

ABSTRACT

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Title of the Diploma Thesis: A study of the coprocessed dry binder with mannitol, lactose, dextrose and crospovidone for orally disintegrating tablets.

This work evaluates and compares directly compressible tableting materials and tablets with Disintequik[®] ODT, which is used for the production of orodispersible tablets. The effect of three lubricants in two concentrations (0.5 and 1 %) on the properties of tableting materials and tablets is evaluated. Tested lubricants are magnesium stearate, calcium stearate and sodium stearyl fumarate. The tested parameters are flow properties, further compressibility, ejection force, tensile strength and disintegration time of tablets in the dependence on compression force. The compressibility is evaluated by the energy profile of the compression process.

The lubricants improved the flowability of Disintequik[®] ODT and the best values were in the case of calcium stearate. The total energy of the compression increased with the compression force and the highest values were seen in the tableting materials with magnesium stearate. The values of plasticity decreased with the compression force. The ejection force increased with the compression force and decreased at the higher concentration of lubricants, except in the case of calcium stearate at the compression force of 13 and 15 kN. Magnesium stearate had the greatest influence on the reduction of the ejection force. The worst lubricating effect had sodium stearyl fumarate. The tensile strength of tablets increased with the compression force and decreased with the higher concentration of lubricants, except in the case of calcium stearate at the compression force of 11 kN. Neither the increase of the compression force nor the higher lubricant's concentration didn't prolong the disintegration time of tablets. The longest disintegration time was measured in tablets containing sodium stearyl fumarate. Tablets met the requirements of the pharmacopoeial limit for disintegration time of orodispersible tablets.