

#### PACKAGING INNOVATION

BRIEFING REPORT JANUARY 2023

#### Welcome

Welcome to ThePackHub's Packaging Innovation Briefing Report for January 2023.

In this comprehensive and unique monthly report, you'll find a wealth of information on the latest packaging innovations and industry news. With 115 pages of content, including 85 new packaging innovations for the month, you can be sure that you'll stay informed and up-to-date on all the latest developments in the packaging industry.

So sit back and enjoy this exciting journey through the world of packaging innovation.

### The innovations featured track The Pack Hub's nine trend areas:

**Naturally Done** 

**Everyday Engagement** 

The Online Surge

**Making Life Easy** 

**Materially Changed** 

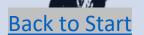
**Protect and Preserve** 

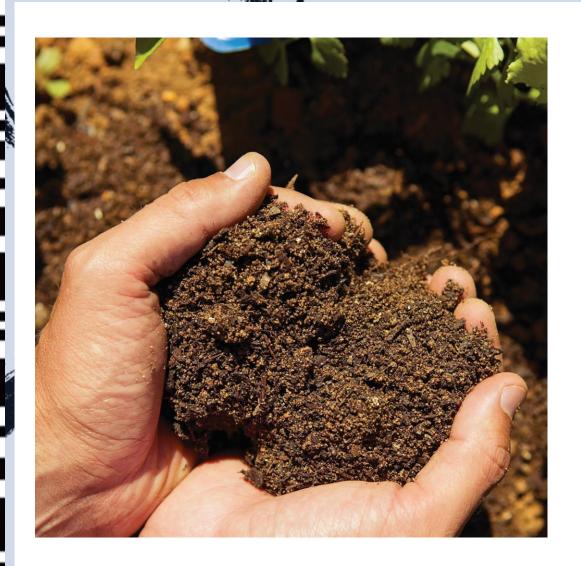
**Recycling Resurgence** 

**Getting Noticed** 

**Refill Revolution** 







Naturally done

#### Naturally done

This month saw a continued focus on bio-based packaging, with 16 new initiatives in the space. Biodegradable and compostable packaging continue to be developed, as well as new bio-based alternatives to plastic. However, the lack of established industrial composting systems in most markets is a significant barrier to mass adoption.

Additionally, there are concerns about compostable and biodegradable packaging contaminating existing recycling streams, and the cost of such packaging is often three to four times higher than conventional plastic-based products. Despite these challenges, the bio-based packaging sector is expanding rapidly, with many new initiatives in development and not yet available on store shelves. However, big brands are yet to widely adopt these new packaging options, and most usage is currently limited to small challenger brands looking for a sustainable point of difference.





#### Naturally Done

Carbon black alternative is made from algae Czech start-up converts mycelium into packaging Edible and biodegradable film made from cranberry waste Compostable cup helps feed people in need Water-resistant takeaway packaging has seaweed-based barrier Compostable straws are made from plant-based plastic Bioplastic made from cassava starch Fast food packaging made from bagasse will degrade in six months Milk brand moves to 100% carbon neutral packaging Bedding manufacturer moves to packaging made from sugarcane Research centre develops biobased alternative to plastic film Sustainable grease resistant paper for fast food sector launched Clothing retailer trials compostable, plastic-free hangers Italian supermarket introduces biodegradable shopping bags Startup making sustainable packaging from seaweed More sustainable option for rigid medical applications

### Carbon black alternative is made from algae

Living Ink is a Colorado-based biomaterials company that creates and delivers carbon-negative pigments and ink products from algae. Carbon black, traditionally used for colouring consumer goods and packaging, is reported to be a class 2b carcinogen which is derived from heavy petroleum such as FCC tar, coal tar or ethylene cracking tar. Living Ink's product, Algae Black, is a bio-based, renewable, and safe carbon black alternative. These natural pigments are in the form of either a dry powder or liquid dispersion. Living Ink uses by-product algae material grown at Earthrise Nutritionals, located in Imperial County, California. Algae is grown using sunlight, water, carbon dioxide and nutrients. Algae, such as spirulina, are grown for a blue colourant called phycocyanin, which is extracted and used as a natural food colourant. The remaining material is considered an algae by-product, which Living Ink uses to make a bio-based black pigment.



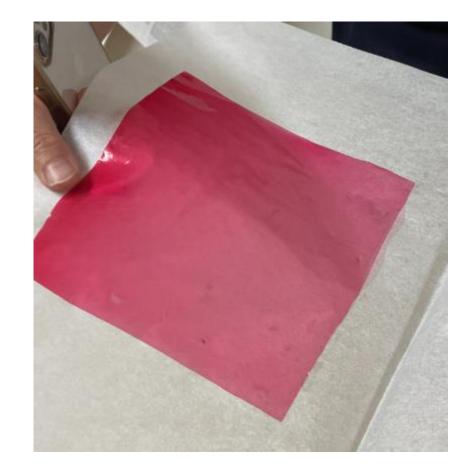
# Czech start-up converts mycelium into packaging

Myco is a biotech start-up based in Brno in the Czech Republic. The company researches, develops and produces functional 100% natural materials from fungal mycelium and waste from the agricultural and wood processing industries. The company sources all of their raw materials from renewable sources that are readily available locally. Their products are reportedly 100% degradable by natural processes and, therefore, harmless to nature. No harmful chemicals are used in their production, and no additional waste is generated. The typical use of mycelium is as a replacement for polystyrene foam. It has a similar structure and can be moulded. The resulting material is both strong and flexible. Various boxes and gift packs or fixing and protective elements for cardboard boxes are possible. Various surface finishes and laser engraving are also possible. Also, use as insulation is an option, the advantage being that it is considerably more resistant to fire.



# Edible and biodegradable film made from cranberry waste

A scientist at Oregon State University has created an edible, biodegradable film manufactured from cranberry waste. While visiting a juice company, they noticed the remains of cranberries being taken off for use in animal feed or compost. This sparked the question as to what this pomace (residue which is left over once the juice has been pressed out) could be turned into. From discussing it with students, they came up with converting it into a packaging film, which resembles a pale strip of fruit leather. It's mostly tasteless, although edible, so it could be possible to create a version with a stronger flavour. In order to give the film more flexibility and elasticity they have incorporated other functional foods, such as other carbohydrates, and a little glycerin. It's also anti-microbial. The cranberry film could be used as a replacement for film plastic, protecting fruits and vegetables with delicate skins, such as cucumbers.



### Compostable cup helps feed people in need

The Australian arm of sustainable packaging manufacturer BioPak, has teamed up with not-for-profit food rescue organisation OzHarvest to raise awareness and funds to help feed people in need during the holiday season. BioPak has produced a limited edition compostable Christmas cup, featuring a QR code to encourage donations to OzHarvest. Every five dollars (£2.80) donated via the QR code on the cup allows OzHarvest to deliver ten meals, and stop good food from going to waste. An additional 5% of cup sales will also be donated to OzHarvest. The limited edition compostable cup will be available at participating cafes and businesses to raise awareness and funds to help feed people in need across Australia. OzHarvest was founded in Sydney in 2004 after the founder noticed the huge volume of food going to waste from her events business.



## Water-resistant takeaway packaging has seaweed-based barrier

London-based plastic-alternative packaging company Notpla has launched a range of takeaway packaging that is grease and waterresistant due to a plastic-free coating made from seaweed. After use they packaging can either be recycled or home composted. One of Notpla's partners is Just Eat, which is supplying the seaweed-coated packaging for restaurants to buy on their webshops in the UK, Austria, Poland, Germany, the Netherlands, and Ireland. The range, which is also PFAS-free, is made up of seven packaging solutions: Notpla Small, Notpla Medium, Notpla Large, Notpla Burger Box, Notpla Square Tray, Notpla Rectangular Tray, Notpla Deep Tray. The trays and boxes are available both in white kraft paperboard and brown kraft paperboard. The collection of takeaway packaging solutions has already received industry recognition, having been awarded 'Innovation of the Year' at the UK Packaging Awards 2022, as well as the 'Innovation Award' at the Responsible Packaging Expo Awards 2022.



### Compostable straws are made from plantbased plastic

Colorado-based Eco-Products has announced the launch of compostable straws. The straws, are made of PHA (polyhydroxyalkanoate), which is a plant-based plastic derived from canola oil, and they are said to be as durable as conventional straws, although they are only recommended for cold drinks. The straws are Biodegradable Products Institute (BPI) certified compostable and meet the ASTM D6400 standard for compostability. As the straws are made with plant-based PHA, their organic nature allows them to act as a food source to the bacteria that aid in decomposition. These PHA straws are able to biodegrade in a commercial compost facility or a home compost pile. The straws are offered in lengths of 5.5 inches (unwrapped), 7.5 inches (wrapped), and 10.25 inches (wrapped). The wrapped versions are clearly marked as compostable, so consumers know to properly dispose of them in a compost bin.





### Bioplastic made from cassava starch

Greenhope is an Indonesian technology company that produces a biodegradable bioplastic made from cassava, a woody root vegetable. Their product Ecoplas, is made from certified fair trade cassava. The price of Ecoplas is relatively higher than conventional plastic though its price is claimed to be the most competitive compared to other bioplastics. Ecoplas has received numerous acknowledgments and awards domestically and internationally as one of the most competitive bio-based materials towards next-generation/sustainable green plastic. While traditional plastics take 500+ years to degrade, Ecoplas reportedly takes 1-2 years, depending on the quantity of microorganisms in the soil. Ecoplas has been widely used to make shopping bags, landfill cover, garbage bags, packaging (e.g. tissue packaging). It also has Fair for Life Certification by IMO Switzerland, certifying that their raw material is obtained through farmers' cooperatives at a premium price above the market price so that the use of Ecoplas directly improves the welfare of Indonesian cassava farmers.



# Fast food packaging made from bagasse will degrade in six months

Cascara Tech is a Colombian supplier of sustainable, biodegradable fast food clamshells. The clamshells are made from bagasse, a byproduct of sugar cane processing. They do not have any plastic coatings as moisture or grease barriers. The clamshells have a degradation time of up to 6 months, depending on conditions, but need to be disposed of with organic waste to aid decomposition. They are available in three different sizes to cover most fast food products, including burgers, kebabs and salads. The company also sells biodegradable supermarket carrier bags made from corn starch which are available in three sizes, small, medium and large. These are also reported to completely biodegrade in around six months, under the ASTM 6400 and EN13432 standards, and are classed as food safe. The bags become compost, substantially helping plant life, providing carbon dioxide, water, inorganic compounds and biomass.



# Milk brand moves to 100% carbon neutral packaging

Portuguese dairy Matinal has announced that it will become the first milk brand in Portugal to adopt 100% carbon-neutral packaging. The board used for the packaging is produced with cardboard from responsibly managed forests and is certified by the FSC (Forestry Stewardship Council), Bonsucro and the Carbon Trust. It also features an innovative lid, a biomaterial made of sugar cane (bagasse) which means it can be recycled more easily and ensures greater convenience in opening and closing. This new pack is certified carbon neutral, thanks to a combination of reducing its life cycle climate impact and offsetting residual emissions. With the adoption of plant-based plastic, the brand expects a 26% reduction in CO2 emissions, which is equivalent to 15,000 kg of CO2 per 10 million packages when compared to the packaging currently used for the 1 litre format.



# Bedding manufacturer moves to packaging made from sugarcane

John Cotton Group, a West Yorkshire-based manufacturer of pillows, duvets and mattress protectors, has partnered with Leeds-based flexible packaging supplier Roberts Mart in order to move to more sustainable, bio-based packaging. Roberts Mart is supplying John Cotton Group Ltd with a range of bags that help reduce greenhouse gas emissions. The new bags will be converted by Roberts Mart using Braskem's 'I'm green'™ bioplastic, which is made from sugarcane, also known as bagasse. Sugarcane, after being refined, produces a coproduct that is converted into ethanol, which is then used to produce the green polythene. By using a material that captures carbon, sugarcane absorbs carbon from the air as it grows. Therefore, any bags produced have a significantly lower carbon footprint. The resins used to produce these polythene-based bags replace fossil fuel-based materials but are recyclable. The new bags are claimed to be comparable to the previous bags, both performance-wise and visually.



## Research centre develops biobased alternative to plastic film

VTT is one of Europe's leading research institutions, and is owned by the Finnish state. They are piloting a new transparent cellulose film to replace traditional plastic for food packaging. VTT says that consumers cannot distinguish between the crystal-clear material and traditional oil-based plastic. Cellulose film can resist dampness, but in nature it disappears as completely as a sheet of paper does, as it is biobased and biodegradable. It makes recycling easy, as it can be placed in cardboard recycling along with paper-based packaging. The forestry industry is looking for value-added new products with a big market. Flexible, transparent cellulose film is one such product, as the world market for plastic films was about 110 billion dollars last year. Production of this cellulose film is in the pilot phase, but it could be in extensive industrial use in 5–7 years.



## Sustainable grease resistant paper for fast food sector launched

German paper manufacturer Koehler Paper has announced another sustainable paper product aimed at the fast-food market. They recently announced the launch of Koehler NexPure Wrap, a paper designed for burger packaging. They have now added to the range with Koehler NexPure OGR, an oil-and-grease-resistant sustainable paper, which will be suitable for packaging foods such as fries, sandwiches, wraps and burritos. The product is entirely free from fluorochemicals and is therefore a sustainable alternative to a lot of the packaging paper currently used in the fast-food sector. The new paper, designed for packaging foods with a higher fat content, has a grammage of 38 grams per square metre (gsm) and uses natural raw materials for the barrier function. It uses pulp from certified sustainable forestry and controlled sources as its fibre material and is fully recyclable. The unique arrangement of the paper fibres also enables a high whiteness and excellent printability.



### Clothing retailer trials compostable, plasticfree hangers

Dutch clothing retailer C&A has announced a partnership with traceless materials, a German circular bioeconomy startup. They are currently trialling advanced biodegradable hangers at C&A's store in Hamburg-Altona. The plastic-free hangers are made by traceless materials using only agricultural plant waste products. They are naturally compostable and claimed to reduce carbon emissions by up to 95%. As a raw material, traceless materials use by-products of food production, like starch production leftovers or brewery residues. Using patent-pending process technology, this material is then turned into a granulate. Then, using standard technologies for plastic processing, this is turned into flexible films, rigid material applications, or coating and adhesive solutions. The introduction of traceless materials' sustainable hooks is part of C&A's circularity initiatives, which include its Cradle to Cradle Certified product innovations and collaboration with material sciences company Recover.



# Italian supermarket introduces biodegradable shopping bags

An Italian supermarket has introduced 100% biodegradable and compostable organic shopping bags, which feature information to support the organisation's sea turtle recovery centres in the Centre-South of the country and its turtle care activities. SPAR italy regional retailer Maiora (DESPAR Centro-Sud) has renewed its partnership with Legambiente, an Italian environmental association. The organic shopping bags are made available to SPAR customers in all of Maiora's stores and raise awareness for environmental sustainability and the preservation of endangered species. Plastic pollution is one of the most frequent causes of mortality for sea turtles in the Mediterranean Sea. Legambiente's turtle recovery centres have documented that over 50% of the sea turtles had ingested various types of plastic: bags, bottle and dish remains, cotton buds, fishing lines, and various types of packaging.



## Startup making sustainable packaging from seaweed

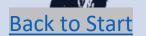
Noriware is a Swiss startup that began in 2021 after its founder was inspired while on holiday in Mexico by the sustainable and circular economy concept around seaweed. On her return home, she started to develop algae plastic prototypes. After successfully creating a biodegradable seaweed material, the company entered its entrepreneurial journey, receiving support from a leading university in Switzerland and funds from the NTN Innovation Booster Plastics for Zero Emission by Innosuisse. Noriware has developed two alternative products to reduce the waste generated by single-use plastics in the food service industry, the Noricup, and Norifilm. Seaweed grows ten times faster than land plants, and less than a tenth of the land is needed to produce the same amount of biomass. Seaweed also has an average annual growth rate of 8%, and takes in carbon dioxide during its growth phase, generating a negative CO2.

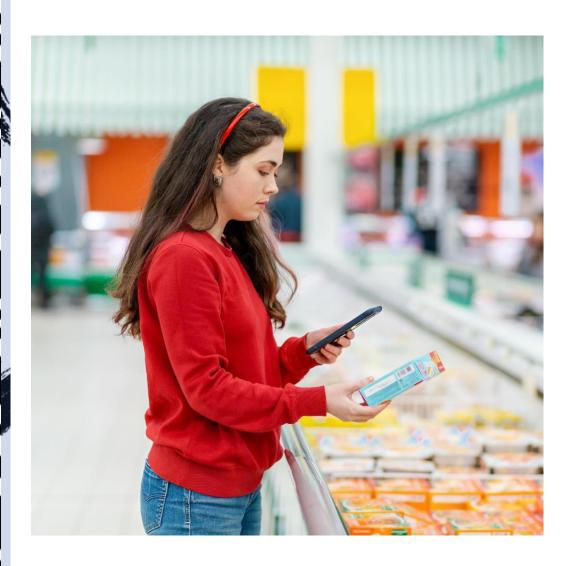


## More sustainable option for rigid medical applications

Sterimed Infection Control is a French company that is a global leader in the field of medical packaging. They have announced the launch of a new substrate for rigid packaging called POLYBOND CGP 85. Being made of PETG (polyethylene terephthalate glycol), the intention is to provide medical device manufacturers with sustainable products and packaging with less plastic content and a lower environmental impact. POLYBOND CGP 85 is water-based and has solvent-free coating technology, in addition to a share of renewable raw materials. Synthetic binders are used for optimal mechanical characteristics, and cellulose contributes to breathability and efficient sterilisation processing. By using PETG, the company says that there is an approximately 70% reduction in plastic. With around 80% renewable material used in the project, this not only makes it more sustainable, but they also state that there will be no extra cost for the product.







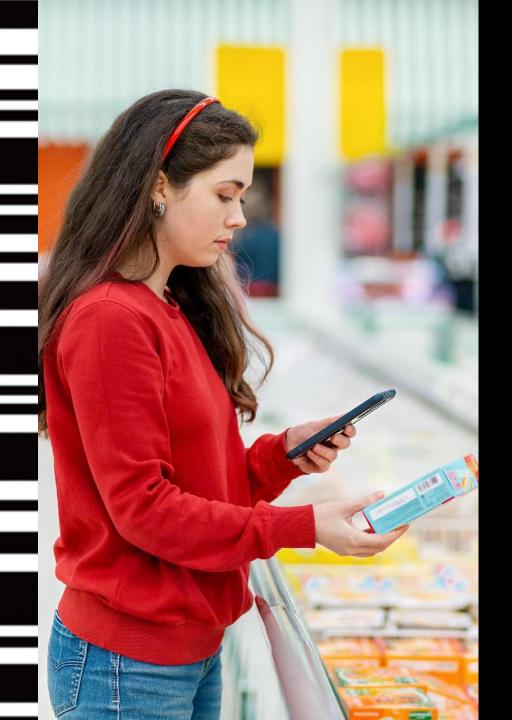
Everyday Engagement

#### **Everyday Engagement**

Packaging that effectively connects with consumers plays a crucial role in the market. We continue to observe a variety of innovative examples, such as utilizing smart technology or unique packaging graphics to spark engagement. Maintaining a consistent dialogue with consumers can greatly enhance brand-building efforts.

Tech-based solutions like RFID, NFC, and QR codes are becoming increasingly popular and cost-effective for these purposes. Sustainability is also a key factor in the use of technology-based packaging, as many lack proper disposal methods. However, as recycling options improve, this sector is becoming more viable. Additionally, utilizing technology in packaging also provides valuable data insights for brands.





### Everyday Engagement

NFC devices embedded in cosmetic packaging
Researchers develop ultrathin, lightweight solar cells

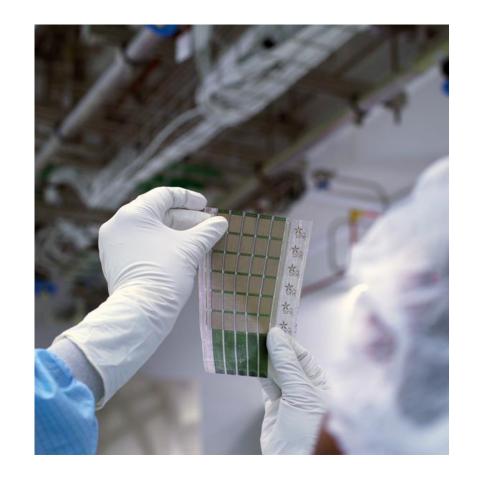
# NFC devices embedded in cosmetic packaging

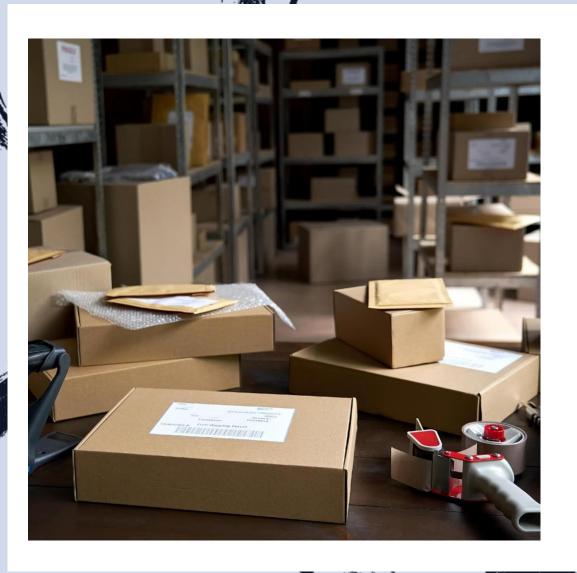
Barcelona-based Faca Packaging is working on the development of NFC embedded cosmetic packaging. The main objective of the project is to find a solution to counterfeiting in the cosmetics sector, to achieve traceability of the material and the life cycle of the container, among other opoprtunities. In the case of cosmetics packaging, it allows links to the online store, dialogue with micro-influencers, to informative videos of the product with explanations of the ingredients and use, the environmental impact of the product, among other digital content. By linking the packaging with the physical store and e-commerce, this technology opens up a great opportunity for brands to unite the online and offline world through packaging, thus expanding the forms of brand communication. In addition to the Barcelona firm, the start-up Bloock and Oktics (spin-off of CIMNE: Research Center of the Polytechnic University of Catalonia) will also participate in the research.



## Researchers develop ultrathin, lightweight solar cells

Researchers at MIT (Massachusetts Institute of Technology) have developed a scalable technique to produce ultrathin, lightweight solar cells. The solar cells weigh about 100 times less than conventional solar cells while generating about 18 times more power-per-kilogram. These durable, flexible solar cells, which are much thinner than a human hair, are glued to a strong, lightweight fabric, making them easy to install on a fixed surface. They can provide energy on the go as a wearable power fabric or be transported and rapidly deployed in remote locations for assistance in emergencies. The cells are made from semiconducting inks using printing processes that can be scaled in the future to large-area manufacturing. These are then attached to a composite fabric that weighs only 13 grams per square metre, commercially known as Dyneema, by using a layer of UV-curable glue, which is only a few microns thick. The technology might one day have applications for the packaging industry.





The Online Surge

#### The Online Surge

The growth of the e-commerce industry has had a significant impact on packaging development, especially due to the acceleration caused by the COVID-19 pandemic. With consumers increasingly turning to online shopping, the need for specialized e-commerce packaging has become more pressing. Many consumers who previously only shopped in physical stores are now shopping online for the first time and are likely to continue doing so. This shift has changed the role of shopping and packaging permanently.

As the e-commerce industry continues to grow, there are ample opportunities for brands and retailers to offer unique packaging solutions specifically for this channel, rather than just replicating traditional packaging. E-commerce packaging does not require the same level of security measures, as the purchasing decision is made on a screen, and eye-catching on-pack messaging is not necessary.

Sustainability and particularly reusable packaging is a big are of growth in the e-commerce channel.





#### The Online Surge

Packaging adapted to product saves material and resources
Insulated packaging is kerbside recyclable
Pressure-sensitive adhesive range optimised for reuse of logistics boxes
Recyclable alternative to traditional cooler bag launched

## Packaging adapted to product saves material and resources

Panther Packaging Group, based in Tornesch, Germany, has developed a range of corrugated cardboard packaging that can be individually adjusted in height and can thus be precisely adapted to the products. They have been developed with shipping products ordered via online portals in mind, and are always precisely tailored to the packaged goods thanks to individual height variability. In this way, the company says, only the necessary packaging volume is created and additional fillers are avoided. The system solutions for individual shipping save resources and material and they score points with the end customer since the packs correspond exactly to the dimensions of the filling goods and therefore do not transport any excess air. Although this solution is ideal for a large number of products that are ordered by end consumers over the Internet, another growing segment is the purchase of pharmaceuticals and medical products from online pharmacies.



### Insulated packaging is kerbside recyclable

CoolBox Solutions, who are based in Northamptonshire, England, are manufacturers of a range of insulated packaging aimed at chilled and frozen products. Their insulated boxes are 100% kerbside recyclable with the paper and board collected by local councils. The boxes are also plastic-free, plant-based compostable and biodegradable, and made from over 90% recycled material. All materials used are vegetarian and vegan-friendly. CO2 emissions are reduced by a claimed average of 65%, and are also reusable. They are available in three different options: the CoolBox Chilled 24, which has 4 x insulating cavities for 24 hour temperature-controlled shipping; CoolBox Chilled 48, which has 6 x insulating cavities for 48 hour temperature controlled shipping; and CoolBox Frozen which has 8 x insulating cavities. CoolBox say that their insulated boxes are suitable for a range of ecommerce food sectors, including food, agriculture, pet care and pharmaceutical.



# Pressure-sensitive adhesive range optimised for reuse of logistics boxes

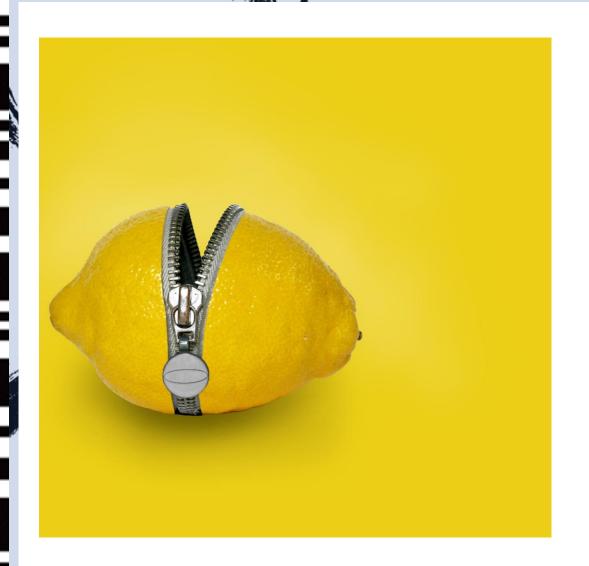
German label and labelling machine manufacturer Herma say that they have developed a pressure-sensitive adhesive optimised for the reuse of logistics boxes. Following a study at the University of Graz in 2021, it has been concluded that if the recycling processes are right, logistic cartons and folding boxes can be reused not only four to seven times, as previously assumed, but up to 25 occasions. Herma has developed a new range of pressure-sensitive adhesives and corresponding adhesive composites. According to the company, these are characterised by the fact that logistics and other labels produced from them cause practically no sticky residue in the recycling process. The range of five pressure-sensitive adhesives has received certification from the Paper Technology Foundation (PTS). The only condition that such an adhesive bond has to meet, according to the PTS certificates, is that it must not make up more than 25% of the mass of the cardboard box.



# Recyclable alternative to traditional cooler bag launched

Global sustainable packaging producer Mondi has collaborated with German manufacturer of sustainable insulating packaging, FRESH!PACKING, to produce what they are saying is the reinvention of the cooler bag. The Fresh!Bag is made entirely from renewable materials, provides excellent protective cooling properties, and offers consumers a durable cooler bag to carry chilled or frozen food home. It is certified as fully recyclable in existing European paper waste streams, and it has already scooped the "functionality & convenience" category at the recent German Packaging Awards. The Fresh!Bag outer layer is entirely made from Mondi's durable kraft paper replacing the traditionally used unrecyclable, multi-material packaging while improving cooling protection by up to 2.5 times. The bag has a high resistance to tear and it is claimed to carry large weights and sizes, with FRESH!PACKING saying that it can even cope with products as large as turkeys.





Making Life Easy

### Making Life Easy

Packaging that is easy to use will always have a place in the packaging innovation schedule. With the focus very much on sustainable solutions, it is important that packaging still delivers the necessary functional requirements and packaging. Easier to use packaging will always create a point of difference in the market and often meets the needs of a growing senior consumer segment.

Packaging that has added functionality, that is easy to use and makes life easier for consumers continues to be popular. We will continue to see many new examples come through the innovation funnel. With most of the development focus on sustainability, it is essential that brands and retailers can still deliver pack formats and solutions that meet an unmet functional need to make the consumer experience easier and more pleasurable. Plastic reduction is a primary focus for the majority of brands and retailers and there are signs this is having an impact on pack functionality in the market. We have tracked a couple of recent examples in the cheese sector where the resealable functionality has been removed to achieve packaging reduction targets. These isolated examples might just be a sign of things to come. However, the worldwide ageing marketplace means an increasing need for packaging that is easy to open and close.



#### Making Life Easy

Tear top tube manufacturer offers reclosable option

Brazilian startup creates low-cost packaging solution for enteral nutrition

Beauty giant pilots first money-free grab-and-go store

New application for squeezable packaging

Beverage giant to pilot NaviLens on packs

New childproof closure is sustainable and cost-effective



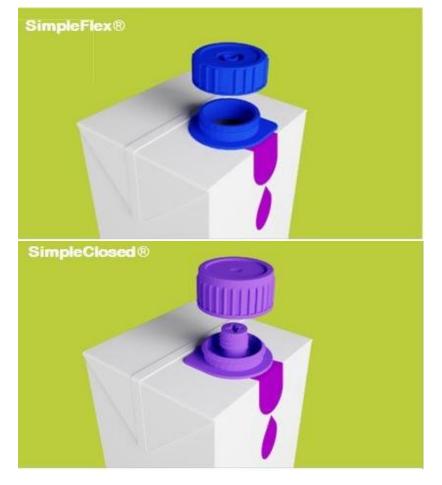
## Tear top tube manufacturer offers reclosable option

Unette is a contract filler and supplier of tube filling machinery based in northern England. They are known for their Unette Tear Top Tube, which they say has become the industry standard for the sports nutrition market, and an ever-increasing number of consumer-friendly, on-the-go applications. They can now also offer a reclosable option called the Tear n Tuck tube. The company says that It is very easy to open and to re-seal, with a clever close to ensure there are no leaks or spillages. To use the Tuck n Tear, the consumer tears the top of the tube, dispenses the required amount then folds along the dotted line, and finally tucks the tab in to reclose. The new closure mechanism allows more than one use. The pack delivers 80% less plastic than a screw cap tube. The company says that the Tear n Tuck tube is proving popular for syrups, sauces, sun cream, as well as other liquid products.



## Brazilian startup creates low-cost packaging solution for enteral nutrition

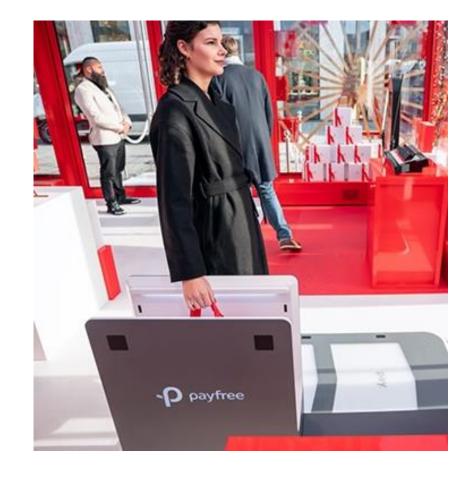
Enterall is a Brazilian startup that has created what it says is a low-cost solution for the enteral nutrition market. Enteral nutrition, also known as tube feeding, is a way of delivering nutrition directly to a patient's stomach or small intestine. EnterAll has created and patented two proposals for packaging that reduces the cost of the product and the amount of plastic used. One of them is SimpleFlex, which can be used as an open or closed system, and the other is SimpleClosed, which will be used exclusively as a closed system. The company says that on the closed system solution, analyses indicate that a 90% reduction in the plastic used is achievable. In comparison, the cost of the packaging material can be reduced by 70% to 75%. For the largest companies in the segment, this could represent staggering savings of \$1.6 to \$3 billion. Both will be launched on the market in early 2023.



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### Beauty giant pilots first money-free graband-go store

French beauty and cosmetics giant L'Oréal recently piloted a moneyfree pop-up shop in its store in Königsallee, Düsseldorf. The pilot was carried out in conjunction with German checkout innovators Payfree, and label manufacturer Avery Dennison. Instead of queuing at checkout, customers purchase their selected products by passing them through a scanning unit, which automatically registers products via RFID tags. The partners say this showcases the first grab-and-go checkout in the beauty sector. While this technology has been successfully used previously on clothing, this is the first time it has been used on cosmetics. Beauty products are more challenging, as liquids and metallic surfaces like foil packaging generally inhibit signal transfer during RFID communication. Avery Dennison claims to be the first company to offer an on-metal tag at a price that makes highvolume tagging feasible. The store was open until the end of November 2022.



### New application for squeezable packaging

Croatian food processor Podravka has become the world's first company to pack ajvar in a squeezable bottle. Ajvar is a condiment made principally from sweet bell peppers that originates from the Balkan region of southeastern Europe. Following an investment of HRK 40 million (£4.5m), which was co-financed by the EU and the Republic of Croatia, a completely new production process was developed. The investment has resulted in a fourfold increase in the production of squeeze products, from five thousand units per shift before, to twenty thousand units per shift. The company says that all the characteristics of the well-known Podravka ajvar have been retained, without artificial flavours and preservatives, and the new packaging will open up numerous new possibilities for easy use. This investment also means other new products will be developed, including jams, marmalades, new types of ajvar, vegetable spreads, fruit spreads, and fruit fillings.



#### Beverage giant to pilot NaviLens on packs

Global beverage giant Coca-Cola will become the first beverage brand to incorporate the NaviLens app on its packaging. The app is designed to aid blind and partially sighted consumers. NaviLens is similar to a QR code but can be detected in a fraction of the time and up to three metres away. A smartphone can detect the optic, and relay information to the user. As a pilot scheme, Coca-Cola Europacific Partners (CCEP) has incorporated the technology onto large Christmas can multipacks (24 & 30). The codes will feature on the carton board outers. A spokesperson for the RNIB said that technology such as NaviLens is a game changer and allows blind and partially sighted people to access key information on packaging independently. In contrast, currently, important information on packaging can often be in very small print, making it difficult or impossible for visually impaired people to read.



## New childproof closure is sustainable and cost-effective

Austrian plastics manufacturer Alpla has announced the launch of CRC justONE, a new childproof closure. Whereas conventional childproof closures are made of three separate parts, produced in three separate stages, the CRC justONE closure is manufactured in just one injection-moulding process with straightforward assembly. The CRC justONE closure is made of high density polyethylene (HDPE), making it a product that is both sustainable and extremely cost-effective. The new closure is certified under 16 CFR §1700.20 and ISO 8317 for childproof packaging for bottles ranging from 30 millilitres to 1.5 litres. It is compatible with 28 mm standard necks used in the pharmaceutical market for glass and plastic bottles. The company also says that as far as the consumer is concerned, nothing changes, the CRC justONE works like any other child-resistant closure, and product safety is just as assured.





Materially Changed

### Materially Changed

The packaging industry continues to experience a rapid transformation driven by sustainability goals. Many brands and retailers are focusing on replacing plastic with alternative materials, often paper-based, in an effort to reduce their environmental impact or appeal to anti-plastic-conscious stakeholders.

ThePackHub reports numerous examples of this shift, but not all come with solid evidence of environmental benefits. It seems to be a time of high change, where recyclable plastic is sometimes being replaced with other materials simply because consumers perceive them to be more environmentally friendly. However, these choices are not always backed by rigorous environmental analysis. The switch to new materials often requires significant investment in machinery and new processes, making it unlikely that brands and retailers will revert back to previous materials in the near future.





#### Materially Changed

Paper-based bottle does not have plastic lining Confectionery giant moves to paper-based packaging Premium Californian wine in 'upmarket' bag-in-box format High barrier 100% metal child-resistant tin for cannabis products Laundry detergent strips bring savings and reduces packaging Supermarket chain to extend removal of single-use plastic lids Seafood company moves from plastic to paper-based packaging Partnership brings dry moulded fibre tablet blister packs to market Australian water company launches resealable aluminium bottle Cardboard strap solution replaces plastic cable ties Spirits producer moves from glass to aluminium bottles Children's dairy drink moves from plastic to board Wood pulp-based pouches are sustainable alternative to plastic medicine bottles Spanish brewer introduces 'packaging free' format for multipacks

# Paper-based bottle does not have plastic lining

SUPA Innovations (which stands for Single Use Plastic Alternative) is claiming a world first in that it has developed a paper bottle that does not incorporate a plastic lining. It also fills the bottles under its ecomate range of laundry, fabric and washing up liquids at its factory near Stamford, UK. Previous paper-based bottles have either had either a plastic inner liner or even a thin plastic bottle. As they could not find one without plastic on the market they decided to develop their own. The eco-mate paper bottle design features an internal coating of seaweed and natural plant latex to hold liquids, which naturally biodegrades in the environment much like a waxy tree leaf. Biodegradable accelerators within the paper bottle construction speed up and ensure natural composting. The bottles can be cut up and composted at home or put in recycling or in the garden waste bin as everything is natural.



# Confectionery giant moves to paper-based packaging

In a world first for the company, Mars Wrigley Australia has announced that it is to move to paper-based wrappers for its chocolate bar lines. The new sustainably sourced paper-based packaging is a result of extensive R&D trials and locally driven innovation from Mars Wrigley's manufacturing site in Ballarat, and is manufactured nearby by Amcor Flexibles. While the packaging features a very thin plastic barrier, it remains able to be recycled via kerbside recycling as validated by APCO's PREP tool. The plan is for the technology, learnings and insights developed and deployed locally in Australia to be shared and implemented in other Mars Wrigley markets across the globe. Mars Wrigley's new paper-based packaging will be available on 47g and 64g Mars Bars, 44g and 64g Snickers and Milky Way 45g at all leading supermarkets and convenience stores nationally from April 2023.



# Premium Californian wine in 'upmarket' bag-in-box format

Juliet Wine is an American business that sells Californian wine in a box. The Eco-Magnum is a patent pending design which contains 1.5 litres, the equivalent of two standard bottles. The inner and outer packaging is fully recyclable except for the rope handle. Juliet's wine shipments include a prepaid, recycled envelope allowing customers to return their empty wine pouches, after which they are sent to TerraCycle to be safely recycled. It is reported that Eco-Magnum packaging has a carbon footprint that's 84% lower than two equivalent glass bottles. Three varieties are available, Pinot Noir, Sauvignon Blanc, and Grenache Rosé. Juliet Wine says that customers receive the equivalent of two bottles of high-quality, handmade wine for \$45.99 (£37.88), which lasts in the refrigerator for up to six weeks after opening. Juliet will soon be available in over 50 select retailers in New York, Florida and California.



## High barrier 100% metal child-resistant tin for cannabis products

Swiss tin and tube manufacturer Hoffmann Neopac has launched a new 100% metal, child-safe tin developed for cannabis products. The child-resistant, high-barrier tins are designed for packing dry and semidry cannabis such as edibles, CBD oils, creams, gummies, and concentrates – aiming for increased recyclability and product protection. While previous tins contained plastic inserts, the fullymetal redesign is intended to be more recyclable, while its certified resealable lid is designed to protect children and pets from ingesting cannabis. The lid has also been designed to shield the product from external light and preserve its freshness with an opaque option available for edibles, pills, and pouches. The 70mm diameter tin has a height of 26.5mm, deeper than previous tins, meaning bulkier products can be packed, and it has an expected volume of 80-85ml. Both the lid and the body of the tins can be decorated, which allows for the application of branding and safety instructions.



# Laundry detergent strips bring savings and reduces packaging

Vancouver-based Tru Earth is a cleaning company that sells soluble laundry detergent strips called Eco-Strips. Eco-Strips are packaged in a recyclable and compostable cardboard envelope. Each pack contains 8, 32, 64 or 384 strips. Although the company says that they haven't found any moisture issues when testing the paper packaging under sinks or cupboards, it does offer a reusable tin storage container for consumers who want to be extra cautious. Strips are pre-portioned, with one strip recommended for a full-size load of laundry, two strips for an extra-large load, and half a strip for a small load, removing consumer confusion about proper dosing. By eliminating water in the formulation, Eco-Strips also significantly reduce carbon emissions in shipping because what would traditionally have needed a pallet for shipping can now fit in a single box. Since the launch of Eco-Strips in 2019, the business has reportedly grown 944%.



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# Supermarket chain to extend removal of single-use plastic lids

British supermarket chain Sainsbury's has announced that from March 2023, household favourites such as guacamole, tzatziki and sour cream and chive dip will no longer be sold with single-use plastic lids. Since 2019 Sainsbury's has removed the lids from a wide range of products, including cream, crème fraiche, custard, cottage cheese and sour cream. Earlier this year, Sainsbury's also removed single-use plastic lids from all own-brand yoghurt. The removal of single-use plastic lids is reported to save 71 million pieces of plastic each year in total, equating to 220 tonnes. For customers that would prefer to use a lid on products at home, Sainsbury's has launched reusable lids, available to purchase across all superstores in England, Scotland and Wales, as well as online for £1.25. After each use, the silicone lids need to be washed by hand or in the dishwasher, before being reused.



# Seafood company moves from plastic to paper-based packaging

Spanish seafood company Angulas Aguinaga is replacing the multimaterial plastic outer packaging it previously used for its Krissia brand seafood sticks with Mondi Packaging's FunctionalBarrier Paper. This is in order to reduce plastic use and to increase recyclability. Mondi's FunctionalBarrier Paper is a flexible packaging solution claimed to resist water vapour and moisture. It is said to be manufactured using responsibly sourced, renewable, and certified materials, and claims to feature a tear-resistant kraft base paper to ensure that the packaging is fully sealable and protects the product within. The new substrate is reportedly compatible with existing paper recycling streams in Spain, and its application on the seafood sticks is expected to save up to 20 tonnes of plastic each year. A spokesperson for the company said that it was their responsibility to offer sustainable solutions to their consumers, whose preferences have shifted towards paper-based packaging.



# Partnership brings dry moulded fibre tablet blister packs to market

A two-company partnership has resulted in the launch of a sustainable alternative to traditional non-recyclable PVC (polyvinyl chloride) blister packs. Swedish company PulPac, who are pioneers in dry moulding technology, and London-based PA Consulting are bringing dry moulded fibre tablet blister packs to market as a competitive packaging alternative for brands seeking to shift away from plastics. Dry moulded fibre uses renewable pulp and cellulose resources to produce low-cost, high-performance fibre-based packaging. The proprietary manufacturing process uses less CO2 and almost no water to create highly versatile tablet arrays that match the design and tablet count of commodity PVC, providing a like-for-like, scalable solution for pharma and consumer healthcare companies to use. With this initial proof of concept to demonstrate viability, industry collaboration with pharmaceutical, consumer health and FMCG industries is now required to accelerate development.



## Australian water company launches resealable aluminium bottle

Following an investment of \$500,000 (£276,000) in specialised capping equipment, Australian canned water company Wallaby has brought a new resealable aluminium bottle to market. The new capping line, sourced via the Japanese supplier which manufactures and prints the bottle, is installed at Wallaby's filling plant at Truganina, Victoria. The investment will enable the production of 120 bottles per minute with a line capacity of around 14 million units per annum. Wallaby claims that the bottles will compete against plastic, cartons and glass packaging as Australia's most recycled and recycle-friendly packaging alternative for bottled water. The company claims that introducing the 400ml aluminium bottle of spring water will save an estimated 150+ tonnes of plastic in the first year. Wallaby also says it intends to develop larger format containers between 600-750ml by the third quarter of 2023 and up to 1.25L by 2025.



## Cardboard strap solution replaces plastic cable ties

Zurich-based Keim Identity has been developing packaging solutions since 2006 and, over the years, has reportedly designed over a hundred sustainable packaging innovations. In most cases, Keim Packaging's solutions have replaced blister packaging, packaging with plastic parts, or glued packaging, and are 100% recyclable. Their latest innovation is the k-fix, which has been developed to replace the plastic cable ties so often seen on packaging to keep the product securely attached. The k-fix is a flexible cardboard strap made of tear-resistant cardboard with a resealable cardboard closure. As with a belt, the length can be varied before fixing. There are various alternatives for using k-fix. It can be connected to a carrier carton as a loose element or function as an integral part of the packaging. The company says that even relatively heavy items such as bicycle racks or tool sets can be tightly fastened with k-fix.





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## Spirits producer moves from glass to aluminium bottles

Penrhos Spirits, based in Herefordshire, England, has announced that it is moving its spirit offerings from glass into 100% recycled aluminium bottles, starting in January 2023. As part of an ongoing commitment to sustainability and improving the carbon footprint at Penrhos, the team decided to transition to aluminium bottles to provide consumers with what they claim is a more sustainable option to glass bottles. A recent study by researchers at University of Southampton considering several factors to conclude that glass is the least sustainable bottling option, with recycled aluminium the best choice for the environment on the market today. Penrhos' range of spirits, which includes gin, rum and a 0% ABV botanical 'spirit', will permanently transition to aluminium bottles throughout 2023. It is estimated that 75% of aluminium that has ever been produced is still in the material loop today. The brand's products are made from 'imperfectly perfect' fruit from Penrhos Farm that would otherwise go to waste.



## Children's dairy drink moves from plastic to board

Dutch multinational dairy cooperative FrieslandCampina N.V. has announced that it is moving its Yazoo Kids flavoured dairy drinks fro the current plastic bottle to cardboard cartons in a step towards the milkshake brand's sustainability goals. The move comes as Yazoo lo to make 100% of its packaging recyclable or reusable by 2025. The n packaging which appears in the form of a lunchbox-friendly square-shaped carton will be rolled out across its Chocolate, Strawberry and Banana flavours in x3 and x6 multipacks through grocery, convenier and wholesale channels. A spokesperson for FrieslandCampina said "Planet-first products are of ever-increasing importance to consume and retailers alike. A recent study found that 65% of the population believe that food and nutrition brands need to do more to protect the planet, a number that is only set to grow in the coming years."







## Wood pulp-based pouches are sustainable alternative to plastic medicine bottles

New York-based pharmaceutical company Cabinet Health aims to provide consumers and enterprises with plastic-free packaging for their everyday medicines. Their approach is to supply consumers with attractive, reusable, stackable containers and then give them the option to refill them with their own health care products delivered in pouches made with wood pulp rather than plastic. Their wood pulpbased pouches meet FDA safety standards. They can handle moisture and heat, and they don't leak. They are lighter than the typical plastic packaging which is an advantage since many pharmaceutical products are now delivered by mail. The pouches are also cost competitive with plastic options and are designed to be aesthetically pleasing. The pouches are certified as compostable and so a consumer that has a backyard worm bin or compost pile could keep them out of the landfill. Some municipal waste processors could successfully compost them with other forms of green waste.



## Spanish brewer introduces 'packaging free' format for multipacks

As part of its commitment to the planet, Spanish brewers Estrella Galicia has introduced a new packaging format for its multipacks that replaces cardboard with glue points to join the cans, and is known as the 'No Pack'. A spokesperson said that "Our ambition is to always do things better, and look for new ways to generate a greater positive impact on our environment. The No Pack is the perfect example that sums up our purpose not to settle". This new packaging will affect the 6 x 25cl and 6 x 33cl can packs of Estrella Galicia Especial. Later, it will be extended to the Estrella Galicia 0.0, the 1906 Reserva Especial and the Red Vintage. The company has also announced other changes in parallel to minimize waste also in larger formats: the film that covers the 12 and 24 can packs will be replaced by 100% recyclable paper.





## Protect and Preserve

#### **Protect and Preserve**

Solutions that prolong shelf life, decrease food waste, and safeguard contents have both environmental and economic benefits. We continue to observe new developments in this area. The COVID-19 pandemic has led to an increase in supply chain-based initiatives that aim to safely distribute vaccines.

Preventing food waste remains a crucial goal, and we are monitoring various packaging formats that have been engineered to reduce food waste. It is widely reported that between 33-50% of all food produced globally goes to waste, with a value of over \$1 trillion. Advancements in technology are playing a role in addressing this issue, with many recent developments using technology to detect and communicate changes in the state of food. Packaging plays a vital role in minimizing food waste. In this section, we will focus on examples that enhance the environment by extending shelf life or reducing waste, as well as packaging that protects the product through improved secondary packaging solutions that take into account environmental or cost considerations.





#### **Protect and Preserve**

Smart shelf life label designed to reduce consumer waste

University develops packaging to determine the freshness of products

Machinery manufacturer launches steam flushing system for hot food packing

Packaging concept for perfume replaces plastic film with tamper-evident labels

Partnership results in new NFC anti-counterfeiting product range

Temperature-sensitive inks indicate product degradation

Sensors embedded in food packaging monitor the freshness of products

### Smart shelf life label designed to reduce consumer waste

Swedish startup Innoscentia has been working with Emballator at their Innovation Centre in Ljungby, Sweden to carry out tests on their dynamic smart shelf life label for meat. The aim of the project is to help consumers, retailers and producers reduce food waste, with a dynamic label, which changes colour depending on when the meat is no longer edible. One of the challenges was the fact that the labels contain ink, so they needed to find a solution that allowed substances from the meat through, but did not let the ink through from the other side. This required testing a number of different label solutions to determine which one was the best. A spokesperson for Emballator said that this innovative smart label may have the potential to be used in other product areas. Development work continues.



## University develops packaging to determine the freshness of products

Russian scientists from the Advanced Engineering School of the Far Eastern Federal University (FES FEFU) have created food packaging that allows the assessment and control of the quality of fish and meat products in real-time. The smart packaging is a bright red film 0.2 mm thick, sufficiently elastic and resistant to deformation. The film contains in its composition polysaccharides and anthocyanins, which act as an indicator of changes in the active acidity of the medium. A rapid change in the colour of the film from red to blue indicates spoilage of raw fish. Scientists also claim that the film is edible, and tests have confirmed that the film not only protects the surface of products from harmful factors but also extends the shelf life of products.



# Machinery manufacturer launches steam flushing system for hot food packing

German machinery manufacturer Multivac has announced the launch of the SFP Light steam flushing system, enabling food producers to vacuum pack hot food without cooling it beforehand. Multivac says that hot food cannot usually be vacuum packed because a decrease in air pressure also brings down the boiling point of water. They say that if a machine created a negative pressure of 200 mbar, for example, the water inside the product would vapourise at 60°c, at which point it is no longer possible to reduce the pressure. Cavities are filled with food and sent to a hermetically enclosed sealing station. Here hot steam at a temperature of 180°C enters the station, and the upper web is sealed to the formed film. When the steam cools into water, the pack contracts; it is also said that the heat kills bacteria on the surface of the food and extends its shelf life.



# Packaging concept for perfume replaces plastic film with tamper-evident labels

Belgian packaging manufacturer Van Genechten Packaging has developed a packaging concept aimed at the perfume and cosmetics market. It can replace the plastic film that has been the industry standard until now but still offers protection against counterfeiting and is tamper evident. The labels display visible security elements to convey to the customer the product's value and how the manufacturer protects it from counterfeiting. By breaking the seal, the buyer or recipient can be sure that the product was not opened after it was sealed at the production site. Together with a security printing company, VGP first developed the concept and then the product range that was able to turn the formulated claim into reality. The label solutions available can look either simple or elaborate while simplifying the process, as the time-consuming and energy-intensive run through a shrink tunnel is no longer necessary.



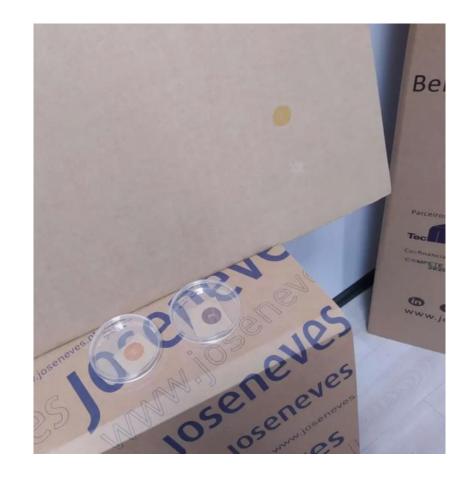
### Partnership results in new NFC anticounterfeiting product range

Ohio-based Avery Dennison is partnering with Dutch multinational STMicroelectronics to include its new ST25TN chip for three new designs of popular NFC (near field communication) inlays to its range of products for the electronics, apparel, beauty and healthcare markets. The new designs for AD Circus NFC ST25TN, AD Minitrack NFC ST25TN and AD Midas+ NFC ST25TN inlays and tags feature chips supplied by STMicroelectronics and complement the existing portfolio. NFC products allow brands to establish a direct communication channel with consumers and by leveraging Avery Dennison's connected product cloud, atma.io, these experiences can be targeted, contextdependent and personalised for deeper engagement. ST25TN chips are all fully NFC Forum 'type 2' and ISO 14443 'type A' compliant, and incorporate the TruST25 feature to aid in the fight against counterfeiting. It is reported that the ST25 NFC portfolio will contribute to more connected, smart and sustainable objects in several segments such as healthcare, packaging, consumer and beyond. Using NFC for anti-counterfeiting purposes allows brands to protect their products, which can damage their reputation and sales. It also provides consumers with a convenient way to verify the authenticity of products, which can help build trust and loyalty



# Temperature-sensitive inks indicate product degradation

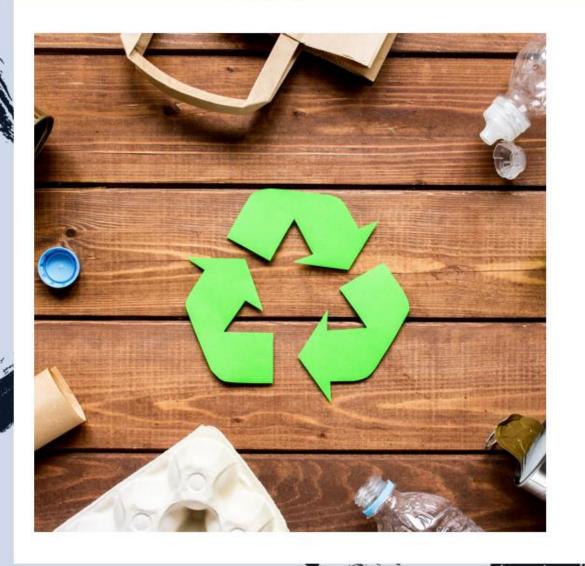
In a joint venture, Fibrenamics, the Institute for Innovation in Fibrous and Composite Materials at the University of Minho, and global online luxury fashion company José Neves, are all involved in the creation of "active" inks that function as sensors. These inks, printed in strategic places on the packaging, change colour and, in this way, warn the user when the packaged product has already started the degradation process. The inks work by natural processes that involve certain changes in pH levels. The ink developed is sensitive to these alterations and changes colour. Two types of functionalised ink have been developed, one that after changing is irreversible and another that can revert back to the original colour according to the conditions. These inks can also be adjusted to different temperature ranges, taking into account the specifications requested by customers. Indications are that the solution will be price competitive.



## Sensors embedded in food packaging monitor the freshness of products

A group of scientists from the National Technological Initiative, a Russian programme aimed at promoting advanced technologies in various sectors of the economy, have developed sensors designed to be embedded in food packaging to monitor the freshness of products. The idea is that If the milk in a bottle carrying such a sensor turns sour, the indicator on it will change colour. The innovation features multilayer sensitive films that can be integrated into any package – plastic, multilayer cartons and corks for glass containers. It is believed that, in theory, a sensor detecting a change in acidity could provide information on the condition of other milk products, including yoghurts and kefir. The scientists expect to begin testing the sensors by the end of 2022. Their mass use is preliminarily scheduled for 2024, although they concede that the added cost could be a barrier for some operators.





### Recycling Resurgence





### Recycling Resurgence

The global drive towards sustainability has put recycling initiatives at the forefront of the packaging industry. Challenging Plastic Pacts with a goal of 100% recyclable packaging by 2025, along with packaging taxes mandating a minimum of 30% recycled content, are pushing brands and retailers to find more effective ways to reduce waste and improve their environmental footprint.

We are observing an increase in the number of mono-material packaging developments and other measures aimed at enhancing recycling rates. The introduction of Packaging Taxes, such as the UK's plastic packaging levy implemented in April last year, is driving the demand for more sustainable packaging solutions. While there is still a long way to go in terms of educating consumers and improving recycling infrastructure, we are also seeing more chemical recycling initiatives and advancements in recycled PS and PP materials.

While mechanical recycling processes continue to dominate, there is a growing interest in chemical recycling methods. However, at this stage, they are still relatively modest in comparison. Nevertheless, the focus on recycling initiatives and recycled content is a positive step towards creating a more sustainable future for the packaging industry.





#### Recycling Resurgence

Pet treats move to PE monomaterial pouch

Ultra-lightweight bottle made from 100% recycled HDPE

Collaboration brings recycled content to MAP applications

Spanish dairy moves to new compostable tethered cap

First commercially available plastic pellets made from 100% recycled ocean plastics

Investment in Brazilian recycling plant for aseptic cartons
Rigid HDPE refill bottles with tethered cap are 100% recyclable
Swiss manufacturer introduces range of recycled HDPE caps
New recycling processes developed for PET containers
Breakthrough creates products out of unrecyclable PVC
Mayonnaise moves to 100% recycled aluminium tubes
Online grocery retailer to trial digital deposit return scheme
NIR technology is able to distinguish PLA from mixed plastic waste

### Pet treats move to PE monomaterial pouch

Eco Flexibles, located in Daventry, UK, has helped pet multivitamin treat brand Lovimals switch its packaging to a lightweight, recyclable monopolymer PE (polyethylene) solution. Lovimals opted for Eco Flexibles' EcoFlow pouch with PE zipper, and is digitally printed. The new mono material structure replaces their previous mixed-material PET and PE substrate. A spokesperson for Lovimals said that the reclose zipper and excellent barrier strength give practicality and performance for their customers and their four-legged friends, and the pack is now easily recyclable. The single-material EcoFlow Pouch can be supplied plain or printed, in high gloss, matt or tactile finishes, and in K-Seal or Doy styles. The versatile EcoFlow Pouch has attractive rounded corners, convenient tear notches and can be fitted with a merchandising-friendly Euroslot. The pouch format has grown in popularity in the last few years, and estimates forecast a compound annual growth rate of over 5% to 2027.



#### Ultra-lightweight bottle made from 100% recycled HDPE

Austrian plastic packaging manufacturer Alpla has launched Canupak, a new 'climate-optimized' solution. The ultra-lightweight beauty care packaging system is a bottle and cap made from 100 percent recycled HDPE (rHDPE), which the company says underlines its global sustainability strategy. Canupak reduces CO<sub>2</sub> emissions by around 71% compared to comparable products on the market. It is also ultra-light, with a combined weight of just 14g for the bottle and cap, for a 250ml bottle, and is also fully recyclable. The rHDPE is supplied by Alpla's own plants in the EU. The production of Canupak takes place exclusively with renewable energies. Alpla has set themselves the goal of all packaging being 100% recyclable and 25% post-consumer recycled material (PCR) should be processed by 2025. To this end, Alpla invests 50 million euros in recycling activities every year.



# Collaboration brings recycled content to MAP applications

German multinational chemical giant BASF, and Israeli sustainable packaging supplier StePac have collaborated to bring two new MAP (modified atmosphere packaging) products to market. These two new developments, known as Xgo and Xtend, will contain recycled material. StePac is focussing on chemically recycled plastics for the packaging of fresh perishables, and to this end, they will be using BASF's Ultramid Ccycled chemically recycled polyamide 6 (commonly known as nylon). Ultramid Ccycled will make up 30% of the packaging material, with options for integration at a higher percentage. Colombian passion fruit exporter, Jardin Exotics, will be the first to use the new packaging brand, Xgo Circular. Supplied as a film for horizontal form fill-and seal, the packaging's MAP properties slows the ripening process and preserves the quality of the fruit during the long sea transportation from Colombia to Europe.



# Spanish dairy moves to new compostable tethered cap

Madrid-based dairy Calidad Pascual has improved the recyclability of its milk packaging by moving to a new tethered cap ahead of EU legislation, which comes into force in July 2024, which is intended to improve recycling rates. Pascual's new cap is considered to be even more recyclable, due to the material used for the cap, sugar cane, also known as bagasse. The new format will be introduced on its classic range containers, which include whole, semi-skimmed and skimmed milk. From there, Pascual will continue to gradually introduce this format to the market through brands such as Bezoya, Bifrutas, Vivesoy or Essential, by the end of 2023. The first products to move to the new more sustainable, bioplastic tethered caps begin in December 2022. In 2020, Pascual was a pioneer in launching the first Tetra Brik for UHT milk on the market made with 89% materials from renewable sources.



# First commercially available plastic pellets made from 100% recycled ocean plastics

Canadian non-profit organisation, The Ocean Legacy Foundation, develops and implements worldwide plastic pollution programmes in a bid to end ocean plastic pollution. They have now announced the launch of what they say is the first commercially available plastic pellet in North America made from 100% recycled ocean plastics, and is called Legacy Plastic. The pellets are made from high-grade postconsumer processed recycled plastic recovered during the ocean, shoreline, and marine equipment cleanups. Legacy Plastic consists of recovered marine gear such as fishing ropes, buoys, floats, oyster trays and other plastic debris. It is reprocessed for use in the manufacturing of new durable products. According to National Geographic, there are 5.25 trillion pieces of plastic waste estimated to be in the world's oceans; 8.3 million metric tons of plastic are discarded in the sea annually, of which 236,000 are ingestible microplastics that marine creatures mistake for food.



### Investment in Brazilian recycling plant for aseptic cartons

Switzerland-based aseptic packaging solutions provider SIG has announced that its Brazilian arm has invested BRL 10 million (approx £1.56m) in innovative recycling technology that will enable polymers and aluminium used in aseptic carton packs to be recovered and sold separately. This will be for the first time on an industrial scale in Brazil. The renewable paper board that makes up around 75% of aseptic carton packs on average can be separated for recycling in paper mills through Brazil's existing recycling infrastructure. The polyethylene and aluminium mix (polyaluminium or PolyAl) left over from this process can now be recycled into a robust material for purposes such as roofing, pallets and furniture. The new technology has already undergone a pilot project that proved the effectiveness of the chemical recycling process. The new recycling plant is currently under construction in the state of Paraná. It is expected to begin operating in 2024.



# Rigid HDPE refill bottles with tethered cap are 100% recyclable

Austrian plastics manufacturer Alpla has what they describe as a minimalist, simplified refill solution for liquid skincare and cosmetics products. Simple One is said to be superior with regard to sustainability and is cost-competitive when compared to conventional pouches as it is made entirely of HDPE (high density polyethylene). The refill bottles are available as a one-to-one refill, or as a multi-refill. The refill bottles can be made of up to 100% post-consumer (PCR) HDPE and are up to 60% lighter than standard HDPE bottles. Although as light as a pouch, they are of a rigid construction. They come with a tethered cap, and as they are made from 100% HDPE, this makes them completely recyclable. The first brand to begin using the Simple One pouch is the Austrian natural skincare company Susanne Kaufmann, who expect their customers will use the refills for the company's iconic glass bottles.



# Swiss manufacturer introduces range of recycled HDPE caps

Hoffmann Neopac, a Swiss producer of tubes and caps, has announced the launch of what it says is a 'first-of-its-kind' range of post-consumer recycled caps for personal care and beauty packaging, with the three designs claimed to be compatible with existing HDPE streams. Said to contain approximately 70% PCR, each cap can be combined with a 'sustainably-minded' tube to result in a pack made up of 77% recycled material. Additionally, the caps are claimed to be produced using 50% green electricity at Neopac's manufacturing facilities in Switzerland and Hungary. The range currently includes screw caps from 19-40mm in diameter, a flip-top cap at 35mm in diameter, and an octagonal cap for sample tubes. All three are made using rHDPE. Neopac also says that the caps have achieved ratings for post-consumer recycled content, post-industrial recycled content, and International Sustainability & Carbon Certification (ISCC+), and also come with foodgrade statements from EFSA and FDA.



### New recycling processes developed for PET containers

The ITENE Technology Centre, based in Valencia, Spain, has developed two new processes for the evaluation and recycling of PET (polyethylene terephthalate) packaging. The objective of the research is to manage and value waste from multilayer, single-layer and coloured PET materials. By developing two new advanced recycling processes, the volume of PET container waste that is incinerated or landfilled can be reduced. These residues may be valued to obtain new sources of raw materials that can be reintroduced in the value chain. The first process will analyse the waste present in the PET stream. This analysis will provide answers about the waste that currently has low or no recyclability. The second process will involve cleaning processes. Treatment methods will be defined to improve depolymerisation processes, which involve the conversion of polymers into monomers. In parallel, enzymes to depolymerize PET residues will be identified and developed.



# Breakthrough creates products out of unrecyclable PVC

Researchers at the University of Michigan have developed a way of converting waste PVC (polyvinyl chloride) into usable products, opening up some interesting new possibilities when it comes to this traditionally unrecyclable material. PVC sits in the top handful of plastics in terms of production and volume, and is put to use in everything from piping and flooring to shower curtains, clothes and some limited packaging applications. Its recycling rate in the US, however, sits at zero, with efforts to recycle the material hindered by its toxic contents. Conventional recycling that relies on heat treatment allows dangerous chemicals such as phthalates to leach out, along with hydrochloric acid. A novel electrochemistry technique using electrons to break down the carbon-chlorine bonds in the material was used, and by using one of the PVC plasticisers to mediate the process, were able to control the release of hydrochloric acid carefully.



### Mayonnaise moves to 100% recycled aluminium tubes

Kavli Sweden, manufacturers of cheese and other dairy-based products, has announced that they have moved their mayonnaise into 100% recycled aluminium tubes. The move from energy-intensive production of virgin aluminium to 100% recycled aluminium yields a reported energy saving of 95% and a CO2 saving of 80%. The aluminium in Kavli's new mayonnaise tubes equates to 95% from collected and recycled metal packaging from households, while the remaining 5% comes from industrial waste. In a press release, Kavli states that the goals for their packaging are that by 2030 they should be 100% recyclable for Kavli's own brands and at least 70% of the packaging should be made of recycled packaging material. The new tubes have now started rolling out in Swedish stores and bear the message "100% recycled aluminium".



### Online grocery retailer to trial digital deposit return scheme

Online grocery retailer Ocado has announced that it is to conduct a three month-long trial of a new on-pack technology, designed to support a digital deposit return scheme and to tackle single-use plastic. As part of the trial, each of the retailer's fully recyclable milk bottles will feature unique QR codes. Upon purchasing the item, via an app, consumers can scan the code using their mobile phones, discard the item in an existing recycling bin and redeem a deposit straight into their mobile wallets. The deposit return scheme will see a levy imposed on recyclable drinks containers and is expected to be around 20p. Ocado will initially be trialling the QR codes on milk bottles to prove that it can print "unique every time" codes on mass-produced bottles. During the trial, customers will be directed to a website with information about recycling in their local area.



## NIR technology is able to distinguish PLA from mixed plastic waste

Netherlands-based polymer company TotalEnergies Corbion and the Norwegian recycling specialist Tomra Recycling have conducted successful trials to investigate how effectively the lactic acid-based bioplastic Polylactic acid (PLA) can be separated from unsorted municipal plastic waste. The trials were carried out at Tomra's plant in Mülheim-Kärlich, Germany, on a sorting machine with NIR (Near Infra-Red) technology. The result showed that it was both simple and uncomplicated to sort out the PLA plastic, for example in the form of trays from the other plastic waste. After sorting, the PLA plastic could be recycled in its entirety and with a very high reported purity. A spokesperson for TotalEnergies said that the trials showed that with the help of infrared technology, PLA plastic products can be easily sorted from waste and in closed-loop environments. Where PLA bottles and cups are used, the amount of PLA is high enough to make it economically possible to collect, sort and clean.





### **Getting Noticed**

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Despite the growth of online, the importance of creating impactful and noticeable packaging continues to create a point of difference. The packs have a role to get noticed on shelf as well as engage and delight in the consumer's hand and again this month we have some great examples. Despite the shift to online purchases, packaging that can get noticed continues to come to our attention. The importance of standing out on supermarket shelves or even in kitchen cupboards cannot be understated.

A pack's first impression can be the difference between success and failure in an ever-increasing competitive marketplace. We have tracked several examples that do just this. Also creating an impact in the hands of consumers is also important. A challenge for brands and retailers is to deliver pack finishes and decorations that meet the need to be sustainable.





### **Getting Noticed**

Beer manufacturer launches limited edition colour-changing nail polish

New holographic film has multiple applications

New printing technology for digitally printed World Cup cans

Fresnel lens technology gives eye-catching graphics

Fast food giant launches limited edition 'al fresco' dining solution

# Beer manufacturer launches limited edition colour-changing nail polish

Coors Light, owned by American-Canadian brewers Molson Coors, has released Chill Polish, a branded, colour-changing nail polish. The cosmetic product echoes how the mountains on Coors Light cans turn from grey to blue when the beer reaches what the brand says is the ideal drinking temperature through the use of thermochromic inks. The nail polish has been created in partnership with California-based Le Chat Nails, and is the beer company's take on bringing fun to the US holiday season. The nail polish is available for purchase in Coors Light's online shop and retails for \$7 (£5.85). New batches will drop every Tuesday at 10 a.m. until 13th December while supplies last. Additionally, consumers have a chance to win a bottle of the nail polish, a pint glass and a pair of fingerless gloves. A spokesperson for Coors said that they hoped that when people wore Chill Polish, it would remind them to drink Coors Light.



# New holographic film has multiple applications

California-based Roland DGA has introduced a new holographic prismatic film to its existing family of premium media offerings. The new film, called ESM-HOLO, is a multi-purpose film that's durable and easy to apply. Roland says it is ideal for indoor and short-term outdoor applications, such as labels, stickers and decals, packaging, POP displays, window displays, signage, and more. ESM-HOLO is a highquality, 6 mil holographic prismatic film featuring a permanent adhesive. Because ESM-HOLO has reported outstanding durability, it can be used without lamination. Those who want additional protection, however, can use this film in combination with Roland DGA's GuardLam gloss overlaminate film (ESM-GLGF). ESM-HOLO is available in a 15" x 75' roll size designed for use with the VersaSTUDIO BN-20 Series desktop printer/cutters. It's also offered in a 30" x 75' roll size for use with the company's 30-inch and wider large-format printers.



# New printing technology for digitally printed World Cup cans

Brazilian brewer Wienbier has released limited edition digitally printed cans to celebrate the 2022 World Cup tournament. The special edition labels will be on Wienbier's Hexamalte Pilsen beer. It is the first beer on the market incorporating Ball Corporation's new printing technology, Digital Printing, which was recently launched in Brazil and gives photographic quality images and vibrant colours. The limited edition features six different high quality printed collectable labels. With image reproduction at up to 600DPIs in the RGB photography language, the resolution is superior to the classic prints of 85DPIs, which start from the combination of only five colours in addition to white. Hexamalte claims to offer consumers a unique experience as it is the only beer to use six different malts, namely, Pilsen, Pale Ale, Munich, Vienna, Crystal and wheat malts.



# Fresnel lens technology gives eye-catching graphics

Taiwan-based K Laser Technology Inc. pioneer in optical hologram origination, hologram embossing and the material deposition process, with a focus on security. With K Laser's new Fresnel Lens circular cold foil patterns, the company says that printers can elevate their packaging design to be modern, sleek, and stylish using circle patterns. As brands compete for market share, K Laser says it's important to create a modern packaging design that wows customers. Fresnel Lens cold foil has the ability to accomplish that goal, says the company. Circles can be used as a background, to highlight and emphasise an important element, to call out multiple features, to frame elements, and more. Using the Fresnel Lens circular cold foil patterns in modern packaging design can attract the eye naturally and help packaging stand out among the others on crowded shelves.



# Fast food giant launches limited edition 'al fresco' dining solution

During Milan Design Week this year, fast food giant McDonald's, in collaboration with creative agency Leo Burnett, unveiled TableBag. Milan Design Week attracts over 400,000 visitors every year to Italy's design capital, and finding a place to have lunch becomes a difficult mission to the detriment of both restaurateurs and visitors looking for a moment to relax without leaving areas of close interest. So McDonald's chose to offer an alternative to the usual indoor spaces with tables and chairs. TableBag is a limited edition 100% recyclable take-out box that lets people recreate a decent eating space utilising the city's bollard. Once assembled, Table Bag is strong enough to take the weight of two complete meals, including drinks. TableBag was offered to selected lucky customers who ordered their food via the McDonald's application and was made of 100% recyclable corrugated board.





**Refill Revolution** 

#### **Refill Revolution**

The trend towards refillable and reusable packaging is gaining momentum as more companies explore ways to reduce their use of single-use, hard-to-recycle packaging. This growth is partly driven by the goal of the Plastic Pact to deliver reusable packaging by 2025. Many of these initiatives are coming from start-up and smaller brands, but multinational companies are also beginning to test the waters with small-scale trials and pilots. The dry food, household, and health and beauty sectors are currently the most active in this area.

Consumer attitudes towards single-use packaging are shifting, with a growing resistance to disposable packaging. The innovations in refillable and reusable packaging can be categorized into the four models outlined by the Ellen MacArthur Foundation: Refill at home, Return from home, Refill on the go, and Return on the go. The dry food, household, and personal care sectors are leading the way in this area. Many of the instore examples of refillable and reusable packaging are currently small trials and pilots, as major retail chains test the waters with a limited number of initiatives in select outlets. The next steps of these major retailers will be watched with interest.





### Refill Revolution

UK supermarket features refill station

Fast food chain moves to reusable packaging

Herb and spice producer moves to carton packaging

Dairy brand becomes early adopter of tethered carton caps

Refillable PP stick for solid formulas

Travel equipment company launches refillable toothpaste tube

Smart packaging is reusable alternative to EPS packaging

New addition to wooden cosmetics range is refillable

Car manufacturer trials reusable takeaway boxes

Own-label refill station launched in Polish supermarket

New refillable pouch system eliminates mess

Petfood manufacturer trials refillable containers in French retailer

Startup eliminates single-use packaging with reusable container subscription

<u>Label manufacturer moves to reusable plastic pallets</u>

Skincare brand introduces refill stations

Reusable, elegant alternative to single-use cake boxes

Alternative to single-use pizza boxes in development

Liqueur company joins closed loop system in UK first

### UK supermarket features refill station

Aldi UK has opened a new supermarket format which includes a refill station in the supermarket. The module is made by Czech company Miwa, who promote zero-waste shopping for coffee, nuts, almonds and seeds in reusable containers. Shoppers can first weigh their empty container or bag, fill it with one of the products, then weigh it again, attach a price label, and finally pay at the till. Miwa's solution, which it says has already succeeded in several European retail chains, is based on standardised reusable capsules circulating between shops, the service centre and manufacturers, and also maximum use of smart data. Miwa claims that one capsule saves almost 2,000 pieces of single-use packaging during its expected life. Aldi reportedly tested Miwa's zero-waste solution internally and decided to test it in a new supermarket near their UK headquarters in Royal Leamington Spa.



## Fast food chain moves to reusable packaging

McDonald's France is moving to reusable packaging in its restaurants. A Twitter post that went viral showed cola in a reusable plastic glass, and other items in plastic bowls. The move looks to respond to a News In France report that states that a new law to be introduced in France will prohibit single-use tableware in fast food establishments. A spokesperson for McDonald's said in the report that this reusable packaging will reduce the waste generated by the restaurant by up to 40%. They also said that they had experimented with several solutions, and think that they have found the one that works best with reusable tableware. A decision to roll out the solution across France has yet to be made, and it is believed it will be communicated formally once it is operational across more restaurants.



## Herb and spice producer moves to carton packaging

Bristol, UK-based Bart Ingredients has launched a new range of herb and spice ingredients in carton board packaging. The new format acts as a reported 'planet-friendly' alternative to the brand's glass jars or as a way to refill pre-owned Bart jars instead of purchasing a new one. By moving from glass jars to these refill cartons, which weigh 92% less than a 97g glass jar, Bart has estimated that it reduces CO2 emissions by 17 times. A spokesperson for Bart's said that this new format helps consumers reduce their carbon footprint and plays a big part in helping their business achieve its sustainability ambitions. The move to cartons covers 19 lines which include Chilli Flakes, Thyme, Himalayan Pink Salt, Black Peppercorns and Smoked Paprika, and can be purchased for RRP £1.50. The range of board refill packs are now available in 422 Morrisons stores.



## Dairy brand becomes early adopter of tethered carton caps

Aseptic packaging systems and solutions provider SIG Group has announced that German dairy company Landliebe Molkereiprodukte has become the first manufacturer to introduce SIG's combiSwift closure with tethered cap (TC) for its products. The launch of combiSwift TC comes ahead of the EU's Single-Use Plastics Directive deadline, which requires all single-use beverage containers to feature caps by July 2024. The SIG combiSwift tethered caps are designed to be used with existing SIG filling lines and closure applicators, with no major capital expenditure required by customers. The closure can be fixed in a preferred position by being pressed down, allowing consumers to drink or pour from the pack without the cap getting in the way or having to hold it, and is guaranteed 100% leakproof when reclosed after opening. The pack can be closed as usual by simply lifting the cap slightly before closing it.



### Refillable PP stick for solid formulas

Barcelona-based Quadpack has launched a sustainable evolution of its original PP (polypropylene) panstick. The Infinite PP Panstick is made of 100% PP, a recyclable material, and is now available in refillable format. Thanks to its eco-conception, Infinite PP Panstick has reduced its carbon emissions by 43% when compared to the original version, and its circularity index has tripled, indicating an improvement in sustainability and reduced environmental impact, according to a Lifecycle Assessment of the product. The evolution to a monomaterial and refillable pack made the product move up from Minimal to Advanced Level of Sustainability on Quadpack's PIP rating. Besides being sustainable, the product is versatile: it can be used for various formulas in solid formats, such as foundations, highlighters, sunscreen, serums and solid fragrances. Thanks to a practical snap-on system, the Infinite PP Panstick can be easily refilled, with top and bottom refilling possibilities.



## Travel equipment company launches refillable toothpaste tube

Colorado-based Matador Travel Equipment, a manufacturer of performance travel equipment, have launched a refillable toothpaste tube in order to replace wasteful single-use travel-size tubes. The refillable tubes come with a standard screw-cap opening on one end, and a wide-mouth opening on the other for refilling. The removable sliding clip seals the refilled end to prevent leaks, and a three-layer ethylene vinyl alcohol polymer (EVOH) vapor barrier prevents toothpaste from drying out. Both the one-week (22ml) and two-week (35ml) tubes are BPA-free (bisphenol A), PVC-free (polyvinyl chloride) and food-safe. The tubes are TSA-approved and are also dishwashersafe. They are priced at \$9.99 (£8.10) plus shipping, and this includes one of each size. The company says that as the tubes can be refilled indefinitely, they will pay for themselves in only a few uses when compared to buying travel-size tubes.



# Smart packaging is reusable alternative to EPS packaging

Australian company TomKat Global Solutions has developed an alternative packaging format intended to replace the industrystandard single-use EPS (expanded polystyrene) fish boxes. The company has arrived at a reusable format called the TomKat KoolPak, which is a durable, lightweight, thermally insulated container that consists of three replaceable components: lid, base, and thermal liner. Each of these components has been fitted with a battery-less NFC temperature sensor tag developed by Taiwanese RFID specialist Securitag Assembly Group (SAG), which allows for scanning of the product temperature without the need to open the lid, which simultaneously provides tamper protection. The company says that clients can monitor each container through every step of the supply chain, prove its provenance and ensure the safety and freshness of its content at any time. Each container can apparently be used more than 10 times, with some trials yielding re-uses of up to more than 20 occasions.



### New addition to wooden cosmetics range is refillable

Spanish cosmetics packaging manufacturer Quadpack has announced that it has a new addition to its Woodacity range of wood-based products. The Idol Woodacity Solo Twist Compact is a refillable solution that features the Solo Twist closure system, bringing a new, inclusive gesture for both right and left-handed consumers, who can open the cap on a quarter turn in either direction. The product is designed to house a flat, refillable metallic 59mm godet, held in place by a small dismantlable magnet in the base, to ease the separation of components for recycling. Thanks to a recess at the base, the godet can be easily extracted by hand, and replaced with a filled version. The casing is completely made of wood from European sustainablymanaged forests and can be PEFC or FSC-certified. It also comes with an embedded mirror in the cap.



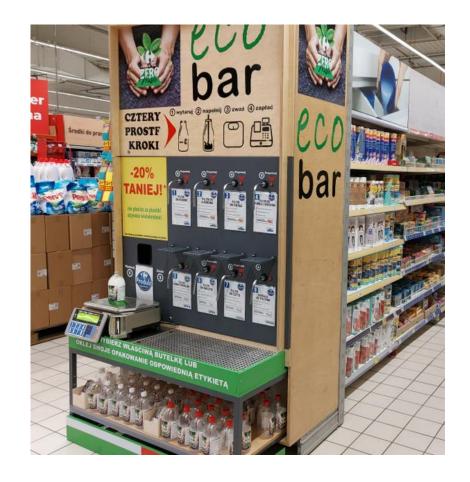
### Car manufacturer trials reusable takeaway boxes

Volvo Cars in Gothenburg, in conjunction with food service provider Compass Group and Panter, supplier of reusable food boxes, is to trial reusable packaging. The pilot project will take place at Volvo's Melting Pot restaurant and involves the removal of all standard disposable lunch boxes and replacing them with reusable multi-use lunch boxes. The reusable food boxes are free to use/borrow for guests, who only need to scan the food boxes and return them to The Melting Pot after use. A spokesperson for Panter said that their reusable boxes and mugs contribute to a better environment after around 20 uses. They could be used hundreds of times, after which they will be recycled, to become new containers. It is hoped that the pilot will be able to show whether a reusable solution works in staff restaurants and also how it is received by the employees.



# Own-label refill station launched in Polish supermarket

French supermarket chain Carrefour has announced the launch of its first refill station in its Arkadia store in Warsaw. Customers can now buy Carrefour own-brand chemical products for their own packaging or prepared reusable bottles. The company says that this is to both reduce waste and offer cheaper alternatives to popular products. In the refillomat, customers can choose from eight items from the household product range: hand soap and various cleaning products, such as liquids for the kitchen, dishes, glass, panels and wood, furniture, bathroom, as well as a universal liquid. Shoppers just select their product, take the bottle (their own or bought at the machine), hold down the button and fill the bottle as desired. They then stick the printout from the scale and pay for the product at the checkout. Carrefour claims that its own brand products at refillomats are up to 50% cheaper than branded goods in traditional packaging.



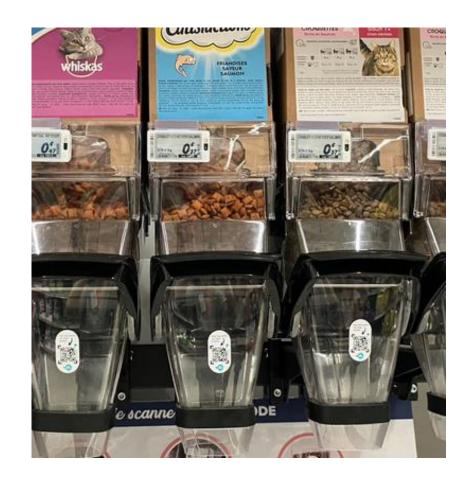
### New refillable pouch system eliminates mess

POUCHIT is a German startup based in Leipzig. The company has a refillable dispenser system which consists of a reusable, durable container combined with a replaceable stand-up pouch. Unlike other refill systems, the consumer simply replaces the empty stand-up pouch for a new one, meaning no spilling, squeezing and mixing. Also, thanks to the airless function, 99% of product is emptied from the pouch. The container is waterproof, and a bracket is available so that it can be kept conveniently in the shower. The pouch, lid and spout are all made of a mono-material plastic, meaning that they are recognized and recycled fully automatically by the sorting systems, simply by throwing it into the yellow bin (in Germany). The replacement pouch is lightweight at only 13g, reportedly saving over 70% raw materials compared to conventional packaging. It is aimed at all liquid skincare, cosmetic and cleaning products.



### Petfood manufacturer trials refillable containers in French retailer

American multinational manufacturer Mars Petcare has announced that in a partnership with French supermarket chain Carrefour, is conducting a pilot scheme where customers can refill pet food and treat containers. This new pilot partnership with Carrefour will offer the company's Perfect Fit dry cat foods, Catisfactions and Whiskas products, as well as treats, in bulk. The collaboration falls within the scope of France's National Pact on Plastic Packaging, through which cross-industry stakeholders are collaborating to deliver on circular economy solutions. Shoppers at Carrefour's hypermarket in Montesson will be provided with reusable or single-use containers for filling (and re-filling) pet food via on-site refill dispensers. Product information can be found through QR codes displayed on each dispenser. According to Mars Pet Nutrition, the solution not only provides a more circular solution for pet food packaging, but also allows pet owners to purchase the exact quantity needed for their pets.



# Startup eliminates single-use packaging with reusable container subscription

Bold Reuse is a Portland-based startup that is eliminating single use packaging with a circular, zero waste system that features reusable containers and cups. The scheme works on a subscription basis, where the number of containers a customer has in circulation reflects their monthly subscription. The most popular option is to have two containers in circulation for a monthly cost of \$8.99 (£7.35), which includes unlimited borrows and returns. Customers select their subscription level through the Bold Reuse App. Participating restaurants have a unique four-digit code. When customers place an order with a vendor, they enter the code when checking out in the app and show them their confirmation screen. After use, they then return the container to a drop-off point indicated on the app, scanning the QR code on the container to confirm its return.



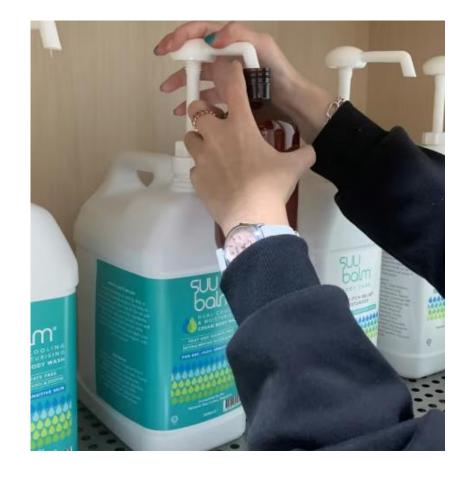
# Label manufacturer moves to reusable plastic pallets

Following a trial lasting nearly a year at its Dublin distribution centre, Avery Dennison Label and Packaging Materials are to extend its use of reusable plastic pallets supplied by Tosca. The move will take effect across factories and distribution centres in the EU, UK, Norway, Switzerland, and Turkey, and clean, empty pallets will be delivered to the company's sites from service centres across Europe at the end of the year. Tosca estimates that its plastic pallets can be used over 100 times and recycled at end of life – and that Avery Dennison alone could switch all its Euro-sized (1200 x 800mm) wooden pallets to plastic and save 819 tons of CO2 emissions. A spokesperson for Avery Dennison said that customers appreciated the fact that plastic pallets offer standard quality; they are cleaner (dust-free). It is also reported that there is less risk of damaging their products.



### Skincare brand introduces refill stations

Suu Balm is a Singapore-based company that produces skincare products formulated by the National Skin Centre. Concerned about the amount of packaging waste that the personal care sector produces annually, they have introduced new refill and recycle stations. This means that their customers can now replenish their Dual Cooling and Moisturising Cream Body Wash and Rapid Itch Relief Moisturiser by bringing their own clean bottles to refill their moisturiser and body wash containers. If they forget to bring their own, they can purchase new bottles or pick up refill packs. They can also drop off their empty Suu Balm bottles for recycling. The refill station is available in their Armenian Street premises. Today, Suu Balm is available in 12 countries and has become a big brand among users with sensitive skin.



### Reusable, elegant alternative to single-use cake boxes

The BentOgatO is a reusable, practical and elegant cake box developed by three people from Rennes, France. It is reported that every year in France, 250 million pastry boxes are thrown away, or one every three seconds. To reduce the quantity of single-use boxes the company MadameZeFrench was created. The BentOgatO was inspired by Japanese culture, namely origami, furoshiki and bento boxes. The material of the BentOgatO is mainly composed of paper fibres and a polypropylene film on both sides to ensure sealing and barrier properties to ensure that they are impermeable to water, grease and oxygen. The BentOgatO comes in a range of colours and five different sizes are available. It is easily cleanable and stable in hot and cold (+ 70°c to -25°c). It has an expected life of twelve reuses. Each BentOgatO box has folding instructions on the base of the box.



# Alternative to single-use pizza boxes in development

PIZZycle is a German company born as a university project during the pandemic. The founders noticed that parks, streets and waste bins were polluted with used pizza cardboard boxes and therefore posed the perfect design challenge. In Germany, corrugated pizza boxes are not considered recyclable and are destined for the 'everything else' grey bin for items that can't be recycled. This is because food residue is inseparable from the material and could damage the recycling machines. When disposed of correctly, they end up being burned or in a landfill. Thus, PIZZycle was born. PIZZycle is composed of two identical, round plates following the outline of a pizza. PIZZycle can be carried easily, cleaned in the dishwasher and stored efficiently. The innovative lock mechanism enables users to open and close the parts intuitively. Due to the extremely durable, scratch and heat-resistant material chosen, PIZZycle can be used several hundred times.



### Liqueur company joins closed loop system in UK first

Rémy Cointreau and ecoSPIRITS have officially announced the joint launch of a closed loop service in the United Kingdom. The partnership will ensure a 95% reduction in single use packaging waste for the scope of this pilot programme and will help the on-trade reduce their own waste, with 30-50% reduction in back-of-house storage and a 95% reduction in daily glass and cardboard waste. The initial pilot programme will include two iconic Rémy Cointreau brands, Mount Gay Eclipse and Cointreau orange liqueur, which will be available in cobranded ecoTOTETMs and SmartPourTMs. ecoSPIRITS has reportedly developed the world's first low carbon, low waste distribution technology for premium spirits and wine. Their patent-pending closed loop system nearly eliminates all packaging waste in the supply chain. The partnership marks Rémy Cointreau brands as the first global customer to launch with ecoSPIRITS in the UK.



#### About Us

ThePackHub is a leading UK based packaging innovation consultancy specialising in delivering packaging solutions to brand owners, retailers and packaging suppliers. ThePackHub manages a market-leading innovation database called The Innovation Zone. The easy to use resource has over 6,700 packaging innovations from around the world updated at 25 initiatives a week. This internal insight and knowledge feeds into much of the consultancy we undertake. ThePackHub also has an unrivalled network of packaging contacts and connections across the industry.

Our team delivers technical support for packaging projects, large and small. From quick and helpful tips and advice through to the project management of significant packaging initiatives, ThePackHub has established a strong reputation for helping companies from start-ups to multinational organisations. Our recent clients for technical support have included EAT, Greencore, Able & Cole, Loch Duart, Innocent, Aunt Bessies, Waitrose, Leathams, WRAP, KP Snacks, Iglo, Fortnum and Masons, Church and Dwight, Aubrey Allen, Glanbia, Pip & Nut and Happen!

We have published several packaging reports covering sustainability, packaging trends, supplier guides, seasonal packaging and more. The PackHub also hosts packaging events. We have delivered a dozen face-to-face seminars that provide insight from expert speakers as well as bring the industry together to network and collaborate.

ThePackHub has a wealth of experience helping many major companies with their packaging innovation. Clients include Arla Foods, Waitrose, Barilla, Coca Cola, PepsiCo, Mondi, Premier Foods, AB InBev, Kraft Heinz, Mondelez, Mars Wrigley, Church & Dwight, PZ Cussons, Meiyume, Walgreen Boots Alliance, Marks & Spencer, Lidl, Aldi and many more.

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