ABSTRACT

Charles University in Prague, Faculty of Pharmacy in Hradec Králové

Department: Department of Pharmaceutical Technology

Consultant: Doc. PharmDr. Zdeňka Šklubalová, Ph.D.

Student: Andrea Matyášová

Title of Thesis: Evaluation of compressibility of tableting mixtures containing theophylline using a compaction equation

This thesis is aimed at the evaluation and comparison of excipients used in production of tablets. The compaction process of these excipients was evaluated using the parameters of the compaction equation. The mixtures of four fillers in various ratios were evaluated. These mixtures contained also theophylline as model drug and magnesium stearate as lubricant. The used three-exponential equation was previously developed by doc. RNDr. Milan Řehula, CSc. By using this compaction equation the volume reductions, speeds of volume reductions and consumed energies were calculated and evaluated.

The results of this work showed that particular used fillers have different effect on the compaction process flow. That is caused primarily by different behavior of these materials during compaction and by formation of different types of bonds. Also the need of thorough cleaning and drying of compaction aid before compaction was confirmed.