

Libra Gloss LIG



Vers. 7
2017
20. Jun

Screen Printing Ink for PVC self-adhesive foils, rigid PVC, polystyrene, ABS, SAN, polycarbonate, acrylics, paper, paste-board, cardboard, wood

Glossy, medium opacity, fast drying, block resistant, low odour, mild, good printability

Field of Application

Substrates

Libra *Gloss* LIG is suited for the following substrates:

- Self-adhesive PVC films and rigid PVC
- Polystyrene (PS)
- ABS/SAN
- Acrylic (PMMA)
- Polycarbonate (PC)
- Paper, paperboard, cardboard, wood

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 *Gloss* LIG is perfectly suited for the production of PVC-stickers, advertising panels, displays, and lettering of all kinds.

LIG 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

Printability

- Very good mesh opening, simple and easy printability
- LIG can be processed by hand printing, with semi-automatic machines, or fully automatic machines

Gloss level

Tests have revealed the gloss level of Libra *Gloss* LIG as below:
(60° angle, fabric 120-34, white self-adh. film)

Standard shades:	60 - 70 gloss units
LIG Varnish:	60 - 70 gloss units
4-colour process shades:	45 - 55 gloss units

The value 100 stands for high-gloss while value 1 indicates deep-matt.

If a higher gloss level is required, we recommend - after a preliminary test - to overcoat with a high gloss varnish such as SR 910, or a UV-curable varnish.

Opacity

The colour shades of the LIG are brilliant with medium to good opacity.

Ink odour

All solvents used for the LIG and other auxiliaries are very mild and neutral in odour. This significantly reduces the polluting solvent odour in the print shop.

Ink Adjustment

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

Drying

Physically fast drying, if dried at 20 °C air temperature over printable within 15-20 min., at 50 °C in a tunnel drier stackable after 30-40 sec. In overprinting, the drying speed and block resistance will be reduced by approx. 20%.

With high dryer capacity and good ventilation provided, the drying temperature can be lowered to 40 °C, for less material distortion. The times mentioned above vary according to the substrate, the ink film thickness, drying conditions and the auxiliaries used. An extended drying time is necessary if softener WM 1 is added to the ink.

Libra Gloss LIG



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Fade resistance

Pigments of excellent fade resistance are used for the Libra *Gloss* LIG range (Blue wool scale 7-8). Provided a professional processing and max. 50% addition of varnish or white to the standard shades, all basic shades of System 21 and the 4 colour process shades (except for yellow) are suitable for outdoor use for 3 years if placed vertically and referred to the middle European climate, north of the forty-fifth degree of latitude.

A full-area overprint with LIG 910 will increase the light fastness to 4 years.

In countries with higher exposure to sunlight (between the 40th parallel north and 40th parallel south) the outdoor resistance decreases to 2 years.

We recommend to use highly fade-resistant ink types plus over-varnish such as e.g. the Mara® *Star* SR or Libra *Speed* LIS for an extended outdoor use.

The LIG PANTONE® basic shades are more transparent than the basic shades of System 21, due to the required brilliance, and therefore, do not achieve the same high fade resistance but maximum 2 years.

The pigments used are resistant to solvents and plasticizers.

Stress resistance

After proper and thorough drying, the ink film of the standard shades exhibits outstanding adhesion as well as rub, scratch, and block resistance and can be moulded (except for 4-colour process shades, please use Libra *Speed* LIS 4-c shades instead!)

LIG exhibits a normal chemical resistance to alcohol and other common cleaners (e.g. window cleaner).

For higher rub resistance we recommend to over-varnish with LIG 910. For higher chemical resistance, we recommend coating with SR 910/911 or a suitable UV-curable varnish.

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

4-Colour Process Shades Standard

429	Process Yellow
439	Process Magenta
459	Process Cyan
473	Process Black

Pantone® Shades

829	PANTONE Yellow
832	PANTONE Rubine Red
836	PANTONE Warm Red
839	PANTONE Rhodamine Red
850	PANTONE Purple
851	PANTONE Violet
852	PANTONE Reflex Blue
859	PANTONE Process Blue
868	PANTONE Green

Further Products

409	Transparent Base
910	Overprint Varnish

Pantone, Inc.'s check standard trademark for colour reproduction and colour reproduction materials.

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-

Libra Gloss LIG



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.

By using these 9 LIG PANTONE basic shades together with LIG 070, LIG 073, and printing varnish LIG 910, more than 1000 colour shades of the Pantone® Color Formula Guide can be mixed.

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 added to LIG 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 overvarnishing.

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

Auxiliaries

PSV	Thinner, mild	10-15%
LIGV	Thinner, slow	10-15%
UKV 2	Thinner	10-15%
VP	Retarder Paste	5-20%
SA 1	Surface Additive	3-5%
WM1	Plasticizer	2-5%
ABM	Matting Base	1-20%
MP	Matting Powder	1-4%
ES	Printing Modifier	0.5-1%
UR 3	Cleaner (flp. 42°C)	
UR 4	Cleaner (flp. 52°C)	
UR 5	Cleaner (flp. 72°C)	
SV 1	Retarder, mild	
SV 9	Retarder, 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.

Thinner PSV is suited for the use on polystyrene or other plastics sensitive to tension cracks. For spray varnishing, our Quick Thinner PSV should be used (by adding approx. 40 %) after preliminary trials.

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.

The degree of gloss can be reduced by adding Matting Paste ABM or Matting Powder MP (max. 2% for LIG 070), decreasing the opacity at the same time.

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.

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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.

cluding 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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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. It is 3.5 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.

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 *Gloss* LIG 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 in-