

THE EFFECT OF PRESSURE ON THE RATE AND
DIRECTION OF CHEMICAL REACTIONS

by

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The pressure effect (up to 2 kbar) on the rate of aromatic nucleophilic substitution-interaction of 2,4-dinitrochlorobenzene with n-butyl- and tert. butyl amines in ethanol has been studied. In this pressure interval the rate constant of the former reaction increased 3,3 times compared with 7,5 times increase in the case of the second (sterically hindered) reaction.

The pressure effect (up to 6 kbar) on the relation between structural isomers of tert. butyl diphenyls formed by action of benzoyl peroxide on tert. butyl benzene has been studied. The relation ortho (sterically hindered) isomer; para (unhindered) isomer increased almost twice, the relation meta; para being only slightly increased.

The pressure effect on the relation between structural and cis-trans isomers in the products of 1-vinyl cyclopentene condensation with methyl acrylate has been studied. The mole fraction of the ortho-cis isomer increased from 0, .. at atmospheric pressure to 0, .. at 6 kbar.

In all these reactions the observed pressure effects are in fair correlation with activated complex models.
