
Technical Information

RAMAFIX - 06/02/01

RAMAFIX

Sheetfed offset inks for low absorbency and non-porous substrates

Ramafix has been created to provide the elevated levels of adhesion and drying essential for printing onto low absorbency and non-porous substrates while maintaining high levels of productivity and print quality.

Characteristics

- **Ramafix** dries rapidly to a hard and flexible ink film through oxidation and additionally by evaporation and absorption where substrate and print process allow.
- Good adhesion and good rub and scratch resistance on a wide range of substrates.
- **Ramafix** includes shades with high resistances adapted to the demanding conditions encountered in label and display work.
- The high fidelity of **Ramafix** inks achieved through good transference and high colour strength, coupled with good gloss, assure high print quality.
- Good lithographic behaviour : rapid and stable ink water balance under all press conditions ensures high, consistent print quality. The fast make ready and start up times achievable with **Ramafix** will allow a reduction in print waste.
- **Ramafix** allows the printing of normal stacks without set-off on suitable substrates providing appropriate precautions are taken,

including the use of an appropriate anti set-off spray.

- **Ramafix** inks dry rapidly without the assistance of auxiliary drying (Infra Red, hot air etc.) and the use of such equipment is not recommended due to the heat sensitivity of some synthetic substrates and the risk of re-softening of the ink film in the stack.

Recommendations for use

Ramafix has been specially developed for printing onto low absorbency and non-porous substrates for the commercial, display and packaging markets.

Ramafix is:

- four inks for 4-colour process printing,
- eleven special and resistant colours.

The complete range offers a selection of commonly used special colours and allows blending of a wide range of supplementary shades where required.

Finishing

Ramafix already provides good gloss and high levels of mechanical resistance. However, **Ramafix** can be over varnished with the range of **Deltalac** water based coatings in-line or off-line. Where advice on their use is required please refer to the technical

information leaflets on the **Deltalac** products and the leaflet **General properties of Deltalac varnishes**.

UV varnishing or film lamination of **Ramafix** is not recommended. Where such finishing process are envisaged the use of a suitable primer is recommended and it is essential to ensure that the print is properly dry. For UV varnishing please refer to our technical information leaflets concerning **Ultracure** UV varnishes and to the leaflet **UV Varnishing on dry conventional inks**.

For lamination we advise:

- When using solvent based adhesive select the inks indicated in the table to have appropriate solvent resistance (ISO 2837).
- When using water based adhesive select the inks indicated in the table to have appropriate alkali resistance (ISO 2838).

Whichever form of print finishing is to be used, avoid excessively high ink film weights and see the paragraph on *Resistances*. For advice on all aspects of print finishing, please consult our technical services.

Note: Use of substrates adapted to finishing processes is recommended; some synthetic substrates may not be suitable due to their non-porous nature or heat sensitivity. Satisfactory results may not be obtained in all cases. The time between printing and finishing and the processes involved should be carefully controlled.

Substrates

Ramafix has been designed to print on low absorbency papers, and non-porous foils and plastic substrates. For example:

- Cast coated and parchment papers,
- washed foils and foil laminates,
- polythene and PVC coated papers,
- self adhesive vinyls,
- polypropylenes,
- cellophanes,

We recommended that a sample of the actual substrate to be printed is supplied at the time of order as the surface printability can vary between different grades and from batch to batch.*

*Certain materials have surface characteristics that render them unprintable with offset inks. For example some grades of plastic, particularly PVC, contain materials such as plasticisers and antioxidants which migrate to the surface and can prevent ink adhesion and drying. In these cases, it is

particularly important to test ink adhesion and drying prior to printing as migration can occur during storage giving poor results, even when the substrate normally gives satisfactory results.

When printing **Ramafix** inks on non-porous substrates ink setting by penetration cannot occur. In these cases, precautions must be taken to avoid set-off in the stack: the use of an appropriate anti set-off spray is necessary and stacks heights should be kept to a minimum.

In all cases we recommend prior tests before commencing commercial print runs. For further information please contact our technical services.

Machines

Permafix has been designed for use on all machines normally used for printing non-porous substrates using offset lithography (conventional, alcohol or integrated dampening) or by dry offset or letterpress.

Machine stability

The requirement for rapid and hard drying to give adhesion on non-porous substrates means **Ramafix** inks also dry relatively quickly on the machine: regular washing of the rollers and blankets is required during the print run, particularly in hot conditions.

Additives

Ramafix is supplied ready for use. Under some conditions (difficult impression, low ambient temperature) it may be necessary to adjust the inks characteristics.

We recommend:

Alkali refined linseed oil

Drying vegetable oil, which softens the ink while retaining the ink body. Use 1 to 3 %.

Fountain solutions

Ramafix inks are compatible with a range of fountain solutions with and without isopropyl alcohol (0-12%).

The composition of the dampening solution should be regulated to avoid excess acidity which can retard ink drying, and to avoid contamination of the ink film with surfactants that could reduce adhesion. Thus, it is preferable to use plain water where possible. The addition of 5-10% isopropyl alcohol, particularly for low take off jobs, will reduce surface tension and allow the quantity of water transferred to the

sheet to be limited. Damper settings should always be kept to a minimum.

If use of a fount additive is essential, this should be chosen for its lack of acidity: fount pH should be above 5.5 and the concentration carefully controlled by measuring conductivity and pH.

For improved drying in difficult conditions, for example on low take off jobs, fount drier additives based on soluble cobalt such as **Aqua-sec** can be used without reducing press stability.

If help is needed in choosing the fount additive and composition best suited to the printing conditions and water, consult our technical services.

Plates, blankets and rollers

Ramafix inks are compatible with all blankets and rollers and with all plates and stereotypes currently in use in offset and letterpress printing which are resistant to vegetable oils.

Note: In offset lithography it is referable to use a plate with a low water take up to avoid excess ink emulsification.

Washing up

Ramafix inks can be cleaned up with the help of solvents currently in use; see the technical data sheet from the supplier. For advice on the use of specialised cleaning agents consult our technical services.

Health and safety

Health and safety data sheet available on request.

Environment

Ramafix inks have been formulated with respect to appropriate environmental issues and to allow the printer to comply with associated regulations through:

- the use of raw materials from renewable resources where applicable;
- the choice of liquid components with very low volatility (cf. Directive 1999/13/CE);
- low heavy metal content (Toy Regulations EN 71/3, CONEG regulations) and minimal impact of our inks on the use of printed matter as a secondary raw material for recycling, composting or incineration in accordance with the Directive 94/62/CE.

Further detailed information can be found in our brochure **Safety, Health and the Environment** or contact our technical services.

Ink packaging

Ramafix is supplied in tins of 1.0kg and 2.5kg.

Resistances

The pigments used in **Ramafix** inks are not necessarily fully resistant to all post printing conditions that may be encountered. In particular, they may be required to withstand conditions of durability and exposure to conditions and/or uses not normally associated with general print. It is therefore necessary to indicate the resistance required at the time of ordering (see table overleaf). For each shade the table gives resistance values corresponding to the different ISO standards for solid prints made under standard conditions (ISO 2834).

Remarks

For lightfastness of prints (ISO 2835) we mean their resistance to daylight without the direct influence of bad weather conditions measured by comparison to a calibrated set of 8 examples of blue dyed wools of increasing resistance to light fading. The use of apparatus equipped with a Xenon lamp permits accelerated testing. The resistance times can vary in practice caused by a number of important factors: pigment compositions, substrate, colour strength, film weight used, format (solid, half-tones), storage conditions, exposure time, etc. In mixtures it is the component with the lowest resistance that defines the overall resistance value: in the same way the resistance is reduced the more the strength of the shade is reduced.

Resistance to alkali (ISO 2838) is used to assess, in a general way, resistance to alkaline products. Even if resistance to the standard ISO 2838 conditions is a necessary requirement, this result alone may not give sufficient confidence and some additional specific tests may be necessary (for example, resistance to soap or other cleaning products, resistance to adhesives, etc.) This standard can equally be used, together with the resistance to solvents (ISO2837), to assess to a first approximation the varnishability when using certain acrylic or certain UV varnishes.

Resistance to solvents (ISO 2837) is used to assess to a first approximation, the ability of the print to resist solvents and certain print finishing processes (varnishing, lamination, etc.) However, the composition of the materials used can be extremely variable: complementary tests may sometimes be necessary.

For further information please contact our technical services.

Ramafix references

PRODUCT CODES		☼ Standard ISO 2835	ALKALI Standard ISO 2838	ALCOHOL Standard ISO 2837	NITRO Standard ISO 2837
4-colour process					
PROCESS YELLOW EURO	365	4	+	+	+
PROCESS MAGENTA EURO	463	5	-	+	+
PROCESS CYAN EURO	519	8	+	+	+
BLACK EURO	972	7	+	+	+
Special colours					
Green Shade Yellow	356	7	+	+	+
Resistant Medium Yellow	366	6	+	+	+
Resistant Orange	370	7	+	+	+
Resistant Warm Red	460	5	+	-	-
Medium Red	461	5	+	-	-
Rubine Red	462	7	+	+	+
Resistant Pink	465	7	+	+	+
Resistant Violet	810	7	+	+	+
Resistant Reflex Blue	518	7	+	+	+
Green Shade Blue	520	8	+	+	+
Green	626	8	+	+	+

The resistances indicated in the table correspond to the following conditions:

☼ Lightfastness

Standard ISO 2835

Alkali resistance

Standard ISO 2838: 5 minutes at 20°C
in 2.5 % caustic soda.

Alcohol resistance

Standard ISO 2837: 5 minutes at 20°C
in denatured ethanol.

Nitro resistance

Standard ISO 2837: 5 minutes at 20°C

in a mixture corresponding to a solvent
for nitrocellulose varnish, in volumes
Acetone 10/Ethyl Glycol 10/Ethyl
Acetate 30/Ethanol 30/Toluene 30.

Lightfastness (full strength)

1 = very poor lightfastness

8 = outstanding lightfastness

Alkali, Alcohol, Nitro

+ = resistant

- = not resistant

This information has been carefully compiled from experience gained in the laboratory and under commercial conditions. However, the product's performance and its suitability for the customer's purpose depend on the particular conditions of use and the material being printed. We recommend that customers satisfy themselves that each product meets their requirements in all respects before commencing a print run. All sales are subject to our standard terms and conditions of sale.

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