Polycarbonate Film for ID Card and e-Passport

Easy Lamination & Super Easy Lamination Grade

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MITSUBISHI GAS CHEMICAL COMPANY, INC.
Specialty Chemicals Business Sector
Engineering Plastics Division
Performance Products Department

Features of easy lamination / super easy lamination grade

Polycarbonate (PC) has excellent durability and heat resistance, and is the best material for security cards (ID cards, passport data pages) that require long-term reliability. Our Easy lamination/Super easy lamination grade can be heat-processed at a lower temperature than general PC.

【Features】

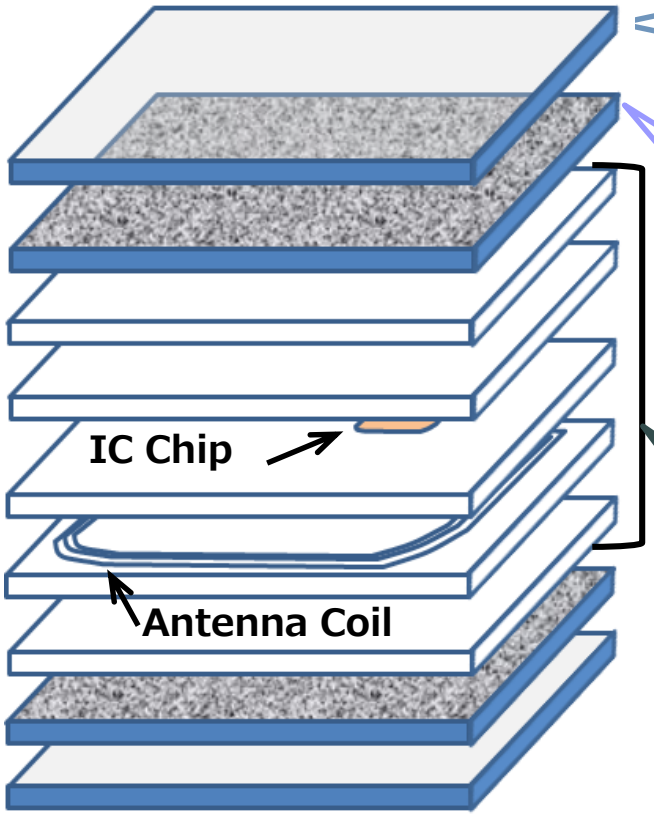
- **Improved heat workability**
  -Easy lamination / Super easy lamination grade has high durability of PC and realizes low temperature processing. It is also effective in shortening the lamination time.

- **High-definition laser marking**
  -Excellent color development, high contrast and high definition drawing is possible.

- **High thickness accuracy**
  -Effective for improving card thickness accuracy.

Lamination Structure of ID Card

We offer 3 types of film for ID card.



Basic Structure of ID Card

①**Overlay Film**【OL】30 - 100μm
- Transparency
- Bending Durability

②**Laser Mark-able Film**【LM】30 - 100μm
- Transparency
- High Chromogenic Property

③**White Core Film**【WC】50 - 400μm
- Easy-Printing Property
- Concealment of Electric circuit

Common Spec
Thickness Tolerance : within ± 5%

Line-up

Grade [Recommended Temp. of Lamination]	Super Easy Lamination [160℃]	Easy Lamination [170℃]
Overlay [OL]	ST-7000M1	ST-5000M1
Laser Mark-able [LM]	SL-7000M1	SL-5000M1
White Core [WC]	SW-7000M1	SW-5000M1

Data Sheet : Easy Lamination Grade

Test Items		Test Method	Condition	Unit	OL	LM	WC
					ST-5000M1	SL-5000M1	SW-5000M1
Physical							
Density		ISO 1183: 1987	-	-	1.20	1.20	1.33
Surface Roughness (Rz)	Front	ISO 4287: 1997	-	mm	8	5	8
	Back				8	5	12
Thermal							
Glass Transfer Temp.		ISO 3146	-	℃	126	129	123
Heat Deflection Temp.		ISO 75-2: 2004	-	℃	116	123	110
Heat Shrinkage	MD	ISO 11501: 1995	130℃ 1hr 0.1mmt	%	-0.2	-0.2	0
	TD				-0.1	-0.1	-0.1
Mechanical							
Tensile Stress(Yield)		ISO 527-1: 1993	-	MPa	66	66	56
Tensile Strain(Break)				%	100	86	185
Bending Modulus		ISO 178: 2001	-	MPa	2,460	2,430	2,710
Bending Strength				MPa	108	103	110
Charpy Notched Impact Strength		ISO 179-1: 2000	23℃	kJ/m^2	11	10	16

Values on the above chart are for reference, not guaranteed.

Data Sheet : Super Easy Lamination Grade

Test Items		Test Method	Condition	Unit	OL	LM	WC
					ST-7000M1	SL-7000M1	SW-7000M1
Physical							
Density		ISO 1183: 1987	-	-	1.22	1.20	1.35
Surface Roughness (Rz)	Front	ISO 4287: 1997	-	mm	8	8	7
	Back				9	9	9
Thermal							
Glass Transfer Temp.		ISO 3146	-	℃	111	106	111
Heat Deflection Temp.		ISO 75-2: 2004	-	℃	98	97	100
Heat Shrinkage	MD	ISO 11501: 1995	100℃ 1hr 0.1mmt	%	-0.2	-0.2	0
	TD				0	0	-0.1
Mechanical							
Tensile Stress(Yield)		ISO 527-1: 1993	-	MPa	60	69	59
Tensile Strain(Break)				%	110	93	60
Bending Modulus		ISO 178: 2001	-	MPa	2,210	2,580	2,510
Bending Strength				MPa	99	110	100
Charpy Notched Impact Strength		ISO 179-1: 2000	23℃	kJ/m^2	11	6	9

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Contact

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Click or read the QR code above!