

Lexan* GS135 Film

Product Datasheet

DESCRIPTION

Lexan® GS135 Film is a laminate of PVF and Lexan polycarbonate graphic film. With this laminate technology, Lexan GS135 Film offers high chemical resistance, formability, and long term resistance to outdoor weathering. Lexan GS135 Film also provides repeatability of graphics that can let you form deep draws while staying within customer specifications. With these characteristics and an improvement of abrasion resistance over our standard graphic grades, Lexan GS135 Film can meet a variety of standard graphic and In Mold Decoration application requirements.

Lexan GS135 laminated film has a velvet texture PVF first surface and a matte texture Lexan second surface. Lexan GS135 Film can be printed with graphics on the second surface. Lexan GS135 Film is UL 94 VTM-0 rated in all available gauges (see below).

Typical Property Values¹

Property	ASTM Test Method	Units (USCS)	Value	ISO Test Method	Units (SI)	Value
Mechanical						
Tensile Strength						
@ Yield	ASTM D882	psi	8900	ISO 527	MPa	61.6
Ultimate	ASTM D882	psi	10200	ISO 527	MPa	70.1
Tensile Modulus	ASTM D882	psi	297000	ISO 527	MPa	2050
Tensile Elongation at Break	ASTM D882	%	190	ISO 527	%	190
Gardner Impact Strenght at 0.03 in. (0.75 mm)	ASTM D3029	ft-lb	23	ISO 6603-1	J	31
Tear Strength						
Initiation	ASTM D1004	lb/mil	1.4-1.8		kN/m	273
Propogation	ASTM D1922	g/mil	30-55		kN/m	10-20
Puncture Resistance (Dynatup)	ASTM D3763	ft-lb	9		J	12
Fold Endurance (MIT)						
0.010 inch (0.25 mm)	ASTM D2176-69	double folds	60			
0.020 inch (0.50 mm)	ASTM D2176-69	double folds	20			
Thermal						
Coefficient of Thermal Conductivity	ASTM D5470	Btu/hr/ft ² /°F/in	1.35		W/m ² K	0.21
Coefficient of Thermal Expansion	ASTM E831	(x 10 ⁻⁵ /°F)	3.7	ISO 11359	(x 10 ⁻⁵ /°C)	6.7
Specific Heat @ 40 °F (4 °C)	ASTM E1269	Btu/lb/°F	0.3		KJ/Kg-°C	1.115
Glass Transition Temperature	ASTM D3417/D3418	°F	297	ISO 11357	°C	147
Vicat Softening Temperature, B	ASTM 1525-00 Modified	°F	312		°C	156
Heat Deflection Temp. by TMA at 1.8 MPa		°F	290	ISO 75 Modified	°C	145
Shrinkage at 302 °F (150 °C)	ASTM D1204	%	3.40%		%	3.40%
Brittleness Temperature	ASTM D746	°F	-211		°C	-135

UL Flammability Rating / Performance Levels

Thickness	Rating
>= 0.010" (0.250 mm) and < 0.025" (0.625 mm)	UL94VTM-0
File Number	E61257

Manufacturing Specifications

Nominal Gauge Ranges	Min./Max Limit of Nominal
0.007" (0.175 mm)	± 10%
0.010-0.015" (0.250-0.375 mm)	± 5%
0.020-0.030" (0.500-0.750 mm)	± 3%



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
Physical						
Density	ASTM D792	slug/ft ³	2.3	ISO 1183	kg/m ³	1200
Water Absorption, 24 hrs.	ASTM D570	% change	0.33	ISO 62	% change	0.33
Surface Roughness (RMS)	ASME B46-1	-	x			
Surface Energy (1st surface / 2nd surface)	ASTM D5946-01	-	33/34			
Surface Tension (1st surface / 2nd surface)	Dyne Pens	Dyne	>44 / 38-40			
Taber Abrasion	ASTM D1044	delta Haze	5			
Optical						
Refractive Index @ 77 °F (25 °C)	ASTM D542A	-	1.6			
Light Transmission	ASTM D1003	%	90			
Yellowness Index	ASTM D1925	%	2.6			
Haze	ASTM D1003	%	72			
Gloss over Flat Black min/max @ 60°	ASTM D523-60	-	19	ISO 2813	-	19
UV %Transmission at 380 nm	UV/Visual Spectroscopy	%	0.2			

CHEMICAL RESISTANCE (As Manufactured)

Chemical Results

One Hour Continuous Surface Contact at 73 °F		24 Hour Surface Exposure at 120 °F	
MEK	Passed	Top Job1	Passed
Ethyl Acetate	Passed	Spray 'N Wash2	Passed
Xylene	Passed	Formula 4093	Passed
40% NaOH	Passed	Mr. Clean1	Passed
5% HCL	Passed	Windex w/Ammonia D4	Passed
Gasoline (Unleaded)	Passed	Wisk5	Passed
Toluene	Passed	WD-406	Passed
Methylene Chloride	Failed		

Results of Other Tests

Reference Fuel C	Passed
Abrasive Wipe	Passed
Reference Fuel C	Passed
14 day Vapor Exposure	Passed

Failure constitutes any of the following:
non-removable stain or cloudiness, blistering,
delamination, or cracking of the substrate.

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