Abstract

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Determination of optimal compression forces and speed of compression for the production of aciclovir tablets.

This thesis deals with the characterisation of impact compression process on hardness of the tablets. The theoretical part of the thesis describes the effective substance – aciclovir. It also describes compression equations which explain process of compression and factors influencing terminal weight and hardness of tablets.

The aim of the experimental part of the work is to measure physical properties of the tablets and find compression forces and speed of compression which are suitable for compression tablets. Tablets were pressed using Kilian Synthesis 700 machine at six compression forces in the range from 4 kN to 14 kN. The height, weight and hardness of each tablet were measured immediately after dressing and note to help for later calculation.

The result of the study was to determine the impact of compression forces and compression speed on tablet hardness and weight. Tablet weight decreses with increasing comppession forces. Hardness increases with increasing compression forces. The range of radial hardness increases with increasing compression speed. It was discovered by experimental testing that target hardness is 59-98 N. Suitable compression speed is 200 000 tbl./h and suitable compression force is 8 kN.