

VINYFOIL[®] (For Cards)

■ Characteristics

1. By means of providing uniform mat, has excellent processability such as printability and air escape during the pressing.
2. Various kinds of sheets, such as general type, flame resistance type, antimicrobial type, self-adhesive sheet for overcoat.
3. Dye-sublimation printing is possible on over sheet.
4. Good flame resistance.
5. Conformed to food-safety laws.

■ Applications

1. Base material for magnetic cards and smart cards.

■ Specifications

• Over sheet

Type	C-8195	C-8135	C-8118	C-419	C-407	C-8112
Thickness	0.09~0.2			0.05~0.2	0.09~0.2	
Shape	Roll					
Color	Clear					
How to emboss	Adhesive	Adhesive	Adhesive	None	Adhesive	Adhesive
Coating Adhesive	Possible	Possible	Possible	Possible	Possible	Possible
Suitability of embossing	○	○	○	△	○	△
Dye-sublimation print	Possible	Possible	Possible	Possible	Possible	Possible
Grade	General type	General type	General type	Low-temperature Fusion	Low-temperature Fusion-like	Antimicrobial type
Others	—	Advanced coloration	Less pigment	Imprinting is Available.	—	Less pigment
	—	Coloration on heating :good	—	—	—	—

• Core sheet

Type	M-4537	M-4534	C-9513	C-4636
Thickness	0.2~0.6		0.1~0.5	
Shape	Plate			
Color	White			
How to emboss	Secondary operation	Secondary operation	Secondary operation	Adhesive
Grade	General type	General type	Flame resistance type	Low-temperature fusion
Impact-resistant	—	good	—	—
Peel strength of UV Offset press ink	good	good	—	—

- *"Flat Plate" of Over sheet responds to the consultation.
- *As for C-4636, "Roll" is also possible
- *The delivery form of Over sheet that is coated of adhesive becomes only "Roll".
- *The custom-designed grade responds to the consultation, too.

■Physical Properties

• Over sheet

	Type			C-8195	C-8135 C-8118	C-419	C-407	C-8112
	Thickness(mm)			0.1				
Test items	Method	Temp.		—				
Tensile Strength (N/mm ²)	JISK 6734-1995	23°C	MD	69.0	65.5	55.3	64.9	62.9
			TD	48.5	47.7	53.1	47.2	46.2
MD			189	191	185	188	188	
TD			218	211	248	215	238	
Elongation (%)								
Softening Temperature (°C)	JISK 6734-1995	—	—	64	65	58	59	61
Vicat Softening Point(°C)	JISK 7206	—	—	82	82	77	76	81
Brittleness Temperature(°C)	ASTMD 1790	—	—	-45	-47	-46	-47	-43
Impact Resistance (Charpy Type) (kJ/m ²)	JISK 7111	23°C	MD	17.3	23.1	12.8	11.3	18.8
			TD	11.5	11.6	12.7	12.9	15.1
Rockwell Hardness	JISK 7202	23°C	—	35.5	38.8	36.1	34.2	40.9
Elongation on heating(%)	JISK 6734-1995	—	MD	-7.6	-5.7	-10.3	-8.2	-8.6
			TD	+2.4	+1.9	+2.6	+0.6	+0.5
Liner Expansion Coefficient (1/°C)	Own method * (1)	—	TD	1.99E-4	2.09E-4	1.78E-4	2.26E-4	2.43E-4
Average roughness(10 points) Rz(um)	Own method	23°C	face	2.7	2.9	1.7	4.0	3.6
			reverse	4.2	3.7	2.2	3.5	3.7
Press fusion temperature(°C)	* (2)	M-4537		130~140	130~140	120~130	125~135	130~140
		M-4534		130~140	130~140	120~130	125~135	130~140
		C-9513		145~155	145~155	135~145	140~150	145~155
		C-4636		120~130	120~130	110~120	115~125	120~130
Anti-bacterial test * (3) (Bacteria strain) (After 24hr.) (Immediately after bacteria inoculation)	Escherichia coli	2.0E+5		—	—	—	—	10 [≥]
	Yellow Staphy- lococcus	1.5E+5		—	—	—	—	10 [≥]
	MRSA	1.5E+5		—	—	—	—	10 [≥]
Peel strength of self-adhesive over sheet (4)	UV Offset press ink side			16			—	—
	Silk-screening print ink side			18			—	—
	M-4537			18			—	—

* The Values mentioned above are typical ones, but not guaranteed ones.

(1)Heat the sheets on 130°C,then remove distortion of the sheets and cool down them on20°C.

(2)10kgf/cm², Press:10min.

(3)Film contact printing (1998 version) by SIAA (Society of industrial technology for antimicrobial articles)

(4) 10kgf/cm², Press:120°C×5min. 180°C Peel strength (JIS X6305)

•Core sheet

	Type			M-4537	M-4534	C-9513	C-4636
	Thickness(mm)			0.28	0.56	0.56	0.28
Test items	Method	Temp.		—			
Tensile Strength (N/mm ²)	JISK 6734-1995	23°C	MD	58.0	48.8	51.3	50.0
			TD	50.2	41.8	48.7	46.4
Elongation (%)			MD	152	111	127	188
			TD	90	121	142	183
Softening Temperature (°C)	JISK 6734-1995	—	—	64	63	81	57
Vicat Softening Point (°C)	JISK 7206		—	81	81	103	73
Brittleness Temperature(°C)	ASTMD 1790		—	-28	-55 \geq	-37	-10
Impact Resistance (Charpy Type) (kJ/m ²)	JISK 7111	23°C	MD	16.7	No damage	11.1	9.7
			TD	19.9	No damage	10.9	9.0
Rockwell Hardness	JISK 7202	23°C	—	37.6	39.2	58.1	41.5
Elongation on heating(%)	JISK 6734-1995	—	MD	-3.7	-1.2	-1.4	-3.2
			TD	-0.9	-0.7	-0.2	+0.1
Liner Expansion Coefficient (1/°C)	Own method *(1)	—	TD	1.84E-4	1.80E-4	1.25E-4	1.72E-4
Average roughness(10 points) Rz(um)	Own method	23°C	face	10.5	10.3	8.6	4.2
			reverse	10.2	5.8	9.1	10.7
Press fusion temperature(°C)	*(2)	M-4537		135~145	—	—	—
		M-4534		—	130~140	—	—
		C-9513		—	—	140~150	—
		C-4636		—	—	—	115~125

* The Values mentioned above are typical ones, but not guaranteed ones.

(1) Heat the sheets on 130°C, then remove the distortion of the sheets and cool down them on 20°C.

(2) 10kgf/cm², Press:10min.

■ Important Safeguards

Directions for safe use are prepared for the purpose of maintaining the safety of customers, your clients and property. For the products carry warning and caution, please read following details.



If this product is mishandled in defiance of this sign, you may have a risk of death or serious injury.

- Absolutely do not implant, insert in the body in the body.
- Never use for any applications for which the material will be left in the body.
- In case of using for medical devices, foodstuff, other special purpose applications, please test and make certain that you can do so safely.



If this product is mishandled in defiance of this sign, you may have a risk of death or serious injury.

- When disposing of VIYNIFOIL, since VINYFOIL emits noxious gasses (main component :hydrogen chloride, carbon, dioxide, carbon monoxide, etc.) upon burning. Therefore do not burn them.
- VIYNIFOIL is quite heavy in sheet and roll form. Should be careful to avoid back injuries when handling.
- The cut edge of VIYNIFOIL is very sharp and therefore can cause cut injuries if not handled with caution.

