

Libra *Matt* LIM



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Screen Printing Ink for rigid and soft PVC, PVC self-adhesive foils, polystyrene, acrylic glass, and polycarbonate

Matt, opaque, fast drying, low odour, weather resistant, and suitable for welding

Field of Application

Substrates

The screen printing ink *Libra Matt* LIM is designed for printing onto

- Rigid PVC
- PVC self-adhesive foils
- Soft PVC
- Polystyrene (PS)
- Acrylic (PMMA)
- Polycarbonate
- coated Polyester Foils
- synthetic and resin-coated Papers, cork, and cardboard

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

Libra Matt LIM is a universal matt ink used for printing substrates where a particularly high requirement for ink opacity, flexibility, or resistance to plasticizers is required, e.g.

- scales, front panels and displays
- double-sided stickers as intermediate ink
- printing, rolling, spraying of PVC tarpaulins
- pressing, sealing into acrylic

For truck tarpaulins, we recommend the ink type Maraplan PL.

LIM 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 homogeneously before printing and if necessary during production.

Drying

Physically fast drying, dries at 20°C air temperature within 20-30 min to be overprinted, at 50°C in the tunnel drier stackable after 30-40 sec.

The times mentioned above vary according to the substrate, the ink film thickness, drying conditions and the auxiliaries used. Generally an extended drying time is necessary when overprinting the ink.

Fade resistance

For outdoor use, matt colours generally show less colour shade stability than glossy colour shades.

We are using pigments of an excellent fade resistance for all shades of our *Libra Matt* LIM ink type. All basic shades are suitable for an outdoor use of 2 years if placed vertically and referred to the middle European climate.

Mixed shades containing > 30% transparent base LIM 409 or printing varnish LIM 910 or shades mixed with white mostly have a reduced fade and weather resistance. The fade resistance of the ink is also reduced, as the density of the printed ink film decreases, therefore, we recommend a fabric 77-55 for outdoor use.

Stress resistance

After proper and thorough drying, the ink film is stackable, weather resistant as well as suitable for welding. Please note that the shades 980 and 180 Black are not suited for welding. Due to their chemical composition, the basic shades are less rub-resistant than other glossy screen printing colour shades.

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For a maximum rub and abrasion resistance, it is necessary to overcoat with printing varnish LIM 910.

The pigments used are resistant to solvents and plasticizers.

Range

Basic Shades

920	Lemon
922	Light Yellow
924	Medium Yellow
926	Orange
930	Vermilion
932	Scarlet Red
934	Carmine Red
936	Magenta
940	Brown
950	Violet
952	Ultramarine Blue
954	Medium Blue
956	Brilliant Blue
960	Blue Green
962	Grass Green
970	White
980	Black

High Opaque Shades

170	Opaque White
180	Opaque Black

Further Products

182	Block-out Silver
409	Transparent Base
570	Offset Baseprint Transparent White
910	Overprint Varnish

High opaque white LIM 170 can be used for signature fields.

Block-out silver LIM 182 is suited for the production of double-sided stickers.

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®, PAN-

TONE®, and RAL®. All formulas are stored in the Marabu-Color Manager software.

Metallics

Metallic Pastes

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	25%
S 190	Aluminium, rub-resistant	25%

These metallics are added to LIM 910 in the recommended amount, whereas 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 overvarnishing.

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

Auxiliaries

UKV 2	Thinner	10-20%
SV 1	Retarder	10-20%
SV 9	Retarder, slow	10-20%
VP	Retarder Paste	10-20%
SA 1	Surface Additive	3-5%
WM1	Plasticizer	2-5%
ES	Printing Modifier	0-1%
UR 3	Cleaner (flp. 42°C)	
UR 4	Cleaner (flp. 52°C)	
UR 5	Cleaner (flp. 72°C)	
7037	Spray Thinner	

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.

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.

For the production of double-sided stickers the use of WM 1 is essential.

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.

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

Printing Parameters

All types of commercially available 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 LIM 180 & 182
- 3,5 years for all other LIM colour shades

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 *Libra Matt LIM* 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.