ABSTRACT

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This master thesis studies rheological behaviour of the polyesters of glycolic acid and lactic acid branched with tripentaerythritol and plasticized with triacetin. The theoretical part summarizes basic rheological facts, mentions main type of the viscometers and deals with importance of the rheological testing in the drug formulation. There are described properties and application of polyesters, polycarbophil and carbomers in the pharmaceutical technology. Plasticized polyesters with various concentrations of triacetin were prepared (20 %, 30 %, 40 %), their viscosity was measured by Brookfield viscometer at 37 and 50 °C. To compare, viscosity of the aqueous dispersion of polycarbophil, carbomers and acacia gum was measured too. Flow behaviour was evaluated by the viscosity curves. The rheological behaviour of plasticized polyesters was influenced particularly by plasticizer concentration, as well their molar weight and branched ratio. Interactions between polyester chains were significantly weakened with increasing concentration of triacetin and viscosity was decreased.

Key words: branched polyesters, tripentaerythritol, triacetin, viscosity of plasticized polyesters