



**Screen printing ink for directly injected plastic parts by using the inmould decoration technology (second surface), printed onto polycarbonate foils**

**Glossy, 1- or 2-component ink, good forming properties, high temperature resistance, excellent adhesion to injection-moulded materials**

## Field of application

Maramold MPC is a solvent-based screen printing ink. It is best suited for printing onto the reverse side of PC decorating foils followed by direct injection with PC or PC/ABS.

### Substrates

Polycarbonate foils or cognate PC blend foils are used for this purpose. Other substrates can also be used but they are to be tested in any case prior to printing.

### Field of use

The IMD process is mostly found in the following fields:

- Automotive industry (manufacturing of flip switches, buttons, turning knobs or panels)
- mobile phones ( housings, lenses)
- housing parts for various uses
- household appliances/ medical products

### Technical recommendations

The IMD technology is a combination of various processes such as printing, forming, cutting, die-cutting, and injection moulding.

Above all, the injection onto the printed foil is a complex process whereby parameters such as injection and tool geometry, pressure, cycle times, and flow properties must be taken into consideration.

Success in this procedure needs the specific knowledge of this process or preliminary trials must be undertaken. All steps of the procedure must be optimized and synchronized.

## Characteristics

### Ink characteristics

Maramold MPC is a 1-component ink system. For higher wash-out resistances, 5 % of Hardener H 1 can be added to the ink.

For particular demands such as climatic chamber, alternating damp heat and shock temperature cycle tests, we recommend to print as a final layer a water-based final varnish, e. g. Autotype's Sealcoat Aquatex.

### Drying

The print should be dried as best as possible in order to limit the risk of residual solvents.

- Tunnel drying with two hot-air zones at 60-75 °C (depending on the substrate) followed by a circulation or cooling zone
- post-tempering of the prints for 4 hours at a temperature of 80°C
- if hardener has been added to the ink, the prints will not yet be stackable after tunnel drying. Due to this, they have to be put in a drying rack.

### Degree of gloss

Alle MPC colour shades are glossy.

### Fade resistance

Only pigments of high fade resistance (blue wool scale 7-8) are used for the production of the Maramold MPC range.

# Maramold MPC



## Range

### Basic shades

(see shade card **System Maracolor**)

MPC920	Lemon	MPC950	Violet
MPC922	Light Yellow	MPC952	Ultramarine Bl.
MPC924	Medium Yell.	MPC954	Medium Blue
MPC926	Orange	MPC956	Brilliant Blue
MPC930	Vermilion	MPC960	Blue Green
MPC932	Scarlet Red	MPC962	Grass Green
MPC934	Carmine Red	MPC970	White
MPC936	Magenta	MPC980	Black
MPC940	Brown		

All shades are intermixable. Mixing with other ink types should be avoided in order to maintain the special characteristics of this outstanding ink range.

These 17 basic shades are included in our Marabu-ColorFormulator. They build the basis for the calculation of individual colour matching formulas, as well as for shades of the common colour reference systems Pantone®, HKS®, and RAL®. All formulas are stored in the Marabu-Color Manager 2 (MCM 2) software.

The pigments used in the below mentioned standard shades, based on their chemical structure, correspond to the EEC regulations EN 71/part 3, safety of toys - migration of specific elements. All colours are therefore suited for printing onto toys.

### Further shades available

MPC 191	Press-ready Silver
MPC 910	Printing Varnish

Other effects on request.

## Auxiliaries

Thinner:	UKV 1
Retarder:	SV 10 (strong) SV 1 (mild)
Hardener:	H 1 (5 %)
Cleaner:	UR 3

To adjust printing viscosity, it is generally sufficient to add 10-15 % of thinner to the ink. When printing fine motives, Retarder SV 10 is to be added proportionately (e. g. 50:50).

For IMD applications, further additives such as levelling, thickening, or matting agents must not be used.

### Fabrics and stencils

All types of commercially available polyester fabrics (1:1 plain weave quality) and solvent-resistant stencils can be used.

For MPC 191 Silver, we recommend a mesh count of 90-120 threads/cm.

## Recommendation

The ink is to be stirred well and homogeneously before printing.

## Shelf life

Shelf life depends very much on the formula/reactivity of the ink system as well as the storage temperature. It is 3 years for an unopened ink 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

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## Labelling

For Maramold MPC and its additives and auxiliaries, there are current Material Safety Data Sheets according to EC-regulation 91/155 covering in detail all relevant safety data including the labelling according to the present EC regulations as to health and safety labelling requirements.

Such health and safety data may also be obtained from the respective label.

The ink has a flash point between 50 °C and 100 °C. Any specific regulations for the handling of flammable liquids do not apply to the ink.

## 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 selection and testing of the ink for specific application is exclusively your responsibility.

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