

Pharma Technical Seminar

Micronization and Nanonization of Pharmaceutical Substances

September 23-24, 2019 Exton Pa

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Background

The majority of approved pharmaceutical substances exhibit poor solubility in the human body. By reducing the particle size and thereby increasing the surface area of the active ingredient particles, the dissolution rate and thus the bioavailability can be significantly increased.

The desired biological effect can be achieved with smaller amounts of active substance, but with fewer side effects. In the pharmaceutical industry, terms for comminution such as micronization and nanonization have become established and agitator bead mills are primarily used for the process of wet grinding.

The costs for the development of a suitable formulation for new products or a production method for generics are primarily driven and determined by the price of the active ingredient itself. A reduction of the development costs can be achieved through a deep understanding of the effect of different process parameters.

Contents

In the "Micronization and Nanonization of Pharmaceutical Substances" seminar, the essential operating parameters of agitator beads mills will be discussed and presented in a logical context. Possible solutions for process optimization will be shown. The process will be considered holistically, from cleaning and sterilization to predispersion and micronization, through packaging. How a process developed on a laboratory scale can be transposed to an actual production scale will be discussed.

Topics of Discussion

- Characterizing the significance of comminution
- Terms and definitions
- Overview of mixing, wetting, and dispersing processes
- Overview of NETZSCH grinding systems; agitator bead mills
- Effect of different process parameters
- Model of the load energy and the number of impacts
- Effect of the dwell time distribution
- Grinding media selection and scale-up
- Calculation from laboratory to production scale
- Limitations of wet grinding
- True comminution and gentle dispersion
- Summary and discussion

Professions That Will Find Value In This Content

- Formulation Development
- Product Research
- Process Engineering
- Manufacturing & Production

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