Import and distribution for Serbia: Farmadria DOO
info@avenalab.com
+381 (0) 69 / 55 65 029
www.avenalab.com

TECHNICAL DATA SHEET

Product name: Glyceryl Stearate

INCI name: Glyceryl (mono) Stearate

CAS: 85251-77-0

Chemical classification: Glycerol ester/derivative; Fatty acid

Functional category: Surfactant ~ emulsifier, Skin conditioning agent ~ emollient

Description: Glyceryl stearate is a biodegradable, plant-derived substance. It is used as a secondary or auxiliary emulsifier, emulsion stabilizer, opacifying agent, amphiphilic softening agent, and softener in nonionic, anionic, or cationic O/W and W/O emulsions and surfactant systems. As a stabilizer, it helps build lamellar structures in emulsions, providing formulations with excellent consistency and texture. It is used in combination with various emulsifiers and surfactants. It has a mild odor, is oil-soluble, and its melting point ranges from 55°C to 65°C, depending on the specific composition and purity. It is chemically stable under normal storage conditions. However, it can decompose when exposed to extreme heat, light, or the presence of strong acids or bases. Generally, it is considered non-reactive under normal use and storage conditions. It does not undergo rapid decomposition or hazardous reactions. Its HLB value is around 3.5. It should be distinguished from the self-emulsifying Glyceryl Stearate SE, which has an HLB of 5.8.

Benefits:

• Co-emulsifier: Glyceryl Stearate is not a primary emulsifier. If used alone without other emulsifiers, it does not have a strong enough ability to independently maintain the stability of emulsions over a longer period. Therefore, another emulsifier is necessary for the emulsion system, which can complicate formulation as it requires additional coordination of ingredients to ensure stability and desired product texture. However, this need for an additional emulsifier provides formulators with the flexibility to precisely adjust the texture and properties of the product, experimenting with different combinations of emulsifiers to achieve the best result.

• Emulsion stabilizer: Glyceryl Stearate helps stabilize emulsions by facilitating the coalescence of oil droplets, resulting in a finer and more stable emulsion.

• Softens the skin: Acts as a skin-softening agent, providing softness and

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smoothness. Helps reduce the feeling of dryness and roughness on the skin. Forms a light film on the skin's surface that helps retain moisture, thereby improving skin hydration and elasticity.

• Increases viscosity: Glyceryl Stearate can affect the viscosity of cosmetic formulations, making them thicker or creamier, which improves the feel of the product upon application. Enhances the product's ability to spread evenly on the skin, making application easier and improving the overall user experience.

• ***Low irritancy:*** Considered a mild ingredient with a low risk of irritation, making it suitable for use in products intended for sensitive skin.

• ***Safety:*** Glyceryl Stearate is recognized as a safe and effective ingredient in cosmetic products, as confirmed by regulatory bodies such as the Cosmetic Ingredient Review (CIR) in the USA.

• ***Biodegradability:*** As an ingredient derived from renewable plant sources, glyceryl stearate is biodegradable and can be considered an environmentally friendly option in cosmetic formulations.

• ***Compatibility with a wide range of ingredients:*** Due to its mild nature and good compatibility with other ingredients, glyceryl stearate easily integrates into various types of formulations, making it an ideal co-emulsifier.

Usage: Glyceryl Stearate is typically added to the oil phase of the formulation as it is oil-soluble. Before use, it is important to carefully plan the formulation, considering how Glyceryl Stearate interacts with other ingredients, as well as the desired texture and stability of the product. The oil phase containing Glyceryl Stearate and the water phase of the formulation are heated separately, usually to a temperature between 70°C and 75°C. This ensures that Glyceryl Stearate is completely melted, and also allows for more efficient mixing of phases. When both the oil and water phases are adequately heated and all ingredients are melted, the water phase is slowly added to the oil phase with continuous stirring. Glyceryl Stearate in the oil phase helps stabilize the emulsion formed when these two phases are combined. After forming the emulsion, the mixture is cooled. During the cooling process, sensitive ingredients such as fragrances, essential oils, and some preservatives are added at lower temperatures to avoid their degradation. The pH value of the product can be adjusted as needed. For products such as moisturizing creams and lotions, Glyceryl Stearate is usually used at concentrations of 1% to 3%. In richer formulations, the concentration can be higher, up to 10%. In hair care products, Glyceryl Stearate is used at lower concentrations, typically from 0.5% to 2%, to improve smoothness and facilitate detangling. In sunscreen formulations, the

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concentration of Glyceryl Stearate can vary depending on the need to stabilize UV filters and other ingredients. In these formulations, the concentration ranges from 1% to 5%. In products such as solid lotions or lip balms, Glyceryl Stearate may be present at higher concentrations, even up to 15%, to achieve a solid product structure.

Applications: Moisturizing creams, lotions, ointments, antiperspirants, hair care products, and sun protection products.

Source materials from which it is derived: Soybean oil

Method of production: Glyceryl stearate is obtained by reacting glycerin with stearic acid, derived from soybean oil.

Animal testing: The substance has not been tested on animals

GMO: Non-GMO

Vegan: Does not contain animal-derived components