

Abstract

The fluid bed granulation is a well-established method how to improve such properties of powders as flowability and increase content uniformity of the tablets.

In this thesis, there was evaluated a granulation process on a lab scale fluid Glatt bed granulator and optimized for highest possible yield. Product yield in the size range of 80–90 % of granules and process reproducibility were stated as most effective. The product was analysed for its particle size distribution, the API distribution within the different particle size fractions and the flowability of the final granules. For process optimization, the most critical parameters such as spraying rate, particle size of raw materials and fluid bed pressure were identified and evaluated. As the highest-yielding dosage for the powder binder was found the spraying rate of 9 g/min. Changes in bed fluid pressure and nozzle pressure showed no significant improvement.

Different grades of caffeine were compared for their impact on the granulation properties. Sieved caffeine enhanced yield of the product and reproducibility compared to bulk or disagglomerated caffeine.