Synergistic Behavior of Mixed Monolayer/Mixed Micelle Formation between Cationic Monomeric and Dimeric Surfactants with PEO-PPO-PEO Triblock Copolymer

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The micellar and surface properties of PEO-PPO-PEO triblock copolymer (Pluronic F-127) with cationic monomeric (hexadecyltrimethylammonium bromide), and gemini or dimeric (Pentanediy-1, 5-bis (dimethylcetylammmonium bromide)) surfactants was investigated using surface tension and conductivity measurements in aqueous solution. Various micellar, interfacial and thermodynamic parameters were evaluated. All the mixtures of binary systems show synergism. The synergistic interactions are found to be more with dimeric surfactant. The copolymer contribution in mixed micelles also increases with gemini surfactant.

Keywords: Triblock co-polymer, Gemini surfactant, Conventional surfactant, Mixed micelle, Synergism

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