TECHNICAL TUESDAYS

PIGMENT PRINTING – CONCLUDING PART

REF: TT/JANUARY 2020/ WK 3

## Pigment Printing - Challenges and their probable solutions

Below are some of the commonly occurring pigment printing related problems and remedial measures in order to minimize them.

- ***Pigment Agglomeration*** – Pigment agglomeration or pigment cluster happens because of the use of excessive amount of pigment and high viscosity of the printing paste. It hinders the flow of printing paste. It is therefore recommended to reduce the amount of thickener as well as pigment. Colour paste pH is another important parameter in pigment printing better flow. pH range of 8-9 for pigment print paste is recommended for best result. At this pH pigment print paste remains wet and possesses a good flow. A slightly alkaline pH keeps the thickener more stable and prohibits binder film forming. Colour paste with pH values below 8, have tendency for drying out quickly and clogging up screens. Also, this poses difficulty in clean up.
- ***Dull Appearance*** – Appearance of the prints can be improved by selecting appropriate thickener and its amount.
- ***Screen Chocking*** – This is one of the common problem and causes due to high viscosity of print paste, poor binder stability and pH variation. Hence, care should be taken in these areas.
- ***Dryness of shade*** – Excessive amount of pigment and high viscosity of paste causes dryness of the shade. Therefore, the use of excessive amount of pigment and thickener should be avoided.
- ***Low colour yield*** – Colour yield of the pigment print can be increased by using appropriate amount of thickener and binder.
- ***Reduction in Viscosity*** – Viscosity of the print paste can be reduced by the use of soft water and stabilize thickener.
- ***Flushing*** - Increasing the amount of thickener and use of anti-flushing agents can avoid flushing of prints.
- ***Colour penetration*** – It is the most important aspect of colouring. In pigment printing, use of appropriate amount of thickener with respect to fabric thickness and porosity helps in better colour preparation.
- ***Poor rubbing fastness*** – Pigment printing has poor dry as well as wet rubbing fastness. However, it can be improved to some extent; by increasing the amount of binder and using appropriate amount of pigment.
- ***Stiffening of fabric*** – Binder gives stiffness to fabric due to the formation of 3D dimension film at the surface of the fabric. It is advisable to use optimum amount of it. Also use of softening agents in the following finishing process helps in the reduction of stiffness.

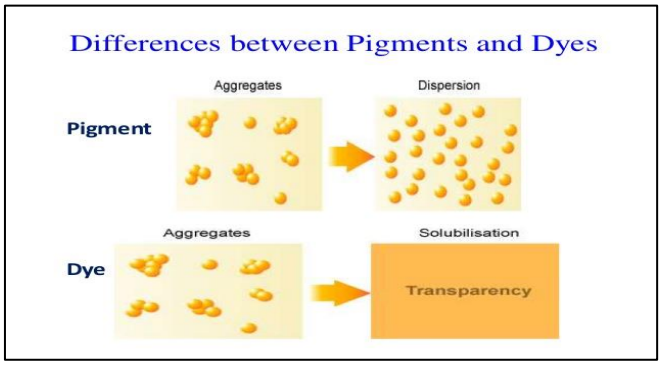
## Difference between Pigments and Dyes

## Pigments

- Has no affinity to fiber
- Insoluble in Water
- Needs binder for fixation onto the fiber

## Dyes

- Has affinity to fiber
- Soluble in Water except few class of dyes
- Held on fiber by dye fiber interactive forces




Wishing you a great week ahead!

Technical Tuesdays is a knowledge sharing initiative by Resil Chemicals Private Limited
arc@resil.com | www.resil.com.