

**Abstract**

# Where is Packaging Heading?

## Potential and Limits of Material Reduction and Circularity

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**A packaging-free world is an illusion. This is because packaging is useful. It protects a product's contents from external influences and helps to transport and store products efficiently. Packaging prevents damage and spoilage and contributes to the reduction of food waste. In this sense, there are also new legislative requirements to consider. It is also clear there is no doubt we should produce less packaging waste, separate waste better and recycle it or, alternatively, be able to re-use it.**

### WRAPPING FOOD IN PAPER: OFTEN INSUFFICIENT PRODUCT PROTECTION

At the centre of the discussion about waste is the material plastic. A material that is extremely versatile, but can cause serious environmental damage if left untreated. In principle, it can be recycled well, but this often requires prerequisites such as a sensible "design for recycling". Particularly in the food sector, the protective properties of paper are often not sufficient, which is why wrapping paper is often coated with plastic. The resulting mix of materials overtaxes modern recycling plants, so the only result is thermal recycling, i.e. incineration, of the valuable raw materials plastic and paper.

### SALES BANS: NEW REGULATORY MEASURES BY EUROPEAN LEGISLATORS

Politicians are also taking a close look at plastic. With the Single-Use Plastics Directive of 2019, for example, the EU Commission wanted to show determination and initiated sales bans for certain products made of plastic. Cotton buds, cutlery, drinking straws or balloon sticks made of plastic may no longer be sold. In addition, other products, such as drinking cups, will be subject to new rules. These include an obligation on the part of the restaurant trade to offer alternative reusable solutions and a cost-sharing obligation on manufacturers for the cleaning of contaminated public areas.

### FOOD PACKAGING: SPECIAL REQUIREMENTS FOR RAW MATERIAL QUALITY

A functioning recycling economy is indispensable. However, the challenges with regard to waste and raw material separation as well as the prerequisites for effective resources-saving recycling are not always easy to meet. Poorly separated waste, long-lasting impurities, hardly separable composites – all this makes recycling usable for numerous applications difficult. After all, packaging for personal care and cosmetic products as well as for foodstuffs makes special demands on the quality of the raw materials. For this sector, the improvement of recycle qualities is an important lever for reducing the quality disadvantages of plastic recyclates compared to virgin material.

Investments in the technical progress of sorting and reprocessing processes, e.g. through the use of digital watermarks or chemical markings on the packaging, are necessary. Packaging will continue to be needed in the future and in most cases its protective and freshness-keeping function cannot be dispensed with. Legislators must therefore not succumb to the temptation of detailed regulation and prohibitive policies. For example, it would hardly be practicable to lay down rigid size ratio requirements for products to packaging. A ban or excessive burdening of individual packaging materials can lead to ecological regressions, as the current boom in hardly recyclable composites made of paper and plastic illustrates.

### IMPROVED CARBON FOOTPRINT THANKS TO PACKAGING

Compared to an unpackaged product, packaging can help improve the carbon footprint when the product would otherwise be damaged or spoil more often and would have to be produced again. This is because the carbon footprint of the packaging used in the packaged product is usually small. It ranges from butter at 0.4% to fish fingers at 3.2%, and milk chocolate at about 7.0%.