ABSTRACT

This work deals with the study of energetic relations during compression and the properties of tablets made from a starch-based co-processed excipient StarCap 1500®. In the study the excipient is compared with another excipient, Starch 1500®. The study also includes the mixtures of StarCap 1500® and the granulated directly compressible lactose Pharmatose DCL® 15. The tablets were compressed on material testing machine T1-FRO 50 Th.A1K Zwick/Roell, energetic profiles were obtained from force-displacement measurements. The tested properties of tablets were tensile strength and disintegration time, tested in dependence on compression force and the addition of 0,4% magnesium stearate. The results show better compressibility of StarCap 1500® in comparison with Starch 1500® and lower elastic component of energy. The tablets were stronger, they disintegrated faster, but StarCap 1500® showed more sensitivity to the addition of lubricant than Starch 1500®. The tensile strength of tablets, disintegration time and the lubricant sensitivity increased with increasing ratio of StarCap 1500® in the mixtures with Pharmatose DCL® 15. From the energetic view the energy needed to overcome friction decreased, the energy accumulated by the tablet during compression and the elastic component of energy increased.