

With increasing duration of the expt. the yield of cyclopentane increases, but its proportion among the conversion products of methylcyclopentane gradually decreases. This is apparently the result of extensive decomposition of cyclopentane itself. We carried out some experiments which showed that at 440° and a pressure of 720 atm for three hours, cyclopentane undergoes 20% decomposition. A comparison with literature data /5,9/ on the thermal decomposition of cyclopentane and methylcyclopentane leads to the conclusion that at $440-460^{\circ}$, this process proceeds at similar rates for both hydrocarbons.

We carried out experiments to clarify the effect of the reactor's surface:vol. ratio on the rate of methylcyclopentane decomposition. It was shown that doubling the surface area by the addition of turnings of the same steel (while maintaining const vol.) had no substantial effect on the rate of the process. This agreed with literature data on the thermal decomposition of methylcyclopentane and cyclopentane /4,9,10/.

Within the limits of the present paper it is not possible for us to analyze in detail our exptl. results from the viewpoint of the actual mechanism of thermal decomposition of methylcyclopentane and high hydrogen pressure. It can only be noted that the most significant results are that the process is retarded by increase in hydrogen pressure, and that the conversion of methylcyclopentane conforms to the kinetic equation for monomolecular reactions.