

Lexan* FR65 Film

Product Datasheet

Description

Lexan FR65 flame-retardant film is a clear, thin-gauge polycarbonate film with a velvet finish on one side and a matt 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 FR65 film 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, TV and monitor insulation.

Typical Property Values ♦

Property	ASTM Test Method	Units (USCS)	Value	ISO Test Method	Units (SI)	Value
Mechanical						
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 Strength at 0.03" (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		kN/m	3 - 5
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	0.2
Coefficient of Thermal Expansion	ASTM E831	(x10 ⁻⁵ /°F)	3.2	ISO 11359	(x10 ⁻⁵ /°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	°F	347		°C	175
Heat Deflection Temp. by TMA at 1.8 Mpa	modified	°F	290	ISO 75 Modified	°C	145
Shrinkage at 302°F (150°C)	ASTM D1204	%	0.02		%	0.02
Brittleness Temperature	ASTM D746	°F	-211		°C	-135
Physical						
Density	ASTM D792	slug/ft ³	2.6	ISO 1183	kg/m ³	1344
Water Absorption, 24 hrs.	ASTM D570	% change	0.28	ISO 62	% change	0.28
Surface Energy(1 st surface/ 2 nd surface)	ASTM D5946-01	-	34/36			
Surface Tension(1 st surface/ 2 nd surface)	Dyne Pens	Dyne	>44/>44			
Optical						
Refractive Index @77°F (25°C)	ASTM D542A	-	1.6			
Light Transmission	ASTM D1003	%	86.1			
Yellowness Index	ASTM D1925	%	1.3			
Haze	ASTM D1003	%	97			
Gloss over Flat Black min/max @ 60°	ASTM D523-60	-	3.0 - 4.5	ISO 2813		3.0 - 4.5

UL Flammability Rating / Performance Levels

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

Manufacturing Specifications

Nominal Gauge Ranges	Min./Max Limit of Nominal
0.010 - 0.020" (0.250 - 0.500mm)	-/+ 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 unless otherwise noted.

* Trademark of SABIC Innovative Plastics IP BV

Property	ASTM Test Method	Units (USCS)	Value	ISO Test Method	Units (USCS)	Value
Electrical						
Dielectric Strength in oil, short time @ 72°F (23°C), 10 mils (0.25mm)	ASTM D 149-97a 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			



* Trademark of SABIC Innovative Plastics IP BV

Americas:
SABIC Innovative Plastics
Specialty Film & Sheet
One Plastics Avenue
Pittsfield, MA 01201
USA
Tel. (1) (413) 448 5400
Fax. (1) (413) 448 7506
Toll free: 1-800 451 3147

Europe:
SABIC Innovative Plastics
Specialty Film & Sheet
Plasticslaan 1
NL - 4612 PX Bergen op Zoom
The Netherlands
Tel. (31) (164) 292911
Fax. (31) (164) 293272

Pacific:
SABIC Innovative Plastics
Specialty Film & Sheet
1266 Nanjin Road (W)
Plaza 66, 17th Floor
200040 Shanghai, China
Tel. (86) 21 62881088
Fax. (86) 21 62880818

THE MATERIALS, PRODUCTS AND SERVICES OF SABIC INNOVATIVE PLASTICS HOLDING BV, ITS SUBSIDIARIES AND AFFILIATES ("SELLER"), ARE SOLD SUBJECT TO SELLER'S STANDARD CONDITIONS OF SALE, WHICH CAN BE FOUND AT <http://www.sabic-ip.com> AND ARE AVAILABLE UPON REQUEST. ALTHOUGH ANY INFORMATION OR RECOMMENDATION CONTAINED HEREIN IS GIVEN IN GOOD FAITH, SELLER 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 SELLER'S PRODUCTS, SERVICES OR RECOMMENDATIONS. EXCEPT AS PROVIDED IN SELLER'S STANDARD CONDITIONS OF SALE, SELLER SHALL NOT BE RESPONSIBLE FOR ANY LOSS RESULTING FROM ANY USE OF ITS PRODUCTS OR SERVICES DESCRIBED HEREIN. Each user is responsible for making its own determination as to the suitability of Seller's products, services or recommendations for the user's particular use through appropriate end-use testing and analysis. Nothing in any document or oral statement shall be deemed to alter or waive any provision of Seller's Standard Conditions of Sale or this Disclaimer, unless it is specifically agreed to in a writing signed by Seller. No statement by Seller concerning a possible use of any product, service or design is intended, or should be construed, to grant any license under any patent or other intellectual property right of Seller or as a recommendation for the use of such product, service or design in a manner that infringes any patent or other intellectual property right.

SABIC Innovative Plastics is a trademark of Sabic Holding Europe BV

* Trademark of SABIC Innovative Plastics IP BV