OP-1

DOI: 10.14232/ftf.2023.op1

Application of Pro-CepT granulator for direct pelletization process

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The employment of a fast one-step pelletization process by a high-shear granulator with an accurate optimization of all the process variables for the preparation of rounded pellets with required physical properties is considered a good alternative for the most used pelletization techniques [1-2]. The aim of this study is the optimization of the pelletization process by using a Pro-CepT granulator. Two levels of full factorial design and central composite design were applied to the formula that contains mannitol, microcrystalline cellulose, and a solution of polyvinylpyrrolidone in water. According to the roundness, size distribution, and hardness results, the design space of the process variables which includes chopper speed, impeller speed, binder quantity, and binding liquid volume was determined. The optimized formula was selected and loaded with hydrochlorothiazide as the model drug, and it resulted in the required size spherical pellets with good hardness, good dissolution rate, and acceptable content uniformity.

References:

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