

LEXAN™ FR700 FILM

PRODUCT DATASHEET

DESCRIPTION

LEXAN™ FR700 is a black, one side fine matt, one side velvet flame-retardant polycarbonate film with a UL94 V-0 listing at 0.250 mm. This film has formability, excellent mechanical properties, good dimensional stability at high temperatures and a high flammability rating, making it good for applications such as power supply insulation, disc drive insulation, bus-bar insulation, TV/monitor insulation, PC board insulation, business equipment insulation and has insulation and EMI/RFI shielding when laminated with metal foil.

TYPICAL PROPERTY VALUES

PROPERTY	ASTM TEST METHOD	UNITS (USCS)	VALUE	ISO TEST METHOD	UNITS (SI)	VALUE
MECHANICAL						
Tensile Strength @ Yield (0.43mm)	ASTM D882	psi	8845	ISO 527	MPa	61
Ultimate(0.43mm)	ASTM D882	psi	9470	ISO 527	MPa	66
Tensile Modulus (0.43mm)	ASTM D882	psi	379465	ISO 527	MPa	2617
Tensile Elongation at Break (0.43MM)	ASTM D882	%	41	ISO 527	%	41
Gardner Impact Strength at 0.03" (0.75mm)	ASTM D3029	ft-lb	11	ISO 6603-1	J	28
Tear Strength						
Initiation	ASTM D1004	lb/mil	1.43		kN/m	298
Propagation	ASTM D1922	g/mil	18.8		kN/m	16
Puncture Resistance (Dynatup)	ASTM D3763	ft-lb	9		J	12
Fold Endurance (MIT)						
0.010" (0.25 mm)	ASTM D2176-69	double folds	27			
0.020" (0.50 mm)	ASTM D2176-69	double folds	12			
THERMAL						
Coefficient of Thermal Conductivity	ASTM D5470	Btu/hr/ft ² /°F/in	1.35		W/m°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 modified	°F	347			175
Heat Deflection Temp. by TMA at 1.8 Mpa		°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	-	35/35			
Surface Tension(1 st surface/ 2 nd surface)	Dyne Pens	Dyne	36-38/36-38			

PROPERTY	ASTM TEST METHOD	UNITS (USCS)	VALUE	ISO TEST METHOD	UNITS (SI)	VALUE
OPTICAL						
Gloss over Flat Black min/max @ 60°	ASTM D523-60	-	10.5	ISO 2813	-	10.5
ELECTRICAL						
Dielectric Strength in oil, short time						
@ 72°F (23°C), 10mils (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 MHz	ASTM D150	-	2.8	IEC 60250	-	2.8
Dissipation Factor						
@ 60 Hz	ASTM D150	-	0.0026	IEC 60250	-	0.0026
@ 1 MHz	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			

◆ These are typical properties and are not intended for specification purposes. If minimum certifiable properties are required, please contact your local SABIC representative or the SABIC Quality Services Department. Reported values are based on 0.250 mm (0.010”) thickness film unless otherwise noted.
 ™ Trademark of SABIC.

MANUFACTURING SPECIFICATIONS

NOMINAL GAUGE RANGES	MIN./MAX LIMIT OF NOMINAL
0.010 - 0.014” (0.250 - 0.350mm)	-/+ 10%
0.015 - 0.030” (0.375 - 0.750mm)	-/+ 5%

Color Code: Black Color 701 (BK)

UL FILE NUMBERS: [E121562](#), [E207780](#), [E45329](#)



CONTACT US:

SABIC CORPORATE HQ
 PO Box 5101
 Riyadh 11422
 Saudi Arabia
 T +966 (0) 1 225 8000
 E info@sabic.com

AMERICAS
 SABIC
 Functional Forms
 2500 City West Boulevard
 Suite 100
 Houston, TX 77042
 USA
 Toll-free (800) 323 3783
 E spinside.sales@sabic.com

EUROPE
 SABIC
 Functional Forms
 Plasticlaan 1
 4612 PX
 Bergen op Zoom
 The Netherlands
 T +31 (0)164 293684
 E ff.info@sabic.com

PACIFIC
 SABIC
 Functional Forms
 2550 Xiupu Road
 Pudong
 201319 Shanghai
 China
 T +86 20 2866 6168
 E ff.info@sabic.com

DISCLAIMER: THE MATERIALS, PRODUCTS AND SERVICES OF SAUDI BASIC INDUSTRIES CORPORATION (SABIC) OR ITS SUBSIDIARIES OR AFFILIATES (“SELLER”) ARE SOLD SUBJECT TO SELLER’S STANDARD CONDITIONS OF SALE, WHICH ARE AVAILABLE UPON REQUEST. INFORMATION AND RECOMMENDATIONS CONTAINED IN THIS DOCUMENT ARE GIVEN IN GOOD FAITH. HOWEVER, SELLER MAKES NO EXPRESS OR IMPLIED REPRESENTATION, WARRANTY OR GUARANTEE (i) THAT ANY RESULTS DESCRIBED IN THIS DOCUMENT WILL BE OBTAINED UNDER END-USE CONDITIONS, OR (ii) AS TO THE EFFECTIVENESS OR SAFETY OF ANY DESIGN OR APPLICATION INCORPORATING SELLER’S MATERIALS, PRODUCTS, SERVICES OR RECOMMENDATIONS. UNLESS OTHERWISE PROVIDED IN SELLER’S STANDARD CONDITIONS OF SALE, SELLER SHALL NOT BE RESPONSIBLE FOR ANY LOSS RESULTING FROM ANY USE OF ITS MATERIALS, PRODUCTS, SERVICES OR RECOMMENDATIONS DESCRIBED IN THIS DOCUMENT. Each user is responsible for making its own determination as to the suitability of Seller’s materials, products, services or recommendations for the user’s particular use through appropriate end-use and other 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. Statements by Seller concerning a possible use of any material, product, service or design do not, are not intended to, and should not be construed to grant any license under any patent or other intellectual property right of Seller or as a recommendation for the use of any material, product, service or design in a manner that infringes any patent or other intellectual property right. SABIC and brands marked with ™ are trademarks of SABIC or its subsidiaries or affiliates, unless otherwise noted.

© 2023 Saudi Basic Industries Corporation (SABIC). All Rights Reserved.

Any brands, products or services of other companies referenced in this document are the trademarks, service marks and/or trade names of their respective holders.