

# LEXAN™ HPxxS FILM

## PRODUCT DATASHEET

### DESCRIPTION

LEXAN HPxxS graphic films are high-performance coated films offering very good chemical and abrasion resistance together with unique processing characteristics. These highly durable, easily printed films create new opportunities in graphic design with a unique package of benefits: Flexible UV processing, Multiple topside selective texturing, Color topside texturing, Durability of coating and texture adhesion when exposed to strong household chemicals such as Wisk<sup>¶</sup> or Formula 409<sup>#</sup>.

### TYPICAL PROPERTY VALUES

PROPERTY	ASTM (ISO) TEST METHOD	UNITS USCS (SI)	HP12S	HP40S	HP60S	HP92S
<b>MECHANICAL</b>						
Tensile Strength @ Yield	ASTM D882 (ISO 527)	psi (MPa)	8800 (60)	8800 (60)	8800 (60)	8800 (60)
Ultimate	ASTM D882 (ISO 527)	psi (MPa)	9000 (62)	9000 (62)	9000 (62)	9000 (62)
Tear Strength						
Initiation	ASTM D1004	lb/mil (kN/m)	1.51 (264)	1.51 (264)	1.51 (264)	1.51 (264)
Propagation	ASTM D1922	g/mil (kN/m)	40 (14)	40 (14)	40 (14)	40 (14)
<b>THERMAL</b>						
Vicat Softening Temperature, B	ASTM 1525	°F (°C)	320 (160)	320 (160)	320 (160)	320 (160)
Heat Deflection Temp. by TMA at 1.8 Mpa	ISO 75 Modified	°F (°C)	290 (145)	291 (145)	292 (145)	293 (145)
Shrinkage at 302°F (150°C)	ASTM D1204	%	1.40%	1.40%	1.40%	1.40%
<b>PHYSICAL</b>						
Density	ASTM D792 (ISO 1183)	slug/ft <sup>3</sup> (kg/m <sup>3</sup> )	2.3 (1200)	2.3 (1200)	2.3 (1200)	2.3 (1200)
Surface Energy (1st surface / 2 <sup>nd</sup> surface)	ASTM D5946-01	-	44/34	38/34	38/34	36/34
Surface Tension (1st surface / 2 <sup>nd</sup> surface)	Dyne Pens	Dyne	>44/38-40	40-42/38-40	32-34/38-40	38-40/38-40
Pencil Hardness (coated surface)	ASTM D3363	-	HB-F	HB-F	HB-F	HB-F
Taber Abrasion	ASTM D1044	delta Haze	<2	4	3	4
<b>OPTICAL</b>						
Light Transmission	ASTM D1003	%	91	92	92	92
Yellowness Index	ASTM D1925	%	0.9	0.8	0.8	0.5
Haze	ASTM D1003	%	45	12	6	0.5
Gloss over Flat Black min/max @ 60	ASTM D523-60 (ISO 2813)	-	12	40	60	92

◆ 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 0.010" (0.250 mm) Thickness unless otherwise noted.

¶ Wisk is a registered trademark of Lever Brothers Company.

# Formula 409 is a registered trademark of Clorox Company.

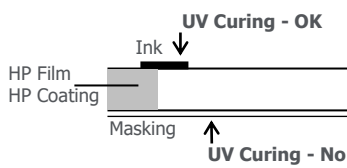
™ Trademark of SABIC.

## MANUFACTURING SPECIFICATIONS

NOMINAL GAUGE RANGES	MIN./MAX LIMIT OF NOMINAL
0.007" (0.175mm)	-/+ 10%
0.010 - 0.015" (0.250 - 0.375mm)	-/+ 5%
0.020 - 0.030" (0.500 - 0.750mm)	-/+ 3%

## MASKING

The standard masking on HP film is not designed to have UV radiation (for curing) passed through it. If this is required, alternate masking is available. Please contact your sales representative for more details.



## CHEMICAL AND ABRASION RESISTANCE

A unique feature of LEXAN™ HPxxS films is receptivity to multiple-pass, first-surface decoration for selective textures and/or color graphics. This feature requires that the coating be chemically sensitive to a variety of ink formulations. As a result, the coating is subject to attack by aggressive industrial chemicals and some strong household cleaners. Both the chemical resistance and the hardness of the coating can be enhanced by exposing the coated surface of the film to UV ink curing conditions.

## TABER ABRASION RESISTANCE (ASTM D1044) LEXAN HP92S GRAPHIC FILM

CONDITION CS10F WHEEL, 500 GRAMS	UNITS	AS MANUF.	POST CURED <sup>‡</sup>
25	Change in % Haze	1.7	1
50	Change in % Haze	3.2	2
100	Change in % Haze	6.5	4.1
200	Change in % Haze	12.9	9

<sup>‡</sup> Post cure conditions: One elliptical focused medium pressure mercury vapor lamp at 300 watts/inch and a conveyor speed of 20 feet/minute

## CHEMICAL RESISTANCE

CHEMICAL	RESULTS <sup>†</sup>	
	As Manufactured	Post Cured <sup>††</sup>
<b>One Hour Continuous Surface Contact at 73° F</b>		
Acetone	Failed	Passed
MEK	Failed	Passed
Toluene	Failed	Passed
Methylene Chloride	Failed	Passed
Isopropyl Alcohol	Passed	Passed
Cyclohexanone	Failed	Passed
Ethyl Acetate	Failed	Passed
Xylene	Failed	Passed
40% NaOH	Failed	Passed
Concentrated HCl	Passed	Passed
Gasoline (Regular)	Passed	Passed
Gasoline (Unleaded)	Passed	Passed
Butyl Cellosolve	Failed	Passed

CHEMICAL	RESULTS <sup>†</sup>	
	As Manufactured	Post Cured <sup>††</sup>
<b>24 hour continuous Surface Contact at 120°F</b>		
Coffee	Passed	Passed
Top Job <sup>*</sup>	Passed	Passed
Fantastik <sup>##</sup>	Passed	Passed
Formula 409 <sup>#</sup>	Passed	Passed
Windex w/ Ammonia D <sup>###</sup>	Passed	Passed
Wisk <sup>¶</sup>	Passed	Passed
Downy <sup>#</sup>	Passed	Passed
Spray N Wash <sup>##</sup>	Passed	Passed
Clorox <sup>*</sup>	Passed	Passed
Mustard	Passed	Passed
Mr. Clean <sup>#</sup>	Passed	Passed
Ketchup	Passed	Passed
Tea	Passed	Passed
Tomato Juice	Passed	Passed
Lemon Juice	Passed	Passed
Grape Juice	Passed	Passed
Vinegar	Passed	Passed
Milk	Passed	Passed

<sup>†</sup> Failure constitutes any of the following: non-removable stain or cloudiness, blistering, delamination, or cracking of the coating or failure to pass crosshatch tape adhesion.

<sup>††</sup> Post cure conditions: One elliptical focused medium pressure mercury vapor lamp at 300 watts/inch and a conveyor speed of 20 feet/minute

<sup>¶</sup> Wisk is a registered trademark of Lever Brothers Company

<sup>#</sup> Formula 409 and Clorox are registered trademarks of the Clorox Company

<sup>#</sup> Top Job, Downy, and Mr. Clean are registered trademarks of Procter & Gamble

<sup>##</sup> Fantastik and Spray 'N Wash are registered trademarks of Texize, Division of Norton Norwich Products, Inc.

<sup>###</sup> Windex w/Ammonia D is a registered trademark of Drackett Products Company

## SAFETY

The processing guidance given in this documentation is given in good faith and the trust that in all cases you wear the correct Personal Protective Equipment (PPE), e.g. helmet, proper gloves, safety goggles etc. to safely fabricate, e.g. (but not limited to) sawing, cutting, forming our sheets and films. In all cases you should follow local and national regulations around the wear of PPE's prescribed or mandatory to perform these tasks in a safely manor.

## CONTACT US:

### MIDDLE EAST AND AFRICA

SABIC Global Headquarters  
PO Box 5101  
Riyadh 11422  
Saudi Arabia  
T +966 (0) 1 225 8000  
F +966 (0) 1 225 9000  
E [info@sabic.com](mailto:info@sabic.com)

### AMERICAS

Functional Forms  
2500 City West Boulevard  
Suite 100  
Houston, TX 77042  
USA  
Inside sales:  
Toll-free (800) 323 3783  
F (888) 443 2033  
E [spinside.sales@sabic.com](mailto:spinside.sales@sabic.com)

### EUROPE

Functional Forms  
Plasticslaan 1  
4612 PX  
Bergen op Zoom  
The Netherlands  
T +31 164 293684  
F +31 164 292272  
E [ff.info@sabic.com](mailto:ff.info@sabic.com)

### ASIA PACIFIC

Functional Forms  
2550 Xiupu Road  
Pudong  
201319 Shanghai  
China  
T +86 21 3222 4500  
F +86 21 6289 8998  
E [ff.info@sabic.com](mailto: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.

© 2021 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.

[www.sabic.com/sfs](http://www.sabic.com/sfs)