

ZERO SINGLE USE



IMS Luxembourg is a non-profit organisation and is recognised as being of public utility. The work for this document was carried out in collaboration with the Ministry of Environment, Climate and Sustainable Development (MECDD) as well as the Environment Administration, the SuperDrecksKëscht, the Chamber of Commerce and the Chamber of Crafts.

FOOD CONTAINERS IN THE WORKPLACE

(TRAYS, BOWLS, CANS, PLATES)



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- Food containers include containers and packaging for **consuming, protecting, preserving or transporting food**. This packaging must comply with strict specifications concerning food contact as defined by European regulation no. 35/2004¹.
- In 2021, Data Bridge Market Research estimates the European market for food containers at \$45 billion² (39 billion euros), with a with an annual growth rate of 4.3% from 2021 to 2028.
- This market has kept pace with eating habits, but also with industrial innovations, particularly with the arrival of plastic materials and increasingly mobile consumption. **increasingly mobile consumption**. Takeaway sales have massively increased the use of single-use containers, mainly made of plastic for its advantages of lightness, transparency and low manufacturing costs.
- According to UNEP³, takeaway packaging is only used for an average of 20 minutes before it becomes waste. With a significant environmental impact due to the numerous resources required to bring them to market, and their recycling difficult, if not impossible, due to the lack of industrial channels, these products represent an enormous environmental challenge.
- Over the last five years, in connection with the plastics directive (EU) 2019/904, many changes in the offerings have been proposed with the very rapid development of paper, bio-sourced, compostable, recycled packaging ...

¹ https://legilux.public.lu/eli/reg_ue/2004/1935/jo

² <https://www.marketdataforecast.com/market-reports/europe-food-containers-market>

³ Programme des Nations Unies pour l'Environnement
<https://www.unep.org/interactive/beat-plastic-pollution/>

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Alternatives

The wide variety of alternatives proposed for the replacement of single-use plastic food containers calls for caution in assessing the environmental impact and sustainability of these products: Some still contain layers of plastic, have no recycling possibilities or are made from distant raw materials. In addition, their use is sometimes still based on single use.

On many aspects, the replacement of single-use food containers by containers based on re-use (Ecobox, personal lunchbox or offered by the company, etc.) remains the best alternative to promote.

In Luxembourg, the use of reusable containers for take-away consumption is now facilitated and well explained in the guide to good hygiene practices and the application of HACCP principles 2021 of the Chambre des Métiers⁴. This document includes recommendations for the use of reusable containers in the food sector and legitimises the fact that it is possible to bring one's own container for counter service at a restaurant.

Extract from the guide to good hygiene practices and the application of HACCP principles 2021 from the Chambre des Métiers :

"It is up to the operator (baker, butcher, caterer, retailer) to decide whether or not to accept the use of food containers brought in by customers. If it wishes to limit the use of single-use packaging for foodstuffs that are sold in bulk, two modes can be considered:

1. Use of returnable packaging (e.g. Ecobox® or other reusable packaging) which the operator makes available to his customers on payment of a deposit. (etc.)
2. Use of a container that belongs to the customer and which the customer brings with him/her when making the purchase. (etc.) In the case of over-the-counter sales, the sales staff is responsible for filling the container, although the responsibility for ensuring that the container is hygienically clean remains with the customer. There is therefore transfer of responsibility from the operator to the customer: in the case of possible recontamination of foodstuffs by the packaging. The same applies if contamination occurs after the sale, due to an interruption in the cold chain or any other error by the customer's fault. "

Chapter 1.10.1 on the use of reusable food containers for sale - Page 34

⁴ https://securite-alimentaire.public.lu/content/dam/securite_alimentaire/fr/professionnel/Denrees-alimentaires/guides-des-bonnes-pratiques/14682-CDM-HACCP2021-V10-PROD-BD.pdf

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Solutions to follow

For single use, moulded cellulose initially used for eggs at lower densities, has recently made its appearance in food containers. Cellulosic fibres, which are made up of renewable and abundant organic molecules, are therefore to be preferred for single use, but only in a version that will allow them to be recycled, including through composting.

Other alternatives in various **vegetable fibres** (*sugar cane/bagasse, maize, bamboo, etc.*) are also emerging and are also emerging and should be followed.

As with every new development, there are still some grey areas to be clarified and legislative frameworks to be adapted to ensure the reliability of these materials: How and where are they produced? Are they mixed with other substances (adhesives, sealants, etc.)? If so, do these substances represent a health or environmental hazard? The experts' advice: always approach new "revolutionary" materials with care and attention.

Concerning **single-use cardboard alternatives**, it is rare that they are made of paper only. To make them waterproof, **these products usually contain one or more layers of plastic**, aluminium or other chemical or natural coating. These layers are not visible, which can be confusing when it is time to throw away and sort. The presence of plastic or non-visible coatings in these types of "laminated" or "complexed" boards makes recycling difficult or impossible. These products are also sometimes thrown away with paper and cardboard, which will "pollute" the recycling channels.

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In repeated use, the simplest food containers have proven their worth for many years, including **earthenware and glass**. Although Luxembourg production is no longer offered, it is still possible in the greater region, notably in Mettlach (DE) with Villeroy & Bosch. Circular economy solutions are also beginning to emerge with products made from manufacturing effluent.

For **take-away consumption**, the use of lunchboxes can significantly reduce waste. The materials are very diverse. There are a few important points to know about reusable plastic containers.

For example, to find out if they can be microwaved with this logo:



The use of returnable food containers is also possible with two models:

1. **The open setpoint.** The Ecobox⁵ proposed by SDK in Luxembourg allows, after payment of a deposit, to use the containers in all partner sites. The deposit will be returned to the place of your choice. The boxes can also be hired through the company Partyrent⁶. This is the only model currently available in Luxembourg.
2. **The closed setpoint.** In this model, the company decides on a range of containers adapted to its uses, and makes them available to its own employees against a deposit. The choice of materials and the range offered will then be freer since the company (or its service provider) will take care of the cleaning after return (cups/mugs, jars, lunchboxes, etc.).

⁵ <https://ecobox.lu/fr/>

⁶ <https://ecobox.lu/wp-content/uploads/2021/07/ecobox-flyer-party-rent.pdf>



The market and its evolution

Snack packaging is directly related to flexible food retail packaging. In the business world, these products are found in various places:

- In vending machines for drinks and sweets
- In the break rooms
- At the counters of company restaurants and cafés
- etc.

In 2020, according to the market report of the European Vending & Coffee Association¹, there will be in Europe :

- **More than 4 million** vending machines (including 2.5 million hot drinks machines)
- **80%** of workplace-based dispensers.
- Every day, almost **90 million** food and beverages distributed and an annual turnover of over 16 billion euros for the sector.

While cups for hot drinks are gradually being phased out or replaced, snacking remains a challenge.

Individual packaging has three key objectives

- Marketing
- Information sharing
- Freshness/hygiene/protection of the product

Thanks to plastic, packaging has been perfected over time around these three objectives... but without taking into account the non-recyclable waste it was becoming.

¹ <https://www.vending-europe.eu/>

FLEXIBLE FOOD PACKAGING ("SNACKING") IN COMPANIES



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Solutions to follow

Brands are vying with each other to try and replace plastic packaging with 'paper' packaging. In fact, in most cases, it is packaging made of more than 80% paper and coated with polyethylene (PE). This means an 80% reduction in the share of plastics, but currently still without a recycling solution.

Over the past five years, several companies have chosen to replace or complement the vending machines in their buildings with bulk and unpackaged products such as self-service fruit baskets and biscuits. fruit baskets or self-service biscuits offered to offered to their employees, for example.

Suppliers

According to the European Vending & Coffee Association² 2020 market report, the annual vending market is worth 16 billion and is shared between 10,000 companies, 69% of which are SMEs with less than 100 machines.

More than two-thirds of the market is therefore composed of small and medium-sized enterprises (SMEs). These offer products made by food industry giants. These SMEs will not be able to directly influence the industrial strategies of their suppliers. As a customer, you can nevertheless repeat your requests for less packaging and more sustainable materials (recycled, recyclable, from renewable resources, etc.).

In Luxembourg, various local suppliers offer seasonal and local fruit baskets or delivery of products in bulk or in returnable containers. In neighbouring countries, other initiatives are also emerging to provide bulk vending machines for businesses.

² <https://www.vending-europe.eu/>



- Initially dedicated to baby hygiene, and then by extension to many other areas such as hand cleaning, dusting of screens, glasses or disinfection of sanitary facilities and other surfaces, single-use wipes have been replacing the traditional washable fabric squares for 30 years. According to the Research and Market organisation, which specialises in market research, this global market is estimated to be worth 39.6 billion dollars (36.33 billion euros) in 2020. in 2020.
- A wipe is a medium soaked with a product. This support is usually "non-woven" (or *nonwoven*) and mainly made of cellulosic and/or synthetic fibres such as polyester or polypropylene. This type of product is currently without recycling solutions.
- When looking at the composition of a wipe, it is important to note that the substrate used is often not specified. The product sheet will generally refer to "fibre" without further clarification as to whether or not the wipe contains plastic. Distributors or manufacturers should be asked for the technical data sheets of the wipes specifying their materials of manufacture, as well as the origin of the manufacture.
- According to the association Detic¹, although on the rise during the health crisis, the use of wipes is limited in companies. The lack of recycling possibilities and the tightening of regulations on this type of product may slow down their use in the long term.

¹ Belgian-Luxembourg association of producers and distributors of cosmetics, detergents, cleaning products, adhesives and sealants, biocides and aerosols. (<https://www.detic.be/fr/>)



Alternatives

With repeated use the traditional cotton cloth impregnated cotton cloth when in use remains a solution to be encouraged. Particular attention must be paid to the management of the dosage of products applied to the cloth.

Microfibres are very fine synthetic textile fibres (polyester, polyamide or acrylic). They can also be an alternative to reduce or eliminate the amount of single-use products used. Unfortunately, they will release fine particles during their passage through the machine, which will pollute the environment and will be impossible to collect once disseminated in the water.

Disinfection. While washing at 90°C is not a problem for cotton, microfibres are usually washed at 40 or 60°C. However, there are microfibres that can withstand high temperatures.

If rag maintenance is a concern due to lack of equipment suppliers, such as Autisme Luxembourg or MEWA in the Greater Region, have been offering and organising rag maintenance for many years.



For single use, paper is a recommended choice. The material to be selected is **pure cellulose**. Many factories exist in Europe. Depending on the products it contains, the wipe may or may not be recycled. To date, however, there is no structure in Luxembourg that can recycle wipes. Supplier TORK (UK) has been working for several years on a recycled towel solution.

From **short-use wipes** (50-80 washes) have also appeared, in more sustainable versions, such as using recycled materials, including rPET.

Reduction of packaging

The reduction of packaging is delicate for pre-moistened wipes, especially to avoid drying out. However, it is possible to reduce packaging by selecting larger capacity pre-saturated wipe dispensers to replace individual packs. It is also possible to ask your supplier to take back the packaging and refill it through a deposit system, or to move towards a refill system.

Suppliers

The manufacturers are united in the EDANA (EU) association, which regularly publishes studies and information on sustainable development. A guide for manufacturers is available [here](#). It contains a lot of information about labels, certifications, but also examples of good and bad practices.

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THE RPET ISSUE

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Definitions

rPET (recycled PET) is a PET made from recycled PET plastic.

PET (Polyethylene Terephthalate)

It is a plastic of the polyester family and is formed by the condensation of terephthalic acid and ethylene glycol.

After the PET packaging has been used, it is recycled to produce new packaging made of rPET, for example.

The stages of PET recycling:

- 1 Collection: After sorting the plastic packaging, the waste is collected and then transported to a sorting centre.
- 2 The sorting centre : On arrival at the sorting centre, the waste is sorted again to separate PET packaging from other plastic packaging. PET packaging is compacted into bales. This stage is used to facilitate transport to the processing plants.
- 3 Once at the processing site, a further final refining sort is carried out to remove any further unwanted material. The sorted packaging is then shredded and reduced to flakes.
- 4 Separation: After crushing some flake packaging, such as bottles, the flakes are washed in large tanks with hot water and detergents to remove fine particles, label residues and glue. The chaff from plastic bottle caps (PEHD) is separated by a flotation system. The flakes from the caps are heavier than those from the rest of the plastic (PET) bottle. Once separated, the two types of chaff will be reused in their respective channels.

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- 5 Optical sorting: A final sorting of the flakes is carried out to separate defective flakes and to separate flakes of different colours.
- 6 Injection of chaff: The flakes are then melted at 280° to obtain granules. These granules are then purified by polycondensation¹.
- 7 Transport of pellets and new use: The pellets are then transported to a production centre where they are used to produce new packaging.

[Link to the European Directive](#)

Advantages of PET:

- **Lightweight**
Its light weight is an economic advantage for the transport of the final products, which can be optimised and which also contributes to the reduction of emissions.
- **Transparency**
The transparency of PET allows the consumer to see the product in the container, which is often important when purchasing food products.
- **Safety & hygiene**
Its resistance to breakage and its flexibility² are an advantage in terms of safety. Single-use PET is also an advantage in terms of hygiene for the food sector and the medical sector.
- **Cost**
The production cost of PET is very competitive.

¹ Polycondensation: It is a series of chemical reactions in which several molecules combine to form a single molecule by eliminating a single molecule (the unwanted by-product).

² Flexibility is a safety advantage because the material can bend without breaking. This is not the case for the glass bottle, for example.

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Disadvantages of PET:

- Particle degradation
- PET waste takes between 500 and 1000 years to decompose. During this very long period, some waste will break down into "microplastic". These small plastic particles could, among other things, cause damage to human and animal health. The precautionary principle is to be favoured here because the damage that plastic particles could cause cannot yet be proven. We are the first generation to become aware of this risk. These plastic particles are everywhere; in what we eat, what we drink and even in the air we breathe.

- Pollution and climate change

PET waste has been increasing steadily for many decades. This mass of waste now represents the equivalent of a continent on its own, called the "7th continent". It is a plastic monster that occupies 1.6 million square kilometres of the Pacific Ocean halfway between California and the Hawaiian archipelago.

This waste in our oceans is a daily danger to marine life. Every day, marine animals die of entanglement or starvation due to the ingestion of plastics that they have mistaken for food.

Plastic pollution can also disrupt an entire ecosystem. By clinging to plastic debris, some species migrate to new ecosystems where their arrival can have very serious consequences for the existing ecosystem. The introduction of new species into an ecosystem can disrupt the balance of the ecosystem and cause the disappearance of certain species.

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Pollution of the marine environment is not the only pollution created by plastic. Just as the fauna and flora of the marine environment, the fauna and flora of the land face the same risks. In addition, there is air pollution caused by the production of plastic.

Plastic is a petroleum product and drilling for oil and turning it into plastic releases harmful gases into the environment.

Some of these gases, also known as greenhouse gases, contribute to the greenhouse effect by absorbing infrared radiation from the Earth's surface and re-emitting it in all directions. Thus causing the warming of the Earth's surface and lower atmosphere.

- **Overconsumption and single use**

The ease and benefits of manufacturing and using single-use plastic have led to its over-consumption. Unfortunately, the recycling of this material has not kept pace. Thus, humanity is now facing a new challenge: to reduce its consumption of single-use plastic and, in fact, to change its daily habits in order to migrate towards a more sustainable consumption.

IMS position on rPET:

Recycling PET is important and necessary to limit the use of new raw materials and reduce waste pollution, but it does not prevent the extraction of new raw materials. In this way, it is only a relative sustainable alternative and is more about single use than repeated use for the consumer.