

Liquids to Granules - One Step closer to finer Granules

Doetinchem, The Netherlands - Recognizing industry demand for ever finer granules for advanced materials applications, Hosokawa Micron B.V. has further developed the production capabilities of its Agglomaster fluidized bed granulator for a range of applications including thin film coating, cGMP particle coating and surface modifications, and nano-particle suspension drying.

One of its latest proven applications is for the micro-agglomeration of antibiotics for inhalation drugs. This involves the nano-encapsulation of the drug for improved stabilization with controlled release, and advanced particle composing techniques to increase the delivery efficiency and bioavailability of the drug.

The Hosokawa Agglomaster is a sanitary, batch type, multi-functional granulator which brings together spray drying, agglomeration and granulation technology in a single machine reducing the need for multi-step processing and



the amount of ancillary equipment used. Single stage operation eliminates the need for rewetting and secondary processing.

During operation the liquid is atomized via the bottom spray nozzles into the fluidized bed that could be filled with or without seed material. Liquid droplets that are initially fed by spraying into the fluid bed evaporate instantaneously and all solid material solidifies to become fine particles i.e. spray drying. Once fine particle begin to form, particle growth by particle-to-particle agglomeration or layering agglomeration takes place, depending on process conditions i.e. spray granulations.

Its unique fluid bed bottom design with rotating slit disk and agitation blades, together with its opposed pulse jet mechanism, and facility to inject liquid at different positions makes the Agglomaster highly versatile and allows control of not only the particle size, but shape, density and other characteristics. Accurate process control is facilitated with a PC/PLC based control system and SCADA supervision system.

Use of different internals allows various processes including agglomeration of fine powders, micro-coating of fine powders, micro-agglomeration, spray fluid bed agglomeration of a liquid-phase feedstock (suspension or slurry) in one step, or drying and cooling of filter cakes. Available with batch sizes of 0.2 for laboratory applications to 1000 liter production unit.

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