

11-13, 7-8 and 2-3%; while the ethylbenzene contents were 19-20, 14-15 and 2-5%.\* Thus, an increase in hydrogen pressure sharply

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\* (Footnote, R.p. 951) In liquid products boiling below 160°, the overall content of paraffinic, naphthenic and olefinic hydrocarbons did not exceed 1%.

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increases the yield of benzene and reduces the yield of toluene and ethylbenzene.

However the data on the composition of the liquid products are insufficient to verify the above-described schematic mechanism for the homogeneous destructive hydrogenation of alkylbenzenes. Analogous changes in the composition of the liquid reaction products with increasing hydrogen pressure might, in principle, occur if it were assumed that hydrogen pressure accelerated the degradation of isopropylbenzene to ethylbenzene, from ethylbenzene to toluene, and from toluene to benzene, even if benzene were not formed from ethylbenzene by reactions (4)-(5) or from isopropylbenzene by reactions (9) and (5).

Obviously, in the latter case, the gaseous products of the reaction at any hydrogen pressure would be predominantly methane while the course of the reaction by equations (7)-(10) should lead to an increase in propane content and a reduction of the methane content in the gaseous products at increasing hydrogen pressure. Analysis of the gaseous reaction products does, in fact, indicate a significant increase in their propane contents. Fig. 1 shows the change in the ratio .....\*\* with