

Plastics Recycling WORLD



ADDITIVES: INNOVATION IN RECYCLING

UPDATES ON PET AND MELT FILTRATION

PREVIEWS: RACE INDIA AND GREENPLAST ITALY

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COVER PHOTO: AVIENT

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Cedo plans film plant closure

Long-established plastics recycler Cedo Recycling is planning to gradually stop operations at its Geleen site in the Netherlands later this year. The company, part of the Cedo film and flexible packaging group, said in a statement that the “decision is being considered due to ongoing market challenges, rising operational costs, and increasing regulatory pressures, which have impacted the site’s long-term viability”.

The plant began operations in 1979 with an initial focus on recycling clothes, before expanding to include PP caps, crates and PS cups and then, in 1985, becoming the first plant in Europe to recycle PET bottles. Since then Cedo has built the plant’s capability for recycling post-consumer PE flexible films, particularly from household packaging, which it says is widely regarded as the most problematic plastic waste.



The Geleen plant is Europe’s largest plastic film recycling centre with the capacity to process more than 80,000 tonnes/yr of plastics waste into recycled granules

According to the Cedo Recycling website, the Geleen plant is Europe’s largest plastic film recycling centre with the capacity to process more than 80,000 tonnes/yr of plastics waste into recycled granules. Its output is used to produce refuse sacks at the group’s facilities in Poland and the UK.

Cedo Recycling said in its statement that it will engage in discussions with employee representatives before it makes a final decision “at a

later stage” about closing the Geleen plant. “Despite these challenges, Cedo remains dedicated to sustainability and, in any case, will continue its recycling efforts at other locations across Europe,” the company said.

Industry body Plastics Recyclers Europe has highlighted the dire position that plastics recycling companies are finding themselves in. “The European Union’s plastic recycling industry is at a breaking

point,” said PRE in a statement. “A sharp decline in domestic production, increased imports, and rising economic pressures are forcing company closures. The industry has long warned of these risks, and today they are unfolding with severe consequences across the entire value chain.”

Increasing plastic waste exports from the EU (36% higher in 2024 compared to 2022) highlights “an alarming shift away from in-region recycling efforts”, said PRE. “These trends have resulted in the slowest plastic recycling capacity growth recorded in years, paired with the increasing closure of recycling facilities. The total capacity of facilities that shut down in 2024 doubled compared to 2023, and the situation is intensifying in 2025, impacting both small and large companies alike.”

➤ www.cedorecycling.nl

➤ www.plasticsrecyclers.eu

Breakthrough claimed in PVDC barrier layer recycling

Syensqo has announced the results of trials that it says prove that multilayer food packaging structures with Ixan polyvinylidene chloride (PVDC) can be recycled into feedstock for other applications within a standard polyethylene-based waste stream. PVDC is used as an oxygen and water vapour barrier in food packaging.

The trials were conduct-

ed by CSI, a provider of testing and certification services, and part of IMQ group. Tests were performed with structures for high-barrier meat packaging using PE/EVA/Ixan /EVA/ PE multilayer films, and the impact of the structures on the recycling process evaluated in comparison to a reference sample of real flexible packaging waste.

Federico Baruffi, Global Marketing Manager Packaging at Syensqo, said multilayer films have a strong positive environmental impact by reducing food waste. However, due to their particular composition and structures, they have previously been considered impractical for mechanical recycling.

➤ www.syensqo.com

IN BRIEF...

Berry has released its 2024 Sustainability Report detailing its progress toward a circular, net-zero economy. The report shows purchases of post-consumer resin (PCR) increased by 43% year-over-year from 3.6% to 5.1% of total volume, while bioplastics purchases year-over-year increased from 0.6% to 1.5%. It also enhanced recyclability of key products.
www.berryglobal.com

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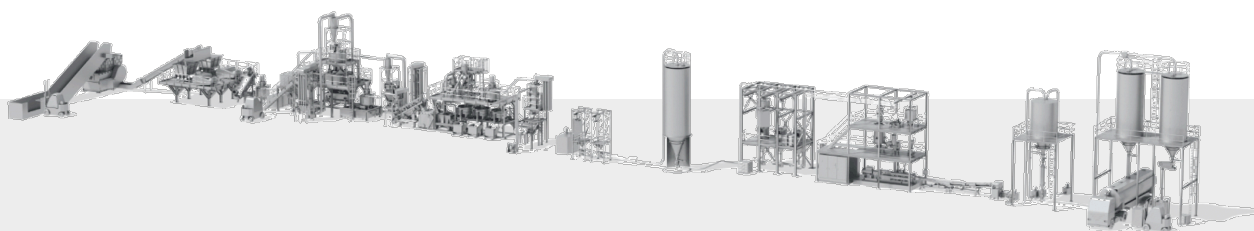
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HUL buys stake in Lucro

Indian company Hindustan Unilever (HUL) is acquiring a 14.3% stake in Lucro, an integrated waste management, recycling, and manufacturing firm.

The move is seen as a significant step towards achieving sustainability goals and scaling up the use of recycled flexible plastic content in packaging in line with government directives in India. The investment aims to strengthen plastic circularity by increasing the availability of recycled content for flexibles, providing a way for firms to move towards sustainable packaging.

Ujwal Desai, Managing Director, Lucro said the investment by HUL paves the way for increasing his company's recycling capacity, driving large-scale commercial adoption of post-consumer resin and setting a new benchmark for sustainable plastics.

➤ www.hul.co.in
➤ www.lucro.in

Veolia expands PET recycling in Europe

Major environmental services group Veolia is further expanding its PET recycling capacity in Europe and investing in the modernisation and expansion of its plants in Frauenfeld, Switzerland, and Norrköping, Sweden.

In Frauenfeld, Veolia is using artificial intelligence to improve input quality and is installing an additional extruder, while in Norrköping, a hall expansion and a new extruder will increase the output of high-quality granules.

With these investments, the company expects to increase its food-grade rPET production by approximately 30% while offering greater flexibility in the use of recycled materials and



IMAGE: RETURPACK

Sweden is an expanding location for Veolia's PET recycling

accommodating the increasing use of high-quality recyclate by system-relevant bottling plants.

"In Sweden, there are mandatory specifications for the design of PET bottles that are allowed to be sold," said Guido Adomßent, CEO of the Veolia Environmental Services Group. "This results

in a very high recycling quality, which in turn leads to high-quality recyclate."

Veolia says it is also keeping an eye on the other markets. "The current situation presents us with challenges, but we certainly see potential," adds Adomßent.

➤ www.veolia.com

Erema adds to ReadyMac range

Erema is expanding its ReadyMac recycling system portfolio by introducing the new ReadyMac 500 Heavy Duty (HD). The new addition features an integrated laser

filter which removes unwanted impurities from the melt while the screen is continuously cleaned by a scraper system, making it ideal for more heavily

contaminated input streams.

In addition to the new laser filter version, the ReadyMac 500 is still available.

➤ www.erima.com

Recycling makes Lego go round and round



The Lego Group has begun using a new, more sustainable material which contains at least 30% recycled content for selected tyres in its toy products.

The SEBS material is created by repurposing discarded ropes and nets from ocean vessels which is then combined with recycled engine oil. It will initially be used in seven Lego tyre pieces, though the company expects the new tyres to be used in approximately 120 different sets by the end of the year and plans to explore ways to expand recycled content across more tyre styles in the near future.

➤ www.lego.com

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Walmart fails to hit its 2025 packaging targets

Retail giant Walmart said it does not expect to meet its 2025 plastic packaging reduction and recyclability targets. The news comes shortly after the US retailer admitted it would fall short of 2025 and 2030 greenhouse gas emissions reduction targets.

"While we have made significant progress towards our ambitious 2025 goals for recycled content, virgin plastic reduction, and packaging recyclability, we expect to fall short of achieving these goals by 2025," said Walmart in a recent update, pointing the finger at limited supplies of high-quality PCR and price volatility. It also suggested that certain laws and regulations restrict PCR use



in certain areas.

The company said that 82% of its private-brand plastic packaging is designed for recycling and says it has reduced its overall 'plastic packaging intensity,' attributing increases in the weight of virgin plastic it uses to growth in certain product categories.

"While we continue to

work towards reducing waste, progress depends on many factors outside our control, including emergence and scalability of innovative more-recyclable materials, public policy for materials management systems, infrastructure development, and societal behaviour change," it said.

➤ <https://corporate.walmart.com>

Circular alliance in boats

An alliance consisting of various industry leaders has been formed to help achieve circularity in boat production so boats can be built using more recycled materials, such as Elium resin produced by Arkema which is a member of the alliance.

The collaboration, launched in France, claims to offer a model for composites sustainability. Beyond the marine industry, the collaboration intends to demonstrate how circular manufacturing can be applied across industries reliant on composites, including automotive, aerospace, wind energy, and construction.

"Elium resin was designed to make composites recyclable, and this initiative showcases how it works at scale," said Guillaume Cledat, Arkema Global Business Manager, and this lays the foundation for the industry to build a circular economy in composites.

➤ www.arkema.com

Carbios technology used by Biotherm



L'Oréal Group brand Biotherm is launching a cosmetics bottle, designed using Carbios' enzymatic PET recycling technology.

From spring, Biotherm's iconic Waterlover sun mist will be available in the reinvented bottle which is made with a material which reduces its carbon footprint by 90% compared to the production of a virgin plastic.

Carbios' biorecycling process also produces material of clear transparency, luxurious shine, and customisable colours.

➤ www.biotherm.com ➤ www.carbios.com

RecyClass revises methodology on recyclability

An updated version of the RecyClass Recyclability Methodology in Europe has been published in anticipation of upcoming legislative changes. The recyclability classification system, originally composed of six classes, will now be streamlined to three, with classes D, E, and F being removed and

classified as 'non-recyclable.'

In addition, the recyclable plastic content thresholds have been adapted to the preliminary PPWR thresholds and the revisions incorporated into the RecyClass audit scheme for plastic packaging recyclability.

"Over the past ten years, RecyClass

has been offering reliable and industry-relevant tools and certifications to advance plastic circularity," said Paolo Glerean, Chairman of RecyClass. "With this update, we are ensuring further optimisation of the methodology in light of the new regulation."

➤ <https://recyclclass.eu>



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New Versalis plant uses EPS waste

Versalis, Eni's chemical company, is opening a new production plant in Porto Marghera, Italy. The facility will have a capacity of up to 20,000 tonnes/yr of crystal polystyrene (r-GPPS) and expandable polystyrene (r-EPS), using secondary raw materials obtained from the recycling of expanded polystyrene (EPS) waste.

The materials produced at the plant will be part of the Versalis Revive range, containing between 35% and 100% post-consumer recycled plastics. These materials are primarily



IMAGE: SHUTTERSTOCK

intended for the packaging and construction sectors, for use in thermal insulation panels and protective packaging for household appliances.

"The new plant in Porto

Marghera is a first step towards the conversion of Venice's petrochemical hub, in line with the transformation and relaunch plan for Versalis," said Adriano Alfani, CEO of Versalis. "In

Porto Marghera, we plan to invest in the expansion of our mechanical plastics recycling platform and consolidate and enhance the logistics hub."

The company said this project not only provides a response to the structural crisis affecting the European chemical industry, but also strengthens Versalis' product portfolio. The site's strategic location, and proximity to facilities in Mantua, Ferrara, and Ravenna, aids logistics and further supports the supply chain.

➤ www.versalis.eni.com

Austrian mattress venture

Foam specialist Neveon and circular economy company Brantner have established the LOOP-it joint venture to boost mattress recycling in Austria.

LOOP-it, headquartered in Krems an der Donau, Austria, will initially collect, dismantle, and mechanically recycle used mattresses in cooperation with waste collection centres and other partners. The recovered raw materials will then be processed by Neveon and other manufacturers into high-value products such as carpet underlays, said the partners.

➤ www.neveon.com

➤ www.brantner.com

Axens and Sorema partnership

French chemical recycler Axens and Italian mechanical recycling firm Sorema have partnered to deliver integrated solutions aimed at facilitating the creation of food-grade recycled polyolefins.

Axens is offering a suite of commercial technologies to produce a recycled naphtha equivalent to

petrochemical naphtha through the proven pyrolysis pathway, enabling the production of food-grade recycled polyolefins.

Additionally, Axens markets the Rewind PET process, which can recycle all types of PET waste into a high-quality, virgin-like, recycled PET. Meanwhile, Sorema's expertise allows it

to optimise feedstock preparation.

Stéphane Fédou, Axens' Plastic Circular Economy Vice President, said: "This partnership illustrates the possible and necessary synergies between mechanical recycling and chemical recycling."

➤ www.axens.net

➤ www.sorema.it

Polykemi wins approval in China

Polykemi Group has become the first in Kunshan, China – where it has been manufacturing plastic compounds since 2007 – to be approved for expanded capabilities in upgrading recycled plastic raw materials after completing an environmental certification process. The approval enables processing alternative sources beyond conventionally recycled

products that have traditionally ended up in energy recovery.

On the back of the approval, Polykemi Group has invested in updated equipment to handle raw materials from a wider range of sources such as dust, non-woven, and fibre, thereby increasing delivery capacity. This development comes at a time when

demand for high-quality recycled plastic has never been higher, it said.

"The future for recycled and customised plastic materials is bright," said Magnus Lindahl, CEO China. He said Polykemi can now offer faster deliveries and larger quantities of more sustainable materials to its customers in Asia.

➤ www.polykemi.se

Republic and Blue Polymers open new US facility

Republic Services and Blue Polymers have opened North America's first Polymer Center and Blue Polymers plastics recycling complex, which will process recycled plastics collected from homes and businesses in Indiana and nearby states, including PET, HDPE, and PP.

The PET will be shredded and washed to produce flakes which are then used to manufacture new beverage bottles, while the HDPE and PP will be sorted by colour and type before being sent to Blue Polymers to be compounded, blended, and pelletised.

"The opening of the first Polymer Center-Blue Polymers complex is a significant milestone in advancing circularity for plastic packaging in Indiana and across the region," said Jon Vander Ark, Republic Services President and CEO.

Republic is a joint venture partner in Blue Polymers with Ravago.

The companies are in the process of developing a network of facilities for nationwide coverage. A Republic Services Polymer Center opened in 2023 in Las Vegas, and a second Blue Polymers facility is scheduled to open later this year in Buckeye, Arizona.

Products at a total of four facilities will include custom-blended and compounded materials for customers to

meet their goals and regulatory requirements for recycled content.

> www.republicservices.com

> <https://bluepolymers.com>

IMAGE: REPUBLIC



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IMAGE: AVIENT

Innovation in additives targets recycling issues

Formulation experts have identified solutions that restore flow characteristics and physical properties. New additives can help recycled polyolefins, PET and PVC, writes Jennifer Markarian

As companies seek to increase recycled content without sacrificing performance, additives of various types mitigate some of the problems that come with recycled materials, such as polymer degradation, substandard optical properties, or the variability in flow properties common in post-consumer recycling (PCR) streams. New measurement tools in development seek to further optimise the use of additives in bringing performance of recycled materials up to par.

Nexam Chemical has been developing its Reactive Recycling additive masterbatches to enhance the performance and cost-effectiveness of recycled plastics by tuning flow characteristics. Nexamite products include grades designed for rPP, rPET, and rPE.

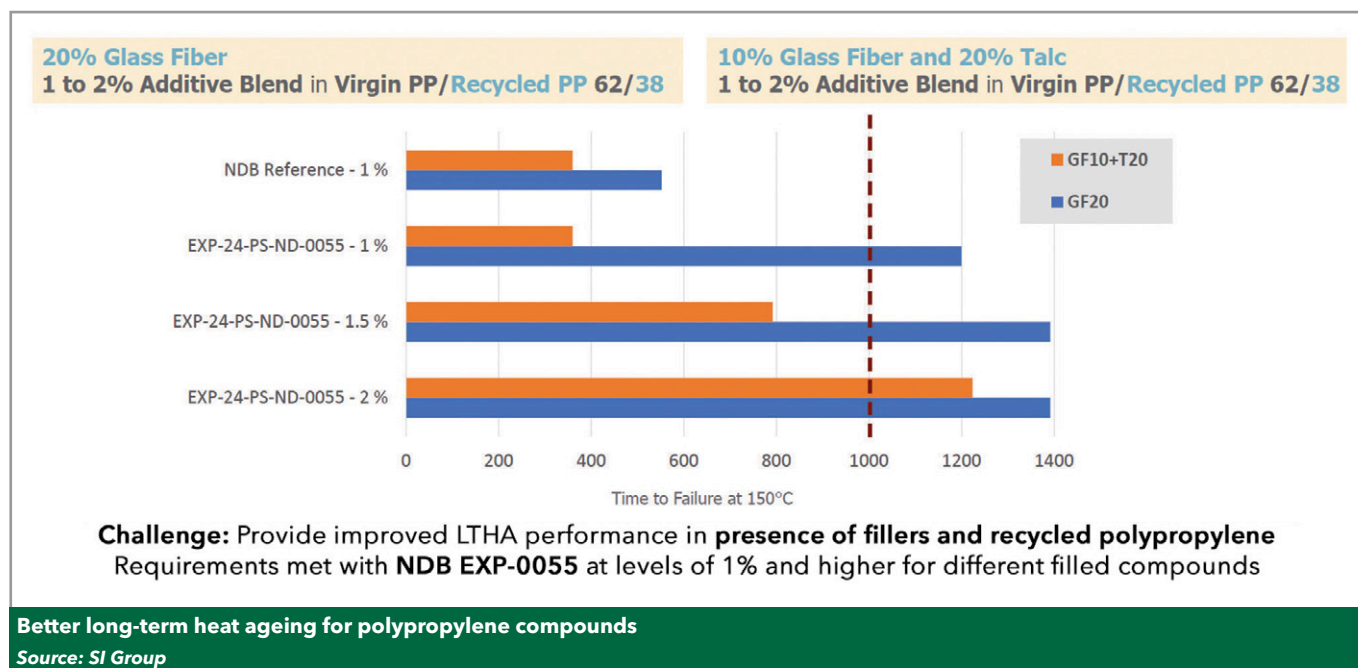
The company reported late in 2024 that it had progressed from industrial trials to commercial sales of its additives, with a key customer placing recurring monthly orders for a specific application. "This specific customer leverages Nexam's unique additives to incorporate a larger share of lower-grade recycled raw materials into their production

process, achieving a significant reduction in raw material costs. For this specific customer, using Nexam Chemical's additives has generated double-digit cost savings and significant process improvements. Depending on the customer's existing raw material mix, cost savings of 25% are not uncommon when implementing Reactive Recycling technology," Nexam said.

In October, the European Patent Office (EPO) confirmed that the company's patent concerning rPP, which was already in force in Sweden, can be extended to all countries in Europe where Nexam Chemical chooses to register the patent.

"Our innovations in recycled polypropylene enable our customers to meet or even exceed EU packaging recycling targets for 2025 and 2030," said Christer Svanberg, Chief Technology Officer at Nexam Chemical. "By offering advanced solutions for recycled plastics, using cost-effective mechanical recycling methods, we enable the industry to close the loop, reduce waste, and drive circularity. This patent grant is not only a testament to the scientific value of our technology but also to the

Main image:
Avient has developed ColorMatrix Amosorb 4020L, a shelf life extender oxygen scavenging additive for PET packaging which benefits recycling



critical role Nexam Chemical plays in transforming the future of plastics.”

The company noted that no opposition was raised by EPO against the company’s patent for rPE, which the company said validates the strength of its technology for plastics recycling. In February, a study of Nexamite R305 in recycled HDPE from researchers at the Polytechnic University of Turin in Italy was published. The additive enhances the polymer’s microstructure by introducing long-chain branching, which improves melt strength. The study found that rHDPE containing the additive demonstrated improved ductility and achieved an elongation at break of 350%.

“This study reinforces the value our additive technology brings to customers looking to enhance the performance of recycled HDPE in demanding applications,” said Svanberg. “By increasing melt strength by up to 100% in degraded material, we make it possible for recycled HDPE to be processed efficiently in film blowing and extrusion blow moulding, enabling the production of high-quality fibres, containers, and components.”

The additives are being used to allow increased recyclate content in polyolefin agricultural films, construction films and pallet hoods with high recycled content, as well as in biaxially oriented PET films and in sheets for thermoforming.

New stabilisers

A new, advanced Non-Dust Blend (NDB) product under development at **SI Group** will add to its Evercycle family of additive products for stabilisation of recycled PE, PP and PET. The stabilisers protect polymer quality through multiple recycling

loops. Evercycle NDB EXP-24-PS-ND-0055 is a 100% blend of various stabilisers that demonstrate synergistic performance when combined together, allowing effective stabilisation at a low dosing level. This efficacy provides a single additive solution for a range of PP compound recipes, without negative impact on final performance due to variation in feedstock quality or recycled content, said Jeroen Frederix, Market Development Manager, Circular Economy, at SI Group.

There is increasing demand for rPP in automotive plastics, driven by the EU’s End-of-Life Vehicle (ELV) directive. Automotive compounders are looking to start using rPP or increase the content of rPP to a higher level in talc or glass-fibre reinforced PP compounds, said Frederix. He suggested that to satisfy this increasing demand, PP compounders may qualify additional supply source of rPP, which can introduce more fluctuation in the quality of the feedstocks. Another challenge when increasing rPP is continuing to meet the OEM specification for long-term heat aging at elevated temperatures (eg 1,000 hrs at 150° C). “Increasing the dosing level of the traditional stabilisation packages as used in rPP compounds is insufficient, as this reaches a plateau where adding more is not bringing any additional performance benefit,” said Frederix. A higher efficiency stabiliser, however, can help meet these challenges.

At the Plastics Recycling World Expo in Cleveland, US, in November, **Cargill** presented data from a study performed at an external, accredited laboratory that simulated mechanical recycling of post-industrial recycled (PIR) material as well as incorporating a wash cycle in the test to simulate PCR



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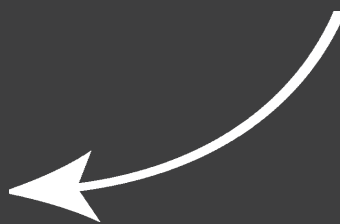
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material, following RecyClass protocols. The study evaluated Cargill's Incroslip C, which is a highly stable slip additive, in the simulated rHDPE, and found that the additive enhanced flow did not affect mechanical properties and was seen to improve the colour of the recyclate. Another additive, Incroslip SL, a fully saturated slip additive, helped maintain viscosity and protected the polymer during processing in a simulation of rPP. Overall Cargill's slip additives were seen to protect polyolefins from further degradation during mechanical recycling.

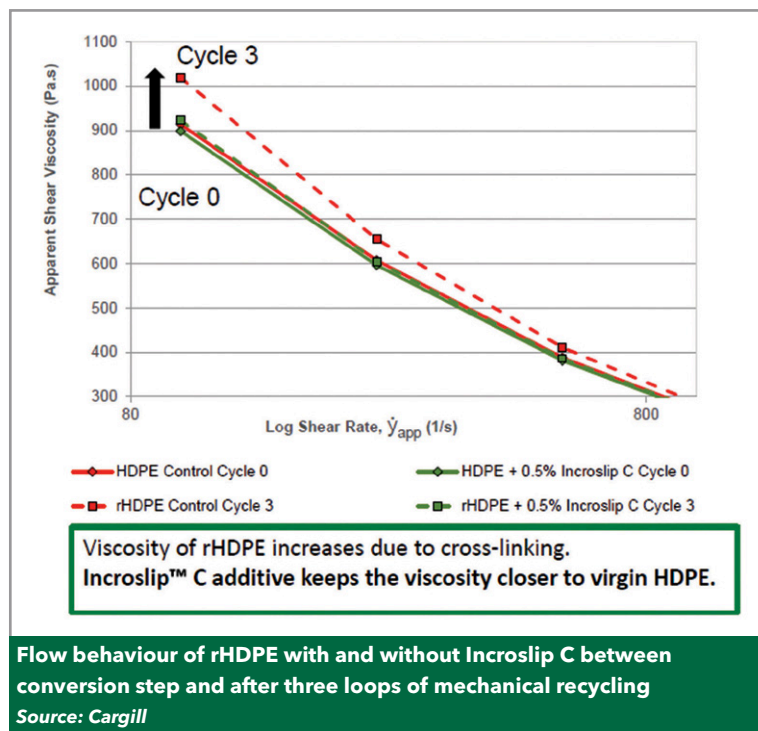
Graphene boost

The latest from Canada-based **Black Swan Graphene** is a Graphene Enhanced Masterbatch (GEM) with 10% graphene nanoplatelets in HDPE that the company says can be used to enhance the properties of recycled PE. GEM S27M is the fifth masterbatch that the company has launched using its GraphCore Powder (GC1004). The company says that the GEM products are available in large volumes with short lead-time.

Black Swan has commercialised its patented graphene products for several industries, including polymers. The company's aim is to reduce overall costs and build supply to accelerate the adoption of graphene. Black Swan partners with masterbatch and compound producer Hubron and most recently partnered with UK-based **Broadway Colours** in July 2024 to help bring graphene products to market.

"Through Broadway's existing relationships with leading bottle moulders, we've explored the benefits of adding graphene nanoplatelets to PET bottles made from 100% ocean prevented [recycled] plastic. Even at low levels, improved barrier properties were apparent - this attribute offers great potential for the packaging of perishable goods," said Michael Edwards, COO and Director of Black Swan, in an interview with Broadway.

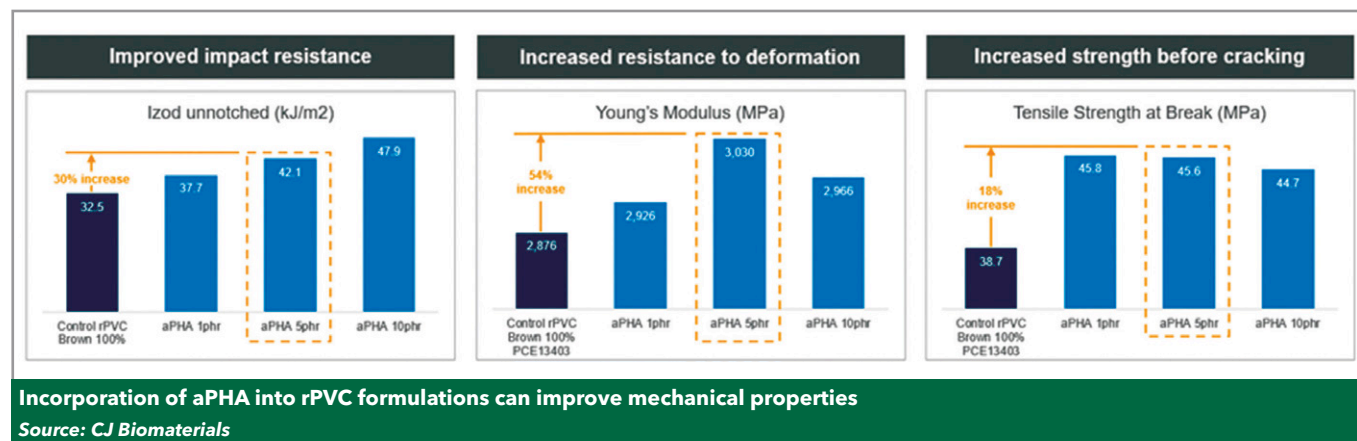
Canadian graphene manufacturer **Hydrograph Clean Power** has investigated its Fractal Graphene



powder (FGA-1) in PET bottles containing a 50:50 blend of virgin PET and rPET and found improved strength at low loadings. At 0.0015 weight percent FGA-1 (15 ppm), researchers measured a 23% improvement in top-load compressive strength and an 83% decrease in water vapour transmission rate. These results indicate the potential for lightweighting of up to 20%.

Tom Eldridge, Director of Business Development at Hydrograph, said that there is a need for solutions to manage new requirements for minimum amounts of recycled content in products, which includes a desire to reduce product weight without compromising performance as a way to manage the potentially increased cost of using rPET.

CJ Biomaterials has found that its amorphous polyhydroxyalkanoate (aPHA), which is a bio-based polymer, can serve as an effective modifier for recycled PVC. The company notes that although PVC can be mechanically recycled, the rPVC may



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BUSS ChemTech



Audrey Tardy
Head of Technology
Circularity
Technip Energies



Valentijn de Neve
CEO
BlueAlp



Dana Mosora
Senior Consultant
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have uneven dispersion of additives, such as plasticisers, stabilisers, and fillers. This inconsistency can result in variations in material properties, which makes it difficult to achieve reliable performance when using the rPVC in new products. In addition, the mechanical properties of PVC can degrade over multiple recycling cycles, reducing its durability and limiting the number of times it can be reused. Sunjong Kim, Director of Commercial Technology at CJ Biomaterials, said that the addition of aPHA to the rPVC formula improves processability and mechanical performance, which enables manufacturers to incorporate higher levels of rPVC while maintaining product quality and consistency.

"More than 150 types of PHA can be created, depending on the type and composition of the monomers. APHA is a softer, rubbery version of PHA with a high molecular weight," said Kim. "Adding small amounts of aPHA to PVC can significantly alter its physical properties, enhancing flexibility and performance, as aPHA is fully miscible in PVC with no phase separation. The miscibility enhances mechanics and rheology for processing PVC, while also improving polymer

chains' molecular mobility with a reduction in glass transition temperature."

Incorporating aPHA into PVC enhances the mechanical properties and improves moisture resistance in both unfilled and filled PVC formulations. "Due to the miscibility of aPHA with PVC, aPHA helps to fill the microporous structures in the PVC material and provide better homogeneity of the blend, which can reduce water penetration," said Kim. "This is especially beneficial for construction, outdoor environments, and applications where prolonged moisture exposure can weaken material integrity."

Kim said: "Loading PHA at a rate of 5phr improves impact resistance 30%, stiffness 54%, and tensile strength 18% over the post-industrial recycled control. The improved properties can be tailored with varying your blend and amounts of aPHA to increase the quantity of rPVC content used in a formulation while maintaining mechanical performance. This enhanced toughness with higher strength flexibility can be particularly useful in applications such as profiles, window frames, and doors."

Kim said that testing of aPHA in rigid PVC



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formulations shows that increasing levels of aPHA speed up fusion and strengthen the melt in addition to improving filler dispersion and improving gelation. Proper gelation results in improved mechanical properties, such as strength and toughness, in the final product.

"This unique combination of performance and sustainability attributes makes aPHA an innovative and practical solution for improving PVC recyclability and mechanical attributes," said Kim.

Avient's new ColorMatrix Amosorb 4020L is an oxygen scavenging additive for extending the shelf life of PET bottles. The additive is not based on polyamide, which makes it compatible with PET recycling. The company says it can be used for products incorporating higher levels of up to 100% recycled material in packaging. The additive is intended for long-shelf life packaging applications such as condiments, sauces, juices, and beverages, including certain alcoholic drinks.

Also new from Avient is Cesa WithStand SX Low Haze Antimicrobial Additives for clear polycarbonate or acrylic applications. The company says this patent-pending, next-generation formula is especially useful for products incorporating recycled resin.

"Traditional antimicrobials often cause opacity or hazing in polycarbonate or acrylic. This is especially true in applications using recycled content. Cesa WithStand SX, however, helps maintain clarity and protects against haze," said Felipe Reichert, Global Marketing Director for Color, Additives, and Inks at Avient.

The additives limit microbial growth in plastic parts to help reduce unwanted odour, staining and discoloration to maintain part appearance and are currently available in the US and Canada.

Measurement project

In a new collaborative project, **BASF**, Endress+Hauser, **TechnoCompound** and the University of Bayreuth and Friedrich Schiller University Jena will investigate how the mechanical recycling of plastics can be improved using spectroscopic measuring techniques and artificial intelligence (AI) to more precisely identify the composition of plastic waste during the recycling process. Researchers in the SpecReK project want to use this data to determine, in real time, which plastic grades, additives and contaminants are contained in the material. An AI algorithm will then be used to recognise patterns in the measurement data and recommend which additional components should be added or how the recycling process should be adapted to improve the quality



IMAGE: BASF

of the recycled plastic output.

"We do not currently have the necessary analysis tools to determine during processing exactly which components are contained in the mechanically recycled plastics," said Bernhard von Vacano, head of the Plastics Circularity research program at BASF. These data are important, because the recycled material can vary, depending on the incoming streams and the degree of sorting.

"With the increasing demand for high-quality recycled materials, and given the current legal framework, it will be crucial to perfectly understand the material properties and composition of mechanically recycled plastic waste and to optimise the process. In this way, we will strengthen the circular economy," said von Vacano.

The €2.2m project is two-thirds financed by the German Federal Ministry of Education and Research and one-third financed by the project partners.

A mechanical recycling system in development by Finland-based **VTT Technical Research Centre** also uses real-time measured data – in this case, in-line viscosity measurement – which it uses to control feeding of additives to compensate for viscosity variation. Details about VTT's Varex advanced pilot line were covered in the *Plastics Recycling World* November-December 2024 issue.

CLICK ON THE LINKS FOR MORE INFORMATION:

- > <https://nexamchemical.com>
- > <https://siigroup.com>
- > www.cargill.com
- > <https://blackswangraphene.com>
- > <https://broadwaycolours.com>
- > <https://hydrograph.com>
- > <https://cjbimaterials.com>
- > www.avient.com
- > www.basf.com
- > www.technocompound.com
- > www.vttresearch.com

Above:
The SpecReK project is using spectroscopic measuring techniques and AI to more precisely identify the composition of plastic waste

Twin Screw Compounding Line



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Production and demand volumes for black, white, colour and additive masterbatch **by region**

Demand volumes for black, white, colour and additive masterbatch **by country**

Production and demand of masterbatch for each region **by product type**

Demand for black, white, colour and additive masterbatch **by polymer**

Demand for black, white, colour and additive masterbatch **by end-use sector**



Contact me to discuss your data requirements

Astrid Della Porta, Commercial Manager, Market Intelligence

M/ +44 (0) 7704 389 944; E / astrid.dellaporta@amiplastics.com

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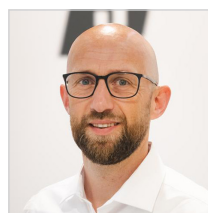
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IMAGE: PLASTIVISION

New showcase event in the heart of India

The dynamic plastics industry of India and wider South Asian region is the focus for a free exhibition and conference this May. We preview the exhibiting companies

The RACE: Recycling and Compounding Expo is a new free-to-attend plastics industry event taking place in Mumbai, India on 14-15 May this year. RACE will build on the success of the Compounding World and Plastics Recycling World Expos, held in Europe and North America over the past six years, and on the RACE plastics recycling conferences, held in India since 2019.

The launch comes at a time of rapid growth and development for both plastics compounding and plastics recycling in India. The exhibition will feature leading industry players and focused conference programmes, offering attendees the opportunity to learn about the latest technologies and trends, compare suppliers, and make valuable connections.

The event is being organised by Mumbai-based information and data provider Polymerupdate in conjunction with AMI, publisher of *Plastics Recycling World*.

The recycling conference theatre promises to be

a highlight of RACE, bringing together industry leaders and innovators to share their expertise on cutting-edge trends, technologies, and strategies in plastic recycling and waste management. The conference event offers a unique platform for attendees to gain invaluable insights from some of the most experienced professionals in the field. Major companies represented by the speakers include Marico, ITC, Swiggy Instamart, Themis Medicare, Reliance Retail, Hindustan Coca-Cola Beverages, Mondelez, Banyan Nation, NEPRA, as well as prominent industry associations.

Main image:
The RACE Recycling and Compounding Expo will take place at Mumbai's NESCO exhibition centre which is also used for Plastivision

RACE: Recycling And Compounding Expo

The expo and conference take place on 14-15 May 2025 at the Bombay Exhibition Center NESCO, Mumbai, India.

Opening Times: Wednesday 14 May, 10:00 AM - 6:00 PM IST.
Thursday 15 May, 10:00 AM - 5:00 PM IST

Register: <https://register.compoundingexpoindia.com>

More information: www.plasticsrecyclingexpoindia.com

Aimplas

The Spanish research group has over 12,000 m² of facilities with cutting-edge technology. More than 35 pilot plants are available to test all plastic processing applications, including thermoplastic, thermoset, and composite processing. It says its laboratories have the highest number of accreditations for plastics according to the UNE-EN ISO/IEC 17025 standard.

➤ <https://www.aimplas.net>

Altero Recycling Machinery

Based in Spain, the company designs and manufactures complete pelletising lines for the recycling of waste plastics.

➤ www.alteromachinery.com

Apar Industries

One of India's Fortune 500 companies, Apar has established itself as a key player in the domain of specialised polymeric compounds. The company's product portfolio under the brand name APAR-PRENE has expanded to include a range of ROHS and REACH-compliant compounds, including TPE, TPV, TPR, PVC compounds, PP compounds and cable compounds catering to diverse industries such as automobiles, irrigation, electrical, toys, food, and medical equipment.

➤ <https://apar.com>

Apex Technoplast

The injection moulding company has the capability to produce injection mouldings from 1g to 1.25 kg in weight.

<https://apextechnoplast.com>

Aquent Advance Material Technologies

The company produces functional polymers in collaboration with a technological partner from the US with quality at par with international standards. At its facility located in Silvassa, India Aquent supports customers' development process, supporting trials, tuning the product and making sure customers are successful.

➤ www.aadibond.com

Autotech Sirmax

Autotech Sirmax focuses on manufacturing engineering plastics and compounds, serving automotive and industrial applications. Its products are designed to enhance performance and sustainability in various applications.

➤ www.sirmax.com

Banyan Nation

The company says it is a pioneer in the circular economy for plastics, and a top player in India's FMCG bottle-to-bottle recycling industry. Banyan produces contact safe, traceable rPE and rPP resins at consistent technical, colour and odour performance.

➤ www.banyannation.com

Boorugu & Company

The company is an established trade house based in Hyderabad with over 20 years of experience in providing reliable solutions for the supply of plastic, PVC, coating and printing raw materials. It says it has a strong brand equity and technical support, providing consistent quality raw materials to its customers.

➤ <https://boorugu.in>

Bry-Air Asia India

The machinery company's products include plastics processing auxiliary equipment, such as desiccant dryers, chillers and conveyors.

➤ www.bryair.com

Buss

Buss says it is a global leader in high-end compounding and pelletising systems. The Buss Kneader is a highly versatile compounding extruder with excellent references in the plastics, aluminium and chemical industries for over 75 years.

➤ www.busscorp.com

Buss Chemtech

The process technology group offers products, development and project delivery in areas that include chemical recycling.

➤ www.buss-ct.com

Chembizasia

The company is a marketing and consultancy firm whose products include polymers such as PVC and PET.

➤ <https://chembizasia.com>

Concord United Products

The company is a supplier of wire EDM machines in the Indian market. Its machines are supported with an after sales service.

➤ <https://concordunited.com>

Coperion Ideal

The India-based business, part-owned by the Coperion compound-

Bry-Air Asia
India supplies a variety of dryer technology.
Pic: Bry-Air



ing technology group, is a specialist in pneumatic conveying systems and additive unloading and feeding systems.

➤ www.coperion.com

Diyani Engineering

The company, which has a presence in India and expanding operations in Dubai, provides comprehensive packaging and automation solutions for the polymer compounding and plastics industry. Its technology range includes weighing, bagging, material conveying, auxiliary equipment, packing line solutions, batching, and process automation.

➤ www.diyani.in

Dodhia Synthetics

The company is a manufacturer of synthetic yarns and fabrics, serving sectors like textiles and industrial applications, with a focus on quality and sustainability. It also recycles PET bottles.

➤ www.dodhiagroup.com

Econ Machinery

The company is a specialist underwater pelletising technology.

➤ www.econ.eu

Entex Rust & Mitschke

Entex is a leading manufacturer of planetary roller extruders, single-screw extruders, pelletisers, tempering systems, and calender rolls. With a strong focus on innovation and modular design, Entex serves various industries, including plastics, rubber, chemicals and food.

➤ www.entex.de



IMAGE: COPERION

Erema

The group says about 7,800 Erema recycling systems are now in use worldwide. With subsidiaries in the USA, China and Africa, as well as around another 50 representatives on all five continents, the company has a reliable network to implement customised plastics recycling solutions for customers around the world and promote a circular economy.

➤ www.erema.com

Above:
Coperion's ZSK
twin screw
extruders are
used by India
companies
such as Alok
Masterbatches

Extrusion Tech

The company makes shredding technology suited to a wide range of plastics waste streams.

➤ www.extrusiontech.in

Fine Organics

The producer of oleochemical-based additives serves sectors like plastics, personal care, and food,



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It is mainly installed on the crushers, shredders, granulators, and pulverizers for grinding or cutting the chunk plastic or plastic cement into small-sized particles.

According to the characteristics of recycling material, we choose the most appropriate high-quality steel and adopt comprehensive heat treatment process to reach extremely homogeneous material structure, thus ensuring the durability of knives.

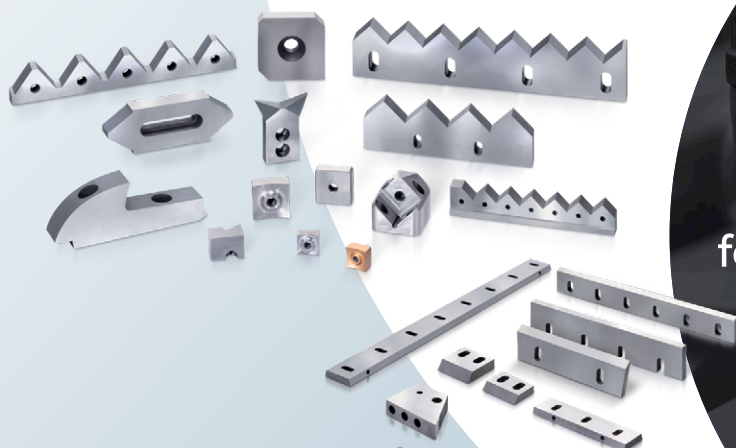
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Machines

Gneuss Omni Recycling System



with a focus on sustainable and innovative solutions.

➤ www.fineorganics.com

Flexochem Ventures

The company specialises in manufacturing diverse packaging solutions, including LDPE liners, zip lock bags, and jumbo bags.

➤ <https://flexochem.in>

Gneuss

The Gneuss MRS extruder is a key element of the Gneuss Omni Recycling Systems and has highly efficient devolatilisation for extrusion of hygroscopic polymer such as polyester and for the extraction of volatile contaminants.

➤ www.gneuss.com

Hindon India

Hindon is a sales and distribution company working in the polymer materials sector.

➤ www.hindon.co.in

Ishitva Robotic Systems

The company designs and builds waste sorting plants with automated materials sorting technology.

➤ <https://ishitva.in>

J&K Industries

J&K produces PVC compounds, TPE and TPV compounds, filled PP, masterbatches and ZHFR compounds.

➤ <https://jnk-welset.com>

JRD Polymer

The company is a distributor of engineering polymers, chemicals, monomers and other products for automotive and other applications.

➤ www.jrdpolymer.com

JSW (Skills Engine Projects)

SEP provides processing technologies and turnkey material handling automation in Indian polymer markets for compounding, masterbatches, polymerisation, calendaring, recycling, powder coating, high performance plastics, high pigment masterbatches, organic pigment masterbatches and cable extrusion line.

➤ <https://skills-engine.net>

K K Compounding Tech Giant

The compounder's product portfolio ranges across TPE, TPO, TPV, TPU, PVC, PP and other compounds.

➤ <https://kkthetechgiant.com>

Kelsey Industries

The materials manufacturer produces reinforced commodity compounds, engineering polymer compounds, polymer blends and alloys.

➤ <https://kelseyindustries.in>

Kingfa Science & Technology

Serving the automotive and consumer markets, Kingfa is a producer of reinforced polypropylene compounds, thermoplastics elastomers, fibre reinforced composites and engineering plastics.

➤ www.kingfaindia.com

Kyokuto Boeki India

The company is a supplier of ancillary equipment to the plastics industry among other markets.

➤ <http://kbindia.co.in>

Leevams Incorporated

European partners of Leevams are suppliers of technology for shredding, grinding, pulverising, sorting, separation, washing, pelletising, pneumatic conveying and handling.

EU partners include Erema, Hamos, Weima, Pierret and Kongskilde.

➤ www.leevams.in

Lucro Plastecycle

Lucro recycles post-consumer waste into traceable rPE and rPP granules, as well as innovative flexible packaging solutions.

➤ www.lucro.in

Luk Plastcon

The company, which is a member of the Bajaj Group, produces white masterbatch and functional masterbatches.

➤ <https://lukplastcon.com>

Right: Kelsey Industries produces ABS materials along with other engineering and commodity polymer compounds



Magic Falcon

With its main focus on plastics recycling, the company has suppliers in USA, Europe, Southeast Asia and the rest of the world.

➤ www.magic-falcon.com

Mixaco Dr. Herfeld

With the understanding gained from over 50 years of mechanical engineering, Mixaco says it has unique know-how in mixing technology. This knowledge flows into continuous development of its products and leads to innovations, it says.

➤ www.mixaco.com

Mixron

The company says it offers a wide range of advanced mixers for the polymer processing market. Its products are based on advanced technologies and constant investment, says Mixron.

➤ www.mixron.it

Multi Polyplast

The company produces plastic raw materials, masterbatches, additives and compounds.

➤ www.multipolyplast.com



Left: Multi Polyplast produces masterbatches, additives and compounds

IMAGE: MULTI POLYPLAST

Nanjing Lesun Screw

The group specialises in manufacturing screws, barrels, and shafts for extrusion machinery. Its high-precision products are designed to enhance the performance and efficiency of plastic processing equipment, ensuring optimal functionality and reliability for industrial applications.

➤ www.lesunscrew.com



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Right: Melt filtration technology from Rajhans Plastic Machinery

Neoplast Engineering

Neoplast is a manufacturer of die heads, single screw and twin screw extruders, lean phase, compounding plants, dense phase, two roll mills, heater mixers, PVC mixers, pelletisers, conveying systems, and automatic plastic processing plants.

➤ www.neoplast.com

Neptra Resource Management

With a blend of experienced consultants and technologically driven platforms, Neptra says it offers a range of advisory and consultancy services tailored to meet sustainability and compliance needs.

➤ www.neptra.co.in

Nexam Chemical

Nexam's advanced reactive masterbatches upgrade recycled plastics like PET, polyolefins and polyamides. It says its solutions improve processability, strength and durability, allowing a higher degree of recycled material to be used and turning them into high-performance products.

➤ www.nexamchemical.com

Padmanabh Alloys & Polymers

The materials company produces mineral filled thermoplastic, mineral masterbatches, synthetic paper masterbatch, glass reinforced thermoplastic and other specialty masterbatches.

➤ www.padmanabh.in

Pashupati Polytex

Pashupati Polytex is a division of Pashupati Group that specialises in the recycling of plastic materials.

➤ www.pashupati.in

Penta Auto Feeding India

The company designs, manufactures and installs material handling and production automation systems.

➤ www.piovan.com

Plast Alloys India

The producer of PP compounds is a supplier to the automotive industry and other markets. It says that under the brand name PREFIL, it has built a strong reputation in the automotive and home appliance industries. It caters to a wide range of technical applications beyond general-purpose components.

➤ www.plastalloys.com

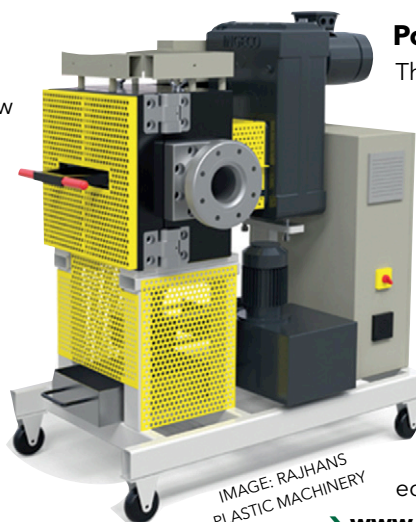


IMAGE: RAJHANS PLASTIC MACHINERY

Polycycl

The chemical recycler says its patented technology enables conversion of low grade plastics to chemical feedstocks and industrial blendstocks using a fully-continuous pyrolysis process.

➤ www.polycycl.com

Prasad Group

The technology group supplies a wide range of auxiliary equipment for plastics processing.

➤ www.prasadgroup.com

Premium Polyalloys

The producer of compounds and additive masterbatches supplies a number of sectors including consumer, automotive, packaging and more.

➤ http://premiumpolyalloys.in

Rajhans Plastic Machinery

The machinery company is a specialist in melt filtration, melt pumps and other technology.

➤ www.rajhansindia.com

Recircle

ReCircle says it has been involved in 300+ locations, with more than 300 waste collection partners and 45 processors in India.

➤ <https://recircle.in>

Santosh Recycling

The PET bottle recycler manufactures premium FDA-approved rPET flakes and granules.

➤ www.santoshrecycling.com

Siloxane Aggrandize Innovative Industries

The compounder provides polymer blends, TPEs and masterbatches.

➤ <https://saiindustries.co>

Star-Better (Shanghai) Chemical Materials

The company specialises in the production and sale of polymer additives.

➤ www.starbetter.com

Starlinger Recycling Technology

For more than 30 years Starlinger has been providing the technology for recycling and refining a wide scope of plastics such as PE, PP, PA, PS, BOPP and PET. Starlinger's recoSTAR product line offers machinery solutions for converting industrial, agricultural and post-consumer plastic scraps into

a high-quality secondary resource, thus helping to close product loops.

➤ www.starlinger.com/en/recycling-technology

Steer Engineering

The compounding extruder group says it is a creator of advanced materials platform technology that effectively transforms and functionalises materials in the field of plastics, recycling and other areas.

<https://steerworld.com>

Steinert

The German family-run business is a leader in sensor sorting and magnetic separation for waste and materials recycling. In addition to 50 sales partnerships and joint ventures around the globe, the company has subsidiaries in Germany, Australia, Brazil and the USA.

➤ <https://steinertglobal.com>

Supreme Petrochem

The group says it is the leader in polystyrene production in India, with a market share exceeding 50% and installed capacity of 300,000 tonnes/yr. It

IMAGE: STEINERT



also produces expanded PS, PP compounds for appliances and automotive applications, plus colour masterbatch.

➤ <https://supremepetrochem.com>

Sytco Engineers

Sytco is a manufacturer of brakes, clutches, torque limiters, couplings, brake motors and allied custom build products.

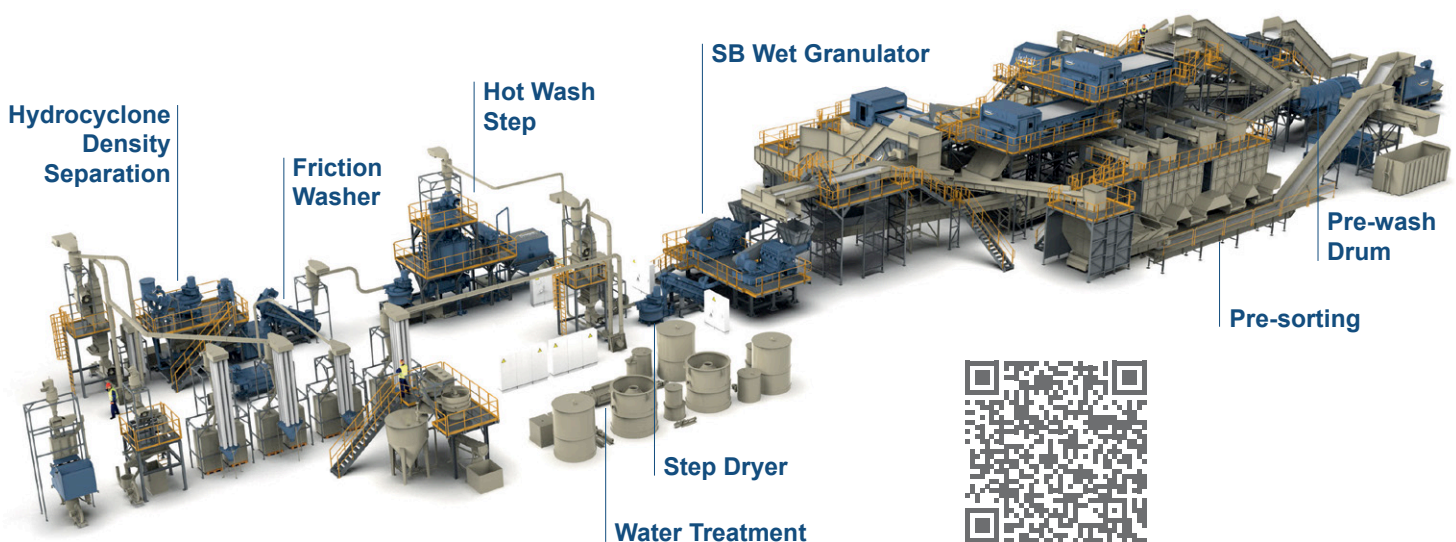
➤ www.sytcobrakes.com

Above: The UniSort Black Eye sorting system from Steinert

PET Washing Lines from Herbold Meckesheim

Energy Efficient ▪ Easy Maintenance ▪ Excellent Flakes

With modern solutions for highly automated and modular systems, Herbold Meckesheim covers the entire process of PET recycling. Our washing lines produce recyclates in bottle-to-bottle quality with efficient energy consumption and high throughputs.



Right: White masterbatch is one of the product ranges from Welset



Tirupathi Hydrocarbon

Filler masterbatches are among the products made by Tirupathi Hydrocarbon.

➤ <https://tirupathihydrocarbon.com>

Troester

The Compounding Division of Troester (X-Compound) is specialised in complete systems including conveying, melting, dispersing, mixing and degassing.

➤ www.troester.de

Vin Poly Recyclers

Vin Group offers its customers a range of plastic and rubber additives which it says can solve their problems and make products better.

www.vin.co.in

Welset Extrusion

The group is a supplier of colour, white and black masterbatches, anti-fibrillation/filler masterbatches, and a full range of additive masterbatches.

➤ <https://welset.com>

XINDA

The group manufactures and sells co-kneader, compounding extruder, recycling and pelletising technology.

➤ www.xindacorp.com

Zamindia

Representing Zambello Group in India, the company provides customised solutions for extrusion gearboxes, and also after sales service and spare parts support for technical service and preventive maintenance of gearboxes.

➤ www.zambelloindia.com

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The PET recycling sector's market and regulatory issues have not stopped companies in their development of innovative technology solutions.
By Chris Saunders



IMAGE: DEPOLY

RPET: Going beyond tackling what is easy

In Europe, eight out of ten PET bottles are collected for recycling, a rate that **Petcore Europe** attributes to the region's Extended Producer Responsibility (EPR) structures and design for recycling. But disparities between Europe and other regions in PET recycling regulation, infrastructure and pricing mean that European PET recyclers are facing unprecedented challenges. Antonello Ciotti, President of Petcore Europe, has highlighted the issue of increasing PET waste material that enters the recycling market in Europe from outside the region.

"In many cases, this material does not comply with the regulatory requirements to which European producers must adhere and is distorting the market and prices," he said. "In Europe you have to have separate collection for food contact materials which stipulates that 95% of what is recycled is already being used for food or drink. Current legislation is not protecting against non-compliant

material entering the EU market, and this is creating an unlevel playing field. A proper chain of custody is urgently needed to ensure that imported recycled PET is compliant with EU regulation."

Ciotti also criticised the inconsistencies that arise from different EU legislation. "The EU's Single Use Plastics Directive (SUP), which entered into force on 1 January this year, requires PET bottles on the EU market to contain a minimum of 25% recycled content," he said. "However, the SUP is a Directive which targets the 27 EU member states who are currently all taking a different approach to the way they calculate the 25% [with] only the large brand owners meeting the target. Meanwhile, the Packaging and Packaging Waste Regulation (PPWR) which requires that by 2029, brand owners must ensure that their production sites meet the target of minimum 25% recycled content across all PET bottle sizes from 250 ml to 2 l, is a regulation so has

Main image:
Swiss company
DePoly's
patented
technology
breaks down
PET waste
feedstock into
PTA and MEG

IMAGE: EASTMAN



Above:
Eastman has developed methanolysis technology which can be used on hard-to-recycle waste streams

to be implemented by all member states. We urgently need the two pieces of legislation to be harmonised so member states, recyclers, and brand owners, know where they are. If Europe wants to deliver a circular economy for packaging, PET recycling companies must have clarity and be confident in moving ahead with investments."

If regulation is hampering progress in PET recycling's development, this is partly counterbalanced by innovation from actors in the rPET arena. Technology and materials companies have been hard at work, motivated by the potential to expand rPET further, and pursuing their goals via two main routes: chemical recycling and mechanical recycling.

Chemical recycling

"Mechanical recycling excels at processing clear single-use plastics like water bottles, but only addresses a small fraction of total plastic waste," said Sandeep Bangaru, Vice President, Circular Economy Platforms at **Eastman Chemical**. "PET and polyester see minimal recycling, with only 23% of PET packaging processed mechanically [and] calls for innovative recycling solutions have intensified as part of a broader approach to recycling. Some critics say chemical recycling causes more hazards than it helps, but not all chemical recycling is the same. Effective new technologies should convert waste into new plastic products rather than fuel, complement mechanical recycling, be environmentally superior to fossil fuel production, and allow independent scrutiny."

Eastman's methanolysis technology is one example attempting to fill gaps left by mechanical recycling. Its facility in Kingsport, Tennessee, US, is the world's largest methanolysis plant, processing 227,000 tonnes/yr, while a planned second facility in Longview, Texas, is set to double capacity. "With minimal projected costs, Eastman's new technology

is part of a wave of innovation that's needed to help usher in a new era of recycling going beyond tackling what is easy and beginning to recycle what isn't," Bangaru said. "By advancing beyond traditional methods, we can redefine our relationship with plastic, ensuring a more sustainable future for communities and the environment alike."

Through a combination of its patented Microwave Assisted DEpolymerisation (MADE) process, new facilities, and strategic alliances, **GR3N** says it has advanced PET recycling significantly during the last 18 months, and illustrated the point by opening a second demonstration plant in northern Italy in March 2024. The technology it uses breaks down PET into monomers, ethylene glycol (MEG), and terephthalic acid (TPA), which can then be re-polymerised using microwave-assisted alkaline hydrolysis. The technology can manage PET purities as low as 70%, according to the company.

In 2023 GR3N signed a Memorandum of Understanding with **Intecsa Industrial** to create a joint venture with the goal of building a first-of-its-kind manufacturing plant in Spain. In October 2024, the project was awarded a grant of up to €35m from the EU Innovation Fund. The engineering, procurement, and construction (EPC) phase is scheduled to start in the fourth quarter of 2025, with operations expected to start at the end of 2027. "This is an important step for GR3N, and a clear signal that our technology is solid enough to move to the industrial scale", said Maurizio Crippa, CEO of GR3N.

Swiss company **DePoly** claims it is redefining how PET and polyester waste is managed. Its patented technology breaks down polyester into PTA and MEG, creating raw materials for PET which it says are identical to their oil-based counterparts. By mid-2025, the company plans to inaugurate its showcase facility in Monthey, Switzerland, marking a significant step in the company's evolution. "Over the past three years, we have rigorously optimised our process, testing over a hundred feedstock combinations to ensure efficiency and quality," said Bardiya Valizadeh, CTO and co-founder of DePoly. "This facility will demonstrate how our technology can scale to meet global demand."

Partnerships

DePoly is working with industry leaders in various sectors, including: Swiss outdoor clothing brand Odlo, which it collaborated with on a proof-of-concept project to convert waste fabrics into virgin-quality recycled PET; and PTI, which it worked with to develop a closed-loop rPET bottle. It says these projects illustrate the advantages of bringing together several partners across the value chain.

"We did not really know what to expect from the first processing and prototyping trials with DePoly's chemically recycled material," said Stéphane Morier, Director Project Management of PTI. "The outcome is promising. The quality and performance of the produced samples are similar to a control made from a virgin PET resin."

Chinese clothing retailer **Shein** says it has developed a polyester recycling process which can be used for a range of materials, including PET bottles, as part of a collaboration with Donghua University. The process offers greater flexibility in sourcing feedstock, and as a result improves cost efficiency compared to other recycling options Shein uses. The company intends to partner with selected partner fibre manufacturers to scale up the technology which is expected to be made available for large-scale production in June 2025, with targeted production of 3,000 tonnes/yr.

"We have invested in the research and development of a new polyester recycling process that allows us to incorporate a broader variety of feedstock, achieve better cost efficiencies, and recycle polyester multiple times without compromising the material properties," said Leonard Lin,

President of EMEA, Global Head of Public Affairs, and General Manager of Singapore, Shein. "This will be a critical step towards our goal of reducing our reliance on virgin polyester and supporting a broader industry transition."

Another recently announced partnership is between **Oerlikon Barmag** and **Evonik** which plan to promote the recycling of PET waste leveraging catalytic processes. Both companies say they are committed to developing technologies for efficient depolymerisation and purification processes, coupled with an integrated concept for repolymerisation and the associated EPC business models. They say the solution they are working on can be seamlessly integrated into existing PET production processes with minimal investment. The partners plan to launch and commercialise the solution by the end of the decade. "This partnership marks a great step forward in the chemical recycling of PET," said Max Preisenberger, Head of Catalysts at Evonik. "Our new catalytic processes and chemical technologies will complement the current mechanical recycling approach enabling high recycled PET content from heavily contaminated and mixed PET waste that would otherwise be incinerated or landfilled." ➤



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Mechanical advances

Technology companies that serve the mechanical recycling sector have also reported progress. **Erema** says customers are increasingly ordering PET recycling systems with higher capacities, highlighting its Vacurema technology which enables throughputs of up to 6 tonnes/hr. "While the bottle-to-bottle market initially tended towards 3-tonne machines, over the past three years we have been seeing increasing demand for PET recycling solutions with throughputs in excess of three tonnes per hour," said Christoph Wöss, Business Development Manager for the Bottle segment at Erema. In total, a dozen Vacurema machines with throughput capacities of 4 to 6 tonnes have been installed and commissioned worldwide since 2020. "Together, these large recycling machines produce almost 350,000 tonnes of rPET per year, which is a clear sign that this order of magnitude is now commonplace in the industry," he said.

In several markets, including Latin America, he said there is a clear trend towards larger PET recycling machines. "We expect the market to develop this way in China too, to meet the increasing demand for high-quality rPET suitable for

sensitive applications such as food packaging."

Erema has already installed more than 50 Vacurema and Vacunite vacuum-supported solid state polycondensation systems in China, but only a few with throughputs in excess of 4 tonnes/hr.

Erema says Vacurema systems are notable for efficient decontamination, gentle IV treatment and they meet the strict requirements of the European and North American food safety authorities. The rPET pellets can be further processed for different applications: using solid state polycondensation (SSP) for IV adjustment for bottle-to-bottle or high IV applications; an additional upstream vacuum treatment enables direct connection to preform production; or the material can be processed inline into sheets or fibres. "This versatility allows users to react flexibly to changes in the market and fluctuations in demand, an important advantage in a dynamic market environment," said Wöss.

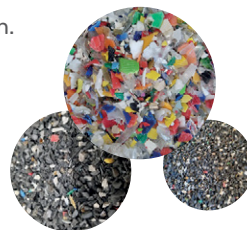
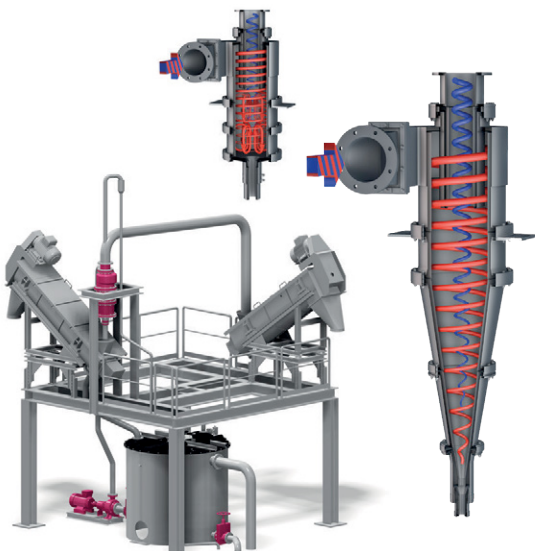
In January, **NGR** announced the European Food Safety Authority (EFSA) had issued a positive Scientific Opinion for its Liquid State Polycondensation (LSP) Process, making it the first recycling process to complete evaluation under the updated regulation (EU) 2022/1616. Unlike the previous

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regulation (EC) 282/2008 where individual recyclers sought authorisation, under the new regulations the responsibility has been passed to developers, with each approved process assigned a unique Recycling Process Authorisation Number (RAN) and listed in a public register.

NGR says that traditional SSP requires prolonged high-temperature processing in a vacuum, whereas the LSP process harnesses faster reaction rates in the melt phase, significantly reducing energy consumption and processing times while delivering high-quality results. The LSP process also provides a consistent increase in intrinsic viscosity (IV) levels, with precise control and stability.

Indian project

Starlinger Recycling Technology has highlighted the recent commissioning of a RecoStar PET 215 HC iV+ PET bottle-to-bottle recycling system by Alpha Ecoplast at its new facility near the city of Kosamba, Gujarat, in India. The system features Starlinger's biggest single extruder size, reaching an output of up to 2,700 kg/hr of bottle-grade rPET pellets. The line is equipped with a pre-drying unit, high-vacuum degassing, a continuous filtration system, and an underwater pelletiser. The ViscoStar SSP reactor installed at the end of the recycling process further increases the viscosity and level of decontamination of the produced pellets. The entire recycling process is based on the FIFO principle, ensuring uniform treatment of every single flake at the front end and each pellet at the back end for outstanding food-contact decontamination.

The rPET pellets produced on Starlinger's RecoStar PET recycling lines have been approved for food-contact applications by national and international authorities such as the FDA in the US and EFSA in the EU, as well as by brand owners in the food and beverage sector.

The sorting stage in PET recycling is also benefiting from innovation. "Advancements in AI are revolutionising PET sorting processes," said Edward Kosior of **Nextek**. "Meeting food-grade regulations requires a 95% food-contact composition, a challenge traditionally addressed by manual sorting. AI-driven solutions now offer a high-speed, low-cost alternative that enhances sorting accuracy while improving efficiency. This innovation is particularly relevant given ongoing discussions about container tagging to track recycling rates. AI-based systems, now being implemented in many Material Recovery Facilities and Plastic Recovery Facilities, could potentially replace tagging solutions, offering a cost-effective, streamlined approach without additional labels, water-



IMAGE: STARLINGER

marks, or other identifiers."

According to Amy Hooper, Innovation Manager at UK recycler **Biffa**, AI, digital tracking tools, and automation, have the potential to revolutionise the processing of PET. "Growing demand for traceability across the value chain is a key trend in the waste management sector," she said. "As such, there has been increasing interest in marking technologies such as Digital Product Passports (DPPs), fluorescent QR codes, and digital watermarks, as well as developments in RFID and NFC technology. Alongside the evolution of these technologies are initiatives that aim to bring together stakeholders across the value chain to assess their viability technically, commercially, and environmentally. While there is still work to do, further advancements in identification and sortation technologies, such as AI vision systems and robotics, present excellent opportunities to enhance the processing of waste. In some instances, this will be through a focus on contamination removal, and in others it will be to recover a wider variety and larger volumes of high-value target material."

Above: A Starlinger RecoStar PET 215 HC iV+ PET bottle-to-bottle recycling system is being used by Alpha Ecoplast at its new facility in Gujarat, India

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IMAGE: GREENPLAST

The plastics recycling and sustainability event returns with a new conference featuring top-level experts from the value chain. Here we preview the speakers

Second edition of GreenPlast expo and conference in Italy

Main image:
The GreenPlast expo was launched in Milan, Italy in 2022

The GreenPlast international exhibition-convention focused on sustainability in the plastics and rubber industry is taking place again in May this year. The event, which combines an exhibition and conference on recycling, energy efficiency and other sustainability features, is returning to the Fiera Milano fairgrounds in Rho, Milan, Italy from 27 to 30 May.

At the launch of GreenPlast in May 2022, the event had 170 exhibitors across a net area of 6,000 m² and attracted more than 20,000 visitors from 55 countries, according to Promaplast which organises the event.

GreenPlast is part of The Innovation Alliance with three other trade fairs - Ipack-Ima, Print4All and Intralogistica Italia - that will hold their events on the same dates this May, occupying nearly the entire exhibition centre with visitors able to move between all four events.

"More than 90,000 attendees [at all four events] are expected from 125 countries," said Mario Maggiani, CEO of Promaplast, speaking at a press

conference in November about GreenPlast 2025.

He emphasised GreenPlast's cost-effective attraction for exhibiting companies, combined with the appeal of sustainability themes at the expo and conference that encompass recycling, energy savings, new materials, innovative applications and more. The plastics industry has a future focus, said Maggiani, "But we cannot think of the future without thinking of what is happening to the environment".

A major element in GreenPlast 2025 is its four-day conference, titled "Shaping a Sustainable Future for Plastics", which is being organised in collaboration with AMI, publisher of *Plastics Recycling World*. "This cooperation will ensure a programme with high-level technical sessions and content, illustrating the sector's challenges through an innovative and future-oriented approach," said Promaplast.

As well as presentations on technology and innovation, the conference will approach sustainability in plastics by focusing on the most strategic sectors and analysing recent regulations and

innovations in waste management, encompassing companies operating in this field. Speakers and panellists drawn from brand owners, retailers, NGOs, universities, material producers, trade organisations, recyclers and converters will discuss plastics sustainability issues not only in packaging but also in the automotive and construction industries, where plastics are widely used.

Conference approach

Topics will range from waste management to mechanical and chemical recycling, from the ecodesign of plastic products to the future of bioplastics, from marine pollution to the use of AI to improve environmental impact.

At the press conference, Andy Beevers, Director of Events and Magazines at AMI, described the conference as “a platform for collaboration” at a time when plastics sustainability is evolving both in the industry and in terms of regulation. He outlined the main themes of the conference programme taking place daily from 27 to 30 May: sustainability strategies, regulatory developments, design for recycling, material sorting, closing the loop in mechanical recycling and chemical recycling.

A panel discussion on sustainability strategies on Day 1 of the conference will include Dario Toso from **Lavazza Group**, Renato Zelcher from **EuPC**, and Marco Brusinelli from **Gruppo Happy**. This is followed by a workshop on European plastic waste regulations led by Hazel O’Keeffe from **Keller & Heckman** and a presentation by Jo Ruxton from **Ocean Generation**.

Day 2 starts with a plastics markets outlook by Martyna Fong from **AMI** who will provide an overview of the plastics industry and demand in Europe. The view of a leading waste management company will be provided by Roberto Sancinelli from **Montello**. Then a technology showcase will include Edward Kosior from **Nextek**, Chiara Incorvaia from **ReLearn**, Melania Gomez from **Cadel Recycling Lab**, and Guillaume-Henri Hurel from **NextWaste**.

Sustainability by design

The afternoon session opens with a talk on “Design for change: Strategies for a Sustainable Product” by Prof Barbara Del Curto from the Department of

Chemistry, Materials and Chemical Engineering “Giulio Natta” at **Politecnico di Milano**, followed by a roundtable discussion chaired by Prof Matteo Ingaramo from the university’s Department of Design. Bio-based plastics is the subject of a presentation by Marco Versari from **Biorepack**. The day concludes with a panel discussion involving Alberto Fornaro from **TotalEnergies Corbion**, Gianluigi Mariani from **FI-Plast**, and Mariagiovanna Vetere from **Natureworks**.

The outlook for plastics recycling in Europe will be presented at the start of Day 3 by Martyna Fong from **AMI**. Then there will be a panel discussion on “Closing the Circle” with participation by Antonio Protopapa from **Corepla**, Bernardo Greenham from **Basuracero Plastics Recycling**, Dario Previero from **Amaplast**, and Marco Bergaglio from **Unionplast**. Another technology showcase will feature Leonardo Forner from **Sirmax Group**, Dimitris Vgenopoulos from **Cargill**, and Micaela Lorenzi from **Greenchemicals**.

Recycling in Italy

Assorimap, the Italian National Association of Plastic Recyclers and Regenerators affiliated with Confindustria, will lead the afternoon session. Starting with Assorimap’s 2024 annual report on the production of secondary raw materials from post-consumer plastics, presented by Paolo Arcelli from **Plastic Consult**, the session will also feature a roundtable discussion on the circularity of recycled plastics markets from both a national and European perspective. Participants will include: Maria Cristina Poggesi from **IPPR**, Paolo Glerean from **RecyClass**, Silvio Nevischi from **La Verde Vita**, and Stefano Chiaramondia from **PlasticFinder**. The session concludes with remarks from Walter Regis from Assorimap and Maria Alessandra Gallone from the **Ministry of the Environment and Energy Security**.

The final day of the conference turns to the evolving role of chemical recycling with an opening presentation by Camillo Roviola from **Amaplast**. This is followed by a technology showcase on chemical recycling featuring Jean-Luc Dubois from **Trinseo**, Martino Gabellich from **Lyondell Basell**, Pieter Imhof from **TNO** and a representative from **Versalis**.

Find out more about the GreenPlast 2025 conference [here](#).

GreenPlast 2025: Visitor information

Where: Fiera Milano in Rho, Milan, Italy

When: 9:30 - 18:00 Tuesday 27 May to Friday 30 May

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Technology from melt filtration specialists increasingly includes automation to help recyclers remove contaminants. Chris Saunders reports on the latest products

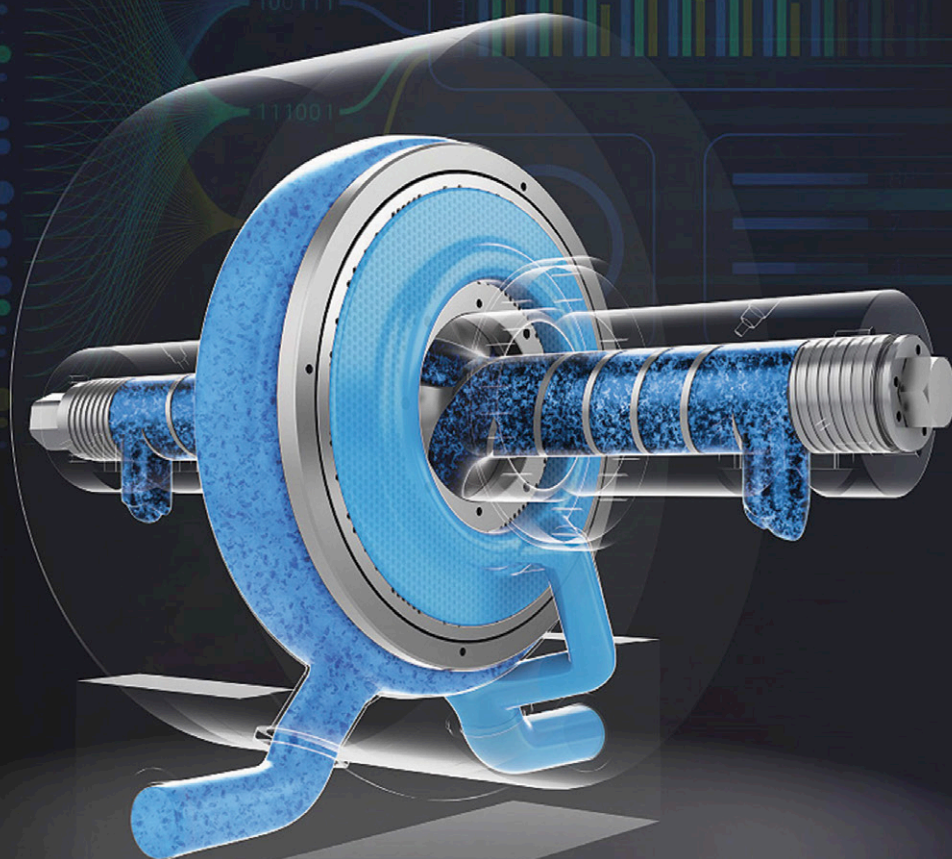


IMAGE: EREMA

New filters cope with contamination

Melt filtration technology is evolving to meet the demands of plastics recycling, with the most recent advancements focused on automation, fine filtration, and other innovations. The general consensus is that the ongoing trend towards more precise and efficient filtration systems is necessary in order to improve the quality of end products. Traditional melt filters such as screen changers require manual cleaning or replacement of parts which often leads to unscheduled downtime, but recent innovations include the fine-tuning of automated backflushing systems which clean the filter screens without interrupting production helping maintain continuous processing.

Other developments focus on honing existing technology and then integrating sensors, data analytics, and machine learning to optimise processes. By monitoring pressure and flow rate across the filter, systems can adjust parameters such as screen change timing, backflush cycles, and processing speeds.

At NPE 2024 in Orlando, Florida, last May, **Nordson's** Polymer Processing Systems (PPS) division introduced its BKG HiCon K-SWE-HD/RS melt filter to the US market, which has been designed to manage backflushing in a maintenance-friendly way. The safety cover can be opened vertically allowing the operator to reach the filter piston from all sides, and to cope with high process pressures it is equipped with a patented melt-pressure controlled venting start that automates the filling of the screen cavity after a screen change in such a way that no air entrapments hamper the process, thus providing maximum pressure consistency.

Nordson PPS has announced an expansion of its sales agent network in Europe to boost global support for its BKG melt delivery and pelletising customers, with melt filtration specialist **Fimic** appointed the exclusive agent for Nordson's BKG products in Italy. The collaboration combines Nordson BKG's portfolio of high-performance melt

Main image:
Erema's
DischargePro
control system
automatically
determines
the optimum
process
setpoints

Right: Break Machinery's Duo system is equipped with two perforated discs which increases the filtering area and production volume

pumps, screen changers, and pelletising systems with Fimic's know-how and established network within the Italian plastics industry, to deliver technical support, streamlined sales channels, and innovative solutions tailored to the specific needs of Italian processors.

Sven Conrad, BKG's Global Segment Development Director at Nordson, said: "Fimic's strong industry connections, technical expertise, and dedication to customer satisfaction make them the ideal partner to represent the Nordson BKG brand." Erica Canaia, Fimic's CEO, said: "Fimic has long been committed to providing our customers with the highest quality and most efficient filtration solutions. Adding Nordson's BKG renowned products to our portfolio allows us to offer a more comprehensive, end-to-end solution and elevate process efficiency for our customers."

At the same event, **Erema's** Powerfil business unit presented the new DischargePro control system. Recycling post-consumer input material is often characterised by material inconsistencies leading to fluctuations, presenting a major challenge for recycling companies. With the SW RTF backflush filter and its laser filter, Erema offers two filters in different sizes, designs, and with varying performance levels. The new laser filter control system detects significant changes in throughput and automatically adjusts the discharge rate so thickening remains consistent during filtration. By adjusting the speed of the scraper disc and the discharge screw, the DischargePro ensures the melt thickens uniformly, a crucial parameter for a consistent and cost-effective process.

"The new DischargePro control system automatically determines the optimum process setpoints

and ensures that these are maintained during the whole operating period," said Robert Obermayr, Head of Erema's Powerfil business unit. "This is made possible using fully automatic reinitialisation which is time and/or event driven."

Contamination

The DischargePro deals with contamination peaks by

automatically adjusting the speed of the scraper star and returning it to the setpoint speed as soon as the contamination peak has been discharged. It also automatically adjusts the setpoint value to ensure a consistent discharge rate and takes the ongoing condition of the filter screen into account. Over the course of the screen's utilisation period its effective surface area systematically decreases, increasing the pressure drop even though the input material is still the same.

"Our new laser filter control system delivers greater efficiency and more stable processes for our customers and is particularly user-friendly," said Obermayr. "We have been able to achieve up to 50% lower melt losses for our customers compared to the previous Erema laser filter control system."

At last year's NPE, **Britas** presented its Automatic Belt Melt Filter (ABMF) with two filter heads for powerful, ultra-fine filtration. The ABMF-TH boasts low melt loss with high output - with efficient melt filtration, flexibility and safe operation. With a screen area of up to 3,200 sq cm, Britas customers have achieved a throughput of up to 8,000 kg/h with a filtration fineness between less than 40 microns and 1000 microns. Melt loss is less than 1% for polyolefins, says the company.

Last summer, **ADG Solutions**, a distributor for **Break Machinery** which recently moved to a larger facility in Stone Mountain, Georgia, US, introduced the Duo double-filter system to the North American market. The Duo is equipped, as its name suggests, with two perforated discs (breakers), which increases the filtering area and production volume. The scraper disc, placed between the two filters, has blades on both sides and rotates to remove contamination from both surfaces while its geometry prevents these contaminants re-entering the melt.

The filter surfaces are constantly cleaned so that they can be used for longer periods than with conventional systems, and the two filter approach makes it possible to reduce the size of the filtration

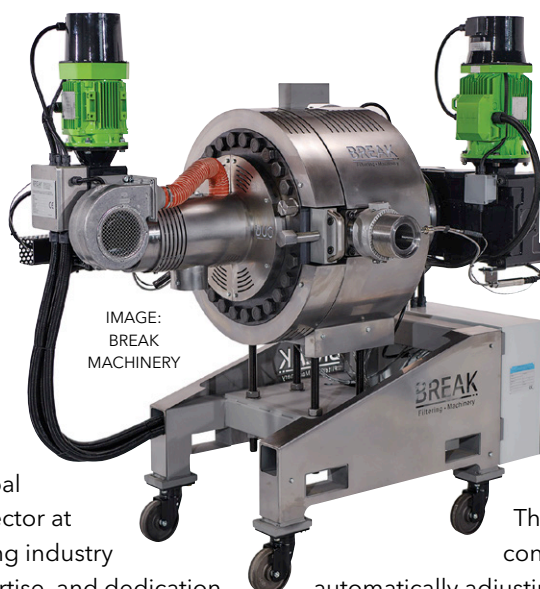


IMAGE: BREAK MACHINERY

Below: Nordson PPS has appointed Fimic to be the exclusive agent for Nordson's BKG products in Italy



IMAGE: NORDSON/FIMIC

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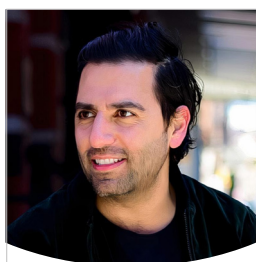
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chamber and have large filtering surfaces while the system's operating principle allows it to work at constant pressure. Manufactured using high quality alloy steel and adopting anti-wear treatments in the most stressed parts, the Duo is robust and offers high resistance to line pressures up to 350 bar.

ADG says the geometry of the six-blade rotating scraper disc ensures excellent cleaning even at low rotation speeds, impurities are discharged by means of a single screw, and the system is designed to filter various types of plastic with percentages of impurities up to 15% by weight. The speed of the discharge screw can be adjusted allowing even the most contaminated materials to be handled, while maintenance operations and replacement of filters and blades can be carried out without dismantling, which reduces cleaning and replacement times.

"We are continually looking to find the best equipment solutions to enhance [the] portfolio we provide to our customers," said ADG President Sandy Guthrie. "Taking the best-quality machinery and marrying that with our advanced industry knowledge allows us to help our customers transform plastic scrap into high-value raw material."

The new Cobra filter from **BB Engineering** combines continuous and automated large-area filtration with integrated intermediate filter cleaning, setting new standards in efficiency, ease of use, and resource saving, the company says. Increasing recycling quotas, coupled with insufficient availability, mean that lower input qualities are increasingly being considered for recycling, resulting in more challenging contaminants. At the same time, higher-quality applications are being targeted, which further intensifies the requirement for fine filtration. It says that systems have been designed for large quantities of contaminants, but as a rule they do not filter as finely as a candle filter. Conversely, there are also candle filters that provide excellent filtration but cannot cope with elevated levels of contamination. According to the manufacturer, as it combines large-area fine filtration with simultaneous fast cleaning and is able to manage higher contamination rates, the new Cobra filter can do both and is particularly effective in PET recycling.

The Cobra filter has two filter inserts, one of which is always active in production mode and the other either in stand-by or intermediate mode. The

automated switchover ensures a smooth changeover between the inserts, the status of which is constantly monitored. If necessary, the filter automatically initiates the cleaning and changeover process. All the operator has to do is sign off on the user interface. Operator-related deviations in the switching process, errors, or delays, all of which could affect the process, are eliminated.

Another feature of the Cobra filter is the integration of BBE's White Filter Cleaning technology (WFC) which enables intermediate cleaning of the filter inserts using hot steam alone, extending the filter's service life. BBE has had WFC in its product portfolio as a stand-alone solution for several years, but this is the first time it has been integrated directly into a filter, bringing additional advantages like cleaning speed and wear-reduc-

tion. Production and cleaning becomes an alternating interaction, and only after multiple cycles (the exact number depending on product and degree of soiling) does it become necessary to remove the filter insert for cleaning and service checks. The WFC cleaning process takes around 10 hours, whereas conventional cleaning takes several days, says BBE.

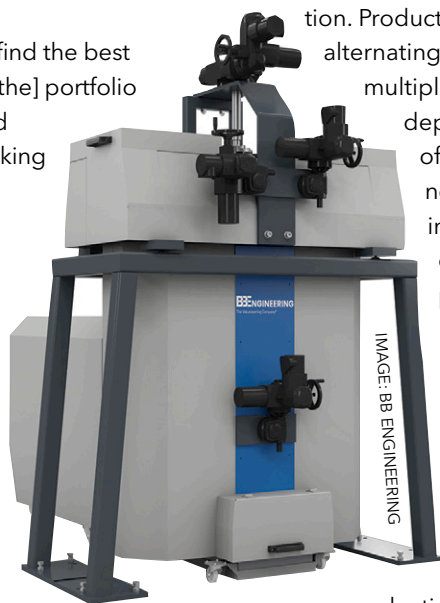
The company claims that comparing the Cobra filter with other fine filters with a throughput of 2,000 kg/h reveals a saving of 40% in operating costs, achieved partly through

a reduction of melt loss. It says the

integrated steam cleaning system has been linked to reduced use of spare parts and consumables due to the gentle treatment, conversion costs, and a lower energy requirement, as no heating and cooling phases are required and cleaning takes place at lower temperatures. The costs of chemicals are also eliminated, while the level of automation reduces personnel costs.

Film production

Gneuss has contributed its melt filtration expertise to a development project with Colines and ExxonMobil Signature Polymers for incorporation of PCR in film. Tests demonstrated the ability to consistently produce film incorporating 30% PCR content for automatic use with a consistency of 180-200% without the need to stop the line except for routine operations. A key component in this process was the patented Gneuss RSFgenius self-cleaning screen changer (see *Plastics Recycling*



Left: BB Engineering's Cobra filter has two filter inserts, one of which is always active in production mode and the other either in stand-by or intermediate mode

IMAGE: GNEUSS



Above: Gneuss RSFgenius systems can usually be easily retrofitted to existing extrusion lines

World January-February 2025 issue).

RSF continuous systems are characterised by a filter disc with circular screen cavities. The screen is changed on the side of the filter disc that is not in the melt channel, allowing the production process to continue uninterrupted even at high process pressures and with variable contamination levels. The RSFgenius filter model also offers automatic high-pressure segment rinsing, meaning parts of the screen surface are continuously cleaned with a small proportion of filtered melt, reducing back-flushing losses. Gneuss filtration systems can usually be easily retrofitted to existing extrusion lines, with the manufacturer insisting that they quickly pay for themselves through cost savings.

Ester Industries is a manufacturer of PET film with facilities in Khatima, Uttarakhand, and Hyderabad Telangana, India, which exports to over 85 countries. To enhance its technological capabilities, Ester has acquired a new Gneuss recycling system including RSFgenius filtration technology at its Hyderabad facility, enabling efficient processing of bottle flakes into food-grade pellets. The system is capable of processing 2,000 kg/h of flakes collected from India and the surrounding region, which can then be converted into food grade pellets without the need for pre-drying or crystallisation.

The Omni 200 recycling system at the Ester facility consists of a 3C Rotary Feeder which ensures maximum process stability, and an MRS extruder, which is based on conventional single-screw technology but incorporates a multi-screw devolatilisation section. This design enables highly efficient and gentle decontamination of the polymer melt, ensuring that the material meets the stringent standards for direct food contact applications. This particular system uses an MRS 200 extruder that degasses the melt at an absolute pressure of 25 mbar, allowing the use of a robust

water ring pump vacuum system.

A more unique feature is the dual filtration process, which allows fine filtration down to 16-20 µm. This is made possible by two RSFgenius filtration systems that provide maximum filtration quality with minimal material loss and operate with integrated backflushing systems. This advanced technology enables fine filtration with exceptionally long screen life, even when processing post-consumer materials. The system offers numerous economic and environmental benefits, including significant energy savings, making it a highly efficient and sustainable solution. The new line is expected to be operational by late 2025.

A new continuous melt filtration system designed for highly contaminated materials was recently installed at **JSW Europe's** sales and extrusion technical centre in Benrath, near Düsseldorf, Germany. "This enables extrusion trials for a wide variety of recycling applications in both mechanical and chemical recycling," says Shota Kikukawa, Sales Manager at JSW Europe. "Now, we're receiving numerous trial requests, reflecting strong interest from a wide range of customers."

At the recent Fakuma show, **Maag** presented its Eco series of continuous high-performance melt filters, which are used to filter contaminated polymer melts. For chemical recycling, the technology is used to filter low viscosity polymers, it says. The Eco filter is self-cleaning with a rotating, perforated drum, through which there is a continuous flow of melt from the outside to the inside. A scraper removes contaminants from the surface and feeds them to the discharge system.

Ueli Thürig, President of Maag Group, said: "Sustainable technologies for recycling and the circular economy are becoming increasingly important. Whether solutions for mechanical or chemical recycling or machines optimized for energy and resource efficiency for the production, processing or treatment of plastics - Maag Group offers appropriate solutions for the plastics industry."

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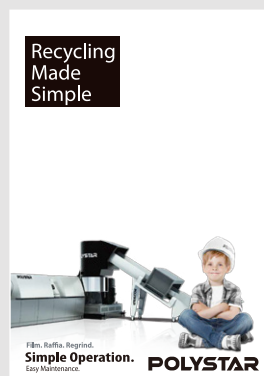
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POLYSTAR

Recycling Made Simple is the brochure from Polystar where you can find information about all of the company's plastics recycling systems. Its Repro Flex lines can recycle post-industrial and post-consumer PE/PP packaging and PP raffia/woven materials.

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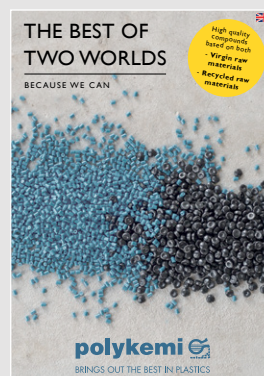
Polymer Processing Systems
BKG® Melt Delivery & Pelletizing Systems

Nordson

The technology portfolio of Nordson BKG, part of Nordson Polymer Processing Systems, includes a full range of melt filtration systems, melt pumps, polymer valves and jet cleaners plus pelletising systems, all detailed in this brochure.

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Plastics Recycling World January/February 2025

Plastics Recycling World's January-February edition looks at technology partnerships in recycling flexible packaging waste, plus trends and products in pelletising and the ongoing sustainability drive of the PVC sector.

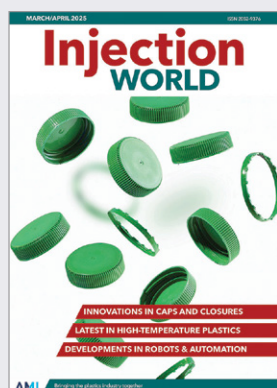
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Plastics Recycling World November/December 2024

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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Injection World March/April 2025

The March/April issue of Injection World magazine reports on expert opinion in the caps and closures sector, performance polymers in high-temperature operating environments and the use of AI for automation and robotics in injection moulding.

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Compounding World March 2025

The March issue of Compounding World magazine has a cover feature on technological developments in twin screw extruders, plus updates on special effect pigments, materials testing and long fibre thermoplastics.

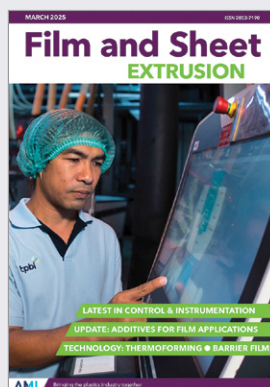
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Pipe and Profile Spring 2025

Features in Pipe and Profile Extrusion's Spring edition find that polyolefin materials are as critical as ever in numerous pipe applications, melt filtration is a hot topic in recycling, and control/measurement is advancing.

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Film and Sheet March 2025

The March issue of Film and Sheet Extrusion has a cover story looking at the increasing sophistication of control systems for film and sheet companies, while other features cover the latest developments in thermoforming, barrier film and additives for film.

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GLOBAL EXHIBITION GUIDE

2025	15-18 April	Chinaplas, Shenzhen, China	www.chinaplasonline.com
	6-9 May	Moulding Expo, Stuttgart, Germany	https://www.messe-stuttgart.de/moulding-expo
	7-8 May	PlastTeknik Nordic, Malmö, Sweden	www.plasttechniknordic.com
	8-10 May	RePlast Eurasia, Istanbul, Turkey	www.replasteurasia.com
	14-15 May	Plastics Recycling World Expo India, Mumbai	https://plasticsrecyclingexpoindia.com
	14-17 May	Plastics & Rubber Thailand, Bangkok, Thailand	www.plasticsrubberthailand.com
	20-23 May	Plastpol, Kielce, Poland	www.targikielce.pl/en/plastpol
	27-30 May	GreenPlast, Milan, Italy	www.greenplast.org
	3-5 June	UTech Las Americas, Mexico City	www.utechlasamericas.com
	4-5 June	Textiles Recycling Expo, Brussels, Belgium	www.textilesrecyclingexpo.com
	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 Recycling World Expo N America, Cleveland, US	https://na.plasticsrecyclingworldexpo.com
	4-7 December	PlastEurasia, Istanbul, Turkey	https://plasteurasia.com

AMI CONFERENCES

8-10 April 2025	Stretch and Shrink Film, Malaga, Spain
19-21 May 2025	Polymer Sourcing, Malaga, Spain
19-21 May 2025	Plastic Closure Innovations, Malaga, Spain
21-22 May 2025	Multilayer Flexible Packaging, Chicago, IL, US
2-3 June 2025	PFAS Workshop, Brussels, Belgium
10-11 June 2025	Plastics Recycling Technology, Long Beach, CA, US
24-26 June 2025	Chemical Recycling, Brussels, Belgium
24 June 2025	Feedstocks for Plastics Recycling, Brussels, Belgium

For information on all these events and other conferences on film, sheet, pipe and packaging applications, see www.amiplastics.com

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