



PRODUCT DATA

TEMPEST F/R

FLEXO

(Prefix MRT + MTS)

DESCRIPTION

A range of inks developed to meet the demands of outdoor requirements and other high specifications associated with polythene or polypropylene sack printing. Supplied as spot colours, or a mono pigmented base range for customer blending.

TYPICAL PROPERTIES

Excellent water resistance.
Excellent water resistance.
Heat Resistant (160°C)
Non blocking ink/ink and ink/treated film.
Excellent weatherfast properties.*
Excellent adhesion to a variety of film substrates.
High light fastness - minimum blue wool scale 5**
Contains flame retardant additive to slow the rate of burn.

SUBSTRATES

Suitable for treated low-density polythene and co-extruded polythene films. It is important to liaise with our laboratory where packaging applications include reactive, corrosive or highly abrasive products as most polythene films exhibit poor barrier properties.

Surface tension 38 to 42 dynes/cm. (Higher surface tension can result in a lowering of water resistance).

REDUCERS

Tolerant to a wide range of alcohols/esters such as:

Normal:	Ethyl Alcohol/N Propyl Acetate:	4/1
Fast:	Ethyl Alcohol/Ethyl Acetate:	4/1
Slow:	N. Propanol/N Propyl Acetate:	4/1

Ethoxy Propanol with above mixtures to retard inks.

Recommended print viscosity 20-25 seconds Zahn 2

N.B. care should be taken in the use of retarders as they may lead to odour or set-off in the reel.

To enable clean running at slow speeds we have developed Tempest MTS which uses slower drying alcohol/acetate mixtures to maintain print quality.

VARIANTS

To enable clean running at slow speeds we have developed Tempest MTS which uses slower drying alcohol/acetate mixtures to maintain print quality.

The standard ink range produces a print surface with a low coefficient of friction (<0.25 static) depending on substrate & coat weight.

A 'Low Slip' & intermediate slip 'Compost' versions are available. However, these ranges will have lower scuff & scratch resistance compared to the standard series.

ADDITIVES

Wax additive to increase scratch & scuff resistance is available – however, care must be taken as introducing the additive will make the ink slipper (lower the Coefficient of Friction).

To give protection & increase the Coefficient of Friction an anti-slip lacquer is also available in the range.

DEGRADATION*

Printed packaging will not withstand outdoor exposure indefinitely.

Ink & substrate resistance will depend on a large number of variables – exposure time, weather conditions, temperature, geographical location/climate etc.

In general terms stronger colours with higher pigment loading will exhibit higher weather resistance. Weaker colours, pastel & cream shades will be more sensitive to colour change & could necessitate the need for higher performance pigments (see note** below).

Pantone shades & spot colours where blend of colourants have been used, could show some colour shift as lightfastness of pigment types will vary.

The inks should be applied at as high a coat weight as possible as lower coat weights will be more prone to degradation & colour change.

When printing over Tempest White on clear film, ensure that the white ink is not printed at low viscosity (over reduced with solvent) & also printed at a high coat weight, otherwise the weather resistance will be compromised.

Please note that general resistance properties will be lower than if colours are printed direct on the film.

Take care when printing inks using cyan blends as the pigment type (copper phthalocyanine) as active components in soil & compost can chemically attack this colourant resulting in loss of colour. Print trials are always advised.

Evidence exists that inks will degrade if exposed to an environment of high temperatures, humidity and light such as created by transparent secondary packaging. It is essential that these inks are not exposed to such conditions.

Reactive chemicals such as fertilisers, calcium carbonate, & cement for example can generate aggressive conditions that can attack the ink layer.

Components within soil & compost can also attack the ink layer. As the compost degrades products aggressive components are generated which can attack the ink layer.

Where printed packaging is stored outdoors & moisture is trapped between the ink layer & any outer wrapping (e.g. pallet shrink wrap), the water resistance can be reduced as the resins used within the ink layers are degraded.

The trapped moisture in combination with aggressive chemical conditions outlined above, with UV from sunlight can accelerate any degradation. This is known as a 'microclimate' & generation of such should be avoided where possible.

To prolong packaging life when printed packaging is stored outdoors it is therefore recommended that black pallet cover should be used to prevent exposure to direct sunlight.

Long term water content should be avoided. If black covers are impractical then store without covers, or have them perforated so printed packaging can 'breathe'.

COLOUR RANGE Available in a wide range of bright colours, including a high-performance process set.

** Pale colours, containing low percentages of organic pigment are referred to as 'Tempest Plus'. The 'Tempest Plus' inks.

We recommend care and consultation with our technical department for the packaging of harsh or reactive products.

Colours are matched under D50 lighting conditions.

**QUALITY
ASSURANCE**

Products with the prefix and product name specified above are Quality Controlled to Mirage Inks Test Specification No 34 as described in the test manual. Details of all tests are available on request from our technical department.

The information given above is supplied as a guide only, with the properties achieved under laboratory conditions. Mirage Inks Limited strongly recommends that you satisfy yourself as to the suitability of the product with trials. Please consult our laboratory to discuss any different requirement.

As particular conditions of use and variations in quality of materials and substrates being used are outside our control, it is therefore not possible to guarantee the performance of our products.

Products supplied under this ink name / prefix, are best used within a six month period from the date of manufacture (as specified on the product label).

In-line with Mirage Inks Ltd ISO 9001 procedures, retained batch samples for any product supplied under this ink name / prefix, are retained & stored at room temperature for a period of six months from the date of manufacture.

Should the product be used outside of this six month period, Mirage Inks Ltd. have no reference sample for comparative & test purposes, so cannot investigate or be held responsible for any print related problems.

Mirage Inks Ltd will not accept liability for any claim arising as a consequence of a laboratory colour matching being offered to our customer in good faith, and then subsequently Mirage's customer failing to obtain approval from their customer prior to printing / production.