

Abstract

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Title of Thesis: Viscosity and a surface activity of solutions oligoesters

In the thesis is presented preformulation study concerning behavioral features of the solutions of aliphatic hydroxyacids polyesters with linear and branched star-like constitution of polymeric chain. Surface activity and viscosity of solutions of three polyester differing in their concentrations, in parameters of molecular mass and also in various other characteristics in solutions, such as solvents ethyl acetate, methyl acetate, methyl formate and methyl ethyl ketone were studied. Surface tension measurements were performed by Wilhelmy plate method at 25 °C, while viscosity was measured by capillary Ubbelohde method at 12 °C, 22 °C, and 32 °C. It was not revealed any surface activity of polyesters in solutions. The viscosity of systems was influenced by parameters of dissolved polyesters, the influence of their concentration on flow parameters is successfully demonstrated by the relation between their concentration and specific viscosity. The intrinsic viscosity was not possible derived with reference to non-linear relation between concentration and reduced viscosity or inherent viscosity. The temperature change impact on viscosity of solutions was possible to presented by the application of classic Arrhenius equation and plot as enthalpic and entropic components describing viscous flow.

