

# Silicotex SI

## Silicon based textile printing ink

# Silicon Based High Quality Textile Printing Ink

PVC resins, Phthalate plasticizers, Solvent, and Formaldehyde use have been under tremendous pressure from environmental groups following claims that they pose a serious threat to human health and environment. These chemicals are widely used in the manufacture of plastic products and plastisol inks for many years and these pressure groups have pumped up their efforts to eliminate these chemicals from circulation.

Environmental groups have also applied pressure on sportswear companies and high street retailers who in turn have sought to reduce the use of these materials in their products.

Silicotex SI textile printing ink is designed to bring an environment friendly solution to sportswear, casual apparel printers and high street retailers.

### **Silicotex SI Key Features:**

- Environment Friendly. Does not contain PVC, Phthalate, Formaldehyde, Solvent and organotin.
- Excellent durability. Very good wash fastness and weather resistance. No colour migration.
- Good soft non sticky hand feel. No problem of blocking upon folding.
- Gloss, Semi gloss and matt finish with no creasing.
- High stretchability. Appropriate for fabrics with Lycra content.
- Fast curing : Silicotex SI inks gets cured within a minute when platinum catalyst is used at temperatures between 150°C-180°C.

- Operation friendly: suitable for manual and automatic screen printing machine.
- Better coverage and lower cycle time. Reduced total cost of use.

### **Substrate :**

- Most natural and synthetic fabric including elastic fabric.

**Important :** \*\* Test Inks on substrates before production run

THE END USER MUST DETERMINE SUITABILITY OF THIS PRODUCT FOR THE INTENDED USE PRIOR TO PRODUCTION.

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## Curing Information

**It is essential that the entire thickness of the ink film has time to reach the full cure temperature of 150°C-180°C or the resistance properties, such as wash fastness and rub resistance will not be achieved.**

Evaluate the cure schedule by testing the print at the wash schedule that will ultimately be expected to pass. It is recommended that cure temperature is confirmed with the use of thermal testing strips.

Factors such as ink film thickness and colour, drying equipment and fabric influence the cure schedule needed. In most cases the oven temperature will need to be set higher than 150°C for the ink to reach full cure within a time frame of 40 to 60 seconds.

During normal production run, a curing temperature of 150°C-180°C should be allowed to reach the garment and for a period of 40 seconds - 60 seconds.

## Application

Most fabrics typically used for jerseys, jackets, caps & hats, gloves, bathing garments, shirts, sleep wear, children's clothing & baby's clothing

**Note : Printed fabric is able to pass 10 wash cycles with no deformation.**

## Fabric

Suitable for most natural and synthetic fabric including elastic fabric.

## Mesh

Print the Silicotex SI through 34/cm to 100/cm, monofilament polyester fabric, depending on the application.

For fine details & half tone printing, use amber or yellow coloured fabric.

## Fastness

Silicotex SI has good wash fastness. It passes 10 cycles of wash, 5 cycles at 40°C and another 5 at 60°C. Prints can be ironed from the front of the fabric on the printed area.

## Colours

**Silicotex SI Colours :** Add 5-10% of Colour concentrates ( SIC ) in SI-381. To increase the colour strength, add as per the requirement.

## Catalyst

SI-386 -Add 2-3% Catalyst is mandatory in below mentioned products for curing. If catalyst is increased above recommended percentage, then pot life will decrease accordingly.

- 1. Products - SI-381,**
- 2. SI-500,**
- 3. SI-397,**
- 3. SI-382 &**
- 4. Silicotex SI colours. -**

## Thixotropic Agent

SI-384 Thixotropic Agent - 0.2-0.4 % - Products -

SI-381,  
SI-500,  
SI-397,  
SI-382 &  
Silicotex SI colours. -

If required, increase Thixotropy by adding the agent.

## Thinning

Silicotex SI Colours : Add 5-10% of Colour concentrates ( SIC ) in SI-381.

Supplied press ready. High initial gel will break down after stirring / mixing. Upto 2-5% SI591 thinner may be added if necessary

## Wash Up

Wash up with SS639 Screen Wash Universal.

## Stencil

Most direct stencil materials are suitable. Recommended: Dirasol 132 or Dirasol 916

## Intermixing & compatibility with other inks

Silicotex SI colours cannot be mixed with any other system.



## Fujifilm & sustainability

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Fujifilm has a long history of responsible and sustainable business development, acknowledged regularly through its inclusion in the Dow Jones Sustainability and FTSE4Good global indices, and is proud to publish its results in an annual Sustainability Report.



## The Fujifilm Green Policy

We at Fujifilm believe that "sustainable development" of the Earth, mankind, and companies in the 21st century is an issue that must be addressed with the highest priority. As a socially responsible corporation, we actively undertake corporate activities with our environmental values in mind. We strive to be a dedicated steward of the environment and assist our customers and corporate partners in doing the same.



## Heat Stability

The combination of raw materials used in Silicotex SI is not as stable or tolerant of elevated temperature (>35°C) during long transportation over sea long storage. The ink may appear thick over time (often referred as false gel) this false gel can normally be broken down by hand mixing with spatula for 5 minutes.

Inks that have been used on press in very hot conditions, such as multiple flash cure prints, should not be returned to the container containing fresh ink.

Avoid prolonged mechanical shaking as it can generate high levels of heat.

For better storage stability, it is recommended to store the Silicotex SI inks in air-conditioned room below 25°C, with relative humidity 50 to 65%.

Silicotex SI inks have been developed to meet the demand for more environmentally friendly print jobs. While Silicotex SI is technically a true Silicone ink, because of its different chemical make up from a traditional plastisol, it will show superior wash fastness, elasticity, rub resistance, weather durability, hand feel and tackiness which is very beneficial for high end apparel applications.

## Wet/Dry Rub

Wet rub & dry rub fastness of SI prints is very good. The Grey Scale grade will vary from colour to colour, but the dry rub can be improved further by either mixing 10%-30% of SI381 Silicotex SI Extender Base into the colours or by overprinting with a layer of SI397. Mixing the extender base in the colours will generally improve the print by half a grade whereas the overprint will achieve acceptable grades. For the overprint use mesh counts from 90T to 140T.

Note: High street stores and garment/sportswear manufacturers will generally have their own levels for acceptable rub fastness. Printers must carry out their own tests to satisfy themselves that the rub levels will meet fully with their end users requirements.

## Fibrillation

Fibrillation occurs when fibers 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 like below to minimise fibrillation.

- 1) Increased ink film weight
- 2) Use of SI 381 as a base coat.

As demand for low handle/low film weight prints increases, so does the likelihood of fibrillation. The complex relationship of ink, print and fabric reinforces the need to wash test-prints to customer requirements prior to production

## Transfer Printing

SI inks can be used for transfer printing along with SI-500 as a Primer and SI-075 glass beads.

Mesh for colours: 43T to 90T

Mesh for Primer SI-500 : 29T to 77T

Each colour should be cured and then next colour should be printed. Curing temperature of colours and primer is mentioned below.

## Curing temperature

colours: 150°C to 180°C for 50 seconds

## Fusing:

Temperature: 120°C to 160°C

Pressure: 4bar/ 60 psi

Time: 10-12 seconds.



Colour	Product Code
SILICOTEX SI BLACK	SIC001
SILICOTEX SI WHITE	SIC021
SILICOTEX SI YELLOW	SIC042
SILICOTEX SI DARK YELLOW	SIC043
SILICOTEX SI RED	SIC134
SILICOTEX SI SCARLET	SIC101
SILICOTEX SI BLUE	SIC206
SILICOTEX SI NAVY BLUE	SIC207
SILICOTEX SI MAGENTA	SIC165
SILICOTEX SI GLASS BEADS	SI-075
SILICOTEX SI ANTI-MIGRATION LSR	SI-410

Fluorescent Colour	Product Code
SILICOTEX SI FLUORESCENCE YELLOW	SIC077
SILICOTEX SI FLUORESCENCE PINK	SIC180
SILICOTEX SI FLUORESCENCE GREEN	SIC294
SILICOTEX SI FLUORESCENCE ORANGE	SIC162

Metallic Colour	Product Code
SILICOTEX SI GOLD	SIC475
SILICOTEX SI SILVER	SIC476

Overprint	Product Code
SILICOTEX SI HIGH CLEAR OVERPRINT	SI-397
SILICOTEX SI MATT EFFECT OVERPRINT	SI-382

Base	Product Code
SILICOTEX SI CLEAR BASE - AUTOMATIC PRINTING	SI-381
SILICOTEX SI PRIMER BASE	SI-500

Catalyst / Thinner / Thixotropic Agent	Product Code
SILICOTEX SI PLATINUM CATALYST	SI-386
SILICOTEX SI THINNER	SI-591
SILICOTEX SI THIXOTROPIC AGENT	SI-384

### Matters that require attention!

Silicone inks give poor results when it comes in contact with the chemicals mentioned below.

- ▷ Sulfur(S)
- ▷ Phosphorus(P)
- ▷ Acid
- ▷ Amine

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