



DSM's latest research reveals the power of robust emulsification

Bringing unique emulsifier properties for ultimate stability in sunscreens and ease of product development

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According to the gel network theory of emulsion stability, the aqueous phase consists of a gel-network generated by hydrophilic emulsifiers (HLB >6) and lipophilic co-emulsifier (HLB < 5) forming an envelope around emulsified droplets and membrane-like structures throughout the aqueous phase. The oil phase ideally consists mainly of liquid crystalline lipid structures.

Latest research revealed a unique emulsifier that is able to form mainly lamellar structures with very dense packed layers of water phase and liquid crystalline lipid phases.

Additionally the rarely seen micro-domains which are known to be responsible for stabilizing emulsions could be identified by freeze-fracture Scanning-Electron-Microscopy. Comparative science will show formulators how to overcome current challenges, such as high load of UV filters and pigments over a broad viscosity range, and illustrate possibilities to develop a new generation of highly sophisticated sunscreens and day care products with a high protection factor whilst also respecting sensorial needs.