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Kinetic Model for Soybean Oil Hydrogenation Usin

Koji TAKEYA[1)], Hiroaki KONISHI[2)], Masami KAWANARI[2)],
Yuzo SANADA[3)]

1) Inspection Center, Snow Brand Milk Products Co., Ltd.
2) Research & Development Division, Snow Brand Milk Produ
3) Faculty of Engineering, Hokkaido University

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A kinetic model including isomerization of fatty acids for soybean o considering the adsorption of fatty acids on the catalyst surface affe rate has been evaluated in this study. The hydrogenation of soybea 12 *l* loop reactor equipped with a venturi nozzle. A reduced nickel The hydrogenation experiment was carried out an experimental des reaction temperature, flow rate of catalyst-oil mixture, hydrogen pr Adsorption of fatty acids including *trans*-acids on the surface of th significantly affected the reaction rate of the hydrogenation. The ads

coefficients of linolenic and linoleic acids were much greater than th
acids, which indicated that the former acids were hydrogenated fas
The time course of fatty acid concentration calculated from the hyd
derived from the kinetic model proposed in this study was in good
obtained from experiments. The kinetic model explained the hydrog
consideration of *trans*-acid formation.

Keywords: kinetic model, soybean oil hydrogenation, time course
concentration, hydrogenation rate constant, adsorption
isomerization, *trans*-acid

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