ConsiGma™ Coater

Revolutionary, high performance tablet coating technology
ConsiGma™ Coater
An Enabling Technology

Another leap forward for continuous manufacturing

GEA has been pioneering continuous manufacturing (CM) solutions for several years and helping customers to develop, evaluate and optimize continuous processing techniques to enable them to bring new products to market faster and cheaper.

Providing increased yields, lower utility consumption and reduced waste, CM presents a new approach to high-volume oral dosage form production and meets the industry’s demands for faster product development, reduced costs, improved production economics and increased manufacturing flexibility.

The ConsiGma™ coater from GEA is a revolutionary, new, high performance tablet coating technology that gently and accurately deposits controlled amounts of coating materials on tablets — even if they are extremely hygroscopic or friable. Designed specifically to be an integral part of the ConsiGma™ continuous tableting lines, the ConsiGma™ coater is able to process small quantities of tablets at very high rates, offering improved heat and mass transfer.

Introducing a paradigm shift in tablet coating, this new type of coater entrains tablets in a cascading movement that enables greater fluid application rates (higher coating build-rates) than traditional coating pans. The functionality of enteric coatings, for example, is greatly dependent on weight gain and coating uniformity. In traditional coating pans, fast coating application rates often result in poor uniformity, requiring a higher weight gain to achieve enteric protection.

Inconsistent and imperfect, this "standard" practice of tablet coating often delivers a non-homogenous product. Because the tablets are loaded in large rotating pans and vented for hot air drying, tablet edges can get rounded off, intagiations can get filled in by coating material, and edges, corners, break lines and/or logos may not be coated with the same thickness as the tablet faces (as a result of the tumbling effect of conventional core handling).

The inaccuracy of coating material deposition limits the use of modified release coatings. In a laboratory setting, it is necessary to coat several kilograms of tablets at one time, making the research and development of a solid dosage form costly and difficult. In addition, extremely hygroscopic tablets cannot be coated using current technology, nor can flat or oddly shaped cores be consistently coated. Offering low attrition rates and gentle product handling, the ConsiGma™ coater from GEA is your solution to these problems.

COATING
Coating is used to either add color, protect, mask the taste or create a modified release form in pharmaceutical production. GEA offers a range of standard, innovative, batch and continuous coater systems for particles, powders, granules, crystals, pellets and tablets.
Features and Benefits
Cascade dynamics and spray/substrate interaction offer improved coating uniformity

Incorporating a small, simple and modular design, a batch of tablets from as little as 1.5 kg is, under the influence of radial air knives, induced using a centrifugal process to form a stable, gravity free cascade inside a perforated wheel rotating at high speed. Increased drying efficiency is achieved by spraying the coating suspension into a cascading cloud of tablets. As such, the process is much faster, offering a target weight gain of 3% (15% solids content) in less than 10 minutes — compared with at least 90 minutes in a conventional process.

Plus, the predictable throughput and operating conditions — obtained through heat and mass balance modeling — ensure excellent color uniformity at lower weight gains. In addition, superior coating thickness uniformity can be achieved using less coating suspension, even for enteric and sustainable release coating formulations.
PAT-compatible, the ConsiGma™ coater is easy to clean and offers significant cost savings compared with conventional systems in terms of time, materials, downtime, process revalidation, stability testing, etc. With a smaller technical space requirement than established technologies, less cleaning and a reduced plant area is needed. And, being a continuous production technology, no scale-up is required and the maximum batch size is almost infinite.

The pharmaceutical industry is looking at continuous processing to improve production quality in an efficient and cost-effective way and to comply with the increasingly stringent manufacturing acceptance criteria put in place by the regulatory authorities. GEA has, from the very beginning, led the field with flexible development options that facilitate the commercial manufacturing process and enable greater process understanding to be achieved with smaller quantities of material.

**Unique Features**

- Continuous coating (30 kg/h)
- Short processing time
- Flexible modular design
- R&D batch size (minimum batch size = 1.5 kg)
- Enhancing technology
- Difficult-to-coat shapes
- Friable tablets
- Multilayer coating
- Enabling technology
- Low humidity process: suitable for moisture-sensitive materials
- Accuracy of coating (RSD less than 1% demonstrated).

**Compact, Precise and Flexible**

Faster processing times enable highly accurate coating.