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Material Data Sheet

HX Hardcoat PET Film Products

HX Hardcoat PET Film contains a Hardcoating layer (2-3H) to achieve anti-scratces surface. Thanks to an excellent UV curing technology, the anti-scratches can come with Transparent Clear, Anti-glare surface, as well as various texture surface, e.g. Fine Matte, Velvet, Shredded or Long Hairline (steel line), etc. To ease printing on PET surface, we have <u>**T-primer**</u> which is compatible to both solvent & UV ink as well as <u>**digital primer**</u> for digital printing.

Applications found in the area where anti-scratches surface is needed, e.g. medical appliance, oil station panel, washing machine panel, Automotive windscreen,. Our film can be IMD to produce back cover for mobile phone and PDA display, high class membrane switches, etc.

Remark: "W" grade - Anti-UV coating can be added to provide weather resistance and anti-UV fuction. It makes suitability for outdoor application, e.g. petrol station panel, membrane switches/ display for outdoor uses

Remark: "AB" grade - Anti-bacterial coating/ bioresin can be added to provide surface resistance for some of germs and bacterias preventing from standing on the panel surface. It makes a strong protect for a person touching panel surface/ button for any infectious bacteria

Thickness range: 0.1, 0.125, 0.15, 0.188, 0.25, 0.28mm. Stanard roll width: 610/1000/1220mm. Any roll or sheet size can be produced upon request

FG130-T, FG180-T, FG250-T:	Hardcoat Fine Matte/Gloss PET (equivalent to Autotype F series)
VG130-T, VG180-T, VG250-T:	Hardcoat Velvet/Gloss PET (equivalent to Autotype V series)
HCGG130-T, HCGG180-T, HCGG250-T:	Hardcoat Fine Matte/Gloss PET (equivalent to Autotype EBG series)
AG130-T, AG180-T, AG250-T:	Hardcoat Antiglare/Gloss PET (equivalent to Autotype EBA series)
HL150-T, HL200-T, HL250-T:	Hardcoat Hairline/Gloss PET (equivalent to Autotype S Steel series) (Shredded/ Long Hairline, Has/ No texture feeling)

TYPICAL PROPERTY VALUE

Property	Standard Test	Unit	Results		Results		
PHYSICAL			FG (Fine Matte)	VG (Velvet)	HL Hairline	HCGG (Hardcoat Clear)	AG (Anti-glare)
Thickness	In-house	mm	0.15, 0.2, 0.28mm			0.13, 0.18, 0.25mm	
Light Transmittion	ASTM - D 1003-61	% (min)	92	92	90.1-92.6	92	92
Haze	ASTM - D 1003-61	% (max)	65	71	59.5-62.5	< 1.5	~ 10
Hardness	In-house	Pencil H	2H-3H				

Property	Standard Test	Unit	Results		Results		
MECHANCIAL			FG (Fine Matte)	VG (Velvet)	HL Hairline	HCGG (Hardcoat Clear)	AG (Anti-glare)
Tensile Strength at Break	ASTM -D 638/882	kg/mm ²	18				
Tensile Elongation at Break	ASTM -D 638/882	%	70				
Friction Coefficient	ASTM -D1894	Static	0.5				
ELECTRICAL							
Dielectric Strength	JIS C2151	KV/mm	3000				
Dielectric Constant	JIS C2151	1KHz/1MHz	3.3/ 3.2				
Dissipation Factor	JIS C2151	1KHz	0.2%/ 0.10%				
Volume Resistivity	JIS C2151	Ohm Ecm	10 E 17				
Surface Resistivity	JIS K6911	Ohm /square	10 E 17				
THERMAL							
Std. Temperature Resistance	ASTM - D 1525-76	°C	> 105				
Shrinkage at 130dec/30min	ASTM - D 1204	% (min)	0.3-1.5				
CONDUCTIVE							
Sheet Resistance	ASTM -D 991	Ohm/sq	80/100/200/400/500				
ITO layer Adhesive Stenght	ASTM -D 3359	%	95-100				

ANTI-BACTERIA PROPERTIES	RESULT	
Test Organism	Escherichia coli ATCC 8739	
Concentration of bacteria (cfu/mL)	1.0x10^6	
Volume of test inoculum (mL)	0.2	
U_0	4.09	
Ut	4.54	
At	-0.2	
R	4.7	
Comment	Pass	
This Technical data is not available for legal certification. Only use for reference information of coating agent.		

Notes:

1. The control sample is plastic film without antimicrobial activity, provided by SGS laboratory.

2.U0: the average of the common logarithm of the number of viable bacteria(CFU/cm²) that recovered from control sample at "0h" contact time.

 $3. Ut: the average of the common logarithm of the number of viable bacteria (CFU/cm^2) that recovered from control sample at "24h" contact time.$

4.AT: the average of the ommon logarithm of the number of viable bacteria(CFU/cm²) that recovered from sample at "24h"contact time.

5.R: the value of antimicrobial activity,R=Ut-At.

6.The requirement of JIS Z 2801-2010: the value of antimicrobial activity > 2.0.

7.Test after tearing off the protective film.

Disclaimer

The information & value are intended for reference only. It does not guarantee the same data result, data safety and application suitability as described, nor is not considered a warranty or quality specification. Customer should carry its own test to determine your own particular use. The information relates only to the specific material designated and may not be vaild for such material used in combination with any other materials or in any process.