

## IcoFlex IF

PVC / Phthalate Free Transfer System

Environmentally Friendly Textile Transfer Ink System

Issue No. 008/2019

**IcoFlex IF** is a dedicated range of super-stretch, ultra-soft water-based transfers for Sportswear and Tagless textile decoration applications. Uniquely formulated to provide the highest level of stretch, yet give adhesion onto a wide range of natural and synthetic materials

### Curing Information

It is vital to ensure full through-cure before overprinting and sealing the ink layer. Excessive temperatures and too short drying time should be avoided to maximize the cure of the ink, so that no water remains trapped in the ink film.

Factors including ink film thickness, image size, colour, drying equipment and fabric all influence the curing schedule needed. Normally when drying in tunnel dryer, the oven temperature will need to be set approx 70 - 100°C for 60sec - 2mins. As for wicket dryer, the drying temperature will need to be set around 60-70°C for 30-40minutes.

Powdered prints are recommended to heat cure to maximise print & wash performance, suggested cure schedule 130 - 165°C for 1 - 3mins.

### Transfer Temperature

**IcoFlex IF** products have a wide range of transfer conditions variant on the fabric, adhesive and application conditions required. The following conditions are recommended:

Conventional Fabrics	130 - 150°C for 15 sec.
Workwear Transfers	155 - 165°C for 15 -20 sec.
Performance Fabrics	140 -150°C for 10 - 15 sec.

Please see further details in the Hotmelt Powder and Printable Adhesive Sections.

### Fastness

The full wash fastness of the system is dependent on the adhesive and base used. Generally 50x domestic wash fastness is achievable with **IcoFlex IF** ink series. (See Hotmelt Powder and Printable Adhesive Sections)

As with all transfer recommendations – it is vital to ensure suitability on the Customer supplied fabric. Due to variation in fabrics and even between batches of fabrics, full compatibility testing should be conducted prior to commencing production. Please note that moisture content in the substrate has an influence on transferability (fabric can absorb up to 30% moisture).

### Main Characteristics

#### Properties

Formulated on non-PVC containing resins and non-phthalate plasticisers. Lead-free, unprecedented stretch properties, superb screen stability, excellent wash resistance and dye bleed resistant options.

- Maximum stretch on difficult fabrics
- Excellent opacity
- Superb wash fastness
- Ultra-soft handle
- Comply with Oeko-Tex 100 and the latest RSL

#### Curing

The ink film must be fully cured to generate the best wash and stretch.

#### Thinning

Supplied press-ready. Up to 5% Water may be added if necessary. For hot-shop conditions, 1-5% **IFRET** retarder may be added to maximize print performance and screen stability.

#### Wash-up

Wash up with water. For dried in ink – wash up with **ZTC639**. Soaking and adding solvent to wet ink should be avoided.

#### Mesh

Ink: 62-120 Thread/cm monofilament mesh  
Adhesive: 24-48 threads/cm monofilament mesh

#### Stencil

Most water resistant direct stencil materials are suitable.  
Recommended: **Dirasol 25** for Adhesive Layers  
**Dirasol 915 or Dirasol 125** for fine details

#### Coverage and Mesh No.

55-65m<sup>2</sup>/ltr. No 90 monofilament

#### Applications

Most knitted and woven fabrics typically used for T-shirts, Sweat Shirts, Sports and Fashion Wear, Badges, Hats and Caps, Travel Bags, Footwear.

#### Fabrics

Suitable for most common natural and synthetic fibres, including, Cotton and Cotton/Polyester blends. Many grades of synthetics. Use **IFSMR** Migration Resistant Black onto most sublimated fabrics

#### Intermixing and Compatibility with Other Inks

Must be used in conjunction with Pigment Concentrates WP.

**IMPORTANT:** Stir well before every use. Users should satisfy themselves that **IcoFlex IF** is compatible with specific textiles and that rub, stretch and other resistance properties are acceptable before commencing production runs. No guarantees can be offered with respect to dye bleed due to the wide range of dyes used.

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### Hotmelt Powder

IcoFlex IF is designed to work with the following hotmelt powder:

#### Economical Powder – XMC378

Universal product with good cost and performance balance

#### Super Stretch Powder – IFSSP

For situations where the highest stretch and comfort is required.

#### Low Temperature Powder – IFLTP

For situations where the lowest transfer temperature is required.

#### Low Bleed Powder – IFLBP

Designed for use with IcoFlex IFSMR Migration Resistant Black to create highly heat resistant dye blocking transfers

#### High Wash Powder – IFHWP

For a high level of stretch but where higher wash performance is required. High Wash Powder is also suitable for Industrial Wash Applications.

Code	Type	Melting Temp.	Transfer Temp.	Wash Fastness
XMC378	Polyester	130°C	140 - 150°C	40-60°C
IFSSP	Polyurethane	120°C	130 - 150°C	60°C
IFLTP	Polyester	120°C	130 - 140°C	60°C
IFLBP	Polyamide	125°C	145 - 150°C	60°C
IFHWP	Polyurethane	150°C	155 - 165°C	60-90°C

All hotmelt powders are provided as 80-200 Micron

### Printable Adhesive

To maximise print options and ease of use for the IcoFlex IF transfer series the following printable adhesives are also available:

Code	Wash Fastness*	Transfer Condition	Description
IFA02	40-60°C	130-150°C 10-15sec	Amazing stretch, softness with transparent edge
IFLTA	40-60°C	130-140°C 10-15sec	Excellent stretch and wash resistance.
IF458	60-90°C	155-165°C 10-15sec	Awesome washing resistance
IFA95	95 °C	170-200°C 15-30sec	Superb resistance for industrial wash

\* Based on two layers adhesives printed through 24-43 threads / cm mesh.

These systems are designed to be printed through 24-48 threads/cm mesh counts. Best performance is achieved by backing and waiting 24 hours prior to transfer.

In line with all transfer recommendations best wash fastness is generated a minimum of 24 hours after application.

### Migration Resistant Black

To achieve high impact on previously sublimated fabrics use of an interlayer of IcoFlex IFSMR Migration Resistant Black should be used.

Designed for printing through 24-43 threads / cm mesh.

Best results are achieved by printing a sandwich layer based on colour, white, migration resistant black and then backed with clear and IFLBP powder to generate a halo-free (no glue mark) finish.

**It is vital to ensure that all moisture has been removed from the IFSMR Migration Resistant Black layer.** Any remaining moisture may lead to bubbling or reduced performance in the end transfer.

### Catalyst

For maximum resistances are required, the ink should be catalysed before use. There are two catalysts available.

Estimate the amount of ink required for a day's work and thoroughly mix the ink base and catalyst in the following ratio:

IcoFlex IF386 Catalyst                    3 – 5%  
IcoFlex IF386 Super Catalyst        1 – 1.5%

Catalysed inks have a pot life of approximately 8 hours. All the catalysed ink left over at the end of the printing run must be discarded.

### Colour Range

#### Main Colour Range and Bases:

IF025            Opaque White  
IFFLW           Fine Line White  
IFPCB           Clear Base  
IFFLC           Fine Line Clear  
IFSMR           Migration resistant Black

Available in 15 KG containers

#### Fluoros and Metallics:

IF053            Fluorescent Yellow  
IF105            Fluorescent Orange  
IF138            Fluorescent Pink  
IF139            Fluorescent Magenta  
IF137            Fluorescent Red  
IF312            Fluorescent Green  
IF461            Bright Gold ink  
IF462            Bright Silver ink

Available in 5 Kg containers

#### Powdering Adhesive:

XMC378            Economical Powder  
IFSSP            Super Stretch Powder  
IFLTP            Low Temperature Powder  
IFLBP            Low Bleed Powder  
IFHWP            High Wash Powder

Available in 10 Kg containers

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### Printable Adhesive:

IFA02	Transparent Adhesive
IFLTA	Low Temperature Adhesive
IF458	High Wash Adhesive
IFA95	Industrial Wash Adhesive

Available in 15 Kg containers

### Thinners / Retarders

IFRET	Retarder
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Available in 1 Ltr containers

### Catalyst

IF386	Catalyst
IFSCT	Super catalyst

Available in 1 Kg containers

### Pigment Concentrates

WP001	Black
WP064	Yellow (Green Shade)
WP066	Yellow (Red Shade)
WP114	Orange
WP121	Red (Yellow Shade)
WP127	Violet
WP164	Red (Blue Shade)
WP165	Magenta
WP203	Blue (Green Shade)
WP233	Blue (Red Shade)
WP325	Green

Available in 1 Kg containers

### Safety and Handling

#### IcoFlex IF:

- Is formulated to be free from any chemicals toxic to health, carcinogenic, mutagenic or repro-toxic according to Directive 67/548/EU.
- Is formulated free from lead and other heavy free metals and is to comply with the EN71-3:2013 Toy Safety Standard.
- Should be stored in a cool (air conditioned) place. Storage conditions above 30°C will significantly reduce the shelf of the product. In cases where ink has been exposed to elevated temperatures for prolonged periods, it may gel and be rendered unusable. Inks that have been catalysed, should not be returned to the container.
- Is formulated free from phthalate plasticisers.

Comprehensive information on safety and handling is given in the **ICONINKS** Safety Data Sheet for this product.

### Environmental Information

#### IcoFlex IF:

- Does not contain ozone-depleting chemicals as described in the Montreal Convention.
- Is formulated free from aromatic hydrocarbons which are known to have an adverse effect on the environment.
- Is water-based, free of any volatile solvent and can be considered to have less impact on the environment, when compared with solvent-based products.
- Is formulated free from PVC containing resins.

**IMPORTANT:** The **IcoFlex IF** range has been developed using non-phthalate plasticisers and non-PVC resins.

However users must be aware of other potential sources of contamination, e.g. squeegees, flood coaters, screens and curing equipment which may all contribute trace amounts of phthalate and PVC from previous use with other inks.

The **IcoFlex IF** product range should only be used in conjunction with the Pigment Concentrate WP range.

The information and recommendations contained in this Product Information sheet, as well as technical advice otherwise given by representatives of our Company, whether verbally or in writing, are based on our present knowledge and believed to be accurate. However, no guarantee regarding their accuracy is given as we cannot cover or anticipate every possible application of our products and because manufacturing methods, printing stocks and other materials vary. For the same reason our products are sold without warranty and on condition that users shall make their own tests to satisfy themselves that they will meet fully their particular requirements. Our policy of continuous product improvement might make some of the information contained in this Product Information sheet out of date and users are requested to ensure that they follow current recommendations.

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