

Maraflex FX System Maracolor



For the manufacturing of ID-Cards

Suitable for laminating and embossing, offset-overprintable, satin ink film, very flexible

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Field of application

Substrates

Maraflex FX is a solvent based screen printing ink suitable for printing onto PVC films and extruded ABS blanks.

The suitability of FX for use with Polycarbonate PC and PETG is limited and preliminary trials are necessary.

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

Operative range

Maraflex FX is suitable for printing on single and multi-layered identity cards such as customer loyalty cards, club cards, bank cards, telephone cards, smart cards, or ID system cards. FX excels through particularly good laminating characteristics. FX can also be used in combination with other printing methods such as waterless or UV offset as well as subsequent processing methods like press finishing.

Characteristics

Drying

Physically very fast drying; dries at 20 °C ambient temperature within 10 min. ready for overprinting, at 50 ° C in a tunnel dryer (2 warm – 1 cold section) within 30 - 40 sec.

The times mentioned above vary according to the substrate, the ink film thickness, drying conditions and the auxiliaries used.

When overprinting the ink an extended drying time is necessary due to the solvent retention of the previously printed colour.

When overprinting an increased drying time is required due to the rewetting of the previous print layer. When printing both sides of cards, careful checks are necessary, so as to ensure adequate block resistance.

Good final drying properties and a check for residual solvents in the printed ink film are essential for successful lamination, good overprintability, and high peel resistance. Here, "Wicket" dryers have proven to be most effective, due to the long dwell time of 10-20 min. in the tunnel. Too high a residual solvent content in the ink generally degrades the laminating result.

Laminating parameters

The following laminating parameters have proven to work for PVC on the market.

Laminating temperature:	140 to 150°C
Pressure:	1 ton for sheet sizes of 35x50cm
Laminating time:	15 min

Opacity

The colour shades of the FX are brilliant with medium opacity. This ensures excellent lamination with high outputs and permits mixing of very pure colour shades.

Fade resistance

We are using pigments of excellent fade resistance (blue wool scale 6-8) for our Maraflex FX ink type.

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Tensile strength

After proper and thorough drying, the ink film is very flexible and laminable. Furthermore, its surface is resistant to scratching and bending. Due to the gloss levels required for good offset overprintability, the dry abrasion and rub resistance properties are somewhat lower. Maraflex FX shows good resistance against alcohol and sweat from fingers.

Range

The Marabu mix colour matching system includes the basic shades of the Maracolor System. All shades are intermixable. The Maraflex FX ink should not be mixed with other types of ink, to maintain the special characteristics of this outstanding ink range.

All shades are based on organic pigments, therefore, the heavy metal content complies with the EEC regulations EN 71, part 3, "safety of toys" - migration of specific elements.

All basic shades are, therefore, entirely suited for printing onto toys.

Shades

Shade Comparison Card Maracolor

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

By using these 17 basic shades in accordance with the mixing ratios given in the Marabu-Color Manager (MCM2, version 2.2) software, it is possible to produce the shades of the ink systems PANTONE, HKS and RAL.

Additives

Special Binder:	FX 904
Overprint Varnish:	FX 910
IR transparent black:	FX 337 05 73
Signature stripe:	Libramatt LIM 170

Press Polish Varnish: 3051/ 567 59 910
Lamination varnish FX 321 45 00
and offset base:

FX 321 45 00 is also suitable as a laminating agent over offset prints. The print varnish 3051/ 567 59 910 can also be used for press finishing of non-laminated cards.

Metallic Mixing System

Metallic colour shades on ID cards are a strength of the screen printing process and permit almost any colour tone. This is based on the Marabu metallic mixing system consisting of 3 silver shades of differing pigment sizes, 2 translucent tones, and the 17 FX basic shades of the Maracolor system. Any number of metallic effects can be mixed from these. Many effects and mixing recipes are illustrated in a special Marabu sample card box.

Other products:

FX 191	Metallic-Silver, Medium like FX 197 but more transparent >Mesh 77-55 to 90-48
FX 195	Metallic-Silver, Fine >Mesh 90-48 to 100-40
FX 197	Metallic-Silver, Medium >Mesh 77-55 to 90-48
FX 199	Metallic-Silver, Coarse >Mesh 43-80
FX 520	Transparent Yellow
FX 536	Transparent Red

All standard colour shades and mixed metallic shades are storable and laminateable.

Auxiliaries

Thinner:	UKV 2
Thinner fast:	UKV 1
Retarder slow:	SV 10
Retarder fast:	SV 5
Cleaner:	UR 3

To adjust the printing viscosity it is generally sufficient to add 10-15 % thinner to the ink. To produce a retarding effect for slow printing

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sequences, the retarder SV 10 or SV 5 is added proportionately to the thinner (about 50 % of the quantity).

To ensure good laminating characteristics, no other auxiliaries should be added to the FX.

Fabrics and Stencils

All types of commercially available fabrics and solvent-resistant stencils can be used. The fabric recommendation for colour shades is 90-48 to 120-34, for bronze see the details under the heading Metallic Mixing System.

Labelling

Current Material Safety Data Sheets according to EC-regulation 91/155 exist for our ink type Maraflex FX (System Maracolor) and its additives and auxiliaries, covering in detail all relevant safety data including the labelling according to present EC regulations for health and safety labelling requirements. Such health and safety data may also be obtained from the respective label.

The ink has a flash point of 55°C.

Recommendation

The ink should be stirred well before printing.

Note

Our technical advice whether verbal, written, or through test trials reflects our current knowledge for the purpose of information on our products and their use. It does not constitute an assurance for certain properties of the products or their suitability for any application. You are responsible to confirm the suitability of the products supplied by us for the intended process or purpose by carrying out your own trials. The selection and testing of the ink for a specific application is exclusively your responsibility.

However, in the event of any liability claims such claims 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.