

原 著

## エマルジョン中添加物の酸化安定性に関する研究 (3)

— Tween系界面活性剤水溶液中  $\gamma$ -Terpineneの自動酸化について—

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## Studies on the Oxidative Stability of Additive Materials in Emulsion (3)

— Autoxidation of  $\gamma$ -Terpinene in Aqueous  
Solutions of Tween Type Surfactants —

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The autoxidation of  $\gamma$ -Terpinene ( $\gamma$ -TPN) in aqueous solutions of Tween type surfactants has been investigated. The determination of oxidized  $\gamma$ -TPN in monodispersed, emulsified and solubilized each states was carried out by gas chromatography. The presumption of the site of  $\gamma$ -TPN within micelles was made by ultraviolet spectroscopy measurement.

The summary of the results is shown below.

- 1)  $\gamma$ -TPN solubilities were proportional to the concentration of the surfactant and increased with an increase in the length of alkyl group chain.
- 2)  $\gamma$ -TPN within the Tween type micelles might be located in the mantle layer.
- 3) The autoxidation of  $\gamma$ -TPN in aqueous solutions of surfactants was inhibited more strongly in the order of solubilized > emulsified > monodispersed states.
- 4) The autoxidation of  $\gamma$ -TPN was inhibited more strongly with an increase in the length of alkyl group chain.

Based on the experimental results, it could be presumed that the inhibition of  $\gamma$ -TPN oxidation in aqueous solutions of Tween type surfactants was caused by the inhibiting actions against oxygen adsorption of the gas-liquid interfacial film of surfactants and the mantle layer of the micelles.