Polycarbonate Film for ID Card and e-Passport

General PC & Ultra-high durability grade

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

Features of ID card film

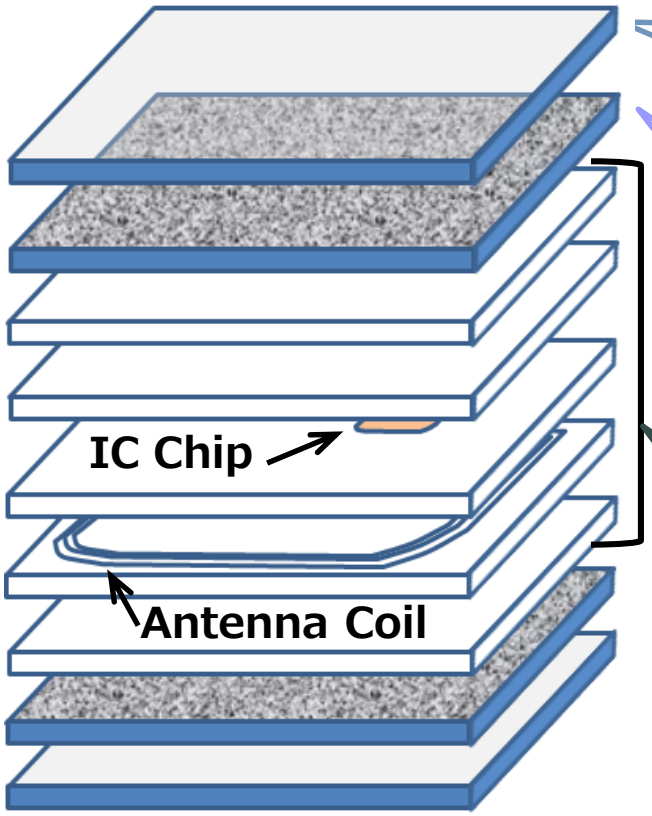
Polycarbonate (PC) is superior in durability and heat resistance to film materials such as PVC and PETG. It is the most suitable material for security cards (ID cards, passport data pages) that require long-term reliability.

【Features】

- **Durability that can withstand long-term use**
  -We have the general PC grade and ultra-high durability grade.
- **High-definition laser marking**
  -It has excellent color development and enables high-contrast, high-definition drawing.
- **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]	General PC [180℃]	High Durability [185℃]
Overlay [OL]	ST-2000M1	ST-1000M1
Laser Mark-able [LM]	SL-2000M1	—
White Core [WC]	SW-2000M1	—

Data Sheet : Normal PC Grade

Test Items		Test Method	Condition	Unit	OL	LM	WC
					ST-2000M1	SL-2000M1	SW-2000M1
Physical							
Density		ISO 1183: 1987	-	-	1.20	1.20	1.35
Surface Roughness (Rz)	Front	ISO 4287: 1997	-	mm	11	10	8
	Back				8	7	9
Thermal							
Glass Transfer Temp.		ISO 3146	-	℃	149	149	150
Heat Deflection Temp.		ISO 75-2: 2004	-	℃	131	131	131
Heat shrinkage	MD	ISO 11501: 1995	130℃ 1hr 0.1mmt	%	-0.1	-0.2	-0.1
	TD				0	0	0
Mechanical							
Tensile Stress(Yield)		ISO 527-1: 1993	-	MPa	60	61	61
Tensile Strain(Break)				%	140	110	110
Bending Modulus		ISO 178: 2001	-	MPa	2,340	2,340	2,620
Bending Strength				MPa	94	94	96
Charpy Notched Impact Strength		ISO 179-1: 2000	23℃	kJ/m^2	80	81	45

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

Data Sheet : High Durability Grade

Test Items		Test Method	Condition	Unit	OL
					ST-1000M1
Physical					
Density		ISO 1183: 1987	-	-	1.20
Surface Roughness (Rz)	Front	ISO 4287: 1997	-	mm	6
	Back				7
Thermal					
Glass Transfer Temp.		ISO 3146	-	℃	152
Heat Deflection Temp.		ISO 75-2: 2004	-	℃	135
Heat shrinkage	MD	ISO 11501: 1995	130℃ 1hr 0.1mmt	%	-0.1
	TD				-0.1
Mechanical					
Tensile Stress(Yield)		ISO 527-1: 1993	-	MPa	59
Tensile Strain(Break)				%	99
Bending Modulus		ISO 178: 2001	-	MPa	2,150
Bending Strength				MPa	87
Charpy Notched Impact Strength		ISO 179-1: 2000	23℃	kJ/m^2	74

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Contact

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