

〈原 著〉

# 非イオン性界面活性剤中のイオン性 不純物の除去法 (第1報) 吸着剤の除去効果の電導度による測定

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## A Method for Removing Ionic Impurities from Nonionics. I. Determination of Electric Conductivity for Removal of Adsorbents

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Abstract — The pH values of aqueous solution of nonionic surfactants have been widely used to evaluate and control the quality of nonionic surfactants. The pH value is however easily influenced by conditions of measurements as well as by manufacturing processes of surfactants. Thus, the value is not always a correct index for indicating the amount of ionic impurities contained in nonionic surfactants. Polyoxyethylene nonionic surfactants are usually prepared in the presence of an alkaline catalyzer and the catalyzers are neutralized with acid after the preparation. In the present work, we removed the alkaline catalyzer by an adsorption method without neutralization. The amount of ionic impurities in the surfactants was measured by the electric conductivity method. We found that the impurity could be effectively removed and that 98% of the ionic materials contained in nonionic surfactants of alkylether type were easily removed. Silica gel and Celite served as adequate adsorbents. Dry conditions were required for the silica gel and to select an adequate quality for the Celite. After adsorbent treatment, the pH value of the aqueous surfactant solution remained at around 6.0 after being subjected to the reduction of ionic impurity. The alkaline catalyzer in surfactants of polysorbate type was considered to form fatty acid soap, to some extent. The degree of reduction of ionic impurity in polysorbate surfactants was limited to about 70–75%. Further study is underway to select and appropriate adsorbent and to establish optimum conditions for the procedure of removing impurities.