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Press release

Pharma extruder for wet and hot melt extrusion processes

Coperion offers new pharma extruder design with maximum flexibility

Stuttgart, September 2018 – Coperion GmbH, Stuttgart, Germany, has launched a completely flexible continuous pharma extrusion system suitable for research and development, as well as for small-scale production. This ZSK 18 MEGAlab extruder fulfills the requirements for both wet extrusion and hot melt extrusion (HME) processes. The first of these ZSK 18 MEGAlab extrusion systems with an 18 mm screw diameter has recently been delivered to a major international pharmaceutical company and is in use for a variety of different continuous process tasks. It offers higher efficiency and uniformity than batch processes.

Besides the extruder the system comprises two Coperion K-Tron gravimetric loss-in-weight feeders with superior accuracy in API and liquid feeding, a cooling belt, and a Coperion Pelletizing Technology strand pelletizer.

Extrusion system offers maximum process flexibility

With a maximum throughput rate of 10 kg/h, the ZSK 18 MEGAlab is suitable for both wet extrusion and hot melt extrusion (HME) on a laboratory scale. For wet extrusion processes the system comprises more than ten different die plates with various numbers of die holes and die hole diameters. For hot melt extrusion applications Coperion has equipped the ZSK extruder with a die head that has several exchangeable nozzles to provide different strand diameters. The die head offers additional bore holes for PAT (Process Analytical Technology) sensors.

The Coperion K-Tron liquid gravimetric loss-in-weight feeder fulfills ATEX requirements and can be connected to each of the barrels of the extruder process section. This flexibility in feeding also applies to the Coperion K-Tron API gravimetric loss-in-weight feeder. It can be mounted on the first barrel or fourth barrel of the process section. This allows the use of the ZSK extruder for processes requiring process lengths of 32 L/D as well as of 20 L/D.

September 2018

The Coperion K-Tron gravimetric feeders also offer flexibility in their ability to handle a wide variety of materials, with even difficult flow characteristics and variable feed rates. This flexibility, coupled with Coperion K-Tron's superior digital weighing and controls technology, ensures high accuracies in materials feeding, all critical to the continuous pharmaceutical process.

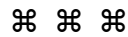
The ZSK extruder itself and all peripheral equipment are very compact in size and are movable on wheels for optimum usage in laboratory conditions. The GAMP control system, as well as the water cooling manifold, is integrated into the stainless steel base frame of the ZSK extruder. Thanks to plug & play connections commissioning is possible in the shortest times.

Due to geometrical consistency within the ZSK series the ZSK 18 MEGAlab system allows proven scale-up to bigger ZSK extruder sizes and higher throughput rates. This is one of the most important requirements for successful laboratory installation.

Stefan Gebhardt, General Manager of Business Unit Food & Pharma at Coperion, says: "We have designed an extrusion system that optimally meets two very important requirements of the pharma industry. The system offers a large number of features for various application processes and at the same time fulfills all state-of-the-art GMP requirements. This way the ZSK extrusion system can be used with maximum flexibility – for a wide range of research and development tasks as well as for clinical trials and small-scale production processes."

Coperion (www.coperion.com) is the global market and technology leader for compounding systems, feed systems, bulk goods systems, and services. Coperion develops, produces, and services plants, machines, and components for the plastics, chemical, pharmaceutical, food, and minerals industries. Coperion employs 2,500 people worldwide in its four divisions Compounding & Extrusion, Equipment & Systems, Materials Handling, and Service, as well as in 30 sales and service companies.

September 2018



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September 2018



Coperion's ZSK 18 MEGAlab twin screw extruder with Coperion K-Tron gravimetric loss-in-weight feeder, suitable for research and development as well as for small-scale production

Photo: Coperion, Stuttgart