

PRINTING – PART X

REF: TT/ JULY 2021/ WK 2

Sublimation Printing

The most commonly used ink for printing on polyester is disperse ink. However, disperse ink does not work well while printing on high-speed digital printers due to the formation of ink mist. Hence, sublimation inks were started being used for printing on polyester fabric. This is called Sublimation printing. Sublimation Printing is also referred to as Transfer Printing, Sublimation Digital Printing or Dye Sublimation Printing.

Sublimation printing is a technique that uses heat sensitive inks. These inks turn into gas under the influence of heat and combine with 100% polyester medium. This means that the artwork is transferred to an object in a gas state by using a high temperature heat press during the dye sublimation printing process. There are no inks drying to the printed object. Since the ink becomes part of the structure of the material, the images on the fabric don't fade or crack - even after multiple washings. Overall, general sublimation printing on polyester results in somewhat lower fastness than printing with disperse inks. But in the fashion world that is an acceptable compromise for sustainability.

Besides printing directly onto the fabric, sublimation printing can be done via paper as well. Here, a specialized paper is used. In which, a design is first printed onto a specialist transfer paper. It is printed as a mirror image, using dye-sublimation inks. After that, the transfer is lined up with the fabric, and a combination of heat and pressure are applied. This causes the inks to transition from their current solid form, directly into a gas. The inks then penetrate into the fibers of the material and are permanently bonded to the fibers.

WHAT IS SUBLIMATION?

It is a chemical process, in which a solid material turns into a gas without going through a liquid stage.

Sublimation Paper

A specific paper is used in sublimation digital printing. There are several criteria to select a transfer or sublimation paper. Such as

- The coating on the paper should be compatible with the ink used.



- The ink should not penetrate into the paper. The aim of the paper coating is to hold as much ink as possible in the coating.
- Maximum ink should be sublimated off the paper at the required temperature.
- The paper needs to stay flat and may not create ripples after printing. Thicker paper creates lesser ripples under heavy ink loading.
- The paper should release the ink when heating.
- Lighter weight paper is sometimes chosen, as it is cheaper and can provide adequate results.

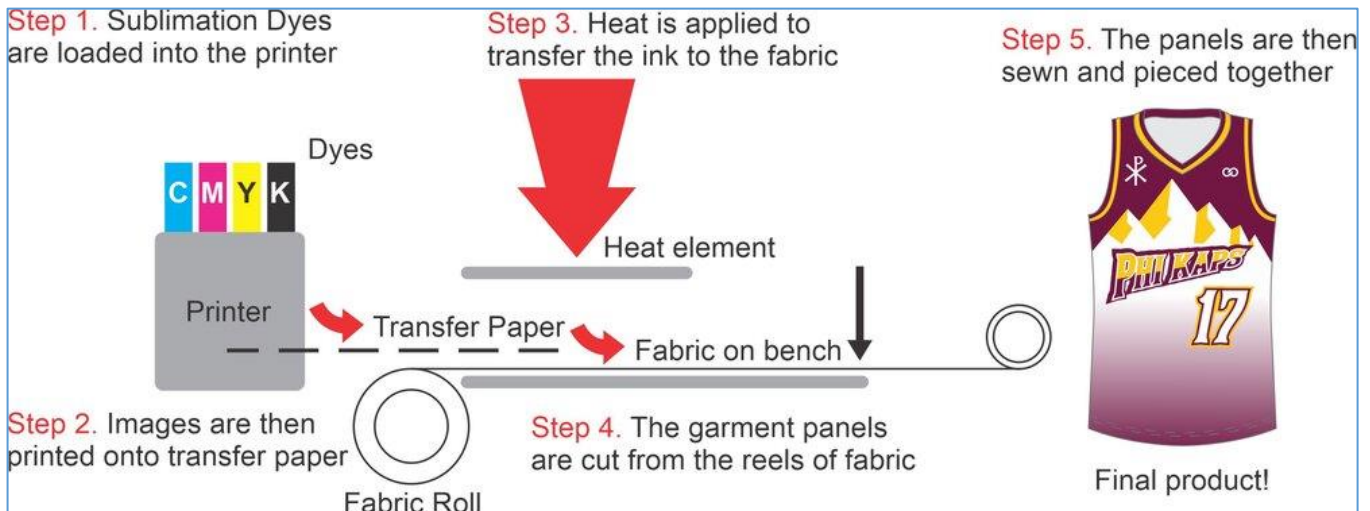


Fig 1.1 Sublimation Printing Process

Ref: wooterapparel.com

References:

1. <https://indiantextilejournal.com/>
2. <https://www.prodigi.com/>
3. <https://www.contrado.co.uk/>
4. <https://www.spgprints.com>
5. <https://www.hollyflower.com/>

.....To be continued.....

UNSCRAMBLE THE JUMBLE WORDS
ANSFERTR
IUMMED
ELERASE
IGHTERL

Last week`s Answers: 1) SUBLIMATION 2) NYLON 3) PIGMENT 4) DIGITAL

Wishing you a great week ahead!

Technical Tuesdays is a knowledge sharing initiative by Resil Chemicals Private Limited

arc@resil.com | www.resil.com.