

Press release

Syntegon Technology

Syntegon at Achema: the highest flexibility for oral solid dosage processing

- Exemplary OSD production line shows all possibilities: from laboratory to big batch production or continuous manufacturing
- Fluid bed processes: drying, granulating, and coating in just one product container
- Xelum platform for continuous manufacturing using fluid bed granulation or direct compression

Waiblingen, Germany, April 11, 2024. At Achema, [Syntegon](#) presents its comprehensive portfolio for the development and production of oral solid dosage (OSD) forms. “We are currently seeing two trends that offer pharmaceutical companies different advantages: on the one hand, production in ever larger batches and, on the other hand, continuous manufacturing,” says Fritz-Martin Scholz, Product Manager at Syntegon. “We are continuing to develop our existing portfolio in both directions and can therefore identify and implement the best solution for our customers’ applications.” An exemplary OSD production line and further exhibits give trade show visitors the opportunity to see this wide range of possibilities.

Gentlewing: effective mixing and granulation

With the [Gentlewing](#) impeller from the Syntegon subsidiary Hüttlin, the company presents a solution that meets the need for flexible batch production. Its unique geometry enables the innovative mixing tool to achieve fill levels of between 20 and 80 percent and is a core component of the Hüttlin high-shear mixer technology. “The Gentlewing achieves optimum granulates with high yields in all versions,” Scholz emphasizes. This makes it possible to produce batches of between 0.1 and 720 kg, from R&D to pilot and production scale. The technology is available in top or bottom drive executions.

HDGC: versatile fluid bed system

Pharmaceutical companies also require a high degree of flexibility in terms of process and batch sizes when it comes to [fluid bed technology](#). The HDGC fluid bed system enables the highly efficient drying, granulation, and coating of powders, granulates, and pellets in just one product container – from laboratory scale to batch sizes of more than 1,200 kg. Thanks to the special air flow of the Hüttlin Diskjet, the system ensures optimum use of process air. This results in homogeneous fluidization, shorter process times, and a low filter load. During granulation and coating, a special three-component nozzle provides higher spray rates and an optimized yield without interrupting the process.

Xelum: continuous manufacturing at all scales

In addition to batch production, [continuous manufacturing](#) is a time- and cost-efficient alternative. With the Xelum platform, Syntegon offers a flexible solution for both continuous direct compression and continuous fluid bed granulation. Xelum doses and mixes active ingredients and excipients as individual X-keys (packages), which run continuously through the process chain and are continuously removed from the system, for example as tablets from the integrated TPR tablet press. “Xelum ensures shorter time to market for new formulations,” Scholz explains. This is further supported by the simple scale-out: “The

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process parameters of the Xelum R&D can be transferred directly to the production system – for a faster production start and significantly lower development costs.”

TPR 500: production-scale tablet compression

Flexibility in tablet shapes and batch sizes as well as robust manufacturing processes are the main requirements for [tablet presses](#). The TPR 500 on show at Achema can produce more than 400,000 tablets per hour in a wide variety of sizes and shapes. “Our customers appreciate the broad range of mixtures and granulates that can be processed, as well as the ergonomic and user-friendly design of the press,” Matthias Moessinger, Product Manager at Syntegon, underlines. The modular powder feed system can be adapted to any powder characteristic. All filling and machine parameters that are important for product quality are continuously monitored and documented in accordance with GMP and GDP.

Sepion Coater: reliable coating with maximum batch size flexibility

The Sepion series enables both film and [tablet coating](#). It offers pharmaceutical manufacturers a reliable solution for closed filling, sampling, and emptying, which can be easily upgraded for containment. The Sepion series covers drum sizes from 175 to 1,000 liters. Thanks to innovative, fully welded mixing elements within the drum, the coater can achieve filling levels of between ten and 100 percent without changing the mixing elements. The optimized drum geometry leads to a flatter tablet bed and more spray nozzles, which results in higher spray rates and significantly shorter process times.

GKF 720: maximum flexibility in the production of small capsule batches

Syntegon also offers numerous solutions for hard capsules. From the preclinical phase to large-scale production, platforms, dosing units, and control technologies are available for all applications. The [GKF 720](#) on show at Achema fills up to 43,200 hard capsules per hour. Thanks to its modular concept, the machine can be quickly and easily converted to other dosing technologies, as well as to increased operator protection up to OEB5. As one of many innovations, Syntegon presents interchangeable stations for dosing powders and pellets. Depending on the production requirements, a tamping or a dosing station can be used. To check the dosing quality, customers can choose between a high-precision gravimetric scale for statistical in-process control and 100% weight control using a capacitive Net Weight Detection System (NWDS).

Containment: comprehensive support

All Syntegon OSD systems can be designed with customer-specific containment. With the [OSD Customer Service Centers](#), Syntegon has a global network of customer centers and partner laboratories that provide support in the development of OSD products and corresponding manufacturing processes. [Service agreements](#) tailored to customer needs, the cloud-based software solution Synexio, as well as qualification and validation services round off Syntegon's service portfolio.

Learn more about the technologies and services from Syntegon and meet the experts at Achema, June 10-14, 2024, in Frankfurt at booth C71 in hall 3.1.

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With the Xelum platform, Syntegon offers a flexible solution for both continuous fluid bed granulation and continuous direct compression.



The Gentlewing impeller meets the need for flexible batch production and achieves fill levels of between 20 and 80 percent thanks to its unique geometry.



The TPR 500 tablet press on show at Achema can produce more than 400,000 tablets per hour in a wide variety of sizes and shapes.

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About Syntegon

Processing and packaging for a better life – this is what 5,800 Syntegon employees work for every day. Be it with individual machines, systems, or services, Syntegon helps its customers in the global pharmaceutical and food industries to improve people's lives. The company, which is headquartered in Waiblingen, Germany, looks back on more than 160 years of experience and achieved annual sales of 1.4 billion EUR in 2022. In the pharma sector, the company's intelligent solutions enable the safe and high-quality production, processing, filling, inspection, and packaging of liquid and solid pharmaceuticals. In the food industry, Syntegon's flexible and reliable technologies produce and pack confectionery, dry food, frozen food, and dairy products. With 1,100 service experts and a comprehensive service portfolio throughout the entire machine lifecycle from spare parts management to digital line optimization, Syntegon lays the foundation for smooth production processes for all customers. More than 35 sites in almost 20 countries keep a firm eye on Syntegon's impact on the environment and society. Syntegon is a leader in the development of sustainable packaging solutions, reduces the energy consumption of its machines and pursues ambitious goals to lower its emissions. www.syntegon.com