POLYVANTIS

PRODUCT DATASHEET

LEXAN™ DPHPxxFRS FILM

DESCRIPTION

LEXAN™ DPHPxxFRS is a one side primed film designed for increased digital UV ink adhesion under laminating adhesive exposure where other polycarbonate film solutions may not perform as needed. Due to rapid development of ink adhesion, post drying of the printed artwork prior to adhesive lamination can be eliminated (with many digital ink sets) thus reducing production cycle time. Utilizing LEXAN™ FR60 flame-retardant film as the base of this specialty film, LEXAN DPHPxxFRS film offers very good chemical and abrasion resistance on the HP coated side (designed for graphics applications).

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	65
Ultimate	ASTM D882	psi	8700	ISO 527	MPa	70
Tensile Modulus	ASTM D882	psi	319000	ISO 527	MPa	>2200
Tensile Elongation at Break	ASTM D882	%	100-160	ISO 527	%	>100
Gardner Impact Strength at 0.03”	ASTM D3029	ft-lb	21	ISO 6603-1	J	28
Tear Strength						
Initiation	ASTM D1004	lb/mil	1.4-1.8		kN/m	298
Propagation	ASTM D1922	g/mil	30-55		kN/m	6
Puncture Resistance (Dynatup)	ASTM D3763	ft-lb	9		J	12
Fold Endurance (MIT)						
0.010” (0.25 mm)	ASTM D2176-69	double folds	45			
0.020” (0.50 mm)	ASTM D2176-69	double folds	30			
THERMAL						
Coefficient of Thermal Conductivity	ASTM D5470	Btu/hr/ft^2/°F/i	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	148
Vicat Softening Temperature, B	ASTM 1525-00	°F	347			141
Heat Deflection Temp. by TMA at 1.8		°F	290	ISO 75	°C	127
Shrinkage at 302°F (150°C)	ASTM D1204	%	0.09		%	0.09
Brittleness Temperature	ASTM D746	°F	-211		°C	-135
PHYSICAL						
Density	ASTM D792	slug/ft^3	2.647	ISO 1183	kg/m^3	1.344
Water Absorption, 24 hrs.	ASTM D570	% change	0.28	ISO 62	% change	0.28
Surface Energy	ASTM D5946-01	-	36			

PROPERTY	ASTM TEST METHOD	UNITS (USCS)	VALUE	ISO TEST METHOD	UNITS (SI)	VALUE
PHYSICAL						
Surface Tension	Dyne Pens	Dyne	38-40			
Pencil Hardness	ASTM D3363	-	b-hb			
Taber Abrasion	ASTM D1044	delta Haze	25			
OPTICAL						
Refractive Index @77°F (25°C)	ASTM D542A	-	1.6			
Light Transmission	ASTM D1003	%	91			
Yellowness Index	ASTM D1925	%	0.9			
Haze	ASTM D1003	%	0.6			
Gloss over Flat Black min/max @ 60°	ASTM D523-60	-	171	ISO 2813	-	171
ELECTRICAL						
Dielectric Strength in oil, short time @ 72°F (23°C), 10 mils (0.25mm)	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
@1,000,000 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			

- 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 0.250 mm (0.010") thickness unless otherwise noted.

CHEMICAL RESISTANCE

CHEMICAL	RESULTS[†]	
	As Manufactured	Post Cured[††]
1 Hour Continuous Surface Contact at 73° F		
Acetone	Failed	Passed
MEK	Failed	Passed
Toluene	Failed	Passed
Methylene Chloride	Failed	Passed
Isopropyl Alcohol	Passed	Passed
Cyclohexanone	Failed	Failed
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[†]	
	As Manufactured	Post Cured[††]
24 hour continuous Surface Contact at 120°F		
Coffee	Passed	Passed
Top Job[1]	Passed	Passed
Fantastik[2]	Passed	Passed
Formula 409[3]	Passed	Passed
Windex w/ Ammonia D[4]	Passed	Passed
Wisk[5]	Passed	Passed
Downy[1]	Passed	Passed
Spray N Wash[2]	Passed	Passed
Clorox[3]	Passed	Passed
Mustard	Passed	Passed
Mr. Clean[1]	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

† 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.

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

1 Top Job, Downy, and Mr. Clean are registered trademarks of Procter & Gamble

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

3 Formula 409 and Clorox are registered trademarks of the Clorox Company

4 Windex w/Ammonia D is a registered trademark of Drackett Products Company

5 Wisk is a registered trademark of Lever Brothers Company

MANUFACTURING SPECIFICATIONS

For Gloss Levels 12 and Above

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

For Gloss Levels Below 12

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

Color Code: Clear - 116 (CL)

POLYVANTIS

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

polyvantis.com

LEXAN™ POLYCARBONATE FILM & SHEET Tough, Virtually Unbreakable

LEXAN is a trademark of SABIC

© POLYVANTIS PV_DS_DPHPXXFRS-FILM_ENG_06-24