



# PACKAGING INNOVATION

BRIEFING REPORT

DECEMBER 2023



## Welcome

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

In this comprehensive and unique monthly report, created exclusively for Innovation Zone members, you'll find a wealth of information on the latest packaging innovations and industry news.

With 124 pages of content, including 110 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.

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# Summary

Our latest monthly report underscores the latest advancements in packaging innovation, highlighting key areas such as bio-based packaging, tech-enabled solutions, e-commerce packaging, functional packaging, recycling initiatives plastic reduction, and refillable and reusable packaging. Sustainability remains the primary focus, with approximately 80% of the latest initiatives being eco-centric.

The biobased packaging industry, particularly seaweed-based packages, is seeing rapid expansion, and consumer-centric packaging continues to be vital. Furthermore, the surge in e-commerce offers increasing opportunities for brands and retailers to provide packaging solutions specifically designed for this platform. The trend towards refillable and reusable packaging is picking up steam, with a plethora of initiatives observed in the dry food, household, and personal care sectors.

Recycling initiatives continue to be among the most dynamic sustainability actions, fuelled by the stringent commitments of global Plastic Pacts and packaging taxes.

# The innovations featured track ThePackHub's trend areas:

[Recycling Resurgence](#)

[Refill Revolution](#)

[Paperisation](#)

[Bio Alternatives](#)

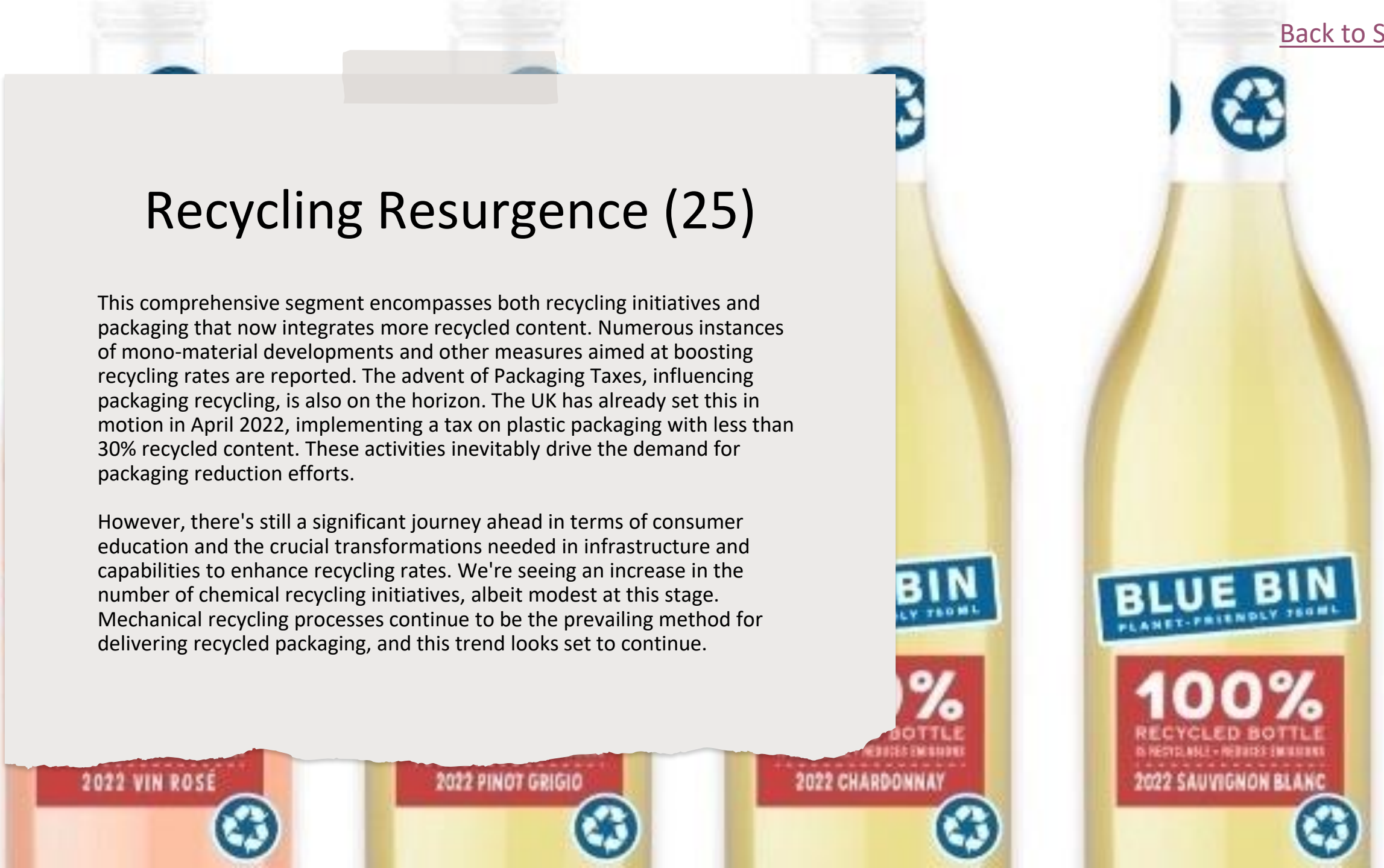
[Miscellaneous](#)



## Recycling Resurgence (25)

This comprehensive segment encompasses both recycling initiatives and packaging that now integrates more recycled content. Numerous instances of mono-material developments and other measures aimed at boosting recycling rates are reported. The advent of Packaging Taxes, influencing packaging recycling, is also on the horizon. The UK has already set this in motion in April 2022, implementing a tax on plastic packaging with less than 30% recycled content. These activities inevitably drive the demand for packaging reduction efforts.

However, there's still a significant journey ahead in terms of consumer education and the crucial transformations needed in infrastructure and capabilities to enhance recycling rates. We're seeing an increase in the number of chemical recycling initiatives, albeit modest at this stage. Mechanical recycling processes continue to be the prevailing method for delivering recycled packaging, and this trend looks set to continue.



# Recycling Resurgence

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# Partnership brings recycled shrink film made from waste fishing gear to market

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Duo, a Manchester-based flexible packaging supplier, has formed a partnership with Danish plastic recycler Plastix to bring a new product to the FMCG market. The companies have developed a shrink film utilising Oceanix HDPE (high density polyethylene) from Plastix – a recycled plastic made from waste fishing gear. Fishing gear is one of the deadliest forms of marine waste, reportedly threatening 66% of marine animals and 50% of seabirds. The Plastix technology enables the maritime industry to minimise waste fishing gear pollution, which could otherwise end up in the oceans. Oceanix has undergone a life-cycle assessment and is confirmed to provide up to 94% CO<sub>2</sub>e savings compared to virgin plastics. A spokesperson for Duo said that many brand owners were expressing a big interest in replacing virgin plastic shrink films with recycled plastic alternatives, and they are excited to begin rolling out these new products in the coming months.



# PVC-free coating enables recycling of coffee capsules

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Actega is a German company that develops and produces specialty coatings, inks, adhesives and sealing compounds. The company says that it has recently achieved an important breakthrough in the coffee capsule market. Their new ACTEseal heat seal coatings for the internal coating of aluminium coffee capsules are PVC-free (polyvinyl chloride), significantly contributing to improved recyclability. Aluminium coffee capsules covered with coatings containing PVC are difficult to recycle, as combustion of the halogen-containing coating produces substances that can be associated with environmental damage. Complex and costly recycling processes with additional filter systems are therefore required. In addition, legal restrictions on the use of PVC are already on the horizon in Europe. Actega's ACTEseal coatings are also said to impress with their excellent sealing seam strength, high burst pressure in the stress test, and their flexibility and formability.



# Skincare brand chooses patented tube for eye cream made from recycled PE

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French skincare brand Caudalie has selected the Tense Tube, by Paris-based cosmetic packaging provider Cosmogen for its Vinoperfect Brightening Eye Cream. Cosmogen's patented Tense Tube is crafted from post-consumer recycled (PCR) polyethylene (PE) and features a ceramic tip. The ceramic tip is said to not only provide a refreshing sensation but also enhances the treatment's effectiveness on dark circles, unveiling a brighter eye contour for a rejuvenated appearance. To facilitate easy sorting and recycling at the end of the tube's life, the tip can be effortlessly removed. The Cosmogen Tense Tube is a highly customisable standard packaging option, while also being available in recycled plastic. It offers the option of a removable ceramic or metal applicator, the latter of which can be textured and personalized to create a distinctive sensory experience. Notably, the metal applicator is designed for reuse on a refill, contributing to a sustainable approach.



# Partnership allows customers to recycle soap packaging

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Colgate-Palmolive US has announced a partnership with New Jersey recycling leaders TerraCycle, which will enable its customers to recycle all brands of dish refill flexible packaging and caps. The Palmolive Refill Free Recycling Program is open to any interested individual, school, office, or community organization in the US. Colgate-Palmolive says that participation is easy: sign up on TerraCycle's Palmolive Refill Free Recycling Program page and mail in any brand of flexible dish soap refill packaging and caps using the prepaid shipping label from anywhere in the United States. Once collected, the dish refill packaging and caps are cleaned and separated by material type. The materials are recycled into raw formats that manufacturers will use to make new products. Colgate-Palmolive aims to eliminate the use of one-third of virgin plastics and make all of its plastic packaging recyclable, reusable, or compostable by 2025.



# Scandinavian producer of middle eastern foods joins recycling deposit scheme

Sevan Hummus Factory AB is the leading industrial producer in Scandinavia of fresh and healthy dips and sauces from the Middle East. They are now partnering with Stockholm-based Bower, who run a deposit scheme for recycling packaging. Sevan has plastic, paper, glass and metal packaging in its product range, and now all of them can be returned via Bower. For each recycled Sevan product, the customer gets five points, which are then turned into money in the customer's account. The customer scans and sorts their packages at home. They can recycle plastic containers, milk cartons, metal cans – basically, anything with a barcode can be recycled with Bower. The customer then uses their existing recycling location and is rewarded with points. Since Bower was launched in 2019, over 73 million packages have been pledged via the app.



# Swedish cheese maker moves to recyclable PP pack

The Nordic arm of global packaging company Mondi has collaborated with Skånemejerier, a Swedish dairy, to create a polypropylene (PP) based mono-material pack for, among others, ICA's Hushållsost cheese. The new packaging comprises a recyclable mono-material base web and lidding film, all of which Mondi produces and prints before being converted for 1kg and 2kg blocks of cheese by Skånemejerier. It will be sold in leading Swedish supermarket ICA. Mondi's mono-material solution provides high barriers against oxygen and water vapour, keeping the product fresh on the supermarket shelf. It offers high puncture resistance, protecting the cheese and great printability, so the brand and recycling messages can be communicated well on-pack. The mono-material cheese packaging on ICA's shelves won this year's PackNorth Award in the 'Food' category and was also recognised at the Empack fair in October in Stockholm, Sweden.



# Microwavable frozen seafood meal pouches are made from recyclable monomaterial

Northampton-based Constantia FFP and Sykes Seafood, based in Cheshire, have partnered to bring a range of frozen 'Ready to Cook' meal solutions for Aldi UK. Aldi wanted solutions that were quick and easy to prepare but also full of flavour and healthy. The result was a range of three 'Steam and Serve' seafood and sauce options that could be microwaved from frozen and ready in less than five minutes. Constantia FFP proposed 'PP-Steam', an all-PP (polypropylene) mono-material laminate that ticked all the boxes. Not only did the material meet the functional demands of the product and could be microwaved from frozen, but it is also recyclable and provides excellent consumer convenience. Due to the unique valve technology applied to the pouches, heat and pressure in the microwave allows a controlled release of steam for a perfect cooking result.



# New PE cold seal film is approved for recycling in US

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A three-way collaboration has resulted in the development of a PE (polyethylene) cold seal film that has passed the Association of Plastic Recyclers (APR) test protocol for PE flexible packaging, making it eligible for the How2Recycle Store Drop-off label. The three companies developing the film are converter American Packaging Corp., adhesive manufacturer Bostik, and PE film producer Charter Next Generation (CNG). Packaging from the new film meets recognised recyclability standards, is non-damaging to the recycling stream, and is easy for consumers to recycle. The impetus for the partnership was How2Recycle's concern about how cold-seal adhesives affect the recycling stream. This issue surfaced when the group conducted its most recent guideline review of flexible PE recycling streams. The new film can be used with any dry foods, which include confectionery, salty snacks, nutritional bars, bakery, ice cream, candy, etc.



# Beverage giant introduces 100% recycled plastic bottles in Canada

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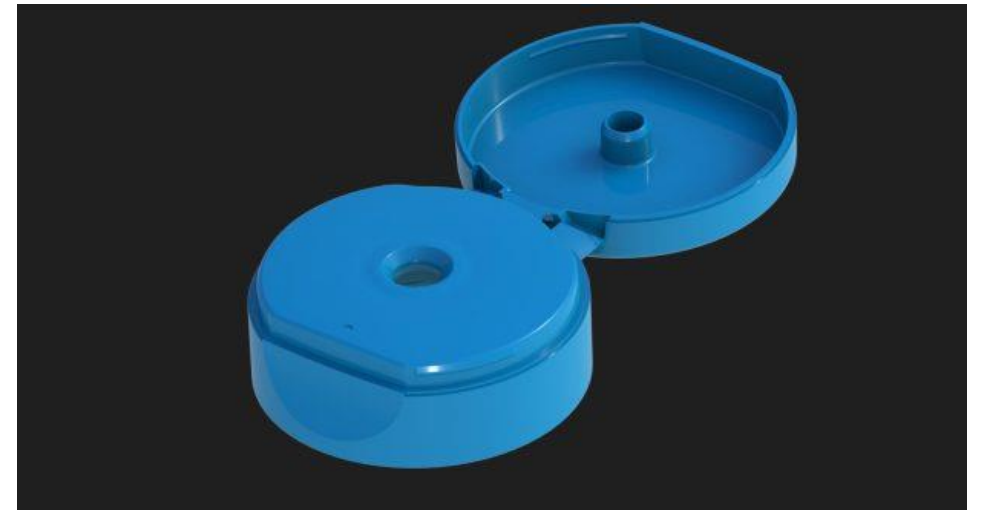
Global beverage giant Coca Cola is to introduce 100% recycled plastic bottles in Canada. From early 2024, all 500ml carbonated beverage bottles offered by the company will be made of 100% recycled plastic, excluding the bottles' caps and labels. The move is expected to prevent 7.6 million pounds (3,447 tonnes) of new plastic from being produced in 2024 alone while also reducing approximately 7,000 tonnes of carbon dioxide emissions annually. All the company's 100% recycled plastic bottles will feature the 'Recycle Me Again' message to further remind its consumers. The transition to 100% recycled plastic bottles is in line with the company's 'World Without Waste' target, which seeks to leverage at least 50% recycled content in its packaging by 2030 and to significantly reduce virgin plastic usage. The new bottles will be manufactured by family-owned Canadian business Coke Canada Bottling at its facilities in Brampton, Ontario; Calgary, Alberta; Lachine, Quebec, and Richmond, British Columbia.



# Slimline tube cap reduces plastic use and CO2 emissions

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Indiana-based Berry Global has announced the introduction of a new lightweight tube closure, which the company says delivers greenhouse gas savings compared to traditional caps through a new lightweight and low-profile design. As one of the lightest solutions currently available on the market, Slimline closures meet customers' performance requirements and underline Berry's commitment to minimise the use of virgin plastic. The closures will be available in 35mm and 50mm diameters, each in matt and glossy surface finishes and with 3mm and 5mm orifices. The closures can be manufactured in virgin polyethylene (PE) and polypropylene (PP) or with food-safe post-consumer recycled plastic (rPE and rPP) from CleanStream, Berry's internal closed-loop recycling process. The Slimline design targets personal care and pharmaceutical applications, such as skin care, body wash, and hair care, and it is compatible with the new generation of flat tube shoulders.



# New 20 litre stackable container is 22% lighter than industry standard

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Plastipak Italy has developed a lightweight preform for a 20-litre stackable container in partnership with Belgian fillers PVG Liquids. The container is expected to reduce PET (polyethylene terephthalate) usage by 500 tonnes in the next five years and eliminate approximately 200 tonnes of CO2 emissions annually. The new container requires significantly less PET per container than its original 500g preform. It has already been created using 10% recycled PET, and its 375g weight is lower than the industry standard of 480g and Plastipak's previous lightweight solution of 390g. Produced at Plastipak's plant in Verbania, Italy, the container is manufactured with a low-crystallinity resin. The company believes that its geometric design 'makes the preform a strong candidate for post-consumer resin. Although originally designed for combustible fluids, it can be used in industrial kitchens to store products like olive oil, as it is made from food-grade PET.



# Non-profit examining potential recyclable materials for blister packs

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Adelphe is a Paris-based non-profit organisation aiming to develop household packaging recycling from companies in France. It has now announced that it is investigating three potential alternative solutions to PVC and aluminium blister packs. Adelphe is exploring a 100% polyethylene terephthalate (PET) alternative, or a solution combining polypropylene (PP) and/or polyethylene (PE). These resins benefit from recycling solutions. The third alternative is the aluminium blister without chlorinated compounds. The solution is recyclable, but the overall environmental impact of aluminium remains a barrier to be removed. The Anti-Waste and Circular Economy law requires that from January 1, 2030, all products can enter a recycling channel, but it is felt that the current industry-standard polyvinyl chloride (PVC) and aluminium blister is not recyclable. This is the observation that has led Adelphe to bring together industry-led working parties to come together to identify sustainable solutions for blister packs.



# New lubricant packaging uses 20% less plastic and is more space efficient

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Lubricant manufacturer Castrol has introduced more sustainable packaging for its products in Europe. The new range of packaging reportedly uses up to 20% less plastic. The new packaging will be available in half-litre, one-litre, four-litre and five-litre sizes. According to the manufacturer, they also have the advantage of being more compact on the shelf and easier to transport than previous packaging. In the case of the five-litre packaging, the sharp corners of the packaging were transformed into projections designed for greater resistance and solidity. Overall pack shapes have also been optimised to allow more packs to fit on pallets and shelves. With this space optimization, including the repositioning of the handle to the corner, 28% more boxes with four-litre packs can now fit on a single pallet. Likewise, 36 boxes of five-litre packaging now fit on a pallet, compared to 28 boxes previously.



# Post consumer resin for bottle caps and lids is FDA approved

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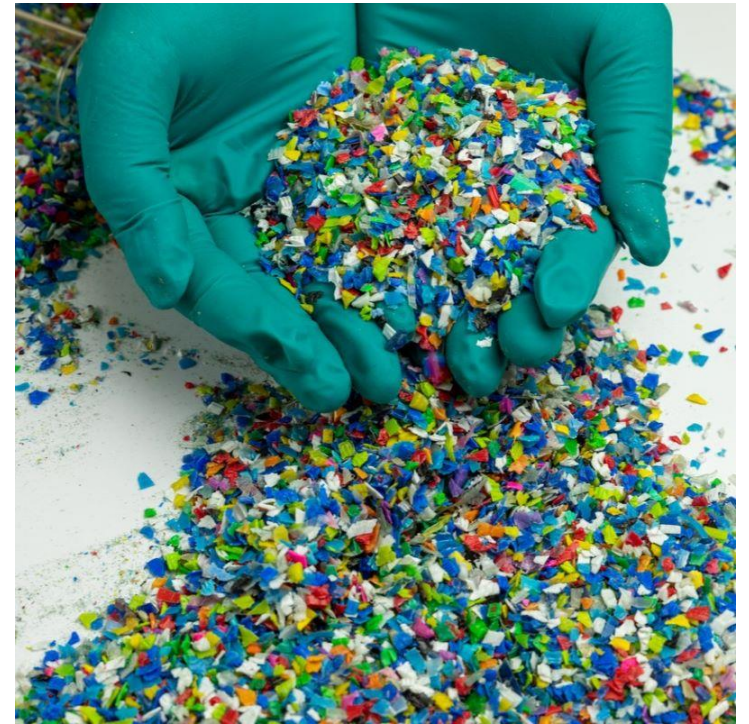
Indiana-based PolyCycle Innovation has developed a new post-consumer recycled (PCR) resin made from 100% recycled plastics from North American recycling organisations. The company uses high-density polyethylene (HDPE) and polypropylene (PP) post consumer resin (PCR), which may be used for product closures, such as packaging lids and bottle caps. PolyCycle's FDA-approved manufacturing process eliminates potential contaminants from post-consumer recycled materials, so its resin may meet or exceed the performance of virgin resins. The company aims to contribute to a circular materials economy by also ensuring the resin may be recycled again—closures made from PolyCycle's resin are 100% recyclable at all standard recycling centres. According to the company, PolyCycle closures reduce energy consumption by 79% during the resin manufacturing process and produce 67% less emissions than virgin resin. The resin also allows customers to comply with packaging requirements legislation and extended producer responsibility requirements.



# Researchers develop artificial proteins capable of degrading PET

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Spanish scientists have developed artificial proteins capable of degrading PET (polyethylene terephthalate) microplastics and nanoplastics while reducing them to their essential components, allowing them to be recycled. Scientists from the Barcelona Supercomputing Centre – Centro Nacional de Supercomputación (BSC-CNS), Spain, worked together with research groups from the Institute of Catalysis and Petrochemistry of the CSIC (ICP-CSIC) and the Complutense University of Madrid. The researchers used a defence protein from the strawberry anemone (*Actinia fragacea*), to which they added the new function after design, using computational methods. One of the researchers said that what the team is doing is like “adding arms to a person.” These arms consist of just three amino acids that function as scissors that are capable of cutting small PET particles. The developed artificial proteins can then degrade PET microplastics and make them recyclable.



# Advanced recycling plant will process 'unrecyclable' plastics

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London-based Mura Technology has announced the opening of its first commercial-scale HydroPRS advanced plastic recycling plant in Teesside. The plant will process currently 'unrecyclable' flexible and rigid mixed plastics into recycled hydrocarbon feedstocks for repeated plastic production. The site reportedly has the capacity to produce 20ktpa (kilotonne per annum) of recycled liquid hydrocarbon products and the facility to expand its production capacity by over three times its initial size in the future. It is said to have created 150 jobs during its build and commissioning phases and now expects to offer up to 50 direct jobs. HydroPRS is a process designed to complement mechanical recycling and produce recycled plastic feedstock to manufacture new plastics, facilitating a circular economy. It uses supercritical water, or water under high pressure and temperature, and converts films, pots, tubs, trays, and other post-consumer, multi-layered plastics into stable hydrocarbon feedstocks.



# Partnership brings 'right-sized' packaging to retail giant

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Austrian logistics and supply chain automation specialists Knapp, and US on-demand packaging system provider Packsize are collaborating to reduce the number of cardboard boxes and filling material in packaging already used at Walmart headquarters. The results are said to be a huge step towards sustainability: less cardboard waste, fewer truck trips and reduced staff costs. Thanks to 'right-sized packaging', the cardboard adapts exactly to the size of the merchandise. As soon as an order is placed, the software calculates the required shipping box size based on the master data and generates it using Packsize's carton machine. The custom-made destination cardboard box for picking is then headed directly to the workstation. This considerably reduces packaging and filling material and, of course, also saves shipping costs. By precisely adapting the packaging size, the size of the cardboard box is reduced by 40%.



# Wine bottle screw cap manufacturer reduces CO2 emissions by 35%

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Amcor Capsules, based in Paris, has announced a reduction of the carbon footprint of its Stelvin aluminium screw cap by up to 35% when compared to a standard screw cap produced with European aluminium sheets. This is made possible through the introduction of up to 46% recycled aluminium and the careful selection of low-carbon primary aluminium, which is certified and independently verified in the manufacturing process. This reduction applies immediately to Stelvin and all 30H60 screw caps produced in Europe, North America and South America for wine and spirits brands. Brands can also go further by selecting the PVDC4-free liner named Stelvin Inside. A spokesperson for the company said that Amcor Capsules were pioneers as far back as 1964 with the launch of the first screw cap for wine. Stelvin is said to be recognised and praised by winemakers worldwide as setting the standard for quality and as one of the most sustainable capping solutions in the industry.



# US beauty brand to increase recycled and recyclable content of packaging

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South Korea's SK Chemicals has formed a partnership with American cosmetics brand Estée Lauder to supply it with recycled and recyclable solutions, which will help the company accelerate its transition to circular packaging solutions. SK Chemicals is a specialist in advanced recycling using a technology that chemically allows waste plastic to decompose into monomers. They will supply the Estée Lauder Companies with resins incorporating advanced recycled materials such as Ecotria CR and Skypet CR, which are based on chemically recycled polyethylene terephthalate (PET) waste or Ecozen Claro. This semi-crystalline copolyester grade can be incorporated into a recycle stream. The Estée Lauder Companies will use the materials supplied by SK Chemicals to develop circular packaging for its entire portfolio of more than twenty brand names, including Bobbi Brown Cosmetics, Aveda, Clinique, Tom Ford, Glamglow, Jo Malone London and La Mer.



# New addition to French recycle-ready PP cosmetic sticks

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French cosmetic and beauty packaging manufacturer Albéa has announced the launch of a new product for their Breizhstick collection of sticks. Following on from the launch of the first Breizhstick guided stick last year, the packaging manufacturer has introduced Breizhstick Blunt, which offers a flat top shape for a classic application. The new stick joins the Breizhstick Tilty, designed with bevelled shape for a precise application. Albéa's "Breizhstick" is a four-piece, mono-material polypropylene (PP) stick that is recycle-ready while answering several criteria of beauty packs like lightweight, shape differentiation, and mechanical resistance. The name "Breizhstick" is a nod to Breton identity, as it is made in Plouhinec, Albéa's European centre of excellence for lipsticks. A spokesperson for the company said that with the Breizhstick family, they are expanding their offer of recycle-ready solutions while delivering on their commitment to lower the carbon footprint of its packaging.



# Voided PE offers recyclable alternative to BOPP for confectionery

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Wisconsin-based VOID Technologies has launched a PE (polyethylene) alternative to pearled BOPP (biaxially oriented polypropylene), known as the VO+ PE 1300 Series. The resulting voided PE film structures are compatible with existing PE recycling streams and meet the requirements for a wide range of recycle-ready packaging applications such as laminates, wicketed bags, labels, and flow wraps. While pearled BOPP has displaced paper for opaque white packaging, labels, and confectionery wrappers since the 1980s, it is challenging to recycle as it is very difficult to separate from flexible PE packaging. VOID said the two materials are incompatible, and post-use BOPP can essentially function as a contaminant in the more common PE flexible packaging recycle streams. Even if BOPP could be successfully separated from PE flexibles, it is claimed that there are almost no dedicated recycling streams for flexible PP packaging, meaning the material would likely be lost to landfill.



# Chocolate bar transitions to 90% recycled PP content

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In what Nestlé is calling an Australian first, the global multinational food and drink company has increased the amount of recycled plastic in its iconic KitKat chocolate bar to 90%, which the company says is the highest proportion used in soft plastic by any major Australian food brand. Nestlé says that the move will cut the use of 1,200,000 sqm of virgin plastic each year, enough to cover approximately 1000 Olympic-sized swimming pools. The 90% recycled plastic is allocated using the ISCC mass balance approach. The company says that customers are looking for better packaging, including packaging made with more recycled material. They also said that while recycled plastic suitable for food wrappers remains scarce, they are working closely with their suppliers to transition as quickly as possible. The new wrappers will be used on the classic KitKat and KitKat Gold 4-finger bars, KitKat Aero Mint bars, and classic KitKat blocks.



# Partnership aims to bring PP monomaterial blister pack to market

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Two packaging manufacturers have partnered to develop further a sustainable mono-material PP (polypropylene) blister pack. Perlen Packaging AG, based in Switzerland and Germany's ETIMEX Primary Packaging GmbH, are working to meet the growing demand for recyclable packaging solutions in the pharmaceutical industry. The objective of the cooperation is to offer demand-oriented, sustainable and fully recyclable packaging solutions of the highest quality. The partnership intends to jointly market and distribute ETIMEX's PP Monoblister product. Both companies are well known in the market for their individual and specialised blister solutions and play a pioneering role in environmental protection, sustainable and responsible use of resources and CO2 emissions reduction. A spokesperson for Etimex said that their sustainable PP mono blister Purelay Pharm was a perfect complement to Perlen Packaging's range of packaging solutions.



# Researchers develop recyclable silver metal ink for electronics

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Scientists at a Welsh University say they have developed a recyclable silver conductive ink which they hope can enable the creation of circular electronics without compromising performance. The researchers at Swansea University developed a new, low-temperature curing ink for screen printing conductive tracks, and they intend to provide a route to scale up the technology using commercially available processes. The key to the technology resides in the conductive particles, giving the opportunity to adjust the formulation to suit different processes and requirements while maintaining recyclability. The ink has been designed to be recovered from various substrates, including paper or plastic, and the product, packaging, and manufacturing waste. A spokesperson for the university said that they envisaged the ink being used in creating connected and intelligent packaging, including RFID aerials for IoT (Internet of Things) monitoring, capacitive touch sensors, and illumination in high-value packaging, without generating electronic waste.



# Swiss lubricant manufacturer switches to 100% recycled packaging

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Motorex is a Swiss company that manufactures lubricants specifically for bicycles and motorbikes. The company has now announced that they are using packaging for their products that is made from 100% recycled material and which can be recycled again after emptying. When customers hand over their empty packaging to a collection point for hazardous waste, the material returns to the cycle and is recycled and made into other products. In this way, Motorex wants to contribute to a circular economy that will eventually work without new raw materials. Motorex is switching its products in its Clean, Care and Lube categories to sustainable packaging with immediate effect. Refillable and reusable solutions that significantly reduce waste have been in use for their Workshop range for some time now. The company says that it is continuously building on its sustainability efforts to conserve and protect natural resources for future generations.



## Refill Revolution (13)

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 startup 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 in-store 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

[German retail chain sells own brand personal care products in reusable packaging](#)

[Monomaterial cosmetic compact is designed for refilling and recycling](#)

[Fresh bananas move to reusable containers for supply chain](#)

[French startup helps brands transition to reusable packaging](#)

[German drinks company moves to reusable bottle made with 50% recycled content](#)

[Refillable cosmetic jar 'pops' when insert is replaced](#)

[French skincare brand launches anti-aging cream in refillable jar](#)

[Swedish companies form partnership to offer reusable takeaway packaging](#)

[American cleaning products company launches refillable aluminium bottles](#)

[Healthcare prescription service utilities refillable glass bottle to cut down on waste](#)

[Bulk packaging solution is reusable and space-saving](#)

[California startup launches intelligent refillable dispenser](#)

[Discounter supermarket to trial refillable packaging for laundry products in Netherlands](#)

# German retail chain sells own brand personal care products in reusable packaging

German retail chain Müller is selling its own brand personal care products in reusable packaging supplied by SEA ME GmbH. Müller will offer six products from different product groups from their successful brand AVEO in reusable glass bottles as part of SEA ME's zero00 reusable system. Müller has spent almost a year and a half of marketing and returning empties from the SEA ME brand, and are now taking the next step and is the first to sell products from one of its own brands in the zero00 reusable system. SEA ME GmbH has developed its refillable offering together with sustainability-focused brands and trading partners throughout Germany and Austria. Müller will offer two scents in each of the three product categories of hand soap, body lotion and bath gel. The AVEO products in reusable packaging are currently available in German and Austrian Müller branches.



# Monomaterial cosmetic compact is designed for refilling and recycling

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Tennessee-based Eastman Chemicals and cosmetics packaging provider Icons ICS, headquartered in Hong Kong, have formed a partnership to launch a monomaterial cosmetic compact. The solution is made entirely from Eastman Cristal One Renew, a RIC1 resin with 100% certified recycled content (allocated via ISCC-certified mass balance approach). Cristal One Renew is a copolyester designed to be fully compatible with the PET (polyethylene terephthalate) recycling stream. The elimination of traditional metal hinges and pins greatly improves the recyclability of the compact while its refillable design allows consumers to easily replenish their cosmetic products. A spokesperson for Eastman said that the integration of design and materials expertise allowed the companies to create a game-changing solution that addresses the growing consumer demand for recycled content and recyclability in packaging in a refillable application they can reuse again and again.



# Fresh bananas move to reusable containers for supply chain

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California-based Del Monte has partnered with New York's Arena Products to introduce RPCs (reusable plastic containers) for its fresh bananas. The RPCs are said to have a life cycle of up to 15 years and are expected to be reused five times a year. The move is anticipated to significantly lower food waste, carbon emissions, and operational expenses, as well as preserve the health of the leading fruit in the fresh produce segment. The introduction of these RPCs is set to enable enhanced airflow and extend the shelf life of banana shipments. A spokesperson for Del Monte said that after years of collaborative work, the groundbreaking RPC design not only reduces greenhouse gas emissions but addresses fruit quality and pallet shipping density, ensuring sustainable impact at every level of the company's supply chain. Last month, the company's 'Banana RPCs' debuted in South Texas, US, retail stores, providing consumers with a sustainable option.



# French startup helps brands transition to reusable packaging

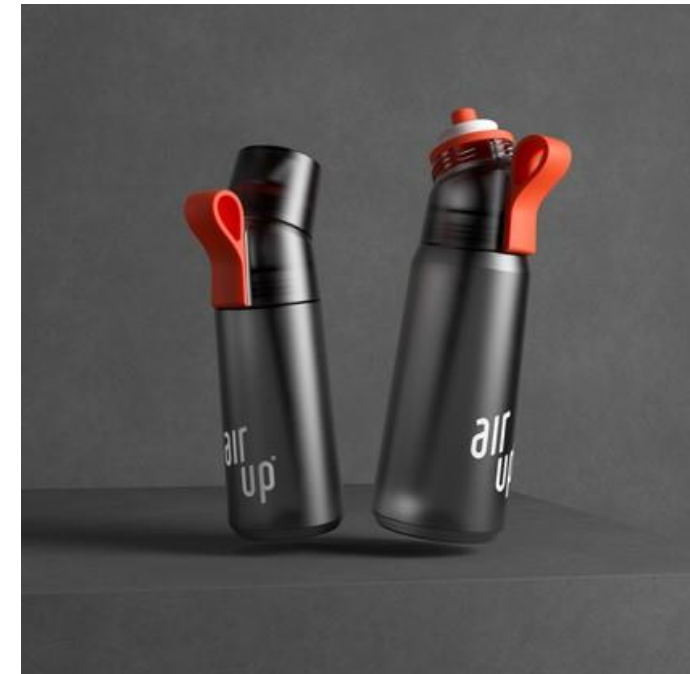
Bocoloco is a French startup that provides a deposit solution for reusable, returnable packaging. The company aims to facilitate distributors and brands in their transition to returnable, reusable packaging. Bocoloco will support its customers in experimenting with instructions, from strategic thinking to operational implementation. Bocoloco will manage the entire packaging reuse loop and generate key data to learn from these new models, while also providing customers with a commercial outlet through partner stores and brands. Traceability of containers is through a QR code placed on a non-removable, soluble label or directly integrated into product labels. The QR code ensures the recognition of containers in deposit collectors and traces these containers during reuse loops. Bocoloco is seen as being at the heart of the reuse ecosystem in France, thanks to a collaborative approach and daily work with players in packaging, industrial washing, and the support of logistics partners.



# German drinks company moves to reusable bottle made with 50% recycled content

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German drinks company Air up sells a refillable bottle system that replaces flavoured drinks widely available in single-use plastic bottles while providing a satisfying drinking experience. They have now announced a partnership with US chemical giant Eastman to launch a new reusable bottle for the European market made with Eastman Tritan Renew, that aims to eliminate single-use plastic waste. Tritan Renew is made with 50% certified recycled content using Eastman's molecular recycling technology, which breaks down hard-to-recycle waste plastics into their molecular building blocks to create new polymers. The new Air up generation 2 bottles made with Tritan Renew are manufactured in the EU at production facilities that use 100% renewable energy and up to 88% less plastic than single-use plastic bottles. The collection is lightweight, shatter-resistant, and available in two sizes – 600ml and 1litre.



# Refillable cosmetic jar 'pops' when insert is replaced

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Barcelona-based Quadpack has launched the PP-Pop Jar, which the company says is a playful solution for refillable cosmetics, with a fresh new gesture. The inner cartridge, once finished, is ejected by pushing it up from the bottom, producing an audible 'pop'. The refill is then simply inserted from the top. The jar's minimal components are comprised of a ring-shaped outer, a thermo-sealed inner, a shive and a cap – and nothing else; no false bottoms and no superfluous material. Made entirely of polypropylene, PP-Pop Jar boasts an 'advanced' level of sustainability according to Quadpack's PIP (positive impact packaging) rating system. The cap and outer jar can also incorporate up to 75% PCR or Ocean Bound Plastic. Life-cycle assessments indicate significant improvements in water use and carbon footprint in the PCR versions. Available in 30ml, 50ml and 100ml capacities, PP-Pop Jar is ideal for face, body and hair products.



# French skincare brand launches anti-aging cream in refillable jar

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French skincare brand Caudalie has partnered with Italian beauty packaging supplier Lumson to create refillable packaging for its Premier Cru La Crème Riche Anti-age Global, selecting Lumson's De Luxe Re Place, a refillable glass jar with an inner PP (polypropylene) cup. Re Place was chosen by the brand "because it marries luxury and sustainability." Lumson says it creates refillable packaging so the consumers can be "more virtuous" and engage in "conscious consumption." When the cream runs out, the PP inner cup can be removed, disposed of in the correct recycling chain and replaced with a new one. All the elements of the jar – inner cup, jar and lid – can be customised and embellished with various effects and decorations. Caudalie chose a matt gold lacquer and hot stamping for the outside of the jar, the mass colouring for the inner cup and the embossed logo on the lid.



# Swedish companies form partnership to offer reusable takeaway packaging

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Martin & Servera, Sweden's leading wholesaler and supplier to restaurants, has announced a partnership with &Repeat, the Stockholm-based digital reuse reward system provider. From January 1, 2024, a legal requirement will be introduced that anyone who sells more than 150 dishes or drinks in single-use packaging per day must offer the guest reusable packaging as an alternative. &Repeat and Martin & Servera are forming a joint venture where customers are offered a user-friendly and affordable solution for reusable systems. The system works in the following way: the restaurant signs up for the &Repeat service. The restaurant's guests download the app. They order food/beverages in reusable packaging and scan the QR code on the packaging (at no cost). The guest returns used packaging to a restaurant connected to &Repeat. The restaurant scans the QR code when returning used packaging, which is then cleaned either by the restaurant or externally. It can be reused up to 500 times.



# American cleaning products company launches refillable aluminium bottles

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New York-based Cleancult has launched what it says are the first-ever cleaning products in the US to be sold in filled and ready-to-use refillable aluminium bottles. The range of products will include dish soaps, all-purpose cleaners and hand soaps. The company says the new refillable aluminium range pairs with its completely recyclable paper-based refill cartons that are reported to remove 90% of plastic waste from cleaning rituals. It says it was the “first company in the world” to successfully pack soaps and detergents in patented 100% recyclable paper-based cartons. The refillable aluminium line will be sold in select Walmart stores across the US, where its patented paper-based refill cartons are sold. The company says it is dedicated to “refill over landfill.” The household cleaning brand also partners with Albertsons Companies, a US-based grocery store. Cleancult is bringing its ready-to-use 12 fl. oz (354 ml) hand soap and refill cartons to approximately 2,000 Albertsons supermarkets across the US.



# Healthcare prescription service utilities refillable glass bottles to cut down on waste

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Cabinet Health, a U.S.-based company, has introduced Cabinet Health Rx, a direct-to-consumer healthcare service aiming to enhance the pharmacy experience while tackling plastic waste. Offering more than 150 commonly prescribed medications, the service pairs each patient with a dedicated Cabinet Care professional and provides them with a refillable glass bottle. Alongside prescription refills, the platform offers discounted over-the-counter medicine, healthcare support, and a range of sustainable packaging options. After three months of beta testing, the service has garnered a waiting list of over 20,000 patients. With more than 66% of U.S. adults on multiple prescriptions annually, the initiative addresses both patient care and the issue of packaging waste in American households. Cabinet has plans to extend its services to B2B sectors, including pharmacies and hospitals. The operation is backed by state-of-the-art technology, aiming to streamline the patient experience and pharmacy operations. Cabinet Health was founded in 2018 to eliminate waste from the \$1.2 trillion pharmaceutical industry, which reportedly produces over 190 billion single-use plastic bottles annually.



# Bulk packaging solution is reusable and space-saving

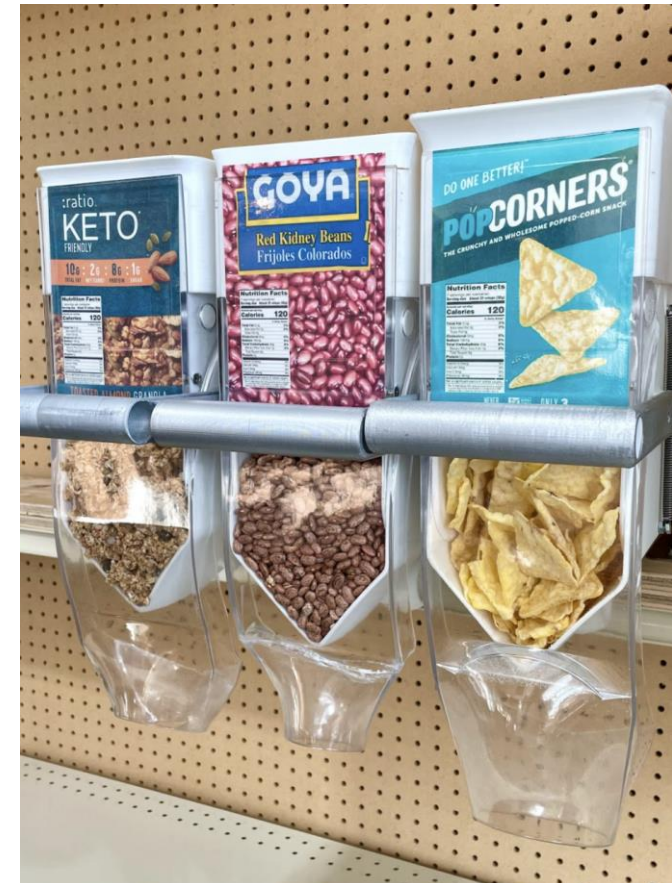
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Multitank is an innovative plastic packaging solutions company focused on improving sustainability through meaningful innovation in packaging and logistics. Multitank bulk packaging is being marketed by DS Smith Tecnicarton and is said to change how solid hazardous chemicals can be transported. This innovative packaging offers numerous reported advantages over traditional IBCs (Intermediate Bulk Containers), boosting the industry's sustainability. One of the most notable features of Multitank is its focus on sustainability, as this packaging is returnable, meaning it can be reused repeatedly. This not only reduces operating costs but also decreases the carbon footprint of the chemical industry. Multitank is also a space-efficient solution, with its optimal size making it ideal for transport by sea and road, optimising loading capacity. When full, it can be stacked to save space, and when empty, it can be nested inside another for easy storage and transportation.



# California startup launches intelligent refillable dispenser

Purcell, a startup based in Santa Cruz, California, has announced the launch of the M1 dispenser, which it says is an innovative and practical bulk food dispenser. Shoppers can access a diverse selection of foods, from chips and cookies to grains, nuts, dried fruits, spices, and confectionaries. Customers can dispense their required quantity, eliminating food waste and saving money. At the heart of the M1 Dispenser is its state-of-the-art technology. Equipped with automatic product identification and portion control, it ensures a hygienic and convenient shopping experience. Customers can simply dispense their desired product, and the M1 Dispenser prints the product information. The company says that the M1 dispenser helps tackle the global plastic pollution problem head-on and says that small changes in our consumption habits can have a significant impact, with the M1 Dispenser being a move toward to a more sustainable future.



# Discounter supermarket to trial refillable packaging for laundry products in Netherlands

Ten Dutch Lidl stores are to begin a six-month pilot, investigating to what extent customers are open to refilling detergent in the store. Customers will be able to purchase Formil detergent and Doussy fabric softener in special reusable packaging. The customer takes a reusable pack and places it in the refill station. The reusable packaging is filled with detergent or fabric softener through the 'smart cap'. The screen immediately shows how much plastic the customer has already saved. When the detergent runs out, the customer takes the packaging back to the store to refill. The refill stations are said to contain the very latest technology, are low-maintenance and leak-free and are located in the middle of the detergent shelf. Lidl has set itself the target of reducing the plastic consumption of its own brand packaging by 30% by 2025. Plastic reduction is part of Lidl's Resetplastic strategy.



## Paperisation (20)

The packaging industry is experiencing a substantial shift in materials, primarily driven by objectives centred around sustainability. The replacement of plastic remains a priority for many brands and retailers, as they seek alternatives that may provide a smaller environmental footprint or at least be more favourably received by consumers focused on anti-plastic. This month, we tracked 15 new initiatives in this direction.

ThePackHub continues to document numerous cases of brands and retailers transitioning primarily from plastic to paper-based alternatives. While some substantiate their moves with positive environmental impact data, not all changes can withstand rigorous environmental examination. The truth is that we're currently in a period of substantial transformation, where recyclable plastic is often replaced with different materials because consumers perceive it as the environmentally conscious choice. Most material changes typically follow significant investments in machinery and novel processes. These changes are made with a long-term view, and any backtracking seems far in the future.



# Paperisation

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# Patented corrugated board prevents product movement during transportation

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Barcelona-based J2 Servid are specialists in the protection of goods during transportation. They have now launched the Niupack solution, a patented range of products to fill the gaps between pallets and prevent the movement of merchandise. Niupack is a piece of corrugated cardboard, manufactured with a folding honeycomb structure, making the product very easy to place, economical, safe, efficient, resistant and takes up little space. Niupack is said to help simplify handling and reduce transportation costs. It is manufactured with recycled, recyclable and reusable material. The product, while protecting the merchandise, also becomes an environmentally sustainable alternative. The pieces of corrugated cardboard are placed between the pallets, acting as separators and thus avoiding the rocking, tilting or falling of goods during transportation.



# Australian vodka brand chooses paper-based bottle for launch

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Australian drinks brand Mother of Pearl Vodka of the Sea, has launched its grape-based vodka in Frugalpac's paper Frugal Bottle. The paper-based Frugal Bottle, which is made from 94% recycled cardboard, claims to be five times lighter — with a carbon footprint six times lower — than glass bottles. The Mother of Pearl Vodka Frugal Bottle was displayed at the Pasir Panjang Power Station in the Emerging Brands Pavilion at the trade show. The Frugal Bottle weighs 83 g before filling and offers 360-degrees branding for enhanced shelf presence. The Frugal Bottle uses up to 77% less plastic than comparative plastic bottles, with only 15g compared to a 64g bottle made from 100% recycled plastic. The company says the food-grade pouch is a PE metalised polyester laminate, the same material used in bag-in-box wines, and is recyclable.



# Plastic-free butter wrap is both recyclable and compostable

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Arjowiggins, a global leader in natural translucent papers, is positioning itself at the forefront of what it calls a new era in paper manufacturing where sustainability is paramount. The company manufactures Sylvicta, a fully recyclable, compostable, and marine-degradable paper produced using only renewable raw materials. It is clean, naturally translucent, totally sustainable and can increase the shelf-life of the packaged product by offering the perfect barrier to oxygen, aroma and grease. It is approved for direct contact with food and has an aesthetic appeal. Arjowiggins says that Sylvicta provides the perfect base for a plastic-free butter wrap, providing excellent barrier properties and superior grease resistance. Unlike most butter wraps, a natural Sylvicta butter wrap is recyclable in the paper stream and is also compostable. It can also be combined with advanced coatings or ultra-thin aluminium coatings.



# New paper-based MAP tray available in more complex shapes

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Atlanta-based Graphic Packaging has launched a PaperSeal Shape to its PaperSeal range of trays. This patented tray has been developed to meet a wider range of customer needs, including those requiring a modified atmosphere (MAP) solution in more complex shapes, such as bowls and multi-compartment designs. The recyclable, fibre-based tray solution is said to offer excellent rigidity and seal integrity to protect the product and preserve its shelf-life. PaperSeal Shape reduces plastic by up to 90% compared to traditional plastic trays. The liner can be easily removed by the consumer post-use, and the paperboard portion of the tray recycled in standard paper recycling streams. Depending on application and barrier requirements, PaperSeal Shape can be supplied without a liner, further reducing plastic. As with other trays in the range, PaperSeal Shape can be supplied flat or fully formed due to a network of Graphic Packaging facilities and lining partners worldwide.



# UK discounters switches to board for beer multipacks

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Aldi UK has announced that it is to remove all plastic from its own-brand four-pack beer and cider products. The discounter is to replace all plastic shrink wrap and rings used on its own-brand beer and cider packs with solid board collars. Aldi says that the move will eliminate around 95 tonnes of plastic per annum. Aldi says that the packaging can be recycled at home with other paper and board items. The move comes as part of the retailer's continued efforts to minimise its overall environmental impact by developing sustainable packaging for its own-label products across the UK. A spokesperson for Aldi said that minimising plastic waste is important to both Aldi and its customers, and said that the company is always looking for ways to adapt its packaging. They also said that moving their beer and cider to cardboard packaging was another step in its fight against unwanted plastic.



# Vodka brand trials paper bottle in Swedish market

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Following a three month trial in 22 Tesco stores around Manchester, Absolut Vodka is now launching its vodka in a paper bottle on the Swedish market in a limited edition to test the market. They call it a half-finished project with a fully-finished plan, as the ultimate goal is to create a 100% bio-based bottle. The current bottle, supplied by Danish paper bottle pioneers Paboco, contains 57% FSC-labeled board (Forestry Stewardship Council), with an inner protective barrier consisting of 43% HDPE (high density polyethylene), which is recyclable. Absolut's ambition is to find more sustainable packaging solutions and reduce the environmental impact on a global level. By releasing a first version of Absolut Vodka in a paper-based bottle, Absolut is now inviting feedback on how the bottle makes it through the entire value chain and how it is received by consumers. The bottle will be available in bars (so not directly accessible to consumers) and in a limited edition of 15,000 bottles.



# Collaboration results in recyclable paper liners for tape

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Helsinki-based UPM Specialty Papers has announced a partnership with German adhesive tape systems specialists Lohmann in order to boost paper liner recycling in the tape industry. The collaboration builds on UPM LinerLoop, the company's closed-loop paper liner recycling solution, launched in 2018. Traditionally the industry has used siliconised release liners with a darker brown shade, however as the typical shade of glassine is white or light, recycling darker coloured glassine grades in the same stream contaminates the recycled pulp. The collaboration has resulted in the standard dark yellow colour of the tape industry being replaced by white in the products to ensure the compatibility of tapes to the labels recycling stream. A spokesperson for UPM said that used paper liners are somewhat more challenging to repulp than standard printing paper recycling, but with suitable equipment, this high-value feedstock can be salvaged and used as high-value recycle to almost any fibre-based packaging.



# Partnership brings sustainable packaging to wholesale retailer

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Seattle-based wholesale retailer Costco has collaborated with Atlanta-based packaging company WestRock to introduce a number of sustainable packaging solutions. These include EnduraGrip, which bundles a range of bottle shapes, sizes, weights and multipack configurations, being especially suitable for small or sleek-neck bottles. It has a similar stablemate, called the Cluster-Clip, which is suitable for bundling small and large jars in a range of shapes, sizes, weights and multipack configurations, including standard and wide-mouthed jars. Evergrow is a fibre-based packaging solution for produce trays, punnets, totes, carriers and clamshells, and is made from easily recyclable board. EnShield is another fibre-based solution which is designed to replace rigid plastic, poly-extruded paper and fluorocarbon-treated packaging with a food-suitable solution for applications requiring grease-resistance. The EnShield portfolio allows brand owners to customise the look of their packaging, address consumers' desire for more 'natural' packaging and provide a larger print canvas than traditional labels.



# Solid board alternative to plastic multipack clips and shrinkfilm

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Atlanta-based board and corrugated packaging manufacturer WestRock has launched Cluster-Clip, a fibre-based clip solution for bundling small and large jars in a range of shapes, sizes, weights, and multipack configurations, including standard and wide-mouthed jars. Cluster-Clip offers a fibre-based replacement for flat plastic clips, rigid plastic clips and shrink film bundles. Cluster-Clip utilises two of the company's solid board offerings, CustomKote for ambient applications, and CarrierKote when required, for more challenging high moisture situations, with the option of containing 15% recycled material. Cluster-Clip is engineered for durable and comfortable handling while providing a fully printable surface for crisp, vibrant graphics. It enables brands to transition from rigid plastic clips or shrink film to a recyclable paperboard alternative. Cluster-Clip is available pre-glued for simple manual or assisted application, or for faster line speed applications WestRock have automated solutions available.



# Confectionery manufacturer moves away from plastic packaging

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Dutch confectionery manufacturer Napoleon has moved away from plastic packaging for its 'Bullet' brand sweets. The company has switched to a paper wrapper with a wax coating made from corn and rapeseed, which protects the sweets against moisture. As the new packaging is no longer transparent, the wrappers are individually coloured so that consumers can identify the different flavours. The move to the paper wrapper means that around 60,000 kilograms of plastic will be saved per year, which is the equivalent of 360 million wrappers. The company says that the wax paper wrapper decays about as quickly as a leaf on a tree, a big difference compared to the old plastic wrappers. Other sustainability steps that the company has taken include using less energy, reducing water use, producing effectively, losing as little heat as possible, and loading trucks more efficiently so that less transport is required.



# New micro-flute solution is alternative to rigid board boxes

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Finnish paperboard and fibre-based products manufacturer Metsä Board's development team at the company's Excellence Center in Äänekoski have designed a lightweight micro-flute gift box with a strength close to the rigid box solutions currently used for premium products such as cosmetics, chocolate, and premium beverages. The company wanted to provide the same experience by developing a strong and rigid but lighter box with less environmental impact. The best solution turned out to be micro-flute, which is significantly thinner than traditional corrugated cardboard. The packaging consists of a separate base and lid. The outer liner can be uncoated or coated white kraftliner whereas the latter option provides the best printing properties. The new lightweight solution also uses significantly less material. Metsä Board's sustainability services team compared it with recycled fibre-based rigid packaging solutions and found that the micro-flute concept was up to 50% lighter.



# Instant noodle manufacturer replaces PS cups with paper alternative

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Japanese instant noodle manufacturer Nissin Foods is to launch a new paper-based cup in the US for its range of Cup Noodles. The new paper cup will replace the current PS (polystyrene) offering. The company expects the new cups to be introduced for all Cup Noodles flavours by early 2024. The paper packaging will be made using 40% recycled fibre and will not require any additional plastic wrap to function. Also, the sleeves on the Cup Noodles' packaging will be made using 100% recycled paper. The revamped on-the-go cup packaging will also be microwavable to significantly reduce cooking time, allowing consumers to conveniently cook their instant ramen noodles by heating them for two minutes and 15 seconds. Nissin Foods' transition to a paper cup signifies a deep-seated commitment to sustainability, with the company aiming to minimise CO2 emissions by 30% by 2030 and reach carbon neutrality by 2050.



# Japanese PVA coating has high water and gas barrier properties

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Kuraray is a Tokyo-based manufacturer of chemicals, fibres and other materials. Exceval is the trademark of Kuraray's hydrophobically modified polyvinyl alcohol (PVA) specially designed for "high water resistance". Due to its high film-forming properties and water resistance, Exceval is also used for the barrier layer of silicone release paper applications. In aqueous gas barrier coating applications, coatings made of Exceval absorb significantly less humidity. Therefore, Exceval provides coatings with excellent gas barrier properties, e.g. toward oxygen, carbon dioxide and various aromas, even at elevated relative humidity. Furthermore, the resulting coatings are highly transparent and glossy, have strong chemical resistance and provide good adhesion to metalisation and excellent printability. Exceval is an FDA-certified product and can be used in paper coating formulas, which the company says will be the best candidate for non-fluoro chemical barrier agents in the next generation of greaseproof papers..



# UK startup develops chipless, metal-free paper-only version of RFID tag

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A London-based startup called PulpaTronics has developed a chipless, metal-free, paper-only version of an RFID (radio-frequency identification) tag, a type of electronic tracker that is attached to products and which is most commonly found in clothing stores. The team of four design graduates from London's Royal College of Art came up with an alternative RFID design that requires no other material than paper. They use a laser to mark a circuit onto its surface, with the laser settings tuned not to cut or burn the paper but to change its chemical composition to make it conductive. As the circuit is carbon-based, the tag can be recycled with household waste as easily as a piece of paper marked with a pencil scrawl. So far, PulpaTronics paper RFID tag has passed its first round of testing, where the technology was found to match the performance of a copper-based control RFID tag.



# Snack giant moves to paper outer bags for multipacks

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Walkers, part of PepsiCo UK and Ireland, has announced that after a successful trial in 800 stores in Tesco earlier this year, it will move to a paper outer bag for its crisp and snack multipacks. The crisp brand claims that the move will reduce its use of virgin plastic by 180 tonnes a year. According to Walkers, the paper bag can be widely recycled in home recycling bins. Products moving to the new paper format include French Fries, Monster Munch, Quavers and the Walkers Baked range. A spokesperson for Walkers said that they are constantly innovating new ways to remove virgin plastic in their packaging. The company is said to be excited to see the successful trial of this paper pack lead to a nationwide roll-out. They said that the new packaging would deliver a huge reduction in virgin plastic while also helping to lower the company's carbon footprint.



# Sustainable packaging group launches new fanfold corrugated board brand

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Belgium-based VPK Group has launched its fit2size brand to further develop fanfold corrugated packaging solutions across Europe. Corrugated fanfold is a continuous length of corrugated sheet that has been accordion-folded into a stack and scored to fit the customer's exact specifications. Fanfold can be sized in different widths. Fanfold is used on high-speed, fully automatic machines typically for e-commerce, producing over 1,000 boxes per hour, or on lower input machines with manual erection of the box or wrap, commonly used for furniture, aluminium extrusion, tubing, or metal building. fit2size works towards eliminating void fill, spacers and fillers and helps to produce exact-size corrugated packaging on demand. The launch of the fit2size brand follows the installation of a state-of-the-art Universal UniFold 220 high-speed line for producing fanfold corrugated packaging in Alizay, France, to be supplied across Europe. .



# Domestic appliances giant moves to packaging made with 100% recycled paper

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Domestic appliances group giant Versuni (previously known as Philips Domestic Appliance) has announced that it is moving the packaging for its top performing Philips home appliances – including the Philips Airfryer, Espresso Machine with LatteGo, Steam Iron 3000 series, Air Purifier and Cordless Vacuum 8000 series to packaging made with 100% recycled paper. The move was made in collaboration with British paper-based multinational DS Smith, and the new packaging will be used across the Philips portfolio globally. The new packaging is designed to withstand transportation without requiring additional protection, allowing customers to stick the shipping label directly onto the packaging. DS Smith said the printed area of the box, which markets the product, has been significantly reduced, requiring 65% less ink. The companies said that, where possible, the dimensions of the redesigned packaging have also been reduced thanks to a focus on space optimisation that minimizes empty areas in each product box.



# Corrugated box with barrier liner eliminates plastic bags for frozen bread

Danish bakery group Lantmännen Unibake has collaborated with Adara, a Finnish manufacturer of corrugated packaging, and UPM Specialty Papers, based in Helsinki, to move to a corrugated case with a barrier paper inner liner, eliminating the need for plastic bags inside the case. The new packaging solution uses UPM Asendo barrier paper, which offers the grease and moisture resistance needed while ensuring food safety and freshness. Frozen baked goods require packaging that offers light grease and moisture resistance while maintaining the freshness of the baked goods inside. Until this development, plastic bags had been utilised inside corrugated board boxes to ensure food safety and quality requirements. A spokesperson for UPM said that the partnership with Lantmännen Unibake and Adara opened the opportunity to unite their expertise across the food packaging value network to create a renewable and recyclable packaging solution for frozen bread.



# Swedish startup aims to replace plastic cable ties with paper-based alternative

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Stockholm-based FibreStrap is a startup that is launching a sustainable cable tie made primarily from wood fibres. Their aim is to replace single-use fossil-based plastic cable ties. Fibrestrap is made of long fibres from the woods of Scandinavia, and is strong and versatile, while also being recyclable and biodegradable within a reasonable time. The cord is made from 99.9% kraft paper from Nordic wood fibres. To prevent abrasion, the cord is treated with a negligible amount of polyethylene wax (0.1%). The bio-composite lock contains 50% polylactic acid (PLA), 20% hemp and 30% Polybutylene Adipate Terephthalate (PBAT). FibreStrap reportedly provides the following sustainability benefits when replacing 200 mm fossil plastic cable ties in Nylon (Polyamide): more than 85% CO<sub>2</sub> reduction, more than 80% water reduction, and is made from a minimum of 85% renewable sources. Fibrestrap can handle weights of up to 12kgs and has a shelf life of two years.



# Fortune cookie manufacturer moves to high barrier paper packaging

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Sweet & Lucky is a German family-owned manufacturer of sustainable fortune cookies. With help from paper specialists delfort and Clarus, the company has introduced a barrier paper pack for its fortune cookies. delfort's Thinbarrier 301 barrier paper is a recyclable, high-performance solution that extends the product's shelf life by a minimum of three months. Thinbarrier 301 provides a strong barrier against water vapour and high processibility on existing packaging machines. The capability of extending the cookies' shelf life were important requirements when designing the packaging. As a result, delfort's base paper – said to feature an optimally matched recipe and surface structure – features a barrier coating developed by its research partner Delsci to create Thinbarrier 301. It is also claimed that Thinbarrier 301 runs smoothly on existing packaging machines and can be processed with no technical changes required. Any further technical measures are said to be easy to implement.



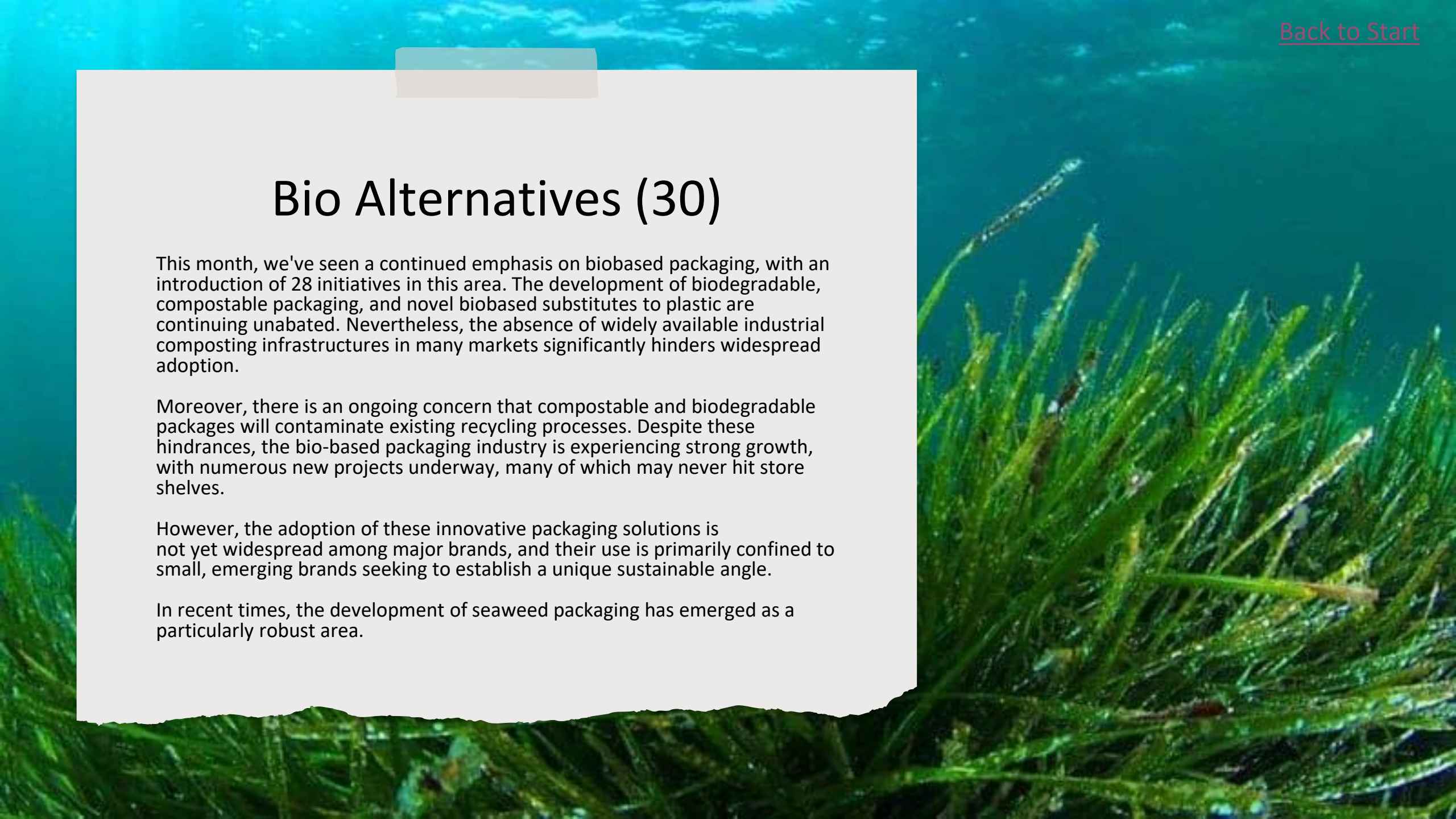
## Bio Alternatives (30)

This month, we've seen a continued emphasis on biobased packaging, with an introduction of 28 initiatives in this area. The development of biodegradable, compostable packaging, and novel biobased substitutes to plastic are continuing unabated. Nevertheless, the absence of widely available industrial composting infrastructures in many markets significantly hinders widespread adoption.

Moreover, there is an ongoing concern that compostable and biodegradable packages will contaminate existing recycling processes. Despite these hindrances, the bio-based packaging industry is experiencing strong growth, with numerous new projects underway, many of which may never hit store shelves.

However, the adoption of these innovative packaging solutions is not yet widespread among major brands, and their use is primarily confined to small, emerging brands seeking to establish a unique sustainable angle.

In recent times, the development of seaweed packaging has emerged as a particularly robust area.



# Bio Alternatives

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[Spanish dropper manufacturer launches 100% plant-based cap](#)

[US craft brewer moves to compostable, edible multipack ring](#)

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[Compostable fruit and vegetable packaging rolls out in Mi...](#)

[Commercial cleaning products provider introduces composta...](#)

[Partnership formed to develop edible, soluble films for i...](#)

# Turkish universities using sunflower stalks to make bioplastic

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Two Turkish universities are working on the feasibility of producing sustainable packaging materials from waste sunflower stalks left in fields after harvest. The researchers are working on obtaining carboxymethyl cellulose from sunflower stalks for biodegradable food packaging material. In a further stage of the study, they also aim to extract colour substances from the materials obtained from sunflower stems, as well as fruit juice industry waste to improve the properties of these packaging materials. They hope to obtain packaging materials that can be integrated into many different areas such as cheese, chocolate packaging, and egg packaging. The project's main goal is to create packaging material by using waste materials and contribute to reducing the use of plastic materials derived from fossil fuels.



# New plastic is self-healing, stronger and partially biodegradable

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Japanese scientists say that they have successfully created a 'sustainable' plastic based on an epoxy resin vitrimer. Vitrimers represent a relatively recent category of plastics known for their impressive strength at low temperatures while also possessing the unique ability to be reshaped numerous times when exposed to higher temperatures. However, they have a notable drawback – extreme brittleness, as they cannot be stretched far before breaking. To address this issue, researchers introduced a molecule called polyrotaxane into the plastic synthesis process, resulting in a novel plastic variant they've dubbed VPR, an abbreviation for "vitrimer incorporated with polyrotaxane." At lower temperatures, VPR's robust internal chemical bonds maintain their rigid shape, but as temperatures rise, these bonds start to recombine, allowing the material to take on different forms. Submerging VPR in seawater for 30 days also led to a 25% biodegradation, with the polyrotaxane breaking down into a potential food source for marine life..



# German glassmaker and startup collaborate for alternative to plastic and aluminium

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German glassmaker Gerresheimer has partnered with Baden-Württemberg-based startup Rezemo to offer sustainable packaging solutions for cosmetics, food, beverages, and pharmaceuticals. The collaboration aims to reduce the environmental impact of primary packaging by combining Gerresheimer's glass containers with Rezemo's bio-based Forewood material, a blend of wood fibres and plant-based binders. This innovative material is a sustainable alternative to plastic and aluminium, providing excellent functional performance. The bio-based closures, when combined with glass containers, cater to environmentally conscious consumers as they are both biodegradable and recyclable. Gerresheimer has introduced a 50ml glass jar with a Forewood closure as the initial offering in its cosmetic packaging portfolio, customizable through decoration techniques or colour design.



# Egg packer switches to moulded pulp pack for individual eggs

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A client approached leicestershire-based Antalis to provide packaging for individual eggs. The customer was using a die-cut box which took over 30 seconds to assemble and pack, and with sometimes over 8,000 eggs per week being packed, it was both laborious and costly. The solution Antalis came up with was a moulded, self-locking, pulp-based box that could be assembled and packed in under 10 seconds. Antalis says the new format cuts assembly and packing time by 75% and uses 20% less material. Also, as a pallet of the moulded pulp box contains 25% more units than the original packaging, the company was able to reduce costs and carbon footprint associated with transporting the packaging materials. The new packaging was designed in Antalis' Smart Packaging Centre and manufactured in collaboration with Market Harborough-based moulded packaging specialists Ezee Group International.



# Brazilian e-commerce fashion brand moves to biodegradable packaging

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Brazilian fashion brand Mindse7 C&A has announced that it will start using biodegradable packaging for its e-commerce business. The company says that it hopes that by the end of the year, they will have used 50,000 bags. Unlike regular plastic bags, biodegradable bags are produced from renewable sources and decompose naturally into the environment within months. The project was initiated based on requests from Mindse7 customers, who need sustainable and special packaging for the brand's products. A spokesperson for C&A said that the initiative reflects their brand values, which is listening, testing and delivering a satisfactory shopping experience with added value for their consumers. Furthermore, its use brings environmental gains that are also a priority for C&A. The use of sustainable packaging is part of C&A's public commitments to, by 2030 replace the use of single-use plastic by 50% with more sustainable alternatives.



# Researchers innovate with bioactive paper to prolong fruit shelf life

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Researchers at the University of Concepción in Chile have developed a novel technology aimed at extending the shelf life of fruit. Known as Bioshield Pack, this bioactive paper is composed of cellulose pulp, Monterey pine, and algae. The developers claim that it can reduce fruit losses by up to 65% during storage and transportation. Dr Cristián Agurto Muñoz, director of the university's Gibmar Laboratory, explained that the paper, incorporating antioxidant, antibacterial, and antifungal properties from algal extracts, prevents the growth of microorganisms causing fruit rot. Chile, with 2 million hectares of Monterey pine plantations, is well placed to utilise biomass and bioactive seaweed extracts to manufacture the paper. The initiative, developed in collaboration with the forestry industry, demonstrates the potential for large-scale production of bioactive algal paper under real industrial conditions, offering promise for reducing fruit losses in Chile's significant fresh fruit export industry, reported at over US\$4 billion annually.



# Leeds company launches home compostable film in Australia

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Leeds-based Roberts Mart has announced the opening of its first overseas office in Australia to facilitate the launch of compostable film in the market. The company has invested heavily in a new home compostable packaging monomaterial called Biyo-bag, which can be run on conventional packing lines and has excellent reported heat sealability. Exhibiting a wide operating window, the film requires minimal line adjustments. Designed for foods with short shelf life, the film has good transparency so that the product packed inside is clearly visible. Compostable packaging is made from biodegradable materials such as vegetable starch, replacing traditional fossil-based materials. This then breaks down naturally and decomposes into nutrient-rich compost, aided by fungi, bacteria and enzymes. To be accredited OK Home Compostable, all materials must pass the EN13432 European Standard as well as the Australian Standards. The AS5810-2010 Australian Standard requires the compostable film to be toxin-free for worms, disintegrate after 12 weeks and completely biodegrade after six months.



# Collaborative breakthrough yields new renewable PP development

Finland-based Neste and Japan-based Mitsui Chemicals subsidiary Prime Polymer have collaborated to create a renewable polypropylene (PP) packaging material for the Japanese Consumers Co-operative Union (JCCU) brand CO/OP, a seaweed snack brand. The product, using the mass balance method to attribute bio-content, is reported to be the first of its kind to attain Eco Mark certification from the Japan Environment Association (JEA). Neste Re, derived from renewable waste, residue oils, and fats, serves as the feedstock for the packaging, processed into renewable polypropylene (Prasus) by Prime Polymer. The companies emphasize that the renewable material maintains quality and performance comparable to its fossil feedstock counterpart, with the key distinction lying in the reduced carbon footprint and the substitution of fossil materials in its production. Initially replacing virgin plastic in seaweed packaging, the collaboration aims to extend the use of bio-based raw materials to more products in subsequent phases.



# Estonian startup gets funding for wood-based alternative to bubble wrap

Raiku is an Estonian startup that has developed an innovative protective packaging product alternative to PE (polyethylene) bubblewrap. The company's product is made from sustainable wooden 'springs'. They have now announced that they have received funding of €8.8M (£7.7m), made up of a €5.65 million grant from the European Innovation Council (EIC) and €3.15 million in investments from private sector investors, including Kaamos, Vestman, Little Green Fund, as well as numerous private investors from Estonia and Finland. The company's primary objective with this new funding is to advance its chemical-free and compostable packaging material technology, establish its first factory, and expand production on a global scale. Raiku specialises in creating sustainable, protective, and entirely natural packaging materials with a low CO2 footprint to address the pressing issue of packaging waste ending up in landfills and nature.



# Space-saving pressboard pallets available from UK supplier

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Based in Dunfermline, Scotland, Scott Pallets has announced that it can offer UK businesses pressboard pallets in various formats, offering an alternative pallet solution for storage and transportation requirements. They are offering these pallets in collaboration with Binderholz, the largest timber processor in Europe. Pallets are available in several different sizes, including standard UK 1000 x 1200mm, Euro pallets at 800 x 1200mm, and right down to quarter Euro size at 400 x 600mm. Pressboard pallets are made from sawdust and reprocessed recycled wood chips, then compression moulded under high temperatures to form a dimensionally diverse and accurate wood composite product. This provides a natural wood finish with a clean, smooth surface and hard, finished edges. The innovative and compact design is stackable and comparatively lightweight, taking up significantly less storage and transportation space than conventional pallets.



# Indian startup uses agricultural by-products to make moulded fibre packaging

Mumbai-based Fibmold is an Indian startup focused on sustainable packaging. The company is developing moulded fibre packaging products that mimic the functionality of rigid plastics. Their products are manufactured from natural fibres, including bamboo, bagasse, husk, wheat straw, or even waste paper, depending on the end-use, and they are 100% recyclable and compostable. They have now revealed that they have raised \$10 million from funders Omnivore and Accel. A spokesperson for Fibmold said that by harnessing India's abundance of agricultural by-products in the future, the company presents a tremendous business opportunity. Through advanced technology and scientific innovation, the startup is not only strengthening the Indian economy but also forging India as a global leader in sustainable packaging solutions. The company was founded in October 2022 by Param Gandhi and Vaibhav Garg, who have over two decades of experience in the packaging and manufacturing industry.



# Pilot project replaces EPS with starch-based alternative for equipment cushioning

German cleaning equipment manufacturer Kärcher is conducting a pilot project with Storopack to replace the company's current EPS (expanded polystyrene) protective packaging. Kärcher will use Storopack's RENATURE 3D, a sustainable packaging solution primarily crafted from plant starch, which is TÜV Austria-certified. The product at the centre of this environmentally conscious pilot scheme is Kärcher's SC3 steam cleaner. RENATURE 3D is home and garden compostable. Storopack says that depending on the packaging design, this biomaterial can achieve CO2 savings of up to 50%. They also say that an additional environmental boon is that the starch used in the production of RENATURE 3D is sourced as a by-product from the food industry, significantly reducing waste. Storopack says that RENATURE 3D maintains the same protective qualities as EPS packaging, ensuring that products remain safe during shipping..



# Scottish bakehouse chooses bags made from wood-based bioplastic

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Woodly Oy, based in Helsinki, a manufacturer of sustainable packaging solutions, has announced a collaboration with Xoko Ltd., a Scottish bakehouse and coffee bar that specializes in patisserie and artisan sourdough bread, who are based in Inverness. The collaboration aims to introduce Woodly's innovative heat-sealed bags to Xoko's product line, as part of the company's commitment to sustainable packaging solutions. Woodly's heat-sealed bags are made of a unique wood-based material, which is carbon-neutral, and recyclable. Woodly's heat-sealed bag provides excellent barrier properties, keeping Xoko's delicious new range of grab-and-go sandwiches fresh and protected for longer. Woodly is a carbon-neutral material that can be used to reduce dependency on fossil-sourced materials. Woodly is designed to be recycled in the plastic recycling stream after being used. It can also be combusted after use to produce energy if necessary.



# Finnish startup manufactures biofoam designed to replace EPS

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Woamy is a Finnish startup that manufactures a fully biodegradable, recyclable and even edible biofoam designed to replace EPS (expanded polystyrene) for product protection. Woamy is a spin-off from Aalto University, Finland, and is supported by Chilean paper and pulp company CMPC. Made from wood or agricultural waste, Woamy biofoam is patented and has a unique directional strength, achieving exceptional strength with minimal weight, providing robustness without excess weight. Being based on cellulose, Woamy can be easily recycled alongside cardboard, ensuring a fully circular lifecycle for packaging. Being a dust-free and soft biofoam is reported to create the perfect scratch protection and with the post-processing, a premium finish can be added for a luxurious touch. Earlier in 2023 the company raised a €1 million seed round to develop and scale up the technology.



# Cellulose film allows product visibility for moulded fibre applications

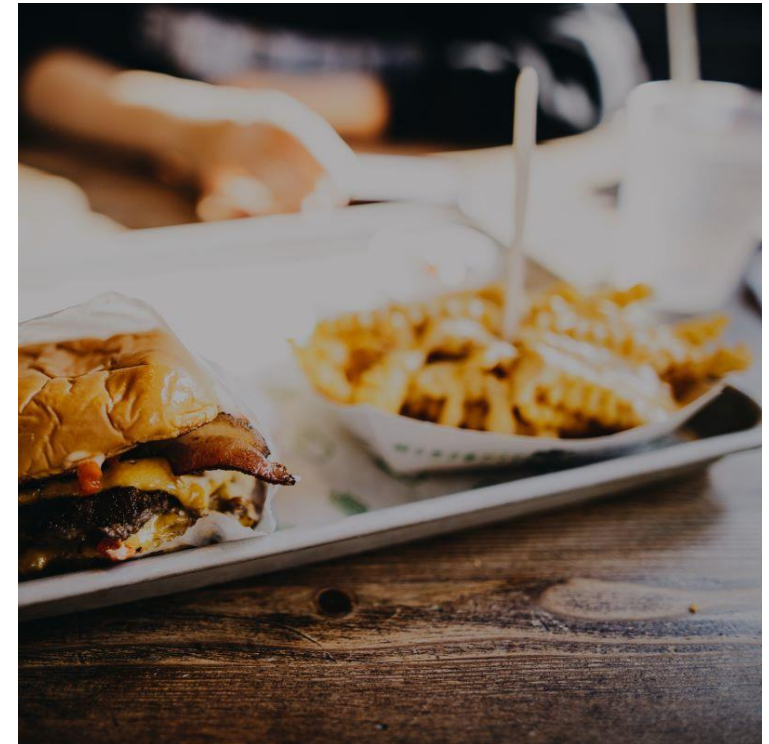
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Chinese sustainable packaging provider YutoEco has announced the launch of a transparent, plant-based film made from cellulose substrate. Eco Lucent is intended to increase both visibility and environmental sustainability in a range of moulded fibre packaging applications. Eco Lucent is said to respond to the packaging industry's desire to transition away from its reliance on plastics while maintaining product visibility. As it is made from plant fibres, it claims to biodegrade naturally with no secondary pollution or adverse effects on the environment. Eco Lucent is non-toxic and odourless. As well as meeting the requirements of food-contact materials, it also offers anti-fog, waterproof, and heat-sealing properties without impacting the transparency of the material. The film's applications are thought to range from visible lunchboxes and baking packaging to pharmaceutical packaging. These uses are expected to unlock new opportunities and possibilities for plant-based packaging while advancing sustainability-minded progress in the packaging industry.



# Foodservice packaging supplier launches range of PFAS-free takeaway packaging

British foodservice packaging supplier, Celebration Packaging has launched a range of PFAS-free compostable takeaway food packs. The range, called EnviroWare, is comprised of white bagasse takeaway clamshells, dinnerware and chip trays that have been TÜV Home Compostable certified and are SGS certified as PFAS-free. PFAS are also known as “forever chemicals” and are a group of synthetic chemicals used in a wide variety of common applications, from fast food packaging and non-stick cookware, to firefighting foams and stain-repellent chemicals for clothing and carpets. PFAS do not naturally degrade, and although they are safe to be used in food packaging and cookware, it is reported that the chemicals can eventually contaminate groundwater following their release into the environment. A spokesperson for Celebration said the new PFAS-free white bagasse fibre packaging looks the same as the old range and can be used in a microwave to reheat food with no reduction in performance.



# Partnership brings one million compostable packs to market

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Florida-based Instabrew is an innovative coffee and tea cubes brand that partnered two years ago with Israeli compostable packaging solutions provider TIPA. The companies have announced that through their collaboration they have brought one million compostable packs to market. On top of the million packs already sold, InstaBrew expects to increase packaging orders from TIPA by 25% in 2024. The continued expansion of the partnership enables the companies to both reduce environmental impact and meet growing consumer demand for sustainable packaging solutions. TIPA offers an alternative to conventional plastic products, including instant coffee sachets. Its solutions have the same characteristics of conventional plastic, including durability, shelf stability, and transparency – but they fully break down into nutrient-rich soil within weeks when composted after use. A spokesperson for Instabrew said that the quality of TIPA's product was outstanding, and they looked forward to expanding their mutual market reach as both companies continued to grow.



# Cleaning products company switches to seaweed-based dissolvable pods

Mack, based in Poole, Dorset, is the manufacturer of a range of biotech cleaning products aimed specifically at the domestic market. The products are not only sustainable but they are also claimed to be extremely effective. The company has been selling what they call Biopods for some time. These are cleaning products encased in a dissolvable coating, to which the consumer adds water in a suitable container. Until recently, the company used PVA (polyvinyl alcohol) for the coating, but following concerns over plastic pollution and the potential of bioaccumulation of PVA in oceans, waterways and soil, the company has moved to Notpla, the biodegradable and edible seaweed and plant-based packaging solution. Notpla dissolves entirely in water, leaving nothing behind. The first of Mack's products to move to Notpla is their ReLoaded Laundry Pods.



# Sustainable water-based alternative to stretch wrap prevents product slip

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F2 Servid is a Barcelona-based distributor of packaging products. Their product, GripPack, is a water-based, soluble and solvent-free liquid solution that prevents merchandise from slipping. Applied in small quantities in all types of paper bags, PE and PP bags, and cardboard boxes, using GripPack avoids mountains of plastic waste when using products such as stretch film, stretch hoods and non-slip sheets. In addition, this product does not leave residues on the merchandise after depalletisation. The components with which this product is manufactured come from the food industry, so it is biodegradable. F2 Servid says that GripPack is one of the most innovative, clean and economical systems for safe palletising, avoiding claims and keeping pallets in perfect condition. A multifunctional machine is available for fully automatic palletising by applying drops, sprays or a cost-saving, power-free roller system, which uses a conveyor's momentum.



# Spanish dropper manufacturer launches 100% plant-based cap

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Barcelona-based Virospack has launched a completely 'Plant-Based' dropper cap in collaboration with Rezemo GmbH, a German supplier of sustainable packaging. Virospack will be using Rezemo's Forewood material for the dropper cap. Forewood is a wood-based material and is certified by sustainable forestry – PEFC (Programme for the Endorsement of Forest Certification). It is compostable plant-based and uses no fossil resources, which reduces the CO2 footprint. It also features a teat made with TPE (thermoplastic elastomer) of biobased origin of under 50% and a pipette with Tenite (a cellulosic thermoplastic material manufactured by the Eastman company) biobased plastic of more than 40%. Virospack says that sustainability has become an important attribute for consumers when shopping. Brand owners and their packaging suppliers can take steps to limit the use of harmful plastics and waste through sustainable packaging. "92% of consumers say that sustainability is important when choosing a brand today" (Nielsen).



# US craft brewer moves to compostable, edible multipack ring

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Flying Tiger Brewery, based in Louisiana, has become what is said to be the first brewery in the state to utilise biodegradable, compostable, and even edible rings for its beer packaging. The rings are crafted from wheat and barley, the grains used in brewing beer, and are said to provide an environmentally responsible alternative to traditional plastic packaging. A spokesperson said that although technically edible, they taste a lot like cardboard, not something a consumer would want to eat. The biodegradable rings are provided by the Mexican startup E6PR, which stands for “Eco Six Pack Ring.” Initially marketed as “edible,” these rings gained recognition in 2016 (and reported in the Innovation Zone) for their sustainable qualities, with promotional videos on the company’s website showing sea turtles safely interacting with them. Flying Tiger Brewery has incorporated the rings into the packaging of their Doux Drop wheat ale, available in four-packs.



# UK startup launches wrapperless snack bars with edible coating

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Hitchin-based One Good Thing has launched what they say is the world's first range of completely wrapperless snack and protein bars in a bid to reduce plastic waste for on-the-go snackers. Each bar is made from raw, cold-pressed, low-carbon ingredients and coated with a completely edible, 100% natural film made from a mix of beeswax and other natural ingredients. The clever coating dries hard enough to hold and protect the contents but is thin and soft enough to chew easily. The edible coating acts as a replacement for a traditional plastic or paper wrapper. Each bar is durable, reportedly completely waterproof and won't disintegrate when wet. The only packaging is the cardboard boxes that the bars are delivered in, which are made of 70% recycled material and recyclable at home. There are seven flavours of both snack and protein bars available, with the option to build-your-own-box selection.



# Spanish plastics technology centre creates barrier film from fish processing by-products

The Spanish plastics technology centre Aimplas is creating a barrier coating for food packaging from fish gelatine. The project aims to deploy sustainable and efficient use of fish-processing side streams by obtaining bio-actives and gelatine for high-value-added food supplements and skin care products, as well as biodegradable and compostable barrier layers for the packaging of sensitive food items, such as meat, fish and cheese. The solution seeks to replace conventional fossil-based barrier polymers while maintaining functionality, sustainability and safety. The process will be scaled up to facilitate industrial pilot production and provide compostable packaging for fish food. Also, in collaboration with EcoeFISHent, Aimplas hopes to extend its impact to address the recycling of fishing nets from both the fishing and aquaculture sectors. Aimplas will repurpose the recovered PE from these nets to produce cosmetic packaging using extrusion, injection moulding and lamination processing.



# Home compostable packaging hits U.S. Midwest retail shelves for fruits and vegetables

Danimer Scientific, Inc., a US next-generation bioplastics firm, has partnered with biodegradable and compostable packaging developers BIOLO and Bolthouse Farms to introduce home compostable retail packaging for vegetables and fruit. Utilising Danimer's proprietary PHA, Nodax, the biobased polyester derived from plant oils like canola, the initiative has launched bags for one-pound Earthbound Farm Organic Mini Peeled Carrots. These bags are available across Meijer's network of 240 stores in the U.S. Midwest. Unlike conventional petroleum-based plastics, Danimer's PHA products can degrade within months under specific conditions. The new packaging is certified as home compostable by TUV, meaning they disintegrate at least 90% within 26 weeks and fully biodegrade within 52 weeks under home composting conditions. William F. Preston, CEO of BIOLO, regards this as a substantial advance in sustainable retail vegetable and fruit packaging, aligning with broader efforts to transform the packaging industry. This builds on BIOLO's parent company, Columbia Packaging Group's 2020 collaboration to develop compostable solutions across multiple sectors.



# Australian food wholesaler moves to 100% compostable pallet wrap

Leading Australian organic food wholesaler Spiral Foods has moved from conventional PE (polyethylene) pallet stretch wrap to a 100% compostable pallet wrap supplied by Melbourne-based Great Wrap. Spiral Foods ships heavy pallets with food products on them, so a strong and reliable pallet wrap was non-negotiable. The company reached out to Great Wrap earlier this year, as it was interested in using its compostable hand pallet wrap and compostable machine pallet wrap. Since then, the company has worked closely with Great Wrap to test and trial its product, and to ensure it met local and international pallet shipping standards. A spokesperson for Spiral Foods said that using a product like Great Wrap fits in with what they are trying to do, with the company wants to be as sustainable as possible, so using a compostable pallet wrap was another piece of the puzzle on their journey.



# Avocado packaging is sustainable and backyard compostable

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California-based Avoworks and Oppy Eco Farms, based in Vancouver, have jointly announced the launch of what the companies say is groundbreaking, compostable avocado packaging. The packaging net and label, which are made from beechwood cellulose, is said to decompose in as little as 12 weeks. This is reportedly different from other compostable options on the market, which can only be broken down effectively within industrial facilities that require intensive energy processes. In contrast, this pack is certified for home composting. Being an easy-to-adopt change, the companies see this move as 'ticking all the boxes' for sustainability. A spokesperson for Avoworks said that the future depends on innovations like this for many reasons: environmental impact, resource conservation, waste reduction, wildlife protection and beyond.



# Startup uses fungi to make bio-based alternative to EPS

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Swiss startup Mycrobez is developing a circular material, an alternative to EPS (expanded polystyrene), which is made from a combination of biowaste and fungi. The biofoam created by Mycrobez is based on fungal root systems (mycorrhizae) and various biological waste products. The product is made by seeding organic waste with fungal spores that grow through the raw material in just a few days. This turns into a mycelium-composite mass. It is then transferred to a suitably shaped mould, where it continues to grow. The mould fills out in a matter of days and is baked, leaving the finished packaging. The completed product is biodegradable and can be disposed of in gardens or outdoors in general (although this shouldn't be a recommendation), where it restores damaged soil. Mycrobez claims to be the first company to bring bio-based materials at a price competitive with fossil-based foams. The startup is being supported by the Migros Pioneer Fund.



# Compostable fruit and vegetable packaging rolls out in Midwest U.S. stores

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Danimer Scientific, a U.S.-based next-generation bioplastics firm, has partnered with BIOLO and Bolthouse Farms to commercialise home compostable packaging for fruit and vegetables. Utilising Danimer's signature biobased polyester, Nodax, the initiative has rolled out compostable bags for Earthbound Farm Organic Mini Peeled Carrots, available in 240 Meijer stores across the U.S. Midwest. Unlike conventional plastic, Nodax degrades within months under specific conditions. The bags have received home compostable certification from TUV, indicating they disintegrate at least 90% within 26 weeks and biodegrade within 52 weeks under home composting conditions. Stephen Croskrey, CEO of Danimer Scientific, noted that the rising demand for eco-friendly alternatives has made it possible to deliver fresh food responsibly. William F. Preston, CEO of BIOLO, emphasised that the launch represents a significant move towards sustainable packaging in the organic produce sector, aligning with the company's broader mission to transform the industry through sustainable, high-performance products.



# Commercial cleaning products provider introduces compostable packaging

Illinois-based UMF Corporation develops, manufactures, and distributes high-performance textiles for the commercial cleaning sector. They have now introduced compostable packaging for its PerfectCLEAN range of products. The compostable packaging, made from corn starch, is currently in use for certain PerfectCLEAN products, with the company intending to extend its usage to the entire range of PerfectCLEAN products by early next year. The new packaging supports the company's mission to offer environmentally conscious and cost-effective hygiene solutions with reduced effort, waste, and carbon footprint compared to traditional cleaning products and methods. A spokesperson for UMF said that more and more of their clients – be they in healthcare, hospitality, education, food services, or other industries – are elevating their sustainability standards. They also say that they are committed to protecting the environment and future generations from needless waste, and this innovative, compostable packaging aligns with those goals.



# Partnership formed to develop edible, soluble films for instant tea

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Lipton Teas US has formed a joint development agreement with Los Angeles startup Mi Terro to develop edible, dissolvable packaging materials for its instant tea powders. The company's tea powder is typically packaged in jars and spooned into cups, so having edible, dissolvable films will enable Lipton to experiment with new portable, pre-portioned pods that can be dropped into hot or room-temperature water on the go. The film dissolves within a couple of seconds without leaving any residue. It is also claimed that the film also extends the shelf-life of the tea. The films could equally be used to contain pre-portioned amounts of loose-leaf tea. The edible films, made from an undisclosed mix of polysaccharides and other "bio-based" ingredients, can also be used in sauce packs for dropping into instant noodles, ketchup packs, and pre-measured protein powders for gym-goers to drop into flasks of water or milk



## Miscellaneous (22)

The packaging industry is seeing a wave of innovative solutions aimed at improving efficiency, added functionality, and user-friendly design. Brazilian brewery Cervejaria Masterpiece and US can supplier Ball Corporation have launched the world's first beer can featuring the Aluminum Stewardship Initiative (ASI) certification seal, highlighting sustainable practices. MIT scientists have developed BrightMaker, a technology that embeds invisible, infrared-readable fluorescent tags in objects for tracking and security. Researchers at Case Western Reserve University are working on self-powered smart packaging to monitor perishable food conditions during transport. German smoothie maker True Fruits has introduced a bottle cap with a cannabis grinder, retailing for €25 plus postage. Meanwhile, General Mills is engaging young consumers with thermochromic packaging for its Yoplait Go-GURT product, which reveals hidden graphics when frozen. These innovations are typical of those that touch on various aspects of sustainability, security, and consumer engagement in packaging.

# Miscellaneous

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# High barrier film for cheese increases shelf life

Singapore-headquartered SP Group have launched a high-barrier packaging film designed for use with cheese. When vacuum packing cheese, a high barrier is required for its conservation. The company says that by using their new RB Q material, product conservation is optimal and the shelf life is extended. RB Q is a thermoformable co-extrusion for vacuum application based on polyamide (nylon) and high-barrier polyethylene (PE). Its formulation gives it robustness and high resistance, but also excellent mechanical performance since it perfectly matches the product's shape without forming folds during the vacuuming process. RB Q adjusts to the shape of the product, not only increasing the quantity correctly packaged leaving the line but also reducing packaging waste. Although initially designed specifically for cheese, RB Q is also suitable for packaging other foodstuffs, such as meat products, both fresh and processed.



# Sustainable food can sealant unveiled

Henkel Adhesive Technologies has introduced DAREX WBC 711, a novel food can sealant designed to reduce Greenhouse Gas Protocol emissions by over 30% compared to its predecessor, the DAREX OP 2928 compound, excluding use phase and end-of-life emissions. Tailored for irregular ends of tinplate and aluminium cans using shower head or die lining applications, the new sealant eliminates the need for additives, resulting in a cleaner application, reduced spoilage, and waste. Henkel claims to offer an improved pot life and increased storage stability while minimising clogging in applicator nozzles, thereby reducing metal waste and preventing seal gaps or leaks. The water-based sealant, compatible with various filling and pasteurisation methods, adheres to European food legislation and FDA 175.300 requirements.



# Lid for water bottles has multiple functions

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San Diego-based outdoor gear company Lunatec is crowd-funding on Kickstarter what it says is a multi-mode lid for water bottles. The BPA-free lid turns water bottles into a mister, streamer or sprayer. It's said to be compatible with existing insulated water bottles from companies such as Hydroflask, Takeya and Thermoflask, plus it can be used with a system-specific 1,000-ml stainless steel vacuum-insulated bottle made by Lunatec itself. To use the Hydration Spray Lid you just pump it a few times to build pressure within the bottle, twist its nozzle to either Mist, Stream or Spray settings, then press its trigger to start the flow. Mist can be used to cool yourself, more effective if the bottle has some ice in it. Stream provides a concentrated jet of water for tasks like blasting mud off the bottom of shoes, while Spray is more useful for things like cleaning utensils and washing your hands.



# Limited edition German liqueur launched in exclusive packaging

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Family-owned Jägermeister has unveiled a new limited-edition prestige Jägermeister herbal liqueur called 9556 Nights of Exploration, at a launch event at the company's headquarters in Germany. The special edition liqueur is limited to 2,500 hand-numbered bottles and has a recommended retail price of €560 (£487) for a 70cl bottle. Specially designed packaging was developed for 9556 Nights of Exploration by the Deco Glas company from Montabaur. The product comes in a clear rather than standard Jägermeister's familiar green glass bottle, and the back label is printed in Jägermeister's signature orange. As the product is drunk, the liqueur's unusual creation is seen printed on the inside of the label. The product is packaged in a shock-resistant wooden gift box. Inside the cap of each bottle of 9556 Nights of Exploration is a QR code that gives purchasers access to a unique digital version of an Jägermeister painting as a non-fungible token (NFT).



# Packaging for freeze-dried fruits features distinctive internal printing

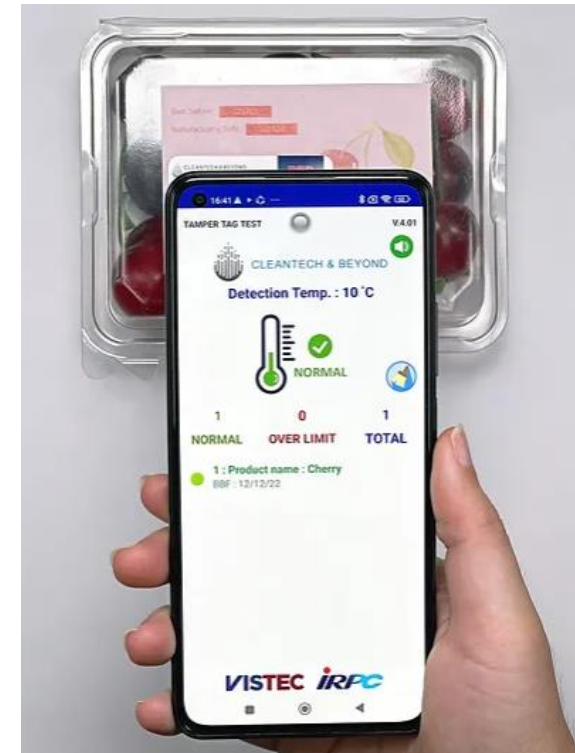
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Bavarian food producer Buah specialises in selling freeze-dried fruits. With the help of German sustainable packaging company Thimm, a sustainable product box was developed for the distribution of fruits in gift sets. These contain freeze-dried kiwis and sour cherries in reusable jars. A pair of wooden tongs is also included for removing the fruit. The two-part corrugated cardboard packaging consists of a hinged lid box as an outer box and an inlay. The inlay serves both as transport protection and for product presentation, which also means there is no need for additional packaging material. The brown outside of the boxes was printed in one colour using an efficient direct printing process. The fully colourful inside is the highlight of the packaging and was produced using digital printing. This internal printing not only improves the perception of the products but also showcases the Buah brand.



# Low cost temperature tracker needs no power supply

CleanTech & Beyond is a deep-tech university spin-off located at the centre of innovation district in Rayong, Thailand, that specialises in developing advanced materials for environmental sensing applications. The company's DTI, or "Digital Temperature Indicator," is an irreversible temperature indicator label that allows temperature-tracking at the item level and displays the status in both visual and digital formats when an item is exposed to temperatures outside of a specific threshold. The DTI's core technology is based on patented thermoresponsive materials. The DTI is created to broaden the usage of passive RFID/NFC labels from just tracking items to include sensing and ensuring the quality of temperature-sensitive products. The DTI can constantly track the ambient temperature of an attached item without any external power sources – no need for batteries, with the cost of a DTI reported to be comparable to traditional RFID/NFC labels.



# Innovative tomato packaging redesign prioritizes sustainability and brand appeal

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Smurfit Kappa in collaboration with Isle of Wight Tomatoes, has developed an innovative lattice box to address issues with tomato packaging. The partnership began when Isle of Wight Tomatoes, facing problems with their 1.5 kg punnet's poorly fitting lid, which led to damaged produce and negative customer perceptions, reached out to Smurfit Kappa Gosport. The resulting lattice box design features diamond-shaped holes that prevent fungal growth, ensuring the tomatoes reach customers in prime condition. This design also incorporates a star logo symbolizing a tomato calyx and a vibrant yellow colour, reflecting the company's slogan, 'More Sunshine, More Flavour.' This new packaging approach is expected to stand out on supermarket shelves and align with consumers' increasing preference for more sustainable packaging. According to Smurfit Kappa, a YouGov poll indicates that half of the British population is willing to pay more for products in eco-friendly packaging, demonstrating a shift towards more environmentally conscious consumer choices.



# Yoghurt brand to launch new range in carton brick format

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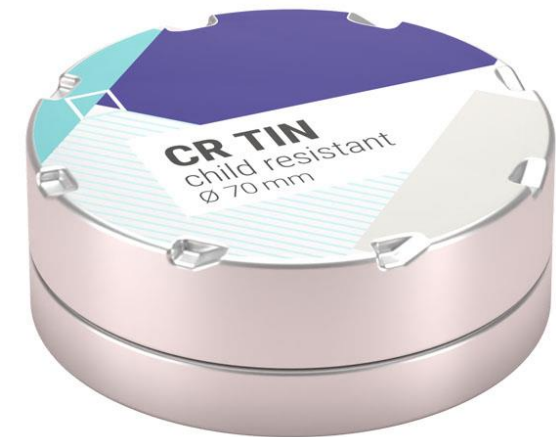
Yoplait is the world's largest franchise brand of yoghurt and is jointly owned by American food conglomerate General Mills and French dairy cooperative Sodiaal. The group has now revealed plans for a product it hopes will revitalise the white yoghurt section by launching nine products in a 750g board-based carton brick format. Yoplait hopes to cover 15% of the ultra-fresh market in the medium term by rediscovering the carton for packaging yoghurt. Yoplait says that it wants to “reconnect with its pioneering spirit”. To boost the white yoghurt category, the ‘little flower’ brand will launch the new range of stirred yoghurt recipes packaged in bricks starting in January 2024. The company considers the move to the 750g “family” brick format as “disruptive” and hopes that the format will offer a new way of consuming.



# Swiss metal can manufacturer wins two awards in annual competition

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Swiss metal can manufacturer Hoffmann Neopac recently won two awards in The Canmaker Magazine's annual competition. The company's resealable, airtight metal lid received a Gold Award in the "Ends, Caps and Closures" competition category. The lid's freshness seal is made possible by precisely placing a food-safe sealing ring that presses on the rim of the can container when it is closed. The lids can be embossed for a customised design and are also available in a Green Steel version, with 70% fewer carbon emissions. In addition, the lid is stackable, making it easier to store and transport the cans. In the Prototyping category, Hoffmann received a Bronze Award for its child-resistant (CR) all-metal can with high barrier. The fully recyclable cans are ideal for various products when child safety is a must, such as medical cannabis and certain foods and cosmetics. The all-metal cans are the company's second generation of CR cans..



# Cannabis pouches feature state-of-the-art technology

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Oklahoma-based Brandmydispo is a cannabis packaging enterprise founded in 2019. It has launched a range of cannabis pouches with several smart packaging features. The packs feature QR codes, real-time freshness indicators, and state-of-the-art near-field communication (NFC) technology. Customers can now access detailed information about their chosen CBD and weed strains while also engaging in an interactive and immersive experience. Safety is paramount, says the company, and Brandmydispo ensures that their custom weed bags meet all regulatory requirements, including child-resistant locks and full compliance with state and national laws. According to the co-founders, this enables dispensaries to transition into the future seamlessly. With these new developments, the company acknowledges that this is only its first step in the marijuana packaging realm. Its sights are set on addressing existing challenges and anticipating future ones. The company says it is dedicated to continual reinvention, community engagement, and sustainability.



# Industrially compostable stretch wrap awarded US patent

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Minnesota-based Cortec Corporation has announced that the company has been awarded a US patent for its commercially compostable industrial strength stretch film technology, also known as Eco Wrap film. Eco Wrap is a specialty wrapping film made from compostable resins that meet the EN 13432/ASTM D6400 standards for commercial composting and was certified industrially compostable by TÜV Austria (#TA8012106218) in 2021. It is reported to be extremely elastic and suited for general machine stretch-wrapping applications. It can be used to replace conventional plastic stretch wrap with the goal of improving the user's environmental image and reducing conventional plastic waste when the material is properly disposed of in a commercial composting environment. Cortec says that Eco Wrap can be used on most existing automated machines and is easily applied by adjusting the tension on standard stretch wrapping equipment.



# Manufacturer of tamper evident PP containers add anti-fog feature

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Following customer consultation, Connecticut-based Inline Plastics has added an anti-fog feature to its Safe-T-Chef range of PP (polypropylene) containers. It was noted that for prepared foods sitting under lamps or in hot displays, venting was not enough to release all steam that builds up inside the pack. The new anti-fog material for the Safe-T-Chef containers makes it so that the steam does not prevent consumers from being able to see the product inside. Inline said that better product visibility will help to increase sales, which also reduces food waste, as when fresh prepared foods are not visible, they are more likely to be wasted. A spokesperson for Inline said that customers repeatedly emphasised the importance of visibility, especially when displaying hot foods. Launched in 2022, Inline Plastics said that the Safe-T-Chef range was the first tamper-evident, tamper-resistant, all-clear polypropylene product line.



# Brewing giant launches China's lightest beer can

At a circular packaging forum in Fujian Province, China, Budweiser APAC launched China's "lightest aluminum can" for beer. The 330ml can weighs in at 9.57g, 4% lighter than the industry average. The average carbon footprint per can is 185g, nearly 100g less than the 2017 baseline, a reduction of around 30%. The forum explored best practices of recycling and packaging to tackle the challenges of current resource scarcity, improve the circularity of packaging materials, and eliminate waste, with support from the Putian local government, brewing and environmental sustainability experts, and industry associations. The forum promotes innovative solutions for the Chinese beer sector, specifically on aluminum cans and glass. Budweiser APAC is also addressing the challenges of aluminum can same-grade recycling by introducing Can-to-Can recycling, a closed-loop solution for used beverage cans, capitalizing on technological innovation and collaboration with industry partners.



# High performance adhesive developed for challenging packing conditions

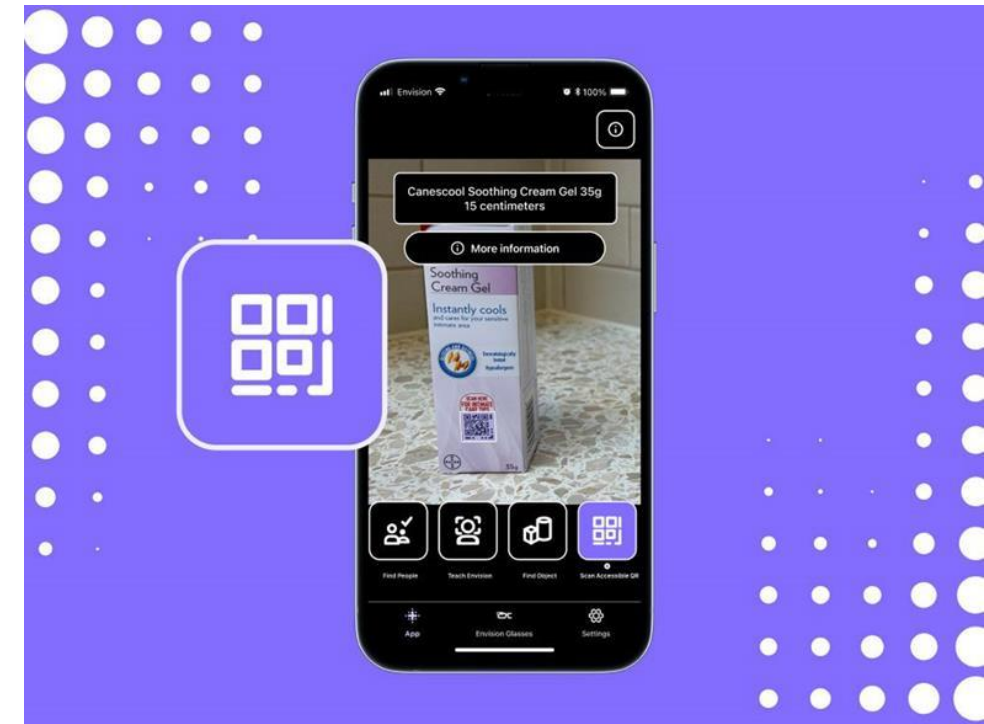
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California-based ASA (American Standard Adhesives) has announced the launch of their latest adhesive formulation, called Agripak ASA-3202. This new adhesive has been developed specifically for the challenging requirements of the agriculture packaging industry in California's Central Valley. Agripak ASA-3202 is an EVA (ethyl vinyl acetate) hot melt adhesive formulated for carton sealing applications. It has been meticulously crafted to address agriculture packers' specific challenges, namely extreme variations in temperature and humidity. According to the company, Agripak ASA-3202 is a high-performance adhesive designed for carton sealing applications. It creates a secure and permanent bond, even on glossy-coated stock. This adhesive is engineered to offer outstanding hot tack, ensuring the boxes remain securely sealed under various environmental conditions, including cold temperatures within refrigerated storage. Agripak ASA-3202's fast setup time is tailored to accommodate the high-speed production lines common in agriculture packaging, ensuring both efficiency and productivity.



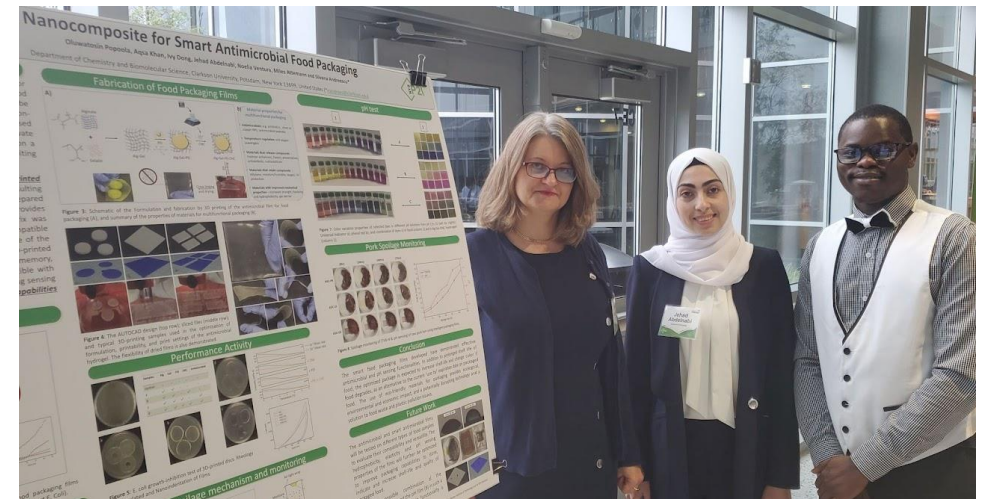
# Personal health care producer adds AQR codes to packaging

Bayer Consumer Health UK has partnered with Scottish software provider Zappar to introduce packaging within AQR (Accessible QR) codes to aid consumers who are blind or partially sighted. These innovative QR codes, created by Zappar, working closely with Bayer and in collaboration with the RNIB (Royal National Institute of Blind People), can be detected by popular accessibility apps such as the Envision app, Microsoft SeeingAI (as of mid-October) and also Zapvision's reference app. Using the codes on Bayer's Canescocool Soothing Gel Cream packaging, structured product information will be announced through text-to-speech for users who are blind or partially sighted. Users will also be directed to a dedicated landing page on the Canescocool website with expanded product information and a myth-busting knowledge quiz. A spokesperson for Bayer said that the move was the start of their ambition to add Accessible QR codes onto more of their product packaging across the consumer health portfolio..



# University develops smart packaging to monitor food quality

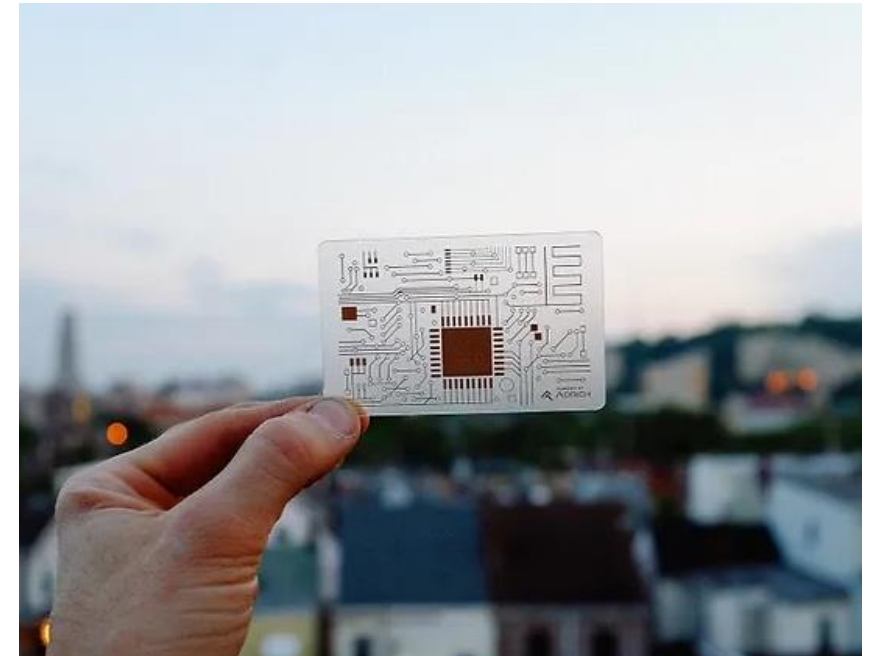
A team of researchers from Clarkson University in New York was awarded a grant of \$42,000 (£34,000) from The New York State Pollution Prevention Institute (NYSP2I) as part of an inaugural Student and Faculty Research Program: Food Spoilage Mitigation through Packaging. The team has developed a new type of 3D-printed packaging fabricated entirely from sustainable sources. The new packaging has built-in multifunctional properties that are meant to monitor and maintain the quality and increase the shelf-life of food, thereby reducing food loss and food waste. During the summer project, the team tested the antimicrobial and sensing properties of their new packaging formulation and developed a 3D printing method to manufacture the packaging at a large scale. The team presented their findings at Binghamton University on September 29 during the “Keep It Fresh!” symposium.



# Smart label captures real-time product usage data

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Pittsburgh-based Adrich is a digital product consumption platform that captures real-time product usage data. The company says that they have unlocked new ways to interact with consumers at point-of-use including smart and sustainable auto-reorders, and created a better way to capture consumer behaviour data. Adrich technology creates a stream of real-time product usage data, obtained from consumers of FMCG goods through a thin, flexible (and patent pending) smart label affixed behind a product's regular label. To date, it's created the greatest impact for manufacturers of food, beverage, and cosmetic products. The label creates a direct feedback loop with the business by simulating consumer behaviour data, connecting to the cloud, and transmitting it to the business through Adrich's dashboard. It lets businesses know in real-time who's using their product after it's sold, where, when and how much they're using it, and when they're running out..



# Packaging for new controller made more accessible for gamers

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In its journey to make gaming more accessible, PlayStation, from Sony, has announced its next step, which is known as Project Leonardo. Developed with key contributions from accessibility experts, community members, and game developers, PlayStation has developed a new highly customisable controller kit that works “out of the box” to help many players with disabilities play games more easily, comfortably, and for longer periods. The packaging for the controller has also been developed to make it easy for disabled users to open the packaging with one hand. Stemming from the company’s collaboration with accessibility experts, the new controller comes in a box featuring loops that can be pulled from the left or right side. These are intended to facilitate easy opening and allow consumers to slide the controller out of its packaging.



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Design and specifications are subject to change without notice.

# Fast food chain chooses sustainable leak-proof packaging

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Two Brazilian companies have collaborated to introduce leak proof packaging for food deliveries. Fast food chain Giraffas is using Bio+ packaging from Meiwa Embalagens, which has been developed as part of its efforts to reduce the environmental impact of disposable packaging. Made with sustainable and recyclable materials, the packaging not only offers practicality but also supports the reduction of the use of plastics and other materials that are harmful to the environment. The new feature of the new packaging is lids specially designed to prevent liquid food from leaking, providing a safer and worry-free delivery experience. The development of the new packaging was based on continuous customer feedback, where they realised the importance of improving the delivery experience, making it more convenient and worry-free. The partnership with Bio+ from Meiwa Embalagens was seen as fundamental to realising this vision, with the consumer no longer receiving packaging with juice leaking into other compartments.



# Food giant adds NaviLens technology to its crisp packaging

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Following the addition of NaviLens technology to its cereal packaging in 2022, Kellanova (formerly Kelloggs) is now to introduce NaviLens on its Pringles crisp packaging. The new packaging will allow a smartphone to detect the unique on-pack code and playback labelling information to the shopper with sight loss. NaviLens will first appear on some Pringles varieties in November, with the full rollout to be completed by the end of 2024. A spokesperson for Kellanova, the new name for the company that owns Pringles and Kellogg's, said that following the success of adding NaviLens to the company's cereal packaging last year, they are now really pleased to feature this technology on their iconic Pringles cans. The inclusion of NaviLens technology provides equal access to important information on pack and enables blind and partially sighted people to shop independently for their favourite Pringles flavours.



# Channel-specific packaging strategies for retail and e-commerce

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Renowned electronics manufacturer, Bosch Power Tools, is embracing the concept of channel differentiation in its packaging strategies by offering bespoke solutions tailored to the two main sales channels. Developed in collaboration with Lauterbach, Germany-based STI Group, this approach addresses the distinct needs of online and offline retail. While the packaging for brick-and-mortar stores often prioritises eye-catching branding, aesthetics and informational content and often boasts vivid print images and comprehensive product details, its online counterpart can focus on logistical efficiency. Specifically designed for a seamless Amazon-approved 'Ships In Own Container' (SIOC) process, the e-commerce packaging is robust and eliminates the need for additional outer layers. It also omits the Euro hole suspension, a feature vital in retail settings but redundant for online. The e-commerce packaging differs visually, incorporating brown recycled material and a reduced white-green print to align with sustainable elements, offering a differentiated brand experience for DIY enthusiasts. This nuanced approach allows Bosch to cater effectively to the divergent demands of the two distribution channels.



# World's first all natural cheese wax launched

Danish packaging and ingredients supplier Procudan has launched a new 100% natural cheese wax. Until the development of Procudan ProCera Natural cheese wax, one of the components of cheese wax was paraffin. ProCera Natural has been developed and tested in collaboration with leading Scandinavian dairies. The patented recipe contains beeswax, among other things, with all the other ingredients being made from materials of natural origin. The objective behind the development process that led to the new product was to make cheese packaging free of fossil-based materials while still providing a product that dairies could use without changing their production methods. The Procudan development team had to test more than 5,000 different recipes before finally producing some prototypes and variants that covered every customer requirement. The project was supported along the way by Innovation Fund Denmark's InnoBooster programme and the European Eurostars innovation programme.



# About Us

ThePackHub is a UK-based packaging innovation consultancy that provides packaging solutions to brand owners, retailers, and packaging suppliers. They offer technical support for packaging projects of all sizes, with a strong reputation for assisting start-ups to multinational organizations.

ThePackHub manages a comprehensive innovation database called The Innovation Zone, featuring over 7,800 packaging innovations worldwide, with 25 new initiatives added weekly. They have a vast network of packaging contacts across the industry that helps inform much of their consultancy work. Additionally, they have published several packaging reports, covering sustainability, packaging trends, supplier guides, seasonal packaging, and more. ThePackHub hosts face-to-face seminars that provide insight from expert speakers and 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, Starbucks, Walgreen Boots Alliance, Marks & Spencer, Lidl, Muller and many more.



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