JANUARY/FEBRUARY 2026 ISSN 2053-7190

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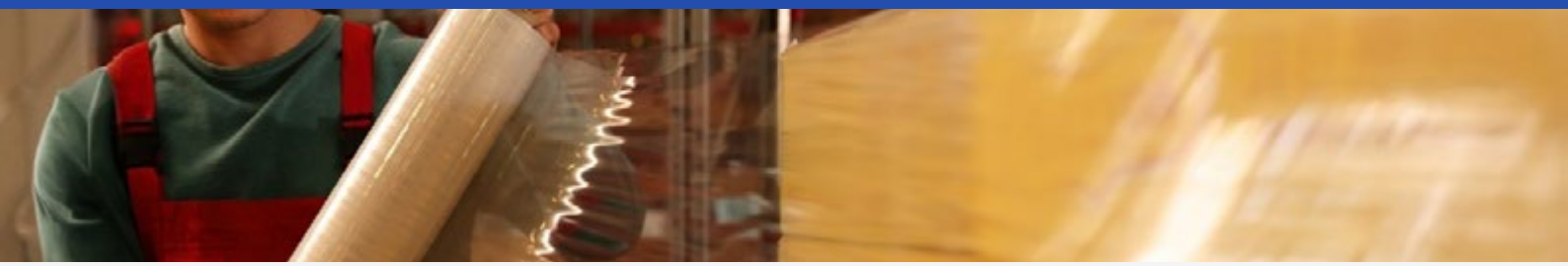

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Brueckner acquires Hennecke

Brueckner has expanded by acquiring polyurethane machinery specialist Hennecke.

The move adds another 650 employees to Brueckner's existing 2,700 in 12 countries and more than €150 million to its annual sales of over €1.2 billion.

"The acquisition of a leading PUR specialist – with more than 2,600 machines in use around the world by another German machine manufacturer – is a signal that we want to send," said Axel Von Wiedersperg, CEO of Brueckner.

"The acquisition reflects our global, industrial entrepreneurship and our long-term prospects as a German family business," he added.

› **www.brueckner.com**

Suedpack breaks ground at new German plant

Suedpack has broken ground on a new German production facility that is expected to be operational towards the end of next year.

The new plant in Erolzheim will expand production of the company's PharmaGuard blister packaging and will also include a unit to re-granulate production-related plastic waste. PharmaGuard is based on a PP mono-material that is easier to recycle than conventional packaging.

In the first phase of expansion, an existing hall will be converted to house an ISO 7-certified cleanroom that will enable GMP-compliant production and accommodate a new extrusion line and slitting machine.

Construction should be finished by June 2026, with installation of the production equipment to follow. Commissioning and start-up are scheduled for Q3 2027.



IMAGE: SUEDPACK

At the same time, Suedpack has sold its US operations to North American flexible packaging manufacturer PPC Flex.

The acquisition gives PPC Flex enhanced production capabilities in flexographic printing and conversion, as well as cold seal technology.

PPC said the acquisition would give it new flexible packaging solutions, more technical solutions – including cold seal technology – and the chance to offer shorter lead time.

"This acquisition brings us expanded technical capabilities and capacity that will allow us to deliver even more innovative and sustainable solutions," said Kevin Keneally, CEO of PPE Flex.

› **www.suedpack.com**
› **https://ppcflex.com**

Euromap advocates more open markets

Market uncertainty has depressed demand for European plastics and rubber machinery over the last two years, said industry body Euromap during an event at K2025.

This uncertainty made buyers reluctant to invest, it said. In 2025, Euromap had expected demand to recover – especially from the US – but the introduction of tariffs undermined this. However, it believes demand from the US "will pick up in phases".

"Our sector is inherently global with tightly connected international supply chains," said Alessandro Grassi, vice president of Euromap.

"This is not so much about the levels of import or export shares. This reflects a global division of labour that benefits all participants."

He pointed out that the plastics industry depends on open markets – in terms of fair competition, a level playing field and the setting of international standards "to facilitate global cooperation and innovation".

These standards – increasingly based on digital frameworkds – enable machines to "speak the same language" so that data can be used more efficiently, which can help to lower costs. For instance, OPC UA has been established as a "common language" and a durable data model – allowing 'plug-and-produce' integration, trustworthy sustainability data, and long-term compatibility.

Tobias Baur, president of Euromap, added: "Our customers' benefits are apparent to users and customers: less complexity, fewer interfaces and quicker setup."

He said digitalisation helps teams can solve problems more quickly and reduce downtime on lines – while planning tools can align production with energy availability and cost.

› **www.euromap.org**

Private equity firm acquires ePac

US-based ePac Flexible Packaging, a producer of digitally printed flexible packaging, has been acquired by private equity firm Butterfly Equity.

Butterfly has bought ePac from its investor consortium, which includes Amcor and Indevco North America.

"Over the past decade, we have redefined the packaging model by putting the most advanced technology in the hands of the world's most innovative brands," said Virag Patel, CEO of ePac.

The existing leadership team, led Patel, will continue to operate ePac and has retained a significant share in the business.

Founded in 2016, ePac specialises in flexible packaging for fast-growing consumer-packaged goods (CPG) customers using its ePacOne technology platform. It operates 14 facilities across the US and Canada – and is making "significant upgrades" at four European facilities.

At its Lyon site in France, it has expanded the manufacturing footprint, added a new warehouse and installed an HP Indigo 200K digital press and Totani pouch converting line. In Austria, it is scaling up its Innsbruck plant to accelerate digital print output and pouch production. Planned investments include an HP Indigo 200K digital press and multiple Totani pouch converting lines.

In the UK, ePac's Silverstone operation is expanding its converting output by adding a new Totani pouch line. Increased headcount will also support higher throughput. And in Poland, it is adding lamination and converting capabilities to support customers in Central and Eastern Europe.

John Peat, group vice president of operations at ePac, said: "By expanding operations and deploying the latest digital technologies, we're ensuring our sites across Europe continue to operate with speed, efficiency and reliability."

› **https://epacflexibles.com**

Soteria Flexibles expands with acquisition of Canada's Imaflex

US flexpack specialist Soteria Flexibles is to acquire Imaflex, a Canada-based manufacturer of films and flexible packaging.

Soteria will acquire all Imaflex share for around C$123 million. On completion of the deal, Imaflex will become a privately held company.

The acquisition is expected to close in the first quarter of 2026, subject to customary closing conditions including applicable regulatory and shareholder approvals.

"This transaction is a natural fit for us," said Brad Herbolsheimer, CEO of Soteria. "Imaflex brings deep technical expertise, strong customer relationships, and a capable team that aligns closely with our culture."

Imaflex produces polyethylene films and packaging for markets including industrial, agriculture and food and has manufacturing in both Canada and the US.

Herbolsheimer added that the combination expands the company's North American footprint and adds to the speed, reliability and technical quality of its offering.

Stephan Yazedjian, president and CEO of Imaflex, added: "In a highly fragmented industry, this transaction represents a natural consolidation."

› **www.soteriaflexibles.com**

› **www.imaflex.com**

Tekni shuts a US plant

US-based medical and packaging company Tekni-Plex is to close its facility in Milwaukee.

The move will affect 39 workers according to a report in the *Milwaukee Journal Sentinel*.

Tekni-Plex plans to close the facility on 30 April and employees will begin leaving on 27 March, said the report.

› **www.tekni-plex.com**

Cosmo and Filmax form JV for film sales

Cosmo First of India has entered a joint venture with South Korea's Filmax.

The jointly owned company will introduce and scale multiple business verticals of Cosmo First into South Korean while taking Filmax products into the global market via Cosmo.

"By joining hands with Filmax, we merge global innovation with South Korean excellence," said Ashok Jaipuria, chairman of Cosmo First.

Cosmo's interests include a films division (offering BOPP, CPP and polyester film) and its Plastech division (thin wall containers and sheets). Filmax is a flexible packaging manufacturer that offers products including BOPP, CPP and stretch film.

Byung Ik Woo, chairman of Filmax, added: "This partnership is a major step towards taking our expertise to the global stage."

› **www.cosmofirst.com**

› **www.filmax.co.kr**

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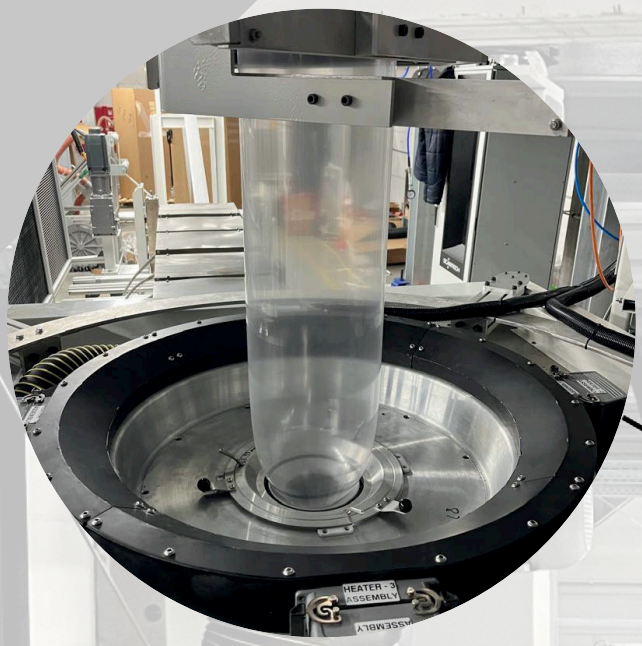

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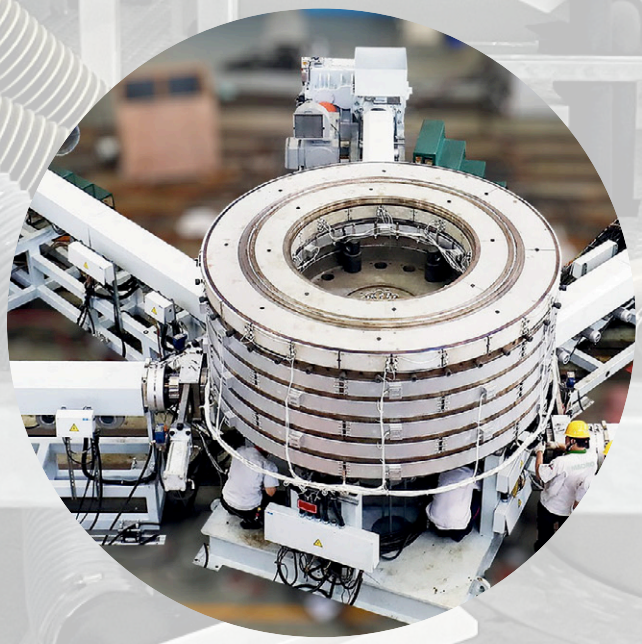

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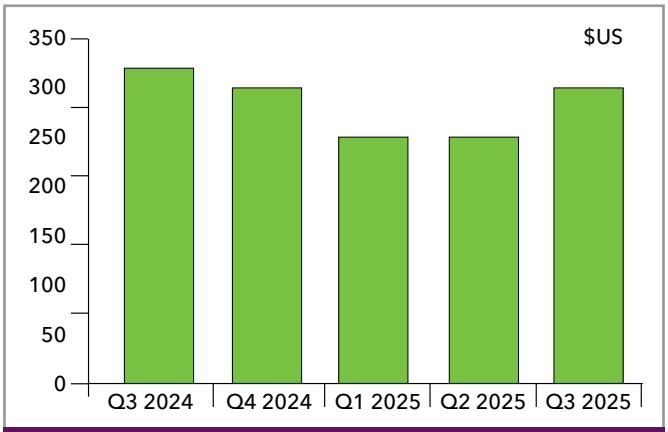
US plastic machine sales kept rising last year but still trail 2024

North American sales of plastics processing machinery continued to rise in the third quarter of last year – but are still behind the same period in 2024.

The Plastics Industry Association's Committee on Equipment Statistics (CES) said that machinery sales were US$303 million for the quarter – 20% up on Q2 this year but around 5% lower than Q3 in 2024.

Sales of extrusion equipment suffered: single-screw extruders fell nearly 5% from the previous quarter and 24% year-on-year; for twin-screw extruders, the respective declines were 29% and 39%. By comparison, injection moulding sales rose 30% on the previous quarter and 4% year-on-year.

"Although shipments continued to increase, it is obvious that both processes faced different headwinds during the quarter," said Perc Pineda, chief economist at the association. "Sector-specific drivers were at play, causing injection moulding to rise while extrusion fell. Both equipment types were in different cycles."



Primary plastics machinery sales, US
Source: CES, Plastics Industry Association

While residential construction has remained largely flat, due to high interest rates, motor vehicles and parts production have been trending upward since January.

However, Pineda said that rate cuts by the Federal Reserve point to lower borrowing costs – which will eventually lead to higher equipment demand.

On US plastics machinery trade, based on the latest available data, exports totalled US$113m and imports US$336m, resulting in a US$223m trade deficit. Compared to a year earlier, exports fell 1.6%, imports by 39%. The trade deficit rose by 76% in July compared to the same month last year.

In the third-quarter survey of CES members, 52% of respondents expected the market to remain steady or improve over the next 12 months – slightly below the 58% response in the previous quarter. However, the share reporting that steady or improved quoting activity rose from 76% to 81% – the second consecutive quarter of an increase.

"While the government shutdown has delayed the release of economic data, the Federal Reserve Bank of Atlanta's GDPNow estimate for third-quarter growth – as of November 5 – stands at 4%," said Pineda. "Trade and tariff issues remain a concern, yet markets appear to be adapting to this – which hinges on US policy shifts and outcomes from trade talks with key partners."

› **www.plasticsindustry.org**

Faerch targets 30% rPET use this year



IMAGE: FAERCH

PET tray producer Faerch says it plans to raise recyclate levels in its products as high as 30% by the end of this year.

The company says that Cirrec – its integrated recycling facility – now has an annual output of 27,000 tonnes of rPET pellets. The company says that Cirrec enables it to turn post-consumer trays into new food-grade packaging.

"Faerch ensures stability and quality in food packaging by managing the recycling process through Cirrec," said Tim Rademacker, divisional CEO for recycling at Faerch. "This allows us to secure high standards for raw materials, consistent quality and reliable supply."

The company has integrated its goal – to achieve 25-30% tray rPET content across its product portfolio this year – into its certification processes.

› **www.faerch.com**

Amaplast: machine exports fell in 2025

Exports of Italian machinery dipped in the first nine months of 2025.

Industry body Amaplast said that foreign sales fell 6% compared to the same period in 2024.

There was a fall in sales to all geographic areas other than Asia – thanks to a 22% increase to China and a 53% increase to India.

However, sales to Europe saw a dip of seven percentage points, while those to North America were variable – up 5% to the US, but down 41% to Mexico. In South America, sales to Brazil fell 37%, but rose by 61% to Argentina and 75% to Chile.

In Africa, sales to Egypt rose 19%, exports to Kenya and Nigeria had a "positive third quarter" but South Africa's purchases dropped by half.

The "positive performance" of the domestic market – which saw imports grow by sixteen points – was not enough to balance out falling exports, said Amaplast.

"Though the full-year forecast for the domestic market is positive, Italian manufacturers are concerned about the geopolitical situation, especially the climate of uncertainty that obliges companies to move cautiously in planning investments," said Massimo Margaglione, president of Amaplast.

› **www.amaplast.org**

IMAGE: SHUTTERSTOCK



US-based FFRA has released its first report on film recycling

FFRA releases first report

The US-based Flexible Film Recycling Alliance (FFRA) – funded by the Plastics Industry Association – has released its first Impact Report, outlining its progress toward scaling flexible film collection and recycling systems.

FFRA says that around 5.3 million tonnes of flexible films and packaging could be recycled using existing technology and systems – but the actual figure is around one-tenth of that (0.5m tonnes).

FFRA plans to raise recycling rates, expand access and improve education to expand and scale film recycling.

"FFRA's progress shows what's possible when industry aligns around a shared goal and speaks with a harmonised voice," said Kurt Kurzawa, senior director of sustainability & packaging at the association.

The report includes an update on the launch and growth of the Plastic Film Recycling Directory. Launched in January 2025, it has now surpassed 170,000 unique users, listing more than 20,000 drop-off locations across all 50 states and Puerto Rico.

› **https://ffra.org**

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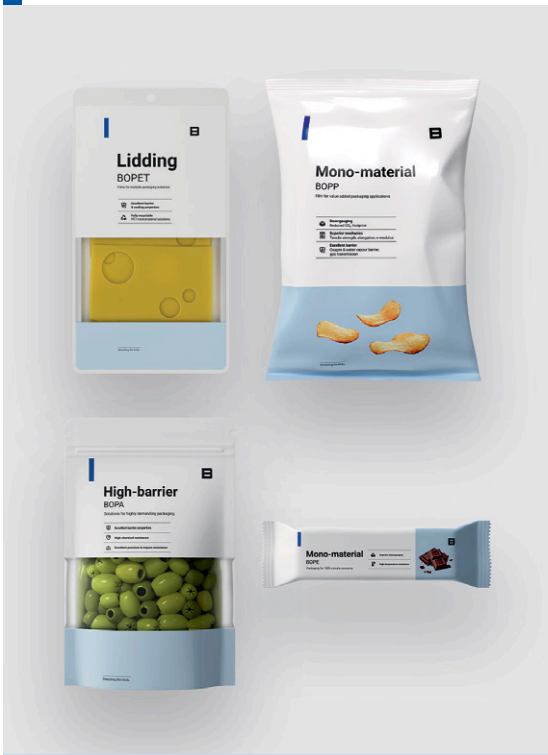
Key innovations for film stretching lines



- Greenline concept for saving energy and raw materials
- 12m lines: Increased productivity and efficiency
- Solutions for recyclate use
- Heat recovery unit reducing operating costs

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Recent developments in bioplastics include several projects to convert agricultural waste into viable materials, as well as several high-barrier grades for food packaging

IMAGE: SHUTTERSTOCK

Green revolution: new sources for bioplastics

Bio-based plastics continue to force their way into new applications – still mainly in packaging film but also in areas such as foamed sheet. In addition, researchers are currently investigating a variety of materials – including rice straw, citrus pruning waste and cellulose – as starting points for bioplastics. Other research is looking to improve biodegradability through the development of novel enzymes and microbes.

Using 'food' crops like cereals and sugar to produce bio-based materials in Europe has benefits for food security, biodiversity, agriculture and climate-change mitigation, says a new paper from **Nova Institute**.

Europe's bioeconomy will soon be the focus of a new EU strategy aimed at boosting autonomy and competitiveness while reducing its reliance on fossil-based resources, says Nova. Its report says the EU has enough biomass to realise the strategy

"Despite concern and frequent pushback against using first-generation biomass for industrial applications, scientific evidence suggests that these concerns are largely misplaced," says the report. "The debate is shaped by emotional and political arguments rather than robust data or a comprehensive understanding of the global food system."

The research highlights four benefits to the EU from using biomass (including food crops) for applications such as materials: making EU agriculture more competitive; increasing food security; supporting climate change mitigation; and supporting biodiversity protection.

The study also considers the potential impact of shifting only to second-generation sugars (from lignocellulose) instead of using first-generation biomass. First, the same amount of fermentable sugars for the biorefinery would need many times more land; second, there would be less protein supply as a by-product of first-generation non-food production; third, the emergency reserve of first-generation crops (starch, sugar and plant oils) would be lost; and, with 2G sugars being two to three times more expensive than 1G sugars, biorefineries would be even less likely to compete with fossil solutions.

The report was commissioned by the European

Main image: Nova Institute says using food crops like corn to make biomaterials has several benefits

IMAGE: AIMPLAS





Above left: Biovalsa, led by Aimplas, aims to make bioplastics from materials such as rice straw and citrus pruning waste

Above right: Microfago is looking for micro-organisms and viruses (phages) that speed up bioplastics degradation

Bioeconomy Alliance, a cross-sector platform "dedicated to mainstreaming the bioeconomy".

Waste to bioplastic

Spanish research organisation **Aimplas** is leading two bioplastics research projects.

The first, Biovalsa, aims to make bioplastics from materials such as rice straw and citrus pruning waste.

Every year, Valencia's agricultural sector generates around 800,000 tonnes of plant waste. The methods for recovering this biomass are costly, as they require commercial enzymes – which represents up to 40% of the cost of the process.

The idea is to replace the usual treatments with others that allow the three fractions of biomass (cellulose, hemicellulose and lignin) to be recovered for use in various applications of interest to the bioplastics industry. Cellulose will be used to produce lactic acid (to make PLA), while hemicellulose is expected to yield succinic acid (to make PBS). The antimicrobial properties of lignin make it suitable for recovery and use as an additive to prevent the proliferation of micro-organisms.

The project is in its first year of development, and progress has been made in separating the components of rice straw using methods that do not involve toxic substances, says Aimplas. Different strains of bacteria and micro-organisms that can break down cellulose and hemicellulose to generate the lactic and succinic acids are also being tested.

The second project, Microfago, is looking to identify a combination of micro-organisms and viruses (phages) to speed up bioplastics degradation.

This aims to overcome the problem that some composting and anaerobic digestion plants do not always completely degrade these materials.

The phages will act on bacteria that hinder degradation, which favours the work of beneficial micro-organisms. At the same time, the presence of micro-organisms that actively break down bioplastics will be enhanced by introducing them into the process to reinforce biodegradation.

"The key is to identify the most active micro-organisms and ensure that they are present in sufficient quantities for the biological decomposition process to be truly efficient," said Giovanni Gadaleta, a researcher at the biodegradability and compostability laboratory at Aimplas.

He added that the effectiveness of these techniques will be evaluated on different scales – laboratory, pilot and industrial – and compared with biodegradation or fragmentation tests regulated by current legislation.

Novel enzymes

Researchers at US-based **Purdue University** have received a US$7 million grant to design novel enzymes that convert biomaterials into biodegradable plastics.

"Nearly 99% of the plastics produced today are made from petrochemicals, which often must be imported from outside the US," said Karthik Sankaranarayanan, assistant professor of agricultural and biological engineering at the university.

"We want to take advantage of locally available materials, such as those commonly used throughout the state of Indiana."

These materials, such as corn, sugar or agricultural waste, will be converted into bioplastics called polyhydroxyalkanoates (PHAs). While retaining their mechanical strength, the materials would be "infinitely recyclable" he says.

"You can take these polymers and break them down into their individual units and reuse them," he said.

PHAs can be fragile and unstable at high temperatures, which has hindered their widespread use in areas like consumer goods and medical devices.

"Our platform will tune the chemical structure of the final polymer to have the proper level of mechanical strength and thermal stability," said Sankaranarayanan. "This will open the door for applications that range from packaging to biomedical devices."

The three-year project will focus on biocatalysis – using enzymes to speed up highly specific reactions to make products without harsh chemicals or extreme conditions.

Purdue researchers are developing algorithms to select the enzymes and the reactions needed to create the bioplastics. Then, researchers at the

University of California, San Francisco (UCSF) will engineer the enzymes using protein computational design methods. Once the enzymes are engineered, they will be sent to researchers at Stanford University to test their functionality – and then to Purdue, where researchers will analyse the speed of their reactions and their ability to tune the chemical structure of the polymer. Finally, researchers at the University of California, Berkeley will determine their properties and commercialisation potential

Sankaranarayanan says that finding adaptable enzymes is one of the major challenges of the project.

"The enzymes we're working with – polyketide synthases (PKSs) – catalyse sequential chemical reactions in an assembly-line fashion to produce complex antibiotics," said Sankaranarayanan. "But they're not designed to work in the types of industrial processes that create bioplastics."

Because of this, the team is looking to alter their natural chemical reaction – to produce the desired bioplastics – while improving the stability of the enzymes so they can be made at scale using biomanufacturing.

Green foam

Researchers at **TU Graz** in Austria have developed certified biodegradable and recyclable multi-purpose foams – using cellulose in place of crude oil.

In the pan-European BreadCell project, an international consortium has developed cellulose-based foams – which are biodegradable and recyclable – using a process like baking bread.

"Cellulose is plant-based and available in large quantities," said Stefan Spirk of the Institute of Bioproducts and Paper Technology at TU Graz. "Replacing oil-based products with cellulose is the goal – and the foams developed in the BreadCell project have a wide range of potential applications."

These include automotive (for crash impact energy management), construction (as an insulating material) and sports (for sports equipment and shoe soles). The material also offers potential benefits in terms of moisture management and acoustics.

A key part of the project was to find correlations between foam strength and fibre design using advanced simulation. To obtain the material input





Right: The BreadCell project produced several foam prototypes including a skateboard

data for these simulations, the material was characterised through a series of tests. Based on the results, foams with different densities and mechanical properties were produced and applied in various demonstrators including a skateboard, bicycle helmet and shoe insoles.

Florian Feist of the Institute of Vehicle Safety at TU Graz said: "It was a challenge to keep density homogeneous over the thickness of the foam, but this proved advantageous in one specific application: bicycle helmets."

Here, a softer centre layer enables a kind of shearing between the outer and inner layers – reducing rotational load on the brain when there is an impact.

The project has given rise to a spin-off company, Foamo, which makes lightweight cushioning insoles based on the developed foams.

Lighter PLA

Similarly, **Nexam Chemical** has expanded its Lightweight product range with a new bio-based foam.

In collaboration with **Verdofoam**, it has used its additive technology to expand PLA into a foam, which can be used to replace conventional polystyrene in applications such as packaging and insulation materials.

"PLA foam opens up an entirely new market for us," said Ronnie Törnqvist, CEO of Nexam. "We are demonstrating how our technology can help reduce the climate footprint of plastics without compromising performance or functionality."

Below: Navico is using Aquapak's Hydropol bags to protect its marine electronics during shipping

Packaging foam is typically used to protect products during transport. The global volume of expanded polystyrene (EPS) used in packaging is estimated at around 5.8 million tonnes/year. This corresponds to 18-30 million tonnes/year of CO_2 e, says Nexam.

"With the help of Nexam additives, we have produced a completely bio-based foam with the right structure and properties," said Hans-Erik Ouwehand, CEO of Verdofoam.



Electronic protection

Navico is using Hydropol bags from **Aquapak** to protect its marine electronics during shipping.

Hydropol is water soluble and non-toxic to marine life. It can be processed on existing packaging machinery at scale to produce a barrier film layer that can be combined with paper and other bioplastics or simply turned into strong, durable, puncture-resistant, anti-static bags. Thanks to these properties, Navico used Hydropol bags as part of its commitment to protecting the natural environment and ensuring its supply chain is as sustainable as possible.

"Hydropol is perfect for a business like Navico, which operates in the highly sensitive marine environment," said Mark Lapping, CEO of Aquapak. "It can be used as an alternative to conventional plastic as it provides the same functionality and performance but without harming the environment."

Compostable barrier

Sukano, Brueckner and **NatureWorks** have teamed up to develop a masterbatch and a biobased material that enables the creation of compostable packaging with barrier properties.

"By combining our Ingeo biopolymer with Brückner's biax technology and Sukano's S/AB surface additive, we've opened the door to a new generation of ultra-thin, cost-effective barrier films," said Roger Tambay, chief growth officer at NatureWorks. "This makes it possible to reduce thickness while still delivering the sealability,

barrier performance, and lamination strength brand owners need."

Sukano's new Antiblock masterbatch – which

Thermoforming boost

Speakers at the latest Bioplastics event, organised by **AMI**, presented a wide range of bio-based materials and processing technologies.

Kuraray showed details of how its starch-based Plantic material can be used to make thermoformed barrier packaging. Tom Black, director of international business for Plantic, said the polymer is made from starch sources that contain high amounts of amylose – a linear polysaccharide. Plantic has similar properties to PET, he said – with the ability to be thermoformed on standard equipment at 120-130°C.

At the same time, barrier properties are "comparable to that of conventional barrier resins", he said. Its oxygen barrier is similar to that of EVOH, while the moisture barrier is comparable with nylon 6. Potential applications include cheese and meat packaging. It also has high puncture resistance – making it suitable for items such as bone-in meat.

One grade, called FX, offers deeper-draw properties and improved barrier.

Shilpa Manjure, director of R&D at **Natur-Tec USA**, focused on the thermoformability of bioplastics – in this case PLA as a replacement for polystyrene (PS). In the case of lids for coffee cups, PLA cannot be used as a drop-in replacement for PS, as its heat performance is inferior when made using the same one-stage forming process.

"PLA formed in the same process is not high-heat resistant," she said.

This is usually overcome using a two-stage process, which improves crystallisation. However, Natur-Tec has devised a one-stage forming process that uses heated forming air to achieve this. The process has a 20°C wide processing window (120-140°C).

She presented results showing that its XF5003 grade has higher heat resistance than a typical PS grade – and 25% higher stress before breaking.

"The lids demonstrate stable thermal performance up to 120°C, ensuring reliability in boiling water conditions," she said.

- **www.amiplastics.com**
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was introduced at K2025 last year – enhances the performance of Ingeo Extend 4950D, enabling efficient processing of biaxially-oriented PLA (BOPLA) films on existing BOPP equipment. This allows customers to produce high-performance, compostable films with up to 7x transverse direction stretch, offering smoother processing, good printability and enhanced optical properties.

The masterbatch improves the surface quality of BOPLA co-ex films for efficient film handling and enhanced barrier properties. In the inner layer, it increases surface roughness, preventing the film from sticking during winding and secondary processing. In the outer layer, it helps create a smooth, uniform surface to obtain a continuous

layer of aluminium with strong adhesion. This reduces defects in the metal

coating, which is key to raising barrier properties. The results were confirmed by trials at Brueckner.

Coffee time

Bio-Fed, part of Akro-Plastic, has developed a bio-based compound for coffee capsules that is home-compostable and has a high oxygen barrier.

MVera GP1065 has been developed to protect the aroma of coffee and extend the shelf life of coffee in capsules. This is accomplished through enhanced barrier properties, with much lower oxygen permeability than previous materials. The food compliance of the biocompound has been confirmed in accordance with EU 10/2011 and the FDA. Its translucent beige colour can also be adapted to meet specific colour requirements.

One advantage in terms of sustainability is the home compatibility, which allows it to be disposed of in domestic compost and uses the natural fertilising properties of coffee grounds in the biological cycle. With a bio-based content of over 98%, the partial carbon footprint is reduced compared to fossil-based plastic.

Bio portfolio

FKuR presented an expanded portfolio of bioplastics at K2025.

Highlights included its soil-biodegradable Bio-Flex N grades for agricultural and farming products, which leave no persistent microplastics behind. Key features of the new Bio-Flex N series

Below: MVera from Bio-Fed can be used to make home-compostable coffee capsules



IMAGE: BIO-FED



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include complete biodegradability in soil and certification according to 'OK biodegradable Soil' by TÜV Austria. Depending on the grade, certification has already been granted or is in progress.

The portfolio includes grades for blown film, injection moulding and extrusion. Bio-Flex N grades are suitable for products that remain in nature after use or cannot be collected again – such as mulch films, plant clips for vegetables, growth tubes for trees, and drainage pipes.

Key applications of the Bio-Flex blown film grades N 21310 and N 31310 include mulch films and plant and net labels. Thanks to its well-balanced property profile, Bio-Flex N 21310 is a suitable alternative to the industrially compostable grade Bio-Flex F 1140 when soil biodegradability is desired. In comparison, Bio-Flex N 31310 offers higher puncture resistance and toughness, says FKuR.

The company also showed products made from recyclable, bio-based Terralene compounds, as well as from the 'I'm green' bio-based PE and EVA grades from Braskem.

Supply hub

Sweden-based **Gaia Biomaterials** has set up a US supply hub for its compostable Biodolomer material.

To meet rising demand, Gaia and its distributor, Mitsubishi International, have set up a supply hub in Los Angeles, enabling fast nationwide deliveries via rail.



Left: FKuR now offers Paluren – an LDPE made from recycled of beverage cartons by Palurec

"People are realising that all conventional plastics eventually turn into microplastics – simply through use," said Peter Stenström, CEO of Gaia Biomaterials. "That has led to a surge in demand for alternatives such as our limestone-based Biodolomer, which is fully compostable according to US standards and does not generate microplastics."

The material is used in everyday products from drinking straws and grocery bags to beer cups.

"We've supplied Biodolomer to the US for several years, but interest is now booming," he added. "We can now shorten lead times."

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FIND OUT MORE AND BOOK TODAY

Polyolefins lead the line in new product development

Innovation in polyolefins – much of it from K2025 – include new high-barrier grades, film for mono-material packaging and several collaborative projects to raise performance



IMAGE: TOTALENERGIES

Main image: TotalEnergies and W&H have developed a pouch to package oil and lubricant

Polyolefins dominate the plastics landscape, accounting the for vast majority of consumption across almost all categories – from pipe through to food packaging. The recent K2025 show saw the emergence of many new grades and products – from recyclate-based and non-fluorinated grades to films for mono-material packaging and barrier products.

TotalEnergies and **Windmöller & Hölscher** (W&H) have joined forces to develop a pouch to package oil and lubricant. It features a recyclable PE/PA multi-layer structure made of PE from Total's Lumicene and Lumicene Supertough ranges. It also incorporates 35% recycled polymer, thanks to the use of Total's rPE 2206, a mechanically recycled post-consumer grade.

Using Aquarex water-quenching technology, the new pouch achieves a thickness of 170 microns – an 83% reduction in material use compared to the standard 1-litre HDPE rigid container that is typically 1mm thick.

The innovation builds on a previous collaboration, which showed the feasibility of a recyclable high-barrier stand-up pouch for food applications. The pouch was seen at K2025, while the films were processed during W&H's in-house expo.

"This shows our integral approach to polymer development," said Olivier Greiner, vice president of polymers for Europe & Orient at TotalEnergies. "We rethink the use of plastics by designing recyclable materials, reduce their impact by reducing thickness, and foster circularity by integrating recycled polymers."

Torsten Schmitz, managing director of extrusion at W&H, added: "This pouch is a tangible example of two megatrends: designing packaging for recyclability and integrating recycled materials into new products."

High-barrier pouch

Polish label and packaging specialist **Masterpress** is a partner in a pan-European research project called Before – to develop recyclable, high-barrier pouch film.

The consortium brings together partners from Belgium, Germany and Poland. Masterpress participates through Natureef, a Polish association bringing together companies from the packaging, food production and recycling sectors under joint research projects.

High-barrier packaging plays a key role in protecting sensitive products. Traditionally, structures rely on complex multi-material combinations that cannot be recycled in today's mechanical recycling systems. ›



IMAGE: DOW

Right: Dow, Macchi and ITP have developed a mono-PE pouch with 50% recycled content

"High-barrier flexible packaging has historically been difficult to recycle, but this project demonstrates how collaborative R&D can accelerate real change," said Jakub Pędziński, pouches business development leader at Masterpress. "By testing our single-layer pouch within this consortium, we are contributing to innovations that keep materials in the loop and support Europe's transition toward sustainable packaging."

As part of Before's work on high-barrier, co-extruded polyethylene (PE) stand-up pouches, Masterpress contributes one of the project's key plastic case studies – its single-layer, non-laminated stand-up pouch for liquid soap.

Masterpress's pouch is made from a single mono-material PE/EVOH structure. It is engineered to sort correctly in recycling facilities and work within existing PE recycling systems.

Pouch development

At K2025 last year, **Dow**, **Macchi** and **ITP** showed a mono-polyethylene (mono-PE) pouch containing over 50% recycled plastic content from chemical recycling.

This enables increased uptake of recycled content into technically challenging or regulated applications like food packaging, minimising reliance on virgin resources. The method also ensures that packaging materials are safe for direct contact with food products.

The pouch proactively addresses the upcoming EU Packaging and Packaging Waste Regulation (PPWR) recycled content quotas, which mandate specific recycled content targets for all plastic packaging by 2030 including 10% for food contact-sensitive applications.

ITP managed film substrate selection, printing, lamination, and pouch making; Macchi provided multilayer extrusion technology; and Dow supplied polyethylene (PE) resins that combine processability and functional performance.

Separately, Dow has teamed up with Zermatt and Nature's Variety on a pet food pouch that includes 10% chemically recycled content.



IMAGE: TOTAL ENERGIES

Below: TotalEnergies and SML have developed downgauged films for packaging

"With our combined innovation, we are delivering a solution that meets legislative requirements and advances sustainability in the pet food packaging segment," said Antonio Barrasus, commercial director at Zermatt.

Downgauged film

Also at K, **TotalEnergies** and **SML** showed new downgauged films that enable material savings in stand-up pouch and deep-freeze bag applications.

The first film, for re-sealable barrier stand-up pouches, combines polyethylene (PE) with a thin ethylene-vinyl alcohol copolymer (EVOH) layer for a superior oxygen barrier. It enables downgauging of over 30% compared to PE/PET structures without affecting performance. The 60-micron film works with or without lamination. When used alone, it simplifies recycling.

The second film, for deep-freeze bags, is an unlaminated MDO-PE cast film that allows downgauging of 35-50% compared to conventional structures – and avoids an energy-consuming lamination process.

"By combining our polymers with SML's high-performancecast film technology, these new films contribute to innovative packaging solutions," said Olivier Greiner, vice president for polymers, Europe & Orient, at TotalEnergies.

Made with Total's Lumicene Supertough, both films are suitable for existing recycling streams and allow cost-efficiency through downgauging.

"SML's cast MDO technology shows its full strength when combined with resins such as Lumicene Supertough polymers," said Elias Mayrhofer, product manager at SML.

Non-fluorinated grades

Nova Chemicals has developed polyethylene (PE) resins that incorporate a "next-generation" non-fluorinated polymer processing aid (NF-PPA).

The resins claim to deliver comparable performance to those with legacy fluoropolymer PPA technology, helping manufacturers meet global regulatory compliance standards with minimal disruptions in production.

Working with film manufacturers over the last three years, ongoing research led to the new NF-PPA formulation which provides enhanced process stability for consistent performance, including frost line control, reduced die-lip

build-up and predictable slip and coefficient of friction properties. It also delivers melt fracture clearing and film optics comparable to fluoropolymer-based PPA technologies.

"This underscores Nova's focus on solving critical challenges for our customers through continuous innovation," said Owen Lightbody, leader of technical services at Nova.

PPAs mitigate melt fracture and to prevent material buildup on die-lips during extrusion processes. The new PPA is compatible with existing resin formulations, enabling high-quality film structures that are free from fluoropolymers. Nova says it has obtained broad regulatory approvals for the new technology.

"Our breakthrough NF-PPA sets a new standard for high-performance, fluoropolymer-free PE that will allow our customers to meet market demands," said Lightbody.

Nine grades of PE with the new NF-PPA are currently available, for use across blown film applications including food packaging, e-commerce, and heavy-duty sacks.

Technology extension

Borealis unveiled its new Borstar Nextension polyethylene (PE) technology at K2025, calling it a "leap forward in polyolefin innovation". It says that proprietary single-site catalysts help create PE grades with superior toughness, sealing performance and processability – enabling downgauging and better cost efficiency. The materials can be used to create mono-material packaging to replace multi-material equivalents.

The company has introduced two development materials: one with twice the toughness of first-generation metallocene PE materials, which is suitable for form, fill & seal (FFS) and frozen food packaging; and a second that reduces sealing initiation temperature by over 15%, enabling faster packaging speeds and making it suitable for lamination, FFS and food packaging.

Borealis is investing €49 million to scale up Nextension PP production at its site in Burghausen, Germany.

Separately, Borealis and **Borouge** have launched Recleo mechanically recycled polymers for a range of polyolefin applications. Recleo uses both post-industrial (PIR) and post-consumer (PCR) recyclates and compounds. The brand complements the Borcycle M portfolio of mechanically recycled





IMAGE: WIS KUNSTSTOFFE

Right: WIS presented certified recyclates for food use, made using a new process, at K2025

polyolefins, which are based exclusively on post-consumer waste and designed for the most demanding applications. Grades are made from verified PIR and PCR plastic waste streams, helping customers reduce carbon footprints and meet ambitious sustainability targets.

"Recleo unites our fit-for-purpose mechanically recycled grades into a global portfolio and makes sustainability affordable in all applications," said Dirk Langhammer, VP of circular economy solutions at Borealis.

Polymer expansion

At K2025, **OQ** showed some of the 17 new polymers that it has developed over the last year, for applications in packaging, durables and infrastructure.

"This expansion reflects our commitment to delivering solutions that align with what matters to our customers: durability, speed-to-market and operational-efficiency," said Abdulrahman Al Tamtami, vice president of global marketing at OQ.

The 17 new grades include: six PP impact copolymers for rigid packaging (including thin-wall packaging, housewares and durables), with good flow and stiffness-impact balance; and four PP random copolymers with enhanced transparency and organoleptic performance, for housewares, closures, and food containers.

They are designed to meet a range of industry needs, including: packaging that helps reduce food waste and energy consumption; water storage solutions; and transparent, reusable rigid packaging.

Food-grade recyclate

WIS Kunststoffe presented several certified recyclates for food use at K2025, which were developed through technical collaboration.

A highlight was a new process for making food-grade polypropylene (PP) recyclate from post-consumer food packaging. In collaboration with **KraussMaffei Extrusion**, WIS has developed the scalable process that has already received FDA approval for food-contact applications.

"The combination of process know-how, state-of-the-art equipment, and close collaboration was key to this," said Daniel Römhild, head of development at WIS.

A twin-screw extruder used in the process enables gentle processing and ensures high-quality recyclate output. The process can be integrated into existing workflows and creates opportunities for post-consumer recycling in the food sector, it says.

WIS Kunststoffe's portfolio also includes regranulates based on PP and PE that are heat-resistant, odour-optimised, and colourable. These meet the demands of various industries, including cosmetics, packaging, automotive and toys, it says.

WIS also offers regranulates that meet the requirements of the US FDA for food contact applications. It says it is the first European recycler to receive FDA approval for recycled polypropylene (rPP) for "all types of food". This provides validation for applications in sensitive areas such as food packaging and medical technology, it says.

Recyclability boost

At the last *Thin Wall Packaging* conference, organised by **AMI**, Synco de Vogel – a polymer technologist at **Synthomer** in Germany – explained how its Plastvance T additive technology can boost packaging recyclability. It aims to overcome the traditional performance challenges that occur when replacing materials like polystyrene (PS) with alternatives such as polypropylene (PP).

Plastvance T can modify the melt strength and rigidity of PP to mimic the properties of materials like PS and PET while allowing manufacturers to use existing machinery and processes. PP modified with Plastvance T has been certified by both the Association of Plastic Recyclers (APR) and Cyclos-HTP as fully recyclable.

He presented some case studies demonstrating the material's versatility. The first focused on replacing PS with PP in thermoforming.

"Thermoforming PP is not an easy task, due to sagging and sheet thinning, a narrow temperature window and slower production cycles," he said.

IMAGE: INNOVIA



Left: Innovia's high-opacity BOPP base film is for use in self-adhesive graphics

In this case, a 0.5mm thick PP sheet – which used 16% Plastvance T – was compared with a 0.6mm PS sheet. The PP sheet was 38% lighter, more transparent and as easy to thermoform. Downgauging also helped to cut emissions by 48%, he claimed – as well as reducing material cost by 32%.

The second involved comparing polystyrene (PS) with a modified PP. In trials at Klockner Pentaplast, it tested 800-micron PP/EVOH/PP formulations with its additive in two different loadings (which it did not specify). One formulation allowed a 50% reduction in thermoforming cycle time without compromising quality, while it also had a 14% higher top load resistance. This formulation also needed 25% less pressure to cut, compared with standard PP – and the same pressure as PS/EVOH/PS of the same thickness.

The third, carried out at Illig, addressed the 'snap ability' of portion packs, which are traditionally made from PS. When standard PP was used here, it failed the snap test – but PP modified with Plastvance T successfully replicated the snap function of PS.

Material reduction

At the same event, **Klöckner Pentaplast** (KP) said its KP FlexiFlow PH 255 R recyclable polypropylene (PP) barrier film is designed to address sustainability challenges in food packaging.

The film contains over 93% PP and is designed to be recyclable in the PP stream, following Ceflex guidelines for mechanical recycling.

The new flow wrap film has a high barrier, with an oxygen transmission rate (OTR) of less than 5 – which extends shelf life and raises the quality and taste of the product, said Hendrik Jan Bartels, marketing director for rigid films at KP.

The film has received recyclability certifications from Interseroh, with Cyclos-HTP certification ongoing, he added.

One of the main benefits of the film is its potential to reduce the total amount of plastic used: switching from a traditional lidded tray to a flow pack using the material can cut the amount of plastic needed by up to 75%. This reduction also reduces the energy needed for sealing, he added.

Graphic detail

Innovia has developed a high-opacity BOPP base film for self-adhesive graphics. Rayoart GWP82 Matt HOP is an 82-micron thick film with a newly developed matt print coating for improved scratch and chemical resistance. Enhanced adhesion allows it to be used on many surfaces and an optimised adhesive receptive layer gives a strong, durable bonding with improved pigmented adhesive compatibility, says the company.

"This film has been designed for maximum visual impact," said Bron Hekkema, director of the graphics business unit. "The matt finish gives a premium, glare-free look and excellent dimensional stability for easy conversion and better UV and latex printing."

It has been optimised for reduced material use and less environmental impact, offering 10-year indoor and four-year outdoor durability when laminated.

New VSP film

ExxonMobil has collaborated with Bandera, Mitsubishi Chemical and Industrie Polieco to develop a high-performance vacuum skin packaging (VSP) film.

The film has high toughness and forming performance, enhanced elasticity and forming

Below: KP Films says its FlexiFlow recyclable PP barrier film contains over 93% PP



IMAGE: KP FILMS

Right: Constantia and Watttron have devised a system to seal both PP and aluminium lids

behaviour and good sealing performance. It uses several ExxonMobil polymers, including Exceed Tough+ m 0512.RA, EVA 06519FL and Exceed Flow m 1020.RA.

The film was extruded on Bandera's barrier blown film line, crosslinked via e-beam and is compatible with blown and tubular quench extrusion.

VSP is becoming more popular in meat and food packaging as its transparent films allow the packaged product to be inspected from all sides. Thanks to high puncture resistance and optimal sealing behaviour, the film helps to ensure packaging integrity and provide product protection.

The new film claims to offer cost savings (by replacing ionomers), maintain sealing properties, provide high toughness (to protect sharp food items) and allow high clarity for consumer appeal.

"This was an opportunity to showcase both cost savings and high performance," said Diego Castiglioni, technical director at Bandera.



IMAGE: CONSTANTIA FLEXIBLES

Sealing the deal

Constantia Flexibles has teamed up with thermal technology specialist **Watttron** to develop a new technique that enables both polypropylene (PP) and aluminium lids to be sealed on PP cups using a single system.

This builds on Constantia's PPCover, a mono-material PP lidding designed to meet recyclability standards without affecting performance. Integrating PPCover into existing sealing machines presented a technical challenge – ensuring consistent, high-quality seals across different lid materials without introducing inefficiencies or material deformation.

Traditional sealing systems typically heat the entire sealing head, which can cause issues such as curling due to excess heat exposure. This prompted Constantia to explore more precise and adaptable sealing methods – in this case, Watttron's ring-heating technology which applies heat only to the outer sealing ring. This targeted method reduces thermal stress on the lid material and improves energy efficiency.

The system heats and cools rapidly—typically at a rate of 10 to 20 °C per second—and maintains the set temperature with a high degree of accuracy (±1 °C). These features not only support consistent sealing performance but also allow the system to be safely powered down during production stops, contributing to energy savings of up to 50% compared to conventional sealing methods.

Lab-scale tests using PPCover demonstrated good peel behaviour, strong internal pressure resistance and reliable sealing for both PP and aluminium lids.

"We developed our ring-heating technology to deliver precise energy exactly where it's needed," said Marcus Stein, CEO of Watttron.

The universal sealing technology offers several advantages: it cuts the need for separate machines or setups for different lid materials; simplifies production processes; and reduces equipment complexity.

Claus Dworschak, market product manager for die cut lids at Constantia, added: "This simplifies operations and enhances quality – which is exactly what our customers need."

Last year, as part of its growth strategy, Constantia acquired Aluflexpack, which it says increases its footprint in high-value segments – especially the food and pharmaceutical industries.

"This is not just about growth, but about creating an agile, future-ready packaging network that serves our customers with greater speed," said Marc Rademacher, EVP for consumer commercial at Constantia.

"We look forward to joining forces with the Aluflexpack team to complete the integration of the businesses," he added.

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IMAGE: POLYVANTIS

Health benefits: medical plastics

Developments in medical plastics include recycling non-contaminated waste into drapes and packaging, a PETG alternative and COC films for microfluidic chips

Medical product manufacture requires the highest standards of control and cleanliness – yet there is also a pressing need to reduce (and recycle) single-use products.

One example of this is a project in which **Sabic** has teamed up with the Zuyderland medical centre in The Netherlands to convert medical plastic waste into new contact-sensitive packaging materials.

In collaboration with converters **Coveris** and ACE, and brand owners Artivion and Mölnlycke Health Care, the partners have recycled used medical plastics back into the medical materials stream in two pilot projects. Details of the projects were exhibited at K2025.

Zuyderland launched a medical plastic waste collection programme in June 2024, with a collection system for non-contaminated plastic waste that had not come into contact with patients, blood or bodily fluids. The waste was prepared and transported to Sabic, to be converted into pyrolysis oil – which was then used to make polyethylene (PE) for its chemically recycled Trucircle range. It has been used in two healthcare products: Coveris used it to make packaging with 25% recyclate, for Artivion's guide wire (used in vascular surgery); and Mölnlycke made surgical drapes – with 49% recycled content.

"Non-contaminated medical plastic waste is a valuable feedstock opportunity," said Khaled Al-Jalawi, global circular economy director at Sabic.

Roel Goffin, board member at Zuyderland, added: "Our own non-contaminated medical plastic waste has been successfully turned into new material and returned for use in our own operating rooms."

Thermoforming expansion

Medical packaging company **Nelipak** is expanding operations – with a new manufacturing facility and an acquisition.

Late last year, the company completed the

Main image: Plexiglas and Europlex films from Polyvantis can be used to make microfluidic chips



IMAGE: SABIC

Above: Sabic and partners are recycling non-contaminated hospital waste into virgin polymers

acquisition of Merrill's Packaging, which specialises in custom thermoformed packaging. It also offers complementary products and services such as die-cut pouch/mounting cards and design, development and tooling services. It has production sites in California and Costa Rica that are ISO 13485 certified and equipped with ISO Class 8 cleanrooms.

"This is an incredible opportunity for our employees and customers" said Rick Schulz, CEO of Merrill's. "With access to Nelipak's global capabilities and broad suite of rigid and flexible product solutions, we look forward to exploring new ways to deliver value to our customers."

This is not Nelipak's only expansion in Costa Rica – as it broke ground on a new facility there last summer. Due to open in the middle of this year, the 60,000 sq ft Class-A facility will expand Nelipak's regional capacity and capabilities. The new site will be ISO 13485 certified and include ISO-7 cleanroom manufacturing space.

Pat Chambliss, CEO of Nelipak, said: "This investment underscores our long-term commitment to customers in Latin America and the Caribbean, and reflects our strategy to provide global excellence with strong local support."

Chip production

At K2025, **Polyvantis** showed how its Plexiglas and Europlex Cyclic Olefin Copolymer (COC) films can be used to make microfluidic chips.

Microfluidic lab-on-a-chip technology integrates laboratory functions onto a single chip, enabling rapid analysis of small fluid volumes. To perform reliably, they require high optical clarity.

"Microfluidics is transforming how the world approaches diagnostics and healthcare, and our role is to make that transformation possible at scale," said Ravi Menon, EVP at Polyvantis.

Plexiglas films have high brilliance and UV transparency (>90% at 315 nm for the 0F301 grade), as well as a high surface energy that enables laminar flow in microchannels. Europlex films have high light transmission with low autofluorescence and are available in two versions – 0F304 (Tg 78 °C) and 0F305 (Tg 142 °C) – to meet "diverse thermal demands".

Both film families are biocompatible, can be processed by laser cutting and are suitable for thermal, solvent, ultrasonic, and laser bonding, says the company.

The company also highlighted its Lexan F8000HR sheet for aircraft interiors.

The polycarbonate sheet is reinforced with glass fibres. It has a high strength-to-weight performance and meets stringent safety standards, including OSU (CS 25.853) and FST (FAR 25.853(d) + App.F Part IV). This makes it suitable for applications requiring compliance with rigorous fire, smoke, and toxicity regulations.

It also offers good thermoformability, enabling design freedom and efficient processing. Its lightweight properties support fuel efficiency and sustainability initiatives, while maintaining durability and reliability in demanding aviation environments.

Packaging advances

TekniPlex Healthcare showcased its medical packaging at the recent MD&M West show in the US.

This included TekniMD PX, a recyclable material in the polyester 1 stream, engineered as an alternative to PETG for thermoformed medical device tray applications. The proprietary material is helping OEMs advance sustainability without compromising package integrity or manufacturing processability, said the company. It forms part of the company's barrier protection systems portfolio that supports medical device packaging.

TekniPlex also showcased its coating and converting capabilities from its recently opened facility in Wisconsin, which includes coated Tyvek. The site features in-line slitting, as well as high-quality eight-colour printing with a flexographic press.

"The most effective medical device packaging solutions are developed in collaboration with our customers," said Bryan Wesselmann, senior vice president and general manager for barrier protection systems at TekniPlex.

Prior to this – at the Pharmapack exhibition in France – it showed its recently launched line of coextruded blown films and bags made at facility in Puurs, Belgium. These films and bags, produced in ISO Class 7 cleanrooms, offer oxygen barrier

properties in a PE-EVOH-PE construction with up to five layers, addressing the needs of applications requiring enhanced barrier protection. The company also highlighted its barrier laminate and coated film solutions, including Aclar laminates and PFAS-free SBC PVDC-coated PVC structures that have high moisture and oxygen barrier protection.

Pharma offerings

Suedpack used the recent Pharmapack show in France to highlight three aspects of its medical and pharmaceutical offerings.

Firstly, its PharmaGuard packaging concept is now available in two versions. As well as transparent film, it now offers a white blister film which has high opacity and improved legibility when printed. The mono-material solution – free from phthalates, vinyl, PFAS, and halogens – offers a high water vapour barrier and reliable processing on standard packaging machines. The PP-based blister solution is also recyclable – with a lower climate impact than conventional composite materials made of aluminium and PET, it says.

The company also offers its MedGuard range of packaging systems for medical devices and sensitive products. Robust rigid and flexible films, and tailored pouch concepts, are made under controlled cleanroom conditions for high product protection, stability and sterility. Materials can be equipped with specific barrier and peel properties and are compatible with flexible lidding systems made from film, Tyvek and medical-grade paper. These materials seal trays securely and are designed for automated processes. The thermoformable rigid films are based on recyclable PET and PP, making them ideal for tray packaging.

Suedpack's range of pouch concepts includes both standardised and customised solutions used as process pouches for bioreactors, as header bags or patched bags for instrument sterilisation, and for transferring sterilised products between cleanrooms.

CLICK ON THE LINKS FOR MORE INFORMATION:

- **www.sabic.com**
- **www.coveris.com**
- **www.nelipak.com**
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Raising standards: the need for quality control

Maintaining the quality of incoming raw material – and that of finished products – is vital in extrusion, and is achieved with everything from MFI testing to accelerated weathering



IMAGE: SIKORA

Main image: Hiroyuki uses Sikora's Purity Concept V to inspect and analyse rPET material

Assessing plastics – before they get processed, and after they've been converted – is vital for maintaining quality. With the use of recyclate now far more common, it is critical to weed out sub-par raw materials at an early stage. Similarly, finished products must be within spec – meaning they must be tested with sufficient rigour.

Malaysia-based Hiroyuki Industries is using the Purity Concept V from **Sikora** to inspect and analyse rPET material.

The company, a subsidiary of Japan's Hiroyuki, specialises in rPET resin and high-quality packaging for the food and beverage industry. Its products include food-grade rPET resin for stretch films – and it relies on Purity Concept V for optical inspection and analysis.

The system, integrated into the quality control laboratory, inspects rPET pellet samples and automatically detects visual defects such as black specks, discolorations and other contaminants (as small as 50 microns) as a replacement for manual inspection.

"We have significantly improved our ability to detect visual contaminants of the pellets, which enhances product quality and boosts confidence in our material among our customers," said Chan Shuang, QA assistant manager at Hiroyuki.

Using Purity Concept V has improved product consistency, as defects are detected earlier – allowing for immediate corrective action. Each inspection is recorded and archived, creating a data trail that supports traceability, customer assurance and regulatory audits. This data includes the number and size of defects, providing the team with valuable insights for ongoing process optimisation.

MFI testing

Zwick Roell says that its Aflow extrusion plastometer can cope with updates to the ASTM D1238:2023 standard – and deliver accurate melt flow index (MFI) testing.

It says one significant change to the standard is the formal approval of force-controlled extrusion plastometers. These systems, which apply the test load via a drive system with a calibrated load cell, offer an accuracy and repeatability of ±0.5% to meet the requirements of the ASTM E4 standard. This change improves measurement accuracy and simplifies laboratory operations by eliminating the need for dead-weight systems.

Modern force-controlled extrusion plastometers – including the Aflow – have adaptive preheating phase control. Rather than relying on static values, the instrument adjusts the piston movement to the actual material flow and fill level. Whatever the

material's melt flow rate, the system ensures that the piston safely and automatically reaches the correct start position, says the company.

Another key feature is automatic parameter control, in which the device performs a quick preliminary measurement to determine the optimal piston stroke. This cuts the need for preliminary tests and ensures that each test is both compliant with standards and optimised for accuracy.

"For laboratories working with multiple polymer grades and test methods, this results in significant time savings and improved reproducibility," said the company.

Beyond the device's technical specifications, Zwick Roell says it is designed to handle the challenges of a melt flow index laboratory – with features such as self-centring hoppers for easy filling, pre-compaction and cleaning, and a continuously variable load selection from 0.325 to 50kg.





IMAGE: TA INSTRUMENTS

Above: TA Instruments says its ElectroForce Apex 1 offers increased testing versatility

Feel the force

TA Instruments says its ElectroForce Apex 1 Mechanical Testing Instrument offers increased versatility, speed and ease of use to support precise tensile and fatigue testing of polymers and composites.

Its motor stroke range is at least 43% greater than the competition, says Waters, giving laboratories and manufacturers the versatility to perform monotonic and fatigue testing across a variety of materials. This also speeds testing by up to 30%, which can cut costs early in development by helping users identify and eliminate weaknesses in material selection and design before the validation or post-launch phase.

"As manufacturers pivot towards developing and using more high-quality sustainable materials, the need for simple, accurate, and affordable mechanical testing becomes increasingly important," said Yu Cheng, vice president of research and development and product solutions at TA Instruments.

Designed to cut operator process steps and errors, the device is equipped with new software features including TuneIQ Technology, which automatically tunes the instrument without operator intervention and without additional stress or strain applied to the sample. The new motor control system improves break-stop capabilities during mechanical testing, increasing workflow options and operator confidence to run longer experiments unsupervised. The instrument also comes with intelligent data acquisition to help prevent computer hard drive overload by selecting test-specific data parameters and limiting collection to more critical and manageable data.

Handheld NIR

TrinamiX has launched the latest addition to its mobile NIR spectroscopy solutions with the handheld Pal Two spectrometer.

Designed with ergonomics in mind, it allows for single-handed operation, making it user-friendly and convenient. It also includes a built-in display that presents measurement results directly on the device, enhancing usability and accessibility for users.

Hard-to-differentiate plastics and textiles, such as multi-material films and blends of polyethylene (PE) and polypropylene (PP), pose challenges in recycling due to their mixed compositions. Compostable plastics can also complicate sorting processes, while polyamides like PA6 and PA 66 are often difficult to separate and recycle. TrinamiX says its mobile NIR spectroscopy solution devices have been trained to identify all these materials, helping to close the loop and improve recyclability.

Flexpack solutions

Nordson and **Nordmeccanica** have developed CWM, a closed-loop control system that monitors and manages coating weight during the converting process.

Over time, technology and chemistry advances – and stricter regulations – have made flexible packaging more expensive. As a result, scrap, waste and downtime must be avoided. Recently, various technological solutions have emerged to address these challenges. Until now, there has not been a holistic solution for this, says Nordson.

The new integrated package relies on a sensing unit and process control. The sensor NM 9000, from Nordson, combines infrared optics with advanced algorithms to achieve high measurement resolution. It can simultaneously detect three chemical groups and uses AI to apply the most effective measurement technique based on the substrate, enabling continuous monitoring of coat weight and mixing ratio. The sensor is mounted on a compact, enclosed scanner LPS 1000 installed between the

IMAGE: NORDSON



Left: CWM, from Nordson and Nordmeccanica, allows closed-loop control of coating weight

frames of Nordmeccanica lines. This prevents dust particles from falling onto the web and provides bi-directional scanning capabilities for the gauging head.

All data collected by the sensor is managed and processed by Nordmeccanica's machine board electronics, allowing closed-loop control with the coating head. This ensures consistency and compliance with safety requirements, protecting converters under OEM guarantees and liabilities. The system also offers a single screen interface for both machine HMI and CWM control, so customers can display the sensor output as a straightforward display of actual coating weight or as an automatic closed-loop control of the coating head. Nordmeccanica oversees installation of the system on both new machines and during retrofits.

Faster results

Atlas has introduced its next generation Xenotest 220 and 440 xenon-arc instruments for accelerated weathering testing.

They feature expanded test method support and improved integration with lab networks. Designed for demanding applications in the polymer industry and others, the upgrades simplify operation while raising test consistency and reliability.

"One of my favourite features is the extension of the test libraries," said Oliver Rahäuser, senior product manager at Atlas. "It makes setting up your Xenotest significantly easier."

The air-cooled, rotating-rack Xenotest 220 and 440 simulate the effects of sunlight, heat and moisture to accelerate material testing under controlled conditions, with a high sample capacity in a compact footprint.

Both models accommodate up to 38 specimens, with supported formats ranging from 90×75mm to 285×75mm and up to 10mm thick – allowing labs to test everything from thin films to moulded parts without requiring a larger system.

A redesigned 10.1in XenoTouch II interface improves visibility and navigation of the Xenotest while aligning with the Atlas Ci Weather-Ometer and Suntest instruments – offering a consistent operator experience across all Atlas's xenon-arc platforms. Set-point monitoring functionality allows users to define all test parameter tolerances and receive real-time alerts when conditions drift beyond limits.

CLICK ON THE LINKS FOR MORE INFORMATION:

- **https://sikora.net**
- **www.zwickroell.com**
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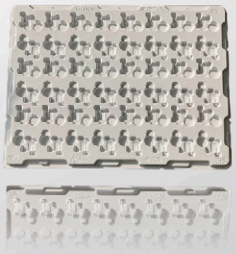

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DIING KUEN: BLOWN FILM



In this brochure, Taiwan-based Diing Kuen provides all the specifications of its blown film technology to produce mono, two three, five and seven layers.. The film lines are divided into four categories: HTRL horizontal top rotating; EBLR vertical top rotating; BFL fixed; and other types.

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AMUT: FOIL EXTRUSION LINES



Built on more than 50 years of plastics expertise, Amut's range of extrusion lines for production of foil and sheet covers a broad range of applications. They can produce mono or multi-layer sheet as thin as 150 microns and as wide as 3.3m at rates up to 4 tonnes/hr or more.

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COLINES: BARRIER FILMS



This new brochure from Colines focuses on extrusion lines for the production of barrier films for vacuum and modified atmosphere packaging to preserve foodstuffs and medical products.

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BRUCKNER: BOPP/BOPE FILMS



Brückner Maschinenbau says its BOPP/BOPE film lines offer benefits including high stiffness and sealing strength, excellent transparent barrier, outstanding puncture resistance and linear tear opening behaviour. Find out more in this brochure.

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HAN KING



Han King, based in Taiwan, has produced this brochure outlining its machines for blown film extrusion, covering five-layer film, three-layer co-extruded film, agricultural film, geomembranes; plus other products in stretch hood, lamination and bags.

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VAN MEEUWEN: ADDITIVES



Van Meeuwen's functional additive range for plastics film and sheet producers includes anti-blocks, anti-statics, anti-fogs and specialty fluids. Suitable for plastic packaging applications, products comply with EU food contact regulations.

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If you would like your brochure to be included on this page, please contact Claire Bishop claire.bishop@amiplastics.com. Tel: +44 (0)1732 682948

Masterpress

Head office:	Bialystok, Poland
General manager:	Jeroen de Haan
Founded:	1996
Employees:	Around 190
Ownership:	Private
Profile:	Masterpress, founded in 1996, is a Polish producer of flexible packaging including pouches, shrink sleeves and printed labels. These are applied in a variety of industries including food & beverage, homecare, personal care, dairy and e-commerce. A key skill for the company is printing – especially 'hybrid printing' which combines traditional methods with new digital advances.
Product lines:	The company offers a variety of solutions to end users. Its shrink sleeve labels – for markets including wine & spirits – are "heat shrink films selected for each project individually". It offers self-adhesive labels to the same industry, with easy-to-apply that can also be easily removed. Shrink sleeve and self-adhesive labels are available for other sectors too – and can be produced for irregularly shaped surfaces. In dairy, it also offers in-mould labels (IMLs), whose advantages include durability, moisture resistance and the inclusion of multi-colour graphics.
Factory location:	The company has a single manufacturing facility in Bialystok that produces the company's entire product line. In late 2023, it began an expansion programme that added around 40% to its production capacity. Additions included two new sleeve printing machines, which raised annual output by around 16 million sq m – to address rising demand in France, the DACH region, and Benelux, according to the company.

To be considered for 'Extruder of the Month', contact the editor on lou.reade@amiplastics.com



Film and Sheet EXTRUSION FORTHCOMING FEATURES

The next issues of Film and Sheet Extrusion magazine will have special reports on the following topics:

March 2026
Thermoforming
Additives for film
Control & instrumentation
Barrier film

April 2026
Agricultural film
Film winders
Photovoltaics

Editorial submissions should be sent to Lou Reade: lou.reade@amiplastics.com
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Film and Sheet November/December 2025
The challenges and responses to the EU's PPWR regulation are part of the Film & Sheet Extrusion November/ December edition's focus on packaging, while other articles cover melt filtration, foamed sheet and polyolefin additives.

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Film and Sheet October 2025
The cover feature of this issue is about developments in biax film, while other articles are on recycling and extruder technology, plus there are previews of the K2025 show and Plastics Extrusion World Expo in the US.

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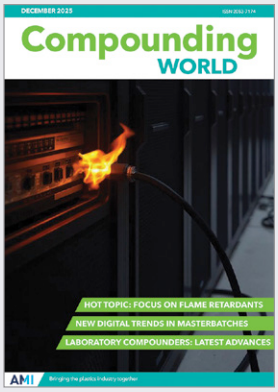

Compounding World December 2025
The December 2025 issue of Compounding World magazine has a cover feature on flame retardants, including regulatory and market issues affecting the sector, while other articles provide updates on masterbatch trends and lab compounders.

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Plastics Recycling World November/December 2025
In Plastics Recycling World's November-December issue, materials and technology innovators are making progress in the improvement of mechanically recycled plastics in terms of colours, product quality and PET processing, as detailed in this edition's features.

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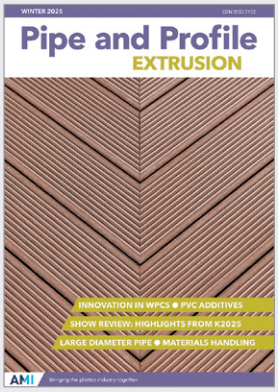

Pipe and Profile Winter 2025
Pipe and Profile Extrusion's Winter 2025 edition has a cover feature on wood-plastic composites, and other articles on large diameter pipe, PVC additives and materials handling, plus a review of the K2025 show.

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Injection World November/December 2025
The November-December issue of Injection World magazine leads with the latest technologies in the hot runners sector, while other features cover digital production functionality and materials handling equipment.

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2026

5-10 February	PlastIndia, New Delhi, India	www.plastindia.org
11-12 March	PlastExpo Nordic, Helsinki, Finland	https://pfsptec.messukeskus.com
26-28 March	RePlast Eurasia, Istanbul, Turkey	www.replasteurasia.com
30 March – 1 April	Plast-Alger, Algiers, Algeria	www.plastalger.com
31 March – 2 April	Plastics & Rubber Vietnam, Ho Chi Minh City	https://plasticsvietnam.com
21-24 April	Chinaplas, Shanghai, China	www.chinaplasonline.com
22-23 April	PlastTeknik Nordic, Malmö, Sweden	www.plasttekniknordic.com
19-22 May	Plastpol, Kielce, Poland	www.targikielce.pl
7-13 May	Interpack, Dusseldorf, Germany	www.interpack.com
19-22 May	Elmia Polymer, Jönköping, Sweden	www.elmia.se/en/polymer
2-4 June	Interplas, Birmingham, UK	www.interplasuk.com
2-5 June	Equiplast, Barcelona, Spain	www.equiplast.com
2-5 June	FIP, Lyon, France	www.f-i-p.com
9-11 June	Kuteno, Bad Salzuflen, Germany	www.kuteno.de
10-13 November	Plastimagen, Mexico	www.plastimagen.com.mx

AMI CONFERENCES

3-5 March 2026	Biax Film Europe, Vienna, Austria
10-11 March 2026	Single-Serve Capsules North America, Tampa, USA
10-11 March 2026	Chemical Recycling North America, Houston, USA
14-16 April 2026	Stretch and Shrink Film Europe, Spain
8-10 June 2026	Chemical Recycling Europe, Frankfurt, Germany
25 June 2026	Flexible Packaging Innovation & Recycling, Milwaukee, USA
14-15 July 2026	Agricultural Film and Plastics, Houston, USA
15-17 September 2026	Single-Serve Capsules Europe, Malaga, Spain

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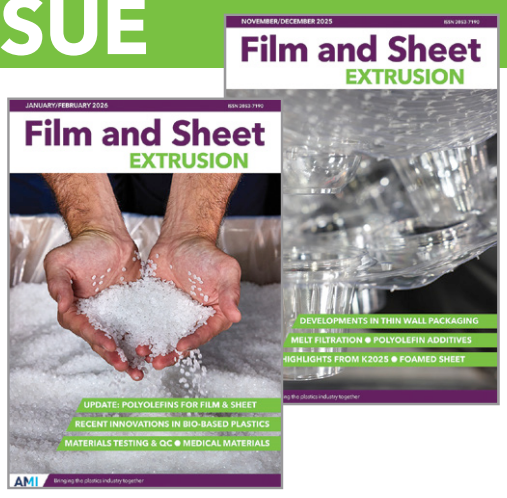

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