

At sufficiently high hydrogen pressure (experiments 2, 9, and 1a) we observed the formation of significant quantities of high boiling products (b.p. above 80°). The content of unsaturated hydrocarbons in liquid reaction products increased with reduced hydrogen pressure. Thus, for example, in the separate product fractions of expt. 9 (450° , 420 atm, 5 hours) the following quantities of unsaturated hydrocarbons were found: fraction $43-46^{\circ}$, 16%; fraction $54-64^{\circ}$ and $64-68^{\circ}$, 6.5%; fraction $78-81^{\circ}$, 11.5%; fraction $85-95^{\circ}$, 14.6%; fraction $120-130^{\circ}$, 25%; fraction $160-180^{\circ}$, 28%. In experiments like this the yields of cyclopentane and methylcyclopentane could not be determined precisely. We could only set the upper limit for those yields (without correction for unsaturated hydrocarbons).

Table 1 gives the exptl. results, showing the effect of hydrogen pressure on the rate of methylcyclopentane decomposition.

The data of Table 1 permit the following conclusions:

1. Increasing hydrogen pressure leads to a significant reduction in the rate of decomposition of methylcyclopentane (i.e., to increased yield of liquid reaction products and of unchanged methylcyclopentane).
2. As the hydrogen pressure is increased, the proportion of cyclopentane increases in the conversion products of methylcyclopentane (see the last column of Table 1).
3. With increasing hydrogen pressure the yield of the high boiling residue (boiling above 80°) is sharply reduced to the 7-10% level, after which it remains virtually const.