

## IcoPlast PL

PVC Containing, Phthalate Free Plastisol Inks

Issue No. 008/2019

**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 dependent 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.**

### 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** Thinner

#### Mesh

Monofilament 34-120

#### Stencil Type

Most direct stencil materials are suitable.

#### Recommended:

Emulsion **Dirasol 125** and **Dirasol 915**

#### 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

33 Intermixable colours, base and specialty inks.

**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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### 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 minimize 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

### 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:

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

#### Four Colour Process Inks

<b>PL004</b>	4cp Black
<b>PL058</b>	4cp Yellow
<b>PL135</b>	4cp Magenta
<b>PL215</b>	4cp Cyan

### Fluorescent Inks

<b>PL077</b>	Fluorescent Yellow
<b>PL119</b>	Fluorescent Orange
<b>PL179</b>	Fluorescent Red
<b>PL180</b>	Fluorescent Magenta
<b>PL294</b>	Fluorescent Green

### Specialty Inks

<b>PL327</b>	Phosphorescent Green
<b>PL397</b>	Transparent Glitter Base
<b>PL475</b>	Metallic Gold
<b>PL476</b>	Metallic Silver
<b>PL439</b>	Soft Hand Base
<b>PL417</b>	Expanding Base
<b>PL421</b>	Metatran Adhesive
<b>PLLBW</b>	Low Bleed White

Available in 5Ltr containers.

**PL456** Sparkle Base  
Available in 1Ltr containers.

### Thinners/Reducers

**PL591** IcoPlast Thinner  
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 with the EN71-3:2013 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.

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### 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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