

rPET packaging trend

Manufacturers count on energy-saving add-on technology from EREMA – including food contact compatibility

One year ago EREMA announced the relaunch of the Multi-Purpose Reactor (MPR) at the Discovery Day. Since then, the trend towards the food contact grade direct processing of PET products has continued to grow. More and more customers are enhancing their existing extrusion plant by adding the attribute of food contact compliance.

Ansfelden 11 July 2017 – Some 1.3 million tonnes of PET are already recycled every year around the world with VACUREMA technology from EREMA. The end products include food contact compliant preforms for the beverage industry, thermoforming sheet, fibres and strapping.

The order figures at EREMA show that the trend in PET recycling is clearly towards direct processing. This does without pellet production as an intermediate step and post-consumer PET flakes or PET production waste are processed directly and in one step to make end products. Twenty-four of these VACUREMA Inline systems have been shipped in the last 15 months alone and, additionally, a new process for the direct production of food contact grade preforms from post-consumer bottle flakes has been presented.

EREMA also offers the MPR, a highly efficient crystallisation dryer, for customers who are converting their existing PET extrusion plants for food contact compliant end products. The decontamination, drying, dedusting and crystallisation of different PET input materials takes place in just one step in preparation for extrusion.

"The MPR is becoming increasingly popular for customers who have a conventional crystalliser and pre-dryer and are confronted with long process times and high operating costs. With energy consumption at only 0.1 kWh/kg, the MPR is a crystalliser and pre-dryer at the same time, making it the economically interesting alternative," says Christoph Wöss, Business Development Manager for the bottle sector at EREMA. Input materials such as washed PET bottle flakes, ground PET flat sheet waste and virgin PET material plus mixtures of them are decontaminated and therefore already food contact compliant before extrusion. "The list of alternative suppliers of these PET extruders without pretreatment is long and tempting. However, later investments in dryers or high-maintenance decontamination modules reduce the profits of the PET producers in the end," warns Christoph Wöss.

Ideal addition for existing extrusion

On the one hand the relaunch of the MPR last year aroused the interest of new customers and, on the other hand, is confirmation for many existing customers to count on EREMA technology in the future, too. "We at Sky-Light place our trust in the MPR from EREMA when it comes to the food contact compliance of PET – and this is already the second time. In the new expansion of our production capacity we once again added an MPR to the twin screw extruder," says Sky-Light owner Søren Larsen. "The growth in output through the increase of the bulk density of PET flakes and flat sheet waste and the stable IV value are more than convincing from the point of view of an entrepreneur." Sky-Light is a specialist for individual packaging solutions. The Danish company produces several hundred million snap-on lids, cups, inserts, blister and transport trays for customers in the food, electronics and pharmaceutical industry.

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The technical and economical improvements in the course of the relaunch include being able to reduce the connected load by over 30 per cent while maintaining output. "The calculable operating costs in combination with the reliable output performance make for a foreseeable and short amortisation period," says Alimpet President Roberto Alibardi. The Italian company – as part of the Aliplast Group – makes thermoforming sheet from post-consumer PET which is then used to make thermoforming containers for the food industry, for example. Besides two MPRs the Aliplast Group also has VACUREMA systems from EREMA to produce food contact grade PET recyclates. Additionally, the relaunch came with a higher degree of automation and improved ease of maintenance with the vacuum system. The process water tank has been replaced by a utility-free vacuum pump which reduces operating costs. The compactness of the system has in general been reworked, which can be seen in a 20 per cent saving in space.



Fig. 1: Christoph Wöss in front of the MPR of Sky-Light at EREMA's production facility.
Photocredit: EREMA



Fig. 2: Everything in a single working step: the input material goes from the MPR into the extrusion system and is then processed directly to make an inline sheet product.
Photocredit: EREMA, Humer / Wallmen

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Fig. 3: The MPR from EREMA allows the decontamination, drying, dedusting and crystallisation of different PET input materials already prior to extrusion.
Photocredit: EREMA, Humer / Wallmen

EREMA Group

Besides EREMA itself, the EREMA Group comprises 3S, PURE LOOP (January 2015) and UMAC (beginning of 2016). With EREMA subsidiaries in the USA, China and Russia plus around 50 representatives in all five continents, the EREMA Group has a reliable network to realise customised recycling solutions for international customers. Around 500 people around the world now work for the Austrian company group which is headquartered in Ansfelden near Linz.

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