

Screen Printing Ink for polystyrene, PVC self-adhesive foils, rigid PVC, ABS/SAN, corrugated board, cardboard, and paper

Satin-gloss, medium opacity, very fast drying, highly block resistant, insensitive surface, suitable for moulding

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Field of Application

Substrates

Mara® *Speed* SL is suited for printing onto

- Polystyrene
- Rigid PVC
- PVC self-adhesive foils
- ABS/SAN
- Corrugated board, cardboard and paper

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® *Speed* SL is a very fast drying and block resistant screen printing ink and is very well suited for fast running fully automatic or cylinder print presses with often low and thus less material-wearing drying temperatures of 30 - 40 °C.

Mara® *Speed* SL shows very good results in multiple colour prints on one or on both sides on polystyrene or rigid PVC sheets. It is not suitable for material which is flexible or contains much plasticizer, nor reversible stickers with thick ink layers.

If the printed ink film is to be cut or punched subsequently, we recommend a sufficient drying in advance and the addition of plasticizer WM 1.

SL can also be processed with a spray gun, but preliminary trials are necessary for this process. In order to avoid surface irregularities, we recommend to filter the thinned ink (25 µm screen) before processing.

Characteristics

Ink Adjustment

The ink should be stirred well before printing.

Drying

Physically very fast drying, dries at 20°C air drying within 5 - 8 min. already to be overprinted, at 40 °C in a tunnel dryer within 20 sec stackable. These dates require a normal thickness of the ink layer (e.g. fabric 120-34), a high capacity of the dryer and a one-colour print. When overprinted, the drying speed and the block resistance are reduced by about 20 %.

With a high capacity of the dryer and good fresh-air ventilation, the dryer temperature can be decreased to 30 - 40 °C for less material distortion.

Fade resistance

Pigments of excellent fade resistance are used for the Mara® *Speed* SL range. Shades mixed by adding printing varnish SL 910 or other colour shades, especially white, mostly have a reduced fade and weather resistance. The fade resistance of the ink also decreases, if the density of the printed ink film is reduced. The pigments used are resistant to solvents and plasticizers.

Stress resistance

After proper and thorough drying, the ink film exhibits outstanding adhesion as well as rub, scratch, and block resistance and is mouldable (basic shades). SL shows a normal chemical resistance to alcohol, other common cleaners (e.g. window cleaner), and to lead-free petrol.

For a higher chemical and rub resistance, we recommend a top-coating with printing varnish SL 910.



Range

Basic Shades

020	Lemon
021	Medium Yellow
022	Yellow Orange
026	Light Yellow
031	Scarlet Red
032	Carmine Red
033	Magenta
035	Bright Red
036	Vermilion
037	Purple Red
045	Dark Brown
055	Ultramarine Blue
056	Turquoise Blue
057	Brilliant Blue
058	Deep Blue
059	Royal Blue
064	Yellow Green
067	Grass Green
068	Brilliant Green
070	White
073	Black

Press-Ready Metallics

191	Silver
193	Rich Gold

Further Products

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

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

Metallics

Metallic Pastes

S 191	Silver	15-25%
S 192	Rich Pale Gold	15-25%
S 193	Rich Gold	15-25%
S 291	High Gloss Silver	10-20%
S 292	High Gloss Rich Pale Gold	10-20%
S 293	High Gloss Rich Gold	10-20%

Metallic Powders

S 181	Aluminium	17%
S 182	Rich Pale Gold	25%
S 183	Rich Gold	25%
S 184	Pale Gold	25%
S 186	Copper	33%
S 190	Aluminium, rub-resistant	12.5%

These metallics are to be added to SL 910 in the recommended amount, whereat the addition may be individually adjusted to the respective application. We recommend preparing a mixture which can be processed within a maximum of 8 h since metallic mixtures usually cannot be stored. Due to their chemical structure, the processing time of mixtures with Pale Gold S 184 and Copper S 186 is even reduced to 4 h.

Owing to the smaller pigment size of Metallic Pastes it is possible to work with finer fabrics like 140-31 to 150-31.

Owing to the bigger pigment size of Metallic Powders we recommend the use of a coarser fabric like 100-40. Shades made of Metallic Powders are always subject to an increased dry abrasion which can only be reduced by over-vernishing.

All metallic shades are displayed in the Marabu "Screen Printing Metallics" colour chart.

Auxiliaries

UKV 1	Thinner, for rigid PVC	10-15%
UKV 2	Thinner, low odour	10-15%
7037	Spray Thinner	10-15%
VP	Retarder Paste	10%
SA 1	Surface Additive	3-5%
WM1	Plasticizer	2-5%
MP	Matting Powder	1-4%
ES	Printing Modifier	0.5-1%
PSV	Thinner, resp. spray thinner	
UR 3	Cleaner (flp. 42°C)	
UR 4	Cleaner (flp. 52°C)	
UR 5	Cleaner (flp. 72°C)	
SV 5	Retarder	
SV 10	Retarder, very slow	

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 spray coating, fast Spray Thinner 7037 should be used (on parts sensitive to tension cracks, preliminary trials are essential).

Thinner PSV is suited for the use on polystyrene or other plastics sensitive to tension cracks.

The addition of surface additive SA 1 can increase the resistance against abrasion and other mechanical stress (max. addition 10%).

Plasticizer WM 1 is recommended if high flexibility is required from the printed ink film. This is important for thin substrates with a natural tendency to roll, as well as for applications involving cutting or die-cutting of the printed surface. The use of Plasticizer WM 1 reduces the drying speed.

By adding Matting Powder MP the ink film can be matted individually (preliminary trials in terms of adhesion and resistance are essential, white shades addition max. 2%).

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 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

All types of commercially available polyester fabrics and solvent-resistant stencils can be used.

Shelf Life

Shelf life depends very much on the formula/reactivity of the ink system as well as the storage temperature. The shelf life for an unopened ink container if stored in a dark room at a temperature of 15 - 25 °C is:

- 2.5 years for SL 191 & 193
- 3.5 years for all other standard products

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.

The selection and testing of the ink for specific applications is exclusively your responsibility. Should, 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® Speed SL 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.