

It is well known that the polymerization of unsaturated hydrocarbons usually takes place by a chain mechanism /3/. Naturally the change in the number, size, and shape of the catalyst pores after pressing should lead to a change in the rates of generation and breaking of the chains responsible for the formation of the polymer film on the surface of contact. On the other hand, we may suppose that the stability of the catalyst ~~after pressing~~ will be unaffected by pressing if the blocking process on its surface ~~is~~ is not created by a chain mechanism.

In order to verify this point we studied the effect of representatives of two types of organic substances on the stability of a nickel-alumina catalyst before and after pressing. The nickel in this catalyst is distributed over a vast area of aluminum oxide pores. Hence any change in the stability of the nickel-alumina catalyst after pressing should also be associated with the mechanism of the formation of a blocking film on its surface.

We judged the relative stability of the pressed and unpressed catalyst samples * by reference to the changes in their activity with time in the ^{dehydrogenation} ~~dehydration~~ of cyclohexane and a narrow fraction of Maikop gasoline. As poison impurities we took cyclopentene and thiophene. The choice of cyclopentene as poison was made because, as shown by N. I. Shuikin, ~~and~~ S. S. Novikov, et al. /4/, a nickel-alumina catalyst, (as well as Pt and Pd in charcoal or silica gel)

* Without regeneration of the catalyst.