

Lexan* GS133 Film

Product Datasheet

Description

Lexan GS133 film is a laminate of Poly Vinyl Floride (PVF) and Lexan polycarbonate graphic film. With this laminate technology, Lexan GS133 film offers high chemical resistance, formability, and long term resistance to outdoor weathering. Lexan GS133 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 GS133 film can meet a variety of standard graphic and In Mold Decoration application requirements. Lexan GS133 laminated film has a velvet texture PVF first surface and a matte texture Lexan second surface. Lexan GS133 can be printed with graphics on the second surface. GS133 is UL 94 VTM-0 rated in all available gauges.

Typical property Values ♦

Property	ASTM Test Method	Units (USCS)	Value	Units (SI)	ISO Test Method	Value
Mechanical						
Tensile Strength @ Yield	ASTM D882	psi	8900	MPa	ISO 527	61.6
Ultimate	ASTM D882	psi	10200	MPa	ISO 527	70.1
Tensile Modulus	ASTM D882	psi	297000	MPa	ISO 527	2050
Tensile Elongation at Break	ASTM D882	%	190	%	ISO 527	190
Gardner Impact Strength at 0.03" (0.75 mm)	ASTM D3029	ft-lb	23	J	ISO 6603-1	31
Tear Strength						
Initiation	ASTM D1004	lb/mil	1.4-1.8	kN/m		273
Propogation	ASTM D1922	g/mil	30-55	kN/m		40.8
Puncture Resistance (Dynatup)	ASTM D3763	ft-lb	9	J		12
Fold Endurance (MIT)						
0.010" (0.25 mm)	ASTM D2176-69	double folds	60			
0.020" (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	(x10 ⁻⁵ /°F)	3.7	(x10 ⁻⁵ /°C)	ISO 11359	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	°C	ISO 11357	147
Vicat Softening Temperature, B	ASTM 1525-00 modified	°F	312	°C		156
Heat Deflection Temp. by TMA at 1.8 Mpa		°F	283	°C	ISO 75 Modified	140
Shrinkage at 302°F (150°C)	ASTM D1204	%	3.40	%		3.40
Brittleness Temperature	ASTM D746	°F	-211	°C		-135
Physical						
Density	ASTM D792	slug/ft ³	2.3	kg/m ³	ISO 1183	1200
Water Absorption, 24 hrs.	ASTM D570	% change	0.33	% change	ISO 62	0.33
Surface Energy(1 st surface/ 2 nd surface)	ASTM D5946-01	-	33/34			
Surface Tension(1 st surface/ 2 nd 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	-	12/28	-	ISO 2813	12/28
UV % Transmission at 380 nm	UV/Visual Spectroscopy	%	0.2			

UL Flammability Rating / Performance Levels

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

Manufacturing Specifications

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

♦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 unless otherwise noted.

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Chemical Resistance (As Manufactured)

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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