

ABSTRACT

The thesis evaluates anhydrous and dihydrate calcium hydrogen phosphate from the view point of the tensile strength, disintegration time of tablets depending on the compression force. Two firm products - Anhydrous Emcompress[®] and Di-Cafos[®] A 60 are used as anhydrate and Emcompress[®] is used as dihydrate. A compression force together with lubricants (magnesium stearate, sodium stearyl fumarate) and an addition of microcrystalline cellulose (Vivapur[®]102) are the influential factors. In addition to the characteristics of tablets, the energy balance of compression is also evaluated. Used compression forces were 12, 16 and 20 kN. The compression force 12 kN was used for the mixtures containing Vivapur[®] 102.

Total energy of compression, energy for friction and energy accumulated by tablet after compression increased with compression force. The highest values were at Anhydrous Emcompress[®], an addition Vivapur[®]102 increased these values. There weren't more significant differences among the values of decompression energy. Plasticity decreased with the growing compression force, the highest values were at Anhydrous Emcompress[®], Vivapur[®] 102 increased that. Tensile strength increased with compression force, Emcompress[®] provided the strongest tablets, Di-Cafos[®] A 60 provided at least strong tablets. Vivapur[®]102 increased the strength and equalized its values. The effect of lubricants was different. Disintegration time of tablets was very short, the compression force didn't any influence on it. Vivapur[®] 102 equalized the values of disintegration time.