

DRUGS PRODUCTION BY UNIAXIAL COMPACTION OF POWDER MATERIAL

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One of the most common unit operations in the pharmaceutical industry in the production of drugs is the process of high-pressure compression - tableting. During tableting, the particles are rearranged, which causes friction between the particles and between the particles and the compression tool, until a uniform compact tablet is formed. In the process of tablet production, it is necessary to examine the physical and mechanical properties of tablets, and currently, the thermal aspect is also coming to the fore. For this purpose, a unique device was designed at the Institute of Process Engineering of the Faculty of Mechanical Engineering STU in Bratislava, which allows measuring the compression pressure in the axial and radial direction, as well as measuring the temperature in the tablet during pressing. The material to be analysed was AVICEL PH102 microcrystalline cellulose, which is the most commonly used in the pharmaceutical industry for direct tablet compression. The pressing process is influenced by several factors that affect the quality of the final product, such as the moisture content of the material or its structure.

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