

Abstract

Charles University in Prague, Faculty of Pharmacy in Hradec Králové

Department of Pharmaceutical Technology

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

Student: Barbora Vitverová

Title of Thesis: Evaluation of elastic recovery of tablets containing theophylline

This diploma thesis deals with evaluation of elastic recovery of tablets containing theophylline. The axial and radial elastic recovery is evaluated. Used materials are characterized in a theoretical part. It concerns microcrystalline cellulose Comprecel 102, lactose SpheroLac 100, calcii hydrogenphosphas anhydrous Di-Cafos A150, calcii hydrogenphosphas dihydrate Di-Cafos D160, magnesi stearas and theophylline. Further, compression process and its evaluation are described and also the elastic recovery of tablets after compression, its calculation and factors which can influence it.

The experimental part of thesis deals with the elastic recovery of tablets. The tablets were compressed by compression strength 10 kN and the height and diameter were measured after 0, 3, 6 and 24 hours after compressing. The elastic recovery of tablets was calculated from these values. The dimensions of tablets at the maximal compression strength 10 kN were used as the initial values. From results is obvious that the highest elastic recovery is immediately after ejection of tablets. The size of elastic recovery depends on the character of material. Di-Cafos D160 has the highest values of the axial elastic recovery but the radial elastic recovery is low. On the contrary the lactose has the lowest values of the axial elastic recovery but the radial elastic recovery is higher. The highest values of the radial elastic recovery have been measured at Di-Cafos A150.