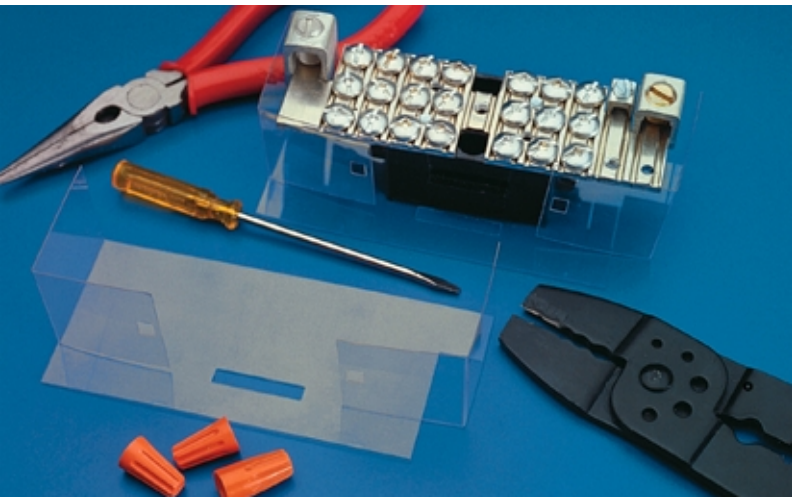
LEXAN HPW films offer UV resistance, chemical resistance and abrasion resistance for outdoor applications.

LEXAN HP films offer sharp, high precision die-cutting for nameplates used on medical and diagnostic devices.

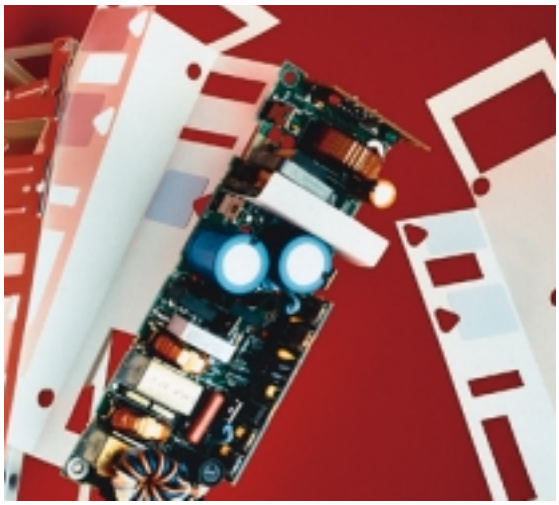
LEXAN HP92S film provides an ideal combination of properties plus high clarity for display products requiring abrasion resistance.

Flame Retardant Film

Proven Protection, Outstanding Printability



LEXAN FR60 film provides high dielectric strength as a strong physical barrier in a switch gear application.



LEXAN FR700 film is suitable for use as a barrier insulation providing excellent thermal and mechanical properties.

LEXAN® FR films feature outstanding flame retardant properties, to meet stringent graphic application and electrical insulation requirements. FR films offer screen printers the same printability and ink adhesion as other LEXAN films, as well as superior flame retardance, excellent dielectric strength, low moisture absorption and high dimensional stability for electrical insulation and shielding applications.

Die-cutters will also benefit from clean, crisp cuts and three-dimensional part fabrication.

VALOX® and ULTEM® films offer unique electrical properties useful in both graphic and electrical/electronic applications.

Features

- Printable FR films
- Selection of textures
- Excellent electrical and mechanical properties
- UL94 V-0 or VTM-0 rating
- Chemical resistance

Applications

- Graphics for displays
- FR nameplates
- Electrical insulation
- Circuitry substrates
- Film based EMI/RFI shields

With excellent dielectric strength, VALOX FR1 can be utilized in a wide range of electronics industry applications, including laminated EMI/RFI shields, disc drive and other business machine barrier insulation.

Availability

Designation	Surface Finishes	Gauges (in.)
LEXAN® Film		
FR60	Polished/Polished	0.010 - 0.030
FR63	Matte/Polished	0.010 - 0.025
FR65	Velvet/Matte	0.010 - 0.020
FR66	Suede/Matte	0.010 - 0.020
FR83	Polished/Ultra Fine Matte	0.002, 0.005, 0.007
FR700	Velvet/Fine Matte	0.010, 0.017, 0.030
ULTEM® Film (PEI)		
1000	Ultra Fine Smooth/Matte	0.002 - 0.007
VALOX® Film	Matte/Polished	0.003 - 0.030

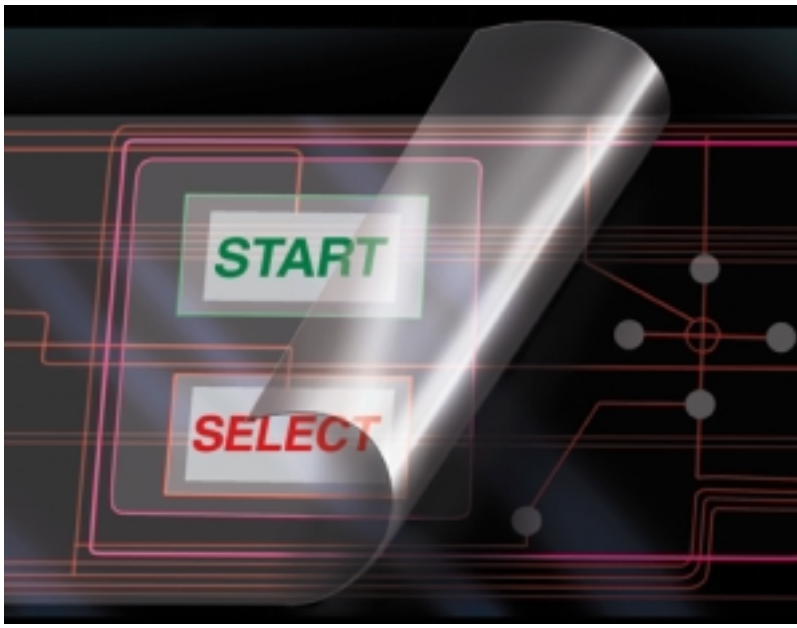
VALOX PTX™ Polyester Film

High Performance for Membrane Switch and Printed Circuit Application

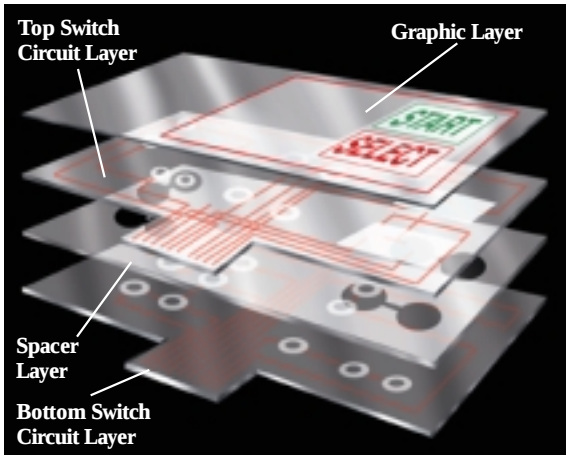
GE Structured Products offers VALOX PTX polyester film to meet your performance requirements for membrane switch and other graphic applications.

All VALOX PTX films provide excellent chemical resistance, optimum optical clarity, high tensile strength, and excellent flex life. In addition, VALOX PTX films are available with one or two sides pretreated to promote better ink adhesion, and in a heat stabilized grade to ensure accurate registration and stable performance. Each of the four VALOX PTX grades available are biaxially-oriented and can be specified in thicknesses from 0.003" to 0.010".

VALOX PTX 820 film is heat stabilized for lower thermal shrinkage**.** VALOX PTX 820 film's thermal shrinkage – typically less than 0.15% after 30 minutes at 150°C – makes it the ideal choice for membrane switch and printed circuit applications.



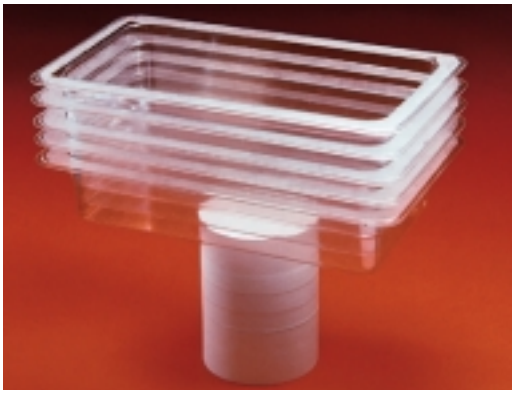
Layers	Desired Benefits	Suitable Grades
Graphic Overlay	Clarity, Printability, Chemical / Abrasion Resistance	LEXAN, LEXAN HP, VALOX PTX 110, VALOX PTX 120
Circuit Layer	Printability, Dimensional Stability	VALOX PTX 820



Grade	Features	Application
VALOX PTX 100	High Optical Clarity, High Gloss, Slip Treated for Improved Handling and Processing 100	Membrane Switch, Flexible Circuits, Labels
VALOX PTX 110	High Optical Clarity, High Gloss, One Side Adhesion Pretreatment 110	Membrane Switch, Flexible Circuits, Labels, Other Graphic Applications
VALOX PTX 120	High Optical Clarity, High Gloss Two Side Adhesion Pretreatment 120, 820	Membrane Switch, Flexible Circuits, Labels, Other Graphic Applications
VALOX PTX 820	Heat Stabilized, Low Shrinkage, High Optical Clarity, High Gloss, Two Side Adhesion Pretreatment	Membrane Switch, Printed Circuits

Specialty Film

Clear Choice for Performance Packaging



Specialty films can be thermoformed into a variety of shapes ranging from flat pouches to deep trays.

GE specialty films include UV-stabilized and FDA-compliant grades. These LEXAN® films can be used for a wide variety of demanding applications where clarity, impact strength and high-temperature performance is required. LEXAN films have good dimensional stability, and can be easily die-cut for clean, crisp parts. In addition, LEXAN films are thermoformable.

LEXAN 8030 film provides outstanding performance over a wide range of general-purpose applications. With excellent deep-draw thermoformability and die-cutting performance, this film offers increased productivity compared with other clear materials.

LEXAN 8040 film is an ideal choice for medical packaging applications ranging from flat pouches to thermoformed blisters and trays. The material withstands autoclaving and select dry heat sterilizing without stress-whitening, pinholing or loss of clarity or structural integrity.

LEXAN 8040 film's superior stiffness allows down-gauging and associated materials savings, while its durability and dimensional stability withstands the most demanding distribution environments. In addition, LEXAN 8040 film's deep-draw thermoformability can accommodate a wide range of functional, form-fitting packaging shapes.

Features

- FDA compliant (8040)
- High-temperature performance
- Excellent dimensional stability
- Easily die-cut
- Steam, EtO, gamma sterilizable
- Available in clear and custom colors

Applications

- Medical packaging
- Industrial thermoforming
- Food trays

Availability

Designation	Surface Finishes	Gauges (in.)
UV Stabilized		
8030	Polished / Polished	0.007-0.030
FDA Grade (Non-UV-Stabilized)		
8040	Polished / Polished	0.007-0.030

LEXAN® Film Property Profile Standard Film

Surface Texture Guide

Smooth: Typical of very-thin-gauge cast film. Good printing surface, but not as smooth as polished.

Polished: Virtually defect-free. Excellent printing surface with true-ink-color fidelity and optics. Particularly effective for LED/LCD windows. Provides primary substrate finish for screen printed applied selective textures.

Matte: Light diffuser. Hides filaments and eliminates "hot spots" in back-lit applications. Preferable finish for deadfront graphics. Offers reduced surface reflections and gloss.

Fine Matte: An optional texture for light diffusion and printability. Designed to eliminate "pinholing." Provides more uniform cut sheets.

Velvet: Hides scratches, fingerprints and marring for heavy-use applications. Also acts as a diffuser for "windowed" or back-lit applications.

Brushed/Polished: Outstanding product for metal replacement with typical LEXAN film properties.

Suede: Excellent in very-heavy-wear applications. Resists abrasion while maintaining its attractive appearance.

Property Profile

Property	Test Method	English Units (SI Units)	Typical Values* (Clear & Textures)	(Flame Retardant, FR-60)
Physical				
Specific Gravity	ASTM D792	–	1.20	1.32
Area Factor		$ft^2lb/mil(m^2/kg/mm)$	160 (0.833)	146 (0.758)
Water Absorption				
Equilibrium, 24 Hrs.	ASTM D570	%	0.35	0.28
Optical				
Light Transmission	ASTM D1003	%	88-91	86-90
Haze	ASTM D1003	%	0.5 (8010 only)	1 (polished only)
Yellowness Index	ASTM D1925	–	<1.0	<1.0
Refractive Index @ 77°F	ASTM D542	–	1.586	1.586
Mechanical				
Tensile Strength				
Yield	ASTM D882	psi (MPa)	8,500 (59)	10,000 (70)
Break	ASTM D882	psi (MPa)	9,000 (62)	8,800 (60)
Elongation	ASTM D882	%	100-150	25-50
Tensile Modulus	ASTM D882	psi (MPa)	300,000 (2,100)	320,000 (2,200)
Tear Strength				
Initial	ASTM D1004	lb/mil(N/mm)	1.4-1.8 (245-315)	1.7-2.0 (300-350)
Propagation	ASTM D1922	g/mil	30-55	16-80
Impact Strength	Gardner	in-lb (J)	120 (13.6) 30 mil (.76mm) film	60 (6.8) 30 mil (.76mm) film
Burst Strength	ASTM D774	Mullen, psi	40-45 @ 1 mil	–
Fold Endurance	M.I.T.	Double folds	200 @ 10 mil	150 @ 10 mil
Thermal				
Tensile Heat				
Distortion @ 50 psi	ASTM D1637	°F (°C)	302 (150) @ 50 psi (.34 MPa)	302 (150) @ 50 psi (.34 MPa)
Specific Heat @ 40°F	ASTM C351	Btu/lb/°F (kJ/kgK)	0.30 (1.25)	0.29 (1.21)
Thermal Conductivity	ASTM C177	Btu/hr/ft2/°F/in (W/km)	1.35 (0.19)	1.35 (0.19)
Coefficient of Thermal Expansion	ASTM D696	in/in/°F (m/m/°C)	3.75 x 10-5 (6.75 x 10-5)	3.75 x 10-5 (6.75 x 10-5)
Strain Relief	ASTM D1204	%	<0.2 @ 275°F (135°C)	<0.3 @ 275°F (135°C)
Brittleness Temperature	ASTM D746	°F (°C)	-211 (-135)	-150 (-101)
Electrical				
Dielectric Strength	ASTM D149	volts/mil (kV/mm)	1.700 (67)	1,500 (60)
72°F (23°C) in oil	(short time)		10 mil (.25mm) film	15 mil (.38mm) film
Dielectric Constant				
60 Hz	ASTM D150	–	2.99	2.9
106 Hz			2.93	2.8
Dissipation Factor				
60 Hz	ASTM D150	%	0.10	0.26
106 Hz			1.10	1.17
Volume Resistivity	ASTM D257	ohm-cm	1016	1016
Surface Resistivity	ASTM D257	ohm-sq	1015	1015
Arc Resistance	ASTM D495	seconds	120 (tungsten)	66 (tungsten)

* These are typical properties and are not intended for specification purposes.

LEXAN® Graphic Film

Versatile Fabricating and Finishing

Embossing for Decoration and Function
With today's focus on ergonomics, there is a growing need for sharp, durable embossing for raised keys or relief patterns on membrane switch overlays and fascia panels. LEXAN graphic film's outstanding dimensional stability and ductility assure high performance for embossed applications.

The ability to emboss in virtually any shape is a key performance characteristic of LEXAN film. Unlike other plastic substrates, LEXAN film can also accommodate square corners, straight sides, narrow-width lines and flat plateaus.

The flex life of a membrane switch overlay is affected by keypad dimensions and shape, emboss height and film gauge. The most important factor, however, is the compatibility of the ink and absence of retained solvents in the finished overlay. Each manufacturer should determine the viability of its application.

Transparent Inks for Backlit Windows
Transparent inks are used on many backlit displays, particularly over LED and LCD readouts. Screening a transparent color on a display window produces a seamless graphic, since there is no need to join a separate covered window with the graphic part. Using different transparent colored inks on a single part can produce exceptionally attractive and functional displays at very reasonable finished part cost.

It is possible to achieve a variety of different surface glosses by incorporating selective textures on the first surface. This technique also provides variable light diffusion on backlit areas.

Transparent colored inks can be used to produce dramatic dead-front graphics when illuminated. LEXAN 8010 polished/polished film is exceptionally well suited to backlite transparent colored windows. Its clarity and distortion-free optics permit the use of heavier gauges for added stiffness and durability.

Insert-Mold Decoration (IMD)
In this process, a pre-printed or decorated film part is inserted into the mold cavity prior to the injection molding process. IMD eliminates the need for a secondary operation and adds a degree of design freedom to the final product.

High-Precision Die-Cutting
LEXAN film is the optimum choice over metal for cost-efficient, intricate and precise die-cuts with burr-free edges. When additional rigidity is required, LEXAN film can be laminated to aluminum. The film's excellent dimensional stability ensures laminate integrity even when exposed to high temperatures.

LEXAN film/aluminum laminates permit streamlined assembly, since overlays with different die-cuts can be used on a standard baseplate. Testing at expected temperature should be performed to determine suitability.

Decorating Techniques
Although screen printing is the most common method of decorating LEXAN film, excellent results also can be achieved through hot-stamping, flexography, offset lithography, rotogravure and letterpress.

LEXAN film is also compatible with common solvent-based inks, as well as UV-curing inks. A list of recommended ink manufacturers is provided on page 11. GE Structured Products' Technical Marketing should be consulted for compatibility testing on new inks.

Adhesive Bonding
Printed LEXAN film fascias and dials are generally applied with transfer adhesives. A number of different systems can be used to bond LEXAN film, including:

- Compatible transfer adhesives
- Solvents, preferably methylene chloride (complete drying required)
- Two-part urethanes
- Hot-melt adhesives
- Contact cements

Recommended adhesive manufacturers are listed on page 11. Adhesives and inks should be tested for compatibility with each other and their suitability for the application.

Transfer Adhesives

Manufacturers	Adhesive ID
3M St. Paul, MN	467, 467MP, 468, 468MP, 918, 918MP, 919, 967, 968, 9453, 9458, 9471, 9472, 9667MP, 9668MP, 9671, 9672, 9186MP
Coating Sciences, Inc. Bloomfield, CT	UA102, UA4020, UB205, UB405, UJ201, UJ205, UJ505, UZ201, SB405T, U128, U141, HT207, HS221, UC205, UC509
Dielectric Polymers Inc. Holyoke, MA	Neltape 100, 140, 100AP, 140AP
Avery Dennison Specialty Tape Div. Painesville, OH	Fastape 1125HX, 1122HX, Fastape 333, 702, 703
Flexcon Co., Inc. Spencer, MA	V90, V22, V95, B126, V23, V402
Mac Tac Stow, OH	IF2012,1F2013, IF2015,IP2100, IP7000, IP2000, IP6000
Ritrama Duramark Minneapolis, MN	TAP-2-86-60, TAP-2-14-60, TAP-2-66-60
Sun Press Converting Elk Grove Village, IL	SP8800, SP3302, SP7511, SP728
Beinsdorf Australia, Ltd. Blacktown, NSW	Tesafix 51945, Tesafix 51946

Conductive Screen-Printing Inks

Manufacturers	Ink ID
Acheson Colloids Co. Port Huron, MI	417SS-silver-cond. 421SS-carbon 450SS-dielectric 432SS-dielectric 479SS-conductive 5524967-conductive
Acme Chemical and Insulation Co. Div. of Allied Products Corp. New Haven, CT	E-Kote-3080-silver E-Kote 3081-silver E-Kote 3082-silver
Amicon Corporation Lexington, MA	C220-1-silver C930-92-1-silver
International Microelectronics Research Corporation Nampa, ID	BA657C BA756B
Spraylat Corporation Mt. Vernon, NY	Z1014-conductive black, L8-5169-silver 599-A8755-copper

For additional information regarding ink or adhesive compatibility, call Technical Marketing at (413) 448-5400. Note: The inks and adhesives listed above are compatible with LEXAN® film as of the date of this publication. Formulations may change, however. Consequently, we strongly suggest that you conduct your own tests before committing to production.

Screen-Printing Inks

Manufacturers	Ink ID
Capex Corporation Ft. Lauderdale, FL	99
AKZO Coating America Wyandotte Sign Finished Co. Norcross, GA	Grip-Flex FR-1-Series Grip-Flex GF-1-Series
Colonial Printing Inks Inc. East Rutherford, NJ	9900 Series C-31, D-40
Color Mix Inc. Schaumburg, IL	CX70, HG Series Widerhold, J Series
General Formulations Sparta, MI	140 Series, 144 Series DB Series, 43 Series
Naz-dar Co. Chicago, IL and Shawnee, KS	9700, 9600-70152 PSP, 70 Series 59142
Sun Chemical Corporation Carlstadt, NJ	GA85-1327
UV Man (Nobes) Newton, PA	G-Man-UVO Foil
Nor-Cote Chemical Co., Inc. Crawfordville, IN	09000 CL-2 (UV) Textured, 02000 Series (UV) MSK Series
Summit Inks North Kansas City, MO	GVYL, Zephyrlon Sinvacure UV
Spraylat Corporation Mt. Vernon, NY	800 Series

Film Technology Backed by Hands-On Support

The growing family of GE thin-gauge extruded film products represents diverse technologies from the industry's broadest and most comprehensive engineering plastics line. The superior properties, durability and performance of these materials are your assurance of quality results.

To optimize your use of GE film products, GE Structured Products offers a range of technical assistance throughout every phase of your project – from initial concept through design, fabrication and end-use.

For further information, please call: (800) 451-3147 or (413) 448-5400.

For Customer Service assistance, please call: (800) 323-3783

GE Structured Products

AMERICAS

United States
GE Plastics
1 Plastics Avenue
Pittsfield, MA 01201
(413) 448-5400

Brazil
GE Plastics - Coplen S.A.
Rua Sansao Alves dos Santos 20
Brooklin, 04571
Sao Paulo, Brazil
(55) 11-543-5800 ext. 202

EUROPE

The Netherlands
GE Plastics B.V.
Structured Products Europe
Plasticslaan 1
4612 PX, Bergen op Zoom
The Netherlands
(31) 1640-32911
(31) 1640-36828 (Fax)

PACIFIC

Australia
GE Plastics (Australia) Pty. Ltd.
175 Hammond Road
Dandenong, Victoria
3175 Australia
(61) 39-794-4204
(61) 39-794-8563 (Fax)

Beijing
GE Plastics
Citic Building, 3rd Floor
No. 19 Jian Guo Men Wai Avenue
Beijing 100004 China
(86) 10-6500-6538
(86) 10-6500-6476 (Fax)

Guangzhou
GE Plastics Guangzhou
Room 1212, Yi An Plaza
No. 38, Jian She 6 Road
Guangzhou, China 510060
(86) 20-8387-2818
(86) 20-3128 or 3118 (Fax)

Hong Kong
GE Plastics Hong Kong Ltd.
Rm 1008, Tower 1, The Gateway
25 Canton Road
Kowloon, Hong Kong
(852) 26-29-0880
(852) 26-29-0801 (Fax)

Indonesia
GE Plastics Indonesia
Lippo Plaza, 9th Floor
Jl. Jend Sudiman Kav, 25
Jakarta 12920, Indonesia
(62) 21-520-3353
(62) 21-520-3510 (Fax)

Japan
SP Pacific Ltd.
Nihonbashi Hamacho Park Bldg. 5th Floor
2-35-4 Nihonbashi Hamacho
Chuo-ku, Tokyo 103, Japan
(81) 3-569-6301
(81) 3-569-6306 (Fax)

Korea
GE Plastics Korea Co. Ltd.
#231-8 Nonhyun-Dong
Kangnam-Ku
Seoul 135-010
Korea
(822) 510-6290
(822) 510-6606 (Fax)

Shanghai
GE Plastics Shanghai
10th Floor, Shartex Center
88 Zunyi Road(s)
Shanghai 200335 China
(86) 21-6270-6789
(86) 21-6270-9973 (Fax)
9974 (Fax)
9975 (Fax)

Singapore
GE Pacific Pte. Ltd.
12 Prince Edward Road
Podium A, Bestway Building
Singapore 079212
(65) 222-8817 x22
(65) 222-5882 (Fax)

Taiwan
GE Plastics
13th Floor, #168
Tun Hua North Road
Taipei, Taiwan
(886) 2-514-9842
(886) 2-514-9921 (Fax)

Thailand
GE Plastics Thailand
15th Floor, Thaniya Plaza Buiding
52 Silom Road, Bangkok 10500
Thailand
(662) 231-2918
(662) 231-2322 (Fax)

GE Structured Products

General Electric Company
One Plastics Avenue
Pittsfield, MA 01201

SPL-5002D (10/97) SMCC