

Hard coat sheet

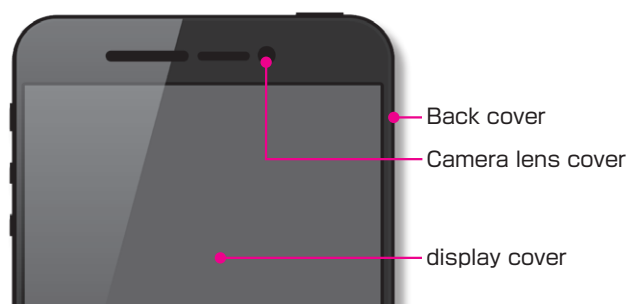
# MR



In the MR series, surface hardness of polycarbonate sheet is improved, and higher scratch resistance is achieved. With its basic characteristics as a polycarbonate sheet, combined with the surface hardness very close to that of general glass, MR series is widely adopted in such applications as printed plates and various display covers.



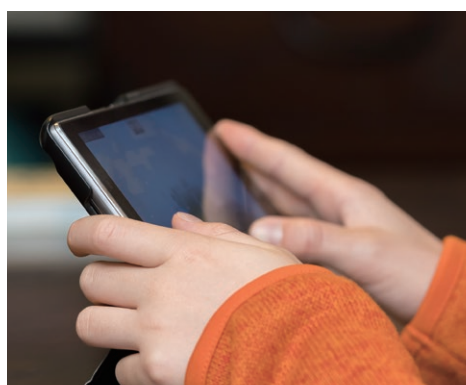
Smart phone



Smart phone parts



Back cover for Tablet PC



Portable game machine display cover

### MR series-main products and applications

Product	Hard Coat Type	Main Applications
IMR05	One-sided hardened hard coat for printed plates	Printed plate, LCD cover (Portable game machine)
MR58U	Hard coat with enhanced pencil hardness	Printed plate, LCD cover (Mobile phone, Laptop computer)
MRS58T	Hard coat with enhanced pencil hardness (Low curve type)	Touch panel front cover (Smart phone, Portable game machine)

### Grades

Product	Size (mm)	Thickness (mm)					
		0.5	0.64	0.8	1.0	1.2	1.5
IMR05	915 × 1,830	○		○	○		○
MR58U	915 × 1,830	○	○	○	○	○	○
MRS58T	915 × 1,830				○	○	
Standard size packing unit (sheet)		20	20	10	10	10	5

○ Stock

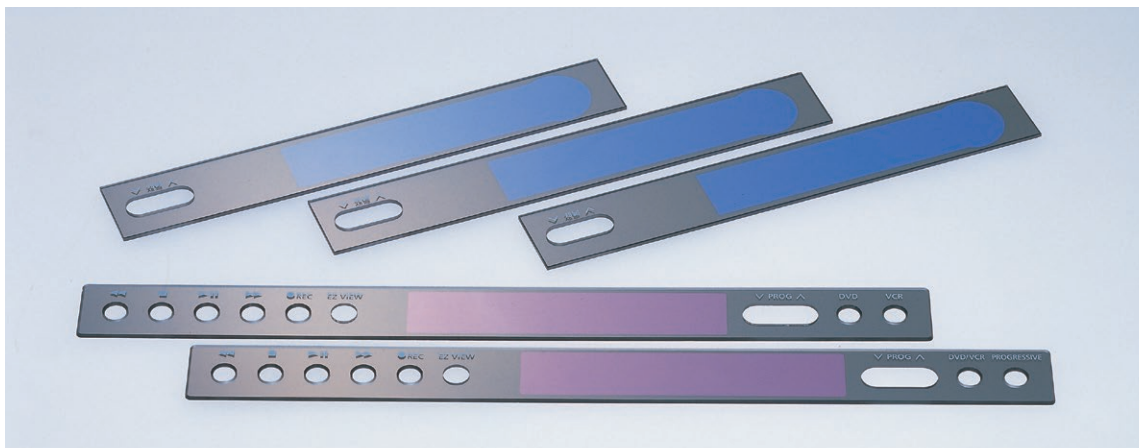
Please contact us about products not in the table.



Laptop computer display cover



Mobile phone display cover



Nameplates (printed)

## Basic physical properties

Category	Test Item	Test Method	PC	IMR05	MR58U	MRS58T
Surface hardness	Pencil hardness	JIS K5600-5-4	< 2B	The side of H/C B~HB	The side of MR8 3~4H	The side of MR8 3~4H
	Scratch resistance <sup>(1)</sup>	In-house method	Rank 10	The side of H/C Rank 2~5	The side of MR8 Rank 1~3	The side of MR8 Rank 1~3
Heat resistance	Adhesion after 1 hour of 90°C	In-house method	○	○	○	○
	Appearance		○	○	○	○
Chemical resistance	37.5% sodium hydroxide	1 minute contact with solvent spot	○	○	○	○
	10% hydrochloric acid		○	○	○	○
	Ethanol		○	○	○	○
	Toluene		×	○	○	○
	Acetone		×	○	○	○
	Gasoline		○	○	○	○

The above data are an example of actual measurement, not a guarantee for performance.

(1) Steel wool #0000 100gf/cm<sup>2</sup> reciprocated 15 times Rank 1: Inorganic glass, Rank 5: CR39, Rank 9: PMMA, Rank 10: PC

○: No change in appearance

## Comparison of surface properties

Grade	NF-2000 (General PC sheet)	IMR05 (One-sided hardened hard coat for printed plates)	MR58U (Hard coat with enhanced pencil hardness)	MRS58T (Hard coat with enhanced pencil hardness) (Low Curve type)
Composition	PC Sheet	Acrylic hard coat layer PC Sheet	The side of MR8 Acrylic hard coat layer PMMA layer PC Sheet Acrylic hard coat layer The side of MR5	The side of MR8 Acrylic hard coat layer Special resin layer PC Sheet Acrylic hard coat layer The side of MR5
Pencil hardness	< 2B	The side of H/C B~HB	The side of MR8 3~4H	The side of MR8 3~4H
Characteristics	High impact resistance (break-proof) Allows for easy severing, cutting, die-cutting, drilling, and screw processing Allows for adhesion, welding and painting Allows for easy vacuum forming and heat-bending	Excellent scratch resistance Excellent chemical resistance High impact resistance (break-proof) Allows for easy severing, cutting, die-cutting, drilling, and screw processing	High pencil hardness Excellent scratch resistance Excellent chemical resistance The dimensional change by absorbing water is smaller than that of acrylic sheet.	High pencil hardness Excellent scratch resistance Excellent chemical resistance The dimensional change by high temperatures and absorbing water is smaller than that of MR58U.