POLYVANTIS

PRODUCT DATASHEET

LEXAN™ HPxxW FILM

DESCRIPTION

LEXAN ™ HPxxW graphic film is a high-performance coated film offering very good chemical/abrasion resistance, plus very good UV resistance. These performance capabilities, along with LEXAN film's ease of processing, make HPxxW film a good choice for outdoor graphic applications such as: Warning Labels, Outdoor Menu Boards, Gasoline Pumps, Outdoor Lenses, and Marine Graphics.

TYPICAL PROPERTY VALUES*

PROPERTY	ASTM (ISO) TEST METHOD	UNITS USCS (SI)	HP12W	HP92W
MECHANICAL				
Tensile Strength @ Yield	ASTM D882 (ISO 527)	psi (MPa)	8800 (60)	8800 (60)
Ultimate	ASTM D882 (ISO 527)	psi (MPa)	9000 (62)	9000 (62)
Tear Strength				
Initiation	ASTM D1004	lb/mil (kN/m)	1.51 (264)	1.51 (264)
Propagation	ASTM D1922	g/mil (kN/m)	40 (14)	40 (14)
THERMAL				
Vicat Softening Temperature, B	ASTM 1525	°F (°C)	320 (160)	320 (160)
Heat Deflection Temp. by TMA at 1.8	ISO 75 Modified	°F (°C)	290 (145)	290 (145)
Shrinkage at 302°F (150°C)	ASTM D1204	%	1.40%	1.40%
PHYSICAL				
Density	ASTM D792 (ISO 1183)	slug/ft^3 (kg/m^3)	2.3 (1200)	2.3 (1200)
Surface Energy (1st surface / 2nd surface)	ASTM D5946-01	-	NA/34	NA/34
Surface Tension (1st surface / 2nd surface)	Dyne Pens	Dyne	NA/38-40	NA/38-40
Pencil Hardness (coated surface)	ASTM D3363	-	HB-F	HB-F
Taber Abrasion	ASTM D1044	delta Haze	<1	<2
OPTICAL				
Light Transmission	ASTM D1003	%	90	92
Yellowness Index	ASTM D1925	%	1.3	0.7
Haze	ASTM D1003	%	56	0.5
Gloss over Flat Black min/max @ 60	ASTM D523-60 (ISO 2813)	_	12	92
UV% Transmission at 380 nm	UV/Visual Spectroscopy	%	14	39

- These are typical properties and are not intended for specification purposes. If minimum certifiable properties are required, please contact your local POLYVANTIS representative or the POLYVANTIS Quality Services Department.
  Reported Values are based on 0.010" (0.250 mm) Thickness unless otherwise noted.

MANUFACTURING SPECIFICATIONS

For Gloss Level 12 and above (i.e. 12-92)

NOMINAL GAUGE RANGES	MIN./MAX LIMIT OF NOMINAL
≤0.010" (0.250 mm)	-/+10%
>0.010" (0.250mm)	-/+5%

For Gloss Level below 12

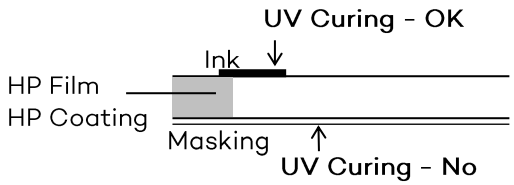
NOMINAL GAUGE RANGES	MIN./MAX LIMIT OF NOMINAL
≤0.010" (0.250 mm)	-10% +20%
>0.010" (0.250mm)	-5% +10%

UV RESISTANCE

LEXAN™ HPxxW film utilizes a proprietary coating technology developed by POLYVANTIS. This special coating resists yellowing and hazing - no matter how bright the sun. With a yellowness index of less than 3.0 at 1000 hours of QUV testing and less than 2.0 at 1000 hours of Xenon Arc testing. LEXAN HPxxW film is a natural choice for demanding outdoor applications.

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

Along with very good UV resistance, LEXAN HPxxW film also has chemical and abrasion resistance comparable with the original HPS series of films.

TABER ABRASION RESISTANCE (ASTM D1044) LEXAN™ HPxxW GRAPHIC FILM

CONDITION CS10F WHEEL, 500 GRAMS	UNITS	HP12W	HP92W
25	Change in % Haze	0.4	2
50	Change in % Haze	0.6	2.9
100	Change in % Haze	2	6.6
200	Change in % Haze	6.7	13.8

CHEMICAL RESISTANCE

CHEMICAL	RESULTS[†]
One Hour Continuous Surface Contact at 73° F	
Acetone	Failed
MEK	Failed
Toluene	Failed
Methylene Chloride	Failed
Isopropyl Alcohol	Passed
Cyclohexanone	Passed
Ethyl Acetate	Failed
Xylene	Passed
40% NaOH	Passed
Concentrated HCl	Passed
Gasoline (Regular)	Passed
Gasoline (Unleaded)	Passed
Butyl Cellosolve	Passed
24 hour continuous Surface Contact at 120°F	
Coffee	Passed
Top Job[¥]	Passed
Fantastik [##]	Passed
Formula 409 [#]	Passed
Windex w/ Ammonia D [###]	Passed
Wisk [¶]	Passed
Downy [#]	Passed
Spray N Wash[##]	Passed
Clorox[*]	Passed
Mustard	Passed
Mr. Clean [#]	Passed
Ketchup	Passed
Tea	Passed
Tomato Juice	Passed
Lemon Juice	Passed
Grape Juice	Passed
Vinegar	Passed
Milk	Passed

[†] 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.

[¶] Wisk is a registered trademark of Lever Brothers Company

[#] Formula 409 and Clorox are registered trademarks of the Clorox Company

[#] Top Job, Downy, and Mr. Clean are registered trademarks of Procter & Gamble

[##] Fantastik and Spray 'N Wash are registered trademarks of Texize, Division of Norton Norwich Products, Inc.

[###] 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 safe manor.

POLYVANTIS

Polycarbonate products are sold globally under the trademark LEXAN™ Film & Sheet, owned by SABIC or its subsidiaries or affiliates.

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LEXAN™ POLYCARBONATE FILM & SHEET | Tough, Virtually Unbreakable

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