catalyst more intensely than iso-butylene, but it is readily washed away with hydrogen quite unlike iso-butylene, and then it accelerates the reaction by refreshing the surface of the catalyst.

Summary.

1) In the hydrogenation of iso-butylene of several centimeters Hg., the recovery of the activity of the catalyst has been examined.

2) The behaviours of iso-butylene and iso-butylene-hydrogen for thermal conditions and that of iso-butylene in the presence of a catalyst have been statically and dynamically studied.

3) The hydrogenation of an equi-volume mixture of hydrogen and iso-butylene has been observed by a static process at the temperature range of 70° to 130°C. The type of the reaction at the intial stage has been found to be of the 1st order and the activated energy to be 1.6 kcals.

4) The hydrogenation of iso-butylene shows its maximum intial velocity when the amount of hydrogen is above the value twice as large as the stoichiometric value.

5) Using hydrogen of the volume two or three times that of iso-butylene, the hydrogenation velocity has been measured and also the poisoning of iso-butylene examined.

6) In the reaction concerned, a trace of oxygen eliminates the poisoning of iso-butylene and accelerates the reaction.

The author is grateful to Professor S. Horiba for his continued interest and helpful advice. Thanks are also due to the Department of Education for a Scientific Research Encouragement Grant.

Institute for Chemical Research (Takatsuki),
Kyoto Imperial University.

(Received July 15, 1941)