

## Product Information

# IcoPlast PL

PVC Containing, Phthalate Free Plastisol Inks

Issue No. 001/2011

**IcoPlast PL** are direct printing, plastisol inks designed with maximum opacity, for printing natural and synthetic fabrics.

**IcoPlast PL inks** are formulated to be Phthalate Compliant. See Environmental Information section.

### Curing Information

**IcoPlast PL** inks must be heat cured at a minimum of 140°C to achieve full wash fastness. Differences in film weight, drying equipment and fabric will affect the dwell time required, but 1.5-3 minutes is typical. Some infrared units achieve full cure in a short time. Time will vary dependant on colour (dark colours curing faster than light colours).

**Ensure the entire thickness of the ink film has sufficient time to reach the cure temperature, or resistance properties will not be achieved. Evaluate your cure schedule by testing the print at the wash schedule it is expected to pass.**

#### Flash curing:

Under optimum conditions a dwell time of less than 3 seconds can be achieved. **PLA53 Special Flash Cure White** should be used, if a phthalate compliant print is required.

Many factors affect the dwell time required for flash curing. These include the type and wavelength of the equipment used, and the distance between the curing unit and the print. Other factors such as fabric and ink colour, film weight and coverage are also crucial.

### Fastness

**IcoPlast PL** inks has good wash fastness to ISO Test Nos. 1 (40°C), 2 (50°C) and 3 (60°C).

#### Colour Matches

The combination of high wash temperatures and strong detergents can cause colour changes in some colour matches, particularly when very small additions of a base colour are added. For example, pastel shades can change colour as the trace additions of base colours are affected in harsh wash cycles. For this reason, it is essential that all formulations are proofed prior to production to ensure wash fastness properties are acceptable.

Prints may be ironed from the back of the fabrics at a cool setting, with a cloth over the printed area. **Prints will not resist dry-cleaning: garments must be marked to this effect.**

### Fibrillation

Fibrillation occurs when fibres from the garment break through the ink film during a wash cycle to give a faded appearance. While fibrillation has the look of poor wash fastness it is not caused by the loss of ink, it occurs even with fully cured prints. There are several methods to minimise fibrillation, however, each results in increased print handle:

- Increase ink film weight
- Use a flash-cure ground coat (**PLA53 Special Flash Cure White**)
- Add 0.5-1% of **SEA10 Additive**.

As demand for low handle/low film weight prints increases, so does the likelihood of fibrillation. This reinforces the need to wash test-prints to customer requirements prior to production

### Ancillary Products

During printing, fabrics have to be held to the table by means of a pressure sensitive adhesive to ensure good definition is obtained. T-Fix Extra Spray Adhesives by Sericol Product are suitable for this purpose.

(See relevant Product Information Sheets)

### Main Characteristics

#### Properties

- Formulated with phthalate compliant plasticisers.
- Lead-free.
- Excellent wet-on-wet printability.
- Unlimited screen stability.
- Excellent wash resistance.
- Build-up free.

#### Curing

Ink film must reach 140°C

#### Thinning

To increase flow, use up to 5% **PL591 IcoPlast PL Thinner**.

#### Wash-up

Wash up with **ZTC639 IcoPrep Thinner**

#### Mesh

Monofilament 34-120

#### Stencil Type

Most direct stencil materials are suitable.

#### Recommended:

IcoPrep Emulsion **EM-PTEX**

#### Coverage & Mesh No.

12-16m<sup>2</sup>/ltr. No. 43 monofilament.

#### Applications

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

#### Fabrics

Suitable on most common, natural and synthetic, fibres, i.e. Cotton, Cotton/polyester blends. Many grades of synthetic fabrics.

#### Colour Range

32 Intermixable colours.

**IMPORTANT: Stir well before every use. Users should satisfy themselves that IcoPlast PL is compatible with specific textiles and resistance properties are acceptable before commencing production runs.**

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### Low Bleed White

**IcoPlast PL LBW** is a low bleed white designed to minimise dye bleed when printing onto polyester and polyester/cotton blends where dye migration is a concern. The recommended cure schedule is the same as **IcoPlast PL** products. A minimum temperature of 140°C must be achieved to ensure full wash fastness. Care should be taken to avoid using high curing temperatures as this can cause excessive dye bleed on some fabrics. Tests must be carried out before starting a production run to confirm compatibility between the ink and fabric.

### Colour Range

#### IcoPlast PL:

PL001	Black
PL021	White
PL042	Yellow (Green Shade)/Light Chrome
PL043	Yellow (Red Shade)/Mid Chrome
PL162	Orange/Light Red
PL165	Magenta
PL166	Violet
PL134	Red (Yellow Shade)/Red
PL124	Red (Blue Shade)/Deep Red
PL203	Blue /Mid Blue
PL206	Blue (Red Shade)/Deep Blue
PL210	Ultra Blue
PL285	Green/Deep Green
PL381	Extender Base
PLA53	Special Flash Cure White

#### Trichromatic Inks

PL004	Trichromatic Black
PL058	Trichromatic Yellow
PL135	Trichromatic Magenta
PL215	Trichromatic Cyan

#### Fluorescent Inks

PL077	Fluorescent Yellow
PL119	Fluorescent Orange
PL179	Fluorescent Red
PL180	Fluorescent Magenta
PL294	Fluorescent Green

#### Specialty Inks

PL327	Phosphorescent Green
PL397	Transparent Glitter Base
PL475	Metallic Gold
PL476	Metallic Silver

PL439	Soft Hand Base
PL417	Expanding Base
PL421	Metatran Adhesive
PLLBW	Low Bleed White

Available in 5ltr containers.

PL456	Sparkle Base
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Available in 1ltr containers.

#### Thinners/Reducers

PL591	IcoPlast Thinner
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Available in 5ltr containers.

### Safety and Handling

#### IcoPlast PL:

- Is formulated not to contain any chemicals toxic to health according to current EU classification criteria.
- Is formulated free from lead and other heavy metals and is tested to comply to the EN71-3: 1995 Toy Safety Standard.
- Has a flashpoint greater than 55°C and is therefore not classified as a "dangerous substance" under the Dangerous Substances and Explosive Atmospheres Regulations (DSEAR).
- All products should be stored at moderate temperatures, between 5°C and 30°C. Storage outside of these temperatures may lead to deterioration in the performance of the product.

Comprehensive information on the safety and handling of **IcoPlast PL** screen inks and solvents is given in the appropriate Iconinks Safety Data Sheet, available upon request.

### Environmental Information

#### IcoPlast PL:

- Does not contain ozone depleting chemicals as described in the Montreal Convention.
- Is formulated free from aromatic hydrocarbons.
- Is free of any volatile solvent and will have less impact on the environment, when compared with solvent-based products.

**IMPORTANT:** The **IcoPlast PL** range has been developed not to contain phthalates restricted for use by Council Directive 76/769/EEC (as amended). However the possibility for low level contamination during the manufacturing process exists.

Users must be aware of potential sources of contamination from squeegees, also flood coaters, screens and curing equipment which may all contribute trace amounts of restricted phthalate materials from previous use with other plastisols. The **IcoPlast PL** range should only be used in conjunction with PLA53 Special Flash Cure White and **PL591** Thinner.

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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