

With KREYENBORG's new technology, odor-contaminated post-consumer plastics get "second life"!

A large amount of plastic waste from consumer-market packaging is generated daily. In order to obtain high-quality plastic recyclates from these material streams, and to be able to make them reusable for high-quality applications, odorous substances that have migrated into the material during the course of the product-life must be removed. Up till now, these odorous substances could be removed only inadequately through recycling processes. But with the introduction of KREYENBORG's new technology, *IR-FRESH*[®], the scenario has changed.

***IR-FRESH*[®]: new developments for odor-minimization in granulates and regrinds.**

KREYENBORG has developed sustained, high-level expertise in plastics recycling, with solutions for decontamination of PCR-PET, crystallization, drying, and heating of bulk materials, using infrared technology. Further development of this technology has brought to the fore its newest member among its products, the *IR-FRESH*[®] - a modular system for the safe and efficient reduction of interfering odors in plastics.

In the first process step, an infrared module installed above the material bed heats the material quickly and directly to the optimum temperature level for the plastic in question. In this process, the continuous rotation of the drum ensures a homogeneous mass flow with a defined dwell time (applying the first-in/first-out principle). Due to the rotation and mixing elements integrated in the spirals, the material is continuously mixed in the drum with constant surface exchange. Combined with controlled heating, this ensures considerable odor elimination, even within a very short residence time.

In the second process step, the remaining odorous substances in the regrind or granules are removed by a thermal-physical cleaning process in the *IR-FRESH*[®] *CONDITIONER*. This *IR-FRESH*[®] *CONDITIONER* - an insulated hopper - keeps the material to be decontaminated at a temperature range ideal for the decontamination process by means of a hot purge-gas. Excellent results for deodorization and decontamination can be achieved through the interaction of the main process parameters of air-flow, temperature, and residence time.

Due to its modular design, the *IR-FRESH*[®] process can be used continuously in two stages both for regrind - before the extrusion process - and for granules after the extrusion process. It is possible to either integrate the *IR-FRESH*[®] *CONDITIONER* as an individual step in the process chain or to operate it as an independent, stand-alone solution either continuously or discontinuously. The *IR-FRESH*[®] system is also suitable as a retrofit solution for integration in existing plants. Together with the customer, KREYENBORG will develop a solution that is optimally tailored to the individual customer's process.



Testing the technology

In the KREYENBORG Plastics Trial Center, located in Senden, North Rhine-Westphalia, Germany, appropriate equipment is available for tests that are tailored to the specific customer's requirements. Relevant tests can be carried out on a laboratory scale of a few kilos, as well as on realistic larger-scale tests.

Contact KREYENBORG's team for a trial at:

plastics@kreyenborg.com

www.kreyenborg.com

