



HELIOS

P A C K A G I N G

WHITEPAPER

**An optimized and environmentally-
conscious way of work**



Uilenbaan 200 unit 3b
B-2160 Wommelgem



+32 (0)3 324 18 10



info@heliospackaging.com
www.heliospackaging.com

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ABOUT

01. About Helios

Helios Packaging is your go-to partner for all shrink sleeve and labelling applications. We process both small and large volumes. Our committed and expert team finds the right solution for you and monitors that our products find their way to the market, packaged in a professional manner.

A total solutions provider

Helios Packaging is a Total Solutions Provider. Our top priorities are:

- Product quality
- Food safety
- Meeting delivery deadlines
- Flexibility.

An optimized way of work

We're continuously optimizing our way of work and the processes within our company.

We do this to...

- meet all legal, regulatory and customer requirements.
- meet the highest standards in terms of quality (in accordance with ISO 9001) and food safety (in accordance with ISO 22000)
- use the available resources and energy sources wisely, to minimise waste.

ENVIRONMENT

02. Environment Friendly Film Options

Recycled Raw Material: PET film made out of more than 30% recycled plastic

Already today we have suppliers of our shrink PET film whom are using approx. 30% recycled PET material (post-industrial) in producing their shrink film. In the future they will try to increase this amount up to 60%.

Floatable film for PET-bottles: film has a specific density of < 1.0

During the recycling process, the sleeve material ensures clean separation from clear PET bottles by floating to the top of the caustic washing solution, unlike PVC and PETG labels, which sink with PET bottle material. The PET bottles will be recycled, the floating material (shrink sleeve) is burned.

Recyclable: designed to be recycled with the container

The first step in the recycling process is separating the different kind of container materials: PET from HD/LDPE. The material of the shrink sleeve may not influence this NIR-scanning separation technic. (See guidelines at <https://www.plasticsrecyclers.eu>)

Washable ink:

To avoid the pollution of the recycled PET material, the ink producers are developing a washable ink. So, during the recycling washing process the ink flakes are separated from the PET material (sleeve) without dissolving in water. This way the clear PET from the container and sleeve can be recycled.

High Yield: white opaque, yield advantage and UV & lightblocking

White Micro-voided film with high opacity and reduced specific density (specific density 0.98 gr/cm^3 before shrink) resulting in yield advantage and less ink consumption. (no white ink necessary) BiColor (inside black/outside white) Rigid PETG film with excellent light blocking properties. This film can be used around clear HDPE/PET bottles instead of using opaque bottles that can pollute the recycling process.

PLA: renewable resource based

Poly(lactic acid) or polylactide (PLA) is a biodegradable thermoplastic derived from renewable resources such as corn starch, tapioca or sugar cane. Unlike petrochemical based resins, this unique film is 100% compostable.

This material will pollute the recycling process, so the sleeves must be removed before recycling. (consumer/first recycling step)

DOWNGAUGING

03. Downgauging Film Thickness

Standard shrinking PET film has a thickness of 50 micron. Today the new application lines make it possible in combination with new shrink films to down gauge the thickness of the film up to 40 micron and even less. This down gauging in combination with a lower specific density of the film, make it possible to reduce the weight of the shrink sleeve up to 35%.

- HYBRID film with a specific density of 1.12 gr/cm³. PET film 1.31 gr/cm³ = (-15% weight)
- Down gauging from 50 to 40 micron. (-20% weight)

Reducing CO₂:

The carbon footprint of plastics (LDPE/PET) is about 6 kg CO₂ per kg of plastic. (producing-logistics-recycling-burning) (<https://timeforchange.org/>)

CO₂ saving for 1 ton shrink sleeves:

- Down gauging from 50 to 40 micron: - 200kg film
- Specific density from 1.31 to 1.12: -120kg weight
- Total of: -320 kg film x 6kg CO₂ = - 1.920kg CO₂



REMOVABLE

04. Removable Sleeves

Perforation:

The shrink sleeve can be provided with a linear perforation. In contrast with a self-adhesive label the shrink sleeve isn't fixed with glue on the container. This way the consumer can easily remove the shrink sleeve after product use and before waste disposal.

De-seaming:

The seam of a shrink sleeve is fixed by a seaming solvent. The seam needs to have a certain strength during the shrinking process. By using a special seaming solvent, which will de-seam during the washing process of the container in the recycling process, the shrink sleeve will be separated from the container. This way the container material can be recognized correctly during the IR-scanning.

PRISM (Under validation):

Plastic Packaging Recycling using Intelligent Separation technologies for Materials (PRISM) is a way of rapidly sorting packaging based on intelligent labels with invisible markers that can be detected and sorted using existing systems. The sleeves and markers are removed completely by the recycling process. Sorting is accomplished using modifications to existing NIR sorting machinery. The new technology can boost recycling plant yields with efficient ways of sorting materials such as sleeved HDPE milk bottles and sleeved PET containers to increase recovery of food grade plastics and open up new markets for recovered plastics.