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# Celanese restructures polyamide 66 business

Celanese is introducing a series of strategic initiatives designed to enhance capabilities, strengthen competitiveness, simplify its manufacturing footprint, and prioritise continuity of supply within its Engineered Materials business. To this end, it is repositioning its polyamide business to create a "more competitive and resilient" platform and closing its Sakra, Singapore, unit, as well as optimising polyamide 66 polymerisation production facilities in Richmond and Washington in the US.

Celanese expects to operate the Sakra facility until the end of July 2026 to ensure a smooth operational shut down.

In 2024, Celanese closed its PA66 and HPN polymerisation units at Uentrop in Germany, and also its compounding operation at Mechelen in Belgium, which it gained in its acquisition of DuPont's engineering thermoplastics business.



IMAGE: CELANESE

"We are reshaping how and where nylon polymer is produced and sourced across our global network," said Todd Elliott, Senior Vice President, Celanese Engineered Materials. "Throughout this process, reliability and customer confidence remain a priority. We are sequencing actions thoughtfully with our customers' experience in mind and with the goal of maintaining continuity of supply and product quality."

Celanese is also advancing a set of complementary actions across its Engineered Materials network to better align with heightened customer requirements. These include advancing steps toward commencing liquid crystal polymer-related operations in China, targeted upgrades of specialty compounds production in Europe, introducing new processes for medical-grade compounding in Asia, and implementing targeted product mix enhancements and localisation in India.

› **www.celanese.com**

## Moisture measuring device

Coperion has introduced the DewTector, a new moisture measuring device designed to provide reliable, automated online measurements of surface moisture content in bulk materials, particularly plastic pellets.

Traditionally, moisture measurement has been labour-intensive and prone to inaccuracies, said Coperion, often relying on sporadic manual assessments of relative humidity in bags and containers. The new patent-pending device offers an economical, simple and reliable method to help plastic manufacturers and recyclers monitor moisture levels more efficiently, it said.

The DewTector introduces a partial flow of bulk solids into a pressure-tight product chamber, and then determines the moisture content by analysing the amount released into the airflow.

› **https://coperion.com**

# Gerresheimer and Milliken in pharma collab


IMAGE: GERRESHEIMER

Bormioli Pharma, a Gerresheimer company, and Milliken, have partnered to support the use of the latter's Lenex UltraGuard additive technology designed to enhance polymer performance, protection, and processing efficiency, for demanding pharmaceutical packaging.

The additive products enable up to 40% improved moisture barrier performance in HDPE packaging, enabling downgauging while maintaining the standards required for pharmaceutical use, said the partners. By enabling material reduction and simplified packaging designs, the collaboration also supports sustainability goals.

"Lenex UltraGuard was developed to support demanding applications where performance and reliability are non-negotiable," said Ruben Subira, Lead Account Manager responsible for Milliken additives in South European market.

› **www.gerresheimer.com**

› **www.milliken.com**




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# Broadway adds compounding line and underwater pelletiser

UK compounder and masterbatch supplier Broadway has expanded its production capabilities with the launch of a new Useon compounding line, featuring the advanced SAT-65 twin screw extruder and UWP500 underwater pelletiser. The new production line can offer a throughput of more than 500 kg per hour

The company said the new production line enhances its ability to efficiently produce larger lots of high-performance plastic compounds and increases total manufacturing capacity by up to 2,000 tonnes/yr, while expanding the range of polymers Broadway can process.

The new line supports the production of technical compounds with high-concentration colours and additives, said the company.

"As we continue to grow, the addition of our latest compounding line represents a major advancement in our manufacturing capabilities," said Stephen Rayner, Technical Director. "It increases our production capacity and, most importantly, broadens the scope of polymers we can run. Combined with our in-house technical expertise, this line opens the door to new markets and allows us to experiment with novel materials. We can further expand our already extensive portfolio into areas that have previously not been possible."



IMAGE: BORADWAY

**Broadway has installed Useon technology at its facility in Halesworth, UK**

Regarding its underwater pelletiser investment, Broadway noted that soft polymers are difficult to cool and cut consistently with a strand pelletiser, while rigid materials become brittle when cooled in a water bath, making strand pelletising challenging. Strand pelletisers require extended cooling and handling whereas underwater pelletisers cut material directly at the die face while submerged, eliminating the need to form strands before cutting.

The newly-commissioned compounding line is already in operation.

› **https://broadwaycolours.com**

# Ampacet launches Rooted Collection

Ampacet has introduced the Rooted Collection, a special effects portfolio that brings enhanced irregular tactility and multisensory depth to injection moulded PE and PP substrates.

Developed in response to consumer demand for sensory-rich design, Ampacet said the collection combines a uniquely formulated swirl effect with a dedicated laser marking masterbatch creating distinctive three-dimensional surface textures.

Mercedes Landazuri, Ampacet Market Insight Manager, said: "In a world filled with distraction, these irregular haptic surfaces draw attention to what matters most, inviting touch, reflection and deeper brand loyalty."

The collection features six colorways inspired by earthy and natural motifs: Ashen Archive, Mottled Meadow, Verdant Vestige, Garnet Ghost, Balbec Blue and Tilled Taproot. The collection is considered ideal for beauty packaging, personal care, consumer durables, housewares, accessories, and automotive interiors helping OEMs deliver premium products.

› **www.ampacet.com**

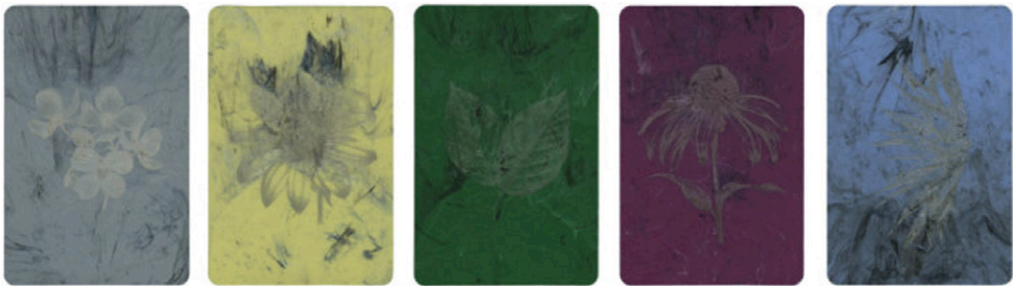


IMAGE: AMPACET

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## BASF expands Ecovio

BASF is expanding its certified compostable Ecovio portfolio with new grades that meet increasing demands for recycling flexible barrier packaging.

Michael Bernhard Schick from BASF's Global Business Management Biopolymers called the new Ecovio portfolio "a modular material system" that enables greater design freedom. Flexible packaging companies can adapt barrier performance, processing technology, and recycling options to their specific application requirements and sustainability goals, he said. This supports processors by allowing them to consider end-of-life options at the product development phase.

The new Ecovio modular system comprises ready-to-use solutions for various packaging technologies and offers adaptable barriers against grease, oil, waxes, and liquids, as well as high barriers against oxygen and moisture while simultaneously functioning as a sealing layer.

› **www.basf.com**

# Velogy is new name for European PO business

Velogy has officially launched as a European polyolefins business. The new company, comprised of LyondellBasell's former European assets, says it is built to deliver high-performing materials with speed, focus, and partnership, for customers across Europe.

The new business launch follows the closing of the sale of LYB's assets to Germany-based industrial investment group Aequita. The production sites forming the major part of the assets are located in Berre (France), Münchsmünster (Germany), Carrington (UK), and Tarragona (Spain).

"Velogy combines velocity, energy and innovation," said Richard Roudeix, Velogy's CEO. "We are applying a new edge, sharper decision-making, closer customer partnership, and a clear focus on performance to help our customers move forward with confidence in a changing European market."



IMAGE: VELOGY

**Münchsmünster facility in Germany**

Headquartered in Rotterdam, the Netherlands, Velogy says it is building a different type of materials business; lean in structure, entrepreneurial in spirit, and relentlessly focused on adding value for its industry customers.

Aequita is also in the process of acquiring Sabic's European petrochemical business (see *Compounding World* January-February 2026 issue).

› **https://velogy.com**

## SKZ initiates sensor project

The SKZ Plastics Center in Germany is launching the Clear project to investigate which sensors are most suitable for detecting foreign materials in plastics processing and transitioning innovative testing systems from the laboratory to industrial use.

It said the increasing use of recycled materials raises the risk of foreign substances entering the plastic melt. This contamination can significantly affect product quality and cause machine damage leading to production downtime, unplanned stoppages, and increased scrap.

Measurement techniques will be developed.

› **https://skz.de**

# PolyComp installs new Feddem lab extruder

German compounder PolyComp has invested in a modern, lab-scale extruder from Feddem. The unit is the Fed 26 Mts model, intended to complement the company's existing capabilities.

"Thanks to this advanced technology, we can produce small quantities flexibly, precisely and economically," said Michael Kurtzke, Head of Sales at PolyComp.

The new system is intended to enable flexible production of short runs, including samples, test batches, and formulation modifications, while maintaining repeatability and process control.

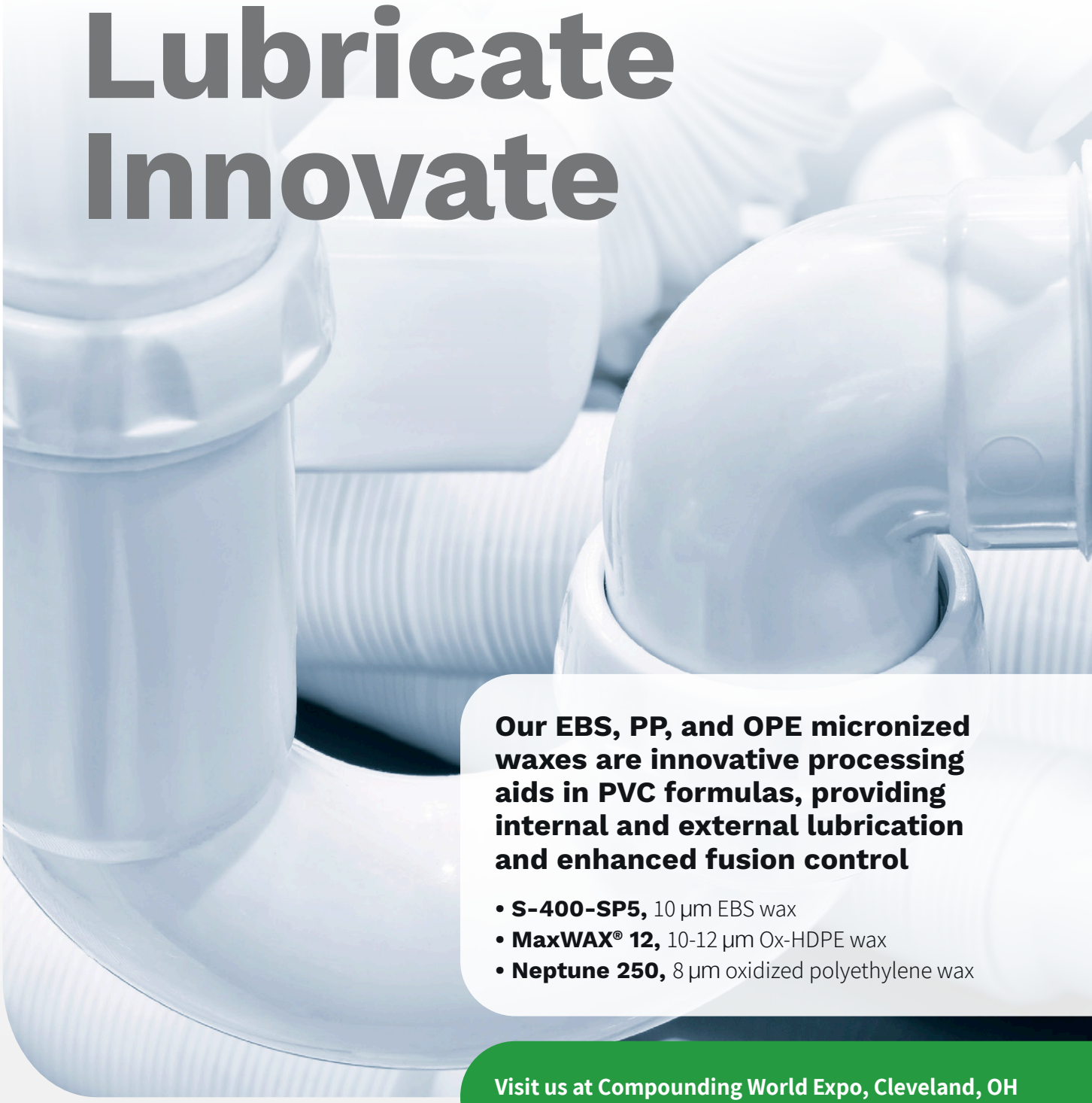
The company also referenced the ability to transfer recipes developed on this line to production scale.

› **https://polycomp.de**

› **https://feddem.com**

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Shamrock Recycles

# Hefestos initiative to build BFR substitution framework

Aimplas in Spain is leading the Hefestos Hub, a new EU-funded initiative designed to support the transition away from brominated flame retardants (BFRs) towards alternative fire safety chemistries.

Promoted and financed by the European Commission and awarded to Aimplas through a competitive tender, Hefestos will act as a pilot cooperation framework to explore the feasibility of an EU-level Substitution Centre focused on BFR additives.

BFRs have been widely used for decades to meet fire safety requirements in construction, automotive, cables, and other polymer-intensive applications. However, regulatory pressure based on their persistence, toxicity, and potential for bioaccumulation has accelerated their substitution.




Supplier companies have been exploring alternatives to BFRs but there have been challenges such as inconsistent methodologies, limited access to reliable data, and the lack of a secure environment for cross-sector collaboration.

Hefestos aims to address these issues by developing and testing a harmonised, transparent, and science-based framework that enables structured information exchange while respecting confidentiality and EU competition law.

The initiative will identify technical and information gaps and support the development of a European BFR Substitution Action Roadmap.

› **www.hefestoshub.com**

## IN BRIEF...

German company **Polytives** is partnering with **Simcoe Plastics** which will take over the distribution of Polytives additives in Canada with immediate effect. Further activities are planned.
**https://polytives.com**
**www.simcoeplastics.com**

Polyamide compounder **RadiciGroup**, headquartered in Italy, has launched a new website built on a customer-oriented approach and a redesign of its content architecture, with the aim of simplifying access to information and improving the overall user experience.
**www.radicigroup.com**

# Polykemi expands into Thailand

Polykemi announced it has established an office in Rayong, Thailand, adding that it "is continuously evaluating the possibilities for a future production facility for plastic compounds based on high-quality virgin and recycled raw materials".

Magnus Lindahl, CEO for Polykemi Asia, said: "We have established a local office in Thailand and will supply materials from our factory in Kunshan, China. Depending on how our local sales in the region develop, a future production facility in Thailand may become a possibility."

He said that the Rayong location gives Polykemi the opportunity to strengthen its position with Japanese end customers, especially plastics processors which supply to the Japanese automotive industry.

› **www.polykemi.se**

# Avient's new BOPP film additive

Avient has launched Hiformer Slip + Antistatic in Latin America, a new additive for biaxially oriented polypropylene (BOPP) films that balances multiple property improvements while maintaining production efficiency.

The new, super-concentrated liquid additive combines migratory slip and antistatic agents in a single formulation with this consolidation reducing production complexity while delivering consistent performance.

"Latin American BOPP film manufacturers face increasing pressure to improve efficiency while maintaining the highest quality standards," said Adriano Muzzi, General Manager, Latin America.

› **www.avient.com**

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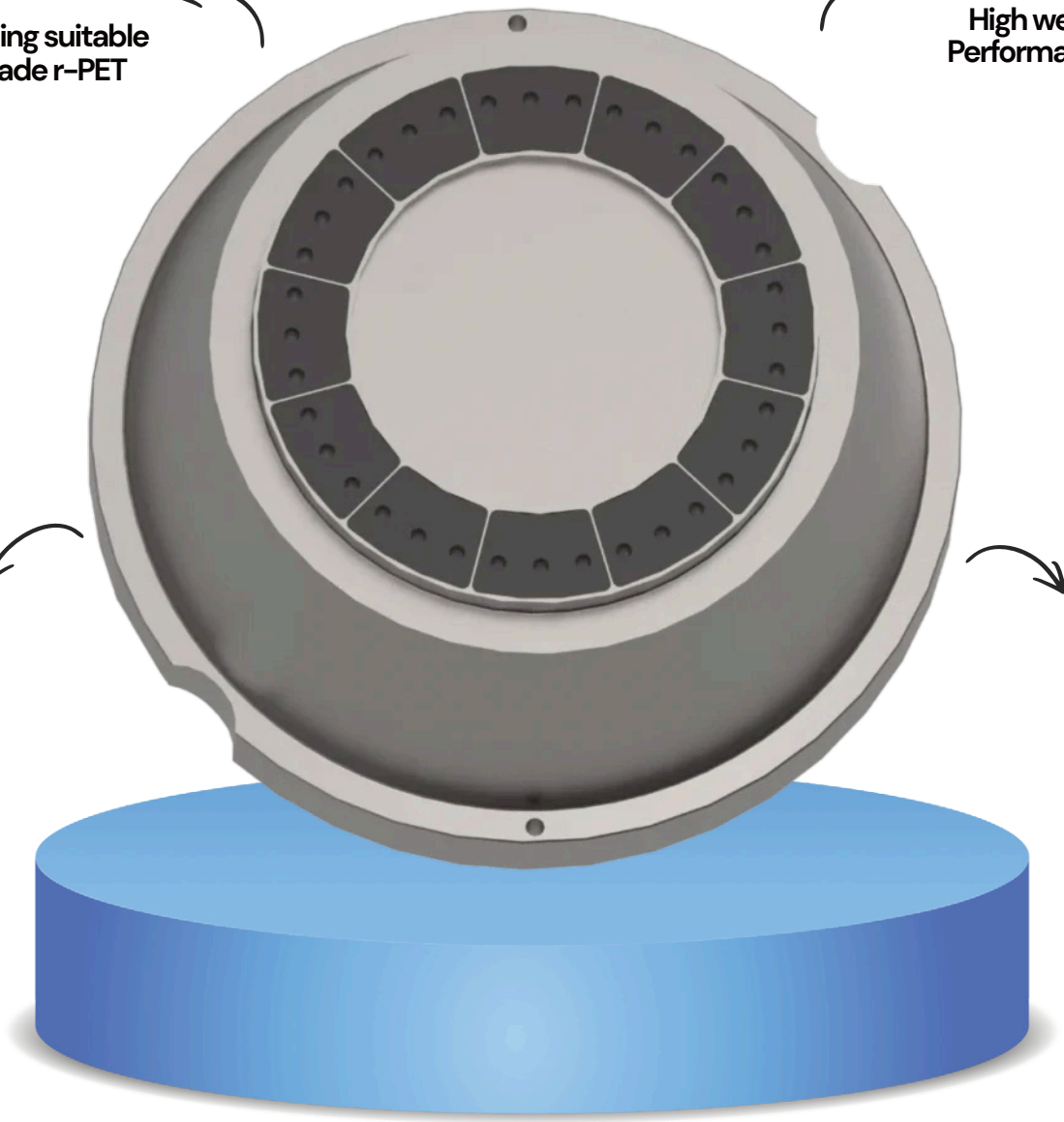
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# Fibres for when compounds need to be strong or stiff



IMAGE: JOHNS MANVILLE

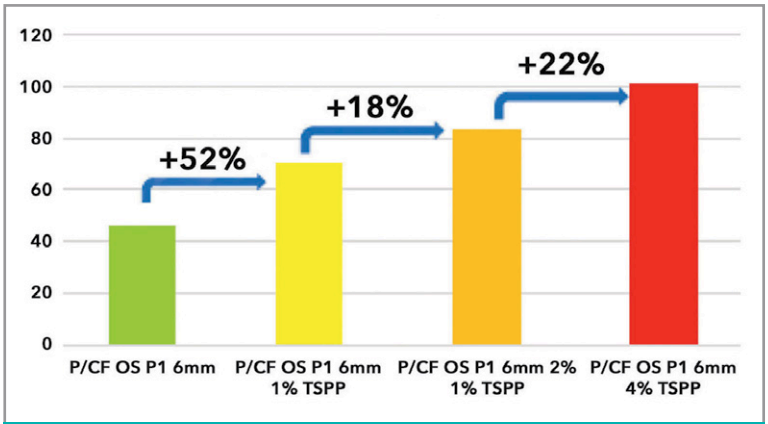
***New products and developments in fibre reinforcement highlight the push to even higher strength, dimensional stability, and durability for thermoplastics, as well as improving sustainability and processing. By Jennifer Markarian***

When plastics compounds need extra strength or stiffness, formulators have long turned to reinforcing fibres, including glass fibres (GF), carbon fibres (CF) and others. Natural fibres, including wood or other plant fibres, are being investigated and used to reduce carbon footprint, as *Compounding World* reported in May 2025. Recycling of fibre-reinforced thermoplastics and use of recycled carbon fibres are also of high interest. In all applications, performance is key.

Glass fibre reinforcement is beneficial for durable polyethylene (PE) applications, said **Johns Manville**, which recently launched a chopped strand glass fibre, StarStran 642, coated with a sizing chemistry designed for PE. The GF has been tested in lengths of 4 mm up to 6.4 mm, with 13 µm diameter. The product is designed for demanding outdoor environments and is being evaluated in applications such as railway sleepers (ie, ties), which require dimensional stability and load-bearing strength over a long service life outdoors. Other applications could include outdoor decking, construction surfaces and wood-replacement boards. It is produced in North America.

The latest from **Michelman** is Hydrosize 1202, which is a new fibre sizing technology for both chopped strand and continuous fibre applications. Typically, a different film former is needed for continuous fibres compared to the film former for chopped fibres because of differences in the fibre manufacturing process, explained Lauren Hickey, Global Market Manager at Michelman. The new sizing overcomes this challenge and is designed to help simplify operations and reduce costs by

**Main image: StarStran 642 glass fibre from Johns Manville is being evaluated in applications such as railway sleepers**




**The addition of a coupling agent labeled TSPP (PPgMAH, from 1 to 4%) on tensile strength for a PP compound with 30% of Procotex recycled carbon fibres (Carbiso P / CF.OS.P1-6mm, coated with Procotex P1 sizing for PP)**
***Source: Procotex France***

eliminating the need to stock and manage multiple sizing products. It can be used with glass fibre, carbon fibre, and natural fibres used to reinforce polypropylene (PP).

The company is also working on a new sizing for high-temperature carbon fibres, which are used in polyamides and other high-temperature polymers for specialty end-uses, including automotive applications that require high heat resistance and mechanical properties. The new sizing is in the pilot-testing stage, said Hickey. It can be used for chopped or continuous fibres and for virgin or recycled fibres.

Another pilot-stage development is a next-generation, VOC-free sizing designed to meet lower emissions requirements, such as manufacturing standards in Europe as well as limits in automotive interiors. All Michelman's sizing products are PFAS-free, the company noted.

**Teijin Carbon** has introduced a short-fibre product based on in-house manufacturing residues and designed for thermoplastic compounding. Tenax Next R2M P513 6mm improves sustainability and provides stiffness, lightweight performance, and electrical conductivity, as well as improved sustainability, the company said. In addition, the in-house source gives the company control over quality and supply.

The company also introduced a new carbon fibre filament yarn, Tenax UTS50 C31 24K 1600tex, that is suitable for long fibre thermoplastics (LFT). It has high tensile strength and enhanced elongation at break, for improved energy absorption and durability, the company said.

The latest from **Vartega** is a recycled, high-strength chopped carbon fibre product, EFB320, available with sizing for polyurethane, polyamide, or custom sizings. The high-strength CF is useful for achieving higher mechanical performance as an alternative to increasing the amount of standard modulus CF in a formulation, the company said. US-based Vartega recycles carbon fibre from post-industrial manufacturing waste sources. The company specializes in handling pre-spooled waste, to which they add sizing and process it to provide as their proprietary EasyFeed Bundle technology to thermoplastic compounders.

**Toray Carbon Fibers Europe** announced the start-up of its new carbon fibre production facility at its plant in South-West France, which was announced in 2023. The new facility will produce T300 (standard modulus) and high modulus carbon fibres and increases the plant's total annual capacity from 5,000 to 6,000 tonnes. The European facility aims to provide reliability and shorter lead times for European customers.

## New CF compounds

Italian compounder **Xenia** launched HM Upgrade, which are compounds using high modulus (HM) carbon fibres for applications that require even higher mechanical strength and structural stability for dimensional control compared to standard modulus CF. The company reported an average 15% increase in tensile modulus, corresponding to stiffness, as well as tensile strength and flexural modulus, which correspond to structural stability. Impact resistance also increased 20% on average, depending on the polymer matrix, Xenia reported. Applications could include aerospace, industrial, and sports.

The company's Xecarb ST portfolio is a family of carbon fibre reinforced polyamides with what the company calls the Super Tough (ST) Upgrade designed to enhance impact resistance and durability. This material is used, for example, in a snowboard binding baseplate, which is a component exposed to dynamic load and repeated stress, the company noted. In the baseplate case, the use of CF reduced the weight by 30% compared to a glass fibre reinforced reference material, while improving dimensional stability and fatigue resistance under cyclic loads.

The latest from Xenia is Xecarb PPA-CF, a 3D printing filament made from bio-based high-performance polyamide with 20% CF reinforcement. The filament has high performance and high temperature resistance, making it useful for functional parts for automotive, aerospace, and industrial applications, the company said.

While CF generally makes black parts, Xenia introduced a Whitened Shade (WS) colour option

last year. The lighter base colour can be dosed with a colour masterbatch during subsequent injection moulding or 3D printing processes.

## Recycled experiments

Sustainable fibre supplier **Procotex** supplies recycled carbon fibres (rCF), which the company said are increasingly being used for metal replacement and lightweighting applications, and recycled aramid fibres that provide abrasion resistance and high-temperature performance.

The company recently conducted compounding studies of its rCF with and without a maleic anhydride functionalized PP (PPgMAH) compatibilizer designed for PP with short or long glass fibres. Tests with 1, 2 and 4% PPgMAH in PP with 30% rCF found a significant benefit to tensile strength and flex strength by adding compatibilizer. A compatibilizer works at the interface of the PP matrix and the rCF, resulting in improved properties. The company also investigated various sizing chemistries to identify the optimal sizing to maximize tensile strength, flex strength or flex modulus in formulas with and without compatibilizer.

Procotex also recently experimented with the FiberXpert loss-in-weight feeder from **Kubota Brabender Technologie** and found that the equipment was able to handle its recycled carbon fibre pellets as well as recycled para-aramid granules without any problems, reported Procotex. Forms such as "bird seed" (also called "grain type") carbon fibre pellets and lightweight granules can be difficult to dose without the right equipment, Procotex noted.

The FiberXpert feeder has specialized screws and agitators designed for long and uneven fibres and non-flowing ingredients. It can handle inputs including wood and carbon fibres, shredded plastic and fibres, film chips and shredded film strips, and other fibres and fillers, said Brabender.

**Daicel High Performance Polymers** (HPP), formerly Polyplastics, launched two new grades of Plastron LFT compounds made with post-consumer recycled (PCR) PP content. The company reports that the materials can achieve mechanical properties (eg, rigidity and impact strength) equivalent to their comparable virgin material products. Plastron RSG20011 and RSG20013 have more than 30% PCR content and 30% to 40% glass fibre reinforcement. The use of PCR reduces the carbon footprint more than 20%, the company reported.

## High flow materials

**Envalior**, along with General Motors and Schaeffler, received the 2025 SPE Innovation Award in the Powertrain category from the Society of Plastics Engineers Automotive Division for a thin-wall actuator gear design made from Envalior's Stanyl PA46. The actuator gear wall for an electronic throttle control application provided impact absorption that the company says nearly eliminated tooth breakage. A thinner wall, compared to a conventional 1.5





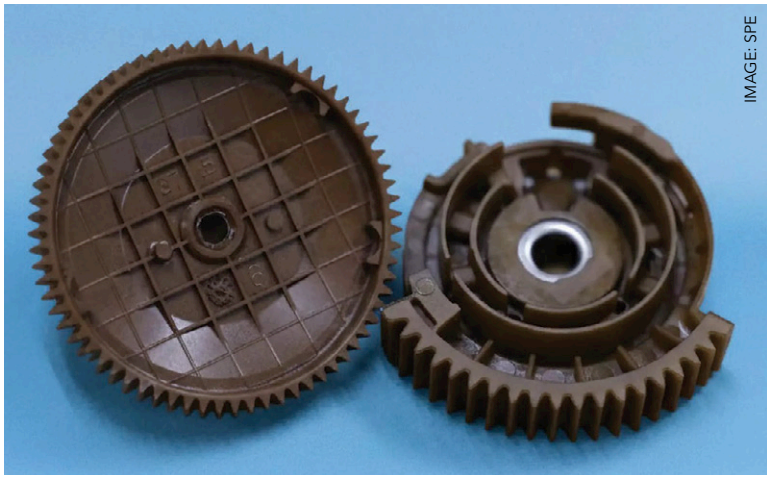


IMAGE: SPE

**Envalior, General Motors and Schaeffler, received the 2025 SPE Innovation Award in the Powertrain category for a thin-wall actuator gear design made from Stanyl PA46**

mm gear wall, reduced weight by 30% and space and cost by 20%. The design used 50 or 60% glass fibre reinforcement, followed by post-mould heat treatment.

The fibre orientation is governed by the injection moulding process, including the gate design, flow path, and mould geometry, explained Willian Barreto, Application Development Engineer at Envalior. "At 50–60 wt% glass fibre, viscosity is significantly increased, so a high-flow material such as Stanyl PA46 is required to achieve proper filling of thin-wall sections while still enabling a controlled and beneficial orientation profile," said Barreto. He said that fibre orientation is primarily affected by flow-induced hydrodynamics and fibre–fibre interactions.

## Sizing and heat

He added that fibre sizing strengthens adhesion between the glass fibre and the polymer matrix, which enables load transfer and improves mechanical performance. The post-mould heat treatment (ie, annealing) adds further dimensional stability and performance by acting primarily on the polymer matrix, with indirect effects on the reinforced system.

"In semi-crystalline polymers such as PA46, heat treatment can further develop the crystalline structure and densify the amorphous phase, improving stiffness, thermal resistance, and wear performance," said Barreto. "Injection moulding – especially in thin-wall, highly filled parts – introduces internal stresses due to orientation and differential shrinkage. Annealing helps relax these stresses, improving dimensional stability. For precision components such as actuator gears, annealing can be used to stabilize geometry prior to use. This is particularly relevant when tight tolerances are required and dimensional changes during service must be minimized. The glass fibres themselves are not affected by the heat treatment. However, they influence how the polymer responds, for example by acting as nucleation sites for crystallization and by reducing overall shrinkage. At high glass fibre contents, dimensional changes during annealing are typically lower than in unfilled materials."

Barreto added that similar benefits can often be achieved with higher mould surface temperatures to promote a "resin-rich surface" that better encapsulates fibres.

## GF in bearings

**Hallite Seals**, part of Michelin's Advanced Sealing Technologies (AST), designs its own compounds for its seals and other components for the fluid power industry. The company has used its knowledge of reinforced thermoplastics to manufacture Type 565 precision bearings for hydraulic cylinders using an injection moulding process and a novel tool design that manages the material flow and the cooling profile to minimize dimensional instability, said Andrew Iddeson, Technology Director for AST. The bearing application requires precise dimensional stability, because the bearings provide alignment within the cylinder to reduce the potential for leaks. Compressive strength is also crucial.

"These parts carry the load in the cylinder, preventing metal-to-metal contact in cylinder parts, which leads to damage and consequently leakage," said Iddeson. "Tensile properties are important to provide a small degree of flexibility, to allow assembly without brittle fracture."

The company identified material formulations and optimized the processing parameters and physical design of the tool to create precision parts. In polyamide and acetal-based compounds for bearings, short-glass fibre reinforcement helps improve dimensional stability, strength properties, and tribological properties, particularly wear-resist-



IMAGE: HALLITE

**Right: Bearings for hydraulic cylinders require precise dimensional stability, says Hallite**

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ance, to provide extended service life, Iddeson said.

**KraussMaffei's** Chopped Fibre Processing (CFP) technology allows compounding of PP with chopped glass fibres that feeds directly into an injection moulding process, without a pelletizing step. The technology allows separate dosing of PP and glass fibres into the system. The CFP screw uses a patented screw geometry designed for this process, said Jörg Stech, CEO of KraussMaffei Technologies.

## Direct compounding

Direct compounding reduces carbon footprint and also saves material, which reduces cost and can allow a return on investment of less than one year, the company reported. The technology is compatible with KraussMaffei machines. At K2025, the company demonstrated production of an integrated tailgate component using the CFP technology on an injection moulding machine. The technology can provide flexibility in production of structural and load-bearing components in automotive, aerospace or technical consumer goods, the company suggested.

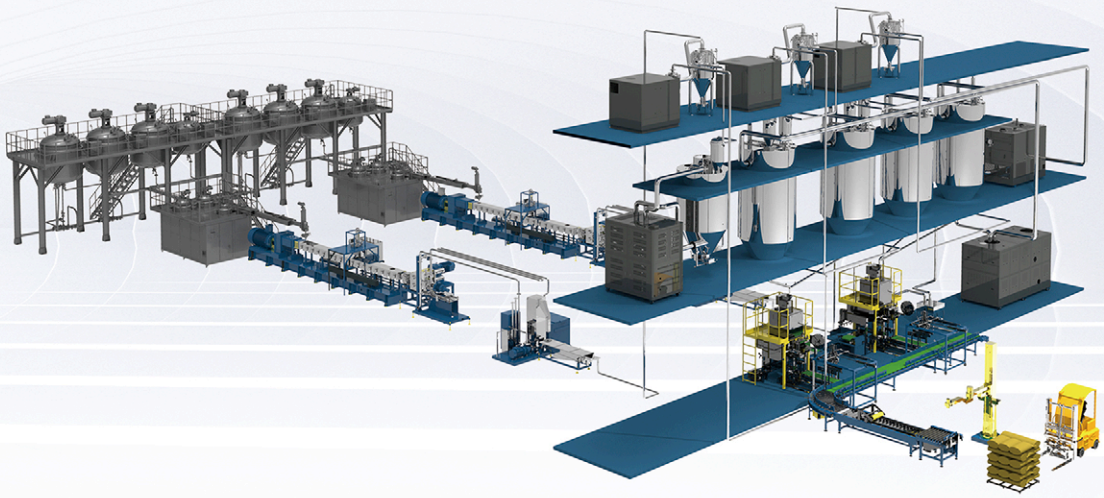
**Daher**, which was awarded at the 2026 JEC Innovation Awards in the Aeronautics Parts category for a carbon-fibre reinforced thermoplastic wing rib, said that it is committed to "upcycling" carbon-fibre reinforced polyphenylene sulfide (PPS) scrap from its composite part production process. The scrap is collected at Daher's plant, ground, and made into pellets containing 56% CF that can be injection moulded. The company plans to scale-up its process and expects to produce 4-8 tonnes/yr of carbon PPS pellets that it will offer for sale.

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# Minerals and more: new fillers and sources

***Carbon footprint is of increasing importance for mineral and alternative fillers, while also keeping cost reduction and functional performance in mind. Jennifer Markarian reports***




IMAGE: OKEANOS

**Main image: Okeanos uses a patented technology to create its Made from Stone compounds that are highly filled with calcium carbonate**

A wide range of functional fillers are added to plastics compounds to enhance properties, save cost, or improve carbon footprint. Mineral fillers include calcium carbonate, talc and others. Each mineral type has different properties, such as particle shape and aspect ratio, that can affect the properties it brings to a plastic compound. Coatings on the mineral particles, as well as compatibilizers added to the compound, are sometimes used to further improve properties. Formulators take all these factors into account as they aim to optimize filler loading to balance properties, processability, and cost.

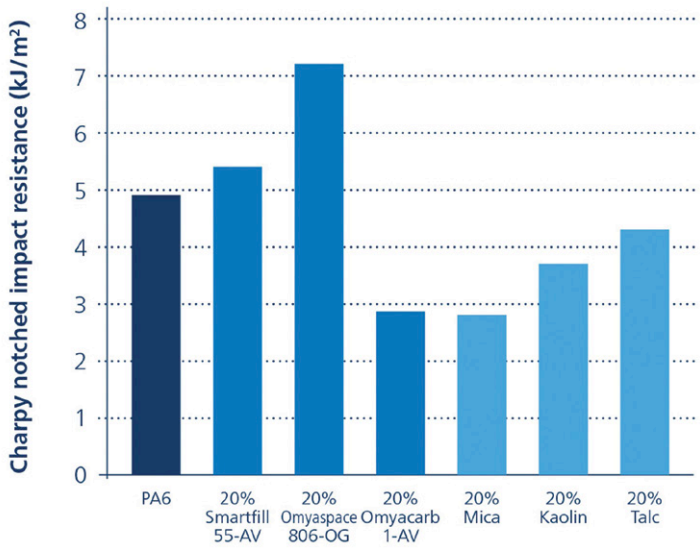
Calcium carbonate has been widely used as a filler for thermoplastics, often in polyethylene (PE) and polypropylene (PP). The mineral has had limited use in engineering polymers, such as polyamide (PA), where other minerals like mica and talc have traditionally been used, said Karsten Schulz, Business Development Director for Polymers at **Omya International**. Omya aims to change this paradigm with two new, advanced grades of calcium carbonate specifically designed for engineering plastics. The company said the new grades outperform conventional calcium carbonate and other minerals. For example, in glass-reinforced polyamide (PA), the new grades can improve dimensional stability without reducing impact resistance and could partially replace glass fibres.

One of the new grades is Omya Smartfill 55-AV, which provides improved impact strength and elongation in PAs. The new product can also improve notched impact resistance and stiffness of polycarbonate (PC). It can improve brightness in opaque PC compounds and allow lower levels of titanium dioxide pigment. The special coating on the calcium carbonate particles in the Smartfill range was initially developed to reduce hydrolysis in PLA formulations and has now been found to be a benefit in PET, PC, and PA as well, said Schulz.

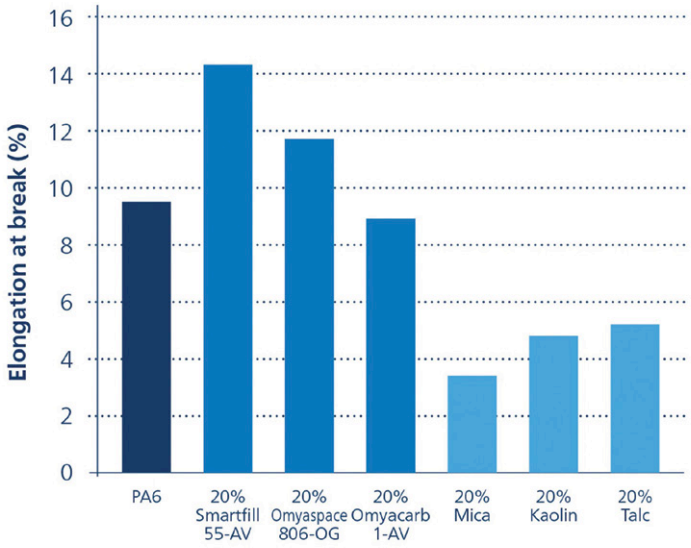
The second new grade is Omyaspace 806-OG. The Omyaspace technology was initially developed as an opacity enhancer for ABS to partially replace titanium dioxide in filled white formulations. In ABS, conventional calcium carbonate reduces impact resistance. Omyaspace 806 minimizes this issue, however, so it can be considered for a wider range of ABS applications. The filler increases stiffness and enhances brightness.

In typical glass-filled PA, Omyaspace 806-OG offers even higher impact resistance than Smartfill. In addition, while most mineral fillers typically reduce the impact properties of PAs formulated with impact modifiers, Omyaspace 806-OG maintains impact strength when used in high-impact polyamide formulations. Recent work at Omya has shown that the new grade "can be used to reduce both costs and cycle times while maintaining full impact performance at lower costs," said Schulz.

The new calcium carbonate grades have a much lower carbon footprint than engineering polymers, and they can reduce carbon footprint of a compound by displacing polymer, titanium dioxide, or




**Graph 1:** Charpy notched impact resistance




**Graph 2:** Elongation at break

**Comparative performance of two new Omya fillers, Smartfill 55-AV and Omyaspace 806-OG, which are advanced grades of calcium carbonate specifically designed for engineering plastics**
***Source Omya***

glass fibre. Industry average carbon footprint for fine ground, coated calcium carbonates such as these is less than 300 kg carbon dioxide equivalent per metric tonne (kg $CO_2$/t). This carbon footprint is much lower than titanium dioxide or engineering polymers, which can range from nearly 4,000 to more than 6,000 kg $CO_2$/t.

Additionally, Omya Smartfill 55-AV is produced from pre-consumer recycled calcium carbonate, which is not internal regrind but is instead sourced from other industries, noted Schulz. In addition to industry average carbon footprint data, Omya can provide specific product carbon footprint (PCF) data to customers that takes into account inputs, such as the use of renewable electricity in the manufacturing facility where the product was made. Requests for PCF have become common for some end-use industries, such as automotive.

## Eggshells and talc

**Renova Technologies**, founded in 2019 in the US state of Iowa, aims to reduce carbon footprint by upcycling eggshell waste from Iowa's large egg production industry. The company extracts the eggshell membrane and calcium carbonate from the waste stream and then separates the two materials. The collagen-rich membrane goes into food, nutraceuticals, and cosmetics, and the eggshell-derived calcium carbonate can be used as a food ingredient, soil conditioner or filler for plastics.

This biobased and biodegradable calcium carbonate mineral has a lower carbon footprint than mined calcium carbonate, and its PCF was evaluated and recently published, the company reported. The company's processing methods can provide predictable particle size and material behavior, and it uses a heat treatment that aids material cleanliness and consistency. In addition to calcium carbonate fillers, the company offers compounded ReOvo Eggshell Calcium Polypropylene (PP) Pellets that are ready for use in injection moulding applications.

Last May, **IMI Fabi** acquired Elementis Talc, the industrial talc business of **Elementis**. "This acquisition enhances IMI FABI's ability to serve a broader range of industries with sustainable, high-performance talc products, and positions the company for long-term innovation and global leadership," the company said in the announcement. The business, formerly Mondo Minerals before its acquisition by Elementis in 2018, is now a group within IMI Fabi that is developing the **Mondo Minerals** brands.

IMI Fabi has introduced a talc product line called NeoFill that is designed for applications where colour is less critical. NeoFill ECO is a lightgrey, ultrafine talc for automotive applications that targets performance comparable to high-brightness ultrafine references in TPO/PP compounds, said the company. Another grade, NeoFill EXTRA, offers high stiffness. Other product lines for automotive targets include the HTP and HTPultra families, which are high-brightness, high-lamellarity and high-purity talc grades.

"Automotive TPO and PP parts require a controlled balance of stiffness, impact retention and dimensional stability [low shrinkage and low coefficient of linear thermal expansion]," the company said. Low odour, long-term heat aging



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and impact resistance are also important, and talc can help meet these requirements.

## PLA concentrate

Also new from IMI Fabi is NatFeel PLA-ready, a polylactic acid-based concentrate of NatFeel talc. "PLA is often limited by slow crystallisation kinetics and the resulting constraints on heat resistance and cycle time," explained the company. "NatFeel is a highly micronised, talc-based functional mineral supplied in compacted form to support handling and feeding; it is used to promote crystallisation and improve thermomechanical performance in compostable polymers." The new concentrate is designed to improve dosing and dispersion while preserving nucleation efficiency, the company said.

Flowability is important for mineral fillers such as talc. Compacted grades can reduce dust and improve bulk handling and feeding consistency. The company's HTP1S grade is a free-flowing, highly micronised talc with spherical agglomerates that reduce bridging and funnel-flow issues. "This [form] supports accurate metering [in loss-in-weight feeders] and makes HTP1S suitable as an ingredient for dry-blend additive pre-mixes, helping processors dose expensive additives more reliably than with fine powders alone," the company said.

**Imerys** has a new grade of Steamic talc, which is a family of platy, finely ground talcs for automotive and other applications in the EMEA and APAC regions. They are available in a compacted form that allows increased throughput with less dust generation than dry powders, the company said. The newest grade, Steamic T1WN, was highlighted at K2025 for the APAC region.

Imerys' talc processing facility in Wuhu, Anhui Province, China opened in October 2023 and produces talc for the local automotive industry, including the growing EV sector.

## Fillers for recyclate

HPF The Mineral Engineers, a division of **Quarzwerke** group, recently conducted material trials at the HPF facility on mineral fillers as solutions for recycled plastics. Unwanted odour is one concern with recycled plastics. The company's Rescofil functional mineral odour absorbers use a combination of physical and chemical adsorption mechanisms to reduce odour-causing substances. Typical use levels are between 1 and 10%, the company

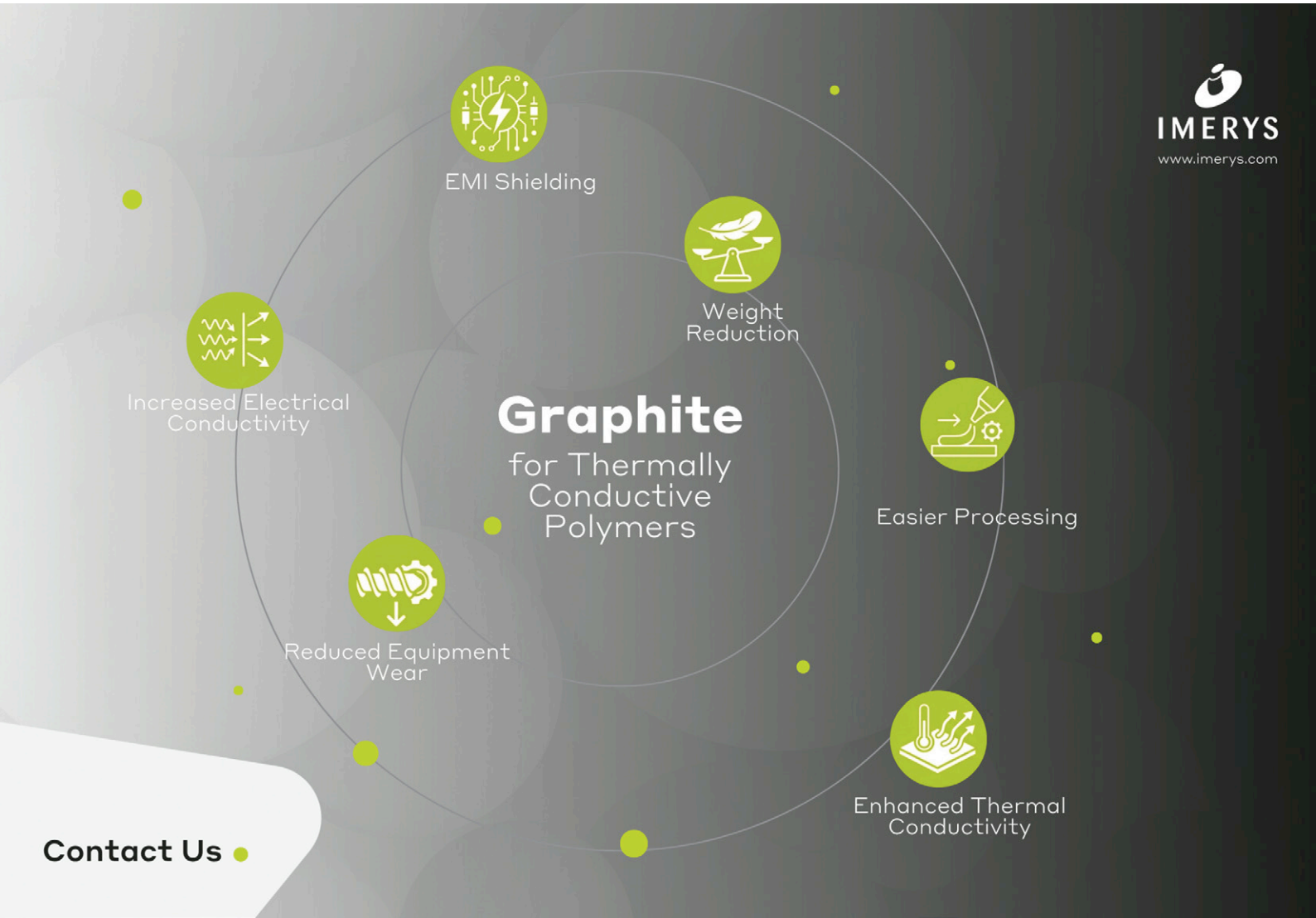





IMAGE: OKEANOS

**Right: Thermoformed (plus film and injection moulded) applications are targets for Made from Stone compounds from Okeanos**

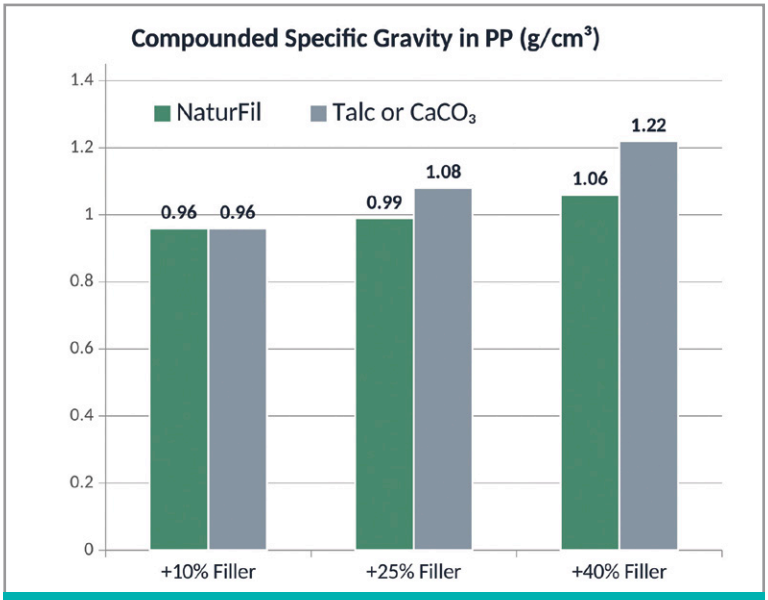
reported. In tests conducted according to the VDA 270 German automotive industry standard for odour, HPF found that odour levels in recycled PP compounds could be reduced below the critical acceptance threshold.

HPF's Microspar is a feldspar with a tailored surface treatment that acts as a compatibilizer in post-consumer recycled compounds, which may contain a variety of materials that are incompatible, such as PP and PE. The mineral compatibilizer improves interfacial adhesion and mechanical performance. Compared to reactive polymer compatibilizers, which were discussed in the May issue of *Compounding World*, the mineral compatibilizer is "cost efficient, robust toward feedstock variations and well suited for repeated recycling cycles," HPF said.

Polyolefins that have high amounts of some mineral fillers can increase the material density above 1 g/m³, which can potentially cause difficulties for recycling processes that use float-sink sortation to separate PP and HDPE (which float in water because they have a density less than 1) from other polymers that have densities greater than 1 and sink. HPF suggested that wollastonite is an alternative filler that can prevent this issue, because it can provide efficient reinforcement at low levels.

## Stone filler

**Okeanos** uses a patented technology to create its Made from Stone compounds that are highly filled with calcium carbonate to reduce virgin polymer use and lower carbon footprint. The technology allows the material to float, enabling recycling even with a high filler level.




**NaturFil comparison with mineral fillers**
***Source: Lignetics***

"Everyone in this industry knows the problem with calcium carbonate: the more you add, the heavier the packaging gets. So, you choose between cost and sustainability," said Okeanos CEO Florencio Cuétara. "At Okeanos, we don't make anyone choose. Our patented Made From Stone injected sheet technology gets past 50% calcium carbonate with density still under 0.8, while cutting $CO_2$ by up to 75%, even replacing polystyrene. We're already doing it at scale."

The company said that its compounds can be used to produce packages that have good dimensional stability, grease resistance, and barrier to acid food contact. The compounds run on existing equipment for film, thermoforming, and moulding. Thermoformed applications include yogurt cups, clamshells, and other packaging. The compounds are also an alternative to paper-plastic combination products, such as coffee cups or quick service restaurant packaging. Okeanos described its material as "mono-material paper-like technology" that is printable and has a "paper-like touch".

**Lignetics**, which manufactures NaturFil biobased and biodegradable wood-based fillers, recently announced the availability of NaturFil WP1050, a new grade with FDA food contact approval at up to 50% loading in finished polymer systems. The biobased filler can now be used in rigid and semi-rigid, single-use food-contact applications, such as cutlery and containers, for brands and converters who want to reduce material footprint, the company said. The filler is produced from sustainably sourced wood residuals using Lignetics Group's patent-pending densification technology to make a processable form for thermoplastics.

Parts filled with NaturFil exhibit mechanical properties comparable to those filled with mineral fillers, at half the weight, said LD Sheftel, Director of Category, Industrial Products, at Lignetics. "While traditional cost analysis focuses on price-per-

pound, processors are increasingly evaluating total cost of goods per finished part," said Sheftel. He noted that NaturFil's lower density (1.30 g/cm³ vs 2.7 g/cm³ for calcium carbonate) translates to cost-per-part savings.

Lignetics is headquartered in Colorado, US, and has 30 production sites in North America. NaturFil is being used in products in North America and Europe. "Early adopters—automotive lightweighting programs, rigid container manufacturers, and biopolymer compounders—are running trials and bringing products to market," said Sheftel. "Demand is expanding beyond packaging into durable goods; we have active trials and customers in furniture, building products, retail consumer goods, and 3D printing materials."

## Mineral flame retardants

Another use for mineral fillers is in flame retardant (FR) formulations. High levels of mineral-based FRs, such as aluminum trihydrate (ATH) and magnesium hydroxide (MDH), are used in halogen-free flame retardant (HFFR) formulations. One challenge is that the very high levels of minerals needed can increase weight and reduce processability and properties. Synergists, including some that are mineral based, can help reduce FR filler levels to maintain fire resistance characteristics and improve processability and properties.

New from Elementis is Charguard 2010, which is an organically modified organoclay that can be used as a synergist in halogen-free flame-retardant thermoplastic compounds to lower ATH or MDH levels. The lamellar silicate structure is a gas barrier that reduces heat release rate. The material also increases char formation efficiency and inhibits dripping, the company said.

**Magris Talc** offers patented high-aspect ratio talcs as extenders for HFFR formulations, for use with FRs such as ATH, MDH, or intumescent FRs such as phosphinates. The company reported commercial use in wire and cable jacketing formulations and in glass-filled polyolefin formulations, such as those targeting conventional engineering thermoplastic applications.

Previous studies showed that, in intumescent FR formulations in glass-filled PA6, Magris Talc's Hyperplate talc could replace 10% of the glass fibre and reduce the level of organic phosphonate-based FR while maintaining FR performance. Another study showed that talc could partly replace MDH in EVA compounds. A study completed this year using Hyperplate talc with an ultrafine precipitated ATH in a thermoset (Neoprene W) demonstrated that up to 50% of the ATH could be replaced while maintaining UL V-0 performance, the company said.

Flame retardants will be discussed in more detail in the December issue of *Compounding World*.

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# Suppliers gear up melt filter capacity

## *Next-generation filtration solutions are addressing throughput and polymer quality needs. **Chris Saunders** reports on new and enhanced technologies*




IMAGE: MAAG

**Main image: Maag Ettlinger is further developing its ERF series of melt filters**

As recycling targets for packaging and other plastics sectors draw closer and demand rises for high-quality post-consumer (PCR) resins, enhanced melt filtration technologies are enabling recyclers to push past historic barriers in melt cleanliness and productivity and bring recycled plastics closer to virgin equivalence. At the heart of these developments are automated units capable of delivering higher throughputs with finer filtration and lower operational costs, while larger open screen areas and lower differential pressures contribute to improved melt homogeneity and reduced degradation, essential for higher-value applications.

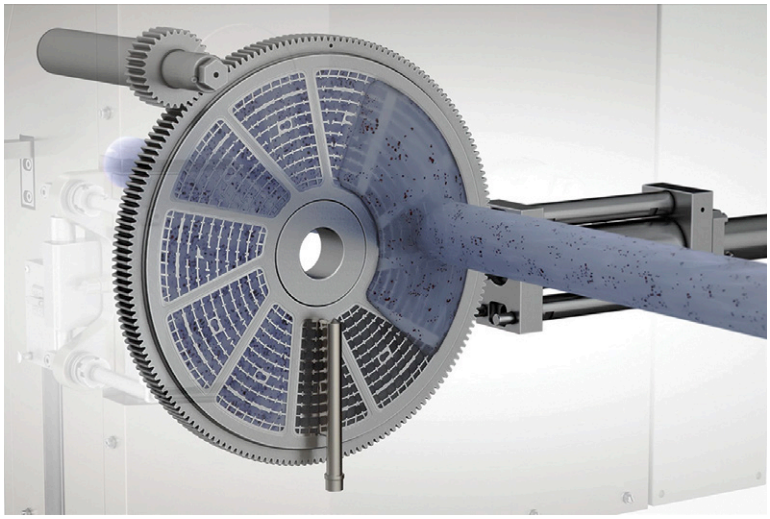
The benefits of high-capacity melt filtration were showcased at K2025 in Düsseldorf, Germany, last October in the form of **Erema**'s LF 812 laser melt filter, a Powerfil brand innovation featuring a 100% increase in screen area versus its predecessor allowing single-unit operation at up to 5,000 kg/h of melt while maintaining fine contaminant removal. The enlarged filtration surface reduces pressure and thermal load on the melt stream, which can offer significant advantages when processing sensitive polymers.

"This latest development in our laser filter sees us take a decisive step towards meeting the growing demands for high throughputs in plastics recycling at the same time as achieving the highest quality of melt," said Markus Huber-Lindinger, Managing Director at Erema. "As a leading provider of plastics recycling machines, at Erema we focus our experience and technical expertise on equipping large-scale systems with high-performance filtration in a compact design."

This latest innovation sees Erema continue on a firmly established course. At K2022, the company presented the LF 406 laser filter with a screen area of almost 2,000 cm²; an increase of 50% compared to the LF 356. The launch of the LF 812 increases the screen area by a further 100%. Combined with the Intarema 2021 TVEplus, which has a throughput of up to 3.5 tonnes/hr, the potential of the new filter becomes clear as now the system can operate with one continuous extruder without a cascade configuration.

A new development is the integration of the proven Lock & Change system into an Endurance filter, which handles coarse pre-filtration and protects the laser filter when processing unwashed material or input streams that are difficult to clean. In combination with the shut-off function on the Lock & Change system (available starting with the twin version), the machine continues production even while one of the sets of screens is being changed. Erema says this increases system uptime and contributes to stable process control with challenging material streams. ›

IMAGE: GNEUSS



**Above: Functional principle of the RSFgenius self-cleaning, process-constant rotary filtration system from Gneuss**

Erema says it is expanding in-house manufacturing of filter components at 3S, a fellow Erema Group company, in Wartberg, Germany, and investing in new production and heat treatment technologies to increase vertical integration. The LF 812 is available either as a single version or as a twin configuration for more demanding applications.

An increase in throughput is also the result of development in **Maag Ettlinger**'s established ERF series with the new ERF 2000 filter. The ultimate aim is to develop a continuous filter system with drum screens that is suitable for recycling processes with high quality requirements, high demands on screen service life, and throughputs of up to 18 tonnes/hr. The company says the ERF series sets the benchmark for a sustainable recycling process, as the melt loss of ERF filters is low in comparison to other filter systems. Ettlinger's new ECO 500 series extends continuous filtration into medium-scale lines, handling up to 4,000 kg/h. Based on a rotating drum with self-cleaning scrapers and modular screen assembly, these units are designed specifically for PET recycling where black speck removal and consistent melt quality are top priorities.

## Multi-stage strategies

Beyond single improvements, multi-stage melt filtration strategies are gaining traction as recyclers turn to highly contaminated and mixed streams that challenge conventional systems with double-stage filtration configurations pairing a coarse filter with a fine filter are emerging as a popular and effective strategy. Combined systems can facilitate continuous operation for months and minimise melt loss, which is crucial for profitability in large-volume recycling. These developments reflect a broader trend toward integrated filtration architectures capable of maintaining tight quality control even when recycling streams include mixed polymers or post-consumer waste with residual adhesives and barriers.

"The different filter systems are combined with other Maag products to meet customer requirements, providing our customers with a tailor-made solution for the entire value chain from a single source," said Uwe Kellner, Managing Director Maag Ettlinger.

Emphasis was placed on ease of use and integration into complete systems during the development of the new Basic Recycling Filter (BRF) disc filter from Maag Ettlinger. At the heart of the system is the rotor which lifts the contamination from the screen, with the frequency of cleaning being adjusted to the level of contamination. The contamination is discharged via a hydraulic system to ensure that the valve can be opened safely without an explosive release of plastic, even in the case of organic contaminants. "The main advantages of the BRF series are consistent recyclate quality, intuitive operation, and easy integration into the Maag ecosystem," said Stefan Schierl, Product Manager.

Since the end of 2025, the BRF 70 (700 mm size) has been available in addition to the BRF 50 (500 mm) and BRF 60 (600 mm). The BRF 70 has a filter area of 3,739 cm² and is very well suited for recycling applications with higher throughputs. In addition, robust and inexpensive screen discs ensure low operating costs. A wide range of filter finenesses from 150 µm to 2,000 µm are available to respond to changing requirements.

The BRF is operated via an intuitive control system that allows easy remote access via the Maag IoT gateway, with the integration of automation and digital control systems proving to be another emerging trend in melt filtration. The company says that systems are increasingly incorporating pressure-differential monitoring, automatic screen change logic, and predictive maintenance alerts, reducing operator intervention, process variability, and unplanned stoppages. Automation also supports fine filtration down to 20 µm or less where required for stringent product specifications such as those in bottle-to-bottle recycling or technical compounding.

## Bigger and better

At K2025, **Gneuss** displayed the RSFgenius 330L, one of the largest and best-selling RSFgenius filtration systems from the company. The unit has an active filtration area of 2,150 cm² and has a filtration fineness of 75 µm for LDPE/ LLDPE film recycling. Gneuss´ flagship high-performance, fully

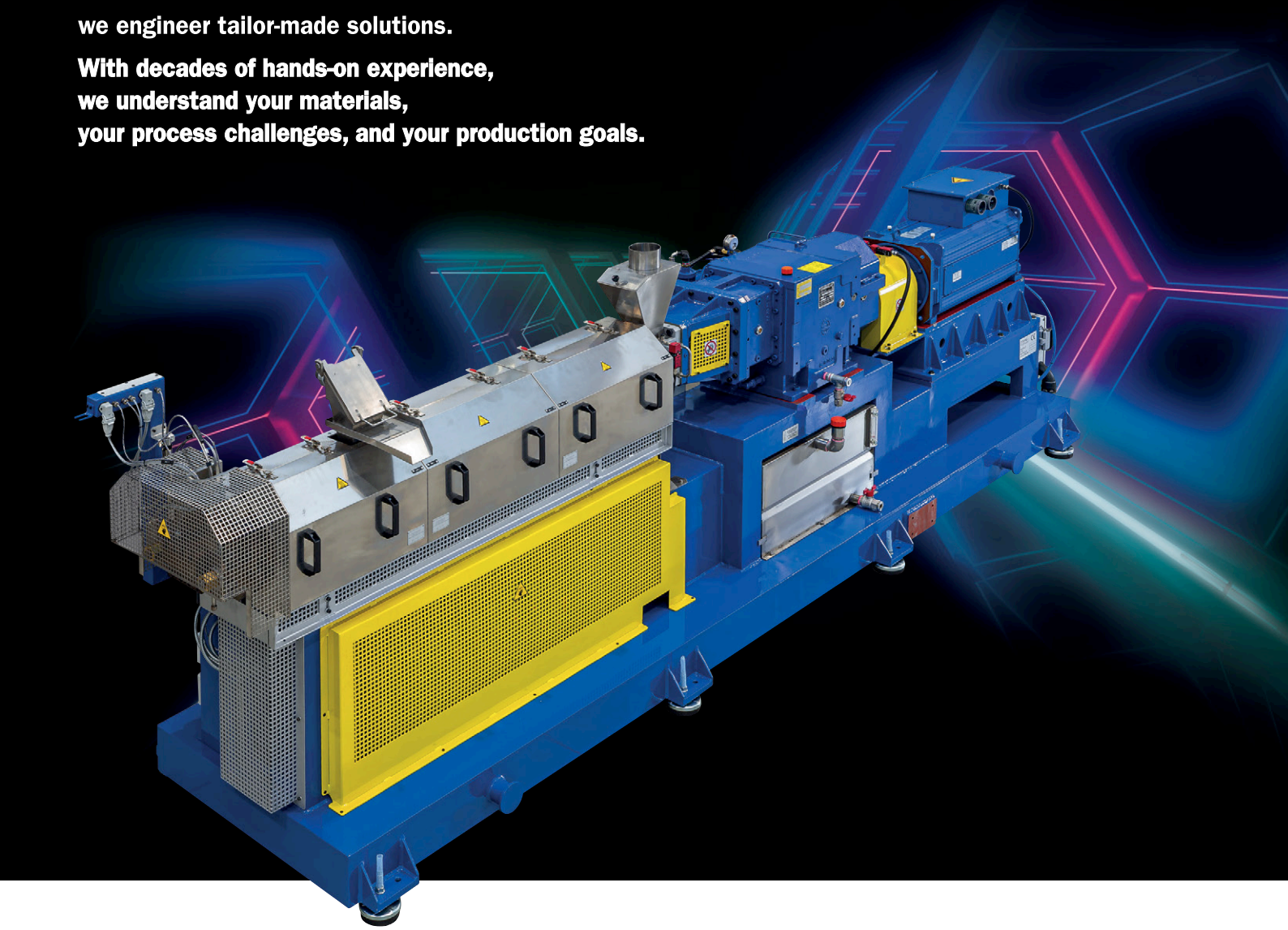
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**Left: Gneuss displayed the RSFgenius 330L system at K2025**

automatic rotary melt filtration system ensures consistent melt pressure when processing recycled material, thanks to its highly-efficient, automatic, integrated self-cleaning system. The filter elements can be automatically cleaned in situ up to 400 times and filter elements as fine as 10 µm (1,200 mesh) can be applied. Retrofitting a fully-automatic RSFgenius to an existing extrusion line permits the use of more contaminated material and/or the use of finer screens without disrupting the process or reducing production yield.

Three further Gneuss screen changer ranges, the SFXmagnus, SFneos, and KSF, were represented at the event. The SFXmagnus is a process-constant screen changer used in a wide range of applications, and the SFneos is a more specialised piece of kit which offers a degree of process and pressure-stability equivalent to that offered by the RSFgenius. This enables Gneuss to cover a huge range of applications where self-cleaning is not necessarily required. The KSF range is designed with extremely sensitive polymers in mind and is mostly used in compounding where its uniquely customisable design for fast material and grade changes is a major advantage.

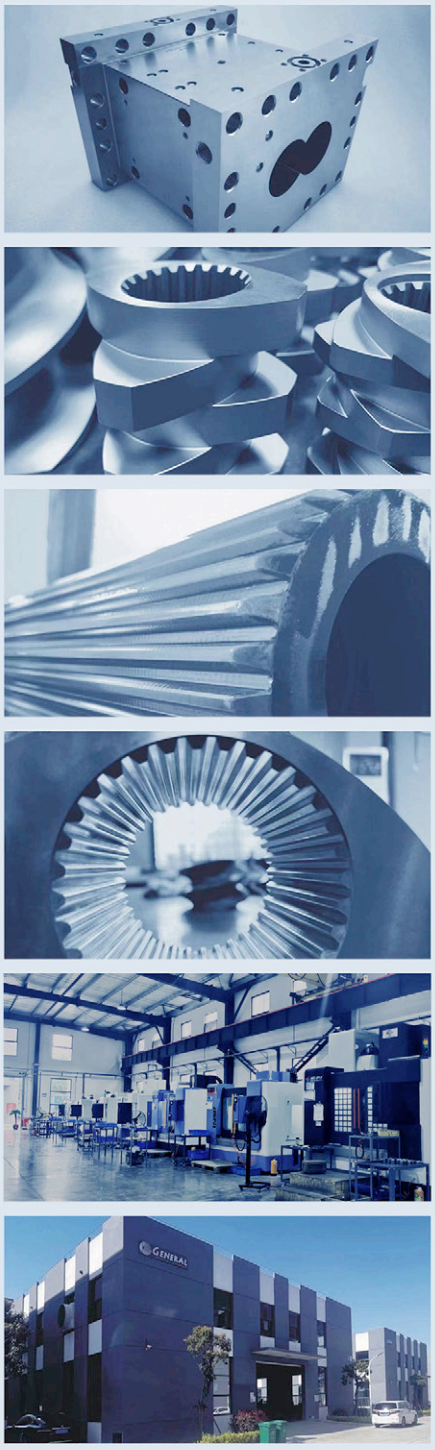
With the new Duo 7000, **Break Machinery** has developed the largest model in its constant-pressure, self-cleaning filtration range. Unveiled at K2025, the Duo 7000 expands production capacity while maintaining the required process stability. **ADG Solutions** serves as the company's US sales partner and it says it has seen strong demand for higher-capacity filtration systems. The Duo series is based on a double-screen, constant-pressure design that enables continuous filtration without pressure fluctuations, a critical requirement in recycling lines producing films, sheets, and high-quality pellets.

With a filtration surface area of 7,025 cm², the Duo 7000 offers more than double the filtering area of many single-unit constant-pressure systems. It is rated for flow rates up to 12,000 kg/h, depending on melt viscosity, filtration fineness, and contamination level, making it suitable for high-output recycling lines processing PE, PP, HDPE, LDPE, PET, PS, and other common polymers. The system is designed to handle contamination levels of up to 15% by weight, depending on pollutant type, making it particularly well suited for PCR applications.

Inside the filtration chamber, two opposing screens work in conjunction with a rotating scraper disc and six interchangeable blades which continuously remove contaminants and transfer them to a single independent discharge screw. This configuration maintains stable pressure during operation, minimises material loss, and



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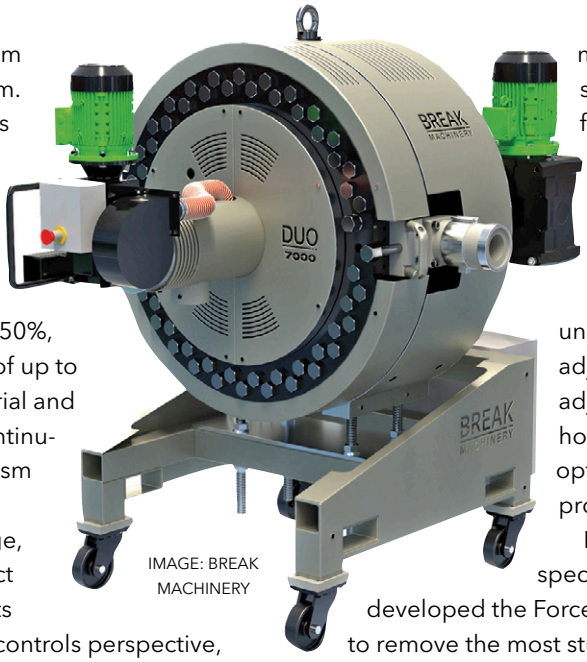



IMAGE: BREAK MACHINERY

**Right: Break Machinery's Duo 7000 is the largest model in its constant-pressure, self-cleaning filtration range**

prevents contaminants from re-entering the melt stream.

Operational efficiency is another key focus. Break Machinery says installation of its Duo systems can result in production increases of up to 20%, waste reductions of up to 50%, and downtime reduction of up to 75%, depending on material and line configuration. The continuous self-cleaning mechanism extends screen life and reduces consumable usage, while the system's compact filtration chamber supports high productivity. From a controls perspective, the HMI enables temperature management, pressure or torque operating modes, and cleaning parameter adjustment. Operators can store and recall recipes, and integration via OPC-UA allows communication with plant PLCs, SCADA, and management systems. Remote monitoring capabilities further support diagnostics and technical assistance.

For materials with lower contamination levels, Break Machinery also offers an optional Eco-Mode configuration. This vacuum-based cleaning system uses mesh screens instead of laser or punched filters, and can reduce material waste to as low as 0.1%. It maintains constant pressure while enabling very fine filtration, supporting applications where material recovery and sustainability are priorities.

**BBE** offers a wide range of melt filters, including the Cobra filter, which formed part of its display at K2025 and is said to set new standards in continuous polymer filtration. This high-performance system is equipped with automated valve switching and integrated inline cleaning, which ensures uninterrupted operation with consistently high filtration quality. With a filter area of 5 to 24 m² and a throughput of up to 4,000 kg/h, the Cobra filter offers high performance density and process stability.

BBE also offers VacuFil, a fully integrated system for innovative PET LSP (liquid state polycondensation) recycling which combines large-area, gentle melt filtration with precise IV control, ensuring consistently high melt quality. The modular system concept allows flexible adaptation to different material qualities and application areas, while the central component of the system is Visco+, an LSP unit for precise viscosity adjustment. Continuous adjustment results in a homogeneous melt with optimum processing properties.

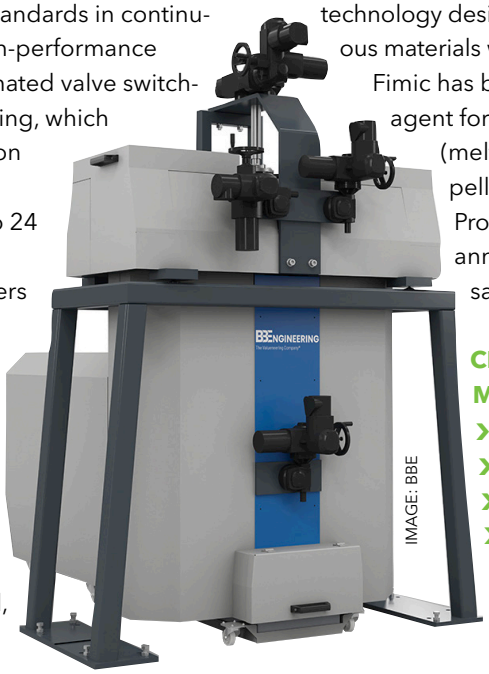



IMAGE: BBE

**Right: The new Cobra continuous large-area fine filter from BB Engineering with automated valve switching and self-cleaning function**

Italian melt filtration specialist **Fimic** says it has developed the Forced Cleaning Scraper (FCS) to remove the most stubborn and adhesive contaminations inside the scraper. A dedicated mechanical piston cleans the channels in seconds and discharges residues through the front valve, extending the filter cloth's lifespan and ensuring consistent machine performance. The company says the simple, and powerful solution is ideal for recyclers processing hard-to-clean materials who want to extend component lifespan, reduce downtime and manual intervention, and maximize operational efficiency and quality results.

The first FCS was installed by Fimic at Prezero. The company said in a LinkedIn post: "One of the main challenges was processing PP grade 50 contaminated with PET fibres, one of the most difficult materials for any filtration system. The FCS filter fully proved its effectiveness, ensuring continuity, quality and optimal management even of the most stubborn contaminants, thanks to its automatic technology designed to handle heterogeneous materials with high impurity loads."

Fimic has been appointed the exclusive agent for Nordson's BKG products (melt pumps, screen changers, and pelletizers) in Italy after its Polymer Processing Systems (PPS) division announced an expansion of its sales agent network in Europe.

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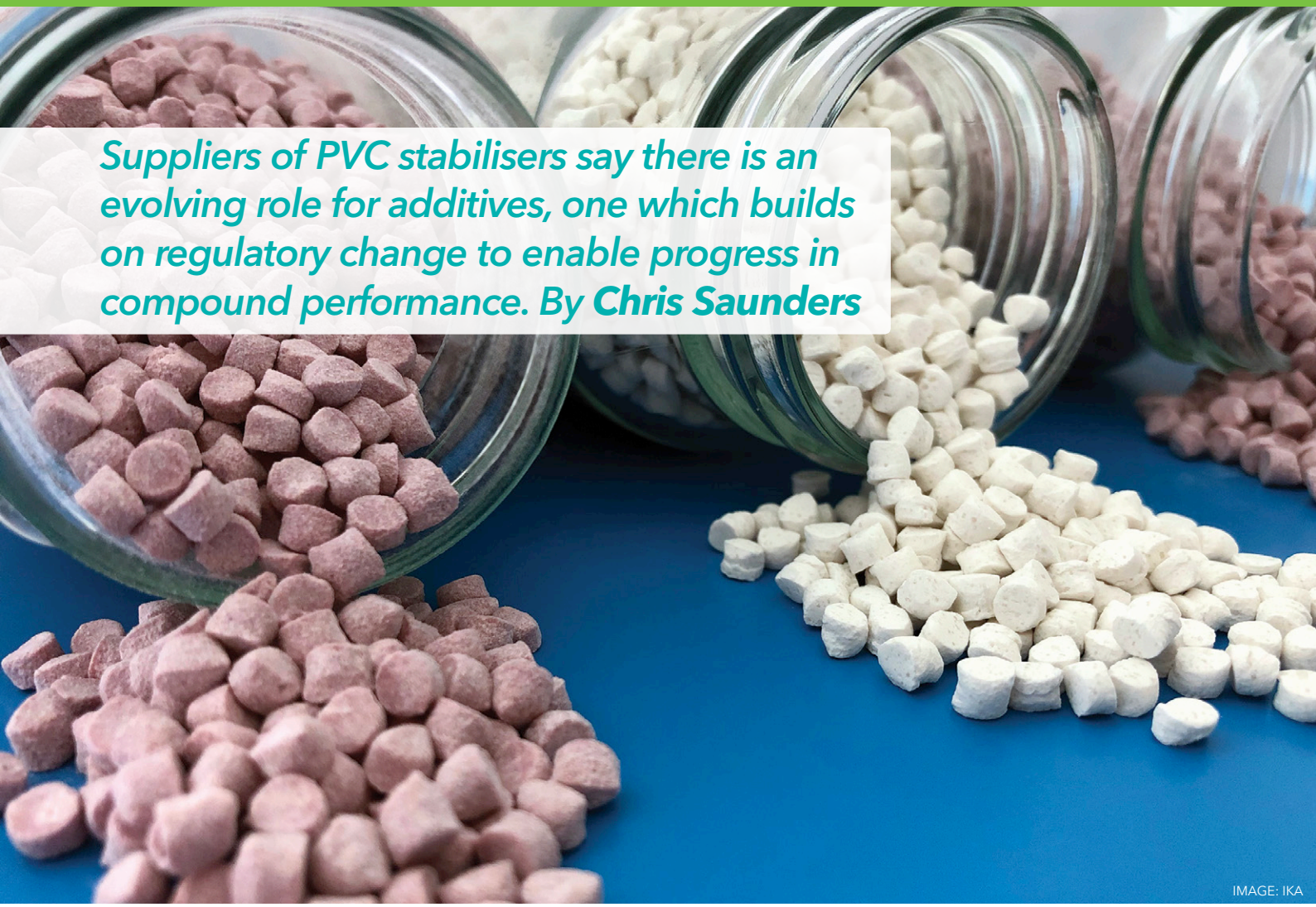


IMAGE: IKA

*Suppliers of PVC stabilisers say there is an evolving role for additives, one which builds on regulatory change to enable progress in compound performance. By* ***Chris Saunders***

# Moving beyond PVC regulation

The polyvinyl chloride (PVC) additive industry has entered a period of structural transition, shaped by regulatory demands, sustainability requirements, and shifting end-use demand. While underlying consumption fundamentals for PVC remain robust, driven by construction, infrastructure, and electrification, in many cases formulators and compounders have been forced to rethink traditional chemistries.

The phase-out of legacy additives, particularly lead- and cadmium-based stabilisers, has accelerated, with the European Union's Reach framework continuing to tighten permissible limits under the proviso of protecting health and the environment. The implications of this include reformulation costs, increased demand for alternative calcium-zinc, organotin, and hybrid stabiliser systems, and the widespread substitution of phthalate plasticizers with non-phthalate or bio-based alternatives.

Sustainability has evolved from a compliance obligation for producers into a core competitive activity with additives being redesigned to improve PVC recyclability, minimise degradation during reprocessing, and enable multi-cycle mechanical recycling.

Beyond compliance, performance demands are also intensifying. Key areas of innovation include thermal stability enhancements, UV and weathering resistance for longer outdoor lifetimes, low-smoke, flame-retardant systems for cable and building applications, and processing aids and impact modifiers which enable thinner, lighter profiles. Advanced formulations are also being tailored for emerging applications such as medical devices and high-spec electrical insulation where regulatory and performance thresholds are both strin-

**Main image: IKA said it expects the transition towards calcium-based stabiliser additive systems to continue in the PVC sector**

IMAGE: IKA




**Above: According to German additive supplier IKA, industry advancement is best achieved through close cooperation with customers**

gent, while trade disruptions and tariff uncertainties have added volatility to global supply chains.

German PVC additive manufacturer and distributor **IKA** says advancement is best achieved through close cooperation with customers to translate these trends into practical solutions. Rather than viewing additive development only through chemistry, it sees innovation as application-driven problem solving, combining formulation expertise with market insight and technical support. This approach has become increasingly important as processors seek solutions tailored not only to today's requirements but also to future regulatory and performance expectations.

Another important aspect to consider is how new stabiliser concepts can contribute to broader use of recycled content and help processors maintain consistent product quality, even under complex conditions. This creates opportunities beyond stabilisation itself and positions additives as "enablers of progress" in the wider PVC value chain. Looking ahead, the company says it expects the transition towards calcium-based systems to continue, supported by both market pull and technological and commercial advancements. However, success will depend less on one-to-one substitution and more on additive concepts designed around application needs. IKA stresses that this trend illustrates how progress is not simply about launching new products, but also about shaping change.

Perhaps the single most notable recent trend is the ongoing shift from tin-based stabiliser systems toward calcium-based alternatives, particularly in North America. The discussion has evolved beyond simple replacement and now centres around how new-generation stabiliser solutions can unlock added value in processing efficiency, formulation robustness, and long-term product performance. In Europe, while tin-based systems are still established in some applications, transformation developments towards calcium-based solutions can be seen in applications like sheets. Here, innovation is not about replacing proven systems for the sake of change, but about developing alternatives that meet technical and economical expectations while supporting broader market trends.

## Tin replacement

This regulation-driven transition is being embraced by some of the larger additive suppliers, including **Baerlocher** which has implemented a Tin Replacement program providing customers worldwide with a broad range of benefits. "Tin was the perfect PVC-component of its time," said Mustafa Ataman, Head of SBU PVC EU/MEA/US at Baerlocher. "Today, greener, safer, and more regulation-friendly systems are taking its place. We not only embrace this shift, we are driving it forward with transformative, sustainability-led innovation, resulting in pioneering technologies. To this end, we combine global expertise with local knowledge to serve our customers worldwide as a trusted advisor."

Baerlocher's Tin Replacement program initiative offers customers: full compliance with Reach, RoHS, and other global regulations; safe use in drinking water, food contact, and medical applications; high-performance calcium-zinc based alternatives; tailored technical support for seamless conversion on existing production lines; and solutions aligned with recyclability and circular economy principles.

In practice, Baerlocher's Baerostab's stabiliser family provides optimised solutions for switching from tin-based systems while Baeropan one-packs represent sustainable and innovative additive systems specifically designed for rigid PVC applications. Key advantages of these products include full compatibility with existing equipment with no further investment required, and consistent performance in colour retention and mechanical strength.

As a further indication of the increasing importance of tin replacement, last July Korea-based additives producer **Songwon** announced that Jaewon Choi had been appointed the new Leader Business Unit Tin Intermediates/PVC to oversee the company's strategic direction and spearhead new business development to strengthen its position in the global market.

According to ResearchAndMarkets.com, the PVC Stabiliser market was valued at $5.6bn in

2024, and is projected to reach $7.6bn by 2030, rising at a CAGR of 5.22%. This increase in demand is partly a result of PVC materials being used in more infrastructure projects, plumbing systems, wiring, and industrial applications, which require stabilisers to reduce deterioration caused by light, heat, and other external factors to ensure longevity, stability, and performance.

### Bio-based wax

**Clariant** announced in May that the US Food and Drug Administration (FDA) had approved its bio-based Licocare RBW wax additives for use in rigid PVC food-contact applications, expanding the existing FDA approval beyond polyester materials and representing continued "regulatory progress" in Clariant's systematic approach to securing comprehensive food-contact approvals across materials and regions. The FDA approval covers the Licocare RBW 100 series and RBW 300 series, including saponified grades RBW 360 Vita and RBW 560 Vita. The authorisation specifies use as a processing aid, lubricant, release agent, and/or slip additive in single- and repeat-use rigid PVC at concentrations up to 0.5% by weight for all food types except infant formula and human milk.



IMAGE: AI/CLARIANT

**Above: Clariant has gained PVC food-contact approval for its Licocare RBW wax additives**

Conditions of use include FDA food-contact categories C through H, with a maximum temperature of 80°C for hot-fill applications. Additionally, Clariant has received a Letter of No Objection (LONO) for repeated use at concentrations up to 1% in food-contact articles for food processing


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IMAGE: ARKEMA

**Above: The divestment of Arkema's impact modifiers and processing aids businesses to Praana includes the Vlissingen production facility in the Netherlands**

equipment manufactured from rigid PVC, the dual authorisation structure addressing both direct food-contact packaging applications and industrial processing equipment requirements.

"This FDA approval represents another step in our systematic approach to securing comprehensive food-contact authorisations across materials and regions," said Diederik Goyvaerts, Market Manager, Additives at Clariant. "The expansion from polyester to rigid PVC demonstrates the versatility of rice bran wax chemistry and provides processors with regulatory compliance for a broader range of applications."

## Montan alternative

Montan wax, extracted from lignite coal deposits, has been widely used as a lubricant in PVC formulations for some time. However, lignite is a finite resource with depleting reserves, particularly in Germany where primary deposits are located. This situation has resulted in supply disruptions and price volatility, creating challenges for PVC processors dependent on consistent additive availability.

"The current and future montan wax supply challenge presents the market with a short-term challenge as well as a long-term strategic opportunity," said Goyvaerts. "Increasing supply concerns are already encouraging companies to switch to Licocare RBW Vita products as valid sustainable alternatives. The steady progress related to the broadening food contact compliance will certainly accelerate this switch."

Clariant points out rice bran wax is derived from an annually renewable agricultural source, providing supply stability compared to geological deposits with finite reserves. The material is sourced from non-food-competing fractions of rice processing, utilising an existing agricultural by-product.

Licocare RBW Vita additives function as both internal and external lubricants in PVC processing, reducing melt viscosity and minimising friction at polymer-metal interfaces during extrusion and moulding operations. The additives demonstrate thermal stability at standard PVC processing temperatures (160-200°C) and provide effective pigment dispersion, mould release functionality, and low migration characteristics. They also exhibit a renewable carbon index of 98% with substantial product carbon footprint reductions compared to montan wax-based alternatives.

The combined FDA and EFSA authorisations enable rice bran wax additive use across multiple rigid PVC application categories, including food processing equipment components such as conveyor belts, cutting boards, seals, and gaskets, as well as rigid PVC containers and packaging materials. The dual concentration specifications (0.5% for direct food contact, 1% for processing equipment) provide flexibility for different application requirements, while the systematic expansion of food-contact approvals across regulatory jurisdictions provides PVC processors with comprehensive compliance documentation and viable alternatives to conventional montan wax-based additives while addressing supply chain constraints.

## Divestment

At K2025, **Arkema** displayed its full range of additives including Durastrength acrylic impact modifiers designed to deliver optimum cost and performance in rigid and flexible PVC applications for siding, fence, deck, rail, pipe, and injection moulding applications, plus its Clearstrength impact modifiers, Plastistrength process aids and Biostrength additives for bio-based polymers. The Clearstrength E-series has been developed to withstand severe processing conditions and bring

high impact performance especially at low temperatures.

The company has since divested some of its businesses in additives used in the manufacture of PVC profiles, pipes, and packaging, as well as engineering plastics, to Indian group **Praana** as it refocused its portfolio. The divestment specifically concerned Arkema's impact modifiers and processing aids businesses, and covered the global scope for methyl methacrylate butadiene styrene (MBS) copolymers as well as the European and Asian scope for acrylic copolymers (AIMPA).

These activities, part of Arkema's Coating Solutions segment, generated €44m sales in 2024, and the project entailed the divestment of the Vlissingen production facility in the Netherlands which employs 50 people. The facility is now operated by Praana group company, **Galata Chemicals** , which produces stabilisers and plasticisers at various operations located around the world, including the US, Canada, India and Germany.

Vishal Goenka, Vice Chairman of Praana Group, said: "This proposed acquisition strengthens Galata Chemicals' portfolio with complementary plastic additives technologies that enhance impact performance and process efficiency in PVC and composite applications. It supports integration-led growth, deeper customer engagement, and scalable value creation across core end markets."

## Colour hold

The prevention of yellowing is one of the most common challenges in PVC manufacturing and application. It is primarily caused by dehydrochlorination due to heat or UV exposure, leading to the formation of conjugated double bonds (polyenes) that discolour the material. The choice of stabiliser is considered the first line of defence against thermal degradation. **Novista Group** highlighted its calcium-zinc stabilisers as providing excellent early colour hold and superior whiteness in finished products, acting as environmentally friendly alternatives to lead.

The company said: "For high-end construction materials, compounding different stabilisers can create a synergistic effect. For example, in premium window profiles, combining Ca-Zn stabilisers with a small amount of organotin can significantly enhance thermal stability and minimise yellowing."

Novista, a chemical manufacturing complex established in 2002 and headquartered in Weifang, Shandong Province, China, also reiterated how inadequate dispersion of stabilisers can create weak spots within the PVC resin matrix where degradation begins and recommends using high-speed mixers to ensure that all stabilisers and antioxidants are adequately distributed.

PVC plasticisers are the subject of a feature article in *Compounding World* August 2026.

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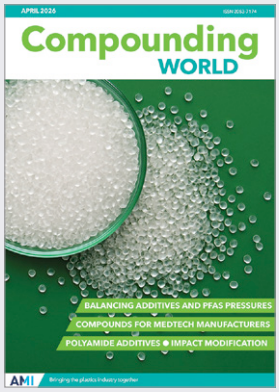
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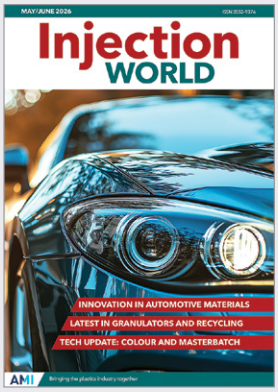

**Compounding World May 2026**
The cover story in the May edition of Compounding World reveals the essentials of the testing regime for biodegradable plastics, while other features look at improved wire and cable compounds and the latest in 3D printing materials.

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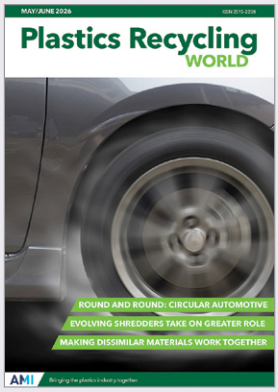

**Compounding World April 2026**
The main feature in the April 2026 edition of Compounding World discovers PFAS-free alternatives from suppliers of polymer processing aids, while other articles look at compounds for medicare applications, polyamide additives and impact modification.

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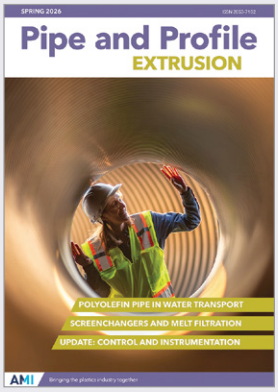

**Injection World May/June 2026**
The cover story in the May-June issue of Injection World focuses on materials developed for the demanding automotive sector, while granulation technology and new masterbatch offerings are covered in other articles.

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**Plastics Recycling World May/June 2026**
Car companies in Europe are ramping up recycled plastics projects, as shown in the cover feature of Plastics Recycling World's May-June edition. Other articles look at shredder technology, compatibilizer additives and the Plast 2026 show.

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**Pipe and Profile Spring 2026**
The cover story in Pipe and Profile Extrusion Spring edition checks on progress in the polyolefin water pipe sector, while other articles explore melt filtration technology and what's new in controls and instrumentation.

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**Film and Sheet May/June 2026**
Film & Sheet Extrusion's May-June edition has a cover feature that looks at the response to industry pressures in stretch and shrink film, plus other features on developments in sheet, waterproof membranes and blown film dies.

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| | **24-25 June** | Textiles Recycling Expo, Brussels, Belgium | www.textilesrecyclingexpo.com |
| | **15-19 September** | TaipeiPlas, Taipei, Taiwan | www.taipeiplas.com.tw |
| | **16-17 September** | Kunstoffenbeurs, 'S-Hertogenbosch, Netherlands | https://kunststoffenbeurs.nl |
| | **23-24 September** | Compounding & Recycling Expo, Frankfurt, Germany | https://eu.compoundingworldexpo.com |
| | **12-16 October** | Fakuma, Friedrichshafen, Germany | www.fakuma-messe.de |
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| | **10-13 November** | Plastimagen, Mexico | www.plastimagen.com |
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| **1-2 December 2026** | Polymer Engineering for Energy, London, UK |

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