

Screen printing ink for the decoration of front panels made of acrylic glass (PMMA) or polycarbonate (PC)

Satin gloss, high opacity, fast drying, high chemical and humidity resistance

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Field of Application

Substrates

Mara® Panel MPA is particularly suited to print onto:

- PMMA, extruded and injection-molded
- Polycarbonate (PC), extruded and injection-molded

Mara® Panel MPA can also be applied to:

- ABS/SAN
- Polystyrene PS
- Rigid PVC
- PVC self adhesive film
- PETG
- Varnished substrates

Since all the print substrates mentioned may be different in printability even within an individual type, preliminary trials are essential to determine the suitability for the intended use.

Field of use

Mara® Panel MPA is a solvent-based, fast-drying screen printing ink for the decoration of control panels of household appliances, like dishwashers or coffee machines.

Mara® Panel MPA is suited for multi-layer prints with subsequent gluing, and was designed for applications requiring electrical resistance values $> 10^{12}$ Ohm in order to provide insulation to the installed electronics.

Characteristics

Mara® Panel MPA is characterized by a satin gloss, low odour, as well as very good printability and screen opening.

Ink Adjustment

The ink should be stirred homogeneously before printing and if necessary during production.

Use as 2-component ink

Depending upon the substrate and the requirements, hardener can be added to the ink before printing. When using hardener, the processing and curing temperature must not be lower than 15°C as irreversible damage can occur. Please also avoid high humidity for several hours after printing as the hardener is sensitive to humidity.

Pre-reaction time

It is recommended to allow the ink/hardener mixture to pre-react for 15 minutes.

Pot life

The ink/hardener mixture is chemically reactive and must be processed within 6-8 h (referred to 20-25 °C and 45-60 % RH). Higher temperatures reduce the pot life. If the mentioned times are exceeded, the ink's adhesion and resistance may be reduced even if the ink still seems processable.

Drying

Physically fast drying, at 20 °C air temperature to be overprinted within 10 - 15 min, at 60 °C in a tunnel dryer stackable after 30-40 sec. The times mentioned above vary according to the substrate, the ink film thickness, drying conditions and the auxiliaries used.

Stress resistance

After proper and thorough drying, the ink film exhibits outstanding adhesion as well as rub, scratch, and block resistance.

With the use of hardener and additional post-tempering of the prints for 30 min. at a temperature of 60 °C will increase the resistances of the ink.

The ink successfully passed the following tests:

- Adhesion according to DIN EN ISO 2409 (GT 0)
- Resistant to common household cleaners and dish detergent up to 48 hours

Mara® Panel MPA



- Steam resistance at 70°C / 5 h
- Alternating climate tests up to 14 days

Range

High Opaque Shades

170	Opaque White
180	Opaque Black

All shades are intermixable. Mixing with other ink types than MSW or auxiliaries must be avoided in order to maintain the special characteristics of this ink.

Combination possibilities

Mara® Panel MPA can be mixed with Mara® Switch MSW. Mara® Star SR (incl. 10 % Hardener H 1) can be used as diffusor ink.

Auxiliaries

UKV 2	Thinner	10-20%
H 1	Hardener	5-10%
ES	Printing Modifier	0.5-1%
SV 5	Retarder	0-5%
UR 3	Cleaner (flp. 42°C)	
UR 4	Cleaner (flp. 52°C)	
UR 5	Cleaner (flp. 72°C)	

Thinner is added to the ink to adjust the printing viscosity. For slow printing sequences and fine motifs, it may be necessary to add retarder to the thinner. For an additional thinning of the ink containing retarder, only pure thinner should be used.

Hardener H 1 is sensitive to humidity and is always to be stored in a sealed container. Hardener H 1 can be added for increased resistance and adhesion. Shortly before use, the hardener is added to the ink and stirred homogeneously. The mixture ink/hardener is not storable and must be processed within pot life.

Printing Modifier ES contains silicone and can be used to rectify flow problems on critical substrates. If an excessive amount is added, flow problems are increased and adhesion may be reduced, especially when overprinting. The use of ES may reduce the degree of gloss.

The cleaners UR 3 and UR 4 are recommended for manual cleaning of the working equipment. Cleaner UR 5 is recommended for manual or automatic cleaning of the working equipment.

Printing Parameters

Mara® Panel MPA can be used on fast running presses such as flat bed or fully automatic cylinder machines but is also suited for manual or semi-automatic machines.

All types of commercially available polyester fabrics and solvent-resistant stencils can be used. Typical qualities are 77-120 threads/cm. Text: 120-34

Blocking layers: 77-55 and up

Shelf Life

Shelf life depends very much on the formula/reactivity of the ink system as well as the storage temperature. It is 1.5 years for an unopened ink container if stored in a dark room at a temperature of 15-25°C. Under different conditions, particularly higher storage temperatures, the shelf life is reduced. In such cases, the warranty given by Marabu expires.

Note

Our technical advice whether spoken, written, or through test trials corresponds to our current knowledge to inform about our products and their use. This is not meant as an assurance for certain properties of the products nor their suitability for each application.

You are, therefore, obliged to conduct your own tests with our supplied products to confirm their suitability for the desired process or purpose. The foregoing information is based on our experience and should not be used for specification purposes. All characteristics described in this Technical Data Sheet refer exclusively to the standard products listed under "Range", provided that they are processed in accordance with their intended use and only when used with the recommended auxiliaries. The selection and testing of the ink for specific applications is exclusively your responsibility. Should,

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however, any liability claims arise, they shall be limited to the value of the goods delivered by us and utilised by you with respect to any and all damages not caused intentionally or by gross negligence.

Labelling

For Mara® Panel MPA and its auxiliaries, there are current Material Safety Data Sheets available according to EC regulation 1907/2006, informing in detail about all relevant safety data including labelling according to EC regulation 1272/2008 (CLP regulation). Such health and safety data may also be derived from the respective label.

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