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NUNTACHAI HANPRAMUKKUN: COMPARISON OF THE OPTIMIZING CONDITIONS OF TABLET COATING IN PERFORATED PAN COATER AND IN FLUIDIZED BED BOTTOM SPRAY COATER. THESIS ADVISORS: AMPOL MITREVEJ, Ph.D., NUTTANAN SINCHAIPANID, Ph.D., VARAPORN JUNYAPRASERT, Ph.D. 111 p. ISBN 974-662-514-4

Since there are several variables involved in the coating process, it was of interest to optimize these conditions. The core tablet were prepared by direct compression method and was found to possess good characteristics. This study used two factor and three level design to allow a small number of experiments required for optimization. The coating was conducted in both the perforated pan coater and fluidized bed bottom spray coater. For each type of equipment, the effects of two factors, spray rate (g/min) and inlet temperature (^{o}C), were investigated. The optimum condition was performed with two and three dimensional plots. Percent loss of coating solution and film adhesive force were the criteria for the designation of optimum condition. The adhesive force increased with the increased inlet temperature and the decreased spray rate, and at the value of not less than 7 kg the tablets were non-friable. This value was assigned to be one criterion. To obtain the lowest percent loss of coating solution, the pan coater should have the spray rate of 11.68 to 14.24 g/min and inlet temperature of 99 to 103 °C and the bottom spray coater should have the spray rate of 13.6 to 15.52 g/min and inlet temperature of 45 to 49 °C. Surface roughness was found to increase with the spray rate and inlet temperature.