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Press Release

Coperion and Aurora Kunststoffe

Profitable Recycling and Upcycling with ZSK Extruders

Stuttgart, April 2020 – Aurora Kunststoffe, a company located in Neuenstein / Germany and since end of 2019 member of MOL Group, is demonstrating how plastic processors' production waste can be recycled and upcycled profitably. This producer of recomponds uses rejected parts accumulated from plastic components manufacturing as primary raw material and processes it into recycled, new-product-quality plastic compounds. After a major fire in their production area in 2017, Aurora Kunststoffe decided once again to rely on ZSK twin screw extruders from Coperion. Those three ZSK 45 Mc¹⁸ twin screw extruders have been in successful operation since early 2019, and with their high throughputs and their reliability, they have fulfilled every requirement that Aurora Kunststoffe needs for their innovative business plan.

Technology for First-Rate Compounds

In manufacturing technical plastic parts, typically there is approximately a five percent rejection rate. Aurora Kunststoffe purchases this production waste, then examines the precise composition and varietal purity. Once they pass quality control, the single-variety plastic parts are ground, fed into the compounding process and pelletized. The result is pellets mainly based on PA6, PA66, PA11, PA12, POM, PP, PC, and PC-ABS. To accomplish this, Aurora Kunststoff relies on Coperion ZSK technology. Within the ZSK twin screw extruders, the ground material is reliably homogenized with additives, fillers and reinforcing materials and devolatilized. To this end, Coperion designed each of these three ZSK 45 extruders individually for Aurora Kunststoffe's requirements, equipping them with ZS-EG twin screw side devolatilization units and special wear protection for product-contact parts. Following melt discharge from the die

April 2020

head at the end of the extruder's process section, plastic strands are taken over by semiautomatic SCP 200 strand conveying systems from Coperion Pelletizing Technology. They are automatically conveyed via a cooling water chute and a conveyor belt to the strand pelletizer's feed mechanism, where they are cut to compounds whose quality corresponds to that of new material. Noted Norbert Büter, Coperion Sales Manager, "When recycling plastics, it is necessary to adapt the process parameters and recipes to the various raw materials. With their flexibility and high torques, ZSK twin screw extruders are optimally suited for processing even the most difficult raw materials to very good product quality – and they do it at throughputs that are economical. By devolatilizing using ZS-EGs, not only are unwanted gases removed; operational safety of the entire vacuum system is increased. This applies especially to even very volatile viscosities."

Rebuilding Production

In 2017, a large fire at Aurora Kunststoffe destroyed the entire production area. Aurora Kunststoffe held fast to its successful sustainability concept, even expanding it after the fire. New twin screw extruders began operation in a new, larger space in 2019. In meeting such a tight deadline, Aurora Kunststoffe relied on close collaboration with their suppliers. Alexander Schweinle, Head of Production at Aurora Kunststoffe, is particularly proud of this: "Coperion delivered not just three ZSK 45 extruders that were individually designed for us, and the appropriate strand pelletizers, but they also supported us with the engineering necessary for the entire production. I would like to emphasize the really good collaboration between our two companies: Coperion consistently reacts to our inquiries quickly and knowledgeably, which was key during our production's rebuilding phase."

Successful Recycling Concept

Production waste from industrial plastics manufacturing is becoming more and more valuable in times of rising raw materials prices and increased environmental pollution. Aurora Kunststoffe buys these industrial by-products and turns them into high-quality raw materials that are used in the automotive, construction, furniture and electronics industries.

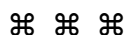
Plastic waste comes to Aurora as part of its unique Aurora-Lean-Logistics concept, consisting of Aurora's own fleet of about 60 semi-trailers and a box concept for perfecting single-origin collection. At Aurora, materials are ground and processed into recomounds by means of

April 2020

extrusion. With this process, Aurora Kunststoffe achieves throughputs of up to 650 kg/h on their ZSK 45 twin screw extruders. Per day, Aurora Kunststoffe produces over 50 tons of compounds. For the future, Aurora anticipates increasing demand. “I am certain that sooner or later, there will be a legally mandated recycling quota”, said Schweinle.

Jochen Schofer, Business Segment Manager, Recycling & Direct Extrusion at Coperion added: “We’re convinced that becoming circular is unavoidable for the plastics industry.” To that end, there is still plenty of room for improvement. In Germany, the share of recyclate used in plastics processing in 2017 only achieved a bit more than 12%. Aurora Kunststoffe, in contrast, is taking an absolutely leading role for us; their company concept is not only profitable, it’s sustainable too! We’re proud to support Aurora Kunststoffe with our compounding and engineering know-how!”

Coperion is the international market and technology leader in compounding and extrusion systems, feeding and weighing technology, bulk materials handling systems and services. Coperion designs, develops, manufactures and maintains systems, machines and components for the plastics, chemicals, pharmaceutical, food and minerals industries. Within its three divisions – Polymer, Equipment & Systems, and Service – Coperion has 2,500 employees and nearly 30 sales and service companies worldwide. Coperion K-Tron is part of the Equipment & Systems division of Coperion. For more information visit www.coperion.com or email info@coperion.com.



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April 2020



Aurora's new production area is equipped with ultramodern ZSK 45 compounding systems from Coperion.

Photo: Coperion, Stuttgart

April 2020



Alexander Schweinle, Head of Production at Aurora Kunststoffe, is very satisfied with the performance and very high daily output of his compounding machines.

Photo: Coperion, Stuttgart