

報 文

アニオン界面活性剤とカチオン界面活性剤混合系による
ポリスチレンラテックス粒子除去およびブドウ球菌の殺菌

広 島 大 学 木 下 瑞 穂
広 島 大 学 宮 本 棗

Removal of Polystyrene Latex and Sterilization of *Staphylococcus*
by Using Mixture of Anionic Surfactant and Cationic Surfactant

The detergency of the mixture of dodecyl sulfate (SDS) and hexadecyl trimethylammonium bromide (HTAB) was studied using cotton and polyester fabrics. The critical micelle concentration (cmc) of the mixture of mixing ratio 1:1 determined by surface tension method was 1×10^{-4} mol/dm³. Removal of polystyrene latex particles and sterilization of *staphylococcus* were examined through SEM observation and culture testing. The effect of the mixing ratio of the surfactants on the detergency was investigated. At mixing ratio of about 1:1, the removal efficiency of particles had the maximum, and the minimum surface tension of the solution was achieved. This removal efficiency was larger than that at cmc of SDS and HTAB considerably. Sterilization increased with HTAB mixing ratio in the range of the mixing ratio below 0.5 and it was 100% at HTAB mixing ratio more than 0.6. These results suggested the existence of free HTAB molecules in the mixture. The cmc of the mixture was 1/160 and 1/20 of the one for SDS and HTAB respectively.

(Received September 12, 2006)

(Accepted Publication January 26, 2007)

Key words : anionic surfactant アニオン界面活性剤, cationic surfactant カチオン界面活性剤, polystyrene latex ポリスチレンラテックス, staphylococcus ブドウ球菌, detergency 洗浄性, surface tension 表面張力, particle soil 粒子汚れ, sterilization 殺菌