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PHOSPHINE OXIDE SURFACTANTS REVISITED

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Abstract

This review summarizes everything we currently know about the nonionic surfactants alkyl dimethyl (C_n DMPO) and alkyl diethyl (C_n DEPO) phosphine oxide (PO surfactants). The review starts with the synthesis and the general properties (Section 2) of these compounds and continues with their interfacial properties (Section 3) such as surface tension, surface rheology, interfacial tension and adsorption at solid surfaces. We discuss studies on thin liquid films and foams stabilized by PO surfactants (Section 4) as well as studies on their self-assembly into lyotropic liquid crystals and microemulsions, respectively (Section 5). We aim at encouraging colleagues from both academia and industry to take on board PO surfactants whenever possible and feasible because of their broad variety of excellent properties.

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Dr. Robert Gene Laughlin, of Cincinnati, Ohio, died Sunday, February 15, 2015.

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