

N°2-2024



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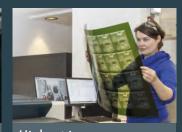
For flexo printing



Aqueous and solventbased systems



Solutions for label and flexibles applications



Highest image quality reproduction



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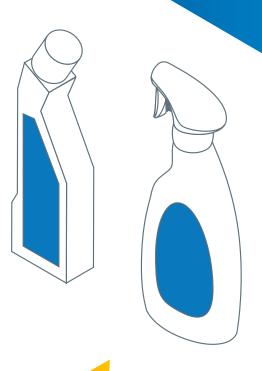








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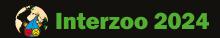
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MH is an Italian Company with 30 years of experience in engineering and building conveyor lines for food packaging. It's product portfolio goes from conveyors for machine connection, elevators, mergers and whatever accessory may be needed to realize a turnkey plant.







BUFFERING SYSTEMS





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In order to comply with the increasing productivity rate and speed of packaging lines MH developed a set of dynamic mergers & dividers in achieve the correct distribuition of products between the primary and secondary packaging machines.

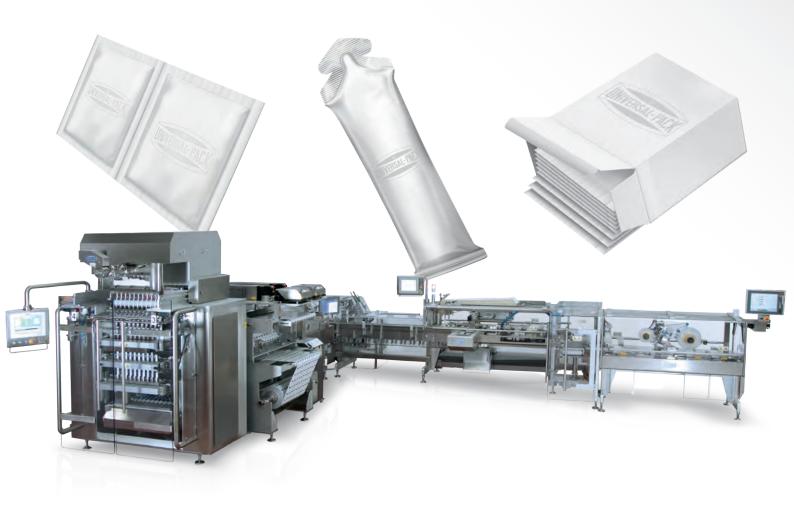




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FOCUS: CONVERTING



10/12

ELITRON IPM SRL

Introducing KOMBO TAV. The future of digital cutting automation.

FOCUS: PHARMA



22/24

IMA SPA

IMA PHARMA: innovating solutions for pharmaceutical processing and packaging.



SONIA V. MAFFIZZONI Editorial Manager

Networking, networking, networking. Only by collaborating and connecting with other entities in the sector and regulatory bodies can we steer policies and manage change.

In times when doing well as we did yesterday is no longer enough, it is networking that makes the difference for companies in every sector. Networking means actively participating in discussions on the main market topics, collaborating and strengthening relationships with all players, and seeking common ground.

It also involves engaging customers, making them truly a reference point for business decisions. Network and dialogue: the keys to success in these times of great change.

Good connection.

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PACKAGING



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CAMA GROUP

Fast design turnaround and deep consultancy capabilities create the foundation for new packaging evolution.

AUTOMATIC DOSING SYSTEM



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COLOR SERVICE SRL

Innovative automatic dosing system: fast, accurate and eco friendly.

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managing editor: Enrico Maffizzoni redazione@editricezeus.com

editorial manager: S.V. Maffizzoni redazione@editricezeus.com

editorial production: Sonia Bennati bennati@editricezeus.com account dep. manager:

Elena Costanzo amministrazione@editricezeus.com

project and layout design creative dep.

ZEUS Agency grafica@editricezeus.com

translations: Zeus Agency

printing: Zeus Agency





ECO3 BROADENS FLEXO OFFERING AT DRUPA





Guy Desmet Head of Marketing at ECO3

uilding on the successful launch of its flexo prepress system for the label segment, ECO3 is now set to extend its portfolio into the flexible packaging market. By adding further ecological benefits, ECO3 offers a total solution for sustainable prepress and in-house platemaking.

From May 28th until June 7th, ECO3 will demonstrate a complete aqueous system for the flexible packaging segment at drupa, including a digital imager, dry film laminator and an all-in-one exposure-processing unit. In addition, the new MAGIS Eco ReFlow water reclaiming unit will premiere at the show. This revolutionary system



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allows customers to reduce their waste generation during platemaking drastically.

"Expanding the reach of our MAGIS ECO solution to the flexible packaging segment is a natural progression of our growth strategy in the flexo market," says Guy Desmet, Head of Marketing at ECO3.

"The industry has been incredibly receptive to our aqueous prepress system, welcoming the sustainability aspects and the 'total solution' approach. MAGIS ECO supports repro houses and printers to move to a water-based system, offering highest image quality, all the way from artwork to press-ready flexo plates."

The upcoming trade show will also mark the extension of ECO3's dry film assortment to enable full compatibility with the broad installed base of flexo imaging systems. The film can be used as a drop-in product, drastically increasing image quality compared to current setups. Dry film lamination can be combined with both MAGIS water-based and solvent-based flexo plates.

Demonstrations of ECO3's dedicated packaging software solutions will also take place on the booth. These include the Amfortis all-in-one PDF workflow with SPIR@L screening and GridTune surface patterning for image quality and ink transfer enhancement.

"At drupa, ECO3 will show the many opportunities for repro houses and printers to integrate an eco-friendly solution, either in full or by choosing those components that fit into their operations," explains Rainer Kirschke, Market Manager Flexo.

"MAGIS ECO represents an integrated solution from one sole supplier, offering inherent advantages, but it remains an open system giving customers the flexibility to tailor it to their needs."

ECO3 WILL BE PRESENT IN HALL 5, BOOTH C31.

About EC03

ECO3 is a leading global supplier of prepress systems to the printing industry. We provide a wide range of integrated solutions to commercial, newspaper, packaging and label printers. These solutions include printing plates, computer-to-plate systems, workflow and print management software and pressroom chemicals.

For more information on ECO3, please visit **www.ECO3.com**



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INNOVATIONS IN THE FOOD SECTOR: HOW CONVERTING IS REVOLUTIONIZING THE INDUSTRY



by Walter Konrad

The food industry is constantly evolving, always seeking new solutions to improve the production, preservation, and presentation of products.



key term in this context is "converting", a broad concept that refers to transforming raw materials into finished or semi-finished products using advanced technologies and innovative processes. In this field, converting applies to various materials such as paper, plastic, and metals, which are converted into packaging, labels, and other essential components.

In recent years, technological innovation has pushed converting towards new horizons, making processes more efficient, sustainable, and customizable. Digital technologies, in particular, have profoundly changed how companies manage production. For instance, digital

printing allows for packaging customization according to individual customer needs, minimizing waste and improving product traceability. Companies can respond more rapidly to market demands by producing small batches of specialized packaging.

Another emerging technology in converting is flexographic printing. This process, which uses flexible printing plates to imprint images on various materials, offers high quality and speed, making it ideal for mass production. Flexography is increasingly being integrated with artificial intelligence systems to monitor print quality in real-time and correct defects.





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We can't discuss converting without mentioning sustainability. Growing environmental awareness has led to the development of eco-friendly materials and low-impact production processes.

Compostable and biodegradable materials are becoming increasingly popular, as are recyclable packaging solutions. Companies are investing in converting systems that reduce plastic and other harmful substances, focusing on reusable and recyclable products.

A notable example is the growing use of paper and cardboard as plastic substitutes in many packaging applications. Another interesting trend in food converting involves the use of automation and robotics. Vision systems can identify packaging defects, improving quality control. Meanwhile, collaborative robots (cobots) are starting to work alongside human operators to speed up packaging processes, reducing errors and improving productivity.

Food converting is a rapidly growing field, driven by innovations that make production and packaging processes more sustainable, efficient, and customizable. Companies investing in these new technologies will be ideally positioned to meet increasingly complex consumer demands and maintain a competitive edge in a global market.





ELITRON: INTRODUCING KOMBO TAV. THE FUTURE OF DIGITAL CUTTING AUTOMATION

E

litron is raising the bar once more in digital cutting automation with the unveiling of the NEW Kombo TAV at Drupa in Dusseldorf later this month.

Looking to take your packaging, sign & display productivity to the next level then don't miss seeing the very latest innovation from Elitron in Hall 16 on Stand D11.

From compact cutting systems for sampling to digital cutting systems with optional feeding and unloading, to the NEW ERA of large format, full automation with Kombo TAV, there is an Elitron system ready to take your productivity into the future.

"The NEW ERA of the Kombo TAV fully automatic, integrated, digital cutting system is here, and much excitement is expected as rumours are already circulating. This is the only cutting system with a fully integrated, patented pallet management system and it's now become even more outstanding, so it's a real game-changer and a must-see for all those investing in digital finishing and looking for ROI in the shortest timeframe." says Paolo Malatesta, Elitron's Executive Director.

100s of Kombo TAVs are installed worldwide and Drupa marks the dawn of this new, exciting era.

Expertly engineered, the next generation control board, re-designed electronics, and new motion control system with faster communication protocol take the brainpower of this already state-of-the-art cutting system to a completely new level. Multi-stack pallets of boards feed directly into the Kombo TAV, with individual sheets being loading, aligned, cut & creased, and then unloading using the integrated Airo Panel for a clean-cut, perfectly finished and aligned palleted stack.

Daniele Gallucci, Elitron America's President, highlights how all this translates into higher productivity with "+ 35% faster speed, + 40% greater production efficiency and - 30% energy consumption which all add up to place the Kombo TAV in a class of its own".

"Furthermore, the system is not only ready for Industry 4.0 but it's also ready for Industry 5.0 and future AI integration" adds Daniele.



Paolo Malatesta Executive Director of Elitron



Daniele Gallucci
President of Elitron America



SECTORS

VISUAL

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S FOOTWEAR

S LEATHERGOODS

S AUTOMOTIVE

S FURNITURE

✓ INDUSTRIAL

MATERIALS

KOMBO TAV

A NEW ERA HAS STARTED



Next Generation Control Board

Faster, high performance communication protocol

Re-designed electronics





Discover the KOMBO TAV evolution!

We'll see you in HALL 16 – STAND D11





In addition to the NEW Kombo TAV, Eltron will also be showcasing another new system for Drupa, the compact Spark cutting system, which is idea for sample making, with a multi-tool cutting head, patented Seeker System vision system and Stressless Working Technology for immediate sample production.

From compact cutting systems right up to total automation, Team Elitron are ready to talk you through their complete system range, tooling and automation options and demonstrate the amazing results of digital cutting.

Book a dedicated meeting at DRUPA today:

elitron@elitron.com

For over 40 years Elitron has been responding to global challenges with futuristic technologies. A leading company in robotic cutting and automation with European headquarters in Italy, in Monte Urano, and an American branch in Atlanta.

Operating in several sectors, designing, and producing systems and software for the packaging, digital print, fashion, furniture, automotive and industrial sectors. Our strength is the ability to transfer acquired technological know-how from sector to sector, which has resulted in numerous patented technologies and awards over the years. Highly qualified engineers and technicians manage the entire production process, from the initial project development to the realization of the final product, all 100% Made in Italy. Not single products but integrated systems, for a stressless working process. Each cut is technology, passion, and challenge. Our drive is precision, and efficiency, with maximum automation for high productivity where required. Elitron develops each project, working closely with customers to offer solutions capable of fully satisfying current production requirements, whilst being ready for the future challenges of tomorrow.

For more information: www.elitron.com







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DRUPA Düsseldorf/Germany May 28 - Jun 7, 2024

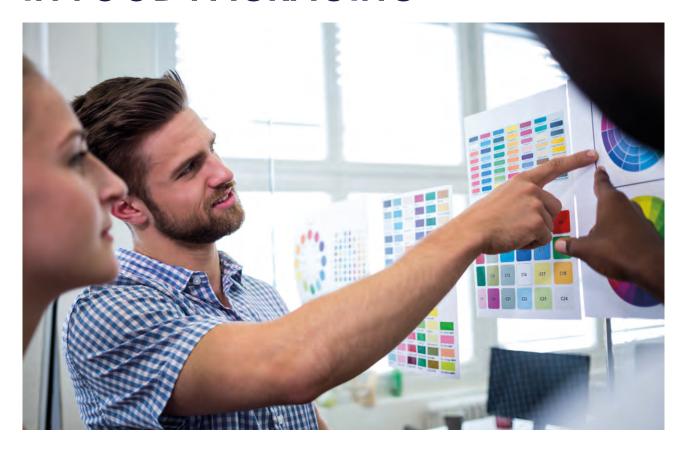


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INNOVATION AND SUSTAINABILITY: THE REVOLUTION OF PRINTING IN FOOD PACKAGING





By the editorial staff

In the modern era, the food industry is facing a dual challenge: meeting the growing demands of consumers for high-quality products and, at the same time, adopting sustainable practices that respect the environment.

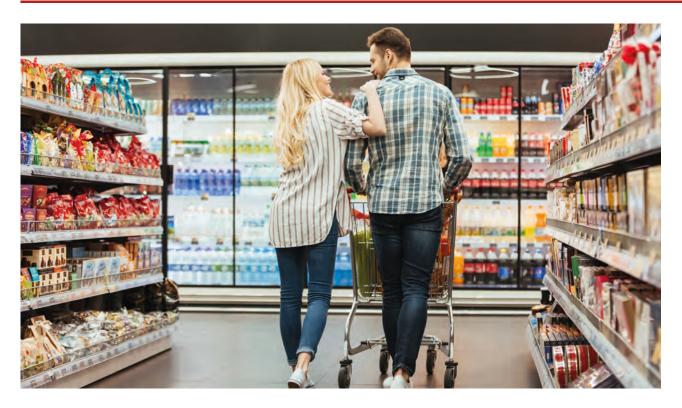
n this context, printing in food packaging emerges as a crucial element for the innovation and sustainability of the sector. The advent of cutting-edge technologies has radically transformed the way food packaging is printed. High-definition digital printers allow unprecedented precision in color and detail reproduction, ensuring a stunning visual impact on consumers.

This precision is essential not only to enhance the aesthetic appearance of packaging but also to provide crucial product information, such as ingredients, expiration dates, and usage instructions.

Moreover, digital printing offers unparalleled flexibility and customization. Companies can easily adapt packaging to market needs, creating unique designs and distinguishing



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themselves from the competition. This flexibility not only enables greater consumer engagement but also reduces waste resulting from overproduction.

In addition to new technologies, another area of great interest is the eco-sustainability of food packaging. In particular, the materials used for packaging and the inks used in printing play a crucial role in reducing the environmental impact of the food industry.

A growing trend is the adoption of biodegradable and compostable materials for packaging. Biodegradable



plastic, recycled paper, and compostable materials derived from renewable sources are gradually replacing traditional non-recyclable plastic packaging.

This transition to more sustainable materials significantly reduces the accumulation of plastic waste in the environment, contributing to the fight against pollution.

Simultaneously, developments in ink formulation are revolutionizing the eco-sustainability of printing in food packaging. Water-based inks and vegetable inks, free from harmful substances such as chemical solvents, offer a safer and more eco-friendly alternative to traditional solvent-based options. These inks reduce the emission of volatile organic compounds (VOCs) during the printing process and facilitate the recycling of packaging.

Printing in food packaging represents a crossroads between technological innovation and environmental sustainability. New technologies enable precise and personalized printing, while the adoption of ecofriendly materials and inks promotes the reduction of the environmental impact of the food industry.

In an increasingly eco-conscious world, investing in sustainable printing practices is not only a necessity but also an opportunity to stand out in the market and contribute to a greener and more prosperous future.







BIOPLASTICS BEYOND BASICS: DEEP DIVE INTO CUTTING-EDGE BIODEGRADABLE PACKAGING

id you know the packaging industry is leading towards a more sustainable future? It's all thanks to growing environmental concerns like plastic pollution and greenhouse gas emissions. Individuals have become more aware of the long-term impact of single-use plastics on our planet's ecosystems and wildlife.

Nevertheless, there's good news! Bioplastics, made from renewable resources like plants and biowaste, offer a sustainable alternative to traditional plastics. They break down naturally, reducing finite resource reliance and carbon footprint. Bioplastics are increasingly popular due to their biodegradability and reduced carbon footprint, but concerns about environmental impact, economic feasibility, and production and disposal issues may affect demand.

Rise of Bioplastic Packaging: First Step Towards the Sustainability

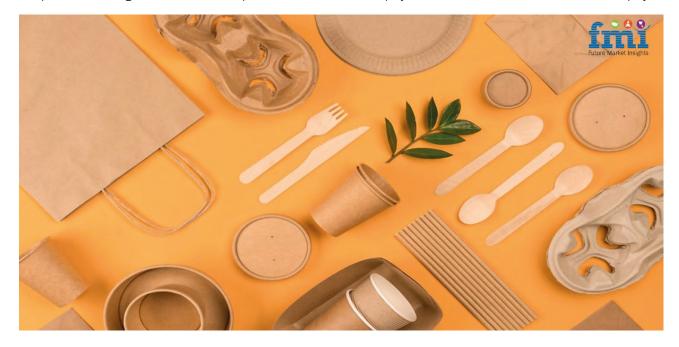
The term "bioplastics," made from biomass resources or biodegradable materials, can be compostable or biodegradable depending on their origin and after-use options. These materials can be designed for either the technical or biological cycle, and some, like PLA and PHA, can be recyclable and compostable if the right infrastructure is in place.



Also, not all compostable materials are bio-based. Some fossil-based compostable plastics, like PBAT and BASF Eco-Flex, are industrially compostable. However, they represent a smaller segment of the market as compared to greenhouse gas-based plastics.

According to market research from Future Market Insights, the bioplastics for packaging market is predicted to surpass US\$ 30.9 billion by 2033, registering a 10.3% CAGR. Discreet but eco-friendly packaging can benefit from this rise as consumers value simplicity and sustainability.

So, what does anybody know about bioplastics? This broad class of polymers is derived from natural materials, including proteins, fermented sugar cane and maize, and corn starch. Furthermore, there are several kinds. For instance, starch-based polyesters are combined with cellulose-based polyes-









ters, biodegradable polyesters, and many more. The fact that they are constructed of renewable resources rather than fossil fuels makes them awesome.

Current Economic Application of Bioplastic

The concept of bioplastics may seem like a modern invention, but the truth is that they have been around for over a century. In fact, the Ford Model T, one of the world's first cars, was manufactured using parts made from corn and soybean oil. As the drawbacks of petroleum-based plastics have become more prominent, bioplastics have emerged as a viable alternative to create a variety of products, including food containers, grocery bags, disposable cutlery, and packaging.

One of the most commonly used bioplastics is polylactic acid (PLA), which has been employed for a wide range of applications, such as plastic films, bottles, medical devices, and shrink wrap. Moreover, PLA has been utilized for specialized uses in 3D printing. Leading companies such as Coca-Cola, PepsiCo., Heinz, Ford, Mercedes, and Toyota have already integrated bioplastics into their packaging materials as part of their commitment to sustainability.

Adaption of the Bio-Based Plastic in Early Days

Perhaps surprisingly, the concept of bioplastics is quite new. The earliest known studies with materials from naturally occurring chemicals, such as cellulose, were conducted in the early 1900s. Unfortunately, petroleum-based polymers are more versatile and affordable, so they have yet to be widely used despite their promise. However, there has been a resurgence of interest in bioplastics recently due to rising concerns about plastic pollution and the depletion of fossil resources. Modern renewable bioplastics have resulted from this, and in some situations, end-of-life alternatives like compostability and biodegradability have been enhanced.

A Confluence of Aspects Propels the Augmented Production and Use of Bioplastics

Elevated Demand from Consumers

Consumers have grown awareness of environmental issues in recent years, increasing demand for sustainable products, particularly packaging. Consumers are increasingly seeking alternatives to conventional plastics, which has prompted companies to explore bioplastics to meet these expectations and enhance their brand image. Consequently, there has been a significant drift towards bioplastics in the packaging industry, with more and more companies investing in research and development in bioplastic packaging.

Hitting Sustainability Goals Commercially

It's heartening to see more and more corporations taking steps towards sustainability by setting ambitious targets for reducing their carbon footprint and transitioning to circular economy models. Bioplastics have appeared as a profitable



solution to help companies achieve these goals, and it's encouraging to see increased investment and interest in bioplastic packaging solutions.

Development of Lowered Carbon Footprint

Bioplastics are better for the environment than regular plastics because they come from plants. When plants grow, they naturally soak up CO2 from the air, and this helps reduce the emissions created when making and breaking down bioplastics. As a result, bioplastics have a lower carbon footprint than traditional plastics.

For example, polylactic acid (PLA), a cornstarch-based bioplastic, emits fewer greenhouse gases than PET. However, the carbon footprint varies based on feedstock cultivation, conversion efficiency, and energy source. Therefore, prudent production process management is essential to maximize the benefits of bioplastics.

Aspects of Biodegradability and Composability

Let's take a moment to appreciate the positive impact of bioplastics on our environment. With their ability to biodegrade or compost, they offer a sustainable solution for a greener future. However, we must also be mindful that not all bioplastics are created equal and require specific conditions for effective breakdown. We can ensure that bioplastics continue contributing to a healthier planet by gaining more clarity on these terms.

Biodegradable bioplastics can decompose into water, carbon dioxide, and biomass with the help of microorganisms. However, this process often requires industrial composting facili-







ties that maintain high temperatures and humidity. Unfortunately, home composting conditions are usually insufficient for many bioplastics, and proper industrial composting facilities are necessary for these materials to break down more efficiently than conventional plastics in a landfill.

On the other hand, compostable plastics are a subset of biodegradable plastics designed to break down in commercial composting facilities within a specific timeframe, leaving behind no toxic residue. The standards for composability, such as ASTM D6400 in the United States, ensure that these plastics can contribute to valuable compost used to enrich soil. However, the effectiveness of composting bioplastics also depends on the availability and accessibility of these nonuniversally available composting facilities.

Novel Regulations on Global Level Prompts Demand for Bioplastic Packaging

Around the world, there is a growing commitment to developing and using bioplastics, backed by supportive regulatory initiatives and policies. This is particularly evident in the European Union, where the Circular Economy Package and the Strategy for Plastics in the Circular Economy have been introduced to ensure that plastics are sustainable and made from renewable and recyclable materials. Similarly, countries like Japan are taking proactive steps to promote bioplastics by providing subsidies for their manufacturing and usage.

In current terms, the focus on mitigating plastic waste has taken on a diverse approach in the United States. Different states have implemented various regulations to tackle this issue, with some advocating for bioplastic usage. Notably, the State of California has passed legislation mandating the reduction of plastic waste while promoting the adoption of compostable and recyclable packaging alternatives.

Such regulatory efforts often comprise directives on minimizing single-use plastics, providing incentives for utilizing renewable resources, and establishing standards for compostability and biodegradability. Such measures have significantly impacted the bioplastics market by bolstering demand and creating clear production and disposal guidelines.

Innovation in Bioplastics

Bioplastics are being developed to address current cost, performance, and disposal limitations. Advancements in bioplastic materials and production processes have improved their durability, flexibility, and barrier properties. New feedstock like algae and non-food crops offer sustainable alternatives. Technological breakthroughs in fermentation and genetic engineering enable bioplastics with enhanced biodegradability and composability. Research also explores bioplastic polymers and natural fiber reinforcements to improve mechanical strength and temperature resistance. Chemical



regulations, and informed consumer choices are needed to

overcome bioplastics' challenges and realize their full envi-

Future of Bioplastics in Ecological Packaging

ronmental benefits.

"Although the delayed acceptance of bioplastic technology is concerning, change is taking place faster than expected. Bioplastics in the packaging sector have a bright future full of innovations, offering a genuine prospect of saving the planet from detrimental impacts of plastics since new developments are being created at a breakneck pace." – Says Ismail Sutaria, Chief Packaging Analyst.

The future of bioplastics in sustainable packaging is a critical stage, with significant growth potential and challenges. As environmental awareness and regulatory pressures increase, bioplastics are seen as a viable solution to reduce reliance on fossil-based plastics and pollution. Market trends show rising demand, advancements in bioplastic technologies, and expanding packaging applications.

To fully utilize bioplastics, challenges include:

- · Sustainable feedstock sourcing.
- · Minimizing land use impacts.
- Scaling production to meet demand.
- · Improving biodegradability and composability.
- · Enhancing consumer understanding.

Developing recycling infrastructure for bioplastics is crucial to prevent contamination and support circular use while ensuring proper disposal and understanding of bioplastic products.

Conclusion

In the ecological packaging industry, efficient material handling is a logistical necessity and the cornerstone of manufacturing excellence, driving operational efficiency, cost savings, and customer satisfaction. Manufacturers can unlock new levels of productivity and competitiveness in a highly competitive landscape by using biodegradable bioplastic materials.

The future of bioplastic is foreseen to notice the integration of advanced technologies such as material science and recycling production, enhancing efficiency and productivity. Bioplastics, derived from renewable resources, can contribute to a circular economy by reducing packaging's environmental impact. However, innovations in material design, waste management, and consumer behavior are needed.

www.futuremarketinsights.com







THE ECOPOLYETHYLENE CONSORTIUM RENEWS ITS LEADERSHIP

he annual meeting of **Ecopolyethylene**, the consortium of the Ecolight System representing producers, distributors, and recyclers of polyethylene goods, was held recently in Milan. The meeting led to the renewal of the leadership and the **reappointment of Fabio Pedrazzi as President for the 2024-2026 triennium**.

Established in 2017 in response to environmental regulations requiring production, import, and distribution companies to manage the disposal of polyethylene goods throughout the Italian territory, the Ecopolyethylene consortium concluded 2023 with 175 associated companies, marking a 22% increase compared to 2022.

"I thank the board for their renewed trust after the intense work carried out in the early years of establishment and growth of Ecopolyethylene. The year 2023 saw the consolidation of the Consortium from a technical perspective, with an increase in the number of associates and the expansion of certification activities for facilities: two important indicators of the quality of our actions," commented **Fabio Pedrazzi, President of Ecopolyethylene**.

The new board of directors of the Ecopolyethylene consortium for the 2024-2026 triennium includes: Fabio Pedrazzi (President), Marco Pagani (Vice President), Lorenzo Contini, Mattia Esposito, Luigi Ferrando, Davide Macchia, Domenico Pacetti, Alfredo Tacchetti, and Laura Tondi.

In terms of volume, the Consortium represents about 12% of the sector. In 2023, it conducted over 7,100 missions throughout Italy, managing 26,032 tons of polyethylene goods waste, which is over a third (36.5%) of what was released by the associated companies.

For 2024, Ecopolyethylene anticipates continued growth with further company memberships and increased collection. However, the president highlights the need to overcome some systemic issues to give greater momentum towards creating a real circular economy in the polyethylene goods sector.

"The next three years will bring us into a new phase, that of full development. Our commitment will be to work on the system to overcome existing criticalities that have so far prevented the entire sector from fully realizing the potential for recovery of the collected material. Our Consortium aims to eliminate these intrinsic constraints, operating in synergy with all the system's players," explains Fabio Pedrazzi. "Among the sector's criti-



calities, for example, there is the need to better identify, also through the development of new EWC codes, those polyethylene products that can and must be better recovered. After all, effective waste management starts with its correct identification, classification, and collection," continues the president of Ecopolyethylene.

"A second goal of this new phase is to collaborate with ministerial authorities to develop tools for transparency and oversight of the entire supply chain. It is indeed essential that the consortia are able to account analytically for the activities carried out and the recoveries actually achieved. This is crucial for ensuring that all consortia operate not only in a directorial role but also with actions that positively impact the environment, in line with the regulations," he continues.

Last but not least, "the responsibility that producers entrust to us in managing waste must not solely respond to the institutional and social role of companies and the consortium but must also aim at building increasingly virtuous supply chains – highlights the president. This goal is today facilitated by a multi-consortium situation that will increasingly allow the development of a true competitive regime, with all the benefits that this entails."

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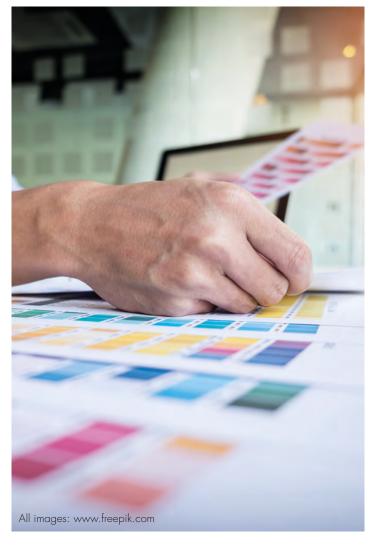


THE EVOLUTION OF PACKAGING PRINTING: FROM TRADITIONAL TO DIGITAL, BENEFITS AND OPPORTUNITIES



By the editorial staff

Packaging printing has undergone a significant transformation in recent years, shifting from traditional to digital printing



his change reflects the natural evolution of technology, but it is also a response to the changing needs of markets, companies, and consumers. The challenge of producing packaging that is appealing, efficient, and sustainable has become a priority for many industries. In this context, both traditional and digital printing play a role, with advantages and disadvantages that vary according to specific needs.

Traditional printing, with techniques such as flexography and offset, has historically dominated the sector. It offers low unit costs for large print runs and consistent quality, making it the ideal choice for mass production of packaging intended for products with long life cycles and standardized graphics. Flexography, for example, is highly efficient for printing on flexible materials like plastic films and paper, providing good value for products requiring large batches. Offset, on the other hand, has long been considered the "gold standard" for image quality, making it suitable for high-end packaging.

On the other hand, digital printing has brought about a revolution. It offers unmatched flexibility through the ability to customize each individual piece without significant additional costs. This ability to produce small-scale variants is perfect for

latest news

products with shorter life cycles or marketing campaigns that require differentiated packaging.

Digital printing also allows for rapid setup and reduces waste, making it more sustainable and cost-effective for companies aiming for customization or accelerated time-to-market. Moreover, the level of detail achievable with digital technology often surpasses the quality of traditional techniques.

Despite the clear advantages of digital printing, the choice between it and traditional techniques depends on factors like the required quantity, budget, design, and timeline. If a company needs to produce a large batch of packaging with simple, consistent graphics, traditional printing will prove more economical and efficient. However, for limited print runs or variable productions, digital printing is almost

always the best choice, offering speed, flexibility, and reduced storage costs. A company launching seasonal, promotional, or market-specific products will find in digital printing the ideal tool to respond quickly to trends.

A notable example of digital printing application is Coca-Cola's "Share a Coke" campaign, where the company replaced its traditional logo with individual names on bottles. This initiative leveraged digital printing's ability to create unique variants, exciting consumers and boosting sales.

In summary, traditional and digital printing offer complementary solutions to the increasingly sophisticated needs of the packaging sector. Understanding the specific advantages of each technique and knowing when to use them is crucial for any company wanting to remain competitive and meet customer expectations.











IMA PHARMA: INNOVATING SOLUTIONS FOR PHARMACEUTICAL PROCESSING AND PACKAGING



stablished in 1961, IMA Group is world leader in the design and manufacture of automatic machines for the processing and packaging of pharmaceuticals, cosmetics, food, tea and coffee. IMA Pharma is composed of highly expert divisions able to offer tailor-made solutions for the most sophisticated requests of the pharmaceutical market: IMA Active (Solid Dose Solutions), IMA Life (Aseptic Processing & Freeze Drying Solutions) and IMA Safe (Packaging Solutions). Together, they combine unique skills and knowledge where people, equipment and technology come in perfect synergy.

IMA Active offers a complete range of machines for the processing of oral solid dosage forms: granulation equipment, tableting machines, capsule filling machines with a wide range of filling and control systems, capsule and tablet coating machines in perforated

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NOP (No-Plastic Program) means we promote eco-friendly plastic substitutes for the packages manufactured on IMA machines. Through the research and testing of alternative processes and materials together with our partners we foster plastic-free and sustainable, compostable, biodegradable or recyclable packaging solutions.



According to these objectives, IMA established **OPENLab**: the Group's network of technological laboratories and testing areas, dedicated to the research on **sustainable materials**, **technologies** and **production optimization processes**.

Discover more about **IMA NOP** on *ima.it/imazero* and **IMA OPENLab** on *ima.it/open-lab*









pan and solid wall, capsule and tablet weighing machines, product handling and washing systems. After years of study and observation, IMA Active has also taken steps towards Continuous Manufacturing with the US company CONTINUUS Pharmaceuticals either working with the IMA Active Research and Development team by revisiting current technologies embracing a concept of Continuous Manufacturing more related to conventional solid forms. In May 2021, IMA finalized the acquisition of the American Company Thomas Engineering (now Thomas Processing), leader in the coating sector from over 50 years. Thomas Processing aims to become the overseas Center of Excellence for coating under the auspices of IMA Active.

IMA Life, which includes the production sites of IMA Life Calenzano, IMA Life Pharmasiena, IMA Life North America, IMA Life Beijing and IMA Life Shanghai, offers a comprehensive product portfolio to process liquids and powders in aseptic and non-aseptic environments: vial and ampoule washers, depyrogenating tunnels, filling and closing machines for vials, ampoules, cartridges and Ready-To-Use components, powder microdosing and macrodosing machines, cappers, containment solutions, including Restricted Area Barrier Systems and isolators, lyophilisation process developments and continuous aseptic spray freeze drying technology, industrial, pilot, laboratory freeze dryers and automatic and semi-automatic vial loading and unloading systems for freeze dryers. Last but not least, assembly and labelling machines for syringes, labelling machines for vials, ampoules, shaped containers, Blow-Fill-Seal single-dose containers and cartons with the latest serialization systems. Blowing machines, depackers, tray loaders and other ancillary equipment are also available.

IMA Safe, which includes the production of IMA Safe Swiftpack, IMA North America (IMA Safe Nova), IMA Safe Co.ma.di.s., IMA Safe PG, Perfect Pack and OMAS, designs and manufactures complete lines for primary and secondary packaging for the pharmaceutical, nutraceuti-



cal and cosmetic industries. In particular, IMA Safe division manufactures a complete range of blister packaging machines, capsule and tablet counters, sachet and stick packaging machines, tube fillers and cartoners.

All-In-One is a pledge, a promise of efficiency: one investment, one contract, one relationship based on trust that ensures the customer benefits from the real value IMA offers as a long-term partner to the world's pharmaceutical industry.

For more information about IMA Pharma, please visit: https://ima.it/pharma/



PHARMA PACKAGING: LESS WASTE, INCREASED RECYCLABILITY, AND SUSTAINABILITY AS THE KEYWORD

Certainly, the magnitude of waste in Pharma is not as impactful as that of the food sector. Indeed, the regulations governing packaging are very strict. However, due to the EU Regulation on packaging and packaging waste, change is on the horizon here too. It's less immediate, requires management, but must certainly be taken into account from now on.



by Elisa Crotti

e are facing a contradiction in terms: human health is tightly linked to the health of the planet, yet often, when considering packaging, the Pharma sector focuses much on the former and very little, if at all, on the latter. Until recently, this could go unnoticed, but now we are at a turning point: the world of pharmaceutical packaging can no longer ignore sustainability, especially since the World Health Organization itself is demanding it.

Thus, whereas a few years ago the choice of a drug's packaging was dictated primarily by two fundamental aspects, namely safety and



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reliability, sometimes supplemented by convenience, today sustainability becomes—and will increasingly be—a key aspect, to be considered by design.

Certainly, in terms of waste, the Pharma sector does not "boast" the same volumes as other sectors, such as the food industry, but reflection is needed, if only because here change is certainly more gradual and, above all, complex. Essentially, it needs to be managed.

Primary and secondary packaging: very different wastes

In Italy, the disposal of drugs, considered special waste, is regulated by the decree of the President of the Republic of July 15, 2003, no. 254 ("Regulations concerning the management of healthcare waste pursuant to art. 24 of the law of July 31, 2002, no. 79"); the European Union obviously has its guidelines, but each country has specific regulations.

When it comes to recycling, it is essential to distinguish between packaging that directly contacts the product (called primary), which remains contaminated by the latter even after use, and secondary packaging, whether it be a protective film, a paper box, or other.

In Pharma, for secondary packaging, disposal is simple: just collect and dispose of waste as directed by the

authorities. But for primary packaging, more caution is needed because the substance or drug cannot be treated like, for example, simple food residues. In some cases, indeed, the residues left inside the primary packaging can chemically interact to the point of compromising the recycling process.

This is particularly true for compostable materials: without knowing the exact chemical composition of the cream or fluid, we cannot be sure that these are compostable. And if they are not, the disposal of that container would truly compromise the celebrated "return to nature" of compostable packaging.

Given how utopian it is to think that Pharma sector packaging can be completely decontaminated to the point that it can be recycled and reused safely, the only alternatives on the horizon are incineration or landfill disposal. But even here, the issue is more complex than it seems: can the substances in question be burned without releasing harmful gases? Or can they be stored without altering groundwater?

It's clear how the theme of recycling pharmaceutical packaging is of primary importance. For this reason, the WHO encourages pharmaceutical companies to consider the degree of recyclability of their products at the end of their lifecycle, aiming, where possible, to prioritize packaging with a lower environmental impact.





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Stringent regulation and the need for minimalist packaging

We know how the EU Regulation on packaging and packaging waste will require the use of recyclable packaging made with a minimum percentage of recycled material for all medicinal products by January 2035. Moreover, the packaging must be reduced to the minimum necessary size.

These requirements create particular challenges for the sector: time and investments will be needed to find feasible solutions that reduce the environmental impact of packaging waste, while simultaneously meeting the high standards of quality and safety of pharmaceutical products. Certainly, it's not an easy transition, especially since pharmaceutical packaging is strictly regulated by stringent regulations aimed at protecting the end consumer.

When a new drug is introduced to the market, it must pass rigorous tests that also include an evaluation of its packaging. Any changes to it require a new, complete regulatory assessment, leading to extended timelines and additional costs. This makes pharmaceutical companies very cautious in their packaging decisions, often forcing them to accept compromises that are not optimal from a sustainability standpoint.

A strongly followed path is that of lightweighting, i.e., reducing the weight of the packaging, which however remains unchanged in terms of format and materials. The goal of lightweighting is to reduce production costs, resource consumption, and the overall environmental impact of the packaging, while maintaining standards of protection and presentation of the product. It is certainly a less impactful choice, but one that does not effectively fit into the logic of sustainability, and above all, of a paradigm shift. Yet, according to the recent report from PMMI (Association for Packaging and Processing Technologies) entitled "Pharmaceutical Manufacturing, Trends Shaping the Future," a full 67% of drug manufacturers cite lightweighting as a strategy for environmental sustainability.

Sustainable packaging by design

If on one hand, the legislator can do much, for example, encouraging greater openness to innovative materials, like biopolymers, and processes that save in terms of energy and materials, it goes without saying how the attention of the consumer can also play a key role.

Here it must be noted that the urgency of the problem is increasingly concerning patients, leading them to loudly demand public awareness campaigns and legislative measures that would have a strong impact on pharmaceutical companies. A bottom-up driven change, as is happening in other sectors.

The repercussions of plastic pollution are vast, and we all have before our eyes the images of plastic islands (or Plastic Vortex) in the heart of the oceans. What does it mean, then, for a company to contribute to reducing this devastation? There are various paths, which can also be integrated. The first, more obvious, involves optimizing packaging, which involves removing unnecessary elements without compromising the safety of the product. Optimized packaging not only reduces waste but can also help minimize other environmental impacts-including the production of those same removed elements. Packaging optimization is now a well-established trend in many sectors and is also appreciated by consumers. Another step involves increasing, where possible, the percentage of recycled materials, promoting the circular economy, and reducing the demand for virgin resources. If this is not possible for packaging in direct contact with the drug, it is quite different for secondary packaging. But even considering recycling already at the design stage is an important step. By creating designs for packaging that are easy to disassemble, prioritizing materials with a lower environmental impact, and adhering to the design for recycling criteria defined in the EU Regulation on packaging and packaging waste, a big difference can be made.

A future to be written

It's always a matter of how you look at the glass, whether half full or half empty. But this time optimism has its reasons: the margins for improvement are immense, technologies can help drastically reduce, minimize in the true sense of the word, the impact of Pharma packaging on the planet. The paths are varied, the consumers (here patients) are informed, the market is ready. It's just a matter of embracing this change, knowing that, like any novelty, it represents a challenge, but that, like all challenges, can yield unexpected results.

Packaging is no longer seen just as an accessory, but as an integral part of a purchasing decision. May it be the best possible solution.







BIOGEST SRL: ANALYSIS OF FOOD CONTAINERS AND PACKAGING

he world of packaging intended for food contact is certainly one of the continuously evolving sectors, both in the regulatory and technological fields.

All companies that produce and / or use food packaging face various problems every day.

All materials that come into contact with food, from manufacturers' packaging to crockery, cutlery, glass, ceramics and food storage containers, must be tested to ensure their safety. In fact, they must not transfer unacceptable quantities of their components to food. The analysis of materials intended for food contact protects the health of consumers.

The current regulatory framework is complex, because alongside the analytical checks on the finished product, there is also the need to verify the compliance of the additives and technological adjuvants used that meet the legal requirements [Ministerial Decree 21 March 1973, Reg. CE 1935/2004 and Reg UE 10/2011]

According to current legislation, all packaging intended for contact with food requires the carrying out of global and / or specific migration tests to verify the absence of release of harmful substance.

Biogest SrI is able to carry out tests on:

- global migration according to the methods DM 21/03/73 and UNI EN 1186
- specific migrations according to the UNI EN 13130 methodologies (they include the migrations of monomers (eg. Phthalic acids, vinyl chloride, etc ...)
- · migration of traces of technological adjuvants
- · control of the composition
- purity requirements
- sensory analysis (PANEL TEST), both olfactory and gustatory, according to UNI and DIN standards
- migration of dyes
- searches for pollutants (eg. PHTHALATES, DIPB, Disopropylnapltalenes DIPN, Bisphenol A, o-phenylphenol, etc.)















All the determinations regarding the packaging are carried out by qualified personnel with the implementation of official national or European standards.

Food packaging and materials intended for food contact are regulated by the following regulations:

- In the EU area, for:
- All materials Framework Regulation (EC) n. 1935/2004
- Ceramics Directive 84/500 / EEC corrected by Directive 2005/31 / EC
- Regenerated cellulose film Directive 2007/42 / EC
- Plastics Regulation 10/2011 / EU with related additions and changes on plastic materials and articles that come into contact with food.
- Nitrosamine Directive 93/11 / EEC
- Plastics BADGE, BFDGE & NOGE Commission Regulation (EC) 1895/2005

Biogest laboratory technicians perform rigorous product inspections and analyzes for the following categories of food containers, packaging and items intended to come into contact with food:

- Paper, glass and ceramic containers (for single or multiple use)
- · Jars, cans and bottles

- · Plastic, metal and wooden containers
- Ceramic and glass objects
 Kitchen utensils and cookware
- · Silver plated items
- · Water bottles and thermos
- · Baby meal set, bottle and lunch box

Biogest laboratory technicians perform the following checks to ensure the quality and safety of your items intended to come into contact with food:

- · Visual examination and evaluation
- Size control
- Sensory analysis and stain detection
- Physical risk assessment
- · Color bleeding
- · Composition control
- · Overall and specific migration test ·
- Substances added unintentionally (NIAS)
- Volatile organic compounds
- Heavy metals (extractable and at risk of release)
- · Residual monomers and solvents
- Impurities and by-products
- REACH SVHC (Substances of Extremely Concern)

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SUPPLYONE REVOLUTIONIZES MEDICAL AND PHARMACEUTICAL PACKAGING, DRIVING DOWN COSTS AND ENHANCING PROFITABILITY

upplyOne, Inc., the largest independent supplier of corrugated and other value-added packaging products, equipment, and services in the U.S., highlights its innovative packaging solutions specifically designed to address the key challenges faced by medical device and pharmaceutical manufacturers.

"Regulatory compliance, product protection, cost efficiencies and waste reduction are major hurdles in the medical and pharmaceutical industries," said Dave Whitney, SVP of Packaging at SupplyOne. "Our comprehensive offering of packaging products, equipment, and packaging-related services are strategically designed to overcome these challenges and optimize the bottom line."

SupplyOne's unique approach focuses on Total Cost of Ownership (TCO), which includes both direct and indirect costs of packaging. By adopting this approach, SupplyOne helps manufacturers evaluate the full spectrum of packaging-related expenses and identify areas for improvement.

In addition, SupplyOne's commitment to sustainability aligns with the growing demand for environmentally friendly packaging. "Our mission at SupplyOne is to provide innovative packaging solutions that not only meet regulatory standards but also drive customer success," said Dave Whitney, SVP, Packaging at SupplyOne. "Our comprehensive suite of solutions for the medical and pharmaceutical industries underscore this commitment."

SupplyOne is the largest independent supplier of corrugated and other value-added packaging products, equipment, and services in the U.S. It provides mid-sized manufacturers, food processors, medical and e-commerce companies industry-leading packaging programs, products, and supply chain solutions from a single point of contact to unlock efficiency and direct cost savings. Since its founding in 1998, SupplyOne has become the acquirer of choice for privately held specialty corrugated packaging manufacturers and value-added packaging distributors. SupplyOne is a portfolio company of Wellspring Capital Management.



To learn more about how SupplyOne's products, packaging equipment, and services can benefit your medical or pharmaceutical manufacturing processes.

www.supplyone.com



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INNOVATIONS IN PHARMACEUTICAL PACKAGING: TECHNOLOGY FOR PATIENT SAFETY

From blister packaging to RFID technologies, the pharmaceutical industry is constantly investing in research and development of new packaging solutions to improve the quality of life for patients. This article explores the latest innovations in pharmaceutical packaging that are improving the safety and efficacy of medications.

n recent years, the pharmaceutical industry has made significant strides in the research and development of technologies and innovations in product packaging. This has allowed for the improvement of medication safety, efficacy, and ease of use for patients.

One major breakthrough in pharmaceutical packaging is blister packaging, which offers a secure and effective solution for the distribution of medications, particularly those that require precise dosages. Blister packaging can be made from various materials such as PVC, aluminum, or PET, and can be easily sealed to ensure product freshness and safety. Other innovative technologies in pharmaceutical packaging include single-dose sachets and child-resistant bottle caps. Single-dose sachets provide a convenient and portable alternative to traditional bottles, while child-resistant caps ensure that medications are protected from any accidental incidents at home.

Digital printing and laser coding are also important innovations in pharmaceutical packaging, as they allow for important information such as active ingredients, lot numbers, and expiration dates to be directly printed onto containers, making it easier for patients and healthcare professionals to identify products.







by our editorial team

New packaging materials have also been developed to improve the stability of pharmaceutical products. These materials are designed to withstand extreme environmental conditions, such as humidity, light, and temperature, ensuring that medications remain stable and safe for use during transport and storage.

Finally, the use of Radio Frequency Identification (RFID) technology is becoming increasingly widespread in pharmaceutical packaging. This technology allows for real-time tracking of products during distribution and storage, ensuring that medications reach patients in the safest and most timely manner possible.

Overall, it is evident that research and development of technologies and innovations in packaging are essential in ensuring the safety and efficacy of pharmaceutical products.

These innovations allow the industry to provide high-quality solutions that improve the health and well-being of patients, making the future of the pharmaceutical sector increasingly promising.







PHARMACEUTICAL PACKAGING MARKET

Boasting a Remarkable CAGR Of 10.7%

he pharmaceutical packaging market is on the cusp of a transformative journey, poised to redefine the landscape of healthcare delivery. With an estimated market size projected to soar from **USD** 117.23 billion in 2022 to an astounding **USD** 322.50 billion by 2032, boasting a remarkable **CAGR** of 10.7%, the global pharmaceutical packaging market is not just expanding; it's evolving. In this article, we delve into the forces propelling this growth and the implications for the future.

Riding the Wave of Technological Advancements Smart Packaging Solutions:

The integration of sensors and RFID technology is revolutionizing packaging, ensuring product authenticity and integrity.

Eco-Friendly Materials:

• The industry is embracing biodegradable materials, a significant stride towards sustainability.

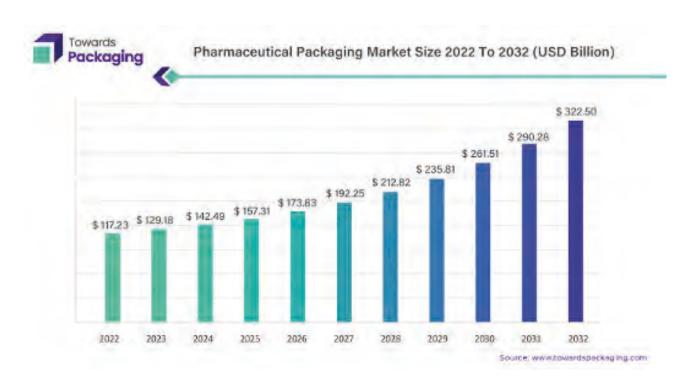
Pharmaceutical Packaging Market: North America Leading with Highest Value Share

North America, particularly the United States, dominates the pharmaceutical packaging market in this region. Stringent regulations, advanced healthcare infrastructure, and a strong focus on patient safety and compliance drive the market. Key market drivers include the demand for tamper-evident and child-resistant packaging and the growing emphasis on sustainable packaging solutions. The market is highly competitive, with significant players catering to the diverse needs of the pharmaceutical industry.

The United States holds a commanding position in the North American pharmaceutical packaging market. Renowned for its well-established pharmaceutical industry, the country provides a conducive environment for major pharmaceutical companies and packaging manufacturers to thrive.

Regulatory Compliance: Navigating the Complexities<u>Tamper-Evident Packaging:</u>

 Stringent regulations drive the adoption of tamper-evident features, safeguarding pharmaceutical products.









Serialization Imperative:

 Meeting serialization requirements is shaping packaging designs, enhancing traceability and security.

Patient-Centric Innovation: Beyond the Prescription

Accessible Packaging Design:

 Packaging is evolving to prioritize accessibility, facilitating ease of use for patients.

Information Accessibility:

 Patient-friendly packaging ensures clear and comprehensive information dissemination, empowering individuals in their healthcare journey.

Supply Chain Resilience: Ensuring Smooth Production in the Pharmaceutical Packaging Market

- International Paper Company offers packaging solutions for various end-user industries, including the pharmaceutical industry. The company published its annual report for 2022, according to which the company's net sales reached up to \$21.2 billion in 2022.
- Syntegon is a company that offers packaging solutions for the pharmaceutical industry. According to the company's statement, the order income increased by 3.0% in 2022.
- The company invested 49 million Euros in research and development activities.
- While expanding its business for packaging solutions, Syntegon installed 67,000 machines worldwide in 2022.
- In 2022, the company generated approximately 33% from North America and 35% from Asia.

Key Drivers of Growth in Pharmaceutical Packaging Market

<u>Technological Advancements Revolutionizing Packaging Solutions</u>

The advent of cutting-edge technologies has ushered in a new era of innovation within the pharmaceutical packaging realm. From smart packaging solutions to advanced labeling techniques, the industry is witnessing a rapid transformation that not only enhances product safety but also elevates user experience.

Stringent Regulatory Standards Fostering Innovation Regulatory bodies across the globe are continuously raising the bar when it comes to packaging standards for pharmaceutical products. This has necessitated companies to invest heavily in research and development to ensure compliance. As a result, this heightened focus on compliance is driving the adoption of state-of-the-art packaging solutions.

Unveiling the Future: Technological Frontiers

Nanotechnology Integration:

• The advent of nanotechnology in packaging promises enhanced drug delivery and preservation capabilities.

Personalized Medicine Packaging:

 3D printing is poised to revolutionize packaging for personalized medicine, tailoring solutions to individual patient needs.

Al and Machine Learning Integration:

 The integration of artificial intelligence and machine learning streamlines packaging processes, ensuring efficiency and quality control.









Challenges and Opportunities: A Balanced Perspective

Supply Chain Complexities:

 The global nature of the pharmaceutical industry introduces challenges in the supply chain, prompting innovative solutions.

Emerging Market Opportunities:

 Growing healthcare needs in emerging economies present untapped opportunities for the pharmaceutical packaging market.

The Road Ahead: A Commitment to Excellence

Patient Safety as the Priority:

 As the industry expands, a steadfast commitment to ensuring patient safety remains paramount.

Transforming Healthcare Ecosystem:

 Packaging is not merely a means to an end; it is a pivotal element reshaping the entire healthcare ecosystem.

Conclusion: Unveiling Tomorrow's Healthcare Landscape

In conclusion, the global pharmaceutical packaging market is not just witnessing growth; it is navigating uncharted territories and revolutionizing the very fabric of healthcare. From adopting technological marvels to addressing regulatory intricacies and embracing sustainability, the industry is sculpting a future where phar-

maceutical packaging is synonymous with innovation, safety, and patient-centricity.

As we stand at the threshold of this transformative journey, the convergence of technology, regulatory acumen, and a commitment to sustainability is painting a canvas of endless possibilities. The soaring trajectory of the global pharmaceutical packaging market is not merely a statistical projection; it is a testament to an industry's resilience, adaptability, and dedication to enhancing global healthcare.

You can ask any questions, please feel free to contact at Email: sales@towardspackaging.com

About Us

Towards Packaging is a leading global consulting firm specializing in providing comprehensive and strategic research solutions across various industries. With a highly skilled and experienced consultant team. We offer specialized consulting in the packaging industry, providing comprehensive insights into market trends, regulations, and emerging technologies. Our tailor-made services address unique challenges, keeping you ahead in an evolving market. With a focus on innovation and sustainability, our solutions drive growth, enhance customer experiences, and elevate your business in the global market.

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NEW DOSAGE TECHNOLOGIES TRANSFORM THE PHARMACEUTICAL

INDUSTRY

dvanced technologies, including controlled release systems, personalized dosing, and innovative administration platforms, are redefining the concept of pharmacological therapy.

Traditionally, pharmaceutical dosing has focused on the mass production of standardized pharmaceutical forms. However, technological evolution has introduced the ability to customize dosing based on the individual needs of the patient, significantly improving treatment efficacy and reducing the risk of side effects. The new dosage technologies use advanced algorithms and biometric sensors to analyze patient data in real time, allowing for unprecedented customization of pharmacological treatment.

One of the most promising innovations in the field is the controlled release system. This technology allows drugs to be released gradually into the body, maintaining therapeutic levels over time and reducing the need for multiple daily administrations. Controlled release not only improves convenience



by Our Editorial Team

The new frontiers of dosage technologies in the pharmaceutical industry represent a crucial turning point in the production and administration of drugs, offering innovative solutions to improve therapeutic effectiveness and patient safety



All Images: pexels.com



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for the patient but also adherence to treatment, both of which are crucial for therapeutic success.

Simultaneously, the introduction of micro and nanoparticles in pharmaceutical formulations is revolutionizing the way active ingredients are delivered to their site of action.

These particles, designed to overcome biological barriers and release the drug in a targeted manner, promise to reduce side effects and increase the efficacy of treatments, especially in fields like oncology, where dosage precision is critical.

The pharmaceutical industry is also exploring the use of 3D printers for the production of pharmaceutical forms. This technology offers the possibility to create customized tablets that can contain multiple dosages or release drugs at different rates, adding another level of treatment personalization. Moreover, 3D printing could enable the "on demand" production of drugs in hospitals or pharmacies, revolutionizing the pharmaceutical distribution chain.

The challenges accompanying these innovations are significant, including regulatory issues, the need for investment in research and development, and the training of healthcare personnel on the new dosing modalities. However, the potential to improve the efficacy of treatments and the quality of life for patients makes these challenges worth tackling.

We can therefore assert that dosage technologies in the pharmaceutical industry promise to bring profound changes in how drugs are produced, administered, and experienced by patients.

As we move towards an era of greater customization and precision in pharmacological therapy, collaboration between researchers and pharmaceutical companies will be crucial to realizing the full potential of these revolutionary technologies."







PHARMACEUTICAL TEMPERATURE CONTROLLED PACKAGING SOLUTIONS MARKET

Predicted To Reach Around USD 945.2 Million By 2030

he global pharmaceutical temperature-controlled packaging solutions market was valued at USD 578.9 million in 2022 and is predicted to reach around USD 945.2 million by 2030, growing at a 6.30% CAGR from 2022 to 2030.

The pharmaceutical temperature-controlled packaging solutions market has experienced significant growth in recent years, driven by the increasing demand for temperature-sensitive medications and the need for effective packaging solutions to maintain product integrity.

Riding the Waves: Factors Driving Market Expansion

1. Escalating Demand for Drug Safety Assurance

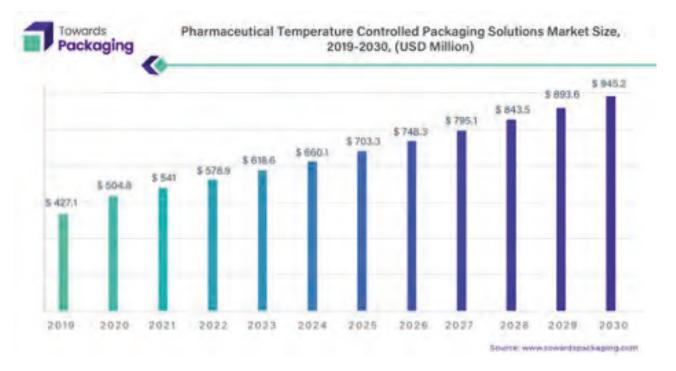
As the pharmaceutical industry continues to witness unprecedented advancements, the demand for robust temperature-controlled packaging solutions is surging. Stakeholders are increasingly recognizing the critical role played by these solutions in safeguarding the effi-

cacy of medications, especially those susceptible to temperature variations.

2. Stringent Regulatory Standards

The stringent regulatory landscape governing pharmaceutical logistics amplifies the need for cutting-edge temperature-controlled packaging. Adhering to international standards not only ensures compliance but also instills confidence in consumers and stakeholders, driving the market towards sustained growth.

North America has emerged as the dominant market for temperature-controlled packaging solutions in the pharmaceutical industry, capturing a significant market share. This growth can be attributed to the increasing demand from the healthcare sector. The region experiences a strong need for transporting vaccines and drugs and conducting clinical trials, leading to substantial growth in the temperature-controlled packaging sector. China, known









as the "world's factory," has played a crucial role in this disruption. The widespread lockdowns, slowdowns in product manufacturing, shortage of raw materials, and labour scarcities have had a domino effect on the international supply chain, specifically impacting North America's temperature-controlled pharmaceutical packaging market.

Navigating Growth Trends: A 2022-2030 Outlook

1. Cold Chain Innovations

In the wake of technological evolution, the pharmaceutical temperature-controlled packaging solutions market is witnessing a paradigm shift. Innovations in the cold chain, leveraging state-of-the-art materials and design, are enhancing the efficiency and reliability of these solutions, catering to the evolving demands of the industry.

2. Biopharmaceuticals and Personalized Medicine

The rise of biopharmaceuticals and personalized medicine presents a unique set of challenges and opportunities for temperature-controlled packaging. With an increasing focus on precision medicine, packaging solutions must adapt to accommodate diverse formulations and maintain the integrity of these cutting-edge pharmaceuticals.

Projections and Beyond: Anticipated Market Landscape

1. Regional Dynamics

Examining the market through a regional lens reveals diverse growth patterns. While established pharmaceutical markets contribute significantly to the current

valuation, emerging economies are anticipated to play a pivotal role in propelling the market forward. This global landscape underscores the need for adaptable and scalable temperature-controlled packaging solutions.

2. Collaboration and Partnerships

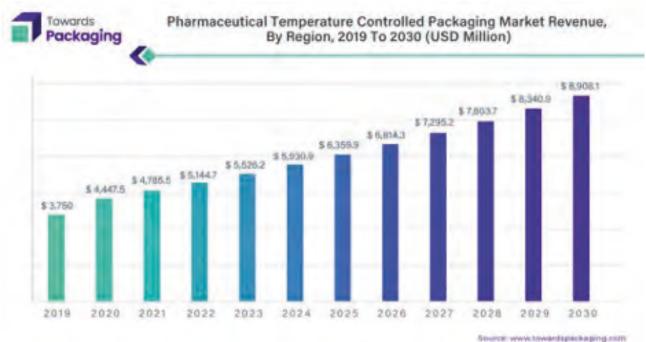
To stay ahead in this competitive landscape, industry players are fostering collaborations and partnerships. These strategic alliances not only facilitate knowledge exchange but also pave the way for innovative solutions, driving market expansion and ensuring a competitive edge.

Crisis and Resilience: Analysing the COVID-19 Impact on the Temperature-Controlled Pharmaceuticals Solution Packaging Market

The COVID-19 pandemic has had a significant and transformative impact on the temperature-controlled pharmaceutical packaging market. As the world grapples with the challenges posed by the global health crisis, the demand for temperature-controlled packaging solutions for pharmaceuticals has skyrocketed. The pandemic has highlighted the critical importance of maintaining pharmaceutical products' efficacy, safety, and integrity, especially vaccines and other temperature-sensitive medications.

Comparative Landscape Analysis of the Temperature-Controlled Pharmaceuticals Solution Packaging Market

The temperature-controlled pharmaceutical solution packaging market refers to the industry that provides packaging solutions for pharmaceutical products that











require strict temperature control to maintain their efficacy and safety. This market has witnessed significant growth in recent years due to the increasing demand for temperature-sensitive drugs and the need to ensure their quality during storage and transportation.

The comparative landscape of the temperature-controlled pharmaceutical solution packaging market involves analysing the key players and their market positions, strategies, product offerings, and competitive advantages.

Major Key Players in The Temperature-Controlled Pharmaceuticals Solution Packaging Market Are:

Pelican Biothermal, Sonoco, Sofrigam SA Ltd., Cryopak, Inmark Packaging, Cold Chain Technologies, VA-Q-Tec AG, Envirotainer Ltd., and American Aerogel Corporation

Recent Development

• In March 2022, Cold Chain Technologies, LLC, a prominent global provider of thermal packaging solutions for temperature-sensitive products and Aurora Capital Partners portfolio company, completed the acquisition of Packaging Technology Group, LLC (PTG). PTG is a leading supplier of environmentally friendly and curbside-recyclable thermal packaging solutions specifically tailored for the life sciences industry. This strategic acquisition further solidifies Cold Chain Technologies commitment to providing sustainable, eco-friendly packaging solutions.

The integration of PTG's renowned TRUEtemp Naturals Line, initially launched in 2018, enhances Cold Chain Technologies' ability to deliver exceptional time-temperature performance at pharmaceutical-grade levels while ensuring a packaging solution that is 100% curbside recyclable and environmentally conscious. Using PTG's innovative solutions, customers can significantly reduce the life sciences sector's carbon footprint by millions of pounds annually and minimize landfill waste.

• In December 2022, in response to the increas-

ing demand for environmentally friendly packaging solutions for temperature-sensitive pharmaceuticals, Sonoco ThermoSafe, a division of Sonoco, a leading producer of cold chain packaging for temperature assurance, is expanding its Orion Rental packaging program in the United Kingdom.

The Orion reusable rental packaging initiative provides UK healthcare organizations with access to a wide range of biologics, vaccines, clinical supplies, and other healthcare products that require specific temperature control during transportation.

 On March 10, 2023, Cryopak, a renowned cold chain packaging and temperature monitoring device provider announced a strategic partnership with M. Chasen & Son, Inc. to establish Chasen Fiber Technologies.

This collaboration aims to bolster Cryopak's commitment to environmentally-friendly shipping solutions by leveraging the expertise and resources of both companies. Chasen Fiber Technologies will focus on developing innovative fiber-based technologies to enhance the efficiency and sustainability of the shipping industry.

If you have any questions, please feel free to contact at email: sales@towardspackaging.com

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THE ART OF IMPERFECTION IN PACKAGING

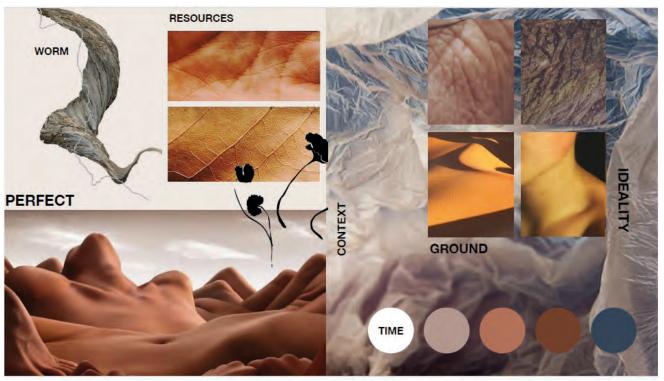


image: Eco Mood Board for cosmetics brand by my student of Sustainability Innovation Communication Master in Naba Milan

don't know if everyone remembers the singer Lynsey de Paul, a household name in the 1970s, better known as the petite performer with blond hair and a beauty mark. Focusing precisely on the latter expression, the interest arose to analyze how a sign of imperfection can instead symbolize an acknowledgement of beauty. And how, from this starting point, the concept of perfection can be applied to the vast world of packaging design.

Finally, And how new codes based on artificial intelligence can create new visual elements related to the concept of beauty without or with imperfections.

afternoon 23 May 2024 at the PCD in Milan, also introducing the well-known Italian edition of the PUMA MANIFESTO, the tool that NVC provides for the packaging community that is working to end packaging as an environmental problem, also in the cosmetics sector. A sector that, as it turns out, is starting to have difficulty categorizing each product (e.g. positioning criteria to categorize wellness or cosmetics?) . This workshop will address a topic that may not seem to



by Silvia D'Alesio

address the packaging dream in the cosmetics sector, but which in fact seems to be very urgent in light of the new issues surrounding sustainability goals. In other words, the concept of 'irregular perfection', which states the paradoxical balance in packaging optimization and the cosmetics industry.

The challenge is to apply the PUMA manifesto method to the changing trend of stereotypes in the cosmetics world, breaking out of the canons and designing new concepts of imperfection.

As stated before, we need to incorporate new resources into our lives, be creative, expand our horizons and acquire new tools, and to achieve these goals, there is



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nothing better than exploring other cultures (for example complementing our western one with the neighboring but different Asian one).

First of all, beauty is practically what is covered in almost every country. Secondly, other values, philosophy regards the ability to learn and evolve, to improve, to follow a path towards improvement, an endless journey along paths of knowledge and evolution.

In this sense, brand owners take their cue from concepts akin to that of harmony, such as:

- To appreciate the philosophy of the place, including differences in colors, traditions and customs.
- To promote respectful culture through products, all while trying to adopt the refined aesthetics, while creating a new meaning of 'luxury'.

However, as has been conveyed to us, harmony is something related to the balance that often occurs when there is chaos. In this sense, product design today seeks a form to conceptualize an "Irregular Harmony", or better still, an imperfect perfection by affirming the paradoxical balance in an asymmetrical composition or the combination of seemingly opposite elements (such as 'being sustainable' and 'being luxurious').



The most recent data published by RetailX on the report Global Luxury show a growing interest in a new trend, bringing together two apparently very different words in terms of consumption, namely Sustainable & Luxury.

How can these two be linked? especially in re-use, driven by younger shoppers getting on board, how to keep the key to the concept of exclusivity so typical in the luxury sector? As shown in the report, across all retail sectors, many shoppers are starting to make purchase choices based on their environmental impact, most notably in clothing, where 46.4% of consumers choose sustainable options, groceries (44.8%) and beauty and cosmetics (32.4%).

So, finding the right balance between waste and resource, seems to meet in the case of cosmetics packaging with the intent of the product as an everyday perfection for our personal beauty. There are several claims that we are familiar with and that are therefore riding the wave of sustainability to innovate and remain competitive in the market.

In a way, the metaphorical value of cosmetics is really discovered when one decides to trespass on ordinary precepts, and who knows if the use of artificial intelligence is not perfect for this trespassing operation.







PICCOLI PLAST, IN LINE WITH THE NEW TRENDS OF THE GREEN ECONOMY



iccoli Plast is a family run company founded in the 90s in a small warehouse of about 600 square meters.

The company over the years has grown considerably and has made itself known both nationally and internationally in the production of blown plastic containers.

Piccoli Plast srl is now located on a total area of 11,000 sqm of which about 7,000 sqm are covered. Into the area there are around thirty latest generation low consumption blowing machines and an internal workshop equipped for the production of molds and the related equipment. There are also well-organized warehouses for the storage of raw materials and finished products. A new photovoltaic system for the production of clean energy will be installed shortly

We have diversified productions that are destined for different sectors such as food, cosmetics, pharmaceuticals, chemical / detergents and coating.

We also specialize in the production of liners of different models for 117 and 217 LT drums.

In addition to the standard products, our technical and design office is available for customized items on request, and for the feasibility and realization studies of molds in our internal workshop.

We periodically create new articles and product lines to offer innovative and sustainable packaging, in line with the customer's requests.

Recently we have completed a new PET packaging ideal for food supplements. The bottles of the new Zen series are available in 200 ml and 250 ml format in PET material with PFP 28 closure.

For some products we also offer a "Just in time" service, keeping the items always available in stock for small quantities.

The company also offers a wide range of closures and accessories to provide the customers with an increasingly complete service.

We are proud of our job and we do it with commitment. We are convinced that plastic must not be banned a priori, it is necessary to make correct use of plastic products and packaging and a careful disposal. It is necessary to raise awareness and improve the culture of citizens and Institutions towards a true "circular economy".

We need a strong commitment to the recycling of all materials and the use of products made with PCR-ma-



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terial, according to the directives of the EU. For this reason Piccoli Plast, in line with the new trends of the green economy, proposes innovative solutions and models to promote the transition towards a circular plastic economy by offering the possibility, on request, to have containers made with materials from renewable sources (sugar cane), containers in "post-consumer recycled" PCR-HDPE and R-PET.

Since 2004, the company has adopted a UNI EN ISO 9001: 2015 certified quality management system.

We also proud to have the ISCC-PLUS certification: The International Sustainability & Carbon Certification (ISCC) is an International certification program for the circular economy that focuses on verifying the traceability of recycled materials (e.g. mixed plastic waste) on the basis of mass balance accounting principles.



www.piccoliplast.com



atest new

INNOVATIONS AND CHALLENGES IN DRUG TRACEABILITY: ENSURING INTEGRITY AND SAFETY IN THE COLD CHAIN



echnological innovation and new regulations are redefining the boundaries of these sectors, presenting both challenges and opportunities for the pharmaceutical industry.

Drug traceability is crucial to combat counterfeiting and ensure that patients receive authentic and safe products. Recent years have seen the introduction of advanced systems based on technologies such as blockchain and the Internet of Things (IoT), which promise to revolutionize the way drugs are tracked along the distribution chain.

Blockchain, with its ability to securely and immutably record transactions, offers a transparent and fraudresistant traceability system.

Companies can use this technology to create a decentralized ledger that tracks every drug movement, from production to distribution to the patient, ensuring product integrity.

Meanwhile, IoT allows for the real-time collection and analysis of data related to the transport and



by Walter Konrad

In the complex landscape of pharmaceutical distribution, drug traceability and cold chain management are two fundamental pillars to ensure the safety and efficacy of medical treatments.



latest news



storage conditions of drugs. Sensors and smart devices can monitor temperature, humidity, and other critical factors, sending alerts in case of deviations from optimal conditions. This not only helps prevent the disruption of the cold chain but also provides detailed documentation that can be used for verification and regulatory compliance.

Despite technological advancements, effective cold chain management remains a significant challenge. Temperature-sensitive drugs, such as vaccines and certain biologicals, require very specific storage conditions to maintain their efficacy. Interruptions, even brief ones, in these conditions can compromise the product's integrity, potentially having serious consequences for patient health.

To address these challenges, the industry is exploring innovative solutions such as the use of advanced packaging materials and high-efficiency portable refrigeration systems. These technologies not only improve drug stability during transport but also offer more environmentally sustainable solutions.

Furthermore, the adoption of global standards for traceability and cold chain management is essential to facilitate international cooperation and ensure that drugs are safe and accessible globally. Collaboration among governments, industries, and international organizations is crucial to establishing these standards and addressing the logistical and regulatory complexities of an increasingly global pharmaceutical market.

As the pharmaceutical industry continues to face

significant challenges in drug traceability and cold chain management, technological innovations and global collaboration offer promising pathways to overcome them. By implementing advanced solutions and adhering to strict international standards, we can ensure that drugs are not only effective but also safe for patients worldwide. The evolution of drug traceability and the cold chain represents a crucial step toward a safer and more reliable healthcare system. As we explore these new frontiers, the goal remains clear: to ensure that every patient receives safe, effective, and high-quality treatments, no matter where they are.







FAST DESIGN TURNAROUND AND DEEP CONSULTANCY CAPABILITIES CREATE THE FOUNDATION FOR NEW PACKAGING EVOLUTION

ama Group lives by the principle that it will always deliver its industry domain expertise, in-depth technological knowledge and broad consultancy capabilities at every stage of a project's lifecycle – from very first contact, through machine and packaging design and all the way through optimisation, support and spares during the machine's operation.

And it shows! The success of this approach was demonstrated recently at PackExpo, when a customer received a complete packaging evaluation, potential redesign and a proposal for a fully featured automated solution they very next day... during the show.

Cama wasn't at PackExpo to just have a marketing presence, it was there to deliver consultancy and solutions, from experts who on hand to answer questions from representatives from a vast array of different industries, all with unique and sometimes fascinating challenges. In this case, the customer in question was a leading global home and healthcare brand. It was looking to automate its currently manual sleeving process, with a There's so much more to Cama Group than its machines.
Behind its class-leading solutions is a team of designers, engineers and consultants who will stop at nothing to develop and deliver the best possible solutions to industry's most demanding packaging challenges.







packaging solution that would also be applicable for use by manual-process co-packers too.

The product was a pumped hand soap dispenser, which was packed in a removeable cardboard sleeve that carried all the branding and product information. Davide Di Lorenzo, Sales Engineer Manager at Cama Group, takes up the story: "The sleeve design was instantly recognisable to consumers, so we had very little scope to modify it for automated packaging. The problem was the way it

was constructed and fastened was not amenable to automated packaging, especially as the customer wanted a throughput of 225 bottle per minute.

"We asked to the customer come back the next day, and immediately got to work to find a format that would not only maintain the proper shape and branding but would also be suitable for both automated and manual packaging.

Our sales team, our packaging design team and our machine design team came together to brainstorm the idea and very soon arrived at the perfect solution for all



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the challenges. It's this teamworking and mutual trust in each other's capabilities that shines through in projects such as these.

"By cutting a slot in the flap that fits over the neck of the bottle – turning the hole into a U-shaped cutout – and folding the glued securing tabs up rather than down, we turned an all-manual packaging format into an automation-friendly sleeve with near identical manual handling. We even took this one step further, as one of our design iterations simply glued the sleeve to the bottle, resulting in a less complex design and a less complex packaging process. This one is on the back burner for possible future deployment."

Cama's solution was based on the impressive multiindustry capabilities of its IF318 top loader. Fed by 14 separate sleeve magazines – to maintain the impressive throughput – the machine receives 7.5 or 10 oz (207 or 295 ml) filled bottles in single file, which are then pitched with a screw conveyor before being delivered to a flighted conveyor. Concurrently, sleeve blanks are picked from the magazines and placed into specially designed pockets on a phaser conveyor, with multiple sleeves being handled at the same time to decrease the overall cycle rate.

Multiple bottles are then picked up using vacuum cups and placed into the awaiting open sleeves. The phaser then indexes the bottles and sleeves to a closing station, which uses a robot with a special folding tool to close the sleeve by folding the 'U' shaped top flap against a back stop. The backstop has glue applied at a slightly earlier stage, as the pockets were transferred between stations.

Once the glue has set, the closing robot picks the completed assemblies and places them onto the exit conveyor, where there is also a solution for monitoring nonglued flaps.

The machine is a counter-flow design, where the bottles traverse one way and sleeves the other, so infeed and exit are on the same side for maximum accessibility.

"On the face of it, our solution to the packaging-design challenge appears relatively simple," Di Lorenzo explains, "but it was derived from years of experience in both packaging design and the capabilities of the processes and machines used to achieve it.

"This was just part of the picture though," he concludes. Our customer really appreciated the high quality of our support and our ability to consult on both aspects of the design – the sleeve and the machine.

And being able to deliver these solutions, the very next day at a major trade show, really impressed them, while also demonstrating our commitment to projects at such an early stage. It is this dedication and depth of experience that wins us so many orders from companies big and small all around the world. We are so much more than just a machine builder!"

www.camagroup.com



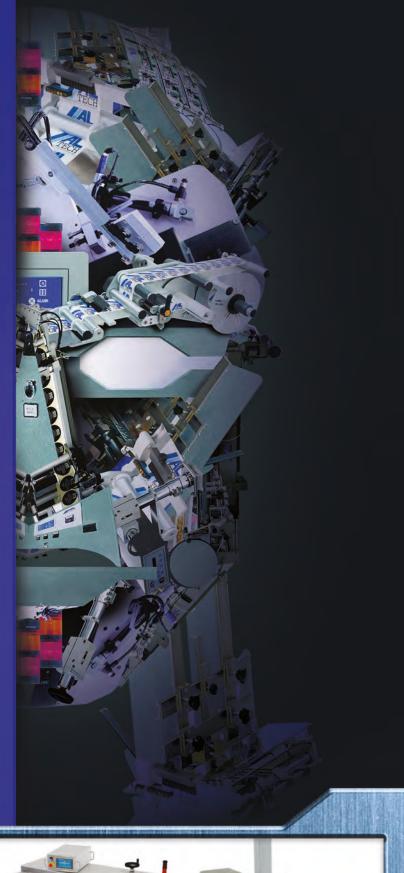




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ALTECH SRL
Viale De Gasperi, 70
20008 Bareggio (MI)
Tel. +390290363464
info@altech.it
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ALRITMA: HIGHLY SOPHISTICATED AND PERFORMING LABELING HEAD



ntroduced by ALTECH in the year 2000, the ALritma labeling head series has been immediately appreciated for its reliability and user friendly features. Due to ongoing technical development and a base of more than 20.000 units installed in the market, the latest version of the ALritma series includes cutting edge technology and represents the precise choice for packaging lines where production speed and label application accuracy are primary needs.

ALritma labeling units are based on an innovative mechanical structure which matches great sturdiness with versatility.

The maximum label width varies according to the model and can be 100, 200 or 300 millimeters; all models have side access for web threading; a reel holder which has a diameter of 300 mm with an expanding locking spindle; the drive group has been designed to exploit the stepper



motor features, guaranteeing accurate label positioning at speeds up to 50 m/min.

The applicator is controlled by a powerful microprocessor, with a 4.3" color touch screen panel which can manage advanced functions. This relieves the operator of complicated mechanical adjustments saving a considerable amount of time during format changeovers.

In addition to its sophisticated standard features, ALritma can be equipped with an array of optional devices:



- Printer/coders for variable data.
- Label sensor for transparent material labels (ultrasonic).
- · Pneumatic and air-blow applicators.
- Near end of reel control, with multicolor alarm beacon.
- Non-stop control system, to control two sequentially placed applicators.
- Encoder for automatic speed matching, with algorithm to maintain label placement position at different speeds. Multipage labels kit.
- · Semi-automatic kit.
- Ultra compact configuration (with smaller unwind unit).

ALritma X represents the maximum evolution of the ALritma series, where the X distinguishes its extraordinary performance for high volume, high speed requirements.

The entry version of the new ALritma X is equipped with a larger, 400 mm diameter unwind unit and an oversized rewind unit for the liner, to extend the working time between label changeovers.

It can reach label application speeds of up to 40 m/min and is available for label widths of 100 and 200 mm.

ALritma X can be fitted with an **HP (High Performance)** kit which includes a motorized rewinder unit for the liner and an innovative "push-pull" label web drive system.

With this configuration the unit can reach 90 m/min and a cruising rate of 900 labels/min.

This version **is particularly suited to huge workloads**, such as **on rotary labelers** or non-stop applications.

For further information info@altech.it www.altech.it



SECTORS SECTORS PACKAGING BEVERAGE FOOD



B.M. GROUP SRL ALL-AROUND SERVICE: CNC MACHINING - PRE-TREATMENTS - ANODIZING



.M. Group S.r.I. was founded more than 50 years ago and its Quality Management System is certified to the worldwide standard ISO 9001:2015. We count on two different production hubs – located in Thiene and Zanè - both easily accessible with the highway.

Our Chairman, **Mr. Silvano Busin**, has developed a deep knowledge of both sector through the years and for this reason he in person is managing the technical department. On the other hand, our VP **Ms. Marina Vitacca**, is managing both communication strategies and research

departments. Moreover, our team is made up with young and qualified staff aiming at continuous self-improvement, in line with our Management working philosophy.

CNC Machining of big-sized aluminum plates has enabled us to establish also abroad in the main European markets and to meet the requirements of a niche sector in which B.M. Group S.r.l. has recognized the potential. Aside from the CNC Machining we perform pre-treatments as mechanical brushing with different types of finishing or chemical pre-treatments, as well as anodizing.

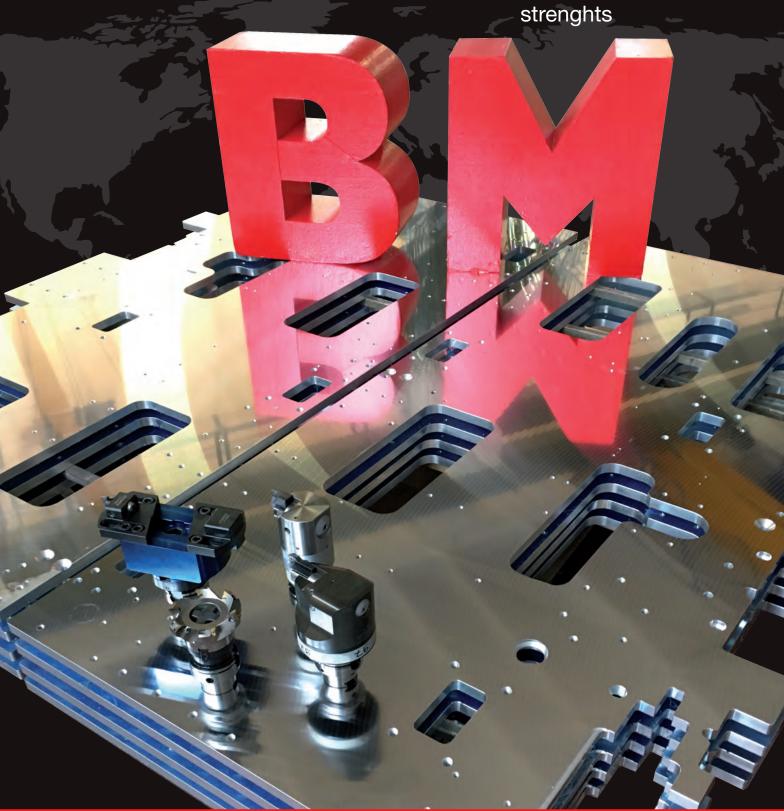


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Upon the customer request we are able to release declaration of compliance with the order, as well as the normative MOCA (food-related norm), measurement reports, anodizing and/or material certificates as regulated by the European standard UNI EN 10204.

We were able to conjugate our know-how with the passion that has always distinguished us. We like thinking that our customers may find a partner able to make a difference.

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GSP - PACKAGING MACHINES AND AUTOMATIC PACKAGING SYSTEMS

eneral System Pack builds and supplies packaging machines and automatic packaging systems, distinguishing itself with its advanced technology and extremely high quality standards.

The packaging lines produced by General System Pack are electronically managed, extremely sturdy, durable, and simple to operate and are built adopting solutions that aim to meet the most stringent ergonomic and hygienic demands. The wide range of models which General System Pack offers provide excellent flow pack solutions for every packaging sector, including automatic feeders and end-of-line equipment, ranging from controlled atmosphere to high speed, all the way to maximum levels of automation. The packaging lines offered are the best solutions for small and medium enterprises that wish to provide industrial-style packaging for their products.











The following are several examples of packaging machines and automatic series:

GSP 55 EVO: Electronic packaging machine, versatile and reliable, extremely flexible when it comes to changes in format, perfect for food and non-food products, for both single servings and multi-packages. It is characterised by a cantilevered structure and ease of accessibility, as well as its hygienic standards, simple maintenance, and built-in safety.

GSP 65 BB: Horizontal electronic packaging machine for long term heat sealing, designed to create hermetic bags in a controlled atmosphere for products that are more challenging to transport or that require extreme caution and zero shocks during transport and insertion

in the film. It is the perfect solution for increasing the shelf life of food products, while also providing a bag that is aesthetically pleasing and able to provide good mechanical protection to the contents.

GSP 50 EVO: Highly technological horizontal electronic packaging machine: a fast, easy-to-use, and versatile machine that is capable of combining high technology and an excellent quality-price ratio.

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DONE EVERYTHING RIGHT

In the beverage can growth segment traditional brewery Estrella Galicia in Spain opted for the clever Nature MultiPack system – not once but twice

n the far northwest of Spain lies the region of Galicia. It's famous not only for its capital of Santiago de Compostela, a place of pilgrimage and final destination on the Way of St. James, but chiefly for its climate: nowhere else on the Iberian Peninsula does it rain as frequently and as much as here. In strong contrast to the rest of the country, some of it plagued by drought, the green hills, regular mist and often stormy winds are reminiscent of the Irish coast. Farming and fishing are therefore both important here, with the Galicians especially proud of the variety and quality thereof. This is also what Jesús Martínez Garcia confirms, plant manager for beverage producer Hijos de Rivera. "In our region we're very conscious of the importance of the origin of our products, of the passion and creativity that goes into them and the demand for quality when it comes to asserting yourself on competitive markets," he says. "The high appreciation

consumers have for Galician produce is based on a long manufacturing tradition for high-quality produce."

Estrella Galicia, the flagship of the family-run business based in the port of A Coruña, benefits from this horn of plenty. The fourth-largest brewery in the country is famous for its light, golden beer made of particularly bitter malt and hops. It takes over 20 days to brew, ferment and mature, thus lending the beer its pleasant, characteristic hoppy note. The company is also distinguished by its great willingness to experiment, as master brewer Luis Alvar proudly states. "Each year we brew three or four specialties as limited editions to test their acceptance among consumers. In the past we've flavored our beer with chestnuts, pumpkin or honey, for instance, and even with goose barnacles. For one of our milk stouts we laced the beer with milk from cows fed with spent grain (Spent



grain = the residue from the brewing malt produced during beer production that can be used industrially or as animal feed). And our pimientos de Padrón beer that we add small, local, sweet peppers to is a real hit."

Both modern and traditional

The special beers crafted under the name of "fabrica de cerveza" are just one of many examples for the company's claim to premium quality. "As opposed to the big industrial breweries of Spain, despite our recent rapid growth in size we still see ourselves as a traditional company," Alvar stresses. "We use cutting-edge technology but always with recourse to classic methods. We've drawn a number of red lines in the brewing process that we don't cross, for instance. And for us, quality always takes precedence over quantity or speed: producing a good product simply takes time – and we give ourselves this."

In 2019 MEGA was opened on the brewery premises, a world of experience plus museum and events location devoted entirely to beer culture. This is where Hijos de Rivera tells the story of the company and pays tribute to the family of owners by celebrating their innovative culture and experiences but also their battle against the increasing uniformity of beer. This is also where concerts, festivals and exhibitions are held that regularly attract a large audience.

Besides its commitment to innovative products, the lager marketed under the Estrella Galicia brand continues to be the brewery's top seller, with Estrella Galicia aiming to sell an impressive almost five million hectoliters of beer in 2023. Thanks to an upward trend that's way above the average for the rest of the country, the company is clearly on course for success – and sees considerable potential for growth in the future, too. After all, for a few years now the amount of beer consumed in Spain has steadily increased.

On course for further growth

Accordingly, its plans are no less than ambitious: as the existing Agrela production site in A Coruña is at the limits of its capacity with nine filling lines, the brewery is currently investing in a new plant ten kilometers away from the present location. An area covering a total of 500,000 square meters will soon be available that will provide plenty of room for further expansion. One of the key technology suppliers to Hijos de Rivera is Dortmund engineering company KHS. To date, the machine and systems manufacturer from Germany has delivered no fewer than five lines for glass, beverage cans and kegs to A Coruña. "For us, KHS has been one of our most important partners for many years," claims Martínez. "We particularly like their high level of innovation which in our opinion makes KHS systems among the best in the world." One

of the most recent joint projects is a turnkey canning line, for example, with a capacity of up to 72,000 containers per hour. The system has two packaging machines. One of these is an Innopack Kisters Nature MultiPacker for the high-capacity range, on which beverage containers are turned into packs of four or six using easy-to-remove dots of adhesive without the need for any film or cardboard. The other is an Innopack Kisters TSPP that has a paper-wrapping module that packs 12 to 24 containers in perfectly folded and glued paper instead of in shrink film. The purpose of both packers is to provide optimized systems that consume as little material as possible and at the same time significantly reduce the packaging's carbon footprint. In parallel, an existing KHS canning line with a maximum output of 60,000 containers per hour was also expanded to include an Innopack Kisters Nature MultiPacker.

Unique packaging system

"Traditionally, we've always packaged our beverage cans in cartons so that we don't have to use any plastic," explains Garcia. "In view of the current debate on packaging and the environment, our competitors are now also increasingly doing away with film or hi-cone packs and instead using cardboard. In this context, we find it important that the packaging systems used for our products continue to be unique on the market. This is why we've gone for Nature MultiPack – a real first on the Spanish market."

Hijos de Rivera supported the launch of the new, sustainable alternative with an extensive marketing campaign. Under the motto of "the best packaging is the one that isn't there", the Estrella Galicia six-pack is sold as a NoPack. Thanks to advertising in the form of eye-catching videos chiefly posted on social media channels that showed consumers how to handle the packs, the new system has been outstandingly well received on the market. "We have had lots of absolutely excellent feedback," smiles Garcia. "Consumers are specifically asking for the







NoPack which for them is both an attractive and environmentally- and climate-friendly variant. The most important thing, however, is that we can gage our success not just through our high media presence but also by looking at our sales figures: since the launch our market share has clearly increased."

Consistent branding

The generally high brand awareness of Estrella Galicia is the result of widespread sponsoring measures that the company consistently implements in many different areas. Activities it supports include Formula 1, MotoGP and soccer - as sponsor of the local club and several teams in Spain's Primera División, among others - and countless major music festivals up and down the country. The brand is also everywhere in its home town of A Coruña: from house facades in the city center to the control tower of the local airport. What's more, the Cuatro Caminos beer bar in the middle of an old factory complex boasts the highest beer sales in the whole of Spain. The marketing ploy is so successful that it has attracted a number of imitators. "We've strengthened the brand, its values and its identity with our strategy and forged a close bond with the consumer," Garcia states.

Pledged to provide premium quality, the brewery isn't satisfied with simply investing in high-profile advertising but also wants to set a good example. "An important part of our activities focuses on saving resources and reducing our carbon footprint," the plant manager emphasizes. "This was one reason why we again chose KHS to supply our most recent canning line. The systems provider not only scored points with us for its line layout but also by having the lowest energy consumption on the market. We not only implement particularly energy-efficient technologies but also use methods designed to recover energy. And we think long and hard about the packaging of our products: how can we save even more material? Which materials are recyclable, have a positive ecobalance and at the same time are economically sustainable?" Besides using secondary packaging such as Nature MultiPack or the KHS PaperWrapper, Estella Galicia is thus increasingly opting for the beverage can as its primary packaging of choice. "We're convinced that this type of container will play an increasingly bigger role thanks to its excellent recyclability and simple handling for consumers," finds Garcia.

Reliable partner

YOUR PACKAGING INSIDER

"In KHS we definitely have the right technology partner at our side to take us through this development," production director Carlos Bao believes. He particularly appreciates the smooth coordination and cooperation between the project team on the one hand and installation and commissioning personnel on the other. Above all, the lo-



cal service and support provided by the regional Spanish office are of prime importance to him. "We're extremely pleased with our new system and especially with the packaging equipment. If you want to be a pioneer, it's good to know that you can rely on your partners 100%. In this respect, we've done everything right." And so that this stays this way in the future, too, the Dortmund engineering company has now received orders for two more turnkey lines with a respective upper capacity of 72,000 non-returnable glass bottles per hour - in perfect time for the move to the new brewery.

For more information go to: www.khs.com/en/media





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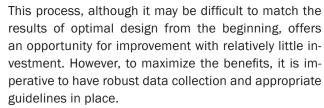






UNLOCKING EFFICIENCY: OPTIMIZING PRODUCTION LINES WITH BUFFER SYSTEMS IN 2023

he 2023 closure showed increased interest in optimizing existing lines, particularly the demand to implement accumulation or buffer systems, aiming to improve production efficiency, ergonomics, and accessibility of production lines.



The core of this article focuses on an in-depth analysis of these issues in order to provide useful insights for planning similar activities.

Clarity of objectives plays a key role when deciding to implement an accumulation system, given the significant amount of investment involved.

Accurately identifying the sources of inefficiency, their frequency and duration is crucial to assessing the economic impact on line productivity. An analysis of the consequences of shutdowns, including the time to restore normal operations, is also essential.

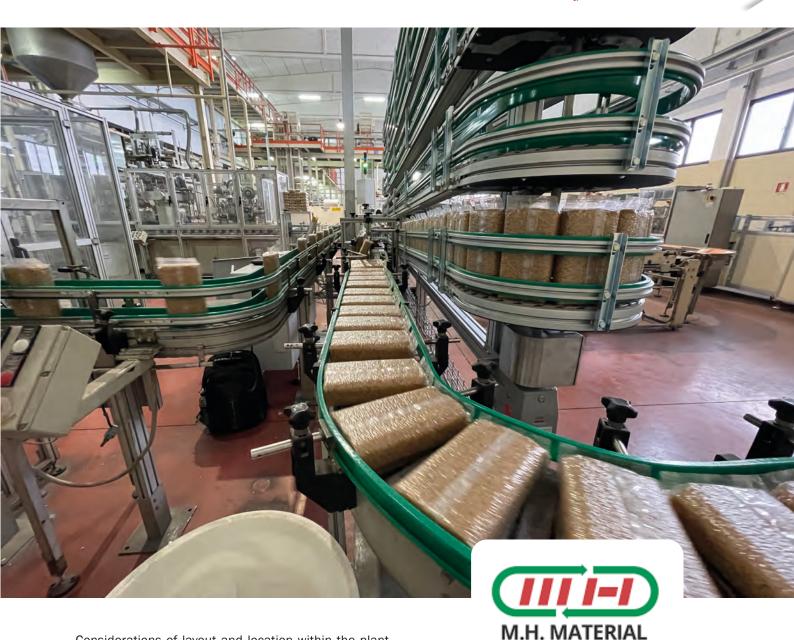
The use of a buffer can offer a hidden benefit by eliminating the disruption resulting from the continuous flow of production during shutdowns. This is a stress element, that prevents line operators from immediately addressing and resolving problems.

As such, a buffer provides an additional benefit that is difficult to measure during the design phase, represented by the elimination of this disruptive element in operators' work. A thorough analysis could include testing the line at lower speeds to reduce machine stress, the source of shutdowns, decreasing the frequency of shutdowns and improving overall performance.

Overcapacity of machines downstream of the buffer is a crucial requirement to ensure that they can operate at speeds above the nominal line speed.

This allows the buffer to be emptied without interrupting upstream production, once any inconvenience is resolved. Without this buffer, the flexibility of the buffer decreases, compromising its purpose. A strategic choice might be to reduce the line speed based on accurate data collection.





Considerations of layout and location within the plant are essential.

Although height can be exploited by using spiral systems, the footprint remains significant. In addition to the space occupied by the buffer, it is crucial to consider that required by its inlet and outlet system, often the most complex part of integrating such machines into an existing line. If the device proves to be excessively intricate, it could turn into an additional source of inefficiency.

In conclusion, carefully evaluating the inclusion of a storage system requires time and attention, considering all the conditions previously discussed.

Although it is not a particularly complex process, careful evaluation is essential for satisfactory results.

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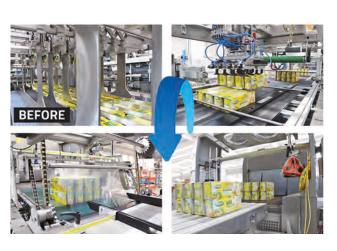
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he frequent changes in consumer habits and preferences impose new competitive challenges and great adaptability to create packaging solutions suitable to intercept every market demand.

This can only be achieved thanks to **versatile bottling** and packaging plants, which quickly and easily switch from one type of production to another thanks to advanced automation and smart technologies.

SMI experience in end-of-line packaging has led to the development of increasingly efficient solutions, such as the new combined packer from the **CM R ERGON** range that stands out for the innovative revolving quick format changeover system, which enables to quickly switch from a film-only packaging to a tray + film or wrap-around box without any manual intervention for the replacement of components or the adjustment of machine devices. In fact, everything happens automatically.

Fast format changeover thanks to the innovative revolving system

The **CM R ERGON** combined packers combine the functions of a wrap-around case packer, a tray packer and a shrink wrapper in a single system. They are thus the ideal solutions for those customers who have to frequently switch from one product to another or from one format to another and need to pack a wide variety of containers in the following types of packages:

- 1) film only
- 2) flat cardboard pad+film
- 3) tray+film

- 4) tray only
- 5) fully closed wrap-around boxes
- 6) partially closed boxes.

The new **CM R ERGON** packers by SMI have been developed with the aim of offering an extremely innovative solution to those companies that opt for a combined packaging machine for processing various products and realizing several packs **at a maximum production speed of 80 packs/minute** (depending on the type of container and pack).

The versatility of combined machines involves frequent format changeover operations.

Thus, the idea of SMI designers to revolutionize these operations by developing a new revolving system to ensure easy, quick, fast and repeatable format changeover operations. Furthermore, mistakes by the operators are

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Our bottling and packaging systems benefit from Industry 4.0 and IoT technologies, can process recyclable materials such as rPET and allows for considerable energy savings.

Find out our solutions for packing a wide range of containers up to 50,000 bottles/hour.

















removed, as the adjustments to be made are set by the machine system control.

What is the revolving format changeover

The CM R models are equipped with the innovative revolving format changeover system (supplied as standard) which consists of two rotary modules:

- the first positioned in the cardboard/loose product advance area (rotary module 1)
- the second positioned in the area of box/tray formation and loose product flow (rotary module 2).

The two rotary modules are supplied with double equipment: (a) that required for working in film only and (b) that for packaging in tray or wrap-around boxes.

By rotating 180° a single rotary module or both modules,









it is possible to obtain different pack configurations with the CM R combined packer. All this without any mechanical adjustment to be manually made by the operator.

The format changeover of yesterday and today

In most packers available on the market, the change of the pack format involves the adjustment of several axes, an operation that is generally performed manually by means of hand wheels. This type of operation can take a lot of time for the operator and can lead to mistakes during the adjustments with effects on the production efficiency.

On the contrary, thanks to the new revolving format changeover system, it is possible to save time during the tooling operation, the number of rejects is reduced, the machine downtime caused by wrong settings is eliminated, thus ensuring high quality and maximum efficiency of the packaging line.

Main advantages of CM R ERGON with revolving format changeover

- when you have to switch from one working condition to another (i.e. from film only to wrap-around case), it is sufficient to rotate 180° one or both modules;
- no mechanical adjustment is required for the machine reconfiguration;
- no manual intervention is required for the component replacement;
- the format changeover, totally automated, is a fast, repeatable and precise operation;
- drastic reduction of format change times;
- greater precision, as module 1 (cardboard/loose product advance area) and module 2 (box/tray former) are already prepared to process the new type of packaging;
- greater production efficiency for customers who need frequent switches between running film-only and tray or box;
- reduced maintenance and installation costs.

www.smigroup.it









Storopack's PAPERplus® Classic CX: blade-free technology for versatile and sturdy paper fillings

toropack introduces the new PAPERplus® Classic CX system for producing sturdy yet flexible paper fillings that perfectly conform to the shape of shipped goods, ensuring optimal protection even for heavier items. Thanks to perforated paper, the cushions easily detach from each other, and the machine operates without blades or cutters: an added value for workplace safety and ergonomics. Additionally, operators can choose from three different speeds and set various parameters to optimize the properties of the filling. Extremely fast and compact, PAPERplus® Classic CX easily integrates into any packing station.

A mode for every need

PAPERplus Classic® CX is a convenient and intuitive system, capable of improving packaging processes for both manufacturers and transportation companies. With high performance, it produces paper fillings in seconds directly at the dedicated workstation, allowing users to choose between the touchscreen or pedal control for maximum ease of use. The various available modes make the work more flexible;

PAPERplus® Classic CX paper cushions fill voids, are suitable for wrapping/cushioning products, and block and brace shipping goods within the box. Image: Storopack



for example, users can choose to store fillings for later use or produce them individually as needed. The system can retrieve paper from a pallet, ensuring a very long operational autonomy, and only a few simple operations are needed to reload it when depleted. With this rapid and continuous material feed, it's immediately ready to get back to work.

Sturdy paper fillings for optimal protection

PAPERplus® Classic CX paper fillings are incredibly robust and therefore ideal for goods transported in medium and large-sized boxes: they fill voids, cushion impacts, wrap products, and secure them inside cartons. To offer the best protection and more efficient use of materials, the volume of paper bundles can be adjusted for each individual shipped item.

www.storopack.com













NACKEX has a consistent history of 50+ years and is considered the ultimate event to showcase savoury snacks and nuts products, network with industry professionals, and learn from the experts.

Being recognized as the only trade show in Europe that is 100% dedicated to the savoury snacks and nuts sector, SNACKEX 2024 will take place next year on 19 - 20 June in Stockholm, Sweden at Stockholmsmässan. SNACKEX is a biannual B2B trade show gathering everybody in the said industry, from snack makers and retailers to suppliers of raw materials, ingredients, flavours, processing equipment, packaging machinery, and consulting services. The exhibition is organised by the European Snacks Association (ESA), the trade association for the savoury snacks industry in Europe.

SNACKEX is also featuring workshop sessions with free access right there on the show floor where speakers share their insights and expertise on the latest trends, challenges, and opportunities in the savoury snacks market.

Attendees learn about consumer preferences, product innovation, sustainability, regulation, nutrition, and more. These sessions help participants improve their skills and knowledge regarding snack production as well as customer choices.

The trade-fair covers 10.000 sqm exhibition floor, welcomes 200+ exhibiting companies, some good 3500+ attendees from 98+ countries all across Europe and the world and spans over the course of 2 full days preceded by a very well attended welcome reception where 500+ snack professionals are expected to network in a fantastic setting enjoying live entertainment and delicious food. 'Anyone who is someone in the savoury snacks and nuts industry will be there at the event. It is the very niche aspect of this trade-show that has kept its' audience faithful over the course of so many years and thanks to which more than 90% of the exhibitors and visitors are returning ones. At SNACKEX you will find very specific customers which cannot be found anywhere else at general food shows.', says Veronica Yakicioglu, Head of Events and Membership at European Snacks Association.









AT THE WORLDWIDE FAIR FOR SAVOURY SNACKS



XX International Trade Fair for Savoury Snacks & Nuts

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STOCKHOLM
19-20 JUNE 2024

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TECHNOLOGIES
SUPPLIERS
DECISION-MAKERS
DISTRIBUTORS
TRADE PARTNERS
CUSTOMERS









SNACKEX is an experience that will inspire, inform, and connect attendees within the savoury snacks community.

It is an investment that pays off in terms of increased sales, brand awareness, customer loyalty, and competitive advantage.

Everyone wishing to attend the show is invited to keep a close eye on the SNACKEX website (www.snackex.com) as pre-registration will be launched early in 2024, and get ready for the most comprehensive international trade fair dedicated exclusively to the savoury snack sector. See you all in Stockholm!

Trade show main contact: Veronica Yakicioglu, Head of Events and Membership at European Snacks Association:

veronica@esasnacks.eu

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SNACK NUT





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TECNO PACK: DEVELOPMENT AND STRATEGY TO REACH NEW GOALS

ver three decades have passed since the early 1980s, when, in a small building on the outskirts of Schio, two enthusiastic and passionate technicians began tinkering with several used packaging machines with the intention of getting them back into working order.

This type of activity was known as "revision", a term that has become extinct in this world of "disposable" products.

It was through the continuous process of disassembling, replacing, modifying, and testing these ageing machines that the two ultimately decided to develop the new and

modern flow pack packaging machines.

In 1985, the first packaging machines from the newly established Tecno Pack company were introduced on the market and immediately received a favourable reception from clients.

Thus began the company's long journey, a company whose priority is to respond in a timely and professional manner to the increasingly stringent demands of the market, courageously and determinedly embarking on the challenging path of automatic packaging systems.

These were years of hard work, sacrifice, and ongoing research, as well as of achievements and growth.







In 2011, operations moved to a new facility occupying over 6,000 square meters, still located in the traditionally industrious town of Schio, since the second half of the 19th century nicknamed "the Little Manchester of Italy".

Machine after machine, system after system, the story continued with the inevitable intertwining of professional and personal events that never undermined the company's corporate ideological continuity, which was supported through the years by a constant investment



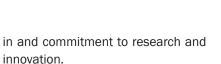
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Thanks to their global technological portfolio, the group of Schlio companies is now recognised as a world leader in the packaging industry, providing a global solution that covers everything from product manufacturing to packaging, at every stage. Their automated solutions, tailored to each individual client company, integrate primary, secondary, and tertiary packaging, as well as palletizing.

Today, the world of small and medium-sized industry that relies on the Tecno Pack group can benefit from the experience and technology that the company has developed over decades with all of the major global food groups which, by renewing their trust each day, continue to fuel ongoing research and development.





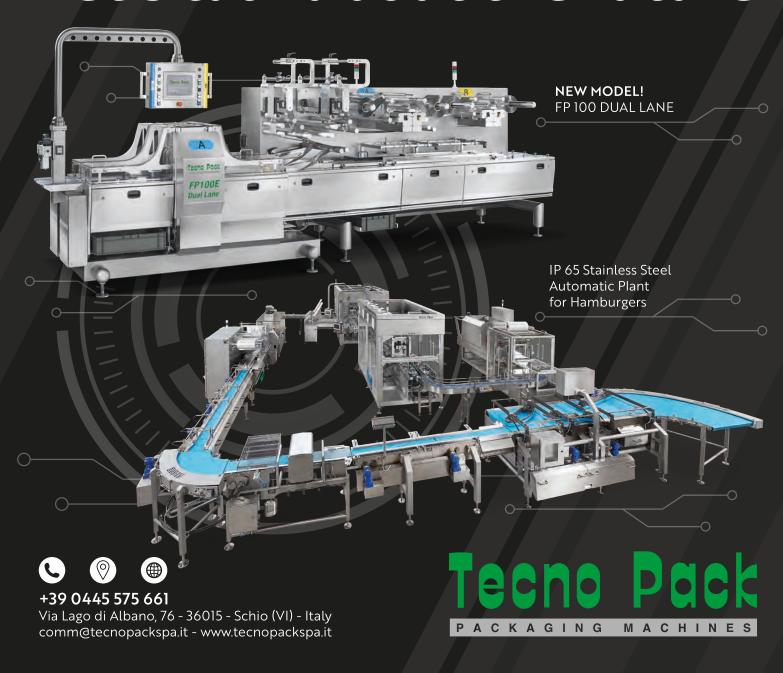


www.tecnopackspa.it





Let's talk about the future





NEW STANDARDS, NEW TECHNOLOGY

n the recent years we entered the era of sustainable packaging. New procedures and technologies help our market to raise its standards and as packaging machinery designer and builder we implemented new instruments to face new challenges. The need for flexibility, traceability, sustainability and attention for consumers gave us the opportunity to improve our offer.

Simple and hygienic

Universal Pack machines are built to guarantee the highest hygienic level in the simplest manner. The R&D department has designed and developed automatic



CIP systems for cleaning the inner parts of dosing systems. As a matter of fact, these systems ensure the full equipment cleaning without the need for disassembling. These solutions are aimed to reduce machine downtime by providing ready-to-work spare units. All cleaning systems are designed and built abiding by EHEDG guide-





lines and 3-A sanitary standard. The next hygienic level available implies Ultraclean technology, equipped with laminar flow to prevent contamination of the product area by isolating the dosing and forming groups from the external environment. The hygienic proposal is also extended to the packaging: decontamination and sterilization lamps ensure the highest hygienic level of the laminated film.

Traceability and certifications

We uniquely code every single component, keep full track of it and provide documentation certifying its compliance with Pharmaceutical and Food industry regulations. An essential list includes for instance: certificates of all materials and parts in contact with the product,

welding certificates, calibration certificates and parts full traceability. The provision goes beyond the latter certificates for proving the components quality and compliance, as it stretches to further documents concerning the line construction and effectiveness. The list goes on with IQ (Installation qualification), OQ (Operational qualification), PQ (Performance qualification), FDS (Functional design specifics), HDS (Hardware design specifics) and Risk analysis, FAT and SAT ad hoc protocols.

For the planet

Our non-stop research in reducing the packaging industry carbon footprint resulted in streamlined machinery design for packing recycled, recyclable and compostable laminates. LCA (life cycle assessment) is used to meas-





ure the environmental impact of our products and identify optimal ways to reduce it. It is a 360° analysis that goes beyond the mere packaging produced and involves every step of the packaging machinery production process. We develop our solutions shoulder-to-shoulder with the main global film suppliers and test them in agreement with major multinational companies in order to provide them with a turnkey solution able to produce ecopackages.

Universal lab

Over 30 years of scientific research. Our in-house laboratory was built to always ensure the most sustainable and efficient packaging solution. The research in Universal Lab allows us to optimize machine design, efficiency and reliability by studying the most significant properties of products and newly developed laminates. That's why we are ready to pack any product using the latest ecolaminates in the market and always looking out for the development of new materials.

The company

Universal Pack is an international reference in the field of packaging. The company has over 50 years of experience in designing and building vertical machines and complete automatic lines for packaging single dose products for the food, pharma, chemical and cosmetic industry. It is present in over 150 countries and has installed more than 8000 systems. It offers cutting-edge solutions for any type of package: stick-packs, sachets sealed on all four sides, shaped packs and cartons.

www.universalpack.it

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TEK IN PAK: MACHINE BUILDING EXPERIENCE FOR PACKAGING IDEAS AND DESIGNS

EK in PAK srl is a small-sized company that carries forward a machine building experience for packaging ideas and designs, both for agriculture, with the creation of the first machines for corrugated cardboard trays, and for various industrial sectors, for example, the confectionery industry with large containers (8 panettone pandori), as well as the liquid detergent and soft drink sectors with the creation of the Visual Box and related wraparound lines.

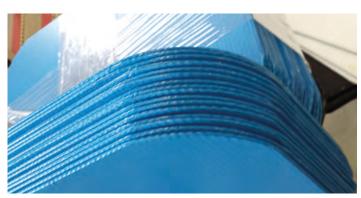
This packaging combines a significant reduction in cardboard while allowing for excellent and immediate product visibility, avoiding the need to cut packages for display and sale.

Furthermore, many other packages for different sectors are always used, using paper or corrugated cardboard, which is an ecological and economic material. As happens with most small companies, to keep up with the times and

TEKINPAK s.r.l.

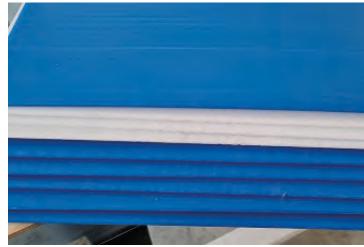
manage themselves effectively, they must continuously study prototypes, seek appropriate personnel, explore international market demand, and make new choices. They stop to study another product with great characteristics, evaluating respect for ecology, the ability to contain and protect the product, and the relevant machines for production. Once they find this new product, whether it is material, packaging, or machinery and has no competition, TEK in PAK starts to produce it.

The material they have adopted is PP in its various forms, including CARTONPLAST, BUBBLE GUARD, and other forms. This product has various characteristics such as being food-grade, reusable, regenerative, moisture-resistant, neutral and unaffected by adhesives or other agents.









YOUR PACKAGING INSIDER





TEK in PAK has studied its own fastening system, which has led to the construction of various models of packaging without the use of current fastening systems such as adhesives or staples.

They have produced trays for fish, trays for vegetables, fruits, and vegetables that can be watered, American boxes (RSA), or sleeves for pallet boxes. In production, they also make lines for pallets of large and small sizes (BOX PALLET), which are easily produced since only adjustments are required, avoiding costs for molds and warehouse storage, unlike those on the market so far with fixed sizes.

Additionally, they have a line for interlocking edges, a fully automatic line with corner trimmers and cutters with different radii, and semi-automatic machines. TEK in PAK's production includes tray-forming machines, tray-forming





machines, box bottom welders, and two-head welding machines for large boxes or pallet sleeves.

www.tekinpak.com



INTERLAYE WELDED



BOX PALLET



CONTAINMENT SLEEVE EDGE "W"



ANGULAR LARGE THICKNESSES



PALLET FROM DIE CUT SHEETS



CONTAINMENT SLEEVE "TIP"



AMERICAN BOXES



PLATEAUX WELDED FLAUTE

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SETTING NEW STANDARDS IN SUSTAINABILITY

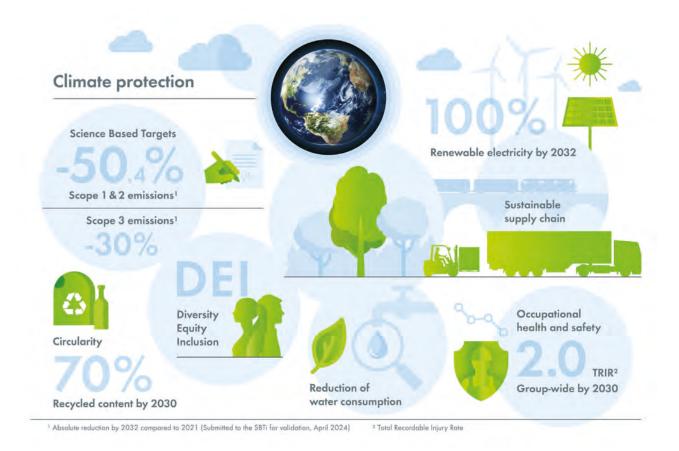
Vetropack defines targets and submits them to the "Science Based Targets initiative".

he Vetropack Group, one of Europe's leading glass packaging manufacturers, has submitted specific targets for reducing CO2 emissions to the Science Based Targets initiative (SBTi) for validation. By 2032, Scope 1 and 2 emissions are to be reduced by 50.4 percent and Scope 3 emissions by 30 percent. SBTi is a global organisation that assists companies in setting targets aligned with climate science and the Paris Agreement.

Vetropack first announced its commitment to the Science Based Targets initiative (SBTi) back in 2022. The company has now defined and submitted emission reduction targets. Vetropack aims to reduce absolute Scope 1 and

2 emissions by 50.4 percent and absolute Scope 3 emissions by 30 percent by 2032 – using 2021 as the reference year. Scope 1 emissions are direct emissions from Vetropack's own production, while Scope 2 emissions are indirect emissions caused by the purchase of electricity. Scope 3 emissions are indirect emissions caused by processes outside the company but related to Vetropack's production and operations.

"Climate change will not happen at some point in the future: the climate has already changed and it is our responsibility to contribute to tackling the climate crisis," says Nicolas Lootens, Group Sustainability Manager. "By defining



As part of the Science Based Targets initiative (SBTi), Vetropack has submitted its targets for reducing CO2 emissions. The company aims to reduce Scope 1 and Scope 2 emissions by 50.4 percent and Scope 3 emissions by 30 percent by 2032.



Vetropack has already invested in photovoltaic systems at various locations in order to increase the use of renewable energy. Pictured here: the photovoltaic system in Kremsmünster, Austria.

our goals in line with the Science Based Targets initiative, we are now taking an important step in this direction."

The scopes at a glance

In total, emissions from Scope 1 and Scope 2 combined accounted for 57 percent of all of Vetropack's greenhouse gas emissions in the reference year 2021. Scope 3 emissions accounted for 43 percent. Within Scope 1 and Scope 2 emissions, natural gas as the main source of energy for glass production is responsible for the majority of Vetropack's greenhouse gas emissions, accounting for around two thirds. Emissions caused by processes such as glass melting account for a further 20 percent. The remainder is accounted for by electricity consumption at the plants.

Scope 1 and 2 emissions: reduction through energy efficiency and recycled glass

With this in mind, Vetropack has developed a comprehensive plan to achieve the defined reduction targets for Scope 1 and 2 emissions. Repairs to existing and construction of new furnaces comprise the greatest leverage to promote climate protection by ensuring that natural gas is used as efficiently as possible. Technical innovations such as hybrid furnaces reduce the emissions associated with glass production. Vetropack further achieves significant emission savings by using recycled glass as raw material. Increasing the proportion of recycled content to 70 percent by 2030 is thus another important measure, along with transitioning to 100 percent renewable energy by 2032. The company is already investing in photovoltaic systems at various

locations, including in Austria, Croatia, and Italy. "By investing in renewable energies, we are paving the way for a more sustainable future in glass production," remarks Nicolas Lootens.

Reducing Scope 3 emissions: focus on supply chains

In terms of Scope 3 emissions, the Vetropack Group is committed to reducing emissions in the categories of purchased goods and services, capital goods, fuel and energy-related activities as well as upstream transportation and distribution by 30 percent by 2032 compared to the base year 2021. The main sources of CO2 emissions in the purchased goods and services category are soda and packaging materials. As part of the "No Soda Trials", Vetropack has already conducted successful re-

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The new furnace in Kyjov, which went into operation at the beginning of 2024, will reduce CO2 emissions per metric ton of glass produced by around 13 percent compared to the previous year.

search on glass production without soda. The trials have demonstrated the formability of bottles made from the soda-free melt. In terms of packaging materials, Vetropack launched pilot projects at two sites in 2023 to use recycled film to wrap and protect glass containers on pallets. Customers then return the used film to the manufacturer, thus closing the material cycles.

"By defining our goals, we are setting a clear course for our future," emphasises Johann Reiter, CEO of the Vetropack Group. "It is our responsibility to promote sustainable practices and innovative solutions." One current fo-



"Climate change will not happen at some point in the future: the climate has already changed and it is our responsibility to contribute to tackling the climate crisis," says Nicolas Lootens, Group Sustainability Manager. "By defining our goals in line with the Science Based Targets initiative, we are now taking an important step in this direction."

cus of innovation is the storage or use of CO2 emissions generated during the glass manufacturing process as part of so-called Carbon Capture and Storage technologies. In collaboration with an external partner, Vetropack is investigating the possibility of mineralising CO2 from the process gas. These minerals can then be used as raw materials both in glass manufacturing and in other industrial processes.

About the Science Based Targets initiative

The Science Based Targets initiative is a global organisation that enables companies to set ambitious emission reduction targets based on the latest climate science. The organisation aims for companies around the world to halve their emissions by 2030 and reach the Science Based Targets initiative Net-Zero Standard by 2050 at the latest. The SBTi defines and promotes best practices in setting science-based targets, provides resources and guidance to address barriers to implementation, and independently assesses and approves companies' targets.

www.vetropack.com







Servomotors 4.0 for automation and motion control for the Food & Beverage industry







INNOVATIVE AUTOMATIC DOSING SYSTEM: FAST, ACCURATE AND ECO FRIENDLY

Color Service is an Italian excellence and since 1987 has positioned itself as a leading supplier of automatic dosing systems for any kind of powder and liquid product

ith a start in the textile field and thanks to years of experience and know-how, Color Service introduced its unique technology into many markets segments (rubber, tire, cosmetics, plastics) before orienting his innovation into the food industry, where the dosing of powders and liquids requires considerable precision, speed and traceability.



Weighing is a key element of the food production process for quality compliance: dosing the proper amount of ingredients is extremely important to fulfill recipe specifications and constant quality requirements.

In most cases, the food industry's weighing department employs operators who manually dose raw ingredients,



resulting in difficult and complicated management in terms of weighing accuracy.

To support this necessity, our technology is designed to solve problems associated with the manual weighing of any kind of powders and liquids applied in the food industry and it is developed with the goal of achieving a safe, fast and precise dosing. The aim is therefore the development of high-efficiency systems that allow to minimize the production costs and boost productivity while also improving final product quality, essential for





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the competition of all companies. According to customer's requirements, Color Sevice offers to the market two solutions of automation: a complete full automatic and a semi automatic weighing system.

Full automatic dosing system

With the full automatic dosing system, all processes are automatically monitored and data are recorded in the software integrated with the customer's management system. The activity of the operator is exclusively confined in the loading of products into storage silos of various capacities through high-performance vacuum for powders and pump for liquids that guarantee fast loading with low air consumption. During the dosing, a multi-scale conveyor completely aspirated through a dedicated dust extraction system allows high dosing accuracy of recipes that can be dosed directly into a bucket or in identified bags created in a completely automatic way: this is a fundamental characteristic that allows each individual recipe to be traced. The full automatic system, guarantees High Dosing Accuracy, Batch Traceability and Modularity of storage stations and according to product consumption and production requirements, the system offers several storage modules of different capacities that could be interchangeable or expanded in the future.

Semi-automatic dosing system

On the other hand, the semi-automatic weighing system can offer a good compromise: the robotic storage of pow-



der products with the manual weighing assisted by a PC. In this way, according to the recipe, the system drops the right box and transfer it to the weighing position, where the operator, guided by the PC can dose the product.

Key benefits of our automatic dispensing system

By investing in an automatic dosing system, the customer will be able to benefit from a repeatable production process that runs 24 hours a day, is reliable and fast, in which human error is definitively eliminated and which allows leading to high-quality end products with uniformity features throughout time. Systems are user-friendly and software is intuitive and easy to use, allowing a quick and easy understanding.

"Dosing right the first time" as a consequence of accurate and exact dosing of powders and liquids, results in a reduction of product waste, energy/water consumption, processing times and, as a consequence, cost.

From the ecological point of view, our technology reduces to zero the exposure for operators to dangerous substances or toxic ingredients and provides absolute control of the dust emitted during the weighing with the use of special suction devices, ensuring total operator safety and environmental protection. Another significant advantage is the traceability of recipes. Indeed with a manual weighing, in case of non-conformity, it is impossible to identify all the products that are affected by this problem downstream and it is difficult to trace the causes upstream that can be represented for example by an incorrect mixing proportion or from a non-conformity of a specific ingredient. Without expensive labor costs due to manual batch processing and profit loss due to recipe formulation mistakes, companies can begin to boost profits, while offering a superior and uniform product to their customers.

www.colorservice.eu

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OPLASTICS

6 FOOD INDUSTRY







The Ultra Solo by Quadpack: airless technology in a monomaterial packaging

irless technology meets monomaterial design in Ultra Solo, the latest addition to the airless range from the interna-



tional manufacturer and supplier of cosmetic packaging, Quadpack. The polyethylene (PE) packaging also features a metal-free pump making it recyclable and monomaterial. Moreover, the airless technology adds a whole range of benefits for the formula, the brand, and the consumer, making Ultra Solo the perfect mix between sustainability and performance.

The single-wall packaging boasts a minimal yet sophisticated design. Made of PE, Ultra Solo's sleek profile can have a glossy finish; the wide variety of possible decorations then makes it adaptable to any brand's identity. It is available in 15, 30, and 50ml sizes, for top filling.

The airless technology ensures precise dosing of 0.15cc per dispensation, which does not vary even with changing the applied pressure. The hermetic structure protects the formula from external contamination and reduces the need for artificial preservatives. The pump also allows consumers to use it at all angles, always maintaining excellent performance.

All components of Ultra Solo - cap, pump, actuator, and bottle - are made of PE. Thus, the entire product boasts

100% recyclability, certified through the evaluation standards of the European leader Institute Cyclos-HTP*. "We aim for greater recyclability in the development of our products," explains Alejandra Isern, Quadpack Category Specialist, "and nothing is simpler than recycling a monomaterial solution. Ultra Solo is also our first airless solution in PE that expands the range of materials in our airless portfolio."

As with all Quadpack's catalog products, an Environmental Report is also available for Ultra Solo. This document provides the life cycle assessment and other data on environmental impact to help brands achieve their sustainability goals.

www.quadpack.com



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BIODEGRADABLE PACKAGING SOLUTIONS



packs Launches World's First Bark-Based Packaging Technology to Replace Seamlessly Plastic Materials

The firm's new technology is fully compatible with existing production streams and targets the \$384 billion global plastic packaging market.

Bpacks, a sustainable packaging startup, announced the launch of the world's first bark-based packaging technology. The new materials seamlessly integrate with current equipment used for all kinds of plastic rigid packaging production, facilitating the shift to eco-packaging. This is especially important, as the European Union's policy directives have mandated the transition to biodegradable packaging within the next five years.

Bpacks' 300 square meters R&D center, which is based in Belgrade, Serbia, enables the production of both finished packaging and granules as substitutes for plastic pellets. The bark-based pellets' production process closely resembles that of polymers and doesn't require capital investments to begin molding, since the manufac-

turing process mirrors that of plastic production.

The Bpacks' production process starts with compounding, followed by the creation of pellets or sheets, and concludes with the casting of solid packaging, which takes place either by injection molding or thermoforming techniques. The material should fully decompose in moist soil

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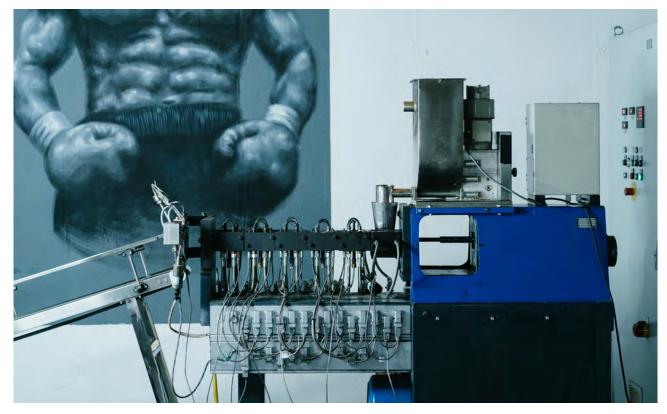


within one to two months. Nowadays, the most common biodegradable polymers such as PLA or PBAT eventually decompose into water and carbon dioxide in compost. However, neither of these adds useful material to it. Barkbased material, on the other hand, turns into compost within a week in an active environment, and enriches the compost with valuable nutrients.

"Traditional bio packaging often struggles to compete with its plastic counterparts in terms of pricing and integration complexity. Our bio-based plastic substitute can be manufactured using existing plastic production equipment, eliminating the need for plastic factories to purchase new equipment. This facilitates overcoming the market penetration challenges that most sustainable packaging startups are facing. Moreover, our packaging is 100% bio-based, with up to 75% of materials sourced from production waste. We also utilize pre-owned equipment, which helps decrease our CO2 emissions," explained Mikhail Skalkin, Co-founder and CEO of Bpacks.

Utilizing bark, waste of wood production, as its primary raw material, Bpacks ensures that forest resources are not further strained. With estimated bark production levels between 300 and 400 million m3 annually, the startup leverages this abundant resource to create environmentally friendly packaging solutions. Furthermore, studies have highlighted the antimicrobial potential of bark extracts from various tree species, enhancing the functionality of Bpacks' technology, which emits up to six











times fewer CO2 emissions compared to traditional plastic production methods.

Founded by an experienced team of entrepreneurs and Ph.D. scientists, and backed by an international advisory board, Bpacks is a circular economy startup operating in Europe and the United Kingdom. The company's CEO and co-founder, Mikhail Skalkin, has an extensive entrepreneurial background, including experience in M&A transactions involving large financial companies in Eastern Europe. The founding team also includes Lev Bolshakov, who has a proven record in corporate finance, startup valuations, and M&A, and has closed deals surpassing \$300 million in value, Nikolay Semenov, Ph.D., a researcher, engineer, and an expert in polymer materials science. Semenov is in charge of leading the firm's R&D innovations together with Aleksandra Nešić, Ph.D., who has extensive experience obtaining and characterizing active substances from plants and organic materials. Bpacks is backed by a strong advisory board of international scientists such as professor Maximilian Lackner,

Ph.D., a process chemist and engineer with over 200 articles published.

With the global packaging market reaching €1 trillion, and the sustainable packaging sector valued at \$285.3 billion, Bpacks targets a very attractive and dynamic market opportunity. The firm aims to capture a slice of the \$348.1 billion companies spend annually on plastic-based products, and which has spurred the emergence of novel materials and circular economy ventures, which offer biodegradable, compostable, returnable, and even edible sustainable packaging solutions.

www.bpacks.eco













FACEGLOSS PACKAGING COMBINES RECYCLABILITY AND AESTHETICS

Quadpack supports the new cosmetic brand with a complete range of packaging

aunching a new cosmetic brand in such a competitive market is no easy feat. facegloss appeared on the scene in October



2023 with a full range of skincare products. Four months later, the Spanish brand found itself at the top of the charts, acclaimed on social networks and high-profile media. A key factor in its success is the beautiful recyclable packaging developed by the international cosmetics packaging manufacturer and supplier Quadpack.

Anna Arbós – founder, cosmetic coach and "skinfluencer" – already had a loyal following on social media as "Glow by Anna". Creating facegloss was the realization of a dream; Anna has brought together all her knowledge in the creation of a range of highly performing and affordable skincare products, aimed at the millennial audience. With €220,000 in funding and the right partner network, they turned to Quadpack for the packaging of various products such as Cloud cleansing mousse, Chill toning and emollient spray, Superglow antioxidant serum, Glasskin all-in-one serum and the Feels Like Water moisturizing cream.

Quadpack has created a simple and refined range, in different formats, customizing some of its flagship items such as the Skin-Up bottle and the Regula glass jar as well as an excellent foamer and a nebulizer spray. The caps and pumps were decorated with a pastel lilac injection while the

bottles and jars remained transparent but with a light touch of color, to highlight the formula inside.

For facegloss, sustainability is a fundamental factor, a part of its philosophy and its way of being. The packaging materials – polypropylene (PP), polyethylene terephthalate (PET) and glass – were in fact chosen based on their recyclability.

Arbós said: "facegloss has been incredibly well received. We already have loyal consumers who appreciate the brand not only because it offers high quality products but also for its aesthetic image and spectacular packaging. As we always say, these are the products that you want to have in your bathroom.

"Our packaging is absolutely beautiful. Even though we were clear on what we wanted, Quadpack helped us from the beginning to consider the best options, always supporting us and offering us the best quality. Their professionalism and closeness to an emerging brand like ours is It was flawless!"

www.quadpack.com



SECTORS

PACKAGING
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UNDERSTANDING DYNAMICS OF THE CROWN CLOSURES MARKET FOR BEER AND SOFT DRINKS

he packaging industry is vouching for a boom in innovation and environmentally friendly alternatives, with closures determining product preservation and consumer ease. Among the many closure choices in the market, crown closures are widely adopted and a proficient solution, especially in the beer and soft drink area.

But before diving into the sea of crown closure trends. Let's see what the experts say about the numbers of the market:

Ismail Sutaria, the Principal Consultant for the Packaging Sector at Future Market Insights (FMI), comments, "The crown closures market is slated to embark on a slow but consistent growth trajectory, exhibiting a CAGR of 2.5% through 2033. The sales revenue of the crown closures infers a valuation of US\$ 1,389.47 million by 2033"

Now, we will explore the dynamics of the crown closures sector, probing diverse trends, troubles, and opportunities of these two beverage sectors.



by Ismail Sutaria

Ismail has over 8 years of experience in market research and consulting in the packaging & materials industry. Ismail's strength lies in identifying key challenges faced by the client and offering logical and actionable insights to equip the clients with strategic decision-making power.

Ismail has been an instrumental part of several transformational consulting assignments. His key skills include competitive benchmarking, opportunity assessment, macroeconomic analysis, and business transformation advisory. Ismail is an MBA holder in Marketing and has a Bachelor's Degree in Mathematics.

Ismail is a regular at industry conferences and expos and has been widely covered in electronic and print media. He is a Speaker at our upcoming Talk show - Rise of the Intelligent Packaging. Ismail has been quoted in leading publications, including the European Pharmaceutical Review and the European Adhesive Tape Association.





Brewing Perspectives: Insights into the Pulse of the Beer Segment

The crown closures industry has a profound impact on the global beer market, ushered by the appeal of this cherished beverage around the distinctive population and cultures. The competitive landscape of the market is dynamic. The ascend of craft breweries is a trend that has deranged conventional market dynamics and is now devising the fate of the crown closures market. This folklore of trials and innovation, strengthened by microbreweries, is a testimonial to their profound influence on the industry.

Craft breweries with a unique preference for crown closures have seen a growth spurt, recently.

These closures, with their quintessential aesthetic charm, affinity with different bottle types, and preservation ability of the artisanal individuality of their beverages, harmonize ideally with the brand image of home-crafted brewers.

This choice is not just limited to aesthetics but regarding the quality that crown closures embody, alluring to the thoughtful consumers looking for these values.

The prime closure producer BERICAP got the TOP100 approval seal as one of the ingenious small and medium enterprises in Germany.

The craft beer resurgence has ushered growth avenues for an elevated interest in carbon neutrality in the beer packaging industry.

Consumers prioritize sustainable products, and breweries seek greener packaging solutions, like renewable and reusable crown caps.

This transition into sustainability coincides with consumer requirements and devises a prospect for crown closure producers to innovate economically greener choices.

Customized packaging designs, like embossed crown closures, have reformed beer branding and promotional campaigns.

Craft wineries use these personalized caps to uplift brand visibility and strengthen consumer connections in a competitive market.

 A United States-based packaging firm called AptarGroup has signed a collaboration agreement with Nippon Closures. It marks a cross-license registered intellectual property exchange between AptarGroup and Nippon Closures.













The crown closures are pivotal in securing carbonation, flavor, and freshness, promising a pleasant drinking experience for soft drink consumers. Despite the presence of alternative packaging solutions for instance, PET bottles and cans, glass bottles with crown closures gain unwavering traction.

The escalating demand for organic and healthier items is an essential trend molding the soft drink segment. Consumers are increasingly inclined toward drinks and beverages that are preservative-free and not filled with artificial additives.

 Beer sector accounts for more than 70% of global crown closures demand, followed by the soft drink beverages.

One of the prominent trends shaping the soft drink market is the growing demand for healthier and natural products.

As consumers gravitate towards beverages free from artificial additives and preservatives, manufacturers are responding by offering a diverse array of natural and organic options.

Crown closures serve this trend by offering a reliable seal that secures the authenticity of the product, and aligns with the demand of the customers for clean-label beverages.

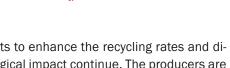
The boom of functional beverages, like energy drinks, ready-to-drink teas, etc propounds new prospects for crown cap producers.

The novel category of innovative drinks needs packaging that can combat distribution troubles while retaining the true essence of the product. Crown closures emerge as the trailblazers with their solid sealing characteristics and different designs, to fulfill the needs, making them an integral choice for soft drink packaging by the manufacturers.

Intricacies in the Crown Closure Industry

With plenty of opportunities, there is a critical challenge for the market too, i.e. the presence of various options for closures contending for the market share. Crown closures cater to numerous benefits but the producers constantly are innovating to stay abreast with the progressing consumer alternatives.

The next major roadblock in the growth path is sustainability and renewability. Though these are intrinsically re-



cyclable, attempts to enhance the recycling rates and diminish the ecological impact continue. The producers are constantly seeking alternative materials and production techniques to augment the biodegradability of crown closures, warranting they coincide with bio-based economy standards and statutory requirements.

Crown Closures as Insignia of Product Integrity

Consumers are actively looking for convenience and onthe-go consumption products, which presents an opportunity for crown closures to cater to the changing consumer requirements. Crown closures or caps that come with resealable designs, easy-open tabs, and tamper-proof seals fulfill the consumer's demand for convenience and give a positive brand experience.

The COVID-19 pandemic had brought forth myriad challenges and opportunities for the crown closures market. The industry faced obstruction in the distribution network and production technology because of the lockdowns and restrictions, the amplified demand for packaged beverages, such as beer and soft drinks, served as a silver lining.

 In March 2020, Pelliconi of Ozzano was a vital crown cork supplier in China. The company was persistent in running despite the COVID-19 pandemic, which resulted in the shutdown of multiple factories. The early February opening served as a benefit, with reference to shipping agility and market proximity.

Consumers transitioned into at-home consumption, and vendors saw a soar in demand for packaged drinks, sustaining the demand for functional closure systems. The pandemic highlighted the prominence of hygiene in packaging, escalating awareness and probing for tamper-evident attributes. During such times crown closures, with their intrinsic anti-tamper properties, are accentuated as dependable alternatives for product reliability and buyer confidence.

Final Thoughts

The crown closures market for beer and soft drinks exhibits a fusion of innovation, culture, and consumer-driven choices. To experience growth in the beverage sector evolution, the crown closure manufacturers must be relevant to the shifting dynamics, and capitalize on personalization, on-the-go convenience, and sustainability.

After comprehending the requirements of soft drink and beer makers and consumers, the crown closure manufacturers can set up as allies to carve out the packaging innovation future.

www.futuremarketinsights.com









To Launch Sustainable Paperboard Canister for Retail Coffee Brands

other Parkers Tea & Coffee ("Mother Parkers"), one of North America's leading coffee and tea companies and the largest supplier of private-label coffee and tea, has invested in new production capability to provide a new, more sustainable packaging option for coffee formats.

The Boardio® paperboard canister, provided by a world leader in sustainable consumer packaging Graphic



Graphic Packaging Holding Company (NYSE: GPK), headquartered in Atlanta, Georgia, designs and produces consumer packaging, made primarily from renewable or recycled materials.

An industry leader in innovation, the Company is committed to reducing the environmental footprint of consumer packaging. Graphic Packaging operates a global network of design and manufacturing facilities serving the world's most widely recognized brands in food, beverage, foodservice, household, and other consumer products.









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MAKING A BETTER MACHAEL MACHA





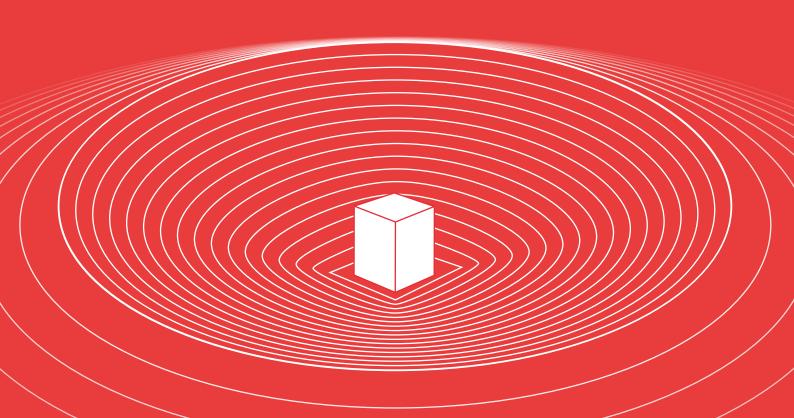


Industrial Packaging



Labelling & Bottling













Packaging International ("Graphic Packaging"), provides an alternative to plastic, glass, and metal containers and delivers the same level of freshness and food safety with less waste.

Recent research shows consumers want packaging that is better for the environment, and many are willing to pay more for it. The consumers surveyed preferred Boardio packaging over current can and bag options that dominate today's retail coffee market.

The new packaging delivers on sustainability, with:

- Increased transportation efficiency, as Boardio is delivered flat. Just three trucks are required for inbound packaging vs. 56 for pre-formed cans.
- A minimum of 50% less plastic versus Mother Parkers' previous bag format
- A minimum of 80% paperboard, that is FSC® certified

Boardio also carries the How2Recycle® 'widely accepted' certification .

"Our new packaging solution is a win for the planet, for our customers and their consumers," said Kim Cunningham, Mother Parkers' chief commercial officer. "It offers a recyclable packaging option with less plastic, without sacrificing any of the freshness, consistency, or quality that Mother Parkers-produced coffee is known for. For retailers with private label coffee programs, it's a way to show innovation, gain share, and drive shelf and transportation efficiencies, all while supporting their sustainability objectives."

The new packaging is the result of a partnership between Mother Parkers and Graphic Packaging to create

a recyclable paperboard canister specifically tailored for coffee using Graphic Packaging's Boardio technology.

"We're committed to innovation, sustainability, and meeting the rapidly evolving demands of consumers," said Johan Werme, Graphic Packaging's head of sales for paperboard canister solutions.

"By helping our customer Mother Parkers to transition from plastic into Boardio, we're helping them make a world of difference to their customers, consumers-and to our planet."

Mother Parkers will begin packing roast and ground coffee in Boardio from its Fort Worth, Texas facility in late 2024.

Learn more at www.graphicpkg.com

SECTORS









PERSPECTIVE

PERSPECTIVE of NVC NETHERLANDS PACKAGING CENTRE on Draft IENW/BSK-2022/263822 by Ms. VLWA Heijnen MSc.



- 1. Introduction of association NVC and its position on packaging and environment
- 2. Analysis of packaging and environment over the period 2013-2022
- 3. Policy recommendations for the year 2023 and beyond





1. Introduction of NVC and its position on packaging and environment

Every second, the world packs some 320,000 products - and the world's population unpacks them later and in a different location. NVC was founded in 1953 and now unites over five hundred companies with an interest in continually improving packaging. The NVC membership includes retailers, packaging suppliers, machine suppliers, branded article manufacturers, pharmaceutical companies, companies in the chemical industry, packaging printers, co-packers, design agencies, recyclers, testing institutes, and so on.

NVC supports its member companies by providing them with up-to-date and reliable business information, by jointly carrying out innovation projects, by educating and training their employees in packaging and by 'matching' supply and demand in the market ('market support').

Specific to packaging and environment, these include the following activities:

- a. Inform member companies of global legislative and regulatory developments through the NVC Members-only Environment Regulations Guide MERGE
- b. The NVC Workshop Sustainable Innovation in Packaging (Live Online, so 100% interactive and participation possible from any location worldwide)
- c. The PUMA Project towards the end of packaging as an environmental problem (see the enclosed PUMA MANIFESTO and all background information at: www.nvc.nl/puma)
- d. Stimulating innovation in the sector by scouting new techniques and linking supply and demand through exhibitions, conferences and the NVC online Buyer's Guide

NVC works with a 'holistic' vision to improve the activity of packaging, obviously in the Netherlands but especially also on an international scale, given the structural developments in the actors involved in packaging, like the raw material suppliers, the packer-filler industry, the logistics and the retail.



NVC has played an active role in the development of European (CEN) standards in the field of packaging and packaging waste since 1994 resulting from the European Packaging and Packaging Waste Directive of December 1994. Thanks in part to NVC's initiative and its active role in the standards development itself, the world (ISO) standards in this area were published in 2012. Photo: the plenary meeting of the ISO working groups on 6 May 2011 in Atlanta USA at the Coca Cola headquarters.



The PUMA MANIFESTO has now been published in nine languages (Dutch, English, French, Italian, Korean, Japanese, Chinese, Spanish and Portuguese). The German-language edition will be published on Wednesday 3 May 2023 during the PUMA World Conference in Düsseldorf, Germany. From 4-10 May 2023, the world's largest packaging exhibition with more than 100,000 visitors will take place there: the interpack2023. NVC will promote the results of the PUMA World Conference there from a dedicated stand (ENB/03) at the Main Entrance North.

NVC is not a 'vertical' trade association, like, for example, FNLI (the umbrella organisation of the food industry in the Netherlands) or CBL (the trade association of Dutch supermarkets) or NRK (the federation of plastics and rubber manufacturers). As such, NVC's primary tasks are therefore not to 'lobby' the central government to promote specific industry interests. However, we do appreciate maintaining good contacts in this regard.

NVC communicates 'across the board' via NVC News and in the various social media. The NVC website attracts about sixty thousand unique visitors annually (about 60% of whom are based outside the Netherlands). Some thirty thousand professionals and organisations located worldwide follow NVC daily via social media, especially Twitter and LinkedIn.

NVC is worried about the state of affairs regarding packaging and the environment in the Netherlands and worldwide in 2022. The first European legislation on packaging and packaging waste dates back to December 1994(!) and we are now on the eve of the year 2023. In the meantime, a proposal for follow-up legislation was launched by the European Commission on 30 November 2022: the Packaging and Packaging Waste Regulation PPWR.

As a society and industry, we unfortunately have to conclude that the problems have clearly not been solved over the past 29 years. On the contrary, they seem to have actually gotten worse. Why is this? What can we learn from the past and how can we all do better in the future? How do we end packaging as an environmental problem? You can find this NVC basic position in our PERSPECTIVE on the Draft Decision of the Minister.

2. Analysis of packaging and environment over the period 2013-2022

The first significant European legislation on packaging and the environment dates from December 1994: the European Packaging and Packaging Waste Directive. At that time, the Netherlands already had the Packaging Covenant, with the actor on the industry side towards the central government being the Stichting Verpakking en Milieu SVM. There came a Second Covenant in the Netherlands, with SVM.PACT (Project Administration Covenant Two) as the implementing organisation, and the European Directive was transposed into Dutch law in the year 1997.

With the Extended Producer Responsibility EPR comes a financing system for collection and recycling. After an 'interwar period' in which the central government started levying a Packaging Tax, the Packaging Waste Fund Foundation StAV took office in the year 2013. In conjunction with - and paid for by - the StAV, several other foundations came into being, each of which started working in a subfield.

To be mentioned in this context is the Knowledge Institute for Sustainable Packaging Stichting KIDV. This organisation has the Stichting StAV as its only client, with the mutual performance agreement being confidential. Over time, the pricing for specific materials (plastics) by Stichting StAV has been linked to whether or not they comply with Recyclechecks to be drawn up by KIDV. The operational relationship between Stichting StAV and Stichting KIDV is characterised by intensive personal ties (the former Stichting KIDV director is now Stichting StAV director).

To address litter, the Stichting Nederland Schoon SNS was set up. Its funding was originally linked to the moderated introduction of deposit fees on specific types of emptied packaging. April 2022, the Stichting StAV presented a plan to collect a whole range of 'deposit-fee sensitive' emptied packs (bottles, cans) through a large number of 'circular hub' collection sites. The plan did not include a public cost budget and went off the table soon after presentation.

Now, after a legal joust and a three-month delay, deposit fees will be introduced across the full breadth of the relevant packaging spectrum on 1 April 2023. What are the costs going to be? The question also arises as to the usefulness of the continued existence of, or funding by, the Stichting StAV of the Stichting SNS.

Regarding the Stichting Nedvang, a different corporate form is envisaged for the coming years: a Private Limited Company (BV). This raises the question of the (future) ownership structure, including the financial allocation of any profits generated by this BV.

StAV's internal organisation comes up for discussion in a report by ILT Inspectorate¹ which audited the accounts for the year 2019. The report contains damning conclusions regarding the limited financial, accounting robustness of the organisation, including the remarkable way the auditor approved the StAV financial statements for the year in question. The question is, whether these criticisms have now been addressed and durably covered by the Stichting

The substantiation of the rates used by the StAV Foundation is also unclear, with sudden rate changes (/increases) of up to +1000% occurring in recent years². There are concerns about the unsatisfactory substantiation of the proposed rates and about the possibility that the Stichting StAV, after having been granted the General Binding Declaration (AVV) by the Minister, has a free hand for five years to implement substantial and unexpected rate increases.

The accountability of the Stichting StAV and the policy structure it funds is also negatively discussed in a recent study by the University of Utrecht³. It analyses for various product categories, including packaging, the extent to which collection and recycling takes place in a transparent manner, with an unambiguous allocation of the various responsibilities. The situation for the packaging sector is outlined as unfathomable.

Finally, there are questions about the data available to the Stichting StAV in the context of its levies. To what extent are the personal and business data of the Dutch industry paying the fees shared with the Stichting KIDV, the Stichting Nederland Schoon and Nedvang BV - and then through these entities with third parties engaged by them (consultancies, lawyers, self-employed professionals, and so on)?

All in all, major concerns have grown at NVC over the past decade about the effectiveness of the policy structure around the StAV Packaging Waste Fund Foundation as set up in the year 2013 and legitimised by the central government. The concerns focus on two questions:

- 1. What charges does the Stichting StAV want to charge, with what justification?
- 2. What environmental performance will be achieved by the Stichting StAV with these targeted levies?

Question 1 has increased in importance now that there is talk of a possible tripling of the envisaged levy per Dutch company, while this was denied in so many words by a representative of Stichting StAV in an NVC members' meeting in early 2022. The foundation's draft multi-year budget is insufficiently conclusive. The foundation does not commit to the level of tariffs for the coming years. What will be the costs (revenues) of the introduction of deposit fees as of 1 April 2023? The basic organisational system costs (at €12.5 million a year equivalent to a workforce of 100 FTEs and significantly increasing) also lack substantiation.





Question 2 is almost even more important, especially now that the definition of 'recycling' is changing. A look at the Model in the PUMA MANIFESTO makes this clear. In fact, the 2013-2022 period looked at the amount of Collect-Control and not at the amount of 'newly usable, circular' materials actually created via a material recycling Backend process. Also, it is fundamentally flawed to exclude energy aspects from Collect-Control and Backend processing.

Essential for sustainable decision-making is the elaboration of the Circular Materials Plan (CMP1) promised by the Minister to be published by mid-February 2023, including an analysis of the desired material flows in the context of the Circular Economy of the Netherlands.

The NVC Survey The future of the packaging recycling in the Netherlands certainly will take into account the insights of the CMP1. The results of the NVC Survey will be presented on 5 April 2023.

Finally, an analysis of the timeframe leading up to the Draft AVV decision over the past twelve months. In the spring of 2022, we communicated our concerns to the Stichting StAV and on 11 May 2022 we met with the management. We had constructive discussions with various industries, the policy department of the Ministry, the Inspectorate and several Members of Parliament.

A total of over hundred NVC member companies actively participated in one or more of the NVC member meetings on the topic. NVC attended the parliamentary debates of the

relevant Lower House parliamentary committee and actively shared the information with NVC member companies and the industry as a whole.

The Draft Decision with an intended entry into force of 1 January 2023, was published on 7 November 2022. Given the deadline for the submission of PERSPECTIVE by interested parties like NVC (six weeks, i.e. until 19 December 2022 at the latest) and the intended entry into force of 1 January 2023, the Minister has only a week and a half to make a decision. This is questionable for a dossier with an impact of at least €2 billion in costs for business and - in our view, much more importantly - with an obligation to future generations to now actually start making an end to packaging as an environmental problem in the Netherlands and worldwide.

Based on the above, one conclusion must unfortunately be that the policy structure in place since 2013 to manage packaging collection and recycling has serious shortcomings anno 2022. This entails significant risks for the Netherlands society, both in terms of costs in an economically turbulent period and in terms of (not) meeting environmental targets in a world where environmental issues rightly need to be addressed.

The decision-making on Draft Decision IENW/BSK-2022/263822 by Ms. VLWA Heijnen MSc., Minister for Infrastructure and Water Management, regarding a General Binding Declaration AVV of the levies by the StAV Waste Fund Foundation (Stichting Afvalfonds Verpakkingen) is a decisive benchmark in the context of the above.

3. Policy recommendations for the year 2023 and beyond

With regard to the Draft AVV Decree, we submit the following recommendations for the Minister's consideration. Of course, the Minister is free to adopt them entirely, partially or not at all. In all cases, we would appreciate receiving a motivation and will actively share them with our member companies and the sector as a whole.

- 1. Postpone your final Decision until 1 July 2023.
- 2. Include in your final Decision the insights from your CMP1 (to be published mid-February 2023) and ideally the results of the NVC Survey the future of the packaging recycling in the Netherlands 2023-2027 (results known 5 April 2023).
- 3. As a condition for a final Decision, ask the Stichting StAV for an analysis addressing the years 2023-2027 of the budgeted costs in relation to the environmental results. This analysis should also include the impact of the various Stichting KIDV recycling checks on costs and environmental results to be achieved.
- 4. In your final Decision, require the Stichting StAV to pre-determine rates for all years covered by the AVV.
- 5. As part of your final Decision, request disclosure of the performance agreement between Stichting StAV and Stichting KIDV including the annual reviews for the past years 2013-2022.
- 6. Engage Parliament prior to your final Decision, especially in the run-up to the public meeting of the Parliamentary Committee on lenW in the spring of 2023.



Gouda, 14 December 2022

NVC NETHERLANDS PACKAGING CENTRE

Stationsplein 9k, 2801 AK Gouda, The Netherlands ♣ +31-(0)182-512411

info@nvc.nl Sharing the future in packaging www.nvc.nl





AVANT-GARDE:

The leading projects of the Packaging Première and PCD Milan initiative for the most innovative packaging of the year revealed



ackaging Première and PCD Milan have unveiled the projects that make the next edition of Avant Garde unique, an initiative highly charged with innovation that actively involves exhibitors, design and branding agencies, material producers, luxury packaging suppliers, and startups in the creation and realization of innovative products in terms of packaging design, sustainability, or materials.

Divided into three categories - innovative materials, sustainability in the production chain and in the realization of the proposal, and innovative design for aesthetics, design, and functionality for the brand and the consumer - the projects were evaluated by a highly qualified jury composed of industry experts: Anna Pellizzari (Head of Advisory at Materially) and Giusy Bettoni (CEO and Founder of C.L.A.S.S. - Creativity Lifestyle And Sustainable Synergy) for the innovative materials category; Federica Brumen (Sustainability, eco-design and corporate relations expert, Research and Development area at Comieco), Irene Ivoi (Designer/Consultant at CONAI) and Massimo





SECTORS

✓ LUXURY✓ COSMETICS











- SMUSH Materials with the new circular and natural material made from fermented organic agricultural waste through mushroom mycelium.
- Sulapac Solid with an innovative injection molding material, completely biobased, that resembles the appearance, tactile and sound sensation of ceramics.
- SLEEVER® with the innovative LDPET® low-density sleeve-label characterized by a striking holographic effect, selected by the L'Oréal Group for the launch of its ELVIVE PRO BOND REPAIR SHAMPOO.
- Fedrigoni with FUTURA, a project born from the collaboration between Fedrigoni Special Papers and Albini_next from which comes the Fedrigoni denim effect paper made with fabric waste and allows for reducing the amount of virgin cellulose in production, recovering textile by-products destined for disposal.

The winning project is Esacote® BIO BC 100 by Lamberti; Special Mention for the extraordinary technology to Qwarzo®.

The sustainability category is represented by:

• CM Cartotecnica Moderna and Icma Sartorial Paper

Ramunni (Secretary of Aticelca) for the sustainability category; Fabio Pastore (Graphic Design Manager at Arcturus Group), Tommaso Pecchioli (Art Director, Owner and Founder of Officina Grafica), Vincenzo Maccarrone (Art Director, Owner and Founding Partner of Officina Grafica) and Elena Ornaghi (Creative Coordinator at Vera Lab) for the design category.

All projects will be exhibited at Packaging Première & PCD Milan 2024 in the AvantGarde area. The winners of the three categories will be awarded on Thursday, May 23, at 11:00 AM in the conference room of Packaging Première & PCD Milan.

The innovative materials category is represented by:

- Lamberti with Esacote® BIO BC 100, a 100% biobased coating obtained from tomato peels through an innovative patented process, offering excellent water, fat, and oil barrier properties, respecting the principles of sustainability and circularity.
- Qwarzo®, with its invisible mineral-based (silica) coating that enhances the performance of the material it coats, particularly paper, creating a barrier without compromising its recyclability or compostability, offering a pure and unprecedented sensory experience.
- Revation with ARLT (acronym for All Road Lead To), ecological products made entirely of paper like Paper Cleaner, an innovative lint remover that replaces the previous plastic body with a perfect paper mold implementation.











with Rinascimento, a 100% recycled paper produced in a circular economy using the waste generated by CM Cartotecnica Moderna.

- Koehler Paper SE with the pouch made for Loacker's Best of Moments product in FSC® certified Kraft paper with an inner heat-sealable coating.
- **Legoplast**, with the new sustainable line of bags and pouches Eva Green, an innovative sustainable material of Italian production obtained from sugarcane.
- Mainetti with Blue Dust, which recycles old pre-consumer jeans or manufacturing scraps transformed into flock powder to give them a second life inside boxes, backpack-shoppers, labels, and tags.
- Nissha with Pulp-Injection, a new injection molding technology developed using pulp and starch instead of plastic and a new cosmetic pot in biobased and compostable Sulapac^{®®} material.
- Scatolificio Girola with SELENE, an eco-friendly display made of overlapping micro-wave layers, with low environmental impact, recycled and recyclable.
- IDP Direct with Eco Logico, a mono-material packaging, 100% recyclable, designed for retail and e-commerce.

The winning project is Rinascimento by: CM Cartotecnica Moderna and Icma Sartorial Paper.

The design category is represented by:

- Revation in collaboration with UNGSAM developed Ungsam Vital Ginseng Packaging, which redefined the traditional approach to ginseng packaging, making it unique with a majestic representation of the mountains and the sleeve design that captures the essence of the highly concentrated ginseng flavor.
- Revation in collaboration with NOSTALGIA, a premium Hanok hotel brand located in the center of Seoul, with eco-friendly packaging for makgeolli, a Korean alcoholic beverage.
- Pozzoli with the paper and cardboard reproduction of the iconic Devotion Bag by Dolce & Gabbana to create a unique "gift pack" for D&G cosmetics and perfumes.
- Co&In with Crafted to disappear, a box entirely in mono-material, with colored corrugated and a tag made of soluble paper, printed with soy-based ink, embossed relief, and woven paper tape.
- Dongguan Mingfeng Packaging with Panda-Inspired Gift Packaging, an egg-shaped container with creative elements reminiscent of pandas. The main body is made with biodegradable materials.
- Advision with the label for Luna Park by Corte Moschina, with an eccentric and playful soul, to accompany the consumer in a whirlwind of sensations and Lume Spin, a simple game, a hand-painted spin-

ning top that becomes the perfect pretext to narrate human creativity and its unique ability to break the mold.

- J Point Plus with Zip-Up, boxes made with special papers and zipper opening, combined with V-cut technology, characterized by perfect angles, magnetic neck, and custom internal padding.
- Corvasce Savino with an iconic packaging that conveys the love for environmental sustainability translated into the language of design.
- All4Labels with Motherland, concept labels that embody a premium design, with refined motifs, different textures, innovative printing techniques, and precious details using certified papers, sustainable decorations, and recyclable elements.
- Cerve with the pressed glass bottle of the highest quality with an extraordinary refractive index, detailed engraving on the bottom of the wind rose, black ceramic decoration, made for Dior Prestige Le Nectar Rechargeable.
- James Cropper in collaboration with the Scottish single malt whisky brand Bruichladdich and the design agency Thirst from Glasgow with Luxury Redefined, a completely sustainable and plastic-free outer wrapper, made with colored films, the first of their kind in the whisky sector.

The winning project is **Ungsam Vital Ginseng Packaging by Revation** in collaboration with UNGSAM.











ARTIFICIAL INTELLIGENCE IMPROVES RECYCLING

he circular economy is an important tool on the path to making "Green Europe" a reality. This means that any resources utilised must be kept in circulation as much as possible. Especially in the case of packaging, which accounts for the largest part of plastic waste, only a small part of the material is actually circulated. Usually, this failure is due to technical and economic challenges. The possibilities of artificial intelligence (AI), which is currently developing at a lightning pace, can contribute to a functional circular economy. **Today, AI technology is already being used** to decrease heaps of waste and improve recycling processes.

The application areas for Al within recycling and the circular economy are broad. While the waste is being sorted, intelligent systems with cameras and sensors can already detect **which materials are currently being conveyed on the sorting belts**. They cannot just distinguish plastic, paper and metal, but also different kinds of plastics which are then automatically sorted into the right flows. Apart from sorting waste, **Al can also monitor the energy consumption of recycling plants**, check the quality of recyclates or

increase plant efficiency through predictive maintenance. Last summer, Remondis Recycling and RE Plano put a new sorting plant into operation in Bochum, the first in Europe where **AI technology can sort up to six different colours** for optimum preparation of incoming material. This enables Remondis to produce a recyclate without any deviations in colour or material, which is then further processed by the plastics processing industry.

The incoming material in the Bochum plant is sorted by material and colour. The sorting plant can process PE-HD, polypropylene and PET packaging from sorting light packaging materials in particular, but also plastics from sorting commercial waste. This colour and material sorting is unique in Europe and **works using multi-phase photo sensor recognition** which allows the incoming material to be sorted according to its properties and, for example, distinguishes between mono-layer and composite packaging.

With cutting-edge AI technology, the sorting plant in Bochum is the first to be able to sort up to six different colours.











Innovative sorting technology through deep learning

Recycling specialist Tomra has now introduced a sorting technology based on deep learning. It uses artificial intelligence to sort PET, PP and HDPE flows according to **whether they have had contact with food or not**. This technology, called GAINnext, is available as an optional add-on to the company's multifunctional sorting system Autosort, and is intended to further improve the performance of sensor-based sorting systems.

Until now, the sorting of food-grade plastics has been a challenge for the recycling industry, as packaging for food and non-food often is made of the same or very similar material. Conventional sorting systems therefore have a difficult time distinguishing and sorting the packaging.

The sorting system Autosort with GAINnext combines object identification with traditional sensor-based sorting.

With the GAINnext technology by Tomra, Autosort systems can now also identify materials which conventional optic waste sensors can only classify with difficulty or in some cases not at all. By **combining near-infrared, visual spectrometry and other sensors with deep learning technology**, the company claims to have now developed the most accurate solution on the market. It is said to already reach a degree of purity of more than 95% for packaging applications in factories in the United Kingdom and Europe.

Tomra has also developed **two non-food applications** which supplement the company's existing GAINnext ecosystem: one application for de-inking paper for clean paper flows and a PET application for single-material PET bottle flows with an even higher degree of purity.

"We are convinced that the most recent AI developments have what it takes to re-define the recovery of raw materials as we know it. Thanks to the clever use of deep learning, GAINnext has made sorting food-contact materials and bottle-to-bottle qualities possible – these are tasks which have posed great challenges to our industry for many years. AI is thus driving the circular economy forward at a point in time where it is most needed: Regulations are becoming more strict and customers are increasingly demanding technologically superior solutions."

Dr. Volker Rehrmann, Executive Vice President and Head of Tomra Recycling

Solving complex sorting tasks

"The use of deep learning technology not only automates manual sorting, but also allows the industry to gain high-quality recyclates through extremely fine sorting", explains Indrajeed Prasad, Product Manager Deep Learning at Tomra Recycling. "Thanks to its ability to recognise **thousands of objects within milliseconds by their material and shape**, GAINnext solves even complex sorting tasks. Deep learning software also offers the possibility to easily adapt to future market requirements."

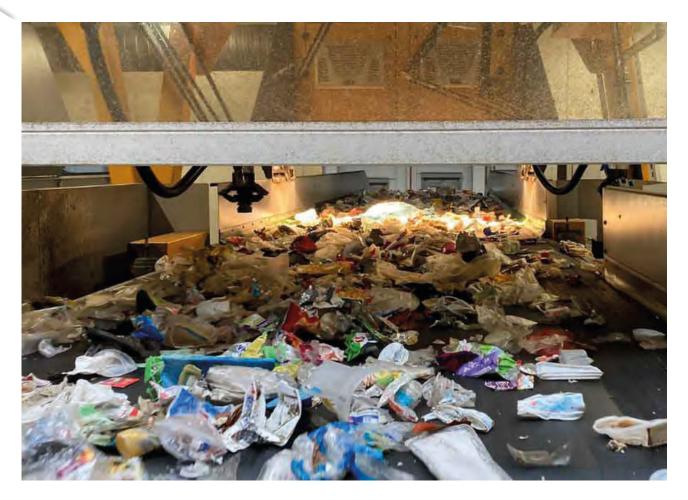












Among the first customers for the new applications are plants like that of Berry Circular Polymers in Leamington Spa, Viridor Avonmouth in Bristol, which is the largest multi-polymer plant in the United Kingdom, and the French Nord Pal Plast plant in Lesquin, which belongs to the globally active Dentis group.

Tomra is currently strengthening its position in the Al sector, also through its ownership of 25 percent of the start-up PolyPerception. The young company offers **Al-based monitoring of waste streams** and is said to be one of the most innovative start-ups in the sorting and recycling landscape. Tomra wants to use this alliance to broaden its portfolio – including sorting systems, a cloud-based data platform and an innovative solution for analysing materials.

The solution by PolyPerception measures data at key points in the sorting process. Operators of sorting plants can thus continuously monitor the quality of sorted flows and any losses of the desired material in the rest flow and make decisions based on qualitative data. In addition, the analysis method acts as a kind of automat-

ed compliance system to ensure that regulations for recycling food and local legal requirements are adhered to. As legal regulations are becoming more and more strict, PolyPerception hopes to see continued rising demand for its transformative technology.

The Bremen start-up WasteAnt wants to turn waste into a more valuable resource using Al-based waste quality management and thereby optimise waste flows. The start-up's Al technology continuously analyses and quantifies incoming material flows and thus **can recognise disruptive materials**, retrace steps along the added value chain and ensure that the plant runs more efficiently. Continuous checking of the material flow provides information about the quality of the waste shipment. The aim is to **recognise unusable waste at or even before delivery** and to reroute it accordingly to different plants. In 2023, the young company received the Bremer Gründerpreis award for founders for its Al-based technology for the better use of waste material.

www.tomra.com









ROBOTIC PACKAGING: ANALYSIS OF AUTOMATION'S TRANSFORMATIVE IMPACT ON PACKAGING

he rapid technology advancements in robotic technology have revolved the packaging industry in recent years. As manufacturers seek major market share and competitive advantages by boosting efficacy and cost reduction, robotic systems emerged as a game-changer solution. Robotic packaging actively offering a wide range of benefits that are reforming product quality and packaging standards.

Why robot packaging?

Precision and repeatability:

Compared to the traditional process, robotic packaging is gaining popularity among manufacturers by providing repeatability and precision. Robotic packaging is programmed to perform the packaging task with accuracy and consistency. By using computer vision and sensors, robotic arms can help manufacturers with a level of accuracy that far exceeds human capabilities. Also, robotic packaging can minimize manual inspection and rework continuing the packaging workflow.

Increased speed and throughput:

The robotic packaging offers impressively greater speed and throughput than manual labor. Robotic arms can work 24/7 with minimal downtime with more significant dexterity than humans.

The lower production cost and faster work capabilities make it the ideal choice for the packaging industry.

Improved Safety:

The workplace safety is a major concern in the packaging industry, where workers are often exposed to repetitive motions and heavy lifting with sometimes hazardous equipment. Robotic packaging eventually provides safety by removing human operators from the most risky tasks. Robotic arms are designed to handle heavy loads and operate in hazardous areas without taking the risk of human injuries. Thus, robotics are significantly reducing costs which are associated with worker's compensation and regulatory compliance.











Flexibility and adaptability:

The inherent flexibility and adaptability are contributing to the growth of acceptance of robotics in packaging. Robotic systems can be programmed and reprogrammed like dedicated packaging equipment by handling a wide variety of products with sizes and packaging configurations. This type of versatility allows manufacturers to respond to changing consumer preferences and trends.

What are the trends in Robotic Packaging?

As packaging lines become more complex and diverse, robots are being designed to handle a broader range of tasks, such as picking, packing, sorting, labeling, and palletizing. This trend is especially prevalent in the food and beverage industry, where robots are being used to handle delicate and perishable products with greater speed, safety, and hygiene. Adoption of collaborative robots. Cobots are designed to be easy to program, operate, and maintain, and can perform a wide range of tasks, such as picking and placing, assembly, and inspection. They are particularly useful in small and medium-sized enterprises (SMEs) that require flexible and affordable automation solutions.

Increasing use of robots in e-commerce and logistics, where they are used to handle the high volumes of packages and parcels that are processed every day. Robots are being used to sort, pack, and transport packages, as well as to perform last-mile delivery tasks, such as loading and unloading trucks and vans. This trend is expected to accelerate as e-commerce continues to grow and consumers demand faster and more efficient delivery options.

Focus on sustainability and environmental responsibility. Robots are being designed to reduce waste, energy consumption, and emissions, as well as to optimize the use of resources such as water and materials. For example, robots can be used to pack products more efficiently, reducing the amount of packaging material required, or to recycle or repurpose waste materials. This trend is driven by increasing consumer awareness and demand for sustainable products and practices.

Introduction of AI in the packaging industry:

"The fusion of AI and robotics into protective packaging systems connotes an innovational step toward smarter, more resilient, and eco-friendly operations, requiring investments in smart machineries and technologies." – Says Ismail Sutaria, Chief Packaging Analyst.

The packaging industry is evolving with the technological revolution, as artificial intelligence emerges as a needy and powerful innovation and transformation. The advancement in areas such as language processing, computer vision, and reinforcement learning will enable even more sophisticated automation, predictive maintenance, and supply chain optimization.

A quick look at our latest report on Al in packaging

The global Al in packaging market is estimated to be worth US\$ 1,790.8 million in 2024. The artificial intelligence (Al) in packaging market is expected to reach US\$ 23,415.2 million by 2034. It is projected to surge at a CAGR of 29.3% in the forecast period 2024 to 2034. The packaging sector is undergoing significant innovation through partnerships between companies, technology providers, research institutes, and government agencies, focusing on creating integrated solutions, conducting research, exchanging best practices, and resolving regulatory issues in various countries.

What is the future of robotic packaging?

The future of the packaging industry is associated with Al technology by transforming the industry into a more agile, customer-faced, and efficient. As manufacturers embrace the transformative potential of artificial intelligence, the packaging sector is poised to reach new heights of excellence and competitiveness.

Final Thoughts

Robotic packaging has become a game-changer solution for the packaging industry, offering a wide range of benefits such as precision, repeatability, speed, safety, and flexibility. Robotic systems have vastly improved the packaging workflow, increasing efficiency and reducing costs for manufacturers. Additionally, the introduction of AI has further transformed the industry, offering even more sophisticated automation and optimization.

Some recent developments in the packaging industry

In 2021, BEUMER Group was contracted by Helthjem, a Norwegian CEP (Courier, Express, and Parcel) provider, to automate its parcel sorting and distribution process. This partnership is aimed at enhancing the efficiency of Helthjem's operations and enabling it to deliver a better customer experience. By leveraging BEUMER Group's advanced sorting technology, Helthjem intends to streamline its parcel handling process, reducing processing times and boosting productivity.

In 2022, Maxpack Machinery LLC has recently launched a revolutionary piece of packing equipment called Leap by Max pack, which is designed to meet the demands of the fast-growing Buy Now, Pay Later market. Leap is a state-of-the-art automation equipment that enables customers to pay for their purchase over time. This innovative technology is offered as premium bundles with 18 interest-free, guaranteed, and credit-free monthly installments. This makes it easier for customers to invest in this equipment without having to worry about the upfront costs, thereby increasing accessibility to businesses of all sizes.

www.futuremarketinsights.com









ZERO-WASTE PACKAGING: PERSPECTIVE ON REDEFINING PACKAGING DESIGN FOR CIRCULAR ECONOMY

ustainability is the backdrop to facilitate and accelerate the advancements in circular economy. Material decarbonization will spice up the consumer's requirements and laterally aid in the betterment of the environment. World around us has an environmentally conscious consumer base, prompting demand for zero-waste packaging. Businesses are reimagining packaging design from biodegradable materials to reusable containers to minimize waste and promote sustainability. The connotation of a green world is a growing circular economy where people reuse resources efficiently rather than dispose.



Let's pen up who made it happen and how. The global packaging industry produces 141 million tons of plastic packaging annually. This is about 40% of all plastic waste. This number has doubled since 2000 to 2019, reaching 353 million tons. This has accelerated and curated the need for building lower carbon products resulting in saving the greens.



by Ismail Sutaria

What is the impact of Zero-Waste Packaging on the packaging industry?

The packaging industry has caught a significant increase in consumption, resulting in a surge of waste and carbon emissions. This has propelled both businesses and consumers to seek eco-friendly alternatives to minimize the industry's impact on the environment. As a result, manufacturers are striving to make their primary and secondary product packaging free from single-use plastic (SUP) and incorporating recycled cardboard. It also involves embedding carbon reduction







strategies into every business process, including procurement, product design, and go-to-market. Companies across varied sectors, from food and beverage to personal care and fashion, are addressing innovative ways to reduce their environmental footprint through packaging redesign. One notable example is *Loop*, a global shopping platform that partners with major brands to offer products in durable, reusable containers. Customers receive orders in specially designed packaging, which they return for cleaning and refill, thus eliminating single-use packaging waste.

Boons and Banes of Zero-Waste Packaging

Holding promises, Zero-Waste Packaging presents challenges for businesses. Material choice, product protection, and consumer convenience are all considerations that hold a tough job for designing packaging to be sustainable and functional. Transitioning to zero-waste packaging may entail upfront costs and operational changes for companies. Still, we can also count down on the long-term benefits, including reduced environmental impact, enhanced brand reputation, and potential cost savings.

Inventing New Trends and Innovations

Trends running throughout are increasing surge for alternative materials such as compostable plastics, plant-based fibers, and mushroom-based packaging. These materials offer biodegradability and lower environmental impact compared to traditional plastics. Clean air technology and renewable energy innovations are central to the zero waste movement. Developments in sustainable materials like recyclable resins and compostable packaging are also reshaping the approach to waste.

Another trend is the rise of package-free stores and refill stations. Here, customers can purchase products in bulk or bring their own containers for refilling. This practice not only lowers the pile of waste but also promotes a more mindful approach to consumption. Taking more trends like advances in design technology. 3D printing and digital prototyping, are enabling companies to create innovative packaging solutions that are both eco-friendly and aesthetically pleasing.

Partnering Future Perspective

"Adopting zero-waste packaging presents a metamorphic opportunity for businesses, promising cost savings, heightened brand reputation, and sustained customer loyalty, shaping the future of sustainable packaging practices" – Says Ismail Sutaria, Chief Packaging Analyst.

Adopting Zero-Waste Packaging is shaking hands with a resourceful and green environment. This is what is going to make you have a better future. Governments, businesses, and consumers alike are increasingly recognizing the urgency of addressing plastic pollution and other environmental challenges. Manufacturers, companies, and humans are building a more resilient and regenerative economy that benefits both people and the planet. This will not only put bangs for bucks but will draw a future with enough oxygen to breathe.



Different packaging industries are striving to implement the concept of sustainable packaging practices to minimize their impact on the planet. For instance, the food and beverage industry is exploring using biodegradable and compostable materials for packaging their products. In the same way, cosmetic sectors are moving towards refillable and reusable packaging options to lower carbon footprints. Then comes the e-commerce industry. They are adopting innovative delivery packaging solutions that are eco-friendly and cost-effective. For example, Amazon has created the idea of the Ships In Product Packaging (SIPP) program. Here, they let the items to the original manufacturer's packaging itself without additional Amazon packaging. This allows them to avoid unnecessary packaging altogether and reduce the weight of deliveries. Amazon also encourages selling partners and vendors to re-engineer packaging to meet SIPP standards. This flow demonstrates the efforts of varied packaging industries to design and embrace the trend of sustainable packaging practices that support a circular economy. Another example of Human staking sustainability as a habit was the foundation of the Chakra Sutra Organization. Himesh Fernando, founder and CEO of Chakra Suthra, aims to combat packaging waste in Sri Lanka by promoting zero-waste practices for homes and businesses. Inspired by his scientific background and experiences working in biotech and sustainable business models. Fernando established Chakra Suthra in 2020. The company's name, derived from Sanskrit, reflects its mission of providing circular solutions to waste management.

According to FMI, https://www.futuremarketinsights.com/reports/zero-waste-packaging-market,the global zero-waste packaging market value reached US\$ 984.9 million in the base year (2022). The top 3 countries are likely to hold around 35 to 40% of the global zero-waste packaging market share in 2023. The ultimate goal of sustainable packaging is zero waste. Ellen MacArthur Foundation discovered that only 14% of the plastic packaging used is recycled, with the remaining 40% ending up in landfills and the remaining 32% in ecosystems (the remaining 14% is used for energy recovery or incineration).

Finishing Lines

Owning the planet filled with all its resources, the spur for making it all green craves the topic of Zero-Waste Packaging. Packaging is the most detailed framework of a product; it not only holds the product but also defines the overall brand value and tampered effects that consumers always opt for. With increasing awareness and a nascent need to save the planet comes the prioritization of sustainable packaging goods. While challenges remain, recent trends and developments indicate a growing momentum towards embracing zero-waste principles across industries. Zero-waste packaging represents a paradigm shift in the way we think about packaging design. Together, embracing the journey towards zero waste and building a planet where packaging not only acts as a protective barrier but serves as a preserver for our planet for coming generations.





PROSWEETS

28-31/01/2024 n

Fair for the sweets and snacks industry.

FRUIT LOGISTICA

07-09/02/2024 m BERLIN

Fair for fruit and vegetables.

BEER&FOOD ATTRACTION

18-20/02/2024 **n** RIMINI

Fair for beers, drinks, food and trends.

MECSPE

06-08/03/2024 **n** BOLOGNA

Fair for the manufacturing industry.

PROWEIN

10-12/03/2024 m DUSSELDORF

International wine & spirits exhibition.

ANUGA FOODTEC

19-22/03/2024 ncologne

Fair on food and beverage technology.

VINITALY

04-08/04/2024 m VERONA

International wine & spirits exhibition.

LATINPACK

16-18/04/2024 **n** SANTIAGO CHILE

International packaging trade fair.

HISPACK

07-10/05/2024 m BARCELLONA

Technology fair for packaging.

CIBUS

07-10/05/2024 n

Fair of food product.

MACFRUT

08-10/05/2024 n

Fair of machinery and equipment for the fruit and vegetable processing.

SPS/IPC/DRIVES/ITALIA

28-30/05/2024 m

Fair for industrial automation sector.

FISPAL

18-21/06/2024 n SÃO PAULO

Fair for product from packaging.

FACHPACK

24-26/09/2024 🏛

NUREMBERG

International packaging trade fair.

MCTER expo

16-17/10/24

VERONA

Exhibition on energy efficiency.

MIDDLE EAST 2024/25

GULFOOD

19-23/02/2024 in

Fair for food and hospitality.

DJAZAGRO

22-25/04/2024

ALGERI

Fair for companies of the agro-food sector.

PROPACK ASIA

12-15/06/2024

BANGKOK

Fair for packaging, bakery, pastry.

IRAN FOOD+BEV TEC

16-19/06/2024 🏛

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Fair for food, beverage&packaging technology.

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05-07/11/2024 🏛

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Fair of hospitality.

HOSPITALITY QATAR

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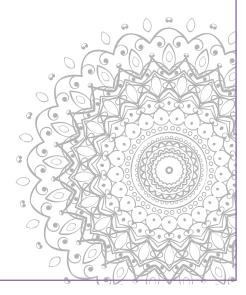
DOHA

Fair of Hospitality and HORECA.

GULFOOD MANUFACTURING

05-07/11/2024 m DUBAI

Fair for packaging and plants.



SIAL

19-23/10/2024 m PARIS

Fair on food products.

SUDBACK

26-29/10/2024 STUTTGART

Fair for bakery and confectionery.

ALL4PACK

04-07/11/2024 m PARIS

Exhibition about packaging technology.

SIME

12-15/11/2024 **n** MILAN

Fair for vine-growing, wine-producing and bottling industry.

BRAU BEVIALE

26-28/11/2024 nuremberg

Fair of production of beer and soft drinks.

TUTTOFOOD

05-08/05/2025 **m** MILAN

Fair B2B show to food & beverage.

INTERPACK

07-13/05/2025 m DUSSELDORF

Technology focused on packaging, bakery, pastry technology.

IBA

18-22/05/2025 m MONACO

Fair for the bakery and confectionery industry.

IPACK-IMA

27-30/05/2025 m MILAN

Exhibition about food and non-food processing and packaging.

DRINKTEC

15-19/09/2025 **m**

Fair for the beverage, liquid food industry.

POWTECH

23-25/09/2025 nuremberg

The trade fair for powder processing.

HOST

17-21/10/2025 m MILAN

Fair for bakery production and for the hospitality.

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2026 🛍

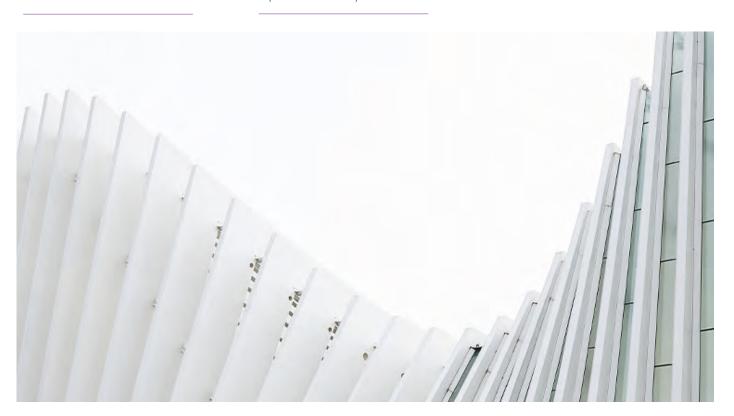
VERONA

Fair for automation, instrumentation, sensors.

CIBUS TEC

27-30/10/2026 n

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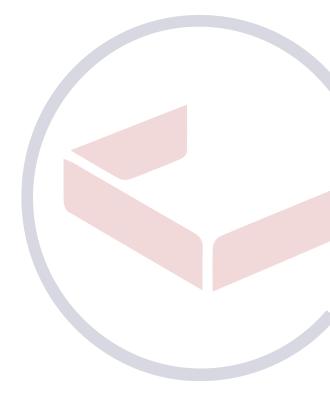
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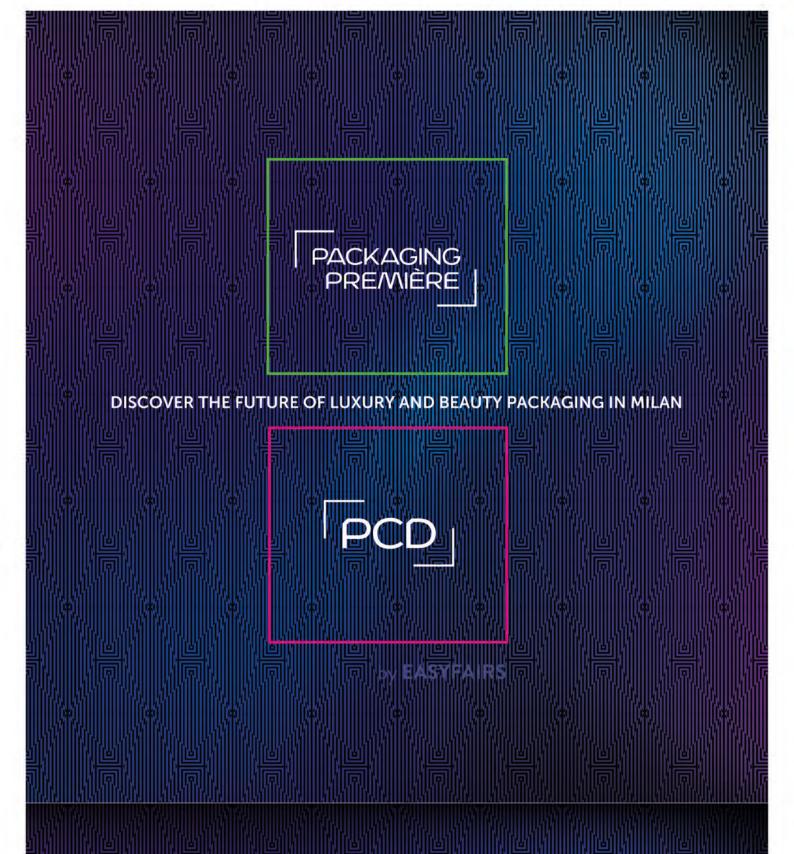
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