

TWIN SCREW GRANULATION 101

Summary

This 2.5-day course focusses on giving a thorough introduction on twin screw processing. Two different aspects will be covered: twin screw wet granulation and hot melt granulation. During this course, the basic and fundamental aspects of these two techniques will be clearly explained. This includes the principle of the technique and which quality end product is intended to obtain. Next to that, the influence of process and formulation parameters on the final product quality will be explained. Finally, theory will be transformed to practice to gain more insight in the process.

In the last ½ day, use-cases will be handled, going into more details about specific aspects of the granulation process.

This course is divided into three separate modules::

- 1) **Module 1: Basic course: Introduction to twin screw wet granulation (1-day)**
- 2) **Module 2: Basic course: Introduction to twin screw hot-melt granulation (1/2-day)**
- 3) **Module 3: Specialized courses (1/2-day)**

MODULE 1: WET GRANULATION

Theoretical

- 1) *Introduction to wet granulation*
 - a. Basic fundamentals
 - b. What equipment does exist?
 - c. What are the (dis)advantages?
- 2) *The wet granulation process*
 - a. What process parameters are relevant?
 - b. What needs to be inside your formulation?
- 3) *Batch vs. continuous processing?*
 - a. Comparison between both processes

Practical

- 1) *Hands-on use of the ConsiGma™-25 line*
 - a. Assembling and disassembling the line
 - b. Placebo trials
- 2) *Hands-on granule characterization*
 - a. Overview of the characterization techniques

MODULE 2: HOT-MELT GRANULATION

Theoretical

- 1) *Introduction to hot-melt granulation*
 - a. Basic fundamentals
 - b. What equipment does exist?
 - c. What are the pitfalls?
- 2) *The hot-melt granulation process*
 - a. What process parameters are relevant?
 - b. What is the impact of different screw configurations?

Practical

- 1) *Hands-on use of the hot-melt granulator*
 - a. Assembling and disassembling the line
 - b. Placebo trials
- 2) *Hands-on granule characterization**

*Not performed if module 1 has also been followed

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MODULE 3: SPECIALIZED COURSES

- 1) *Use-case 1: Wet granulation: Modified release formulations*
 - a. How can you alter the formulation to achieve modified release?
 - b. What is the impact on the processability?
 - c. What are the CQAs?
- 2) *Use-case 2: Wet granulation: Impact of dry or wet addition*
 - a. What is dry addition?
 - b. What is wet addition?
 - c. Comparison between both methods?