

PRINTING – PART XXI

REF: TT/ SEPT 2021/ WK 4

Printing Auxiliaries

In printing, auxiliaries are an essential part which enables the process smooth, effective and efficient. The auxiliaries also help to make the outline of the pattern clear and to achieve the design even and bright. Besides the main printing auxiliaries like thickener and binder, there are others too which play important role in the entire process of printing. These include wetting agent, antifoaming agent, hygroscopic agent and others as per dyes and style of printing used.

- a) **Wetting agent** - During the preparation of printing paste the dyestuff is dissolved in a small amount of water. If the pasting is not proper then small lumps of undissolved dye powder will remain in the printing paste. During printing these lumps will get deposited onto the fabric leaving dark spots on it. Wetting agents are used to assist the dyes in dissolving. The high surface tension of water prevents wetting of the dye powder. The wetting agent helps to reduce the surface tension and facilitates the wetting of dye particles that results into solubilizing of the dye. Hence, it is necessary to use a suitable wetting agent in the printing paste.
- b) **Antifoaming agent** – Foam is a colloidal system of dispersed gases as fine bubbles or in other words it is an aggregate of bubbles. The phenomenon of foaming is based on the properties of the interfaces and interfacial area involved in the system. Foam is generated due to vigorous circulation of liquor in presence of various additives and air during wet processing. This causes detrimental effects. The surface-active property of the antifoaming agent has the ability to spread over any air-water interface, which ruptures the air bubbles resulting into breakdown of surface foam. Agitation at several stages during printing generates foam which results into faulty prints. To avoid this antifoaming agents are introduced into the printing recipe.
- c) **Hygroscopic agent** - The function of hygroscopic agents used in the printing paste is to take up enough amounts of water during steaming to give mobility to dye molecules and to enable them to transfer to the fiber. Urea is most commonly used hygroscopic agent in printing.
- d) **Solubilizing agent** – They are used to prevent aggregation of dye molecules in concentrated paste. These are used to produce better print qualities and high color yield.



Challenges with different printing types

a) Pigment Printing

Below are some of the challenges faced in pigment printing and probable solutions to minimize them.

- Due to the use of excessive or unmeasured amount of pigment, some amount of pigment remains in water. This cause pigment agglomeration ant it disturbs the flow of dispersion of the print paste.
- High viscosity of print paste, poor binder stability and pH variation leads to screen chocking. A slightly alkaline pH keeps the thickener more stable.
- Penetration of colour is hampered if desired amount of thickener is not used with respect to fabric thickness and porosity.
- Low viscosity of the printing paste causes flushing.
- Binder gives stiffness to fabric due to the formation of film at the surface of the fabric. Use of recommended amount of binder can help to minimize the problem.
- Pigment has poor dry as well as wet crocking properties. Use of sufficient amount of binder and adding cross linking agents in the printing paste can improve the property to some extent.
- Use of high amount of pigments and high paste viscosity causes dryness of shade. Reducing the excessive amount of pigments and thickener can give better result.

References:

1. <https://textilechemrose.blogspot.com/>
2. <https://www.fibre2fashion.com/>
3. <https://sewguide.com/>
4. <https://textilelearner.net/>

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

UNSCRAMBLE THE JUMBLE WORDS
TEWNITG
COSVSITIY
YTISOROP
SSNECKITH

Last week`s Answers: 1) RONGALITE 2) BACKGROUND 3) DISCHARGE 4) CHEMICAL

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