

Topic: Kinetics and mechanism of acyl transfer reactions. Part 7.

Influence of pH medium on the reactivity of amines in *N*-acylation

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Abstract

The calculation of effective rate constants of reactions of mono substituted anilines with benzoyl chloride is carried out taking into account the contribution of kinetic and thermodynamic factors to the reaction rate. It is shown that a type of Brensted dependence can be change with the variation of ratio of amine pH and pK_a values which determines the free amine part in the solution. It has been established that when studying the kinetics of the reactions with participation of aliphatic amines it is necessary to create pH medium, exceeding pK_a amine, not less than 2 log. units. The conclusion is made that on carrying out kinetic investigations it is necessary to take into account accurately the parts of any compounds of reactive forms, able to protonation and deprotonation, since in water-containing media the protic acids can inhibit acylation of amines.