



# The world's first completely recyclable stand-up pouch

## What is the innovation?

The pouch, including the spout, the cap and printed sleeve are made of a monomaterial (polyethylene, or PE)

No use of adhesives

No use of barrier materials (e.g., EVOH)

Certificate regarding its complete recyclability issued by the independent Institute Interseroh and HTP-Cyclos

Printed area is separate from the pouch itself and fused to it only at the edges



### Current Situation:

Nearly all the pouches now on the market have a layered structure in which different types of plastic (e.g., PET and PE) are combined. Because sorting facilities cannot clearly identify those plastics, the individual components cannot be separated for recycling purposes.

→ The layered mix prevents re-use and the materials go into thermal recycling (incineration).

### USPs of our pouch:

The concept's innovation is in the two printed and removable plastic sleeves on which the design and product information are found.

When the pouch is recycled, the packaging is shredded. The printed and unprinted parts of the pouch can be sorted by color (in flake-sorting machines).

→ This method extracts 85 percent of all the packaging material for high quality purposes. The printed remnants can be recycled in a colored fraction.

Our monomaterial packaging solution overcomes the mentioned restrictions. We have a completely unprinted container of PE with an integrated spout and cap also made of 100% PE.

The pouch is designed to allow 100% material recycling. That goal can be reached because no contaminants at all go into the packaging during its production. No adhesives, barrier materials (such as EVOH) or other polymers are used.

## Impact on other industries:

- Pouch will be developed for other uses such as packaging for foodstuffs or animal feed.
- The high-quality recyclates from the pouch can be a future source and raw material for high-quality secondary raw materials.
- The pouch's development has had an effect on the design of sorting facilities. Up until now there was no sorting system or recycling method that could handle plastic sheets (used to make the removable sleeve) measuring less than DIN4 (210 x 297 mm). So the plastic was sent instead into thermal recycling.

→ **Practical example:** The pouch was considered in the design of sorting facilities in Gernsheim, one of the most modern sorting systems in Germany. The machine identified the pouch correctly and fed it into material recycling.

## The principle of Reduce-Reuse-Recycle:

Compared to a bottle, the pouch saves up to 70% packaging material for the same amount of product (**reduce**).

Thanks to the refill pouch, the original bottle can be refilled again and again (**reuse**).

The pouch can be recycled completely. The plastic remains in a closed material loop (**recycle**).

REDUCE OR  
REUSE OR  
RECYCLE



**100% EFFECTIVE CIRCULARITY**



### Another special feature:

The original bottles for the Frosch brand are made 100% of used plastic recovered from post-consumer waste collections.

## Awards:

- German Packaging Award 2019 in the "Sustainability" category
- Kompack Green Packaging Star Award 2019
- Packaging Innovation Award 2019 from Dow in the "Collaboration Honorable Mention" category and Diamond Finalist
- WorldStar Packaging Award 2020 in the "Household" category
- German Design Award 2021 in the category "Excellent Communications Design – Eco Design"
- Circularity Champion Award 2024 in the category "Innovative Solutions"



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