Press release

Significantly higher degassing performance in post consumer recycling

VOLEX technology reduces VOCs by 40 percent

EREMA is launching VOLEX technology at K 2025 as a quantum leap in plastics extrusion. This innovation sees water stripping technology installed on a single-screw extruder for the first time without compromising throughput or output quality. Made possible by proven INTAREMA® TVEplus® technology combined with a specially developed extruder screw and cylinder geometry in the degassing zone. EcoGentle® plasticising technology is also new for INTAREMA® systems, so it is now available for polyolefins as well.

Ansfelden/Düsseldorf, 9 October 2025 - The EREMA stand showcases an INTAREMA® 1108 TVEplus® equipped with the very latest technological innovations. Both of the new technologies are aimed at further increasing the quality of recycled pellets and, at the same time, improving cost effectiveness and process stability for recycling companies.

Degassing, but even better, with highly efficient water injection in the single screw extruder

The new VOLEX technology achieves impressive degassing performance with as much as 40 percent lower VOCs (volatile organic compounds) in the final recycled pellets than with INTAREMA® TVEplus® standard degassing, and up to 75 percent lower than the input material (in accordance with VDA 277). Fogging effects, which can be an issue in injection moulding applications for example, are significantly reduced. All this is achieved at a consistently high throughput without compromising on the mechanical properties of the final product. To achieve this, water is added to the plastic melt in precise doses and distributed evenly as an entraining agent. The prerequisite is the use of proven INTAREMA® TVEplus® technology in combination with a specially developed extruder screw and cylinder geometry in the degassing zone. "We didn't invent water stripping - but we have revolutionised it," says Sophie Pachner, R&D Manager Process Engineering at EREMA. "Only the INTAREMA® TVEplus® has the unique and proven Plus-Zone. This is located directly after filtration, upstream of degassing, and it ensures extremely homogeneous mixing of the entrainer into the plastic melt. The result is a really efficient stripping effect."

An intelligent dosing and control concept injects the water into the Plus-Zone with precision. The open-pored melt created by the evaporation of the water multiplies the exposed surface area of the melt a thousand-fold, shortening the diffusion paths to a minimum, and allowing VOCs and condensable substances such as limonene to escape efficiently. Together with an increase in the

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surface renewal rate of up to 320 per cent and the high free volume, the optimum interplay that takes place is a high-efficiency boost for degassing performance. VOLEX technology does not need any additional melt lines, diverters or manifolds, significantly reducing the risk of black spots and deposits. The result is a perfectly filtered and efficiently degassed melt, without compromising throughput or quality.

"VOLEX technology opens up completely new opportunities in post consumer recycling. Our customers are able to enter new applications where they can use higher proportions of recycled pellets in new products," says Markus Huber-Lindinger, Managing Director at EREMA. Examples can be found in a wide variety of film and regrind materials where particularly high degassing performance is required. The premium recycled pellets now produced at this quality level provide access to new capabilities for challenging applications, ranging from film for transport packaging, lifestyle products, and furniture, to high-quality automotive interior components and robust transport solutions such as shopping baskets.

EcoGentle® now also for polyolefins

Bringing EcoGentle® plasticising technology to the INTAREMA® series of recycling machines is another update from EREMA. For VACUREMA® and VACUNITE® recycling systems that have been in successful operation for years processing PET, EcoGentle® is now available for HDPE, LDPE, PP and BOPET applications as well. Existing EREMA systems can be retrofitted with this technology.

In combination with proven Counter Current® technology, EcoGentle® ensures perfect interaction between the intake section and the extruder screw. The material is melted particularly efficiently and gently. At the same time, the temperature of the melt is much lower. Along with reduced energy consumption and maximum flexibility in terms of the feed material, this process ensures particularly gentle treatment of the plastic melt and produces recycled pellets with a higher quality.

In the post consumer segment, EcoGentle® enables the reliable processing of regrind material with different bulk densities and viscosities. For multipurpose applications (HDPE and PP), the plasticising technology lowers the temperature of the melt by up to 13 degrees Celsius and reduces the power consumption of the extruder drive by up to six percent. In real life, this translates into stable processes, less wear, longer component service life, and lower production costs. EcoGentle® is also available starting immediately for inhouse recycling. With LDPE/LLDPE stretch film and with BOPET film material, the temperature of the melt is as much as 20 degrees Celsius lower, while the extruder drive consumes up to 15 percent less power.

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The key components for EcoGentle® are made by 3S, a subsidiary of the EREMA Group. The Austrian manufacturing specialist has many years of experience and extensive competence in the production of extruder screws and cylinders, including for large plasticising units.

"EcoGentle® delivers particularly smooth and energy-efficient plasticising, and at K 2025 we are pleased to bring the proven technology for PET bottle flakes to other material streams. The much lower melt temperature has a positive effect on the quality of the melt and the quality of the final recycled pellets," says Huber-Lindinger. "EcoGentle® and VOLEX are two ground-breaking technologies that open up more opportunities for high-value applications in recycling. We welcome visitors to come and see the latest technologies at the EREMA stand in Hall 9."

Edvanced Recycling **powered by EREMA**

The current campaign *Edvanced Recycling - EREMA prime solutions for advanced recycling* sees EREMA present a wide range of advanced plastics recycling solutions. More than 40 years of experience combined with practical application expertise are the basis for EREMA systems consistently delivering high-quality recycled pellets to meet precise quality specifications, from food and cosmetic grade to more straightforward applications. *Edvanced Recycling* shows how EREMA is working together with its customers to sustainably increase the proportion of recycled materials used to make new plastic products. All the information is available online at edvanced.erema.com

Find out more and visit EREMA at K 2025: **Hall 9, Stand: C09**
and at the *Edvanced Recycling* Centre: **Outdoor area, CE03**

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Photo:

At K 2025 in Hall 9: Markus Huber-Lindinger, Managing Director at EREMA, and Sophie Pachner, R&D Manager Process Engineering at EREMA, in front of the INTAREMA® 1108 TVEplus®. The machine is equipped with the new VOLEX technology for high-efficiency degassing and EcoGentle® for particularly smooth plasticising.

Photo credits: EREMA GmbH

EREMA Engineering Recycling Maschinen und Anlagen GmbH

Since its founding in 1983, EREMA Engineering Recycling Maschinen und Anlagen Ges.m.b.H has specialised in the development and production of plastics recycling systems and technologies for the plastics processing industry and is regarded as the global market and innovation leader in these sectors. The company is part of the Austrian group of companies EREMA Group GmbH based in Ansfelden/Linz, which employs around 920 people worldwide

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