

In this way, the calculation of the steric hindrance of the process of formation of the activated complex (determined by us as a mutual approaching of valence-bond-free atoms to distances smaller than the sum of their molecular radii) permits a quantitative explanation of the different accelerations by means of pressure of Menshutkin reactions that differ in the structure of participating amines and alkyl halides. The increase of acceleration of these reactions under pressure in the transition from  $\text{CH}_3\text{I}$  to  $\text{C}_2\text{H}_5\text{I}$  and iso -  $\text{C}_3\text{H}_7\text{I}$  \*, from  $\text{C}_5\text{H}_5\text{N}$  to  $(\text{CH}_3)_3\text{N}$  and  $\text{C}_6\text{H}_5\text{N}(\text{CH}_3)_2$ , and also the unique effect of pressure in the reactions of trimethylamine and triethylamine, becomes particularly clear. It is essential for a complete analysis of the effect of pressure on the rate of Menshutkin reactions to calculate all  $\Delta V$  components.

We think that the notions developed in this work as well as the simple calculations shown, in spite of their approximate character, permit an explanation of the extremely important acceleration of sterically hindered reactions with increase of pressure. It may be assumed, together with this, that an investigation of the reaction kinetics under high pressures is helpful also for the verification of these or other presentations of the structure of the activated complex in these reactions.

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