

Maraflo TK



Vers.02
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Screen Printing Ink for textiles made of synthetic and natural fabrics, polyurethane foam material

Matt, semi-opaque, quick drying 2-component ink, weather and wash resistant

Field of Application

Substrates

Maraflo TK is excellently suited to print onto

- Textiles such as synthetic fabrics
- Polyester
- Polyacrylic
- Polyurethane foam material
- Cotton and blended fabrics

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 as well as a sufficient adhesion.

Field of use

Maraflo TK is a two-component ink and very well suited for printing onto sunshades, casual jackets and working clothes made of synthetic fabrics which are not suitable for printing with water based textile inks.

Characteristics

Mixing ratio

Before printing, it is essential to add Hardener H 2 in the correct quantity and to mix it well. Immediately after that, the mixture ink/hardener must be adjusted to the right printing viscosity by adding thinner. Regardless of the shade, the ratio is as follows:

10 parts of ink : 1 part of Hardener H 2

Pot life (processing period)

The pot life (processing period) at room temperature (approx. 20 °C) will be about 8 h with Hardener H 2. Higher temperatures reduce the pot life, lower temperatures increase it a little.

If the mentioned times are exceeded, the ink's adhesion and resistance may be reduced even if the ink is still fluid and therefore seems processable.

Drying/Hardening

Parallel to physical drying, i. e. the evaporation of the solvents used, the actual hardening of the ink film is caused by the chemical cross-linking reaction between ink and hardener. The standard values concerning progressive cross-linking reactions (hardening) of the ink film are as follows:

(single print, fabric 68 - 64)

Extent of drying	temperature	time
ready for overprinting	20°C	20 min
	60°C	5 min
	120°C	3 min
stackable	20°C	60 min
	60°C	20 min
	120°C	10 min
final hardness	20°C	5 days
pot life	20°C	8 hours

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

For multiple printing, please note that the film should not be completely cured before being overprinted.

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If cured at a room temperature of 20 °C, the ink film has to be overprinted within 24 hours. Heat-activated intermediate curing is possible at 60 - 80 °C for 5 min.

The processing and curing temperature should not be lower than 15° C within the first 12 hours as irreversible damage can occur.

We recommend to avoid high air humidity during and immediately after the print since the hardener is sensitive to air humidity.

Fade resistance

Only pigments of high fade resistance are used in the Maraflo TK range. Owing to this, the TK ink type is suited for a medium-term outdoor applications.

Shades mixed with Bronze Binder TK 902 and 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, so it is recommended to use a fabric between 48-70 and 68-64. The pigments used are resistant to plasticizers and solvents.

Stress resistance

After proper and thorough drying (5 days at 20°C), the ink film exhibits good block and weather resistance and is resistant to a number of chemicals, oils, greases and solvents. Maraflo TK is wash-proof in a washing machine up to 60°C and resistant to chemical dry-cleaning.

Range

Basic shades – System Maracolor

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

Further Color Shades

170 Opaque White

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

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.

The pigments used in the above mentioned standard shades, based on their chemical structure, correspond to the EEC regulations EN 71/part 3, safety of toys - migration of specific elements.

Additives

Bronze Binder / Varnish TK 902

Bronze binder TK 902 can also be used as overprint varnish. By adding 1-2 % STM thickening agent to the ink, opacity of light shades on dark substrates can be slightly improved.

Bronzes

Various bronze pastes are available which can be mixed with TK 902. They can be chosen according to the required opacity, cost limit, visual impression, and curing characteristics. Due to the bigger pigment size of bronze powders, we recommend a coarser fabric, e. g. 100-40.

Bronze Powder

S 181	Aluminium	6:1
S 182	Rich Pale Gold	4:1
S 183	Rich Gold	4:1
S 184	Pale Gold	4:1
S 186	Copper	3:1
S 190	Aluminium, rub-resistant	8:1

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Bronze mixtures have a reduced processing time. They cannot be stored and must be processed within 8 h. Due to their chemical structure, S 184 Pale Gold and S 186 Copper have a further reduced processing time of 6 hours. Shades made of bronze powders are always subject to an increased dry abrasion which can only be reduced by a suitable overvarnish with TK 902.

All bronze shades are shown in a separate shade chart.

The recommended mixing ratio can be varied according to the required opacity and curing properties. All figures in brackets are guidelines for mixtures with TK 902 Special Binder while the first figure is standing for the parts by weight of TK 902.

Auxiliaries

Hardener:	H 2
Mixing ratio:	10 parts ink : 1 part H 2
Thickening agent:	STM
Thinner:	UKV 1
Thinner, mild:	UKV 2
Retarder:	SV 1

To adjust the printing viscosity, it is generally sufficient to add 5-15 % thinner to the ink. To produce a retarding effect for slow printing sequences, retarder is added to the thinner proportionately (about 50 %).

Cleaning

For manual cleaning of screen printing stencils and tools our cleaner UR 3 (flash point 42° C) or UR 4 (flash point 52°C) can be used.

Fabrics and stencils

All types of commercially available fabrics and solvent-resistant stencils can be used. We recommend a fabric between 48-70 and 68-64.

Labelling

For Maraflo TK and its additives and 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 the present EEC regulations as to health and safety labelling requirements. Such health and safety data may also be derived from the respective label.

The ink has a flash point between 21 °C and 55°C.

Recommendation

Please stir well before use. If Maraflo TK is stored at low temperatures (< 0° C) for awhile, it becomes jellylike and cannot be processed. In order to prepare the ink for use again, it should be warmed up in an oven or a water bath (60 min at 50 °C).

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, they 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.