ABSTRACT

Charles University in Prague, Faculty of Pharmacy in Hradec Králové

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Title of Doctoral Thesis: Characterization of compaction process according to new equation parameteres of compaction.

The thessis deals with comparation of excipients used for production of tablets using new equations of tablet compaction. A lot of mathematical interpretations exist for determination of excipient behaviour during compaction process of tablet production. Obtained parameters of them express more or less possible behaviour of these excipients during compaction. The new mathematical interpretation was proposed for crystallic and polymeric materials. It seems to be very exact method to express compation process very correctly. 40 materials was evaluated according to this new proposed equation of compaction. Zwick/Roell Z050 was used to obtain this equation. Different behaviour of polymeric and crystallic materials has been found out. Behaviour of crystallic materials is interpreted by 2 phases, expressed by biexpoinencial equation. Behaviour of polymeric materials is interpreted by 3 phases, expressed by triexponencial equation. According to obtained paramateres, excipients have been described in term of energetical and compactibility. Very important parameter P_{H3} was obtained to express compactibility of all excipients.