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Extended Surfactants: Origin, Distinctive Features, and Attractive Performances for Potential Applications

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The published research in the past decades indicates that surfactant interfacial performance in producing low tension or high solubilization with polar oils is not attained with pure conventional surfactants exhibiting well defined polar and apolar portions. The improvement trends reached with surfactant mixtures as well as the introduction of additives like cosurfactants and linkers, lead to the introduction of the so-called extended surfactants, whose structure includes an intermediate polarity spacer between the head and tail groups.

Recent investigations on different types and different applications such as detergency, cosmetics, enhanced oil recovery or crude demulsifying, indicate that these surfactants are likely to be particularly performing with problematical oils like high molecular weight natural oils, triglycerides or asphaltenic crudes. Emerging trends are analyzed to correlate the structure to the properties and to guess about the next generation.

The newly divulgated interfacial rheology impact at optimum formulation is presented for the first time with a performant contribution of extended surfactants, that improve its expectency in enhanced oil recovery and emulsion breaking.