

## Kinetic parameters of the reactions of molecular decomposition of unsaturated acids

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### Abstract

Experimental data on molecular decomposition of  $\beta,\gamma$ -unsaturated acids of different structure into olefine and CO<sub>2</sub> have been analyzed with the use of the method of intersecting parabolas. Kinetic parameters characterizing such decomposition have been calculated and factors exerting influence on activation energy of such parameters have been defined. Activation energies and constants of reaction rates of such decomposition have been calculated for 25 acids. Comparison of activation energies of thermoneutral decomposition of unsaturated acids ( $E_{e0}$ ), peroxyesters and carboxylic radicals with the formation of CO<sub>2</sub> has shown that for such compounds it is directly proportional to the number of bonds, participating in the reaction ( $E_{e0}/\text{number of bonds} = 33.3 \text{ kJ}\cdot\text{mol}^{-1}$ ). For the first time activation energies and constants of reaction rates of addition of CO<sub>2</sub> to olefines, reverse to acids decomposition, have been calculated.