

## Abstract

This thesis deals with the study of properties of the tablets from calcium hydrogen phosphate dihydrate (Emcompress<sup>®</sup>) with Vivasol in concentration 1 or 2 % and lubricants, their concentration was 0,5 or 1 %. Then the properties of tablets from Emcompress with Prosolv in ratio 1:1 and 3:1 without or with 0,5 or 1 % of lubricants were studied. The lubricants were magnesium stearate and sodium stearyl fumarate (Pruv). The tablets with Vivasol were compressed with a force of 10, 12 and 14 kN, the others with a force of 6, 8 and 10 kN. The tensile strength and the disintegration time were tested. Whereas tensile strength of tablets with Vivasol was increased with increasing compression force, independently on concentration or type of lubricant, the disintegration time did not increase with compression force and it was shorter with increasing concentration of Vivasol, mainly when magnesium stearate was added. The tensile strength of tablets from Emcompress-Prosol 1:1 was higher than of tablets from Emcompress-Prosol 3:1 and it increased with compression force. The lubricants decreased tensile strength much more for tablets from Emcompress-Prosol 1:1 directly proportional with increasing concentration of lubricants. The shortest disintegration time had the tablets from mixture of dry binders, without lubricant, time increased with compression force, it was significantly longer with increasing concentration of lubricant for mixture of Emcompress-Prosol 3:1. This was not always true in case of tablets from mixture Emcompress-Prosol 1:1. In both cases the disintegration time was longer by using Pruv. When it was compared the tensile strength of the tablets from Emcompress and 1 % Vivasol with 1% lubricants and tablets from mixture of dry binders with 1% lubricants with a compression force at the 10 kN, it was the most optimal for tablet from mixture Emcompress-Prosol 3-1. There were no significant differences for these mixtures in using lubricants. The disintegration time of these tablets was extremely long.