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PRESS RELEASE

WITTMANN BATTENFELD at the K 2019

WITTMANN BATTENFELD and Zeroplast at the K 2019 with injection molding process for the natural material Zeroplast free

"Circular Economy" was the motto of the K 2019 and is the largest common denominator in the cooperation between WITTMANN BATTENFELD and Zeroplast. The bio-based natural material is not only recyclable, bio-compatible, free of genetically modified organisms (GMOs) and chemical additives, but is also said to fulfill all the wishes and requirements of industrial customers. In addition to the criteria already mentioned, these include industrial series production by injection molding, a positive environmental balance, a bio-based barrier layer for cosmetics and foodstuffs, as well as competitiveness in pricing, processes and quality standards. The ingredients of Zeroplast free do not compete with animal feed or food production.

"We have invented the sustainable, all-purpose bio material", says Friedrich Breidenbach (CEO and co-founder of Zeroplast) with a twinkle in his eye. The facts & figures about the joint development work really read like the program for a request concert organized by industrial customers from the cosmetics, food and toy sectors. This has been made possible by the expert knowledge of WITTMANN BATTENFELD and Buzek Plastic, Poland in injection molding and process technology, the cooperation with leading research institutions, universities and an award-winning EU Horizon 2020 project under the leadership of the Fraunhofer ISC and Fraunhofer IWKS institutes, as well as the material development carried out by Zeroplast to create Zeroplast free. Due to batch variations in natural materials, new developments in areas such as programming and process technology became necessary.

Michael Wittmann and Friedrich Breidenbach were agreed on one thing from the very beginning: "100% bio-based, zero compromise. At the K 2019, we will not present just a concept, but an almost market-ready solution. Throughout the entire development process, we have focused on meeting the requirements of our industrial customers, which is vital for application in real competitive situations. In this, we have been successful. Solutions are only sustainable if they can be brought to market in

large numbers of units. Only integrated, intelligent and cost-efficient material compounds and production processes have a chance there."

At the K 2019 WITTMANN BATTENFELD demonstrated live the production of a packaging product for the cosmetics industry made of the bio-based compound Zeroplast free, which consists of no more than 3 ingredients. On the multi-component machine model *EcoPower* 240/1100H/130L COMBIMOULD, cosmetic jars and lids were manufactured from this compound based entirely on natural materials, which can be recycled without losing any of its physical properties.

The jar was injection-molded by the machine's main aggregate, while the L aggregate produced the lid in a different color. The machine was equipped with a W842 pro robot from WITTMANN, which took a round paper label made of certified cradle-to-cradle paper from a magazine and inserted it into the moving mold half for the bottom of the jar. Next, the W842 pro removed the parts from the nozzle side and passed the jars on to a W818 robot, which inserted them into a screwing station. The W842 pro brought the lids to the screwing station, where they were united with the jars and then deposited.

The preceding in-mold labeling process reduces the complexity of the materials in the packaging product. Use of the paper label ensures efficient recycling processes and thus provides recyclable and sustainable decoration of the packaging products. Michael Wittmann and Friedrich Breidenbach comment: "Sustainable solutions must not be a sacrifice. If they are worse or less attractive, they will not be accepted by the market."

According to Streamlined Life Cycle Assessment (LCA), Zeroplast free shows a significantly better environmental performance per kilogram than commonly available plastic materials in most impact categories examined. The material must be produced from renewable and mineral sources, be recyclable after use and decomposable in the event of improper disposal out of doors (littering), in order to avoid negative effects such as toxic substances or micro plastics. At its facility in Poland, Zeroplast develops and manufactures sustainable packaging solutions and compounds.

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Fig. 1: *EcoPower* 240/1100H/130L COMBIMOULD

Fig. 2: Jars and lids made of the natural material Zeroplast free, manufactured with a WITTMANN BATTENFELD *EcoPower* 240/1100H/130L COMBIMOULD, bearing an in-mold label consisting of certified cradle-to-cradle natural paper (Photo: Ernst Kainerstorfer)

The WITTMANN Group

The WITTMANN Group is a worldwide leader in the production of injection molding machines, robots and auxiliaries, headquartered in Vienna/Austria and consisting of two main divisions: WITTMANN BATTENFELD and WITTMANN. They jointly operate the companies of the group with eight production plants in five countries, and its additional sales and service companies are active with 34 facilities on all important markets around the world.

WITTMANN BATTENFELD pursues the further expansion of its market position as an injection molding machine manufacturer and specialist for state-of-the-art process technologies. As a supplier of comprehensive, modern machine technology in modular design, the company meets both present and future market demands for injection molding equipment.

The WITTMANN product portfolio includes robots and automation systems, material handling systems, dryers, gravimetric and volumetric blenders, granulators, temperature controllers and chillers. With this diversified range of auxiliaries, WITTMANN offers its customers solutions to cover all production requirements, ranging from independent production cells to integrated plant-wide systems.

The syndication of the various segments under the umbrella of the WITTMANN Group has led to complete connectivity between the various product lines, for the benefit of processors with an increasing demand for seamless integration of processing machinery with automation and auxiliaries.

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