

Structured Surfactant Technology: Novel suspensive system by surfactant self-assembly

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It is well-known that surfactants self-assemble into different phases such as lamellar phase, hexagonal phase or multi-lamellar vesicles. This phenomenon is mainly driven by the surfactant concentration and its molecular architecture. Additional ingredients in the water phase also greatly impact surfactant self-assembly. Structured surfactant technology consists of the preparation of multi-lamellar vesicles by the self-assembly of surfactants with defined characteristics. The resulting phase shows interesting rheological behavior such as a very high elasticity and a strong shear thinning. These properties are the attributes of a strong suspensive system, which can be particularly relevant in agrochemical formulations.

Over the past three years, Stepan Company has been utilizing this technology to develop highly complex formulations which show benefits over those that employ conventional rheology modifiers. Herein, we present the continuation of this work with new examples that solve many of the issues that agricultural formulators are facing today.