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AMI

Third Floor, One Brunswick Square,
Bristol, BS2 8PE, United Kingdom
Tel: +44 (0)117 924 9442
Fax: +44 (0)117 311 1534
www.ami.international
www.twitter.com/plasticsworld
Registered in England No: 2140318

EDITORIAL

Editor-in-Chief: Chris Smith
chris.smith@ami.international

Editor: Lou Reade
lou@filmandsheet.com

Events and magazines director:
Andy Beevers
andy.beevers@ami.international

ADVERTISING

Advertisement manager: Claire Bishop
claire.bishop@ami.international +44 (0)1732 682948

Sales & commercial manager: Levent Tounjer
levent.tounjer@ami.international +44 (0)117 924 9442

Sales manager (China): Jenny Zhou
jenny.zhou@ami.international +86 13651 985526

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US helps Simona boost sales as profits dip 3%

Simona of Germany has posted increased first-half sales - though profitability dipped slightly.

The company says that sales grew by 11% to exceed €227 million (US\$247m) in the first six months of the year. This was fuelled by a solid performance in the USA, though revenue remained stagnant in Asia.

Overall, the USA accounted for almost one-third of revenue for the period, with sales of nearly €70m (US\$76m) - a growth of nearly 37%. This was due in part to the contribution of its new subsidiary Simona PMC, which makes plastic sheet for a variety of markets. Sales in Europe rose more than 2% to €142m (US\$154m). Sales in Asia declined slightly, to just over €15m (US\$16m).

Overall, the finished and semi-finished parts division increased revenue by nearly 10%, to more than €181m



Simona's semi-finished products division performed well in the USA

(US\$199m).

Operating profit, in the form of EBIT (earnings before interest and taxes), was just over €18m (US\$20m) - a dip of around 3% compared with the corresponding period in 2018.

"The substantial contribution made by our US business stands in contrast to a downturn in earnings in our semi-finished products business in Europe," said

Wolfgang Moyses, CEO of Simona.

The outlook for the second half of the year is dampened by a deterioration in economic conditions, said the company - though it still expects to meet its guidance target of €435-450m (US\$473-489m) in annual group revenue. It added that its projected EBIT margin of 6-8% was "ambitious but achievable".

➤ www.simona.de

Hilco acquires Draka

US-based Hilco Industrial Acquisitions has bought Draka Polymer Films - a Netherlands-based film extruder that entered bankruptcy in July this year.

The acquisition includes all machinery and equipment, inventory and intellectual property, said Hilco.

Ernst Rost Onnes, vice president of Hilco in Amsterdam, said: "The receivers handled the sale of the assets in a quick, transparent bidding process. We were the winning bidders for the entire package of assets."

Machinery at the production facility in Enkhuizen includes four- and five-roll calendar production, printing, painting and cutting lines. Hilco now plans to sell off the assets it has acquired through private sales and online auctions.

➤ www.hilcohia.com

Polykar adds capacity with second facility



Polykar's new facility will boost flexpack production by around 14,000 tonnes

Polykar, a Canadian flexible packaging manufacturer, has acquired a site to build a new plant in Edmonton.

The new facility - which is scheduled to open in 2021 - will add around 30m lbs (nearly 14,000 tonnes) to its production capacity. The proposed three-acre site will help support Polykar's customer base in western Canada and the USA.

"This is an important milestone for us," said Amir Karim, president and CEO of Polykar.

Polykar has engaged FarMor Architecture to design the 50,000 sq ft facility.

➤ www.polykar.com

Industry initiative sets targets for recycling agricultural film

The Erde initiative - set up by German producers of agricultural film - has committed to collect and recycle 65% of all silage and stretch films sold on the German market by 2022.

As part of the voluntary commitment, members also agreed to extend the return system to other agricultural plastics - such as bale nets, asparagus film and mulch film - in future.

Erde will review the effectiveness of the voluntary commitment by 1 May

2023 and define further measures and objectives in cooperation with the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU).

"As a value-based company, we have established sustainability as an integral part of our corporate policy and business mission," said Thomas Gröner, director of corporate R&D and sustainability at RKW, a founder member of Erde. "It is of the utmost

importance that agricultural films are collected and recycled instead of remaining in the environment. This way, we live up to our responsibility as a manufacturer, and towards the environment."

Erde collected 13,433 tonnes of agricultural films in 2018, which it said had a greenhouse gas equivalent of nearly 20,000 tonnes of CO₂.

➤ www.rkw-group.com

➤ www.erde-recycling.de/en

NEWS IN BRIEF...

WM Thermoforming Machines of Switzerland has signed up a new distributor for its machinery in the USA and Canada, in the form of **Sencorp-White**. WM's FC and Flex series, together with the FT series (tilt-bed) thermoformers, will expand Sencorp-White's product portfolio. www.wm-thermoforming.com www.sencorpwhite.com

Pallet stretch film account for 15% of all polyethylene film production in Europe, says a new report from **AMI Consulting**. *Palletisation films - The European market* quantifies production of three types of palletisation film: pallet stretch wrap, shrink hoods and stretch hoods. These three account for 20% of European film production, says AMI. The report includes a forecast of production to 2023. www.ami.international

Baumgartner elected to lead FPE

Alexander Baumgartner, CEO of Constantia Flexibles, has been elected chairman of Flexible Packaging Europe (FPE) - the body that represents flexpack manufacturers.

"It is vitally important that we come together to innovate and work on all the important topics, such as recyclability, resource

efficiency, sustainability, food waste and food safety," he said. "It is important that, as an industry, we speak with one voice and implement change - I am more than happy to support this very actively."

He replaces Gérard Blatrix of Amcor, who served two terms as chairman of FPE.

➤ www.flexpack-europe.org



CGT expands into Europe with acquisition in France

Canadian General Tower (CGT), which makes film and other products, has acquired France-based AlkorDraka Industries and Alkor Medical Tubing.

The new trade names for the European businesses will be CGT Alkor and CGT Medical Products.

As a previous supplier of pool liners to CGT Europe, AlkorDraka Industries now covers eight business sectors

- specialising in ceiling and wall decoration, coatings for window marketing, dance floor films, consumer product packaging, pool liners, containment film, movie screens and various technical applications.

"This investment will add to our capacity and geographic presence so we can continue to serve our growing global customer base," said Craig Richard-

son, CEO of CGT.

The acquisition will provide CGT with a strategic base of operations in Europe, adding to its existing portfolio in North America and China.

AlkorDraka's former sister company - Netherlands-based Draka Polymer Films - was acquired by Renolit last year - but went into bankruptcy in July this year.

➤ www.cgtower.com

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Coexpan opens film and sheet plant in Russia

Coexpan has begun production of rigid sheet and barrier film at its new plant in Moscow.

The Coexpan Extech plant produces a range of coextruded rigid sheets (PP, PP Barrier, PS, PS Barrier and PLA-based products) for use in Form, Fill and Seal (FFS) machines to package dairy products, and fresh and ready-prepared food. The company also plans to add thermoforming technology, which will further diversify its range of products.

The plant is designed on lean manufacturing principles, and has a total built surface area of 10,000 sq m - of which 3,500 sq m are

devoted to production.

"This clearly shows our strong commitment to innovation and production efficiency," said Tomasz Mikos, general manager of Coexpan Extech. "The new plant has been designed to

comply with the most demanding international standards, allowing us to grow and diversify our business into new markets."

Coexpan is part of Spain-based Grupo Lantero.

➤ www.coexpan.com



Coexpan's new plant in Moscow will make both sheet and barrier film

Recyclable laminate barrier film

Amcor has launched AmLite Ultra Recyclable high-barrier laminate film, in which it has replaced the PET layer of the original AmLite with OPP film to make it recyclable in polyolefin waste streams. The film can package a range of food, home and personal care, and pharmaceutical products, and be recycled in existing polyolefin recycling streams. It is certified by Cyclos-HTP Institute testing lab.

AmLite can be used for a variety of formats, such as: pillow pouches, stand-up and spouted pouches; bags; lidding for trays and containers; stick packs and more.

Amcor says it achieves a reduced carbon footprint by using an ultra-thin, transparent barrier coating to replace aluminium and metalized barriers.

➤ www.amcor.com

Coated plastics project begins

The multi-partner Decoat project has been started in Europe, targeting coated and painted textiles and plastic materials which are not currently recyclable.

The project will investigate triggerable smart polymer material systems and

appropriate recycling processes. Smart additives such as microcapsules or microwave triggered additives will be explored to develop coating formulations that will be activated by a specific trigger.

➤ <http://decoat.eu>

Domo develops low-carbon polyamides

Domo Film Solutions - formerly the Domo Chemicals subsidiary CFP Flexible Packaging - has developed a new family of nylon films, which it says has a lower carbon footprint.

Nyleen, which is available in cast and bi-oriented versions, is made using a new production process that reduces carbon emissions by 28%, says the company. There are three factors behind the reduced emissions: the resin production process; the use of green energy; and delivering to

customers from the closest plant.

"We are committed to the sustainable future of nylon, and the introduction of Nyleen is only the first step," said Attilio Annoni, managing director of Domo Film Solutions. "In the short term, we will launch the first vertically recycled/recyclable nylon film. We are also developing strategic partnerships with the aim of investigating bio-based solutions."

The division has been part of Domo Chemicals since 2014, and began

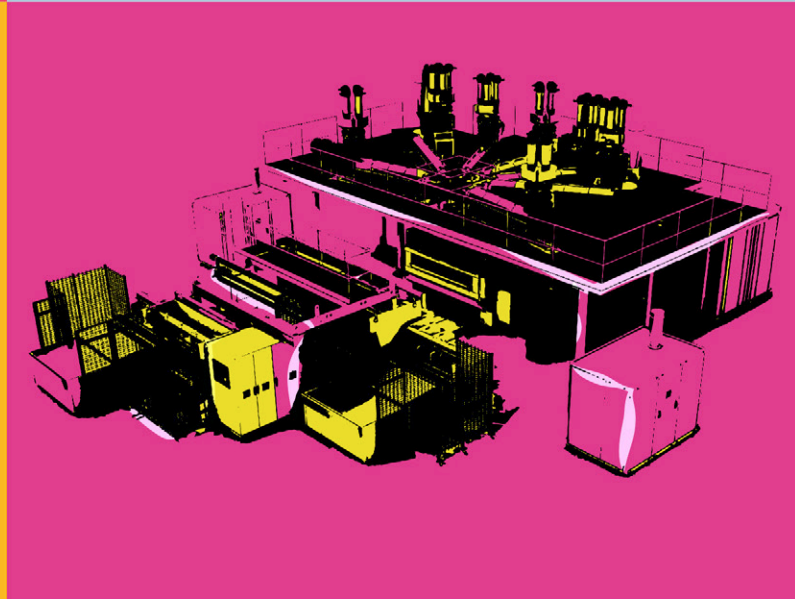
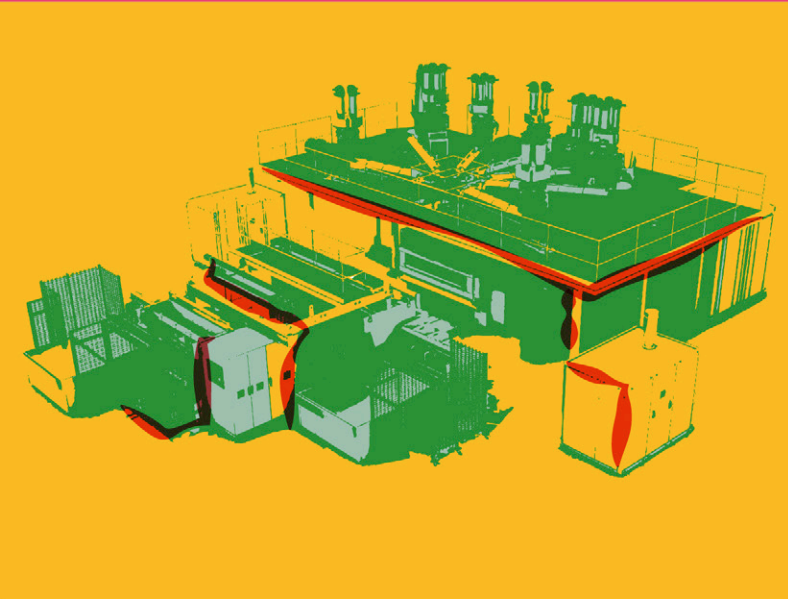
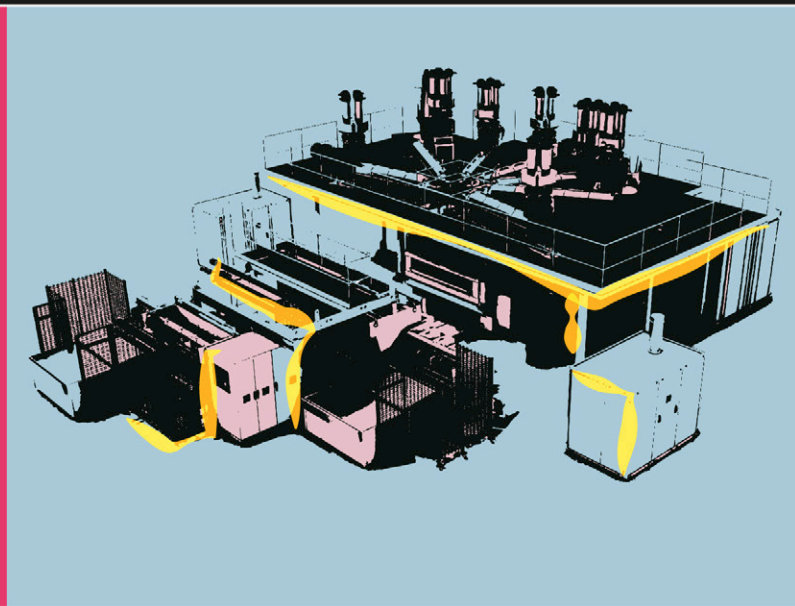
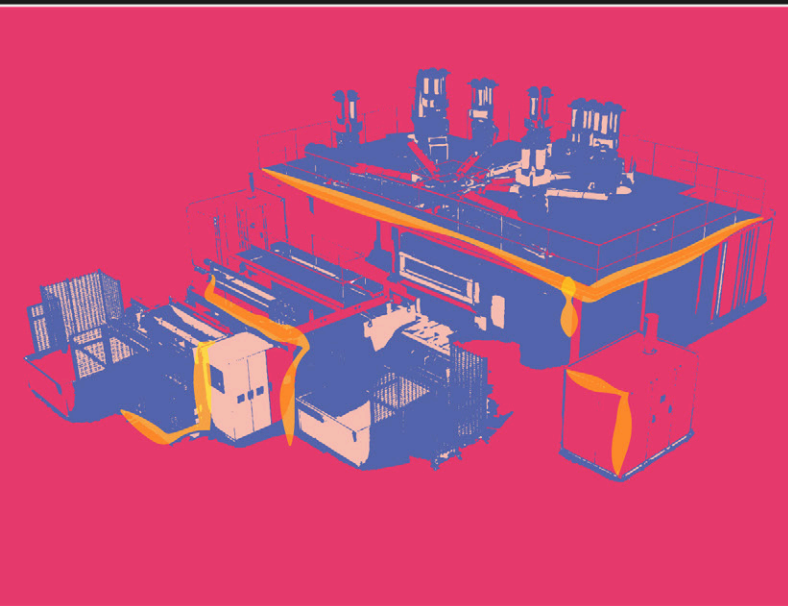
operating a new German BOPA plant last year. Its films are used for flexible packaging and other applications.

■ Domo Chemicals is to acquire Solvay's performance polyamides business in Europe, which includes engineering plastics operations in France and Poland. The deal is expected to close by the end of the year. The purchase price is around €300 million (US\$329m). Domo Chemicals will exhibit at K2019 next month.

➤ www.domochemicals.com

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North American plastics machinery deliveries "encouraging" in Q2

Deliveries of primary plastics machinery (extrusion and injection moulding equipment) in North America increased in the second quarter of this year, according to the Plastics Industry Association's Committee on Equipment Statistics (CES).

After declining by more than 27% in the first quarter, deliveries increased by more than 8% in the second quarter. However, compared with the corresponding period of last year, the figures were down by nearly 13%.

The preliminary estimate of deliveries exceeded US\$295 million. Those for single- and twin-screw extrusion equipment both increased by more than 13%. (For comparison, those for injection moulding rose by more than 7%.)

While the value of deliveries of single-screw extruders rose by more than 4% compared to one year ago, the value for twin-screw extruders was down by nearly 30%.

"The second quarter numbers are encouraging, but machinery shipments remain comparatively lower than the previous quarters," said Perc Pineda, chief economist at the association.

"What's happening is not surprising, judging from the macroeconomic environment. Real business investment spending in the second quarter fell, and investment spending in industrial equipment flattened in the second quarter."

The CES also conducts a quarterly survey of plastics machinery suppliers that asks about present market conditions and expectations for the future.

In the coming quarter, 56% of respondents expect conditions to improve or hold steady - lower than



Pineda: "Second quarter numbers are encouraging, but shipments remain comparatively low"

the 70% that felt this way in the previous quarter. Over the next 12 months, 53% expect market conditions to be steady-to-better - down from 60% in the previous quarter's survey.

Exports in the second quarter reached nearly \$379m - a 4.3% increase from the previous quarter. Mexico, Canada and Germany remained the largest US export markets - and together accounted for 53% of the total.

Exports to China rose more than 11% in the second quarter, but this was 37% lower than during the same period in 2018.

There are also trade issues to be resolved, he said.

"Mexico has ratified the US-Mexico-Canada Agreement (USMCA), but the US and Canada have yet to sign off on this trade pact. Unless that is resolved, the uncertainty from the ongoing US-China trade dispute will continue to run high and will negatively impact not only the plastics industry but the global economy," said Pineda.

➤ www.plasticsindustry.org

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Line extensions: latest in downstream equipment

Downstream equipment - including many types of system that control extrusion quality - will be on show at K2019. We take a look at some of the offerings of relevance to film and sheet extruders

Downstream equipment covers a multitude of descriptions - and traditionally included many post-processing operations such as slitting, winding and surface treatment. However, control systems have become an increasingly important part of this sector, as they help to determine product quality in many different ways.

For instance, the cast sheet coating division of **Reifenhäuser** has developed a technology that can measure the thickness of multi-layer films on the fly - and adjust them automatically.

"Our patented Reicofeed-Pro achieves this even for high-tech products," said Johannes Müller, managing director of Reifenhäuser Cast Sheet Coating. "Single-layer thicknesses can be set across the width in the feedblock - even during ongoing production. As a result, line stops for product changes become unnecessary, which means that we maximise the machine run time."

By using innovative measuring systems, the line can continuously and reproducibly measure the thickness of the functional layers during production, says the company.

Deviations from the target value are detected in real time and trigger an immediate modification of the parameters, which the Reicofeed feedblock then implements. The line is in a closed loop, optimising itself.

"Automation means that the know-how is located in the machine, removing the burden from the operator," said Müller. "This smart solution enables us to make the individual layers one or two microns thinner, thus optimising cost efficiency."

He says that raw material savings in the "mid-six-figure range" can be saved each year.



Intensive cooling

US-based **Addex** has developed the next phase of its 'intensive cooling' technology for blown film lines. It says that its "revolutionary approach" to bubble cooling can lead to increased stability and output.

To date, Addex has typically replaced a conventional dual flow's low-velocity, diffused-flow lower lip with a high-velocity, upwardly-directed and focused air stream. This is mounted flat to the die to create a new lock point, about 25mm above the die lip. It is supplied as part of Addex's industry-standard laminar flow air ring.

Addex's first phase of R&D work in intensive cooling has helped it develop systems to run both high- and low-melt materials. In its next phase of research, it will look at the design of other components within blown film cooling - with an eye towards optimising total system performance in combination with intensive cooling.

"Intensive Cooling allows us to push output so far that we start to see where other parts of the cooling system begin to break down, such as the main air ring lip designs, air collars, and IBC - so that's where our R&D is focused now," said Bob

Main image:
Atlas Converting's Titan ER610-DT slitter rewinder promises faster speeds with enhanced operator safety



Above:
Reicofeed-Pro
adjusts the
thickness of
multi-layer
films on the fly
to cut material
costs

Cree, president of Addex.

Intensive cooling operates over a range of configurations and materials, supporting fast changeovers and enhanced bubble stability, even at higher output rates. It can yield a broader range of processing parameters such as BUR (blow up ratio), thickness, and melt strength. Combining it with Addex's auto-profile External Gauge Control (EGC), processors can also reduce thickness variation.

Addex guarantees a minimum of 10% increase in output rate, though customers have reported higher: a 30% increase in output is typical, especially for stiffer materials, while one customer reported an 80% output, says Addex.

"The only drawback to retrofitting a line with intensive cooling is that the customer may need to make further investments in blowers and extruders to handle the increases in output rate," said Cree.

Sheet production

At K2019, **Welex** will run a complete sheet production line equipped with its XSL Navigator control system.

Real-time graphical display is a feature of the Navigator control system, said the company. High visual correlation between the touchscreen and machine function ensures an intuitive user experience for ease of use and rapid learning, it added. Control is delivered via hardware that is designed to withstand harsh industrial conditions such as vibration, electrical interference, high temperature, and humidity.

"Navigator uses an industrial PC with a Windows platform to enable intuitive, integrated extrusion process control," said David Schroeder, CEO of **Graham Engineering** - parent company of Welex.

At the show, Welex will produce thin-gauge polypropylene on an Evolution sheet extrusion line equipped with Navigator control.

The line can be customised for widths of 36-90in (90-230cm), gauges of 0.008-0.125in. (0.2-3.2mm)

Right: Addex
has developed
the next phase
of its 'intensive
cooling'
technology for
blown film
lines

and throughputs up to 10,000 lbs/hr (4,535 kg/hr).

Monolayer and co-extrusion systems are available, with up to nine extruders. In addition to a customised roll stand, the Evolution system can also be equipped with screen changers, melt pumps, mixers, feedblocks and dies.


The line on display at the show will also include a proprietary roll-skewing mechanism for thin-gauge applications, maintaining quick roll change and electric gap adjustment under full hydraulic load without interrupting production.

Haze measurement

NDC Technologies says that its HazePro gauge helps plastic manufacturers measure the haze of plastic films online and report in real time.

Haze is a critical quality parameter for plastic film, sheet and other transparent materials. A product with a poor visible appearance can be a problem for manufacturers trying to maintain a specific quality standard. HazePro solves this by measuring the haze of both narrow and wide films online with high accuracy and reliability. It allows manufacturers to adjust the film and sheet extrusion process to maintain haze quality. Process adjustments can be automated, for real-time control of haze.

HazePro will be demonstrated on NDC's Mini-Trak O-Frame scanner and iView Pro.net process controller. Applications include optical, packaging, flexible packaging, agricultural, solar panel, coatings on glass (such as solar panels), anti-glare on computer screens and other uses. NDC's haze measurement complies with ASTM standard D1003 for transparent materials.

NDC will also display a virtual demonstration of a complete measurement and control system for plastic film extrusion applications. 





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Above: NDC's HazePro gauge helps plastic manufacturers measure the haze of plastic film and sheet

"It will look as though the entire measurement system and moving film product are actually on the booth floor," said the company.

Using tablets as the 'window' into this virtual environment, users will get a close-up look at NDC's FilmPro infrared gauge that measures the basis weight and thickness of clear, voided, pigmented, cavitated, porous, translucent coloured and even black tinted films. The measurement capability of FilmPro extends to single- or multi-layer products including biaxially-orientated films, cast films and stretch films. It can simultaneously measure the individual thicknesses of up to six different layers in co-extruded films.

The virtual system incorporates a scanning FilmPro sensor mounted on a MiniTrak O-Frame. FilmPro moves back-and-forth across the web, making film thickness measurements on a virtual plastic film. Visitors will be able to see critical process data on the company's virtual Pro.Net TDi process controller.

Monitoring and inspection

BST Eltromat has developed new options for web monitoring and inspection.

Its QLink workflow and TubeScan systems can be integrated with customer ERP systems. Expand-

ed options include a new, 4k high-resolution area scan camera, and Contour Light illumination option. This laterally directed light source can be used to make the outlines of transparent labels visible on paper or plastic carriers.

The TubeScan range is known for diffuse standard background illumination, background illumination through the web, and UV illumination for security features. In addition to the new contour light, it also features three other independent illumination sources that cover a number of different web monitoring and 100% inspection requirements.

The TubeScan range was developed by Nyquist Systems, which became part of BST earlier this year.

"Nyquist now has access to additional resources for continuing to evolve the TubeScan range," said Anne-Laureen Lauven, head of marketing at BST Eltromat. "This will generate a flow of new opportunities for our customers to optimise their production processes."

Web winding

Atlas Converting will unveil a compact turret slitting rewinding machine at K2019.

The Titan ER610-DT promises to raise productivity, processing web widths up to 1650mm (65in) at up to 600m/min (2000ft/min).

The company spent three years developing the new model. It offers increased productivity, reduced machine download times and improved operator safety, says Atlas.

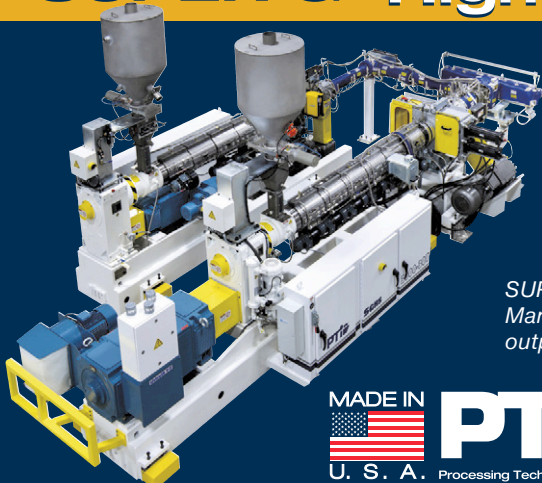
The model has four rewind shafts - two in each turret - for high productivity. Turrets are of cantilevered design, which eliminates the need for centre cross shafts.

Winding is performed on two rewind shafts. While this is being done, the other two shafts can be loaded with cores, to enable a fast changeover when winding is complete.

A new control system uses a flat touchscreen terminal to allow simple operation. This is used to

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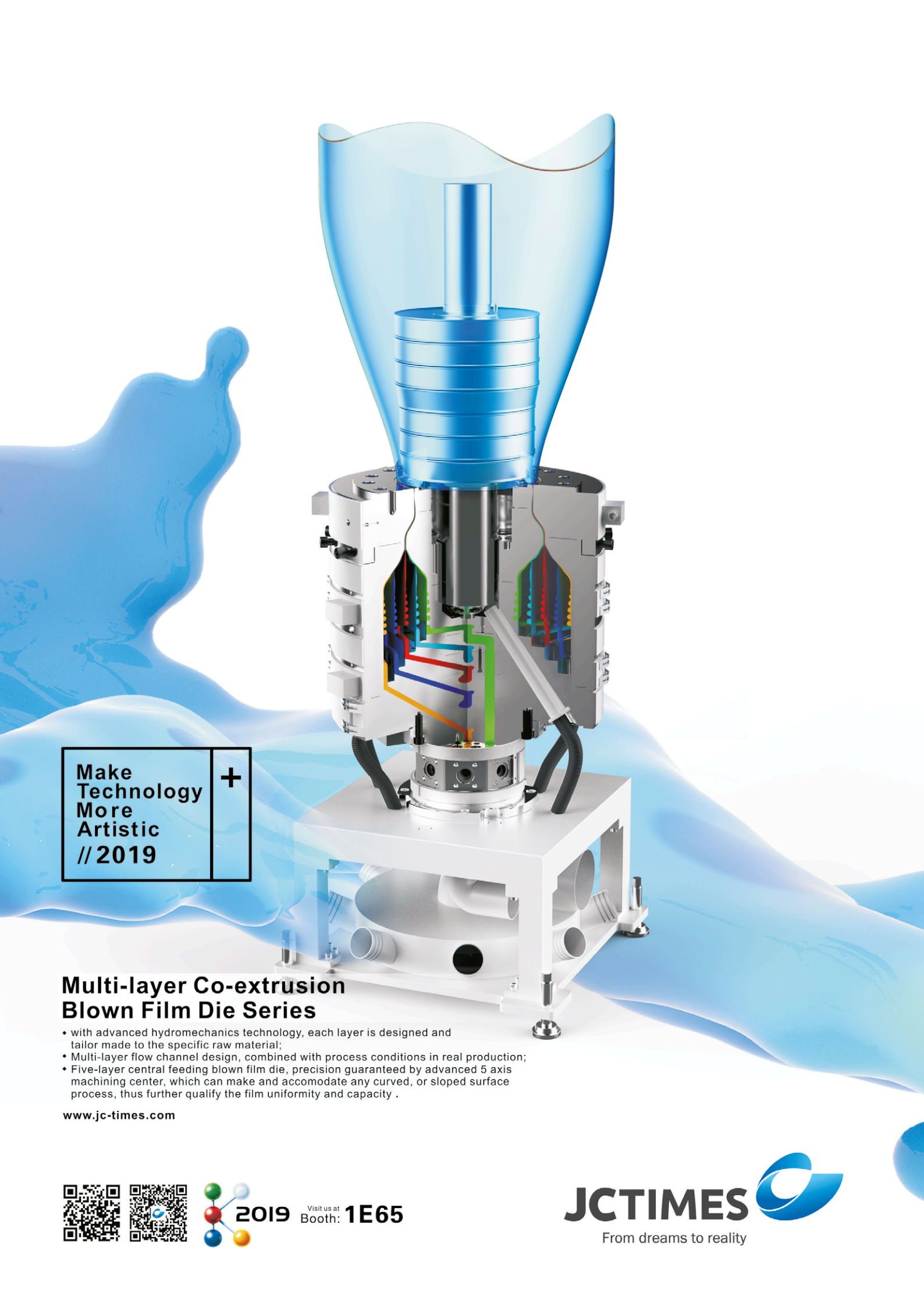
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input the most commonly used functions, such as speed, tension and lay-on pressure. It uses symbols rather than words - so is not language-sensitive.

A line-laser guide core positioning system enables the operator to reload new cores quickly and accurately, which minimises set-up time. Individual laser alignments can be set as low as 25mm.

An auto crosscut facility means there is no need for manual cutting, which helps to boost safety. At the same time, laser scanner and guard fences ensure that operators cannot enter the work area while the machine is running.

Static conditions

Meech International has developed a number of new static control and web cleaning products, which it will showcase at K2019.

They include the CyClean R web cleaner, Hyperion IonCharge50 (75W) and IonCharge30 (15W) static generators and the Hyperion 960IPS static control bar.

CyClean R is aimed at wider webs where lower tensions are common. The single or double-sided non-contact web cleaner uses positive and negative airflows to clean low-tension plastic webs.

"It is compact, making it suitable for use in tight spaces, and can handle high speed webs up to 800m/min," said Ralph Simon, sales director at Meech Elektrostatik. "What's more, it only requires a low level of air consumption to operate, meaning energy usage is kept to a minimum."

The company's latest static generators - Hyperion IonCharge30 (15W) and IonCharge50 (75W) - are versatile, compact and simple to install. They are suitable for use within a range of plastic-based applications that require temporary bonding of materials. IonCharge30 is compact and easy to install, while IonCharge50 is Meech's most powerful static generator.

The new mid-range Hyperion 960IPS is a pulsed DC ionising bar, which is versatile and simple to install. With adjustable voltage, frequency and balance, the bar possesses powerful ionisation of up to 15kV and provides 50% greater maximum working distance than the earlier 929IPS ionising bar.

Surface treatment

Vetaphone will display a range of surface treatment technology at K2019,.

This include four standard Corona units from its

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portfolio. The VE2-B model is for extrusion and converting applications, which is capable of double-sided treatment. The VE1-D and VE1-E models are also for extrusion and converting applications but can distribute a higher power charge or run at higher speeds than the B model. The final unit on display, the VE1-L, is a compact model designed for lamination environments where space is at a premium.

All four units are equipped with Vetaphone's iCC7 control panel that logs function and maintenance and has remote access for performance and fault analysis. By using a proprietary hardware interface, all Vetaphone Corona systems can be controlled centrally from the main machine HMI, allowing one operator to manage several lines at the same time.

"Many see the integrated display as the end-game - we see it as the beginning and have made it available on our iCC7 unit since 2017," said Frank Eisby, CEO of Vetaphone. "The aim is to make the use of our technology completely intuitive, simplifying the control of the Corona process as much as possible."



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- > www.grahamengineering.com
- > www.ndc.com
- > www.bst.group
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Above:
Vetaphone will show a double-sided Corona treater for extrusion and converting applications

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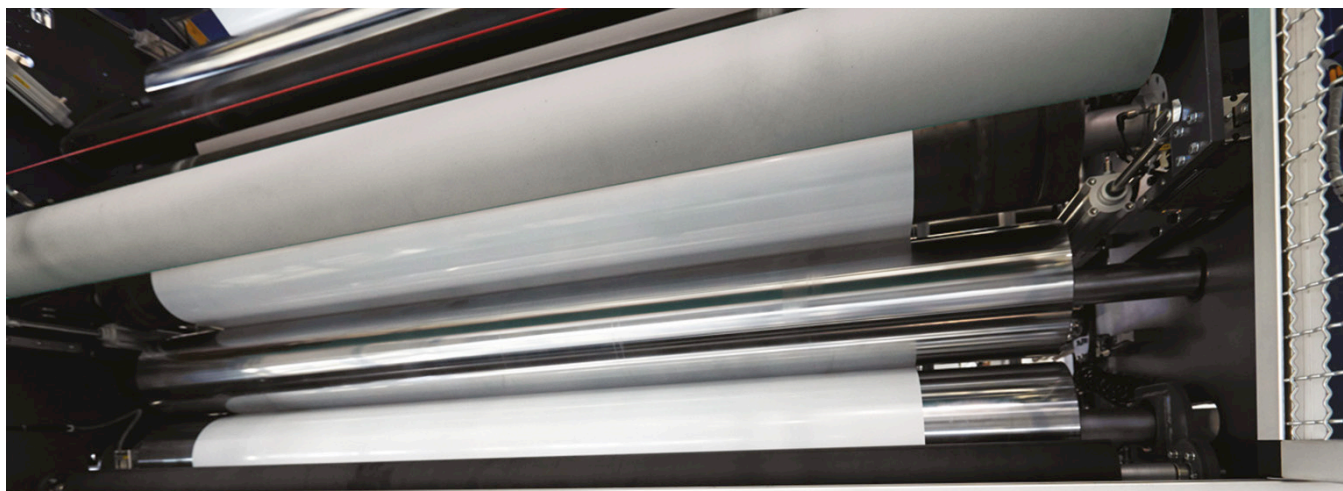
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We take a look at some of the biaxial film technologies that will be on show at K2019 - including stretching lines and dies

Stretching programme: biaxial film technology

Biaxial film technology has grown beyond packaging into specialist applications such as battery separator film - and a number of technologies will be on show at K2019 next month.

Reifenhäuser will reveal how its Evo Ultra Stretch system is being used to make recyclable, mono-material packaging.

At K2019, the company will present a new solution for processing polyethylene (PE). Its MDO film stretching system is already being used in plant to make breathable backsheets in the hygiene sector.

"The positioning of the MDO in the haul-off unit is a key factor," said Eugen Fredel, sales director at Reifenhäuser Blown Film. "The advantage lies in the fact that the plastic can be stretched using initial heat by a four- to six-fold extent. This enables us to achieve a much higher process stability and lower shrink values due to the longer cooling path. The result is a recyclable film with improved sealing properties, which can sustainably replace PET."

The film's simple heat-sealing property also allows a high degree of efficiency in the later finishing process, as it can be further processed on existing finishing equipment with no adaptations needed.

"By adapting the Evo Ultra Stretch to mono-material laminates, we can offer a high-performing alternative within packaging production," he said.

Compared to conventional film stretching systems, the investment costs for the components are significantly lower - as are energy consumption levels due to the use of initial heat, said the company. The application has already been field tested by a Reifenhäuser customer.

Polyethylene concept

Brückner will demonstrate a number of new concepts in film stretching technology at K2019.

At the show, it will introduce two new line concepts for making biaxially oriented polyethylene (BOPE) films. Film producers can choose between a working width of 6.6m and an output of

Main image:
Reifenhäuser's Evo Ultra Stretch system can be used to make mono-material packaging

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3 tonnes/h, or a working width of 8.7m and an output of 5 tonnes/h. These are five-layer concepts for an extended range of films.

The new lines can also produce BOPP film - including specialities such as UHB films and coated films for high-barrier use, as well as conventional packaging film.

As well as stretching lines for packaging films, Brückner will also show a range of machinery for making speciality films. These include:

- A new high-temperature concept for BOPP capacitor film - for use in electrical components installed near motors;
- Lines to make stone paper based on BOPP or BOPE, with a calcium carbonate loading of over 60% - that is waterproof, and with good printability;
- Biaxially oriented polyester films (BOPET) for optical applications - where its new, patent-pending Relax System ensures homogenous film properties; and,
- Biaxially oriented polyimide (BOPI) lines, for optical applications such as flexible displays, where the stretching ovens and systems can be used up to 400°C.

In battery separator film, the company will show its optimised simultaneous Lisim technology - which reduces edge trim and delivers higher film gain.

Die replacement

A packaging film extruder based in India has improved production by changing to an EDI Autoflex die from **Nordson**.

Asia Poly Films Industries, which produces biaxially oriented polypropylene (BOPP) film, has reduced downtime and increased throughput on its lamination-grade film line since making the switch.

With the original die, the company encountered gauge bands and film sagging, so was unable to produce film of the necessary flatness. It also needed to clean the die every two or three months - which caused up to 60 hours of production downtime. Also, the die's gauge variation could only be held within acceptable limits if the line speed was limited to 2,800 kg/hr, said Nordson.

Since installing the EDI die earlier this year, the company has run its film line continuously at 3,500 kg/h with gauge variation maintained within acceptable levels.

"While our old die needed about two hours to stabilise and produce film with an acceptable level of gauge variation, the new die stabilises within 20 minutes," said Dipesh Patel, director of Asia Poly Films Industries.

Using the same extruder, controls, and polymer



recipe, the new die also produces film with lower haze and better gloss, he added.

The die is an Autoflex VI-R triple-manifold unit. The automatic die uses data from a computerised downstream gauging system to adjust the transverse thickness profile by making changes to the flexible upper lip of the die.

Mrunal Sanghvi, general sales manager in India for Nordson's Polymer Processing Systems business, said: "We custom-designed the flow channel, or manifold, inside the die to optimise the flow of the specific polymers used by Asia Poly Films."

Simultaneous stretch

Marchante of France will exhibit its Masim modular simultaneous stretching system, for speciality films, at K2019. The system is already proven in applications such as battery separator film for polyamide (PA) and polyethylene (PE) - and is now available for other materials including polystyrene (PS), polyimide (PI) and PTFE.

The clips are designed to stretch thin film down to 5 microns, and to reduce edge waste creation during production due to the very short clip-to-clip distance - before and after stretching.

Marchante says that film thickness and flatness are ensured from inlet to outlet without turbulence, thus producing an optimal width of high-grade film.

Current market demand tends towards higher stretching ratios and speciality films, that can today be fulfilled with different machine sizes using the Masim technology up to 10 x 10 times (10 per orientation direction). This year, the company is celebrating its 40th anniversary.

- We will cover more machinery developments - including more biaxial film technologies - next month, in our K2019 show issue.

Above:
Marchante
says its Masim
stretching
system can
produce film
as thin as 5
microns

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Plasticiser sector marked by innovation and regulation

The PVC plasticiser industry has changed dramatically over the past decade as it has adapted to fast moving regulatory and consumer concerns and that process continues. Peter Mapleston looks at the latest developments

Few areas of the plastics industry can have seen such change - and regulatory and NGO attention - as the plasticisers sector. And those changes continue. The most obvious is the ongoing trend away from low molecular weight orthophthalate-based PVC plasticisers in favour of alternative chemistries. Many of these are bio-based; all offer more favourable environmental and health profiles.

In terms of physical performance, there is near nothing to touch diethylhexylphthalate (DEHP) as a commodity plasticiser. However, its poor toxicological profile means it is being banned in an increasing number of applications and the search has been on for some time for alternatives, preferably drop-in substitutes. **Eastman's** latest development in this area is VersaMax Plus, a non-phthalate plasticiser that is said to mirror the performance of DEHP in dry-blends and plastisols. "You can upgrade your current non-phthalate formulation to achieve better performance, cost savings, and regulatory compliance - with a minimal reformulation," the company claims.

By providing comparable mechanical properties together with improved processing parameters, Eastman says VersaMax Plus provides advantages

over other general-purpose plasticisers such as diisononyl phthalate (DINP), 1,2-cyclohexane dicarboxylic acid diisononyl ester (DINCH), dipropylheptyl phthalate (DPHP), and even its own Eastman 168 di-2-ethylhexyl terephthalate (DEHT). "Compared to general-purpose orthophthalate plasticisers, VersaMax Plus has equivalent or better performance characteristics in efficiency, fusion, viscosity, and dry times," the company claims (Figure 1).

Tom Markley, Senior Applications Development Scientist at Eastman, says that in recent testing VersaMax Plus has shown excellent performance in applications including antifatigue mats, coated fabrics, and graphic films and inks. The plasticiser is compliant with US food contact regulations and is particularly well-suited for food contact applications such as PVC gloves, hoses and tubing, and conveyor belting, as well as indirect food contact adhesives, he adds.

Evonik introduced Elatur DPT, a di(iso)-pentyl terephthalate, last year and says it enables fast and simple production of flexible PVC products. Commercial production of the new plasticiser began in May 2018 and a second production campaign began this January. "Feedback from

Main image:
The plasticiser industry has adapted - and continues to adapt - to a fast changing regulatory environment with a raft of new introductions

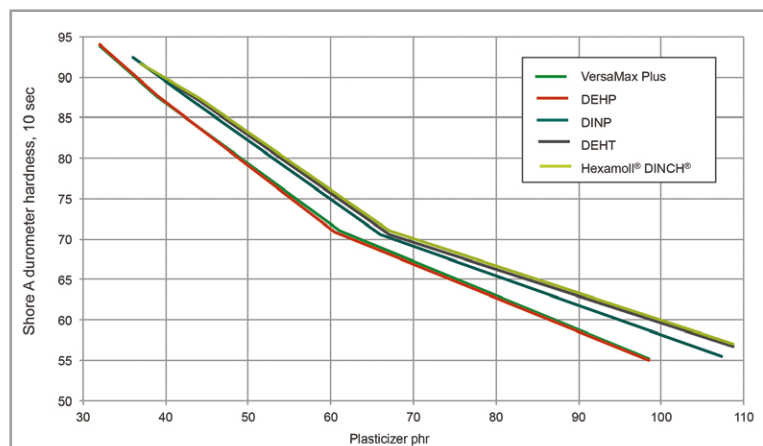


Figure 1: VersaMax Plus effectiveness measured by hardness compared to DEHP, DINP, DINCH and DEHT

Source: Eastman

customers has been extremely positive, particularly when the product is used in combination with Elatur CH (cyclohexanoate), and demand for the next few months is satisfyingly high,” Evonik says.

Universal option

At **Lanxess**, Dr Thomas Facklam, Head of Application Technology, Polymer Additives, says the use of its Mesamoll as a universal non-phthalate plasticiser is well-known. “In view of its good gelling capacity with PVC, indicated by a low dissolution temperature of 120°C, Mesamoll can be used as a special plasticiser and is able to support technically in filling the gap left by the low molecular weight phthalates. The use of Mesamoll as a supplement for other plasticisers in compounds containing poor gelling plasticisers has proved highly successful,” he says.

“One of the manifold uses of plasticised PVC is its use as a thixotropic agent for polyurethane compounds. In one-component PUR sealants, the plasticiser and the PVC influence the rheology and the mechanical properties. Demand also exists in this application for fundamentally high-performance and additionally phthalate-free solutions,” Facklam says.

“It has been proven that Mesamoll, which is highly compatible with both PVC and the polyurethane used, is a very good alternative in 1K polyurethane applications. The remarkable resistance to saponification by chemicals or extreme weather conditions allows the development of products for demanding in and outdoor application like joint sealants in contact with concrete,” he says.

Adeka points to its range of specialty plasticisers, of which it has no fewer than four. ADK Cizer C Series grades are linear and branched trimellitates, the ADK Cizer PN series comprises polymeric plasticisers, and the ADK Cizer RS series

is intended for rubber. The company also produces epoxidized soya bean oils.

The Cizer C series trimellitates are said to provide superior heat aging resistance, low volatility, electrical insulation and oil resistance, making them especially suitable for wire and cable applications, films, sheets and automotive upholsteries. Polymeric PN series plasticisers offer low migration into other plastics and high resistance to oil extraction. “High viscosity polyadipates grades also demonstrate excellent oil resistance and are suitable for fuel hose uses and high-end applications in PVC and also rubbers,” the company says.

Specialty developments

Grupa Azoty is also active in specialty plasticisers. The recent introduction of products under the Adoflex and Oxovilen banners are said to be the next step of the development of the OXO Segment at the company, and are based on its assembly of a range of non-phthalate specialty products. Previously, the company developed and started production of the first Polish-manufactured non-phthalate plasticiser, Oxoviflex. Capacity for that has increased in the last few months “thanks to which a leading position was reached in the group of European manufacturers,” the company claims.

The Adoflex and Oxovilen products are manufactured in a new multifunctional 10,000 tonnes/yr plant at Kędzierzyn-Koźle in Poland. Adoflex is a bis(2-ethylhexyl) adipate with very good plasticising properties and is recommended for the production of food-contact materials (films in particular), due in part to its good toxicological profile. It maintains its properties at low temperatures. Adoflex can also be used in the production of garden hoses, cables and coated fabrics. Depending on the application, it can be used as a main or functional plasticiser along with Oxoviflex.

Oxovilen is a di(n-butyl) terephthalate, which is characterised by fast polymerisation and low

Right: Trimellitate plasticisers such as Adeka’s ADK Cizer C series are finding application in film and sheet markets



PHOTO: SHUTTERSTOCK

migration and gives greater flexibility to finished products. It is used, among other things, in the production of PVC liners as a functional plasticiser with Oxoviflex.

Grupa Azoty says more new plasticisers will be produced on the new production line (which will be officially opened next year). The company says its intention is to develop a wide range of innovative polyester non-phthalate plasticisers, including the use of bio-renewable succinic acid.

Fast-fusing plasticisers

Valtris Specialty Chemicals recently introduced Santicizer Platinum P-1700, the latest addition to its line of non-phthalate fast-fusing plasticisers. Based on cyclohexanoate technology, this grade is said to combine high solvating ability with extremely low volatility and excellent migration resistance (Figure 2). "Santicizer Platinum P-1700 can lower both formulation and production costs while improving final product properties," says Polymer Modifiers Business Director Mark Holt. "It is an effective replacement for traditional phthalate fast-fusing plasticisers as well as volatile non-phthalate plasticisers."



PHOTO: GRUPA AZOTY

Valtris has also extended its line of bio-based plasticisers. Plas-Chek Platinum G-2000 is an epoxy soyate ester with an 85% certified bio-content. Holt describes it as an excellent general-purpose plasticiser with performance comparable to other non-phthalate general purpose products. "It offers good processing performance, excellent low temperature properties, and outstanding heat stability all while providing significant bio-content," he says. Plas-Chek Platinum G-2000 can be

Above: Part of Grupa Azoty's new plasticiser plant at Kędzierzyn-Koźle in Poland



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combined with a Santicizer plasticiser to meet specific processing needs if required.

Perstorp, which already offers a DPHP marketed under the name Emoltene as well as a non-phthalate polyol ester plasticiser PETV (pentaerythritol tetravalerate) branded as Pevalen, is now preparing for the launch of Pevalen Pro, which is based on partly renewable raw materials. Pevalen Pro will be made available during Q4 2019.

Jenny Klevås, Global Marketing & Product Manager, says that while Emoltene is intended for outdoor applications exposed to tough conditions, including automotive exteriors, cables and roofing, Pevalen is suitable for close-to-human roles such as coated fabrics, flooring, food contact applications and gym products. "With Pevalen Pro we will be able to offer a superior non-phthalate plasticiser that can boost the environmental profile for flexible PVC, something that we truly believe is the right way forward," she says.

Pevalen Pro will be available with up to 40% renewable content as a first step, based on the mass balanced production concept. This involves mixing fossil-based raw materials and renewables but keeping track of their quantities and allocating them to specific products. "We believe that using the mass balance concept is the best approach to be able to make the production economically feasible," says Klevås. The product will be ISCC (www.iscc-system.org) certified, guaranteeing that the bio-based input is sustainably sourced. The certification also includes carbon footprint calculations.

Perstorp recently initiated a feasibility study investigating the possibility to recycle methanol, one of the ingredients used for producing Pevalen. The project, partly funded by the Swedish Energy Agency, involves construction of a new plant, the integration of raw materials, fuel, energy and residual streams and new logistical solutions for the methanol.

Proviron continues its focus on its phthalate-free bio-based products. "Over the last decade, Proviron noticed sufficiently diversified requests to justify the

Below:
Perstorp's Pevalen PETV is suitable for food contact applications and is now offered in a part-renewable version

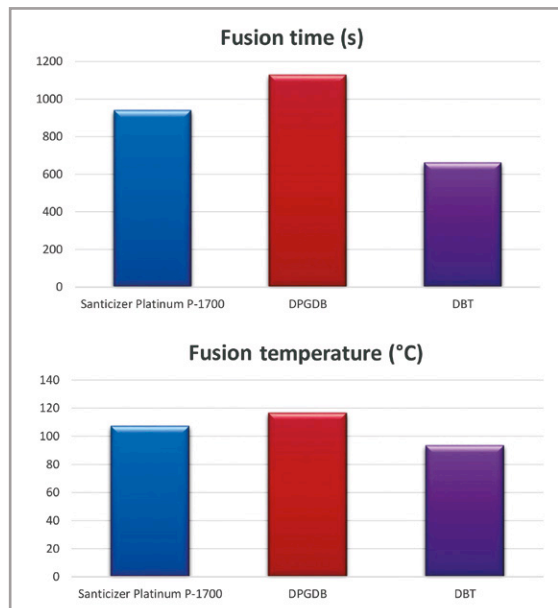


Figure 2: Fusion times and temperatures of Santicizer Platinum P-1700 compared with DPGDB (Dipropylene Glycol Dibenzoate) and DBT (Dibutyl Terephthalate)

Source: Valtris

development of two general-purpose and two niche plasticisers," says Koen Engelen.

The company now offers a valerate plasticiser and what it calls an "upgraded epoxidised" plasticiser. The valerate plasticiser is intended for applications where weatherability and hydrolytic stability are critical. The upgraded epoxidised plasticiser is pitched for indoor applications "where biobased sourcing is seen as a marketing tool and a way to secure the supply," Engelen says.

Regulatory update

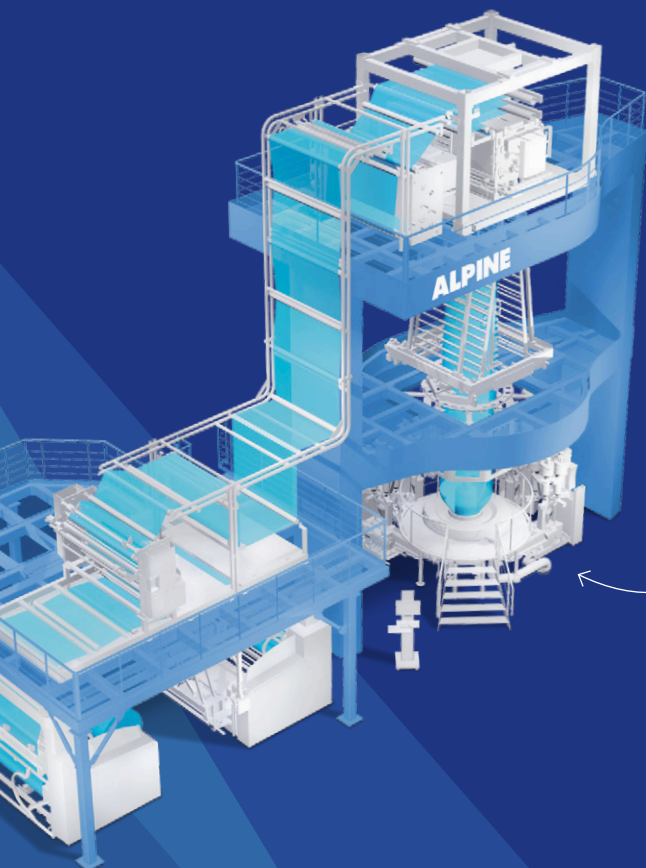
Alongside the new production introductions, the regulatory picture for the plasticiser industry also continues to develop. In July, the **European Chemicals Agency** (ECHA) confirmed industry expectations by announcing that it had submitted a recommendation to the European Commission to amend Authorisation List (Annex XIV of REACH) entries by adding endocrine disrupting properties of DEHP, BBP, DBP, and DIBP. Once the Commission decides on the amendment, some previously exempted uses (notably medical devices and food contact materials) will require authorisation. ECHA also recommends that the exemption for uses of DEHP in immediate packaging of medicinal products be removed from the Authorisation List.

European Plasticisers, the trade association representing plasticiser manufacturers in Europe, responded to the ECHA recommendations in mid-July. It said that: "consistent with better regulation, and in the interests of the circular



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economy, European Plasticisers calls on the European Commission not to adopt this recommendation from ECHA." It points out that DEHP, DBP, BBP and DIBP are already listed on Annex XIV due to Category 1B reproductive effects and further listings as endocrine disruptors are based on these same adverse effects.

"Since the substances have already been extensively regulated and phased out by this first listing on Annex XIV (and the Candidate List), the added value of second and third listings is very questionable given the limited benefits. We therefore question the efficiency and potential of this amendment to protect health and the environment since proper disposal and/or recycling are the appropriate risk management measures with respect to the environment, and health aspects are already addressed via the first Annex XIV listing which has led to the phase out and broad restriction of DEHP, DBP, BBP and DIBP in REACH related applications," the association says.

"Additionally, this amendment would further undermine the efforts of PVC recycling and the potential for a circular economy with respect to flexible PVC made with these plasticisers (mainly

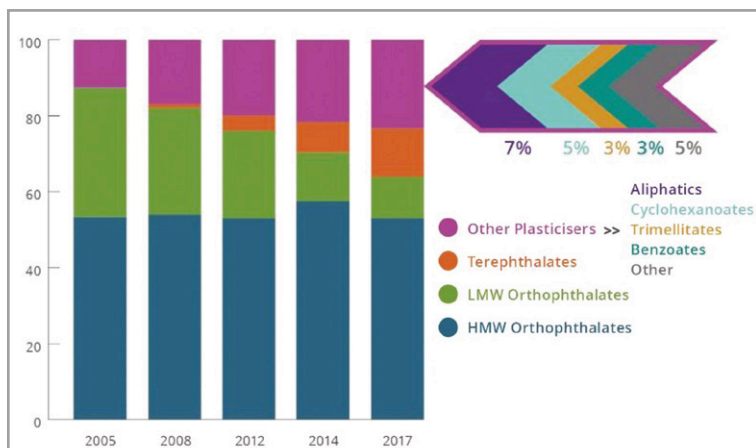


Figure 3: Data showing the changing profile of the European plasticisers market from 2005 to 2017

Source: European Plasticisers/IHS

past use)," according to the association.

As for DINP, another phthalate in some campaigners' crosshairs, ECHA's Risk Assessment Committee (RAC) concluded in March 2018 that it does not warrant classification for reprotoxic effects under the EU's Classification, Labelling and Packaging (CLP) regulation. ECHA concluded that DINP can be safely used in all current applications.

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Challenges continue

But the battle goes on. For example, **ChemSec** – the International Chemical Secretariat – says DINP was added to its “SIN List” in 2008, and it has not found reasons to remove DINP from it. SIN stands for Substitute It Now. ChemSec describes the SIN list as “a comprehensive database of chemicals likely to be restricted or banned in the EU.”

ChemSec is an independent non-profit organisation that advocates for substitution of toxic chemicals to safer alternatives. It is run with financial support from the Swedish Government, foundations, private individuals and other non-profit organisations. ChemSec says DINP was placed on the SIN List in 2008 because “reprotoxic effects and effects on development have been reported and it is a suspected endocrine disruptor.”

European Plasticisers has contacted ChemSec to provide the latest scientific data and regulatory conclusions and says it is open for further dialogue.

Over in the USA, DINP suppliers are busy reinforcing their case. In May, the US **Environmental Protection Agency** (EPA) received a request from ExxonMobil Chemical, Evonik Corporation, and Teknor Apex (through the **American Chemistry**

Council’s High Phthalates Panel) to conduct a risk evaluation for DINP. A request was also received from ExxonMobil to conduct a risk evaluation for diisodecyl phthalate (DIDP).

Speaking on behalf of the companies at the time, the ACC said the requests were submitted because industry has “full confidence” in the substances’ safety, and that a confirmation of this fact by a regulatory body would be positive for businesses and consumers.

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Milliken presents

At K 2019, OMG srl to thermoform fruit container made from PP using Milliken's Millad® NX® 8000

At the K 2019 trade fair on Oct. 16-23 in Düsseldorf, Germany, Milliken Chemical is partnering with leading Italian machinery supplier **OMG srl** to showcase the benefits of thermoforming with polypropylene enhanced with Milliken's **Millad® NX® 8000** clarifier.

With a strong emphasis on collaboration, Milliken is focusing at K 2019 on **"Enhancing plastics with Color, Care, Clarity and Performance. Together."** One of those joint efforts will involve Turin-based OMG producing date palm containers on its Machine PVE, part of its Elektra series. OMG, featuring a four-station machine with a 200 mm stroke suitable for making deep-draw parts, will run PP sheet extruded by Germany's Mezger Verpackungen GmbH & Co. KG.

The resin supplier is France's Polychim Industrie SAS. For this project it is providing Mezger with its HA31XTF homopolymer grade, which offers very good antistatic properties and has a high crystallization temperature that allows for cost-efficient production, and yields balanced physical properties.

The resulting NX® UltraClear™ PP sheet — which can only be produced using Millad® NX® 8000 clarifier — is lightweight and highly recyclable with a transparency and clarity normally associated with PET. This combination makes PP viable for use in a wide range of clear applications. Products such as cups, trays, clamshells, and foldable containers can be made lighter, thinner, stronger and more heat resistant.

Milliken is devoted to enabling plastics to improve people's lives and transform the impact plastics have on the environment for the better. Producing clear, recyclable PP that can replace alternative, less environmentally materials is part of that plan.



At K 2019, visit Milliken at **Booth A27 in Hall 6** to learn how our additives can give you a clear advantage. Visit OMG at **Booth D06 in Hall 3** to see them mold the sample containers. For more, go to k-2019.milliken.com or www.omgitaly.com.



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Extruders' guide to 2019

Part 1: Materials and additives

The world's biggest and most international plastics trade fair opens in Dusseldorf in Germany next month. K2019 is the place to see the latest innovations in plastics materials and processing but it is a big event that's best approached with a plan - our pre-event coverage aims to help you get the most from your time there.

This month we take a look at some of the planned materials and additives introductions likely to be of interest to extrusion companies. In the section that follows, we provide details on some of the newest developments in resins, compounds, plasticisers and pigments. In our next issue, we will round up details on machinery, including extruders, dies and control systems - as well as a wide range of ancillary products.

K2019 will be a big show. The previous event in 2016 attracted 3,285 exhibitors and set a new attendance record of 232,053 (up by 5.5% on 2013 numbers). The mood among visitors back then was very positive - the plastics industry had been going through a seven-year investment boom.

The picture for 2019 is quite different: global markets are slowing, protectionist economic policies are emerging, the impact of the UK's departure from the EU remains unclear, the automotive industry is facing a technological upheaval, and plastics are finding themselves in the environmental firing line.

Against such a background, it is no surprise that machinery makers have dialled down their expectations: VDMA, which represents German machinery manufacturers, is forecasting at least a 10% decline in production value across its members this year, reversing a decade of growth. That said, the K show has always been a shop window for the latest technologies and a place where business is done - whatever the prevailing market conditions. That is likely to remain the case for K2019.

If you are planning to attend the show but are yet to finalise your travel and accommodation, it is not too late. But you should act fast. There are some useful weblinks at the foot of this page and plenty more in the 'First Look' article in our August edition that may prove helpful <http://bit.ly/2lCcm5X>

The Film & Sheet Extrusion and AMI magazines team will be at the show for the full eight days and will be gathering information for our post-event coverage in the November/December edition. We will also be reporting on the biggest news and innovations as they happen via our @PlasticsWorld feed on Twitter. If you want to be sure you keep in touch with developments join the more than 20,000 people already following us.

You may also be able to catch up with our editors and sales team on the AMI stand at the show - you can find us on Stand C11 in Hall 7. We will have information about our magazines, conferences, databases, consulting services and our new North American and European expos available. Some of our industry experts will also be giving daily presentations covering compounding, masterbatch and recycling. You can learn more about those here https://go.ami.international/book_ami_k2019demo/

Dates: 16-23 October 2019

Venue: Messe Dusseldorf, Dusseldorf, Germany

Hours: 10:00-18:30 daily

Tickets: One-day €75, three-day €155 (€49/€108 online).

All include free local transport and on-site wifi

Organiser: Messe Dusseldorf

Website: www.k-online.com

Use the following links to go direct to essential show information:

K2019 hotel booking - <http://bit.ly/k2019hotel>

K2019 online ticket purchase - <http://bit.ly/K2019tickets>

K2019 exhibitor search - <http://bit.ly/K2019exhibitorsearch>

K2019 iOS/Android apps - <http://bit.ly/K2019mobile>



German compounder **Akro-Plastic** will showcase a variety of its extrusion products at K2019, in collaboration with its subsidiary companies Bio-Fed and AF Color.

Bio-Fed produces biodegradable and bio-based plastics under the brand name MVerá. They have a renewable content of 30-100%. To meet the legal requirements of the bioplastics sector in France and Italy - among other countries - Bio-Fed offers compounds with a high proportion of renewable raw materials (bio-based carbon content over 50%).

Potential applications include: biodegradable compounds for the production of home-compostable films for starch-based bag applications (such as fruit and vegetable bags); and, compounds for making biodegradable films for agricultural applications (such as mulch films).

All MVerá compounds can be coloured individually - such as with the AF-Eco biopolymer-based masterbatches. The range consists of colour, carbon black and additive masterbatches.

"With our extensive portfolio of bioplastics compounds, we are making a contribution to waste avoidance by supplying alternatives to conventional plastics, and helping to reduce the carbon footprint," said Stanislaw Haftka, head of sales at Bio-Fed.

AF-Color, another branch of Akro-Plastic, is a specialist in colour and additive masterbatches and focuses on customer-focused solutions. The masterbatches are produced in many common carrier materials, including engineering thermoplastics. At the show, it will focus on a number of applications, including: masterbatches for use in recyclable packaging; additive concentrates for optimum laser markability; laser-transparent colour concentrates to ensure optimum laser weldability; and, ice effect in packaging films.

➤ www.akro-plastic.com

Below: BASF has raised the melt strength of its Ultradur PBT, making it suitable for extrusion and thermoforming



BASF is to expand its range of Ultradur PBT materials with a grade for extrusion and thermoforming. An interdisciplinary team of chemists, physicists, and engineers took the product from lab to reality.

Ultradur B6560 M2 FC TF combines the typical characteristics of PBT, including high melting point, low water uptake, high dimensional stability and good barrier properties. To date, the melt strength of PBT was not sufficient to make it suitable for extrusion. By connecting and branching the polymer chains via tailor-made additives, BASF experts have boosted the melt strength. This has made Ultradur B6560 M2 FC TF appropriate for films and thermoforming of packaging or technical parts. Its processability was confirmed by thermoforming machinery company Illig.

The material offers good mechanical properties, is easy to colour, and even allows foaming. This makes it suitable for use in a range of extrusion applications across several industries. The material is produced in Schwarzheide, Germany, and is available worldwide with respect to national regulations.

The company will also show its slim, high-performance insulation materials in new applications at K2019.

Its Slentite and Slentex are energy-efficient, aerogel-based insulation materials. BASF will present new applications in carbon concrete facade elements and motorhomes.

In a pilot project in Leipzig, a house is being built with a hybrid load-bearing structure of carbon concrete and reinforced concrete. To reduce wall thickness, the new Slentite and Slentex materials can be used to create an insulating layer between the layers of concrete - reducing wall thickness by up to 50% compared to conventional insulation materials.

This allows new aesthetic approaches, and also a gain in space. In addition, the insulation materials can be integrated in the automated precasting of the elements in the concrete plant without further system adjustments.

"Owing to their outstanding insulation performance, Slentite and Slentex are ideal for the production of slim precast element walls," said Alexander Kahnt, chief architect and research associate at Leipzig University of Applied Sciences.

The materials have also been used in the automotive sector. BASF will show a typical motorhome - made in cooperation with a motorhome manufacturer - that uses the insulating materials to create extra internal space.

➤ www.basf.com



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Right: CMT has developed two new syntactic foam plug-assist materials for thermoforming operations

At K2019, **Clariant** will highlight several collaborative sustainability projects.

One, carried out with the Finnish oil refining company, Neste, recovers fat residues and discarded cooking oils and uses them as a source of renewable hydrocarbons. The company says it will reveal more details at K2019 -- including details of new products for plastic applications based on mass-balance certification for usage of renewable polyolefins.

Clariant has also developed new black colorants for plastics that can be identified by NIR sorting devices. This new range can be used for various polymers (including polyolefins, PET and PA) for applications including packaging.

The company will also launch a new masterbatch for PET, for the food and beverage market. The oxygen scavenger is based on a new molecule that goes beyond existing solutions for PET in protecting content shelf life and taste, says Clariant.

Clariant will also showcase its AddWorks PKG 906 - a proprietary polymer stabiliser composition used to increase plastic waste recycling in polyolefin film manufacturing. It is suited to BOPP production, and also applicable to cast and blown film process. It allows to use increased amounts of recycled resin or film during the film manufacturing process without loss of film quality or production efficiency, says the company.

➤ www.clariant.com

CMT Materials will showcase its Hytac XTL and C1R syntactic foam plug-assist materials, for thermoforming operations.

Plug-assist materials can play an important role by helping processors to manage wall thickness variation, reduce starting gauge, and improve cycle times.

Hytac XTL was developed to boost surface quality after machining, compared to its existing Hytact B1X. It claims to be the only material that combines the machined surface quality of an epoxy syntactic with the durability and dust-free machining of thermoplastic syntactic foam. This is important when working with sticky or transparent plastics due to the challenge of polishing thermoplastic syntactic materials. A side benefit of the formulation is increased toughness, allowing for



very fine plug details.

The plug assist material offers low thermal conductivity, low coefficient of thermal expansion, and is highly effective where edge definition and detail are required.

CMT will also show Hytac C1R, a co-polymer plug assist formulated with a friction enhancer to carry plastic deep into a cavity or specialty detail.

C1R is easily machined and polished to a smooth finish for scratch-free forming. This new co-polymer plug assist has been optimised for both the machine shop and the thermoforming process. Hytac C1R provides up to four times the toughness of epoxy-based syntactic foam, machinability, superior edge definition and detail, low thermal conductivity, and good material distribution, says CMT. It is recommended for use with a wide range of materials.

"We continue to see strong growth for copolymer and thermoplastic plug materials as the global plastics packaging market continues to evolve and grow," said Terry Woldorf, managing director of CMT Materials.

He noted that the increased growth is largely focused in food packaging applications in Europe and Asia, with material shifts away from PS to PP and multilayer films.

"These more complex polymers require more sophisticated plug assists," he said. "In some cases, there is a requirement for higher friction, in others it's easier release."

Key trends are the growing popularity in ready-to-eat meals, changing consumer habits, and growing disposable income in emerging Asian economies. North American processors also show continued growth in sectors such as large bakery items, tamper-evident clamshells, and medical device packages.

"The pace of product and package design is speeding up, with custom formers moving from prototype to production sometimes in less than four weeks," he said.

➤ www.cmtmaterials.com

Covestro has developed special breathable films from its Platilon range of thermoplastic polyurethanes (TPUs) - for use in wearable electronic patches.

These are already used in many areas of



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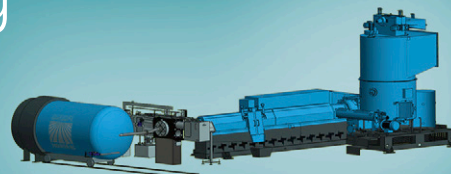
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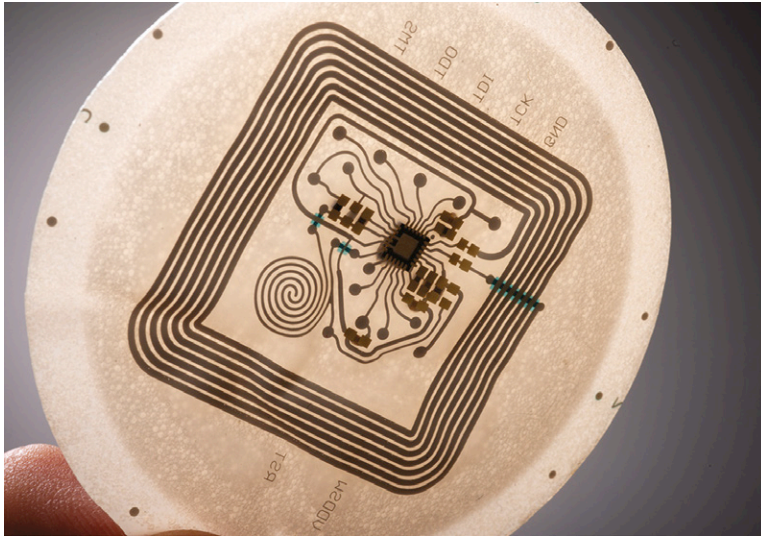
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Above: Covestro has developed breathable TPU films for use in wearable electronic patches

medicine, including patient monitoring and diagnosis. They are worn on the skin for long periods of time, so must be kind to the skin - and stick to it. They should also be removed as painlessly as possible.

The materials are made using a roll-to-roll manufacturing process, allowing efficient production. The electronics can be printed on the film and embedded in thermoformable PU foam covered with a second film layer for more comfort. The patch is fixed with a special skin-compatible adhesive, which adheres firmly to the skin but can be removed painlessly. The adhesive system and thermoformable foam are based on Baymedix PU raw materials.

A prototype was made in collaboration with the Holst Centre, an expert in printed electronics and wearables. The materials are now ready for the market. As well as the wearable patch, Covestro will present a design study at K2019 to present different wearable designs depending on their medical use.

> www.covestro.com

Croda recently opened a £27 million (US\$XXm) amide manufacturing facility at its site in the UK. This doubles the site's capacity and will ensure long-term global security of supply and consistent product quality, says the company.

The new site will make a range of Croda's amides, including Crodamide slip and anti-block, Incroslip high stability slip and torque release, and IncroMold release and anti-scratch additives.

The company will showcase its Ionphase permanent anti-static additives at K2019. Ionphase inherently dissipative polymers offer an immediate and permanent effect that is not dependent on humidity. They provide uniform, homogenous distribution in the host polymer and offer high processability and surface quality. The additives are suitable for several processes, including extrusion, and allow for compliance with key industry standards for EPA and EX areas. There are multiple grades available to suit different polymer types including polyolefins, styrenics and PC blends.

Croda's smart materials business is also home to a range of bio-based building blocks to enhance the performance of engineering polymers like COPE/COPA and polyimides.

> www.croda.com

Dow will showcase its recycling portfolio at K2019 - including details of a new agreement with Netherlands-based Fuenix.

Fuenix will produce pyrolysis oil feedstock - made from recycled plastic waste - which Dow will then use to make new polymers at its production facilities at Terneuzen, The Netherlands.

The agreement will help to increase feedstock recycling - the process of breaking down mixed waste plastics into their original form to manufacture new virgin polymers. The polymers made from the pyrolysis oil will be identical to those made

AMI will launch new data subscription services and demonstrate a suite of interactive tools to support online analysis of critical market information.

"Our new data subscription service provides a comprehensive view of the plastic processing universe through any browser," said Richard Walker, head of market intelligence at AMI. "All our clients need is internet access. This is the first important step in the development of our data services."

The launch is the latest stage in the development of the company's market intelligence reports and data

services. These include AMI's database of global plastics processors - which has been assembled over 30 years, and includes verified information for more than 20,000 named production sites.

"The demand for plastics continues to rise but there is increased uncertainty as the circular economy becomes a primary issue affecting the industry. It is our intention for AMI's data subscription package to offer a suite of commercially valuable information including detailed end use application tonnage data with

historic, current and future forecasts of polymer, providing our clients with the tools to easily identify opportunities associated with the circular economy in a visually effective way," he said.

With advanced mapping capabilities and online access, a number of AMI's larger clients are already using the new web-based Search and Analysis tool.

Options are also available for smaller clients, who may require more targeted access to data.

> www.ami.international

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Right: Dow and Menshen have developed a new type of spouted pouch designed for recyclability

from traditional feedstocks and can be used in the same applications - including food packaging.

This will contribute to Dow's commitment to use at least 100,000 tonnes of recycled plastics in its products sold in the European Union by 2025.

"Plastics are too valuable to be lost as waste and should be part of the circular economy," said Diego Donoso, business president for Dow Packaging & Specialty Plastics. "This partnership is an important next step in moving towards the sustainable production of circular polymers."

In a separate development, Dow and Menshen will highlight a new type of spouted pouch that is designed for recyclability. Their reverse spout sealing technology enables spouted pouches to be made from mono-material films.

"We reversed the idea of where and when the heat needs to be applied during the spout sealing process," said Peter Sandkuehler, global application technology leader at Dow's Packaging & Specialty Plastics business. "By transferring the heat from the pre-melted spout base directly to the sealant layer of the film, we've solved two challenges at the same time: how to easily seal spouts to mono-material films, and how to prevent the hard spout ribs from cutting into the film."

The technology is the result of a three-year joint development between Dow and Menshen.

The new process is designed to easily seal spouts in more heat sensitive, mono-material structures made from all-polypropylene or all-polyethylene packaging layers. Rather than traditionally applying the heat from outside the pouch forming film to melt the seal layer and the spout, the latter is pre-melted at its base before insertion into the pouch and sealing.

The technology was tested at Dow's Pack Studios in Horgen, Switzerland, with Menshen spouts sealed in mono or laminate film structures containing Dow solutions such as Dowlex 2750ST, Elite 5960G in outer layers coated with Opulux HGT and Affinity sealants.

Below: Evonik will showcase a range of its innovative materials at K2019



It is suitable for most pouch sizes and for a wide range of applications - from baby food, condiments, and detergents, to personal care applications such as shampoos, shower gels, or body lotions. It can also be combined with barrier solutions.

> www.dow.com

Evonik will present its portfolio of high-performance polymers and speciality additives at K2019. These include its Vestamid polyamides, which are used in a range of applications including consumer goods, as well as its Pebax PA12 elastomer.

The company is making a €400 million investment to increase its total capacity of PA 12 by over 50% between now and 2021.

Another important material is its range of Dynapol speciality co-polyesters - which are used in flexible packaging for food, and for internal coatings for cans. Evonik recently expanded production of the material at its Witten site in Germany. Aquafil Engineering helped Evonik build the new production plant.

"Adapting our technology to the particular requirements of the Evonik process, and integrating it into existing structures, proved to be an enormous challenge," said Dirk Karasiak, managing director of Aquafil.

The technology ensures that the materials can now be produced more efficiently. The partners intend to continue collaborating in the development and construction of plants for production of speciality co-polyesters.

Also at K2019, Evonik will showcase its speciality additives for masterbatch manufacturers, compounders, and processors include crosslinkers, comonomers, and dispersing agents for pigments and fillers, as well as additives for process and performance improvement. The resulting modified surface characteristics improve mechanical

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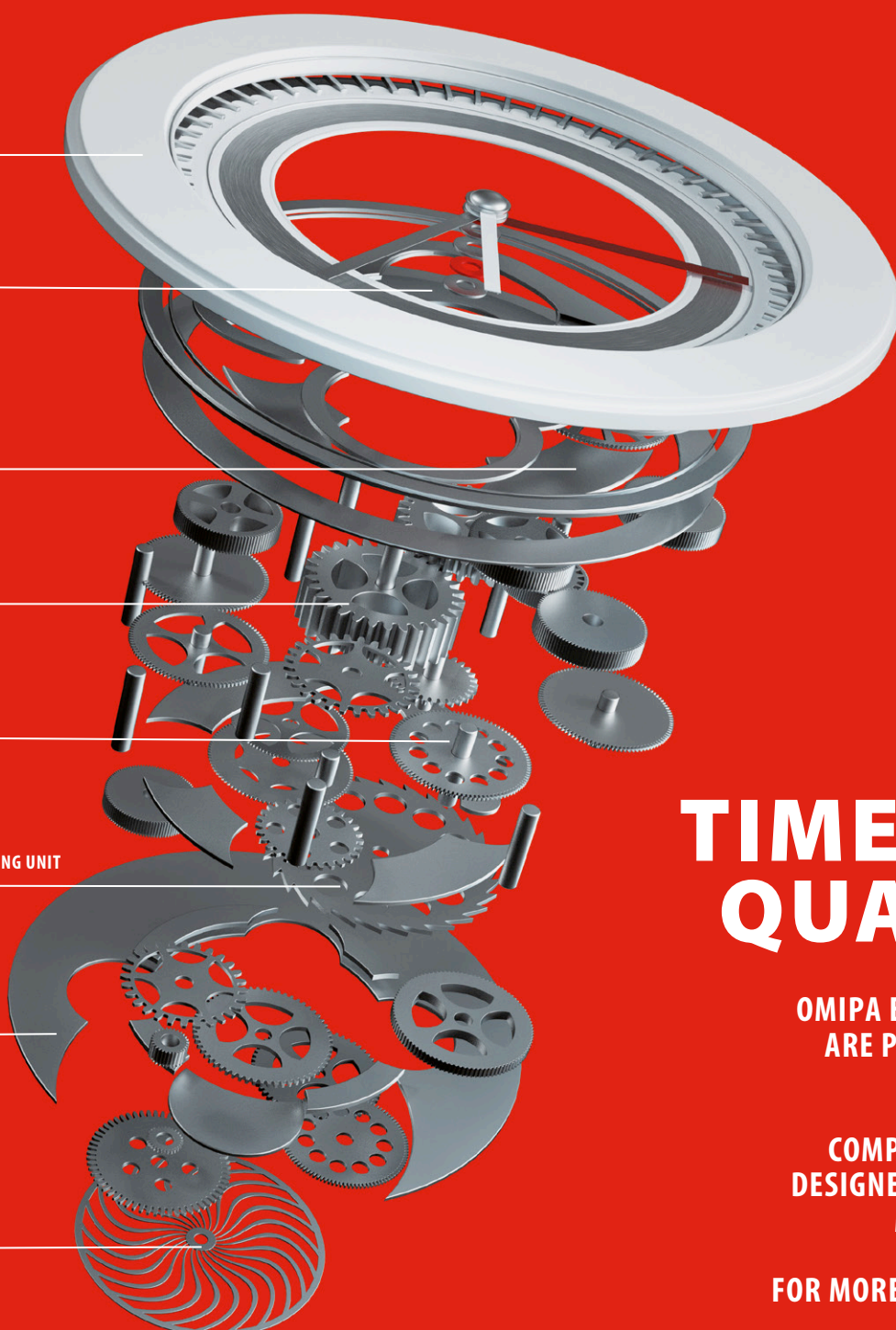
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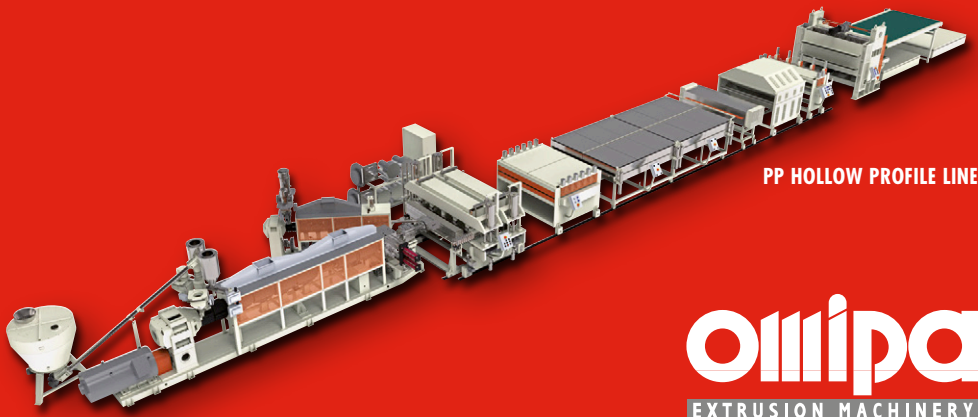
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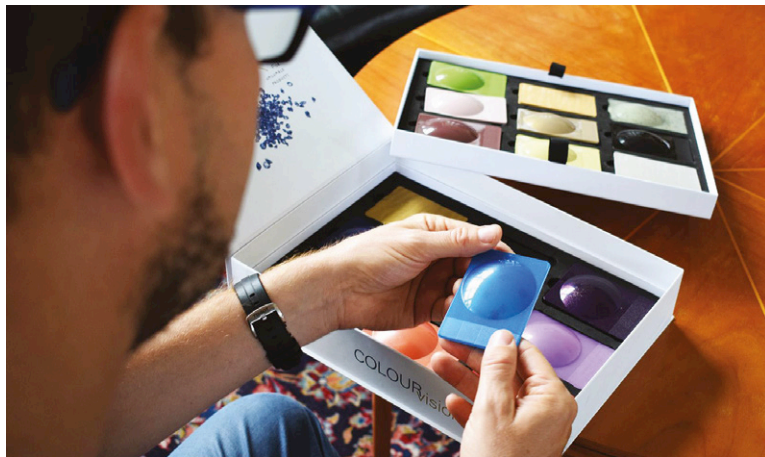
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Above:
Gabriel-Chemie will present a number of new additive solutions, including its **Colour Vision** sustainability range

properties including scratch resistance, flow, block resistance and anti-caking effects.

➤ www.evonik.com

ExxonMobil will introduce a number of sustainable solutions and innovative applications at K2019.

One highlight will be a recyclable all-polyethylene laminated packaging solution. The solution, which contains the company's Exceed XP, Exceed and Enable polymers, helps overcome the recycling issues typically associated with conventional laminated structures.

These all-PE laminated solutions can easily be recycled where programmes and facilities exist, while having the necessary performance properties for high-quality packaging.

The company will also show how it can combine recycled polyethylene (PE) with performance PE polymers to produce a range of sustainable flexible film applications. Also, it has used its Vistamaxx performance polymers to allow low-cost recycled content utilisation while targeting high-value applications.

"We continue to innovate through our technology advancements, while working with customers to help them create sustainable solutions to meet value chain needs," said David Hergenrether, ExxonMobil Chemical vice president for polyethylene.

At the same time, the company will show a new film technology that combines Exceed XP with polypropylene for heavy-duty sack films - with high performance and heat resistance.

➤ www.exxonmobil.com

Gabriel-Chemie will present a number of new additive solutions and product demonstrations - in areas including colouring, printing and detection.

One new product series, called Taggant Technology (TagTec), is a 'marker' that is added to a formulation and can be used to identify individual parts. The unique molecule acts like a 'fingerprint'.

It can be used in all stages of a product cycle - including manufacturing, quality management, and even in raw materials at the end of a product life.

The colours and materials of its Colour Vision sustainability range showcase dry colour and surface impressions. These were realised on the basis of PCR and PIR polymers. Also, new additives have been used which, among other features, enable detectability in the recycling stream. The colour spectrum includes intense, vibrant red through to marble-effect blue shades.

Detection in the recycling stream requires it to be tracked using near-infrared systems. The masterbatch must be made using special pigment formulations that allow this - as well as being food contact approved and laser markable. The masterbatch can be processed by extrusion and other methods.

A laser additive masterbatch enables contact-free, permanent marking, labelling and decoration of plastic parts without using printing ink or solvents. Markings can be made on soft, coarse, stepped and curved surfaces and are resistant, to abrasion and chemicals, as well as being lightfast. Gabriel-Chemie has an ongoing cooperation with BeLaser, and will demonstrate this at K2019 in a separate laser area.

➤ www.gabriel-chemie.com

Ineos Styrolution says a major theme for it at K2019 will be demonstrating the recyclability of polystyrene. The company has a number of projects involving both chemical and mechanical recycling of PS. Its work in depolymerisation led the company to announce in April it had produced lab-scale quantities of general purpose PS from 100% recycled styrene monomer.

At about the same time, it signed a joint development agreement with Canada-based GreenMantra. The agreement aligns GreenMantra's patented catalytic depolymerisation technology with Ineos' manufacturing infrastructure to convert waste PS into chemical monomer building blocks - which will replace a portion of Ineos' virgin monomer feed in its polymerisation process.

➤ www.ineos-styrolution.com

Kafrit has developed a set of anti-fog additives for three types of plastic film: PET, polyamide and PLA.

Anti-fogs are typically used in packaging film and for agricultural film. In food, preventing droplets can improve food quality. In agriculture, it helps to maintain maximum transparency.

Anti-fog additives are usually introduced into film in two ways: during extrusion, using a masterbatch or compound, or as a coating. Coating

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usually makes the product more expensive as it requires an additional process step. Kafrit's method applies the anti-fog additives during extrusion, without the need for a separate coating process.

For PET, the material is effective on the inner film layer, which faces the packaged material. A layer of 7 microns in a multi-layer structure is enough to give immediate results, says Kafrit. The product was tested in both cold and hot anti-fog tests.

The product works in a stable manner and has approvals for contact with food.

The new masterbatch for polyamide gives good results and is intended to be used in layers of PA6 or 6/66 copolymer. It was developed with a leading European PA manufacturer. It is approved for food contact, and is used for packaging fruit and vegetables. Adding 6% of the masterbatch to a 30 micron film produces results in six hours. Increasing this to 12% reduces the reaction time to two hours.

The masterbatch for PLA is suitable for a variety of biodegradable polymers, and its recommended usage is 10-15%.

➤ www.kafrit.com

Milliken will highlight its partnership with Chicago-based PureCycle Technologies - which will advance closed-loop recycling of polypropylene (PP) resin. Using technology developed and licensed by Procter & Gamble, PureCycle plans to open a plant by 2021 that will use a patented recycling method to restore virgin-like quality to waste PP resin.

This will enable the recycled material to become circular, and be reused in its original application - rather than having to be downcycled into lower-value products.

"We have clear priorities to help create a circular economy for plastics," said Herrin Hood, global marketing director of Milliken's plastics additives business. "Improving the recyclability of plastics, replacing single-use plastics with durable reusable

plastics, and increasing the use of biopolymers will help create a more sustainable plastics industry."

The company will also show its Millad NX 8000 clarifier, which transforms PP into a lightweight, transparent alternative to glass. It also helps converters process the material at a lower temperature, resulting in faster cycle times and energy savings. Grades are available that have been optimised for various processes, including thermoforming.

At the same time, its ClearShield UV absorber protects PET-packaged goods - such as food and beverages - against UV light to. This extends shelf life, protects brand image and allows more sustainable formulations - with natural colours, flavours and essences, said Milliken.

➤ www.milliken.com

Perstorp has developed a non-phthalate plasticiser called Pevalen Pro, which it will launch at K2019.

The material will initially be available with up to 40% renewable content - with plans to make it fully renewable in future.

The company says this will give flexible PVC an environmental boost, including a lower carbon footprint. It adds that the renewable polyol ester also provides superior performance.

Jenny Klevås, global marketing and product manager for polyol ester plasticisers, said: "We believe that flexible PVC with Pevalen Pro offers precisely what brand owners and consumers are looking for: a high-performance product with a significantly better environmental footprint."

Perstorp says that Pevalen - which was launched in 2014 - has high plasticising efficiency (as less material is required), faster processing (so less energy is needed), low volatility and high UV stability (which prevents premature ageing).

Pevalen Pro is a direct replacement for Pevalen, making it very easy to switch to. The renewable grades are made under the Mass Balance concept and backed by third-party ISCC Certification, says Perstorp.

➤ www.perstorp.com

Plastika Kritis - part of the **Global Colors** group - has developed a range of biodegradable black masterbatches based on PLA, PBAT and selected carbon black of high purity.

Kritilen Bio4420P and Kritilen PL 8430 can be used for extrusion and thermoforming of compostable articles, offering high opacity and jetness. They are certified for industrial and home composting.

At its headquarters in Crete, the company recently opened a new R&D centre, hosting the group's advanced research and development

Below: Pevalen Pro will initially be available with up to 40% renewable content



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Right: Simona has added four variants to its Simopor family of foam sheets

activities, as well as pilot plants for optimising process technologies using its masterbatches.

The company has also developed two masterbatches that allow dark coloured plastics to be sorted for recycling using near infrared (NIR) technology. This involves replacing traditional carbon black with alternative black pigments. Kritilen Black 92001 is a general purpose black masterbatch for thermoforming products, while the 92002 grade offers better tinting and black undertone. Both are based on PE carriers and are free of carbon black.

Global Colors itself has developed a number of additive masterbatches for use with recycled plastics.

These include: desiccant masterbatches such as DC 500, DC700 and DC451, which eliminate the humidity that could be present in recycled plastics; deodorant masterbatches such as DEO 588, which absorbs unpleasant odours; and fragrance masterbatches such as 1411 Forest OC and 1412 Lavender OC that chemically de-activate substances that create unpleasant smells.

At the same time, combo masterbatches combine a strong anti-oxidant package (to prevent polymer oxidation) with an odour neutraliser and rheology modifier to improve the flow of recycled polyethylene or polypropylene.

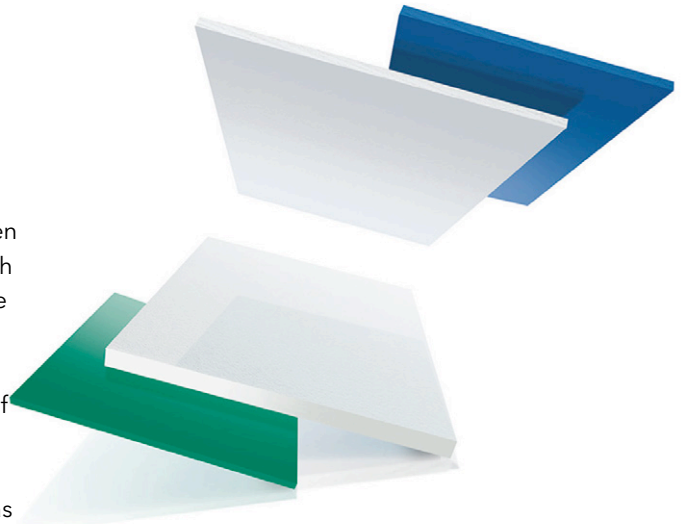
Finally, CE9126 is a chain extender masterbatch used for recycled PET that helps to restore broken PET chains and improving the mechanical properties of the end product.

> www.plastikakritis.com

> www.global-colors.net

Below: Songwon has strengthened its collaboration with Sabo, which makes hindered amine light stabilisers

SABIC is highlighting its commitment to circular solutions and reducing plastics waste under the theme of "Making a world of difference together". The group said it will be addressing global trends through the use of bio-renewable and recycled feedstock and showcasing product solutions for its customers in multiple industries in the context of



recyclability, durability and optimal reuse.

Its family of circular polymers are being produced using a pyrolysis oil feedstock from the recycling of mixed plastic waste. As part of the project, has introduced the alternative feedstock into its Chemelot production site at Geleen in The Netherlands. The resultant certified circular polymers will be supplied to major customers such as Unilever, for use in products including food packaging.

"To enable a genuine shift from a linear to a circular economy, while meeting the needs of our customers, the maximum value of the plastics waste stream needs to be retained and reused," said the company.

The company intends to build a semi-commercial plant to refine and upgrade pyrolysis oil feedstock, which is expected to enter commercial production in 2021.

> www.sabic.com

Simona will launch its new range of PVC free foam sheets at this year's K2019 exhibition.

It says that its new Simopor product family allows creative designs in the field of visual communication and structural engineering. Four variants are available.

Simopor S is an all-rounder for all applications, meeting high standards in terms of technical properties and certifications. Simopor SP is a specialist product in functional white that is optimised for digital printing. Simopor E is a cost-effective, entry-level product. And, Simopor EP is an economical, lightweight product in pure white.

The portfolio also includes the established products Simopor Color and Simopor Construct.

The company has also extended its portfolio of third-generation twin-wall sheets to include an all-white design featuring UV stabilisation. Compared to the grey or black sheets in this range, the new product offers lower heat absorption, particu-





ZAPSIBNEFTEKHIM

SIBUR, RUSSIA'S LARGEST INTEGRATED PETROCHEMICALS COMPANY, TO START SALES OF PP AND PE IN 2020 FROM ITS POLYOLEFIN COMPLEX AT ZAPSIBNEFTEKHIM

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larly in outdoor applications. This makes it suitable for use in container construction (outdoor installation), exhaust air scrubbers and for installations such as containers or other enclosures - where a durable and corrosion-resistant material is required.

Simona HKP white UV is physiologically safe and can be exposed to the elements for 10 years or more. Simona also supplies the matching welding rod for the product.

> www.simona.de

Solvay, which is best known for its high performance thermoplastics, will showcase a range of additives at K2019. These include its Cyasorb and Cyasorb Cyxtra UV stabilisers, which are formulated for applications ranging from polyolefin agricultural films through to photovoltaic backsheet films.

> www.solvay.com

Songwon is to showcase its portfolio of additive solutions - including stabilisers and anti-oxidants - at K2019. It will also launch a new family of flame-retardant synergists based on a proprietary technology designed to combine high performance with safety and sustainability.

The company will feature products and solutions for applications in sectors including packaging and films, healthcare and agriculture. Another key feature of its presence will be an increased focus on sustainability. One recent success was to become one of the first chemical companies to package its products in 20kg PE bags that incorporated 50% recycled PE sourced from its customers.

This year, Songwon strengthened its collaboration with Sabo, which develops and manufactures hindered amine light stabilisers (HALS). Its recently launched light stabiliser system, Sabo Stab UV 216, was developed for demanding agricultural applications. Songwon will promote the material during the exhibition.

"Our success is built on innovations focused on

combining the best possible efficiency and economy with high reliability in production," said Olivier Keiser, chief sustainability officer. "By combining our strong capabilities with our committed approach we can respond to some of the world's most pressing challenges."

> www.songwon.com

> www.sabo.com

Tolsa has extended its Adins range of flame-retardant (FR) additives for PP, PVC, rubber polymer systems, and silicones, and will highlight them at K2019.

The new clay synergists reduce smoke production and improve heat release in PP, PVC, and rubber polymer systems, in addition to the existing FR additives used in other polymers.

"Our unique FR technology continues to evolve and we see continuing growth for clay synergists in a wide range of systems that require the highest standards of flame retardancy," said Antonio Esteban, technical manager for special additives at Tolsa. "Our materials are highly versatile and can be fine-tuned to meet the high-performance needs of formulators and end users."

The expanded product line includes a new grade that uses titanium dioxide to improve the performance of intumescent systems for PP and coatings. It further stabilises the char in intumescent systems (at dosages of 1-2%), improving the flame-retardant efficiency. In intumescent systems, Adins clay decreases and delays the peak of the heat release rate and acts as a smoke suppressor. It can improve cost efficiency of formulations with intumescent flame retardants.

Tolsa has also introduced Adins Clay Sil1, which is used in silicones and PVC formulations, delivering reduced heat release and smoke suppression. It is an effective alternative to antimony trioxide (ATO), thus easing environmental concerns.

> www.tolsa.com



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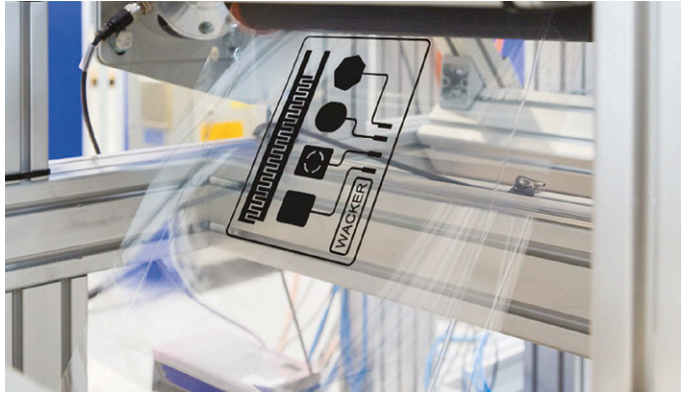


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Above left:
Wacker's Genioplast 345 pellet can be added to TPUs to reduce their hardness and boost elasticity

Above right:
Wacker will showcase Nexipal, a silicone laminate with electroactive properties

Vertellus will highlight a range of its materials technologies at K2019.

These include: performance additives for the PVC, polyester, polyolefin and polyamide industries; intermediates and catalysts for making a broad range of vinyl and sulphone polymers; and adhesives, sealants and gel products that help device manufacturers maintain product integrity in harsh environments.

"We have a great portfolio of products as well as a pipeline of innovations that position us to drive real value for our customers and stakeholders," said John Van Hulle, CEO of Vertellus.

> www.vertellus.com

Wacker says that Elastosil R771, its new flame-retardant solid silicone rubber for the rail industry, meets the fire-safety codes for all rolling stock in the European Union since 2018.

The new grade allows manufacturers to produce large-format bellows and profiles in compliance with the new fire-safety codes, says the company. The material can be processed in a variety of ways - including extrusion - to make products including profiles, panels, films and fabric-reinforced silicone sheets.

The grade meets hazard level 2 ('HL2') for the R1 requirement set, which Wacker says is sufficient for most applications in rolling stock.

Silicone elastomers are naturally flame-resistant, generate little smoke in a fire and are halogen-free - so emit no hydrogen chloride when they do burn. For this reason, Wacker says that the material is also likely to find use for components in buildings that are exposed to fire risk - such as fire curtains, insulation, and seals for windows and doors.

In addition, the company will showcase a new silicone additive for thermoplastic polyurethanes (TPUs). The Genioplast 345 pellet reduces hardness while also boosting elasticity. It can also be used to modify other TPEs.

Organic polymer segments within the pellet make it compatible with TPUs, so that it disperses

very finely and homogeneously throughout the PU matrix. The co-polymer becomes physically bound to the matrix so is unable to migrate. In Europe, it is authorised for food-contact applications.

The pellets are easy to meter, and incorporating them into TPUs on conventional compounding extruders is straightforward. These compounds can then be extruded into film, as well as being processed in other ways such as two-component injection moulding.

Wacker will also showcase a silicone laminate with electroactive properties called Nexipal - and demonstrate several applications of it.

Nexipal has several ultrathin precision films made of Wacker's Elastosil silicone rubber. These films are coated with an electrically conductive material prior to lamination. The result is an actuator that creates movement once a voltage is applied. It can also be used as a sensor by measuring deformations electrically. The silicone laminate is wear-free, compact and energy saving.

During the show, Wacker will present the first applications of these multilayer films - including a haptic touchscreen, which was developed in collaboration with the University of Saarland in Germany.

Wacker produces Elastosil film in thicknesses of 20-400 microns. The silicone rubber is a key component, and its dielectric properties contribute to the electroactive effects of the laminate.

Wacker is setting up a production line for silicone laminates. It is scheduled to produce the first prefabricated laminates in the second half of 2020. The size and design of the laminates can be modified depending on customer needs.

"We have studied the needs of the sector and the technical requirements for creating our own production system," said Christian Gimber, head of the engineering silicones business within the Wacker Silicones. "We decided to produce high-quality electroactive laminates on an industrial scale in addition to silicone films."

> www.wacker.com

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FIND OUT MORE

Creating a stir in single-serve capsules



We preview speakers presenting at the 2019 edition of AMI's successful Single-Serve Capsules conference in Berlin

From a niche market, single-serve beverage capsules have grown to be one of the most important sub-applications of the ambient thin wall packaging segment in the past five years. This dynamic market segment has a complex value chain. There are a variety of coffee brewing systems available with proprietary capsule designs, with a number of brands competing to achieve the highest machine instalment rates globally.

The third edition of AMI's international Single-Serve Capsules conference returns to the Sofitel Berlin hotel in Germany from 24 to 25 September 2019. The conference brings together industry-elite speakers from the entire supply chain to evaluate and discuss the trends, challenges and opportunities facing the single-serve capsules industry.

Single-Serve Capsules 2019 provides a unique forum to explore the global trends, receive insights into future applications, evaluate end-of-life options, explore sustainability and materials as well as looking at innovations in capsule design and production technology. The audience includes capsule fillers, coffee roasters, capsule moulders, material suppliers, technology and machinery suppliers.

In addition to the busy two-day speaker program, Single-Serve Capsules 2019 offers high-level networking opportunities in a focused exhibition

area featuring displays from a range of suppliers.

Here we preview the event, with a closer look at the line-up of expert speakers.

Market overview

The opening session of Single-Serve Capsules 2019 kicks-off with **Martyna Fong**, Unit Manager - Packaging from **AMI's** plastics consultancy in the UK who gives a global single-serve capsules market overview. **Veith Behrmann**, Group Packaging Manager, and **Pierre-Oliver Azzouz**, Manufacturing Services & Packaging Manager, both from **Nestle Nespresso** in Switzerland, discuss the dual challenge of sustainability and food contact legislation compliance, a challenge facing capsule manufacturers across the globe. A roaster's perspective of the evolution of the coffee capsules market is then shared by **Luca Cioffi**, Managing Director from **COIND** in Italy. After the refreshment break, **Peter Grainger**, Founder of **Cafe Pod** in the UK, talks about the ever-changing consumer needs and the implications for capsule technology and manufacturing.

The next session provides a sneak peak into the future of single-serve applications. **Carlos Ruiz**, Founder, CEO & Chairman from **Flatev**, in Switzerland showcases his work with regards to the future of snacking with single-serves. This is followed by a

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talk focusing on the single-serve ice cream revolution, where food tradition meets technology, presented by **Alessandra Gaudio**, Chief Product Officer from **Fwip** in the UK. The third paper of the session is given by **Andy Wang**, President of **Eastsign** in Hong Kong, which explores the smart brewing technology that is making single-serve capsules portable.

The conference's third session opens with **Sophie Kieselbach**, Senior Consultant / Solution Manager from **Thinkstep** in Germany, who provides a comparison of various capsule packages and questions whether to recycle or not. A case study on recycling of compostable bioplastics at composting and biogas facilities in Italy is then given by **Marco Ricci**, Senior Project Manager from the **Italian Composting and Biogas Association (CIC)** in Italy. After the refreshment break, **Julien Tremblin**, Head of Brand Partnerships & Marketing - Europe from **Terracycle** in the UK, questions whether single-serve capsules and sustainability should be viewed as a threat or an opportunity.

Panel discussion

The final session of day one takes the form of a panel discussion that evaluates sustainability within the single-serve capsule landscape, starting with material selection through to end-of-life choices. Members of the panel include **Flavio Di Marcotullio**, Business Development Manager from **Natureworks** in Spain, **Laurent Lombart**, Managing Director of **Capsul'In Pro** in Luxembourg, **Julien Tremblin** from **Terracycle** and **Zouhair Yahia**, Sales Director from **Belmoca** in Belgium. The panel is moderated by **Martyna Fong** from **AMI**.

Day two of Single-Serve Capsules 2019 is opened by **Tazio Zerbini**, R&D Manager from **FLO** in Italy, and **Flavio Di Marcotullio** from **Natureworks** in Spain. Their joint presentation looks at sustainability and performance and how we can rethink single use packaging. A paper on new developments in compostable applications for the single-serve



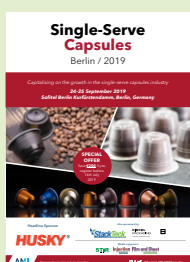
Speakers at the conference include (from left to right) Iacopo Bianconcini and Cristian Spadoni, both from Sacmi, and Martin Bussmann from BASF

market is then given by **Martin Bussmann**, Team Leader Segment Biodegradable Packaging and Technical Marketing from **BASF** in Germany. This is followed by **Giorgio Dini**, Marketing Manager Coffee, and **Remy Teuscher**, Sustainability Specialist, both from **Amcort Flexibles** in Switzerland, who discuss sustainability and capsules with a focus on their compostable lidding with barrier.

Dave Morton, Vice President, Multi-Layer Technology Solutions from **Husky Injection Molding Systems** in Canada, begins the final session of the conference with a look at multi-layer technology and how to unlock sustainable packaging possibilities for single-serve capsules. This is followed by **Iacopo Bianconcini**, Marketing and Business Development Manager, and **Cristian Spadoni**, Technological Lab Specialist, both from Sacmi in Italy, who provide an industry case study on multi-layer compression moulding, highlighting the benefits of this innovative technology.

After the lunch break, the session is continued by **Chris Law**, Sales and Marketing Manager from **Union Papertech** in the UK, who discusses biodegradable filtration paper with a focus on clarity and the consumer. Closing the conference is a paper exploring technology advances in ultrasonic sealing and how this is preserving the aroma in single-serve capsules, presented by **Michael Zimmleraikis**, Area Sales Manager Packaging from **Herrmann Ultraschalltechnik** in Germany.

About Single-Serve Capsules 2019



Single-Serve Capsules 2019 takes place on 24-25 September in Sofitel Berlin Kurfürstendamm hotel in Berlin, Germany. The conference provides an international forum bringing together the entire value chain of plastic and metal capsules.

In addition to the formal conference sessions, the event provides extensive networking opportunities throughout the informal breaks, including access to the table top exhibition area and complementary cocktail reception at the end of the first day. To find out more about attending the conference, taking a table-top exhibition space, or becoming a conference sponsor, visit the [conference website](#) or contact Conference Organiser Thom Crawley: thom.crawley@ami.international, Tel: +44 (0) 117 314 8111.

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POLYOLEFINS

Sibur collaborates with Norner and BASF on separate material projects

Russian petrochemicals and plastics company Sibur has signed two agreements to develop new materials: one with German giant BASF, the other with Norwegian research organisation Norner.

With Norner, it will cooperate in product development and polymer recycling at Sibur's PolyLab R&D centre. Norner has worked with Sibur on several projects during the last seven years. Under the new agreement, the two companies will jointly develop new product solutions and optimise polymer stabilising formulas. These will include new 'green' polymer grades, catalysis testing, and new chemical and technical recycling technologies.

"Partnering with Norner will take our polymer production to the next level and help us launch advanced grades in line with the highest environmental standards," said Sergey Komyshan, executive director at Sibur.



PolyLab develops polymers - for existing products, and for new products in various industries. Samples of new polyethylene (PE) and polypropylene (PP) grades will be transformed on its pilot lines into films, food packaging and other products.

Sibur will also work with BASF to develop 'innovative polymer solutions' at PolyLab. The companies will use new digital technologies in production and R&D to develop a new range of polymers using BASF's plastic

additives technology. In addition, BASF will provide its technical expertise to develop new technology tests at PolyLab.

They also plan to develop new high-performance additive solutions, focusing on highly demanding converting conditions for polymers and specifically targeting long term durable goods.

"At BASF, we are committed to developing additive solutions that perform economically and last longer," said Achim Sties, senior vice president of performance chemicals for Europe at BASF.

Pavel Lyakhovich, managing director of Sibur, added: "The new agreement unlocks new opportunities for all consumers of polymer products. We will develop modern synthetic materials that are advanced and sustainable."

> www.sibur.ru

> www.norner.no

> www.basf.com

ADDITIVES

Organic UV filter made from cashew nuts

An international research team has used cashew nut shell liquid (CNSL) as the basis for new types of organic UV filter, which can be used as a plastics additive.

The cashew nut shells are left over from the production of cashew nuts, so are a waste product.

The researchers, from Johannes Gutenberg University Mainz (JGU) in Germany, the University of the Witwatersrand in

Johannesburg in South Africa and the University of Dar-es-Salaam in Tanzania, say the CNSL acts as a substitute for petroleum in the synthesis of the filter.

UV radiation is a typical cause of damage to paints, coatings and plastics. A typical way to protect against this is to add UV filters to the formulation. These can either be mineral pigments such as titanium dioxide or organic compounds.

Currently, both classes of

UV filters are under fire for different reasons, say the researchers - with some organic filters being toxic to aquatic life. At the same time, most organic filters are produced from petroleum.

The researchers, led by Till Opatz of JGU and Charles de Koning from Johannesburg, used CNSL as a renewable starting material for the production of new UV filters. CNSL is produced in large quantity during the production of the nuts and cannot

be used as food or feed., so there is no competition between its use as a chemical raw material and the production of foodstuff.

Using CNSL can be regarded as an example of xylochemistry - in which woody biomass serves as the carbon source for chemical synthesis.

The research was published in a recent edition of the European Journal of Organic Chemistry.

> www.uni-mainz.de

RECYCLING

Separator technology protects recycling and processing equipment

Bunting Europe will showcase its expertise in magnetic separators and metal detectors for the recycling and plastics industries at K2019.

In virgin plastic manufacturing processes, metal damages processing equipment and the quality of the end-product. Recycled plastic commonly has both ferrous and non-ferrous metal contamination, and removal is vital to enable the reuse of the waste material, says the company.

Bunting's portfolio includes a wide range of magnetic separators and metal detectors to detect and remove metals.

Its FF and HF drawer filter magnets are the most commonly used magnetic separators in the plastics sector. Visitors will see both standard and manual-clean (MSC) designs, which all use high strength neodymium iron boron (rare earth) magnets.

In operation, plastic beads or shredded plastic waste falls through the drawer filter under gravity, while ferrous metal contamination is attracted to the surface of the magnets.

The company will display its new FF350 drawer filter magnet in Europe for the first time. The FF350 enables processing material at higher temperatures.



High heat is damaging to standard rare earth magnets and the new design maintains magnetic strength at temperatures up to 350F (175°C). There are also

changes to the housing, window and access fixings to provide trouble-free operation at these temperatures.

The company will also display the plate magnet (with and without tapered step) and grate magnets (round and square).

"Our experience in solving metal contamination issues in the plastics sector is second to none," said Simon Ayling, managing director of Bunting Europe. "Without removing metal from waste, the recycling of plastic is simply not possible."

■ The next issue of PPE will include extensive coverage of recycling machinery.

➤ www.buntingeurope.com

SHEET EXTRUSION

Expanding in edge banding

Amut of Italy has stepped up its activities in edge banding - signing up a number of new customers.

"Last year we acquired four new customers Europe and one in China

- who purchased two lines," said Fernando Morandi, sales manager of Amut.

ABS edge banding production with an Amut double venting extruder excludes any pre-dehumidi-

fication treatment normally used for hygroscopic materials such as ABS. A double venting screw design makes it possible to reach high quality product with no extra costs and low energy consumption, says Amut. The extruder has a 52L/D ratio.

The Amut technology can also change the surface finish on the final product.

"A new post-embossing solution has been supplied to a customer, which confirms full achievement of the expected savings in production cost," said Morandi.

➤ www.amut.it



BLOWN FILM

Blown film in Eastern Europe

Bandera of Italy has sold two SmartFlex blown film lines to customers in Poland and Slovenia.

The customers will use the lines to produce a variety of products, including shrink film for bottles and cans, shrink-hood film, and lamination and converting film.

The lines offer a number of advantages, including competitive price and low energy consumption.

➤ www.luigibandera.com

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MACCHI: FILM EXTRUSION



This 28-page brochure from Macchi covers the company's wide range of film extrusion technologies including coextrusion lines, wide webs, die heads, take offs, winders, trim recovery and control systems.

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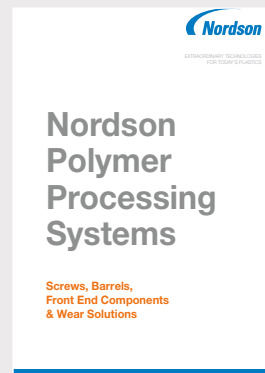
COLINES: BARRIER FILMS



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

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NORDSON: SCREWS & BARRELS



In this Nordson Polymer Processing Systems brochure, find out about Xaloy bimetallic extrusion screws and barrels, designed to meet process requirements, help optimisation, combat wear, boost output, and improve and maintain quality.

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AQUAFIL: PLANT ENGINEERING



This 12-page brochure from Aquafil Engineering details its comprehensive range of chemical plant engineering capabilities, which include polyamide polymerisation, polyester condensation and polymer drying installations.

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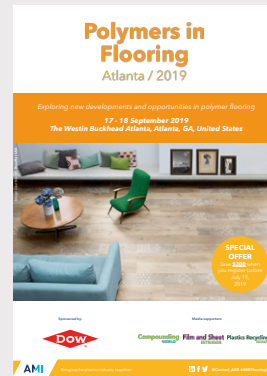
HOUSEWRAP



AMI's new Housewrap conference takes place on September 17-18, 2019 in Coral Springs, FL, USA. Find out how technology and materials can help seize the growth potential in all facets of exterior building weatherisation and protection.

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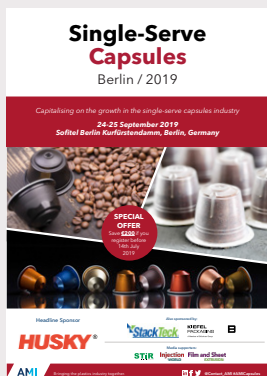
POLYMERS IN FLOORING



The 3rd edition of AMI's Polymers in Flooring US conference will take place on September 17-18, 2019 in Atlanta, GA, USA. The conference provides a unique forum bringing the polymer flooring industry together to debate technical and market trends.

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SINGLE-SERVE CAPSULES



The 3rd edition of AMI's international Single-Serve Capsules conference will take place on 24-25 September 2019 in Berlin, Germany. The conference is going from strength to strength and will once again bring industry-elite speakers together with all members of the supply chain.

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POLYMER FOAM



AMI's Polymer Foam conference returns on 26-27 November and will take place in Hamburg, Germany. The programme will cover the latest developments in chemical blowing agents, physical foaming, particle foam processing and syntactic foam technology.

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AGRICULTURAL FILM



Now in its 12th edition, the popular Agricultural Film conference will take place on 18-20 November 2019 in Barcelona, Spain. The three-day programme will bring together agricultural and horticultural cover specifiers, raw material and film manufacturers with agriculture stakeholders.

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MULTILAYER FLEXIBLE PACKAGING



The Multilayer Flexible Packaging conference, which takes place on 18-20 November 2019 in Vienna, Austria, will explore the challenges for producers in answering sustainability demands while continuing to meet brand owners' needs in design and performance.

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To see our full line-up of more than 50 plastics industry events over the next 12 months, please visit www.ami.international/events

Comptoir National du Plastique (CNP)

Head office:	Akouda, Tunisia
CEO:	Meriem Driss Garnaoui
Founded:	1958
Ownership:	Private
Employees:	Around 170
Profile:	CNP was founded in 1958 by Mohammed Driss, initially as an injection moulder of items such as combs. The company moved into film extrusion in 1965, when it began making plastic bags. Soon afterwards, it began printing its products - and now offers a range of products, including industrial and agricultural films and rubbish bags.
Product lines:	The company offers a range of agricultural and industrial films, plus a range of injection moulded products. Its industrial films include technical films for lamination, heat shrink films, pallet wrap films, industrial bags and printed films for packaging. Its agricultural products include greenhouse, silage and mulch film. It also produces nursery bags, and even irrigation ducts. In a nod to its history, it continues to make plastic carrier bags, as well as rubbish sacks.
Factory location:	The company employs around 170 people at its production plant in Akouda, in western Tunisia. Here, it has a production of around 10,000 tonnes/year. It runs around 10 extruder lines - of which three are multi-layer - in a 40,000 sq m facility. In addition, it has a six-colour flexographic printer. It recently took delivery of a new three-layer, blown film die head from Windmoller & Holscher of Germany, which has boosted the line's output by 20%. At the same time, it updated the Varex blown film line - which it bought from W&H in 2007 - with two new automation modules, to improve production.

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

Film and Sheet FORTHCOMING FEATURES EXTRUSION

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

October 2019

PO additives ● K2019 show issue
Extruder developments
Multi-layer packaging
Mineral fillers for films

November 2019

Sheet materials ● Construction
Thin-wall packaging
Smart packaging
K2019 show review

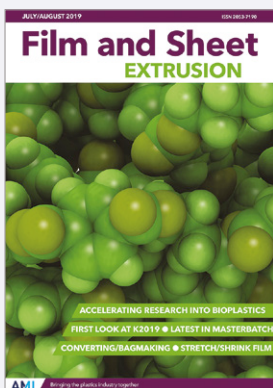
Editorial submissions should be sent to Lou Reade: lou@filmandsheet.com

For information on advertising in these issues, please contact:

Claire Bishop: claire.bishop@ami.international Tel: +44 (0)1732 682948
Levent Tounjer: levent.tounjer@ami.international Tel: +44 (0)117 314 8183

Keep informed: read our latest editions

AMI publishes five process-specific FREE plastics industry magazines. Simply click on the cover below to read each magazine. Or download the issue in the relevant Apple or Android app



Film and Sheet July/August 2019

The July-August edition of Film and Sheet Extrusion looks at the accelerating research into bioplastics applications, plus stretch and shrink film, masterbatches, bag-making machinery and a Visitor Guide to K2019.

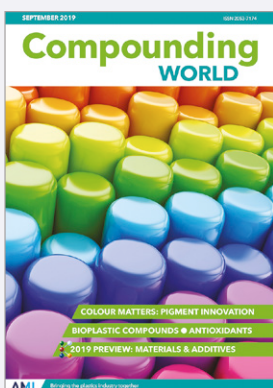
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Film and Sheet June 2019

The June edition of Film and Sheet Extrusion reviews the latest developments in plastic pouches. It also takes a look at the newest innovations in thermoforming machinery, printing technology and blown film dies.

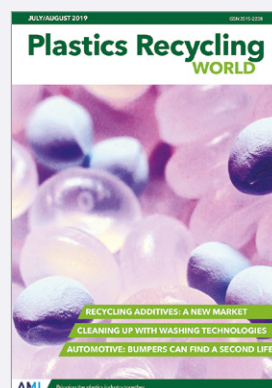
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Compounding World September 2019

The September issue of Compounding World discusses how to get more from pigments and also covers bioplastics, stabilisation and purging. Plus a preview of K2019 materials and additives exhibitors.

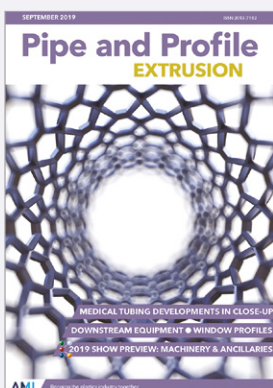
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Plastics Recycling World July/August 2019

The July/August edition of Plastics Recycling World takes a detailed look at the growing range of additives available to plastics recyclers. It also explores new developments in washing equipment and reviews a major US car bumper recycling project.

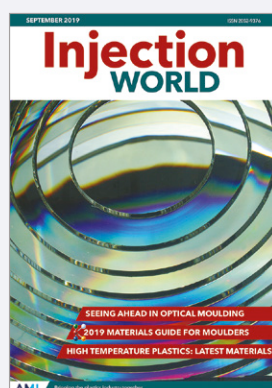
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Pipe and Profile September 2019

The September issue of Pipe and Profile Extrusion magazine explores the latest developments in medical tubing, window profiles and downstream cutting systems. Plus, a preview of the innovations in store for extruders at K2019.

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Injection World September 2019

The September edition of Injection World magazine takes a look at the latest in optical and medical moulding. It also reviews developments in high temperature plastics, plus a preview of the material innovations that will feature at K2019.

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Take out your own FREE subscriptions to any of the magazines. Click on the logos below to simply register on-line.

Compounding
WORLD

Film and Sheet
EXTRUSION

Pipe and Profile
EXTRUSION

Injection
WORLD

Plastics Recycling
WORLD

GLOBAL EXHIBITION GUIDE

2019	18-21 September	T-Plas/Tiprex, Bangkok, Thailand	www.tplas.com
	16-23 October	K2019, Dusseldorf, Germany	www.k-online.com
	17-19 October	Plastics, Printing & Packaging, Dar-es-Salaam, Tanzania	www.expogr.com/tanzania/pppexpo
	25-28 November	Plastivision Arabia, Sharjah	www.plastivision.ae
	27-29 November	Plastics & Rubber Vietnam	www.plasticsvietnam.com
2020	13-16 January	Saudi Plastics & Petrochem, Riyadh	www.saudipp.com
	16-20 January	Plastivision India, Mumbai, India	www.plastivision.org
	21-23 January	Swiss Plastics, Lucerne, Switzerland	www.swissplastics-expo.ch
	28-31 January	Interplastica, Moscow, Russia	www.interplastica.de
	24-26 February	Plastics, Printing & Packaging, Addis Ababa, Ethiopia	www.expogr.com/ethiopia/pppexpo
	9-11 March	Plast Alger, Algiers, Algeria	www.plastalger.com
	11-13 March	Expo Plasticos, Guadalajara, Mexico	www.expoplasticos.com.mx
	7-13 May	Interpack, Dusseldorf, Germany	www.interpack.com
	3-4 June	Plastics Extrusion World Expo Europe, Essen, Germany	www.eu.extrusion-expo.com/
	13-17 October	Fakuma, Friedrichshafen, Germany	www.fakuma-messe.de

AMI CONFERENCES

17-18 September 2019	Housewrap, Coral Springs, USA
12-14 November 2019	Polyolefin Additives, Vienna, Austria
18-20 November 2019	Agricultural Film, Barcelona, Spain
18-20 November 2019	Waterproof Membranes, Cologne, Germany
18-20 November 2019	Multilayer Flexible Packaging, Vienna, Austria
2-4 December 2019	Thin Wall Packaging, Dusseldorf, Germany
3-4 December 2019	Stretch & Shrink Film, New Orleans, USA
4-6 February 2020	Polyethylene Films, Coral Springs, USA
10-11 March 2020	Specialty Packaging Films Asia, Bangkok, Thailand
17-18 March 2020	Plastic Pouches, Vienna, Austria

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

PLASTICS RECYCLING
WORLD EXPO

POLYMER TESTING
WORLD EXPO

3 - 4 June, 2020
ESSEN, GERMANY

PLASTICS EXTRUSION
WORLD EXPO

COMPOUNDING
WORLD EXPO

4 - 5 November, 2020
CLEVELAND, OHIO

www.ami.international/exhibitions