

## TECHNICAL TUESDAYS

TOPIC: Low Temperature Soaping Agents

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### **What is soaping process?**

Soaping is the process of removal of non-adhered dyes or hydrolyzed dyes present on the textile fabric post the dyeing process. The process works to improve the dye fastness on the textile.

The Soaping efficiency is directly proportional to the amount of non-adhered dye present on the fabric and also depends upon the ease of removal of non-adhered dye from Textiles Dyed fabrics.

### **What is low temperature soaping process?**

Ideally, the washing process is carried out at temperatures between 90 - 100 °C. But, during low temperature soaping the washing process is carried out at a temperature of 40 °C.

### **Role of soaping agents in reactive dyeing:**

- Washing-off agents are necessary to remove the non-adhered/ hydrolyzed dye or to fix the hydrolyzed dye to the dyed substrate material.
- Washing-off agents disperse hydrolyzed dyestuff and suspends them in the water bath preventing their re-deposition on the substrate material.
- Washing-off efficiency of dyes would depend upon the amount of non-adhered dye and the ease of removal of the non-adhered dye.
- Washing-off agent acts to facilitate the diffusion of non-adhered dye molecules from the substrate fibre into the water.

### **Low temperature soaping using laccase enzyme:**

This study reveals that usage of laccase can be extremely versatile for room temperature soaping processes.

The laccase enzyme acts directly on the dyestuff inducing the removal or decolorization of the non-adhered loose dye on the dyed fabric.



This process offers a number of unique features and advantages over conventional technologies and works efficiently to save energy & water associated with the washing process.

### **Low temperature soaping using cationic polymer:**

This study reveals that the usage of cationic polymer can be extremely versatile for room temperature soaping at acidic pH levels.

The cationic polymer acts on the anionic dyes by the formation of an external coat, which results in preventing the loose dye to bleed from the surface of the substrate fabric.

### **Need of low temperature soaping off agents:**

- To save energy: operates at lower temperatures of 40-60 °C.
- To save time: Improves productivity.
- To save water: Enhances the process sequence when compared to conventional process.
- To improve the washing fastness: With comparison to conventional washing- off agents, application of the low temperature soaping process improves the washing fastness.

**Wishing you a great week ahead!**

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