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APPLICATION OF SURFACTANTS IN THE PRETREATMENT OF RAW TEXTILE FABRICS

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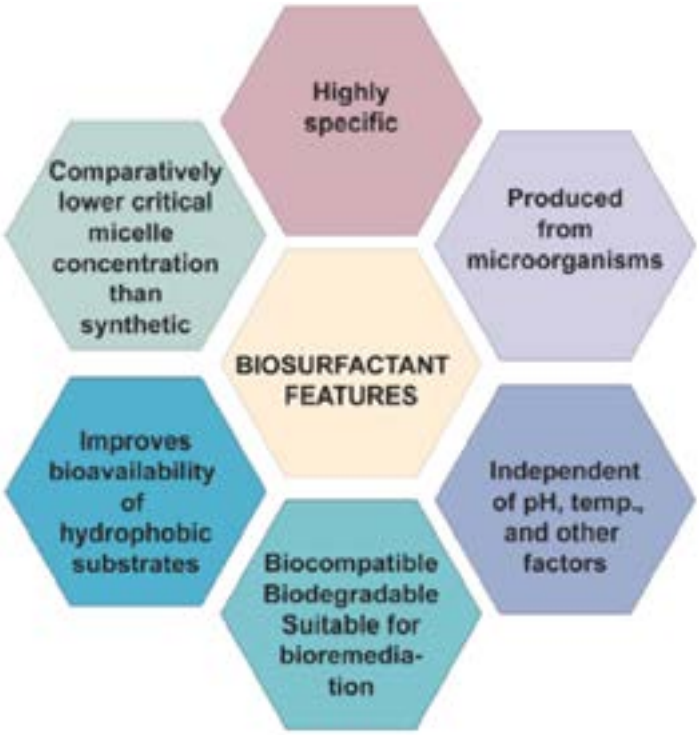
The pre-treatment of raw textile fabrics is a critical phase in textile processing, aimed at removing impurities and enhancing fabric wettability, absorbency, and dye affinity. Surfactants play a pivotal role in this stage by facilitating the efficient removal of natural and processing-related contaminants such as waxes, oils, pectins, and sizing agents.

This study examines the application of various classes of surfactants – anionic, cationic, nonionic, and amphoteric – in the pre-treatment of different textile substrates. The mechanisms of surfactant action, including emulsification, wetting, and detergency, are analysed to evaluate their impact on process efficiency and fabric quality. Comparative assessments highlight the influence of surfactant type and concentration on parameters such as fabric whiteness, absorbency, and tensile strength.



The research further discusses environmental implications and the potential of biodegradable surfactants as sustainable alternatives to conventional agents. Overall, the findings underscore the significance of optimizing surfactant selection and process conditions to achieve effective, eco-friendly textile pre-treatment outcomes.

Keywords: *surfactants, raw textile, application, processing, biosurfactants.*