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Recycling-friendly packaging design is the starting point for high-quality recyclates in resource cycles

Recyclates are materials that result from recycling secondary resources. Within this context, there is a difference between post-consumer recyclates (PCR) and post-industrial recyclates (PIR). One source of PCR is used packaging from kerbside collection (yellow bag / yellow bin and commercial collection streams). PIR involves industrial production waste from plastic packaging or products that have not yet reached consumers.

Recyclates can in turn be used to make a variety of new products, packaging types and designs, with both short and long lifecycles. Food packaging is still largely an exception because there is currently no approved recycling process for products that have contact with food except for polyethylene terephthalate (PET). It is already technically possible to produce packaging made of 100% recyclates. But depending on factors like dye and the size of the label, the percentage goes down.

Example 1

The plant pots pictured here are made of at least 80% polypropylene (PP) post-consumer recyclates. This figure has to be calculated in relation to the dye in the pots, the use of filler material and other added materials in the production process. It is not uncommon for dyes to account for up to 10% of the overall product for plant pots. The blue plant pot is made of 100% recyclates. The plant pots made of polypropylene recyclates are themselves 100% recyclable.



Example 2

Here we see buckets made of more than 90% polypropylene post-consumer recyclates, including the dye and any labelling.

The labels are so-called 'in-mould labels'. These labels are made of a polypropylene film (virgin material). They are shrink-wrapped around the buckets with heat during the production process. For material technology purposes, both the bucket and the label are therefore a single recyclable material. In this example, the carrier handles are made of 100% recyclates because the weight of the contents permits that from a load-bearing perspective.

The buckets made of PP recyclates are 100% recyclable.



Example 3

In this example, the buckets are made of 75% polypropylene post-consumer recyclates and 25% recovered ground particles from the producer's own industrial production. The bucket and lid can be made of up to 100% PCR.

The recyclates used here are made of a mixture of plastic waste and therefore assume different shades of grey in the recycling process. The buckets made of polypropylene recyclates are 100% recyclable.



Example 4

Here we see two other buckets that underscore the interaction between recyclates and virgin plastic material. They are made of 75% polypropylene post-consumer recyclates and 25% recovered ground particles from the producer's own industrial production. The bucket's lid in the top picture is made of 100% virgin polypropylene.

The bucket's lid in the lower picture is made of 50% polypropylene post-consumer recyclates and 50% recovered ground particles from the producer's own industrial production. Because of the contents' weight and the necessary carrying robustness, the plastic handles of both buckets are made of 100% virgin material.

The labels for both are 'in-mould labels'. They are made of a polypropylene film (virgin material) that is shrink-wrapped to the buckets with heat during the production process. For material technology purposes, both the bucket and the label are a single recyclable material here as well.

Both buckets and lids can be made of 100% recyclates. The buckets are 100% recyclable.

