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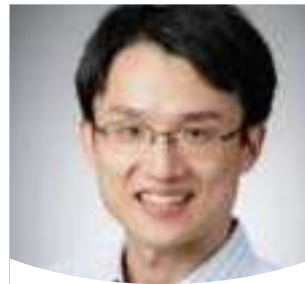
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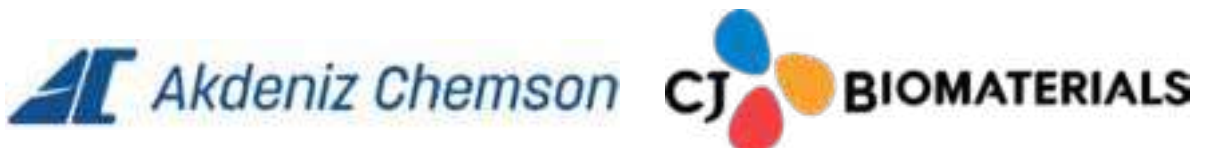


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Work starts on battery film plant in Canada

IMAGE: ASAHI KASEI



Asahi Kasei's battery separator film plant in Ontario is expected to start production in 2027

Asahi Kasei has broken ground on a lithium-ion battery separator film facility in Canada.

The plant, in Port Colborne, Ontario, is expected to begin commercial production in 2027, subject to permits and approvals from relevant authorities. It is likely to operate as a joint venture facility between Asahi Kasei and Honda. Lithium-ion batteries are used for electric vehicles

(EVs) and other energy storage applications.

The facility, expected to create more than 300 jobs in the first phase, will have annual capacity of around 700 million sq m of coated lithium-ion battery separator film - which prevents the battery's positive and negative electrodes from touching, while allowing lithium ions to pass through and energy to be stored.

The company says the

plant will effectively be Canada's first large-scale wet-process separator facility.

"This is a bold step in advancing innovation in battery technology," said Koshiro Kudo, president and representative director of Asahi Kasei. "It will further meet the growing demand for electric vehicle battery separators across North America."

➤ www.asahi-kasei.com

PS gets recycling boost in US

The US-based Plastics Industry Association has formed a new body to improve polystyrene recycling.

The Polystyrene Recycling Alliance (PSRA) will cover both standard and expandable polystyrene, and involve brands, converters, and recyclers.

"Polystyrene is inherently recyclable and will be recycled at much greater scale in future," said Matt Seaholm, president and CEO of the association.

PSRA has established a roadmap to guide the initiative. Initial data indicates that 32% of the US population now has access to recycle one or more polystyrene items. With ongoing investments in capacity, PSRA expects recycling access for several PS formats and applications to approach "widely recyclable status" by 2030.

Richard Shaw, chair of PSRA, said: "Our focus is to expand recycling options for all types of polystyrene."

➤ www.psrecycling.org

Expanding PCR packaging options

Revolution Sustainable Solutions has acquired Island Plastics, which produces post-consumer recycled (PCR) LDPE and LLDPE film-grade resin.

The takeover will expand Revolution's recycling capabilities, especially in the production of clear food-grade PCR for flexible food packaging and other applications.

In October 2023, Revolution received a Letter of No Objection (LNO) from the US Food and Drug Administration (FDA) for its mechanical recycling method to produce clear food-grade PCR-LLDPE resin from stretch film. The approval allows the use of up to 100% recycled content in food contact applications across a range of food

types and conditions, it says.

"By integrating Island Plastics' recycling capabilities and PCR products, we are poised to enhance our sustainable ecosystem and further contribute to a circular economy," said Scott Coleman, president and CEO of Revolution.

➤ www.revolutioncompany.com

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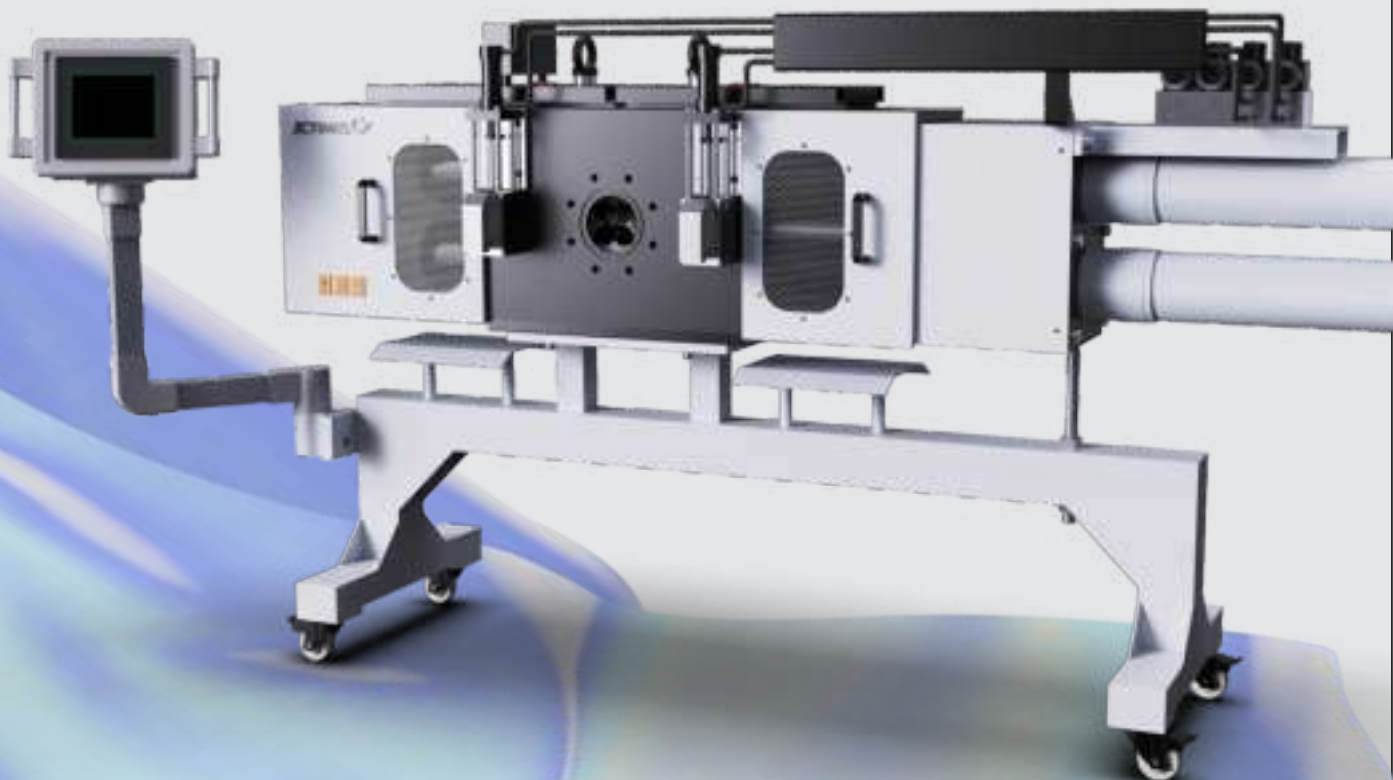
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CMD is DAC sales partner

CMD has become the exclusive North American sales partner for web inspection systems from DAC Engineering. The systems are used in applications including printed webs, label-stock and sheet-fed materials.

The partnership combines DAC's vision inspection expertise with CMD's sales network and market knowledge, according to Tim Lewis, VP of global sales and marketing at CMD.

► <https://cmd-corp.com>

Italy expects dip in 2024 machine sales

Italian sales of plastics and rubber processing machinery are expected to fall by around 9% in 2024, according to a full-year forecast.

Amaplast, which represents manufacturers, said sales fell to an estimated value of €4.35 billion, due mainly to a reduction in exports to around €3.25bn.

At the same time, weak domestic demand reduced imports by 15%.

Sales to Europe - the main export market - fell by around five percentage points, due mainly to dips in

Spain and Poland. However, sales to Germany, Turkey and the UK were healthy. Sales to the Americas showed "little dynamism", said Amaplast.

Sales to Mexico were healthy, while those to the US were slower. In South America, Brazil remained the leading market, but there were slowdowns in Argentina, Peru and Chile.

There was a sharp growth in sales to Asia, especially China, India, Thailand and Indonesia. In Africa, strong sales to sub-Saharan

countries (such as South Africa) were offset by weaker sales to Mediterranean countries - though Morocco saw a positive result.

"It is not easy to make predictions for 2025," said Massimo Margaglione, president of Amaplast. "The ability to adapt to changing markets - and propose technologically advanced solutions - must be balanced against the growing complexity of global scenarios."

► www.amaplast.org

Single-ply roofing sheet cuts carbon at shopping centre

Renolit Alkorplan's single-ply roofing membranes have been used as part of a 'green' renovation project for the Maremagnum shopping centre in Barcelona.

Owner Klepierre invested €18 million, as it wanted to offer a better service without increasing carbon footprint. Specifically, it wanted to cover the second floor of the shopping centre and reshape it to create space for a new food market.

"In reference to the roof, it was fundamental that it contributed to a passive solution" said Pamela Martin, of L35 Architects. "We looked for a material that guarantees a solar reflectance index that does not accumulate energy in



IMAGE: RENOLIT ALKORPLAN

Renolit Alkorplan's Bright roofing membranes were used to renovate the Maremagnum centre

the covering itself - thus avoiding the heat island effect."

Renolit's Bright roofing membrane is white throughout (both underneath and on the surface)

and offers a high-quality finish. It was fitted on an area of 1,500 sq m.

Renolit planted 24 trees to offset the project's CO2 emissions.

► www.renolit.alkorplan.com

Sonoco sells to Toppan

US-based Sonoco is to sell its thermoforming and flexible packaging business to Toppan Holdings for around US\$1.8 billion.

The deal, which is subject to closing conditions including regulatory approval, is expected to close in the first half of this. Net proceeds from the transaction are expected to be used to repay existing debt.

"Selling this business accelerates our portfolio simplification strategy and streamlines our organisational structure," said Howard Coker, president and CEO of Sonoco.

► www.sonoco.com



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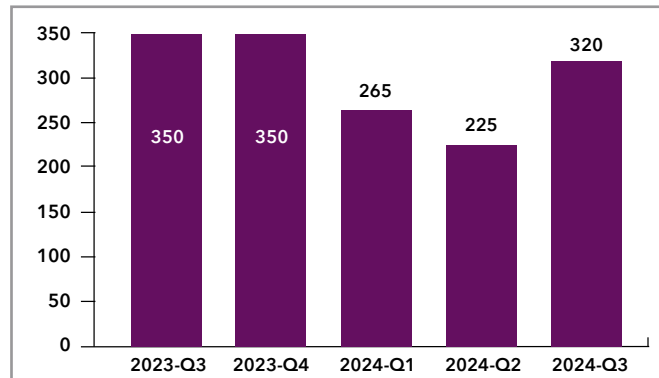
US plastic machine sales decline in third quarter

North American sales of plastics processing machinery fell again in the third quarter of last year.

The Plastics Industry Association's Committee on Equipment Statistics (CES) said machinery sales were US\$319 million for the quarter - a 9% fall on the same period in 2023.

However, it was around 42% higher than the second quarter of the year.

Sales of single-screw extruders fell nearly 28% year-on-year - but were about 32% higher than the previous quarter. Twin-screw extruder sales rose 43% year-on-year and by nearly 150% on the previous quarter. For comparison, sales of injection moulding



Primary plastics machinery sales, US

Source: CES, Plastics Industry Association

machines were down 11% year-on-year, but up around 34% compared to the previous quarter.

"The rebound in primary plastics equipment in the third quarter shows that growth prospects remain, aligning with the positive outlook for the broader

plastics industry - not just equipment," said Perc Pineda, chief economist at the association. "With baseline demand for plastic products holding steady, demand for plastics equipment is likely to grow over time."

➤ www.plasticsindustry.org

Cosmo First raises sales in H1

India-based flexpack supplier Cosmo First raised sales and profitability in the first half of the year.

The company reported sales of 1450 crore Rupees (around US\$166 million) - up 9% on the same period

of the previous year. At the same time, profitability (EBITDA) rose by one-third, to reach 191 crore Rupees (around US\$22m).

The profit rose thanks to higher volumes and BOPP film margins, it said. BOPET,

which accounts for around 9% of sales, also saw higher margins.

"In film, our focus remains on speciality film and cost rationalisation," said Pankaj Poddar, CEO of Cosmo First.

➤ www.cosmofirst.com

Plastics output falls in Europe

Production of plastics in Europe fell more than 8% in 2023.

Plastics Europe, which represents resin manufacturers, says the sharp decline - to 54 million tonnes - contrasted with the 3% global increase in plastics production. This puts Europe's share of plastics production at 12%. At the same time, exports of plastic resins from Europe declined by more than 25% between 2020 and 2023.

Production of mechanically recycled post-consumer plastics also dropped by nearly 8%, to around 7 million tonnes.

"The EU's transformation to a circular plastics system is in danger from imported plastics which do not always meet EU standards," said Marco ten Bruggen-cate, president of Plastics Europe. "The circularity transition will only be successful if policymakers urgently implement the framework conditions needed to regain our competitiveness."

➤ <https://plasticseurope.org>

Amcor and Berry plan merger agreement

Amcor and Berry, which have combined revenues of \$24bn and adjusted EBITDA of \$4.3bn, have entered into a definitive merger agreement.

The merger will bring together two worldwide production and commercial networks to create what they said is "a global leader in consumer packaging solutions, with a broader flexible film

and converted film offering for customers, a scaled containers and closures business, and a unique global health-care portfolio".

The combined group would serve more than 140 countries through approximately 400 production facilities.

The transaction has already been unanimously approved by both boards

and is expected to close in mid-2025. Peter Konieczny will serve as CEO, Graeme Liebelt as Chairman and Stephen Sterrett as Deputy Chairman. The new entity will be named Amcor and its global head office will remain in Zurich, Switzerland.

➤ www.amcor.com

➤ www.berryglobal.com

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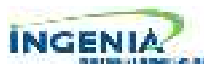
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IMAGE: WIPAK



Wipak has invested in several of its European facilities, including Walsrode in Germany

Wipak invests in multiple expansions

Finland-based flexpack company Wipak has made a number of investments that it says will strengthen operations.

A new extrusion production line at its Nastola facility will boost annual capacity and expand its portfolio in recycle-ready and healthcare packaging. This will allow Wipak to introduce a new range of PE-based films for Flowpack applications, as well as PE-based lidding films. The films are designed for recycling and suitable for food industry applications. In addition, cleanroom facilities for its Steriking products will be updated and expanded over the next three years.

Wipak will also make investments

at other European facilities. At Walsrode in Germany, it will make a "multi-million Euro investment" over the next three years, adding converting machinery and optimised material flows to improve manufacturing processes and enhance logistics efficiency. It will also invest "several million" Euros at its site in Spain. It has also installed a 'Greencast' line at its Gryspeert facility in France, allowing it to provide co-extruded mono-material solutions for thermoforming applications.

"These investments show that we are all in on growth, innovation, and sustainability," said Karri Koskela, CEO of Wipak.

> www.wipak.com

Fimic to represent Nordson

Fimic has become the new Italian agent for the Polymer Processing Systems (PPS) division of Nordson.

The deal combines Nordson BKG's portfolio of melt pumps, screen changers and pelletising systems with Fimic's knowledge of melt filtration processes and its established network within the Italian plastics industry.

Highlights of the partnership

include enhanced technical support and streamlined sales and service, says Nordson.

Sven Conrad, BKG's global segment development director at Nordson, said Fimic's industry connections and technical expertise made it "the ideal partner".

> www.nordsonpolymerprocessing.com

> www.fimic.it

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As demand for bio-based plastics continues to grow, producers are planning to bring new production facilities online - and introduce new grades - as converters develop more sustainable applications



Pushing the envelope of bio-based plastics

From small beginnings, bioplastics - which are derived from sustainable resources rather than petrochemicals - continue to capture the market.

European Bioplastics (EUBP) - which represents resin producers - says that production continues to rise. The organisation estimates that global bioplastics production capacity will increase from around 2.5 million tonnes in 2024 to more than 5.7 million tonnes in 2029.

"This growth should be seen against the backdrop of increasing consumer awareness of the environmental impact of plastics consumption," said Hasso von Pogrell, managing director of European Bioplastics.

EUBP says that bioplastic alternatives exist for many conventional plastics - such as biomass-derived PE and PP - while materials such as PLA and PHA can be used to replace conventional polymers. Packaging remains the largest market segment for bioplastics with 45% (1.12 million tonnes) of the total market in 2024.

In its 2024 annual report, EUBP said that the bioplastics industry is producing at almost 60% capacity. Though this can vary from one polymer to another - ranging from 35% to 100% - the average utilisation rate in 2024 was 58% (1.44 million tonnes produced, from 2.47 million tonnes of production capacity).

PLA in UAE

One unlikely location for this growth is the petrochemicals-rich Middle East - where **Emirates Biotech** has begun work on what it says will be the world's largest PLA production facility.

The plant, in the United Arab Emirates (UAE), will be built in two phases - each with a capacity of 80,000 tonnes/year. Construction will begin this year and the plant is expected to be operational by early 2028, using lactic acid as its feedstock - resulting in a total production capacity of 160,000 tonnes/year.

Emirates Biotech will use Sulzer's licensed PLA technology to manage all production steps from a

Main image: Production of bioplastics, made from renewable resources, will more than double by 2029



IMAGE: EMIRATES BIOTECH

Above:
Emirates Biotech is building a 160,000 tonnes/year PLA plant, for completion in 2028

single location, including lactide production, purification and polymerisation. The facility will also use a plant-based feedstock to produce high-quality PLA bioplastics at scale, it says.

“Our partnership with Sulzer marks a key milestone in our journey to establish a world-class PLA production facility,” said Marc Verbruggen, CEO of Emirates Biotech.

Bio-based nylon

Toray of Japan is exploring whether it can mass-produce PA66 from agricultural waste.

It has signed an agreement with Thai petrochemicals producer **PTT Global** to evaluate the feasibility of making “several thousand tonnes” of bio-based muconic and bio-based adipic acid annually by 2030.

The companies have already started developing technology to make these PA66 precursors from biomass-derived sugars made at Cellulosic Biomass Technology, a Thai company in which Toray owns a stake.

PTT uses its fermentation technology to convert sugars from the waste into muconic acid. Toray’s hydrogenation process converts muconic acid to adipic acid - which can be used to make PA66.

PHA progress

Lummus has taken the position of lead investor in the **RWDC Industries** convertible bond round, in a project to produce polyhydroxyalkanoates (PHAs).

“Lummus’ investment in RWDC is a testament to our commitment to commercialising PHA and advancing the circular economy of the polymer industry,” said Leon de Bruyn, CEO of Lummus.

Since signing a binding agreement in September 2023, Lummus and RWDC have made progress in their goal of speeding up adoption of PHA and prepare the technology for global licensing. The engineering phase of RWDC’s first commercial-scale PHA facility is nearly complete,

with detailed engineering and preconstruction activities still to be finalised. Lummus said its investment in RWDC’s convertible bond round will enable completion of these final stages - with the aim of starting construction of the facility this year.

Daniel Carraway, CEO of RWDC, added: “This investment accelerates our journey towards construction of our first commercial-scale PHA production facility and validates the immense potential of our technology.”

PEF plant

A five-year pan-European research project called **PEference** has culminated in the construction of a production plant for FDCA - a key building block for the biopolymer PEF.

The 5,000 tonnes/year facility - at Chemie Park Delfzijl, in the Netherlands - makes FDCA from plant sources. PEF is a polyester that can be used in applications including flexible films. It is similar to PET, but bio-based and with high barrier and mechanical properties. PEF is also suitable for recycling while maintaining its quality and value.

“The opening of this plant is a pivotal moment for PEference and the bioplastics industry,” said Ed de Jong, VP of development at **Avantium**, which coordinated the project. “PEF is a material of the future as it offers a sustainable alternative to traditional plastics.”

Compostable seal

Shrink sleeve label supplier **Sleever** - with help from biotech specialist **Carbios** - has developed a home compostable tamper-evident seal.

The product, called Seelcap Onego, incorporates Carbios Active - an enzyme that biodegrades PLA - into a biopolymer blend.

This ensures that the seal disintegrates under composting conditions, even at room temperature, in less than six months. It can reduce carbon footprint by up to 70% compared with

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conventional shrink capsules, say the companies - while significantly increasing circularity.

The new formulation can be used on existing lines and is compatible with Sleeveless Combishrink and Combiskinner shrink-fitting equipment, with outputs ranging from 60 to 24,000 bottles per hour. Seelcap Onego was launched at the LuxePack Monaco show last October.

The tamper-evident function is necessary to ensure packaging security. Due to its small size, conventional tamper-evident systems do not fit into traditional packaging sorting and recycling flows - which is where the new system fits in.

"This innovation in packaging security meets the needs of the wine, spirits and alcoholic beverages markets, particularly in countries where recycling channels for glass packaging have not yet been developed," said Eric Fresnel, president of Sleever International.

Certified range

CJ Biomaterials has secured Biodegradable Products Institute (BPI) certification for its range of PHA masterbatches and compounds for the US market. These combine the properties of its Phact-branded PHA and polylactic acid (PLA), for products including rigid and flexible packaging.

It means that six products - three masterbatches and three compounds - are now BPI-certified.

"BPI certification ensures that products sent to composters are safe, help capture more food scraps, and breakdown within expected timeframes," said Max Senechal, chief commercial officer at CJ Biomaterials. "As demand for sustainable materials grows, BPI certification will allow us to partner with brands and converters looking to accelerate the development and adoption of new compostable products."

Certification and labelling are increasingly important as composting infrastructure that accepts food scraps and compostable products expands in the US, said the company. To ensure that commercial composters can maintain manufacturing high-quality compost, BPI certification requires that certified products facilitate the capture of food or green waste. Diverting food scraps away from landfills can help to reduce methane emissions.

Bio-based PVC

TekniPlex Healthcare claims it is the first

company to develop medical-grade, bio-based PVC compounds that are ISCC Plus-certified.

It says the compounds - including plasticisers - are equivalent to traditional medical-grade PVC in terms of chemical composition, functionality, and regulatory viability.

The compounds can reduce CO₂ emissions by up to 90% compared with conventional PVC resins, and around 60% relative to traditional PVC plasticisers, says the company. They can be used as a drop-in replacement for a variety of extruded PVC applications including tubing solutions and films used for trays, pouches and bags.

"This is a significant step forward in healthcare materials science sustainability," said Meg Henke, global head of product management at TekniPlex Healthcare.

Bioplastics recycling

A pan-European project will attempt to boost the recycling of bioplastics.

ReBioCycle, which began last year, will establish separate 'hubs' for mechanical, chemical, enzymatic and microbial recycling. These will be located in the Netherlands, Italy, Spain and Ireland. The project aims to demonstrate the impact of obtaining the same or superior grade of three types of recycled bioplastics - PLA, PHA and composites - in higher-value applications.

European Bioplastics and its members - including TotalEnergies Corbion, Aimplas, Novamont, Sulapac and Kaneka - are among the 20 project partners.

"Current recycling technologies for recycling biodegradable plastics are limited," said Jan Pels, managing director of Torwash, which leads the Dutch hub. "With this project we are going to make them widely available - then nobody can claim that biodegradable plastics cannot be recycled."

ReBioCycle will separate the three types of bioplastics by adapting and upscaling existing sorting technologies. It will also propose a range of bioplastics recycling technologies at a relevant scale and demonstrate their effectiveness.

This will result in a position paper on the status of bioplastics recycling, to provide a contribution to various European action plans and strategies. ReBioCycle has received €7.5 million in funding from the European Union's Horizon Europe research programme. ➤



IMAGE: CARBIOS

Left: Sleever and Carbios say they have developed the first home-compost tamper evident seal

Right: The Biofast project has devised a way to speed up biodegradation tests of compostable plastics

Project coordinator Kevin O' Connor, professor in the school of biomolecular and biomedical science at University College Dublin, added: "ReBioCycle will scale up and demonstrate bio-based biodegradable plastics recycling technologies."

Testing time

A Spanish research project, called Biofast, has devised a way to carry out biodegradation tests of compostable plastics more quickly.

The project partners - including coordinator **Aimplas**, the MATS Research Group at Valencia University and materials company Prime Biopolymers - developed and validated a new protocol that combines specific bioplastic formulations, various oxidative pre-treatment technologies and compost enrichment to speed up biodegradation.

The MATS group applied abiotic pre-treatment technologies - including plasma and UV irradiation, as well as hydro- and chemo-thermal degradation - to biopolymers. The impact of the oxidative pre-treatments was evaluated in terms of the short- and medium-term stability of the materials' structure, morphology and functional performance.

Prime Biopolymers prepared several compositions of compostable biopolymers that are currently used on the market, while Aimplas analysed factors that affect biodegradation. This led to a strategy to speed up the process based on increasing the potential of the biotic and abiotic components involved in composting.

"This is an important step towards a circular economy model in which bioplastics can be rapidly broken down and valorised," said the partners. "The protocol developed could be adopted on a large scale to promote more sustainable and efficient practices in the treatment of compostable bioplastic waste."

Aimplas is also involved in a project to use a waste product from the brewing industry as a bioplastics precursor.

Brewers' spent grain (BSG), which is rich in fibre and protein, is typically used as low-value animal feed or discarded in landfills. BSG could be used as a feedstock for bioplastics, but applications are limited by poor mechanical properties and lack of scalability.

The Polymeer project aims to develop new bio-based polymers, copolymers and polymer blends based on BSG. The materials produced will be aimed at three targeted applications: mulch films suitable for agricultural use; textile for the



IMAGE: AIMPLAS

automotive industry; and tertiary packaging films for industrial purposes. All products will be designed to be recycled or biodegraded in specific environments.

Over 48 months, the project will attempt to optimise the conversion of BSG into bio-based building blocks. It will also assess the life cycle sustainability, cost-effectiveness, and scalability of these solutions.

The project, supported by a €4.9 million Horizon grant, has 14 partners in eight countries - including Spain, Italy, Croatia and Denmark.

Conference highlights

Delegates at the recent *Bioplastics* conference - organised by **AMI** - also learnt about new bioplastics materials and applications.

Ramani Narayan, a professor at **Michigan State University**, told delegates that radioactivity is key to validating the bio-based carbon content of a bioplastic. This is through 'carbon dating' - the same technique used to determine the age of ancient artefacts.

Similarly, a molecule derived from organic matter - such as biomass - will be faintly radioactive, due to the presence of carbon-14 molecules. There will be no carbon-14 molecules in petroleum, as they are millions of years old and will have decayed into stable carbon-12 molecules.

"Biobased carbons will have the same C-14 radioactivity as plant biomass - providing a tracer," said Narayan

This can be used to verify the bio-based nature of bioplastics using a technique called accelerator mass spectrometry (AMS) - which measures the proportion of C-14 molecules. This is achieved through a standardised test (ASTM D6866/ISO 1660 part 2).



IMAGE: AIMPLAS



Above: The Polymeer project aims to develop new bio-based polymers from brewer's spent grain

AMI | Events

Multilayer Flexible Packaging

May 21-22, 2025 | Chicago, IL, USA



The Multilayer Flexible Packaging event hosted by AMI brings many leaders across the value chain to discuss future opportunities, new technologies and trends in the industry. I found the conference very informative and would highly recommend to anyone interested in learning more about the flexible films industry.



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This can also be fed into a mass balance calculation, he added.

Blend improvement

Akanksha Patel, a polymer scientist at **CJ Biomaterials**, explained how the company's PHA biopolymer can be used to create a new range of packaging materials in combination with PLA.

"Our strategy is to use our Phact A1000P amorphous PHA to enable easier processing and superior performance of PLA-based blown, cast and biax films," she said.

The company prepared two PHA/PLA blends - one clear (CA1270P) and one mineral-filled (CA1240PF) - which were compared with pure PLA material.

The new formulation led to films with a reduction in torque and pressure, relative to PLA control. This led to easier extrusion and improved downstream web handling. In addition, there was a 10-20% increase in output rate relative to the PLA control for any given screw speed.

"Early plastication of A1000P appears to promote faster solids-melt transition of PLA," she said.

Both grades were industrially compostable - while CA1240PF had good potential to be home compostable, she said. In addition, both were processable using MDO to create oriented films for shrink wrap applications.

Market outlook

Heather Nortz, manager of sustainability and materials at the **Plastics Industry Association** in the US, told delegates that US production and use

of bioplastics still lags behind the global average. While bioplastics account for around 1.5% of global production, this figure is about 0.6% in the US. Projected to 2028, bioplastics will account for 2% of global production - and 1% of US production.

However, while exports of bioplastics from the US are expected to remain stable to 2028, imports are expected to accelerate. In that time, global production of bioplastics is expected to triple - from around 2 million tonnes in 2023 to more than 7m tonnes in 2028: Asia currently accounts for around half of all bioplastics production - but will exceed 70% by 2028, she said.

■ The next *Bioplastics* conference is held in Cleveland, USA on 26-27 August this year. For more details, contact Annabel Kerr on +1 610 478 0800 (annabel.kerr@amiplastics.com).

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Going again: breathing new life into polyolefins



Recent developments in polyolefin materials include applications in stretch and shrink film, vacuum packaging and freezer film - many of them based at least partially on recycle

Polyolefins are the most versatile and widely used of all polymers - and are increasingly being supplied in the form of recycle.

Packaging manufacturer **Winpak** has signed a long-term agreement with **Nova Chemicals** for the supply of its Syndigo post-consumer recycled polyethylene (PE).

Winpak will use the material in packaging materials to protect perishable foods, beverages and personal care products.

"This is a significant step forward in delivering innovative, sustainable solutions to the flexible packaging industry," said Greg DeKunder, vice president of Nova Circular Solutions.

Nova's recycling facility in Connersville, Indiana - scheduled to begin operations early this year - will produce more than 110 million pounds (50,000 tonnes) of Syndigo annually. The facility will supply post-consumer recycled LLDPE for a range of applications, including flexible food packaging.

Mustafa Bilgen, vice president of technology and innovations at Winpak, added: "This collaboration will allow us to expand our sustainable product offerings and meet the evolving needs of our customers."

Stretch film line

Rani Plast has also installed a new cast line at its Bjölas factory, to make industrial stretch film.

"Right now, there is great demand for thinner, more durable films," said Magnus Lundén, sales manager at Rani Plast. "With our new line we will be able to meet our customers' needs and attract new customers too."

The new line, from German manufacturer **Windmüller & Hölscher**, has more features than an existing cast film line at Rani Plast - such as the ability to produce thinner films with up to nine layers. It is also equipped with larger, more advanced filters - to make films from recycled materials - as well as a high degree of automation and additional test equipment, allowing better monitoring and maintenance.

In addition, it can manufacture both machine stretch film and hand stretch film.

"Hand stretch film accounts for a large share of the market," said Lundén. "With this investment, we can compete with others in this segment and enter new markets, such as the logistics industry."

Traditional industrial customers using machine stretch film will also have a broader range to choose from, he added.

In addition, Rani Plast has acquired Lithuanian flexpack manufacturer UAB Umaras. It says this will allow the two companies to offer their customers a wider product range.

Umaras, located in Utena, Lithuania, produces industrial packaging film, has 215 employees, and

**Main image:
Nova's new
recycling plant
will produce
around 50,000
tonnes/year of
recyclate**



IMAGE: NOVA

Above: Winpak will use recyclate from Nova in packaging materials to protect perishable foods

an annual turnover of around €40 million. Around half its annual production is sold within the Baltic states, and the remainder is exported. Rani Plast sales director Dennis Granqvist will become Umaras' new CEO.

Tissue packaging

Borealis has helped Rani Plast to develop tissue paper packaging that contains 80% post-consumer recycled (PCR) polyethylene.

Designed for products such as kitchen roll, the multi-layer film uses Borcycle M CWT100VL - plus 20% virgin resin - to deliver the same strength and performance as conventional packaging, without increasing film thickness. Borealis says the new packaging has a 50% lower carbon footprint than traditional packaging.

"This advance means we can now offer our customers packaging solutions at the cutting edge of sustainability," said Rikhard Storbacka, procurement and R&D director at Rani Plast.

Prior to this, the companies collaborated to create a flexible film with 55% PCR content.

Recycled stretch film

ExxonMobil has teamed up with **Colines** and **Gneuss** to produce stretch film that incorporates recycled content.

This is to overcome the fact that LDPE/LLDPE that has undergone extensive mechanical processing can be difficult to convert into new film on conventional production lines.

The gels and black dots that typically reduce the quality of recyclate can be minimised by using appropriate materials from ExxonMobil, a pressure-constant screenchanger from Gneuss and a flexible cast film line from Colines.

When ExxonMobil conducted trials using

post-consumer recyclate (PCR) - derived from stretch film - combined with its Exceed Tough m3812 polyethylene it saw a reduction in the size of the larger polymer gels.

"With most commercial PCR grades on the market, extrusion lines often cannot run continuously," said Bart Lauwers, principal extrusion customer and application development at ExxonMobil. "Filtration removes a significant proportion of the impurities present in the melt, but not all the gels."

The tests demonstrated the ability to produce film with 30% PCR content for automatic use with a consistency of 180-200% without the need to stop the line, other than for routine operations such as lip die cleaning or chill roll cleaning. A key factor was the Gneuss RSFgenius self-cleaning screenchanger, which renewed the screen surface with no measurable pressure fluctuations. It has typical screen finenesses of 30-75 microns.

By incorporating the screenchanger, Colines has created several large-scale production lines dedicated to recycled content - with more under development.

Thinner skin

ExxonMobil has also helped a flexpack producer to develop an ionomer-free vacuum skin packaging (VSP).

VSP is used to package products such as meat - by applying heat to a thin plastic layer, then drawing it over the product and a tray, and removing the air using a vacuum.

Videplast, a Brazilian packaging converter, saw the chance to replace its existing resin with a new one from ExxonMobil, to create a solution with reduced film thickness that does not contain ionomers.

"We saw an opportunity to develop a differentiated structure for the VSP film," said Leonardo Nunes da Silva, R&D manager at Videplast. "By creating a unique structure that does not contain ionomers, we saw an opportunity to

Right: Borealis has helped Rani Plast develop tissue paper packaging with 80% PCR polyethylene



IMAGE: BOREALIS

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offer a high-performance, cost-effective solution.”

The VSP uses Exceed XP 7052ML, which ExxonMobil says offers benefits including cost-effectiveness, a tight seal and protection from spoilage, leakage and contamination – for extended shelf life.

In addition, the company has helped **Constantia** develop a freezer film for the ready-to-use plant-based food brand Bonduelle. The mono-material polyethylene (PE) solution replaces multi-material metallized films, so is easier to recycle. The new film can be used for ‘challenging to pack’ vegetables such as spinach and broccoli.

“We selected a mono-material PE solution without adhesives to facilitate easier recycling compared to multi-material solutions,” said Arnaud Warusfel, packaging development manager at Bonduelle Europe Long Life. “We encountered numerous challenges but overcame them with the technical expertise of Constantia and ExxonMobil.”

In the lab, the film showed superior puncture and tear resistance, encouraging Bonduelle to conduct a factory trial – where it performed well on the company’s vertical form fill seal (VFFS) packaging line, with high abrasion resistance at high speed.

Frozen treat

In similar fashion, **Sabic** has helped food manufacturer Lamb Weston create bags for frozen produce – based partially on polymers made from used cooking oil.

The process begins with the collection of the cooking oil from Lamb Weston’s production, which is then converted to bio-feedstock to produce Sabic high-density polyethylene (HDPE) and Supeer mLLDPE polymers. The final packaging contains at least 60% cooking oil-based polymer.

Oerlemans Plastics converts the polymers into a multilayer PE film for Lamb Weston’s pre-fried frozen potato products.

“Distributors, retailers and consumers have a growing preference for more sustainable packaging,” said Sebastiaan Besems, vice president of commercial for EMEA at Lamb Weston. “This project meets our goals to halve our food waste, cut overall product carbon footprint by 25% and move to more circular production by 2030.”

A combination of 20% reduced film thickness – the bags have an average unit weight of only 10g – and the use of bio-renewable PE enables a carbon footprint reduction of around 30% compared to the previous bags used for this application. The HDPE in the film delivers high strength and flexibility, while the mLLDPE resin improves sealing.



IMAGE: CONSTANTIA

Separately, Sabic has helped develop a greenhouse roofing film made from recycled polymer – its Trucircle LLDPE, produced from pyrolysis oil made from mixed post-consumer plastics.

The 200-micron film for the roofing is made by Napco National. It has good tensile strength and elongation and has passed relevant Elmendorf tear and dart impact testing. In addition, it has high clarity and UV stability. It has also been treated with SecondSky technology from Iyris boosts thermal behaviour by blocking near-infrared radiation without affecting the transmission of photosynthetically active radiation.

Floatable sleeves

Innovia Films has extended its range of floatable polyolefin shrink films.

It says that its RayoFloat range of shrink sleeves support the recycling of rigid packaging in the PET, HDPE and PP streams. They are made from low density materials that automatically separate from PET flakes in the sink/float process step at recyclers and float to the top of the washing tank – while heavier PET flakes sink to the bottom.

“This is an ideal density separation that leads to very clean PET flakes that can be recycled back into new bottles,” said Marika Knorr, head of sustainability and communications at Innovia Films.

The standard RayoFloat sleeve is 50 microns, but Innovia offers a thinner 45-micron version. There is also a high-shrink version for more complex bottle shapes. In addition, RayoFloat WAPO (White APO) protects products that are light-sensitive. This new opaque film is a low-density white polyolefin film that maintains floatability when printed. It contributes to light blocking that later can be applied to containers for light-sensitive products.

Innovia has also developed a white, ultra-low density BOPP film for ice cream flow wrap packaging.

The new film grade, VL40, was trialled and

Above:
ExxonMobil
helped
Constantia
develop a
freezer film for
‘challenging to
pack’
vegetables

Right: Sabic's LLDPE polymer, made from pyrolysis oil, is used in a greenhouse roofing film

launched at Innovia's site in Plock, Poland. "The film is a high-gloss white coextruded OPP film with a very wide heat seal range," said Piotr Piasny, general manager at Innovia Films in Plock. "We made some significant changes to our extrusion lines to be able to deliver this specific grade."

Its features include high puncture resistance - which is important to preserve the product and prevent food waste. The printability of the product helps to achieve superior graphic appeal, and the film provides an easy-to-open package.

The films are largely unaffected by climatic conditions but should not be stored above 40°C. Under suitable storage conditions, the film can be stored for six months without risk of deterioration.

Standing up

At last year's *Plastic Pouches* conference, organised by **AMI**, Daniele Borin, senior product manager for flexible packaging in the EU at **Taghleef Industries**, said that stand-up pouches are one example of a product that will need to be redesigned in light of the new PPWR regulations.

"PPWR sets targets that impacts pouches in the areas of reduction and recyclability," he said.

For instance, the law sets a 5% reduction in packaging waste by 2030, rising to 10% by 2035 and 15% by 2040. There are also tough targets for recyclability of packaging, and the inclusion of recycle.

He said that Taghleef's heat-resistant film can help to meet design criteria through higher heat stability and reduced thermal shrinkage. In addition, its Extendo PP-based barrier structures deliver protection against oxygen and water vapour. In one example, a PET/PE structure with an LDPE zipper was replaced with an Extendo XTGR grade, TSU and a PP zipper - for a mono-material (PP) solution with a high barrier.

Similarly, with Sipospack, it replaced a PET/Alu/PE structure - plus PP zipper - with a mono-PP solution that boasted a high barrier against oxygen, moisture and mineral oil - as well as odour protection. The pouch is used for applications such as dry broth, chocolate and vitamins.

"Mono-material design is crucial to meet recycling - both mechanical and chemical - and

recycled content targets of PPWR," said Borin. "Functionality needs to be maintained to guarantee product protection and performance."



IMAGE: SABIC

The company recently opened an innovation centre at its San Giorgio di Nogaro site in Italy. The new facility is designed to encourage collaboration and speed up innovation.

By locating the centre adjacent to production lines - including extrusion, metallisation and coating - Taghleef has integrated research and development with manufacturing.

"This is a testament to our commitment to meeting the evolving needs of the market," said Wolfgang Meyer, managing director of Taghleef Industries in Italy.

In addition, it has developed a partially bio-based version of its Derprosa polypropylene laminating films.

Its Derprosa BioBlue range includes 30% resin that is derived from waste cooking oil.

"With Derprosa BioBlue laminating films you can contribute to a lower use of fossil resources and a reduction in carbon footprint," said the company.

It adds that the films offer the same technical characteristics and performance as the equivalent versions made from traditional fossil-based materials.

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Below: Innovia trialled its new VL40 film grade at its site in Poland



IMAGE: INNOVIA

Measured approach: raising quality control

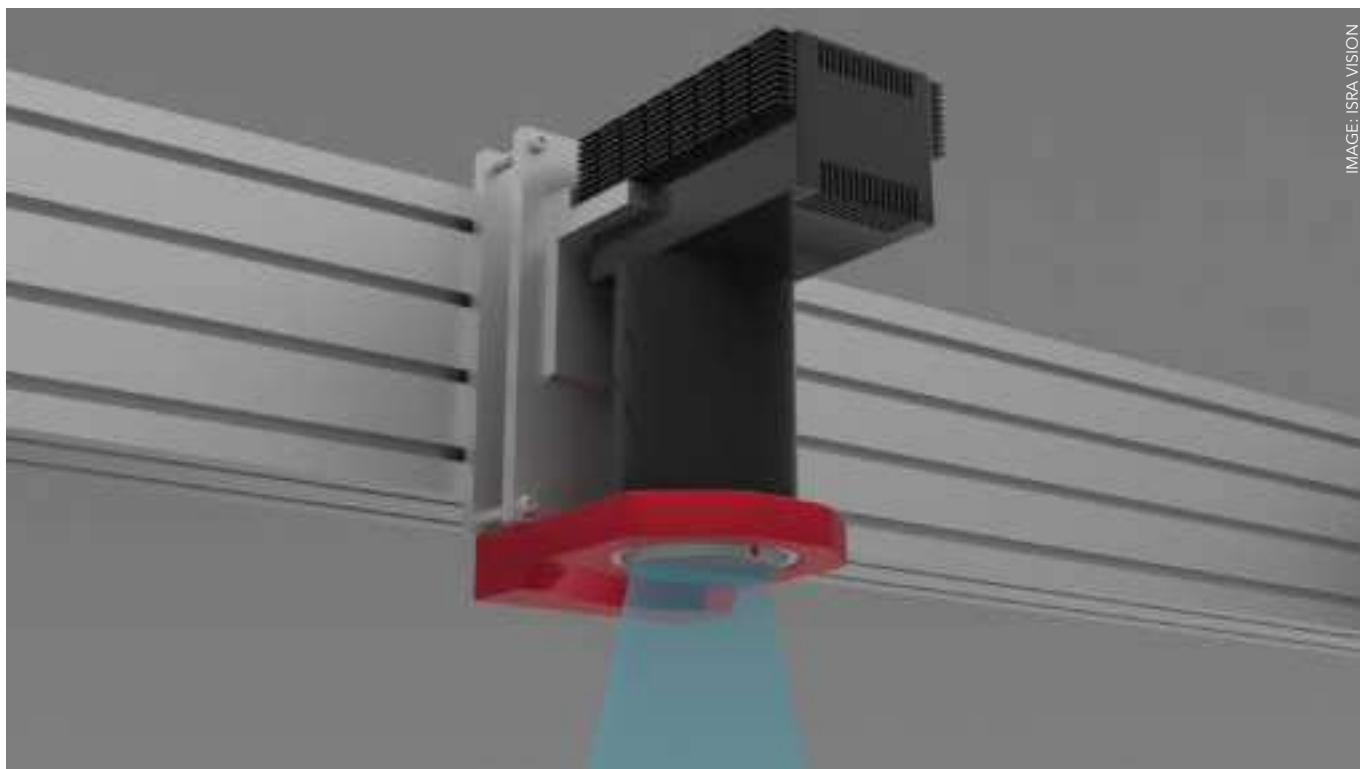


IMAGE: ISRA VISION

Developments in materials testing and quality control include a thickness measurement system, how viscometry improves foams, and an inline way to inspect polarisation film

Ensuring quality is fundamental to manufacturing – including all forms of plastics production. Everything from extruded film to printed packaging must be assessed for its appearance, performance and physical characteristics.

One recent development comes from **Isra Vision**, which has enhanced its optical inline inspection system for polarisation films.

The company has equipped its Smash system with a new sensor that improves the detection of typical defects such as scratches and perforations. Thanks to a special extra lens, the polarisation angle of the camera can be automatically changed. Pre-configured, product-specific profiles can be transmitted online to the camera. There is no need to stop production to make adjustments – which further optimises inspection performance and product quality while saving time and cost.

The system offers automatic surface inspection

for optical films such as prism films, polariser films, protective films and window films. High-resolution line-scan cameras and lighting technology help it to recognise even the smallest defects – even at line speeds up to 150 m/min.

The trainable defect classifier QuickTeach helps to simplify and accelerate system start-up. The system also includes a set of tools for data recording, analysis and reporting functions. The polarising filter used for inline inspection allows automatic adjustment of the polarising angle in the event of phase changes in the film. It sets the polariser to full-light extinction or other predefined settings without the need to stop production. Because the camera always receives an optimum input signal, defects can be recognised even more efficiently and reliably, says Isra. This helps to optimise product output and raise quality.

Product-specific settings can be pre-configured

Main image:
Isra has enhanced its Smash optical inline inspection system for polarisation films

as recipes and transmitted online to the camera during operation. Compared with the manual setting of the polarization angle, the automatic adjustment ensures higher precision and also saves both time and money.

Using the new filter, the waste generated during start-up can typically be reduced by up to 1,000 sq m for each eight-hour shift, depending on roll width and line speed. This increases the amount of saleable product and protects resources by reducing material consumption and production waste.

Web extension

Atlas Material Testing Solutions has extended its web-based WXView II data acquisition system to its Suntest and Xenotest weathering testing instruments

The software was previously limited to its flagship Weather-Ometers series. It has now expanded to four additional weathering testing instruments: the Suntest XLS+ and XXL+ full-spectrum xenon-arc flatbed instruments for 3D specimens; and the Xenotest 220+ and 440 compact, rotating-rack, xenon-arc weathering and lightfastness testers.

WXView II R2 allows users to monitor test parameter, control system and other data outputs in real time. The upgraded WXView II R2 allows multi-site monitoring, which is useful for companies that have labs or contract manufacturers in multiple locations.

“This adds more functionality to more Atlas instruments,” said Chelsea Todd, product marketing manager at Atlas. “Our remote data acquisition software provides you with access to your Atlas instruments from anywhere, anytime.”

The company has also introduced the Atlas S3T system - which allows continuous measurement of the specific surface temperature of individual samples during live testing. It is used with the company’s Weather-Ometer Ci4400 and Ci5000 instruments.

Surface temperature is a critical factor for the rate of photochemical reactions in weathering. Until now, measuring it has not been feasible for multiple samples in laboratory weathering instruments. For this reason, surface temperature is often neglected during testing - or only roughly estimated based on black and white standard or panel reference temperatures, says Atlas. >

AMI | Market Intelligence

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Contact me for more information

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The core of the system is an integrated, contactless IR pyrometer, which measures and assigns the surface temperature of each specimen and can operate continuously during the complete exposure.

Mobile sorting

BASF Thailand has presented a mobile NIR spectroscopy device – from its subsidiary **Trinamix** – to the Plastic Institute of Thailand, during a workshop on mechanical recycling and sorting of plastics.

The partners say this will help to advance plastics circularity in Thailand. The device accurately identifies a broad range of plastic types on-site, optimising the recycling process by ensuring high-quality sorting from the outset.

The institute provides knowledge, R&D and training to the local plastics industry. Integrating the Trinamix device will help it improve plastic sorting and support local recycling projects by enhancing efficiency.

“Through this initiative, we can advance the circular economy in Thailand, aligning with our goal of achieving net zero emissions by 2050 alongside our partners,” said Panuwat Triyangkulsri, acting president of the Plastic Institute of Thailand.

Foam solution

Promix Solutions says that its Visco-P inline viscometer is gaining increasing interest from extruders of foams.

It is particularly relevant for companies producing light foams – such as XPS, XPE, XPP and XPET – where line productivity, foam density and the mechanical properties of the final products are critical.

From the heating phase of the line, until standard production conditions are reached, the operator uses the Visco-P in a similar way to how an explorer in the forest traces a path with a map and a compass. The displayed graph of the melt viscosity shows, in real time, the effects of every small change in the process parameters – from temperature and throughput adjustments to variations in the amount of blowing agent and raw material composition.

The Visco-P, in combination with a P1 cooling mixer, can improve the process. The P1 cooling mixer can homogenise and lower the melt temperature. With the Visco-P, this setup allows precise adjustment and control of melt viscosity before the polymer enters the extrusion die. This increases output, improves cell structure and can lower foam density. It also enables safe processing



Left: NDC says FilmPro gauge offers accurate thickness measurement of film and sheet

of cheaper, lower-viscosity raw materials – which can reduce production costs.

Profile control

NDC, a division of Nordson Measurement & Control Solutions, says its FilmPro gauge can accurately measure the thickness of film and sheet.

The infrared gauge is engineered to deliver accurate, repeatable, high-resolution thickness measurements for film, sheet and coated products. It is designed to provide reliable measurements under varying conditions, including fluctuating light, temperature and humidity.

FilmPro does not require special radiation licenses, protective guarding or interlocked safety gates. Its calibration techniques ensure measurement accuracy, and it can measure various materials including clear, pigmented, voided, pearlized and coloured films (including black). It can measure the true thickness of voided, microporous, or breathable films, as well as their weight and density. It can also measure barrier materials such as nylon, EVOH and PVDC.

Another benefit is its ability to measure thin, clear films – which often generate reflected light and create a phenomenon called Optical Interference (OI), which can affect the accuracy of infrared film measurements. To overcome this, FilmPro includes an optional Fringe Suppression Optics (FSO) module, tailored for thin films. This module features a new, more efficient optical system that is unaffected by changes in film thickness, scanner misalignment or run-out.

Melt testing

ZwickRoell says its new Mflow extrusion plastometer sets new standards in melt flow testing in accordance with ASTM D1238 and ISO 1133-1/-2.

In its base version, it performs melt mass flow rate (MFR) and melt volume flow rate (MVR) – using

Right: TA's smart-seal pans enables convenient TGA analysis of atmosphere-sensitive samples



Method A for MFR and Method B for MVR. Thanks to its modular design, the device is adapted to the needs of the plastics industry. It can be expanded with functions such as pneumatic weight lifting, a cleaning function and a weight-selection feature. These offer increased adaptability for growing laboratory requirements.

One important update is a 30% reduction in cleaning time between tests.

"With improved accessibility and optimised surfaces, cleaning time is reduced - enabling successive tests to be carried out more quickly," said Dennis Stöhr, product manager at ZwickRoell.

The Mflow also has a focus on ergonomics, offering an optimised working position that reduces physical strain on the user. An integrated touch display and LED status indicators support intuitive operation, which is possible both with and without a PC.

Sealed tight

TA Instruments has developed its TGA Smart-Seal Pans - self-opening containers that enable analysis of atmosphere-sensitive samples in its Discovery thermogravimetric analyser (TGA).

The new pans allow air-sensitive materials to be prepared, loaded, and sealed in an airtight environment. The self-opening pan uses a temperature-sensitive shape memory alloy to open the sealed pan at around 55°C. This occurs automatically without user interaction in the closed TGA, so samples are never exposed to ambient conditions.

"Whether they are developing next generation batteries, new medicines or advanced polymers, many of our customers have a growing need to analyse air-sensitive samples with speed and accuracy," said Yu Cheng, vice president of research and development and product solutions at TA Instruments.

Until now, he said, operating TGAs inside atmosphere-controlled gloveboxes has been the main option - but has high costs and complexity.

"Our smart-seal pans deliver reliable, accurate TGA data at a lower cost within a traditional laboratory environment," he added.

Analysis of air- and humidity-sensitive materials typically requires installation of a TGA device inside an atmosphere-controlled environment (a 'glove-box') - but this can lead to higher costs. By eliminating the glovebox, customers can save lab space and support twice as many TGA instruments for nearly the same price and achieve higher throughput, says TA.

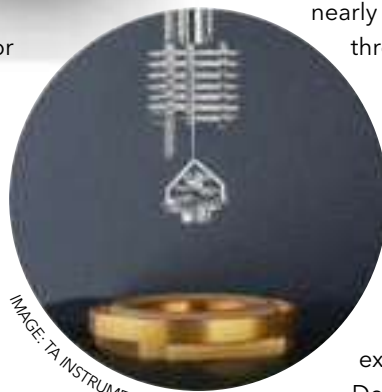


IMAGE: TA INSTRUMENTS

Performance update

Lloyd Instruments has developed its latest material testing equipment, the LSPlus Series. Building on the legacy of its LS Series, the latest versions offer a leap forward in performance, reliability, and user experience, says the company.

Designed to meet the demands of material testing professionals, the LSPlus Series maintains the functionality of its predecessor while introducing higher accuracy components - allowing everything from tensile and compression testing to flexural and peel testing. One improvement is in speed regulation and accuracy, says Lloyd.

This advancement reflects Lloyd Instruments' unwavering commitment to pushing the boundaries of innovation in material testing technology. By incorporating the latest components, the LSPlus Series ensures superior precision, reliability, and durability, empowering users to achieve consistent and trustworthy results.

"With its advanced features, the LSPlus Series underscores our dedication to delivering state-of-the-art solutions for our customers' material testing needs," said Toby Rogers, director of test sales at Ametek STC, Lloyd's parent company.

Key features include: higher speed regulation and accuracy; updated components for improved performance and reliability; compatibility with a range of grips and accessories, for versatile testing capabilities; and, an intuitive software interface for seamless operation and data analysis.

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Health matters: latest in medical materials

Recent medical material and application developments include improved colours and additives, several recyclable blister pack concepts and new types of active packaging

Material developments are critical to the medical industry - with packaging improvements helping to ensure that vital medicines are fully protected before they are needed by patients.

Aptar CSP Technologies and **ProAmpac** have developed a new type of active packaging.

ProActive Intelligence Moisture Protect (MP-1000) combines Aptar CSP's three-phase Activ-Polymer technology with ProAmpac's flexible blown film technology in a moisture-adsorbing flexible packaging solution.

It is the first in a series of active microclimate management packaging solutions to cut the risk of degradation, maintain potency and improve product performance, say the developers.

Activ-Polymer helps to protect sensitive drug products, probiotics, medical devices, drug delivery systems and foods. By adding it into a flexible film structure, MP-1000 delivers high-quality moisture protection without the need for add-on desiccant sachets. The solution not only adsorbs excess moisture within a package, but also shields the contents from any moisture that passes through the packaging.

Available in rollstock or pre-made pouches, MP-1000 has excellent seal characteristics and runs on high-speed form-fill-sealing equipment, ensuring product integrity and compatibility with existing flexible packaging equipment.

"The goal of this collaboration is to transform the way active packaging is delivered and fulfill unmet needs by providing the market with a fully integrated, flexible, multi-layer film solution," said Badre Hammond, vice president of global commercial operations and general manager APAC at Aptar CSP.



IMAGE: BUSINESS WIRE

RecyClass approval

Perpetua, a mono-polypropylene (PP) laminate for the pharma industry from **Constantia Flexibles**, has received technology approval from RecyClass.

The material, a laminate with a BOPP/metBOPP/ CPP structure, was evaluated by RecyClass under the guidance of Plastics Recyclers Europe (PRE). As well as high recyclability, it provides barrier protection against moisture, oxygen, and light, while reducing global warming potential by 48-55% compared to functionally similar multi-material laminates, says the company.

In addition, Perpetua Alta has earned the RecyClass Letter of Compatibility for Design for Recycling - class B, following its technology approval in 2022.

"This recognition strengthens our position as innovators in mono-PP laminates, and we are ready to meet future demands as the PP recycling stream in Europe develops," said Roberto Martin, head of innovation for laminates at Constantia Flexibles.

Marked out

Masterbatch supplier **Ampacet** has introduced ProVital+ LaserMark, which is designed for high-

Main image: MP-1000 combines Aptar's Activ-Polymer with ProAmpac's flexible blown film technology



IMAGE: TEKNIPILEX

Above:
TekniPlex Healthcare has expanded capacity of its multi-layer blown cleanroom films

contrast laser marking using Nd:YAG lasers on medical products including packaging systems.

Medical marking enhances the safety and reliability of medical and pharmaceutical products and supports efficient manufacturing and supply chain management. Markings ensure proper usage, quality, integrity and sterility of products as well as compliance with regulations. While several techniques exist, laser marking has become the preferred method due to its high precision, durability and efficiency, says Ampacet.

The company has introduced two ProVital+ LaserMark products: 1001513-EM, for dark markings on transparent, translucent, white or light-coloured PE or PP parts; and 1001514-EM, an antimony-free technology that is more environmentally friendly and safer for production teams, for dark markings on white and light-coloured PE or PP parts; and

The masterbatches have been formulated with raw materials that have been pre-evaluated for biocompatibility. They provide full consistency of formulation with a no-change policy for raw materials at CAS and commercial levels, says Ampacet.

Medical masterbatch

Gabriel-Chemie has introduced a masterbatch range for the medical industry, designed to meet the requirements of ISO 10993.

The new line features polyethylene (PE)- and polypropylene (PP)-based polymer carrier masterbatches, and was developed to help streamline bio-compatibility concerns.

The company says that the medical masterbatches will help to reduce product development times due to being a ready-made product range.

“This is reflected in the careful selection of raw

materials that meet ISO 10993 standards,” said Diego Karpeles, corporate business development and innovation manager at Gabriel-Chemie. “Our product range also includes specialised laser-marking masterbatches.”

The medical masterbatches adhere to ISO 13485 certification, ensuring compliance with strict quality standards.

Colour range

At the recent Pharmapack 2025 in France, **Avient** highlighted its range of colorants and additives for supporting medication identification and enhancing the performance of medical devices and pharmaceutical packaging.

Its Mevopur formulations and additives can be used to accelerate the development of healthcare products and help reduce the risk of non-compliance, it says.

“Our Mevopur portfolio is constantly growing and adapting,” said Volker Dickfeld, senior marketing manager in healthcare global for colour and additives at Avient.

Its Mevopur healthcare bio-based polymer solutions – which help reduce carbon footprint – are colour and additive concentrates formulated with bio-based polypropylene, polyethylene, polycarbonate, ABS and styrenic polymers. These drop-in solutions can cut carbon footprint by more than 70% compared to fossil-fuel-based counterparts, it says, in applications such as pharmaceutical packaging.

Its Mevopur chemical foaming agents – which reduce material use by up to 20% depending on part geometry and wall thickness – are suitable for the extrusion of polyolefins, styrenics, and copolymers.

Clean expansion

At the same event, **TekniPlex Healthcare** announced it has expanded capacity for its cleanroom-produced multi-layer blown films.

At its Puurs facility in Belgium, it is now offering co-extruded blown films and bags with up to five layers – with a particular focus on PE-EVOH-PE constructions with a high oxygen barrier.

The blown film upgrade reflects a market shift away from conventional food-grade materials towards higher-quality grade pharmaceutical resins, it says. These materials are used for cleanroom-produced films and bags, manufactured in accordance with GMP guidelines. The company’s existing customers are driving demand here, through requests for higher barrier solutions requiring multi-layer protective properties, it says.

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Right:
Suedpack's
PP-based
PharmaGuard
recyclable
blister helps to
reduce carbon
footprint

The company also showcased its range of more sustainable blister packaging solutions, which can be run on standard machines. It has developed a pharma-grade blister film with 30% post-consumer recycled (PCR) content. It incorporates Alpek Polyester's Octal rDPET sheet technology, which - when combined with TekniPlex's Teknilid Push polyester lidding - yields a blister package that can be recycled in the polyester stream.

It also exhibited what it says is the world's first fully transparent recyclable mid-barrier blister package. Recyclable in places where the #5 (polypropylene) recycling stream is available, the blisters feature a polyolefin blister film paired with a barrier PP lidding film.

Recyclable PP

At the CPHI in Italy last year, **Suedpack Medica** exhibited its PharmaGuard recyclable blister concept - based on polypropylene (PP) - for hard pharmaceutical products or nutraceuticals.

The focus on one polymer (PP) means the overall concept ensures simple, effective recyclability. This makes it a major contributor to a circular economy, it says. According to an LCA conducted by Sphera, PharmaGuard helps to reduce carbon footprint, and both energy and water consumption compared to typical blister solutions made of PVC/PVdC and aluminium, it says.

Other benefits of PharmaGuard its high transparency, water vapour barrier, stable shrinkage behaviour and wide sealing range. It also offers simple, secure sealing without additional sealing coating.

When developing the solution, the company wanted to ensure childproof yet user-friendly unpacking.

"As with conventional packaging solutions, a blister concept with PP-based top and bottom webs must ensure it is easy to pop out the tablets or capsules whatever their size, shape and type," said Thomas Freis, managing director of Suedpack Medical.

The mono-material is also free of phthalates, vinyl, PFAS and halogens, making it safe for human health, he added.

Blister recovery

Blister packaging is commonly made from a composite of PVC and aluminium but can be hard to recycle. This is often done by grinding the scrap finely, but this can produce aluminium with up to 10% residual PVC - so cannot be used directly as a recyclate.



IMAGE: SUEDPACK

An alternative - developed by **Fraunhofer IVV** in Germany - is to use an extractive, solvent-based process. Fraunhofer originally developed the technique to recycle polystyrene. The process removes the PVC using selective 'green solvents' (which are non-hazardous and emit no VOCs). The aim is to produce high-purity secondary aluminium and a PVC recyclate that can be used by the plastics industry - such as for window profiles, credit cards or even new blister packaging. At the same time, the PVC-free aluminium is suitable for re-use.

The process was originally tested on blister packaging 10 years ago as part of a research project. It was recently optimised in an industry project (in collaboration with VinylPlus).

Now, a pilot plant with a throughput of up to 20 kg/h for solvent-based plastic recycling is available at Fraunhofer IVV to evaluate the process on a technical scale and produce sample quantities for external application tests.

Medical branding

Materials developer **Coveris** has brought its medical offerings under a single brand name: MediFlex.

"The demand for high quality, sustainable medical packaging is steadily growing," said Jan-Willem Bruijsten, director of the medical segment at Coveris. "We recently invested over €8 million to expand production capacity and know-how for medical device packaging at our Rohrdorf and Halle facilities in Germany."

The investment involved upgrading medical device production, including ISO Class 7 cleanroom manufacturing.

Coveris says the rebrand helps distinguish its medical portfolio from other non-food applications - and reflects the heritage of its Rohrdorf and Halle sites as specialists in medical packaging.

US expansion

Medical packaging specialist **Nelipak** has opened its first North American flexible packaging production site, in North Carolina.



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Right: Rinco says its Electrical Motion 20 and 35 machines improve weld quality and repeatability

The new site, in Winston-Salem, will support growing customer demand in the Americas region and adds to Nelipak's three existing European production sites.

The company's healthcare flexible packaging product line includes custom-designed roll-stock, die cut lids and sheets, pouches and bags. These incorporate a wide range of material substrates (films, Tyvek, foil-laminates) and the company's heat-seal coating technologies which include Nelipak CR27 and Nelipak SBP2000.

"We are thrilled to bring our flexible healthcare packaging products closer to our customers," said Pat Chambliss, CEO of Nelipak. "We are actively developing sterile-barrier packaging solutions that help our customers deliver on their sustainability and business continuity objectives."

The 110,000 sq ft site includes ISO-7 clean room space, new production equipment, and ISO 13485 certification.

Digital benefit

Flexpack specialist **Gualapack Pharma** says it has introduced digital printing solutions for aluminium and PVC blister foil production. This, it says, helps it to ensure higher quality, flexibility and speed in the pharmaceutical packaging sector.

One huge benefit of digital printing is the ability to achieve a very short lead time. This fast turnaround helps pharma companies to respond swiftly to market needs, such as for new product launches, clinical trial packaging or custom batch requirements.

Digital printing eliminates the need for extensive pre-press setup, including the production of plates. This reduces initial costs and allows for seamless revisions and updates to packaging designs without delaying production timelines.

Digital printing delivers high print quality, with vibrant colours and precise details that meet the pharmaceutical industry's high standards, it says. The technology supports variable data printing, enabling serialisation, anti-counterfeiting measures, and unique design elements for enhanced product security and differentiation.

Welding innovation

Rinco Ultrasonics showcased its latest plastics welding innovations for medical applications at the recent MD&M West in the US.

It says its Electrical Motion 20 and 35 machines push the limits of what customers can achieve in weld quality and repeatability.

"We've developed a more intuitive ultrasonic



IMAGE: RINCO

system that is faster and more efficient to help manufacturers meet today's challenging productivity demands," said Bill Aurand, sales manager at Rinco.

A redesigned microprocessor operating system increases screen response time, it says. The Linux Ubuntu operating system is logically structured, self-explanatory, and easy to use, giving operators and maintenance personnel easy access. A new stack mounting feature facilitates easy alignment for quick-change tools. The device is also fully calibratable and offers permanent audit trails so users can track all system errors and adjustments.

In addition, its Standard Series ultrasonic welders, available in 20, 35 and 70kHz, have been upgraded with enhanced pneumatics and new user-friendly features. The new series includes a machine status indicator on the front. A light strip indicates machine status (ready = green, error = red), alerting the operator to good and bad parts.

Both systems meet ISO 13485 certification standards for medical device manufacturing and feature a non-volatile audit trail for traceability of weld parameters, adjustments and any errors or faults that occur.

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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

JBF Bahrain

Head office: Al Hidd, Bahrain

General manager: Biplab Mishra

Founded: 2012

Ownership: Private

Employees: Around 300

Profile: JBF Bahrain, founded in 2012, is a producer of biaxially oriented PET (BOPET) films, for applications including food packaging, photovoltaics, electrical insulation, labelling and flat screens. These use an increasing amount of recycled materials. The company also produces metallised film. Its production facility has a capacity that exceeds 90,000 tonnes/year. It says that it exports to more than 100 countries.

Product lines: The company's main product line is BOPET film - branded as Aryafilm - which is available in more than 200 variants, such as plain/corona treated, chemically treated (for retort application), anti-static, high-friction and heat-sealable products. Production is split between thin film (9-50 microns) - which tends to be used for packaging - and thick film, up to about 350 microns. Its metallised film is also available in many varieties. Many films use chemically recycled PET, sourced from sister company JBF Global Europe in Belgium.

Factory location: The company has a production facility in Al Hidd that makes its entire range of products. Here, it has three BOPET lines (two for thin film, one for thick) supplied by Dornier, and two metallisers from Bobst. JBF recently underwent refinancing, which saw its UAE-based sister company sold off, leaving the core of the Belgium- and Bahrain-based businesses.

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

Film and Sheet FORTHCOMING FEATURES EXTRUSION

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Editorial submissions should be sent to Lou Reade: lou.reade@amiplastics.com

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**Film and Sheet
November-December 2024**
In Film & Sheet Extrusion's November-December edition, the cover story reports on the views of thin wall packaging experts, while other features are on melt filtration systems, advances in foamed sheet and the latest stabiliser products.

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**Film and Sheet
October 2024**
Film & Sheet Extrusion's October edition has features covering technology for granulation and recycling, developments in extruder systems, biaxially-oriented film market and technology, and mineral additives.

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**Compounding World
December 2024**
The December 2024 issue of Compounding World looks at strong currents in global markets affecting companies in the flame retardants sector and trends such as recycled content leading the strategies of masterbatch producers.

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**Plastics Recycling World
November/December 2024**
Plastics Recycling World's November-December 2024 edition shows how in-line data can be used to correct imperfect PCR plastics in articles on colour and melt flow, while non-conventional PET recycling processes are also covered.

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**Pipe and Profile
Winter 2024**
Pipe and Profile Extrusion's Winter 2024 edition has a cover feature showing how R&D is helping wood-plastic composites continue to improve, while other features are on large-diameter pipe, materials handling products and PVC additives.

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**Injection World
November/December 2024**
The November-December issue of Injection World magazine has a cover feature on the growing availability of digital aids to production in injection moulding, while other features cover developments in hot runners and materials handling. Plus there is a Fakuma 2024 review.

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GLOBAL EXHIBITION GUIDE

2025	24-26 February	Plast-Alger, Algiers, Algeria	https://www.plastalger.com
	11-14 March	Plastimagen, Mexico City	www.plastimagen.com.mx
	18-20 March	Plastics & Rubber Vietnam, Ho Chi Minh City, Vietnam	https://plasticsvietnam.com
	24-28 March	Plástico Brasil, São Paulo, Brazil	www.plasticobrasil.com.br
	15-18 April	Chinaplas, Shenzhen, China	www.chinaplasonline.com
	7-8 May	PlastTeknik Nordic, Malmö, Sweden	www.plasttekniknordic.com/en/
	8-10 May	RePlast Eurasia, Istanbul, Turkey	www.replasteurasia.com
	14-17 May	Plastics & Rubber Thailand, Bangkok, Thailand	https://www.plasticsrubberthailand.com
	20-23 May	Plastpol, Kielce, Poland	www.targikielce.pl/en/plastpol
	27-30 May	GreenPlast, Milan, Italy	www.greenplast.org
	24-26 June	Foam Expo North America, Novi, MI, USA	www.foam-expo.com
	8-15 October	K2025, Dusseldorf, Germany	www.k-online.com
12-13 November	Plastics Extrusion World Expo North America, Cleveland, OH, USA	https://na.extrusion-expo.com/	
3-6 December	PlastEurasia, Istanbul, Turkey	https://plasteurasia.com	


AMI CONFERENCES

17-19 February 2025	Polyethylene Films, Tampa, USA
11-12 March 2025	Agricultural Film Europe, Malaga, Spain
11-12 March 2025	Chemical Recycling North America, Dallas, USA
18-19 March 2025	Single-Serve Capsules North America, Tampa, USA
2-3 April 2025	Innovations in Pouches, Vienna, Austria
8-10 April 2025	Stretch & Shrink Film Europe, Malaga, Spain
29-30 April 2025	Specialty Packaging Films Asia, Bangkok, Thailand
21-22 May 2025	Multilayer Flexible Packaging North America, Chicago, USA
24-26 June 2025	Chemical Recycling Europe, Brussels, Belgium
15-16 July 2025	Agricultural Film North America, Tampa, USA

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