

Decolourisation to increase pellet quality in plastics recycling**KEYCYCLE presents industrial-scale deinking solution upstream of extrusion**

KEYCYCLE GmbH, a member of the EREMA Group, is a global provider of turnkey solutions for new plastics recycling projects and of optimisations to existing plants. The whole recycling process is covered, including sorting, washing, extrusion and decontamination. At K 2022, the company will present its comprehensive package of planning and consulting services, as well as a new deinking technology for decolourising printed plastics prior to extrusion.

Recycling projects, especially in the post-consumer segment, are complex. While several technologies need to be linked together, material logistics and the interfaces between the individual process steps also have to be organised. With its engineering and consulting services covering end-to-end factory and logistics planning as well as full systems implementation up to the complete plant ready for operation, KEYCYCLE has become well-established in the 3 years it has been on the market. At the same time, the company has taken on a specific challenge for recycling processes: printing inks. At K 2022, KEYCYCLE will present a solution already proven in practice featuring decolourisation technology upstream of extrusion for heavily printed film and regrind material. This solution can also be integrated into industrial recycling processes.

Printing inks are a major challenge in the recycling of plastics and there are different strategies for solving it. One way is to avoid or reduce printing on plastic in general. However, it is often not possible to do without printing completely, given the wide range of applications for film products. "That is why we are focusing on decolourisation technology that can be integrated into the plastics recycling chain as a process step," explains Michal Prochazka, Managing Director of KEYCYCLE GmbH.

New: deinking system with a throughput of 1,200 kg per hour

In the patented decolourisation process, the ink is dissolved from the surface of the shredded film or regrind material before it is fed to the recycling extruder. Only water-based chemical

components are used, which makes the deinking process particularly environmentally friendly. "Eight deinking lines have since been ordered, five of which are already in operation at customers' plants and are delivering very impressive results," says Prochazka, reporting on the successful launch. He still sees great potential in this new technological development for environmentally friendly and cost effective recycling solutions. "In recent months, our focus has been on scaling up the existing plant type with a throughput capacity of 500 kilograms per hour to the latest industrial-scale solution with a throughput of 1,200 kilograms per hour. This step enables our customers to decolourise production waste even more efficiently, while also paving the way for this technology to enter the post-consumer recycling market."

Trade fair visitors who would like to see for themselves the improvement in quality that the deinking process brings to the recycling of printed inhouse and post-consumer film material will have two opportunities to do so at K 2022 during live recycling demonstrations in the EREMA Circonomic Centre:

Saturday, 22 October, 10 a.m. - 1:30 p.m

PP film flakes from household waste that have been cold washed and processed in a deinking plant will be recycled.

Sunday, 23 October, 10 a.m. - 1:30 p.m.

LDPE film flakes from production waste previously decolourised in a deinking plant will be recycled, followed by the same input stream without deinking treatment in a second recycling demonstration. This allows a direct comparison of the differences in quality.

KEYCYCLE is also at the EREMA Group stand, Hall 9/C03



Photo:

Heavily printed film (left) is colourless following the deinking process (right) and as a result can be processed in the recycling extruder to make high-quality recycled pellets (bottom). Photo credit: EREMA

KEYCYCLE GmbH

KEYCYCLE GmbH is a global provider of turnkey solutions for new plastics recycling projects and for system optimisations. Our range of services includes engineering and consulting, project management, manufacturing and logistics planning and complete implementation up to a turnkey system ready for operation. The company is based in Ansfelden/Linz and is part of the Austrian EREMA Group, whose experience and technological know-how also benefit KEYCYCLE customers.

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