



Best Practice
Post Consumer Recycling

METAMORPHOSIS

> FROM MUNICIPAL WASTE TO FIRST-CLASS PELLETS <

DSD 310 - a name to bear in mind. Because it refers to a post-consumer plastic which is particularly challenging to recycle: waste PE film from the household and food sectors which is at times heavily contaminated and has PET and PA barrier layers which are hard to filter. Cedo Recycling in the Netherlands knows how to handle this material properly and transforms it into clean, quality recycled pellets on a day-to-day basis. The key to success: an INTAREMA® TVEplus® with efficient double filtration and high-performance homogenisation package.



Input on the left, output on the right: the INTAREMA® TVEplus® masters the transformation stage between the two thanks to efficient double filtration and a high-performance homogenisation package.

Ton Emans, Managing Director of Cedo, puts it in a nutshell: "The recycling of DSD 310 plastic films from the municipal post-consumer sector is still a challenge for recyclers." Nevertheless, when Cedo was acquired by Straco in 2014 the new shareholder made a conscious decision together with Ton Emans to invest in the recycling of post-consumer household waste. "Due to

its many barrier layers of PET and PA and the high organic contamination, the DSD fraction 310, i.e. film packaging for food, is very difficult to recycle. The thermal utilisation of DSD 310 which has been common until now was, in my eyes, not in the sense of the circular economy. I was convinced that you can reuse the raw material at a profit and in an environment-friendly way."

» **DUE TO ITS MANY BARRIER LAYERS OF PET AND PA AND THE HIGH ORGANIC CONTAMINATION, DSD 310 IS VERY DIFFICULT TO RECYCLE.**

Ton Emans, Managing Director Cedo

JOINT DEVELOPMENT CEDO AND EREMA

This is the reason why Cedo started a tuning process with EREMA to develop the appropriate recycling method together. An INTAREMA® 1512 TVEplus® was customised especially to meet these requirements. "It was by no means easy to process such a difficult material to make high-quality recyclates. A special add-on was required for the INTAREMA® to remove the complex contaminants step by step: the double filtration homogenisation package. Months of trials resulted in the desired recyclate quality," says Clemens Kitzberger, EREMA Business Development Manager for Post Consumer Recycling, looking back on the successful development process.

Thanks to Counter Current technology the benefits of the preconditioning unit can be implemented even better and with greater stability. In combination with EREMA Airflush technology, anything which adheres to the film - such as moisture, organic contaminants or printing inks - can already be degassed before the extruder. The already degassed and thoroughly warmed input material then goes into the extruder screw where the polyethylene is melted with minimal mechanical stress.

DOUBLE FILTRATION: FIRST FINE, THEN COARSE

Polymers with a high melt temperature such as PET or PA and also solid matter such as aluminium or wood are untouched and can be separated and removed using a Laserfilter with 90µm screens. The material then goes into the new extruder-screw-mixer developed for this purpose in the TVEplus® zone in which homogenisation takes place. The homogeneous melt is heated to degassing temperature. The double degassing is followed by the second filtration by means of the SW RTF, the EREMA backflush filter. This filters minimal, rubber-like residual particles through its large filter area and with coarse 200µm screens at an extremely low pressure level – the high screen service life means a considerable saving in costs. The result is recyclates with the best possible degassing and filtration for the blown film industry. "Thanks to the close collaboration with Cedo we have been able to develop the homogenisation package with the double filtration for this application-specific adaptation of the system so it is ready for series production. The best praise for us is that Cedo has placed an order for two more INTAREMA® systems," says a delighted Clemens Kitzberger.



THE COMPANY

The 49 employees at Cedo Recycling located in the Dutch city Sittard-Geleen produce around 30,000 tonnes of plastics recyclate every year. Besides agricultural films, the subsidiary of the Cedo Group also processes DSD 310 films. The machine used for this, an INTAREMA® 1512 TVEplus® with Laserfilter and homogenisation package, achieves throughput of around 1,050 kg of quality recycled pellets per hour. The plastic recyclates which are produced are shipped to Cedo Great Britain to make film products such as bin bags once again.



Double filtration a recipe for success: particularly effective in the case of challenging DSD 310 films.