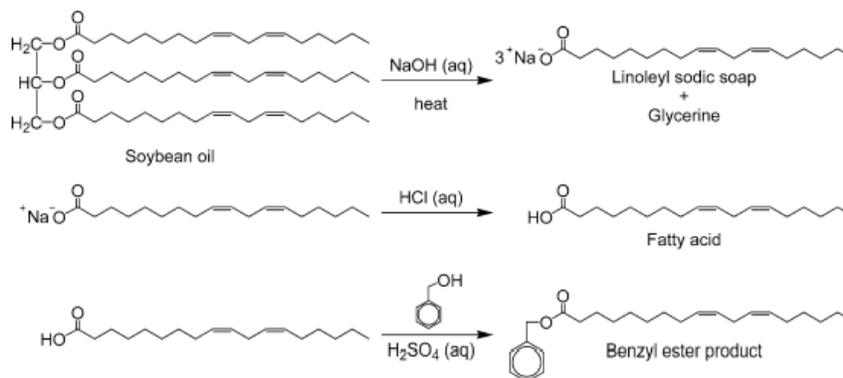


## Modified Soybean Oil as Processing Aids in Tire Application

For tire applications, aromatic oil has been the most widely used processing aids. However, it could generate carcinogenic substances. Eco-friendly oils have received increasing attention, especially for the possible use of sustainable vegetable-based oils as alternatives to petroleum-based oils. Although various vegetable oils offer many advantages over petroleum-based oils, their hydrophilic nature of fatty acids in the vegetable oils inherently causes poor compatibility with hydrophobic rubbers, and thus problems in plasticization efficiency and material properties. In this work, an attempt to modify the chemical structure of soybean oil has been made by adding the benzyl group into their backbone to increase compatibility with the rubber matrix. The modified soybean oil has been prepared via transesterification reaction of soybean oil with benzyl alcohol. Then, the modified soybean oil has been used as processing oil in a black-filled rubber blend.

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### Reference:

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