

... recycling-friendly design for lightweight packaging

Composites versus mono-materials from yellow bins and sacks

Many companies are currently replacing pure plastic packaging with fibre-based packaging plus a plastic coating. However, even if packaging mainly consists of paper – applying a plastic coating instantly limits recyclability. As a rule of thumb, only the fibre portion of that type of composite packaging is recyclable. Paper mills try to separate the fibres from the plastic. Depending on the coating and the paper mill, the separation may or may not be successful. The plastic portion is generally rejected and disposed of. Recovery capacity is limited for composite materials.



Mono-material packaging with a corresponding recycling infrastructure has a better recyclability profile.

Worked examples:

1. Packaging of dried goods in the foodstuffs sector

The picture shows packaging of dried goods in the foodstuffs sector: the paper packaging (left) is coated with polyethylene (PE) on the inside and, at a weight of 9 grammes, is nearly twice as heavy as the packaging made of pure polypropylene (PP) plastic (right), which weighs only 4.9 grammes.

The film bag is made of 100 % polypropylene and is printed on directly. This mono-material packaging is 100 % recyclable.

The mono-material packaging made of polypropylene is preferable in terms of waste prevention because of its recycling-friendly design.



2. Plastic bowl made of pure polypropylene (PP) and paper composite bowl

This picture shows two takeaway bowls: the plastic bowl made of pure polypropylene (right) is 100 % recyclable. It weighs 19.4 grammes and is 60 % lighter than the paper composite bowl (left), which weighs 32.5 grammes.

The paper composite bowl is made of cardboard with a plastic coating. The lid is made of polyethylene terephthalate (PET). The recyclability of this bowl is 54 % at most.



In practice:

Mono-material plastics versus fibre-based packaging

- Plastic packaging in the pictures: 100 % mono-material (virgin) polypropylene; 100 % recyclable.
- Fibre-based composite packaging: plastic-coated paper packaging is not fully recyclable.
- It can be significantly heavier, meaning that more packaging is used.

Conclusion:

Recyclable, weight-optimised packaging solutions made of mono-materials meet the demands of waste prevention. As soon as a plastic coating is applied, recyclability becomes limited.