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Review Article

Wurster technology: Process variables involved and Scale up science

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Abstract

Among the pelletization techniques available at present, wurster process is a production method of a great interest as it offers the various advantages in single equipment. Continuous process, less manual interruption and batch to batch reproducible assurance are some advantages of Wurster based pellets coating. The many scientist have no clarity that “is the process scalable?” due to ‘n’ number of process variables involves. There are five sets of process variables affecting the quality of pellets - Equipment variables, Coating liquid preparation variables, preheating variables, spraying variables and drying variable involved in Wurster based coating process. Many of them has medium and high risk. The risk need to reduced by studying the variables at lab level during development using quality by design (QbD) approach and experimental design software. Wurster basted coating process scale up possible based on complete optimization of process variables, understanding of risk associated with variables and implementation of scale up factor calculation provided by vendor. Lab scale and commercial scale Wurster should be linear and preferably of same manufacturer is the key of successfully implementation of scale up factor.

Keywords: pelletization techniques, wurster process, quality by design.

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