



☰ Surfactants

drstraetmans
intelligence behind beauty



STRONG PERFORMANCE AT THE INTERFACE – NATURAL AND PEG-FREE

Cosmetic products depend strongly on their emulsifiers. There are technical considerations regarding the best emulsifier that define the product concept and stability of the formulation. This is the basic requirement for emulsifiers and a whole set of compounds is necessary to serve the different concepts in cosmetics. But also the sensorial profile is strongly influenced by the choice of emulsifiers, and so the skin feel of cosmetics can be altered by certain emulsifiers. Finally sustainable sourcing of natural raw materials or absence of certain chemicals may play an important role in the product development .

Natural polyglyceryl esters meet many of the requirements for modern formulations. Under the roof of our **dermofeel®** brand there are many emulsifiers with entirely different properties. There is one common feature in our emulsifiers: they are produced using only natural building blocks. The majority of the range consists of polyglyceryl esters of edible fatty acids, forming a broad range of emulsifiers covering the whole HLB-range. The range is completed by anionic emulsifiers **dermofeel®** GSC and **dermofeel®** SL.

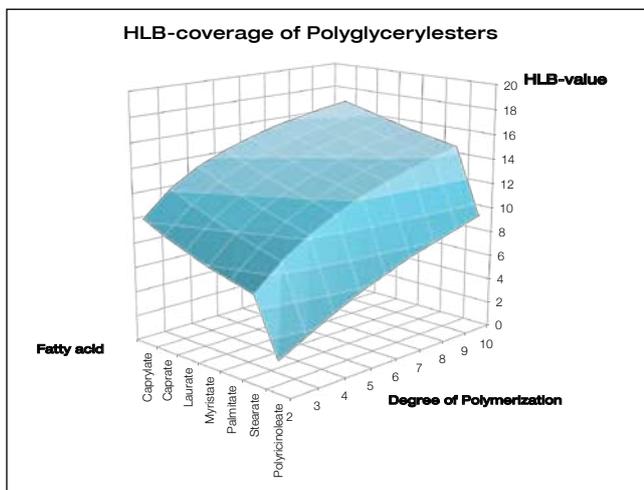


Fig. 1: The whole HLB-range is covered by the flexible combination of different chain lengths of the polyglycerol unit and the different fatty acid moieties. Thus, with only plant derived raw materials it is possible to form emulsifiers for every product concept.

Emulsions are best formed and stabilized with our non-ionic **dermofeel®** emulsifiers that cover w/o-applications as well as o/w-concepts. With the great variety of chain lengths at the hydrophilic polyglyceryl unit and the use of different fatty acids as lipophilic moieties we create an array of products that gives freedom for developing modern naturally oriented and PEG-free cosmetic concepts. Please refer to the list below to learn more about the properties and applications. In contrast to PEG-derived products our **dermofeel®** range is 100% vegetable based, readily

biodegradable and free from potentially toxic impurities. It may be interesting to know, that the technically determined distribution of different chain lengths gives an extra of emulsion stability. It has been shown, that a certain distribution in size is beneficial, as the molecules of different sizes can fill gaps in the interface and thus lower surface tension better than structurally uniform emulsifiers. The polyglyceryl section of the molecules consists of vegetable glycerine, which is polymerized in a mild and environmentally unobjectionable process.

Anionic co-emulsifiers are commonly used for further stabilization of emulsions. They are located at the interface along with other emulsifiers used in the formulation and due to their anionic charge the approach and coalescence of oil droplets within the emulsion is hindered. Furthermore these emulsifiers build up structures within the emulsion and help to increase the viscosity. Both effects are used as a general stabilising principle and also to compensate the slightly destabilizing effect that some modern antimicrobial agents exhibit in emulsions. Thus the long term stability of emulsions can be enhanced. Our vegetable food grade emulsifiers **dermofeel®** GSC (Glyceryl Stearate Citrate) and **dermofeel®** SL (Stearoyl Lactylate) are designed for that purpose. The beneficial effect on the emulsion stability of **dermofeel®** GSC and **dermofeel®** SL are completed by the elegant skin feel, they help to produce in the formulation.

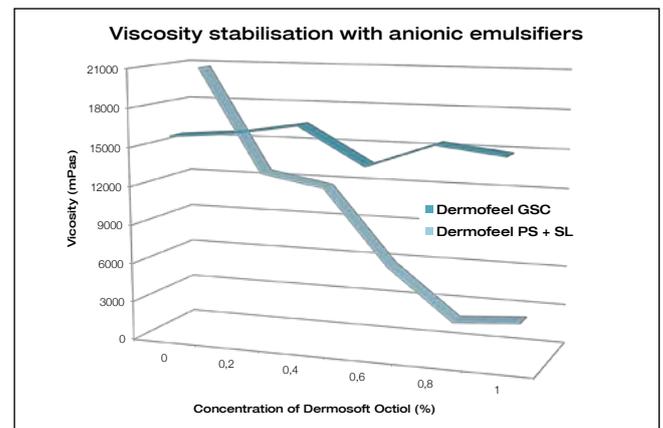


Fig. 2: Dermofeel GSC (Glyceryl Stearate Citrate) can effectively help to maintain the viscosity even with high levels of Caprylyl Glycol or other surface active compounds which may tend to lower the viscosity.

Convenience is what can be achieved with a versatile emulsifier blend like our **symbio®** muls GC. This innovative blend comprises a powerful anionic emulsifier, a structuring co-emulsifier and a wetting agent to allow a quick formation of emulsions at temperatures as low as 40°C. Different viscosities can be achieved and the blend gives a basic preservation to the finished product. This allows a minimized use of preservatives or creating a preservative free

formulation, as long as other antimicrobial agents (e.g. **dermosoft**®) are used.

Solubilizers are used to stabilize small amounts of oils in aqueous products. The oil components may be fatty oils to create a certain sensorial effect and add caring properties to aqueous formulations or essential oils to form a scent and define the first and probably most important impression of a cosmetic product. **dermofeel**® G 6 CY (Polyglyceryl-6-Caprylate) and **dermofeel**® G 10 L (Polyglyceryl-10-Laurate) perfectly fulfill the requirements and are used as powerful, PEG-free solubilizers. Many product concepts have been realized with **dermofeel**® G 10 L as a solubilizer and show that effective solubilisation can well be achieved with purely natural raw materials.

Natural and safe. These attributes apply to all our vegetable based emulsifiers. They are derived from plant sources and designed to meet the needs of cosmetic formulations. Only natural sustainable resources are used and rule out any presence of toxic impurities like halogenated or ethoxylated organic compounds. To underline the safe use of the presented raw materials a long history of use in the food industry of many of polyglycerylestere shall be mentioned. Dermofeel emulsifiers can be used for natural cosmetics concepts. They are fully biologically degradable. The new line of organic ingredients underlines our efforts to develop ingredients respecting natural production. **dermorganics**® are ingredients produced using the highest possible degree of building blocks derived from organic sources. Yet they are proven functional ingredients that match the requirements for modern cosmetic products.

Our non-ionic O/W emulsifiers	INCI	Properties
symbio ®muls GC	Glyceryl Stearate Citrate; Cetearyl Alcohol, Glyceryl Caprylate	Easy to use emulsifying blend, for homogenous elegant creams and lotions. Can be used at low temperatures. Natural origin.
dermofeel ® PS	Polyglyceryl-3 Stearate	Vegetable food grade emulsifier for O/W- emulsions (HLB ~ 9)
dermofeel ® PP	Polyglyceryl-3 Palmitate	Vegetable food grade emulsifier for O/W- emulsions (HLB ~ 10)
dermofeel ® G 2 L	Polyglyceryl-2 Laurate	Re-fattying and consistency agent (HLB ~ 9)
dermofeel ® G 5 L	Polyglyceryl-5 Laurate	Vegetable emulsifier for O/W- emulsions (HLB ~ 13)
dermofeel ® G 5 O	Polyglyceryl-5 Oleate	Natural vegetable emulsifier for oilgels (HLB: ca. 11,5)
dermofeel ® G 5 DO	Polyglyceryl-5 Dioleate	Natural vegetable emulsifier (HLB: ca. 8)
dermofeel ® G 10 DI	Polyglyceryl-10 Diisostearate	Natural vegetable emulsifier (HLB: ca. 11)
Our W/O emulsifiers		
dermofeel ® PR	Polyglyceryl-3 Polyricinoleate	Highly versatile emulsifier for W/O emulsions of low viscosity (HLB ~ 4)
dermofeel ® PO	Glyceryl Oleate	Co-emulsifier for W/O-emulsions
Our solubilizers		
dermofeel ® G 6 CY	Polyglyceryl-6 Caprylate	Non-ionic solubilizer (HLB ~ 15)
dermofeel ® G 10 L	Polyglyceryl-10 Laurate	Highly skin-friendly solubilizer and surfactant (HLB ~ 16)
dermofeel ® G 10 LW	Polyglyceryl-10 Laurate/Aqua	Highly skin-friendly solubilizer and surfactant (HLB ~ 16)
Our anionic O/W co-emulsifiers		
dermofeel ® SL	Sodium Stearoyl Lactylate	Vegetable food grade co-emulsifier for O/W- emulsions
dermofeel ® GSC	Glyceryl Stearate Citrate	Vegetable food grade emulsifier for O/W- emulsions
Our organic emulsifier		
dermorganics ® GSC	Glyceryl Stearate Citrate	O/W-Emulsifier from organic sources

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