

Alternative Wastestreams – tackling unused wastestreams by dissolution recycling and dedicated sorting

Today's wastestreams are becoming more and more challenging from a perspective of a waste disposal company. Different topics and trends are nowadays addressing the management of wastestreams and leads to a strategic change to handle and treat them.

Therefore we need a change in mindset to tackle all types of valuable materials to recycle them and bring them back into the loop. This necessary change is directly linked to the requirements of the legislation, but also caused by new packaging materials and hybrids, sorting qualities and especially end-user- behavior.

To address the idea of the circular economy, it is not enough to focus on today's available sorting fractions and already recycled wastestreams. We need to find solutions for the entire wastestream to enable the industry to achieve the goals of legislation like the PPWR. Conventional separation and recycling technologies for mixed polymer waste have reached their technical limits. More than 2/3 of the postconsumer household plastics waste is not reused because of containing mixed flexible packaging films, high contaminations and papers which remain unsorted and are incinerated or landfilled.

Dissolution Recycling, especially the CreaSolv® Process – a registered trademark of CreaCycle GmbH) process precisely separates different polymers from a mixture of plastics waste and enables us with dedicated sorting processes to tackle unused wastestreams and achieve much higher recycling quotes.

Starting with a dedicated and a simplified sorting technology different kind of sorting fractions are produced. In the processing step of dissolution recycling a selectively acting solvent physically dissolves individual polyolefin grades from mixed post-consumer flexible packaging waste. Insoluble residuals such as labels or inorganics, other polyolefins and polymers, pigments, debris, organic residues can be effectively removed from the solution. In consecutive process steps the polymer solution is purified, stabilized and converted into PCR pellets. The solvent, non-hazardous and safe in industrial application, is reused in a closed loop. From the remaining insoluble residues further polyolefin grades can be extracted with the same process by adjusting the parameters or modifying the solvent.

The Dissolution Recycling process focuses on plastics waste streams, not only flexibles and multilayers, that cannot be recycled with existing technologies today and turning waste streams into high quality products for direct re-use.