

Cover lens sheet for Automobile HMRS and MRS Grade

June, 2021.

 **mitsubishi GAS CHEMICAL COMPANY, INC.**

Specialty Chemicals Business Sector

Engineering Plastics Division

Performance Products Department

Layer structure of HMRS and MRS grade

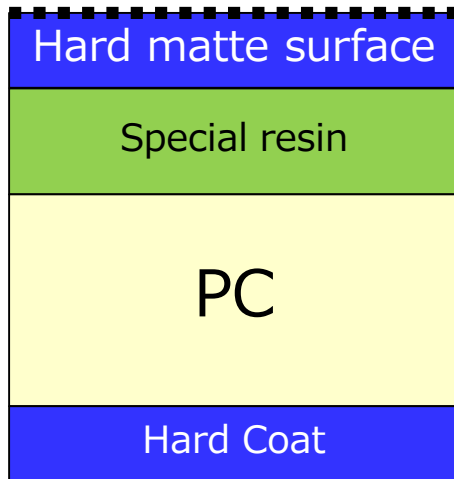
Standard AG

HMRS52T/54T

Anti-Sparkling AG

HMRS511T/513T/515T/53T

A-side (Transparent masking film)

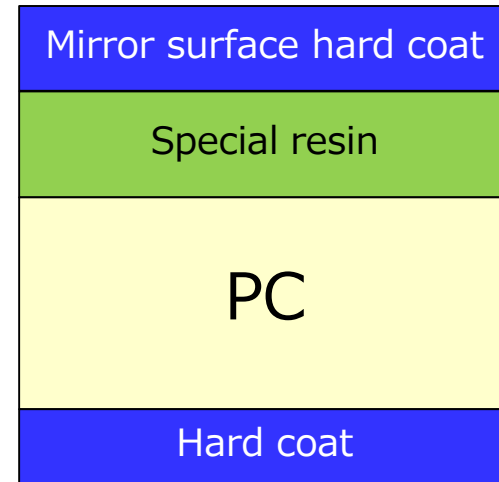


B-side (Yellow masking film)

Mirror surface

MRS58TB

A-side (Transparent masking film)



B-side (Yellow masking film)

- ◆ AFP function sheet is also available.
- ◆ Anti-UV is standard specification.
- ◆ Good seeing even with polarized sunglasses.
(Any polarize angles except 0/90°)

Available HMRS and MRS grade line up

Grade	MRS58TB	HMRS511T	HMRS513T	HMRS515T	HMRS53T	HMRS52T	HMRS54T
Hard coat (A-side)	Mirror surface	Anti-sparkling AG				Standard AG	
HAZE data[%]	0.5	1	4	10	13	6.5	4.5
AFP	Nil / High repellent type						
Retardation	Offering high or low retardation sheet on demand						
Thickness [mm]	1.0 / 1.5 / 2.0 If you need a different thickness, please contact us.						
Transparent color	○						
Smoke[%]	27 / 50 / 60 / 73						
Sheet size	915mm×1,830mm						

HMRS · MRS grade spec with reference value

Test	MRS58TB	HMRS511T	HMRS513T	HMRS515T	HMRS53T	HMRS52T	HMRS54T	Test method
Light transmission rate [%]	91	91	91	90	90	90	90	JIS K 7361-1
HAZE [%]	0.5	1	5	10	13	6.5	4.5	JIS K 7136
60° Gloss	167	155	120	105	80	108	92	JIS K 5600-4-7
Anti-sparkling	○	○	○	○	○	△	△	Light source ; 265ppi
Image clarity [%]	100.0	99.8	84.9	91.7	67.8	40.8	13.4	Reflection 45°, optical comb; 2.0mm

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

HMRS · MRS grade spec with reference value

Test	HMRS grade · MRS58TB	Test method
Pencil hardness (750gf)	A-side : 3~4H B-side : B~HB	JIS K 5600-5-4
Steel wool hardness	A-side : Rank 1 B-side : Rank 3	Our method Steel wool #0000 100g/cm ² ; reciprocating 15 times. Visual check condition of surface. Rank 1=Inorganic Glass, Rank9=PMMA, Rank 10=Polycarbonate
Adhesion	A-side : OK B-side : OK	JIS K 5600-5-6
Chemical Resistance (including sun-screen)	○	Arbitrary method
High temperature test	○	108°C×1,000 hour
High temperature/ humidity test	○	85°C/85%×1,000 hour
Weathering test	○ ($\Delta E < 1$)	PV1303 5 cycles (70MJ/m ²)
Drop weight test	1.0mm ; 2.94 J 1.5mm ; 2.94 J 2.0mm ; 4.90 J	Energy value(A-side) Before occurrence of a crack

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

HMRS · MRS grade spec with reference value (1.0mm thickness)

Test	HMRS grade · MRS58TB	Test method
Density	1.2g/cm ³	JIS K 7112
Tensile strength	58~59MPa	JIS K 7161-1,2
Nominal strain at break	6~22%	JIS K 7161-1,2
Tensile modulus	2.3~2.4GPa	JIS K 7161-1,2
Linear expansion rate	6~7×10 ⁻⁵ K ⁻¹	JIS K 7139
Volume resistivity	over 10 ¹⁵ Ω · cm	JIS K 6911
Surface resistivity	A-side : over 10 ¹⁵ Ω B-side : over 10 ¹⁵ Ω	JIS K 6911
Dielectric constant	3	JIS C 6481
Poisson's ratio	0.35~0.4	JIS K 7161-1

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