

salling group

Plastic Packaging Principles

GROCERY FRESH

May 2019

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PLASTIC PACKAGING STRATEGY

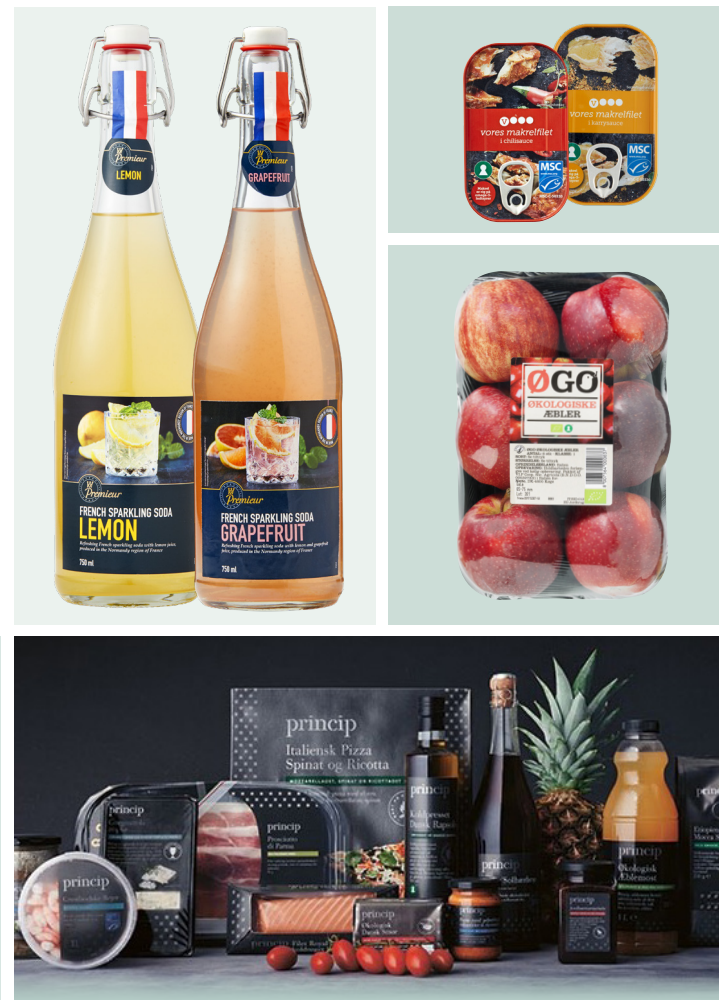
These Food Plastic Packaging Principles are developed to achieve the goal of a 100% recyclable packaging portfolio in the Salling Group private label sub brands and reduce plastic in the packaging in all food and nearfood private labels with 30% by 2023.

First step is to enable recyclability of the Salling Group packaging to ensure that all packaging can be recycled for other purposes. Another goal is the use of 30% recycled plastic by 2023, and therefore an important step is to start using packaging containing recycled plastic.

The final goal is to further ensure that as high a percentage as possible is recyclable in a circular sense: allowing the meat tray to become a meat tray again.

Recyclability is not in opposition to food safety, but should be seen as an extra but equal parameter to evaluate packaging quality and an initiative to ensure an efficient resource economy in a long perspective.

These Food Plastic Packaging Principles are developed in May 2019 and are based on the existing Danish recycling system and existing technologies.



PLASTIC PACKAGING PRINCIPLES

- #1 We remove and reduce our packaging when possible.
- #2 We use mono material or material in compatible polymer structures.
- #3 We use PET versions where possible, otherwise we use PP and PE versions
- #4 We use packaging where all components can be easily separated.
- #5 We print directly on the packaging or use plastic labels.
- #6 We use recycled material when possible.
- #7 We use clear plastic if shelf life allows it.
- #8 We clearly communicate material specifications and disassembly requirements on each packaging.
- #9 We continue to use packaging in glass, paper and aluminium.
- #10 We do not use biodegradable or bio-based plastic.



#1 WE REMOVE AND REDUCE OUR PACKAGING WHEN POSSIBLE

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We use the best performing material in relation to recyclability and food safety but we also work continuously to remove and reduce our packaging to leave as small a CO₂ foot print and as little negative environmental impact as possible.

Therefore, we make sure to ask all suppliers to investigate the opportunities to reduce and remove within the following areas:

- Can packaging components be eliminated for example handles, lids, zip locks, spouts etc.?
- Can the thickness of the packaging be reduced?
- Can the packaging format be adapted to fit the size of the product?
Can we alternatively, change the quantity to fit the packaging format?



#2 WE USE MONO MATERIAL OR MATERIAL IN COMPATIBLE POLYMER STRUCTURES

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We use packaging where the individual parts are made of mono material or material in compatible polymer structures to ensure a high recycling quality. The use of the correct packaging material is crucial to establish a successful recycling process and still deliver on the essential packaging requirements.

- Multi material could be packaging in several layers for instance plastic/paper or plastic/metal or different types of plastic material like PET/PE.
- Multi material packaging poses a range of obstacles when it comes to recycling the materials:
 - Complicated for consumers to sort out correctly.
 - Mismanaged at recycling facilities.
 - Leads to lower grade or contaminated recycled end product.
- In the current reprocessing and with the existing technology packaging made of a single plastic type ensures a high quality recycling.
- Plastic foils can consist of several layers and still be mono material if the layers are different versions of the same polymer e.g. PP (polypropylene).
- For some food packaging specific barriers are needed and in these cases we allow the use of multi materials as long as these have compatible polymer structures (PE and PP versions).



#3 WE USE PET VERSIONS WHERE POSSIBLE, OTHERWISE WE USE PP AND PE VERSIONS

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We ask for PET material to the widest extent possible.

At the moment PET is the only option for food packaging that can be circularly recycled – e.g. a meat tray can become a meat tray again.

- PET as the preferred choice promotes circular material use
- According to the current state of law and technology PET is the only plastic material option that is allowed to and can be recycled in a circular way; a bottle can become a new bottle.
- Keeping the material at the highest functional level creates the highest energy and resource savings in the total life cycle span.

If PET is not technically feasible, we use PP and PE material that can be recycled into other products.

- There is a well-established market for recycled PP and PE for non-food related products which creates a demand for recycled feedstock which our packaging can provide.



#4 WE USE PACKAGING WHERE ALL COMPONENTS CAN BE EASILY SEPARATED

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We use packaging where the components can easily be separated and discarded individually since this improves the quality of the recycled plastic.

- Attached secondary component e.g. lid, trigger, seal or label will contaminate the bulk of the recycled material unless the label is made from the same material.
- When individual parts can be separated it:
 - makes it easier for consumers to sort packaging waste correctly.
 - can be sorted separately and allows for higher quality of recycled material.
- Packaging that easily separates into individual parts allows for lid and body of packaging to be of different types of plastic material with different functionalities without compromising recyclability.

Do



Honey

The bottle and the cap is rPET and the label is easy to remove.

Don't

Carrots

This foil is a mix of different materials. It should be turned into a mono material.



#5 WE PRINT DIRECTLY ON THE PACKAGING OR USE PLASTIC LABELS

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We either print directly on the packaging or use plastic labels since this work better in the following recycling process.

- If labels cannot be fully separated from the packaging, we prefer print directly on the plastic packaging.
- Labels must be easy to mechanically separate from the main packaging, either:
 - By using easy-peel glue or soluble glue that dissolves in 60 degrees' water.
 - By using a sleeve around the main component – here paper or cardboard is allowed since it is not glue to the main component
 - be cardboard band that separates completely from plastic material when opening.

We do not allow full body shrink foil for decoration, labelling or as collation wrap for multi-packs.

We allow print to fully cover packaging if the print works as a barrier to light and thereby improve shelf life. Otherwise print should be limited.



#6 WE USE RECYCLED MATERIAL WHEN POSSIBLE

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We aim for packaging based on as much recycled material as possible. Our primary concern is that all packaging can be recycled, whether it is virgin material or recycled material.

We demand packaging based on as high percentage of recycled material as possible if it is technically feasible, financially justifiable, and does not compromise core packaging requirements.

- Demanding recycled material is a way to support the market for recycled material and encourage investments in the optimisation of quality recycling.
- An optimised procedure drives the purchasing price of recycled material down.

At the moment it is only allowed to use recycled PET (rPET) for food packaging.

Recycled PP and PE (rPP and rPE) is allowed for other packaging than food packaging, but at the moment it can only be provided for hard packaging like boxes and bottles since it is still not technically feasible to produce for an industrial production of thin plastic like foil.

1 kg of recycled PET material saves 2,6 kg of CO₂ compared to production of new PET material.



#7 WE USE CLEAR PLASTIC IF SHELF LIFE ALLOWS IT

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We use clear plastic when shelf life allows it because clear plastic has a wider application scope and therefore a higher recycle value.

- Clear plastic can be recycled into clear plastic again and when it gets too cloudy colour is added and in the end it will be black.
- Clear plastic can be recycled to any colour as recycled material.
- Coloured plastic will create a mixed colour that will have black pigments added to be aesthetically pleasing.
- Pigments colouring limits the applicability of the plastic e.g. black plastic can never become other colours than black again.

If we are not able to use clear plastic, we use as light coloured plastic as possible.

Juice
A clear PET bottle
and a label that is
easy to remove.



Cherry tomatoes
Mono material container
in recycled PET (rPET) with
easy peel-off label.

#8 WE CLEARLY COMMUNICATE MATERIAL SPECIFICATIONS AND DISASSEMBLY REQUIREMENTS ON EACH PACKAGING

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We clearly communicate material specifications on product labels:

- Including percentage of recycled material
- Disassembly and sorting requirements in text and visual
- Pictograms to help the consumer disassemble and discard the packaging.

We require our vendors to inform in detail the materials that have been used for the packaging so that we have sufficient packaging specifications.

We require vendors to ensure that any packaging changes are coherent with our packaging principles.

It must be clear to consumers what all parts of the packaging is made from and how to best discard the individual parts.



#9 WE CONTINUE TO USE PACKAGING IN GLASS, PAPER AND ALUMINIUM

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We continue to use packaging in glass, paper and aluminium where an efficient recyclability structure already exists.

- Recycling rates for cardboard, paper, glass and metal has very high recycling rates in Denmark with significant environmental benefits.
- We require vendors to ensure that any packaging changes are coherent with our packaging principles.

This primarily applies to food packaging, where the use of glass and aluminium are used to prevent waste or preserve the food.



Chickpeas + Coconut Oil Org 200ml

We continue to use these packagings because an efficient recyclability structure already exists.

#10 WE DO NOT USE BIODEGRADABLE OR BIO-BASED PLASTIC

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We do not use biodegradable or bio-based plastic for our packaging to not exert excessive demand on natural resources.

- We design our packaging to fit the waste management system it is likely to encounter post-consumer use.

Biodegradable packaging

- Composting and biodegradation are unlikely fates for household waste in Denmark.
- Consumers can easily mistake biodegradable plastic as conventional plastic and sort it as such causing destructive contamination in the stream of recycled material.
- We do not want to encourage littering behaviour.
- We do not accept any packaging to be left in nature.

Bio-based packaging

- We design our packaging for the circular economy and invest in carbon savings through recycled material.
- We believe that agricultural products are for food and other high value products, not for packaging that could be made from recycled plastic material.
- We emphasise that biological material from agricultural production has environmental impacts in the form of land clearing, loss of wild habitats, use of pesticides, artificial fertilizers and water usage that can outweigh the initial carbon savings.



DICTIONARY

PET

Polyethylene Terephthalate (PET) is thermo plastic and is used for e.g. soda bottles. PET an easy recyclable material and does not deteriorate in quality when going through the recycling process. Due to its high recycling quality new products can be made with high percentage of recycled PET (rPET) and hence does not require large addition of virgin material.

PET is one of the most used types of plastic in the European packaging industry. It is a very strong material that can handle a high pressure and also has a very high-level barrier. These features make PET a preferred material for food packaging.

PP

Polypropylene (PP) is a hard thermo plastic. PP has a wide range of applications and is one of the most used thermoplastic materials in general and in the packaging industry in particular. PP can be recycled and used to produce other products but it is generally considered that PP only can be recycled in a 'closed loop' a few times before thermal degradation (the recycling process) has a negative impact on the polymer.

There are several versions of the PP type, the most common being OPP, BOPP, CPP. All can be recycled if they are mono materials, in this case the recycling facility can mix the versions in the right profile when producing new plastic.

Most of the recycled PP is mixed with 'virgin' plastic (i.e. plastic that has not been produced via recycling) in a ratio of around 1:3 to produce new plastic products.

Some examples of typical products:

Packaging for fresh meat and fruit, ready to eat products for the microwave, rugs and furniture, clothes and sports underwear, filters and pipes, components for cars.

PE

Polyethylene (PE) comes in many varieties and is used in many different ways. It can be very flexible but also very rigid. The most common versions are LDPE (Low Density Polyethylene) and HDPE (High Density Polyethylene). LDPE and HDPE can both be recycled and used in new products of a lower grade than original.

LDPE is a tough material and very flexible. LDPE is among other things used for shrink wrap, plastic carrier bags and coating on cardboard (eg milk cartons are coated with LDPE on the inside), tubs and cable insulation.

HDPE is stable in terms of shape compared to LDPE. It can be strong and rigid as well as being used as strong foils. These qualities make HDPE suitable for water and drain pipes, bottles, tubs, buckets and toys as well as thin plastic bags.

rPET

rPET is recycled PET e.g from soda bottle collection schemes. A clear PET bottle can become a clear bottle again in rPET. rPET can be used for many different products. E.g. clothes, fleece, fibers for sleeping bags and jackets, components for cars and food packaging.

PS and EPS

PolyStyrene (PS) is a rigid, glassy thermoplastic. It is a hard and solid plastic often used in food packaging and takeaway that requires clarity. Mixed with other plastics, colorants and additives PS is also used in products like appliances, electronics, toys, automobile parts and gardening pots and equipment. EPS is PS when made into foam. Here is it used in home and appliance insulation, lightweight protective packaging, surfboards, foodservice and food packaging.

DICTIONARY

Compatible polymere structures

Polymer films are often produced in multiple layers which make them challenging in recycling. Depending on the requirements for barriers the combination of layers varies. For an example is PE film often used for fresh produce (LDPE) with a need for gas/aroma barriers. It is possible to recycle different layers if they have the same polymer structure which PE and PP have. Therefore a foil of e.g. PE/OPP can be recycled even if it cannot be separated. However, a mono material is by far the best to recycle why this is preferred. PET cannot be recycled if it is mixed with the other two plastic types PE and PP and therefore PET should preferably always be a mono material.

Recyclability

The ability of a material to be collected, sorted and processed into a new material that has a market value in new products. When considering recyclability current technology, likely waste management procedures and consumer behavior needs to be considered. What is likely to happen to this piece of packaging once it has outlived its purpose as packaging?

Circular packaging

When packaging can become the same product after being recycled. E.g. the clear bottle becomes a clear bottle again. At the moment it is only possible to fully recycle PET in a circular loop due to recycling technology, material qualities and food safety regulations.

Mono material

When a single component of a packaging is made of one material only – although this material can be in several layers to strengthen the packaging or ensure qualities in relation to e.g. shelf life or barriers. The mono material component e.g. a lid can be combined with another component of another mono material e.g. a tub and still be fully recycled if the two parts are properly separated.

Migration from rPE and rPP?

At the moment there is no full covered test of migrations from packaging material to product if the packaging component is made of rPP or rPE. This means there is no approved use of the recycled rPE and rPP for food packaging.

Multi layered material

When a packaging component is made from layers of different materials that cannot easily be separated from each other by the consumer or the recycling facility. A typical example of this multi layered material could be cardboard combined with plastic coating (e.g. milk cartons) and plastic foil combined with aluminum foil (e.g. chips bags) but also plastic foils that combine different types of plastic material (e.g. coffee bags made of PET and PE). Plastic multilayers are hard to visually differentiate and details on the packaging must be obtained from the vendor.

Soluble glue for labels

Glued labels stick to the packaging component are often attached with acrylate glue. It is possible to attach label with soluble glue. Recycled PET is often washed in hot water (85°) while recycled PE and PP is often washed in cold water. Therefore, the glue has to fit the washing technique.

NIR scanner

Using Near InfraRed scanning for sorting for recycling. The basic principle behind NIR technology is casting light in the near infrared wavelength range onto a piece of packaging and measuring the reflectivity the piece. Materials such as plastics have their own specific reflective characteristics. Dark materials do not reflect light and are harder if not impossible for the NIR scanner to detect. NIR scanners are widely used in automated recycling facilities.

Design for disassembly

DICTIONARY

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When individual components of the packaging are designed so that they can easily be separated from each other. Design for disassembly makes it easier for customers to sort packaging waste correctly. Furthermore, separation of individual components allows for better sorting at recycling facilities and this creates higher quality of recycled material.

Biodegradable plastic

When material bio-degrades it reverts to the organic building blocks it was originally made up of. Some types of plastic have the ability to revert to the organic building blocks it was made from. For this process to occur the temperature, presence of microorganisms and certain oxygen level have to be present over a prolonged period of time. These conditions are available in industrial composting facilities but not in the natural environment. It should be noted that Danish household organic waste is not being composted but rather energy recovered via bio-gas production. In most cases, bio-gas production does not provide the conditions for bio-degradable plastic to break down. In other words, bio-degradable plastic in the Danish household waste management system must be disposed of by incineration. Mixing bio-degradable plastic with conventional plastic in the recycling waste stream will make the fraction of conventional plastic useless for recycling and hence cause more harm than if it was incinerated.

The term bio-degradable does not refer to what the material is made from, and bio-degradable plastic can be made from both fossil oil or plant material.

Bio-based plastic

Raw material of plastic comes from plants rather than from fossil oil. Plant material can be corn, sugar cane, wheat and other. Either primary production or side streams and waste from agricultural products. Bio-based plastic is often called bio-plastic and have a green and environmentally friendly sound to it. The environmental benefit using plant based raw material is that the CO₂ emission from discarding bio-based plastic is equal to what the plant took up via photosynthesis while growing. Using agricultural products to produce plastic however has some significant footprints like demand for agricultural land that could otherwise be wild nature, demanding produce that could otherwise be life supporting food and feed for humans and livestock or could change local food availability when land-use changes from food production to material production.

Bio-based plastic can be bio-degradable or exactly like conventional fossil-based plastic like PE.

Bio-plastic

Bio-plastic is a term in the everyday language that covers both bio-degradable plastic and bio-based plastic. Hence using the word bio-plastic does not give a specific understanding of the properties of the material in question.



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