

Author: [ADVANCED](#) | Volume Page
 Keyword: |



[TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

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[\[PDF \(140K\)\]](#) [\[References\]](#)

Oxidation Process of Linoleic Acid Encapsulated with a Polysaccharide by Spray-Drying

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The oxidation processes of linoleic acid encapsulated with gum arabic or maltodextrin at various weight ratios by spray-drying were analyzed using the model in which the free energy of activation for the rate constant of the autocatalytic type kinetics was assumed to obey a Gaussian distribution. The model could well express the oxidation processes, and the rate constant corresponding to the mean value of the free energy of activation, k , was greater for linoleic acid encapsulated at the higher weight ratio. Emulsions of linoleic acid and maltodextrin solution with different diameters were spray-dried to prepare the microcapsules. The oxidation processes of linoleic acid within the microcapsules were also calculated using the model. The k value was smaller for the emulsion with a smaller diameter.

Keywords: [oxidation](#), [encapsulation](#), [linoleic acid](#), [spray-drying](#), [free energy of activation](#)



[\[PDF \(140K\)\]](#) [\[References\]](#)

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