Product Data Sheet

Lexan® HPxxS Film

Description

Lexan HPxxS is a transparent high-performance one side coated polycarbonate film, which offers excellent chemical and abrasion resistance.
These performance capabilities, along with Lexan film's ease of processing, make HPxxS film very suitable for graphic applications such as:

- industrial nameplates
- business and communication equipment
- medical and diagnostic equipment
- pager/mobile phone LCD windows
- cluster and dial-lens covers
- appliance front-panels and overlays

Configuration

Gloss (%)	Gauges (mm)	Color
92	0.175	112
60	0.250	
40	0.375	
12	0.500	
	0.635	
	0.750	

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Property	Test	Unit	Value+
Physical			
Specific gravity	ISO 1183	g/cm^3	1.20
Water absorption, saturation, 23°	ISO 62	%	0.40
Resistance to humidity, 720 hrs. @ 40°C, 100% RH	GE test	---	no visible change
Mechanical			
Tensile stress, yield	ISO R527	MPa	63
Tensile stress, break	ISO R527	MPa	70
Tear strength, initiation	ASTM D1004	kN/m	245
Tear strength, propagation	ASTM D1922	kN/m	10-20
Thermal			
Heat aging @ 168 hrs. 82°C	GE test	---	no visible change
Coefficient of linear expansion	DIN 53752	1/°C	$6.8x10^{-5}$

Optical

Property	Test Method	Units	Values+			
			HP92	HP60	HP40	HP12
Haze	ASTM D1003	%	<0.5	6.4	23	45
Light transmission	ASTM D1003	%	92	92	91	90
Yellowness index	ASTM D1925	--	0.8	0.8	0.9	1.2
Gloss back painted flat black	ASTM D523	Gardner				
60°			92	62	40	12
85°			--	--	--	45
20°			84	--	--	--
Gloss clear oven white	ASTM D523	Gardner				
60°			165	65	64	27
85°			--	--	--	--
20°			181	181	--	--

+ Typical values only. Variations within normal tolerances are possible for the various textures.

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Chemical and Abrasion resistance

Chemical resistance	As manufactured	Post cured*
One hour continious surface contact at 23 °C		
Acetone	Failed	Passed
Methylethylketone	Failed	Passed
Toluene	Failed	Passed
Dichloromethane	Failed	Passed
Isopropyl alcohol	Passed	Passed
Cyclohexanone	Failed	Passed
Ethyl acetate	Failed	Passed
Xylene	Failed	Passed
Sodium hydroxide (40%)	Failed	Passed
Hydrochloric acid (conc.)	Passed	Passed
Gasoline (Leaded)	Passed	Passed
Gasoline (Unleaded)	Passed	Passed
Butyl Cellosolve	Failed	Passed
24 hour surface exposure at 50 °C		
Coffee	Failed	Passed
Mustard	Failed	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
Mild household detergent	Passed	Passed

Taber abrasion			
Condition	**Units**	**As manufactured**	**Post cured***
CS10F wheel, 500 grams			
25 cycles	Δ % haze	1.7	1.0
50 cycles	Δ % haze	3.2	2.0
100 cycles	Δ % haze	6.5	4.1
200 cycles	Δ % haze	12.9	9.0

* Post cure conditions: one elliptical focused medium pressure mercury vapour lamp at 300 Watts/2.5 mm and a conveyer speed of 6 metres per minute.

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