

Boom in demand for recycling systems featuring EREMA ReFresher technology

Reduced odour is becoming an indispensable quality criterion in post-consumer plastics recycling

There has been a noticeable increase in demand for EREMA recycling machine combinations featuring ReFresher technology that reduces odour downstream of the extrusion process. This is due to the growing demand for high-quality post consumer recyclates that can be used for a wide variety of applications. Thanks to the combination of its INTAREMA[®] TVEplus[®] RegrindPro[®] machine with the ReFresher, EREMA has enabled the PCR-HDPE produced with it to be used in proportions of up to 100 percent for the production of packaging for direct contact with food and beverages, as confirmed by the U.S. Food and Drug Administration (FDA).

Ansfelden, 16. March 2021 - A look at the order books of the Austrian plastics recycling machine manufacturer shows that out of a total of more than 25 ReFresher modules sold, 19 were ordered in the past 18 months alone. This development goes hand in hand with the enormous increase in interest in the use of post consumer recycle. "Odour is a typical problem with contaminated household waste such as LDPE films, HDPE containers and PE closures. It is essential that odour is removed if the PCR material is to be reused in high quality packaging for cosmetic products or food," explains Clemens Kitzberger, EREMA Group Business Development Manager for Post Consumer Applications.

This development is driven by two factors: firstly, the ambitious recycling goals set by the European Union, specifying that by 2025, fifty percent of plastic packaging waste must be recycled, and secondly, the fact that recycling technologies are becoming more and more efficient. "Both of these factors have made possible for post consumer recycle applications things that were unimaginable a few years ago, and this trend is set to continue. That is because the EU's recycling goals will mean reusing 10 million tonnes of recyclates in new products every year in future," says Kitzberger.

An outstanding example of a high-end product made from post consumer recycle is the cosmetics packaging that was launched as a world first in spring 2019. This was a shower gel

bottle made from 100 percent PCR-HDPE. The recyclate is produced by an INTAREMA® TVEplus® RegrindPro® machine plus ReFresher module.

Closures as additional input for food packaging made of PCR-HDPE

The superclean recycling process was also certified by the FDA in August 2019 as suitable for the production of milk and juice bottles, as well as meat trays, disposable tableware and cutlery, provided the input material comes from milk and juice bottles. In November 2020, the FDA confirmed an additional input stream and more application uses for the recyclate treated using this process. In addition to all HDPE beverage containers, HDPE closures of HDPE, PP and PET beverage bottles can also be processed. Material containing up to 100 percent recyclate can be used in the production of containers for direct contact with food of all kinds.

"In order to produce a recyclate of such high quality from PCR material, the recycling machine needs to deliver very high decontamination performance," explains Thomas Hofstätter, Process Engineer at EREMA GmbH. "While the high degassing extrusion system removes mainly highly volatile, low molecular weight substances, the ReFresher ensures a significant reduction of the low volatile, high molecular weight organic compounds in the recycled pellets. At the same time, the thermo-physical process works in a particularly energy-saving way, because it makes use of the thermal energy of the recycled pellets that are still warm after the extrusion process."

"In addition to EREMA developments that have been industry-proven for some time, such as our Preconditioning Unit with Counter Current and RegrindPro technology, the combination of the extruder with the ReFresher was a key factor in obtaining FDA approval," confirms Michael Heitzinger, Managing Director of EREMA GmbH. "This super-clean process produces high-quality recycled pellets that will open up new, economically viable sales markets that can be developed by working together with partners from all along the value chain."

Customer tests now possible using industrial-sized ReFresher

People who are interested in the efficiency of this process can come and see it for themselves from April onwards in the expanded Customer Centre at the group's headquarters in Ansfelden/Austria. An extruder-ReFresher combination for testing is now available for the first time on an industrial scale.

For carrying out tests at the customer's plant, EREMA also offers a compact and mobile ReFresher module that can be integrated into the on-site recycling process.



Caption:

In the EREMA Customer Centre, test runs using an industrial class extruder-ReFresher combination can also be carried out from April onwards. Michael Heitzinger, Clemens Kitzberger and Thomas Hofstätter very much hope that more customer visits will be possible soon. Photo credit: EREMA

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 600 people worldwide.

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