

GLYCERYL STEARATE CITRATE: NEW MODERN COSMETIC EMULSIFIER

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Abstract

Emulsifiers play a crucial role in modern cosmetic formulations, ensuring stability and enhancing the sensory properties of emulsions. Glyceryl Stearate Citrate (GSC) is a novel, naturally derived, biodegradable, and mild anionic emulsifier that has gained attention due to its excellent biocompatibility and multifunctionality. It is synthesized through the esterification of glyceryl stearate with citric acid, resulting in a molecule that offers both emulsifying and conditioning properties. This study provides a comprehensive analysis of the physicochemical properties, mechanism of action, and benefits of Glyceryl Stearate Citrate in cosmetic formulations. Compared to traditional emulsifiers, GSC exhibits superior stability over a broad pH range, enhanced compatibility with active ingredients, and improved skin tolerance. Furthermore, due to its mildness, it is suitable for sensitive skin and baby care products. The research also highlights the eco-friendly aspect of GSC, as it is derived from renewable plant sources and is readily biodegradable, aligning with the current trend of sustainable cosmetic ingredients. Its ability to create light, non-greasy emulsions with a soft skin feel makes it highly desirable in formulations for facial creams, sunscreens, serums, and natural cosmetics. In this study, the stability, viscosity, and sensory attributes of emulsions containing Glyceryl Stearate Citrate were evaluated. Results indicate that emulsions formulated with GSC demonstrate excellent stability even under stress conditions, such as varying temperatures and mechanical stress. Additionally, its synergy with other natural emulsifiers and co-emulsifiers enhances the stability and texture of final formulations. The findings of this study confirm that Glyceryl Stearate Citrate represents an advanced, multifunctional emulsifier that meets the growing demand for safe, effective, and environmentally sustainable ingredients. Its versatility and mild nature make it an essential component in modern cosmetic formulations, replacing traditional synthetic emulsifiers with more sustainable alternatives.

Keywords: *Glyceryl Stearate Citrate, emulsifier, natural cosmetics, stability, biodegradable, skincare formulations.*