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IMAGE: TOTAL CORBION



Above: Total Corbion plans to build its second world-scale PLA facility at Grandpuits in France

Corbion and Total plan PLA plant in Europe

Corbion and Total are to build a new PLA bioplastics facility in Europe through their Total Corbion PLA joint venture.

The companies say that, with an expected capacity of 100,000 tonnes/year, it will be the first world-scale PLA production facility in Europe. It will be located in Grandpuits, France and should be operational in 2024.

"PLA is increasingly finding its place as a bioplastic, enabling acceleration towards a circular

economy," said Olivier Rigaud, CEO of Corbion. "One of our goals, together with Total, is to become the market leader in PLA. This new plant puts us firmly on track to achieve that."

The construction is expected to need capital expenditure of around €200 million (US\$230m). Corbion and Total will contribute equal funding for the project, which may also rely on third party debt.

Corbion will continue to supply lactic acid to the Total Corbion PLA joint

venture. Earlier this year, it announced it will build a new lactic acid plant in Thailand, which is expected to open in 2023.

"This PLA investment accelerates further expansion plans for lactic acid, with a European location as one of the likely options," said the company.

The joint venture already produces its Luminy PLA resin at a 75,000 tonnes/year capacity plant in Thailand - which began operating two years ago.

➤ www.corbion.com

Solvent recycling of resins

German recycler APK is using a ZSK extruder from Coperion in its Newcycling process - which uses solvent recycling to convert multi-polymer packaging into usable regrind.

The company says that the process, allied with the devolatilisation performance of the extruder, leads to recyclates with a quality close to that of virgin polymer.

The physical and solvent-based process enables clean, single-origin polyamide (PA) and polyethylene (PE) pellets to be extracted from complex PA/PE multi-layer films. The recyclate can be used in high-quality products up to the original application.

The Newcycling process operates at APK's Merseburg location in Germany.

➤ www.coperion.com

➤ www.apk-ag.de

Label makers pledge to boost recycling

Avery Dennison has joined a consortium of pressure sensitive label manufacturers that aims to improve recycling of their products. Currently, only 52% of matrix and liner waste is recycled globally, it says. The consortium, called Celab, aims to improve this.

"Celab is the embodiment of how shared goals can reach across an entire value chain to push the industry towards circularity," said Renae Kezar, global leader for sustainability, label and graphic Materials at Avery Dennison.

The company's targets for 2025 include repurposing 75% of its waste, and helping customers to cut waste from its products by 70%.

➤ www.averydennison.com



Above: Celab aims to boost recycling of matrix and liner waste

Covestro opens polycarbonate film production line in Thailand

Covestro has launched a new polycarbonate film production line in Thailand.

The extra capacity will help the company meet growing local demand. The films are mainly used in the automotive, telecommunications and medical sectors.

Covestro has operated a production facility for speciality films in Thailand since 2007. The range includes Makrofol polycarbonate films and Bayfol products made from polycarbonate blends.

"With this additional production line, we are investing in future growth in the Asia-Pacific markets, which are very important to



Above: Covestro's new polycarbonate film line in Thailand will help it meet growing local demand

us," said Sucheta Govil, chief commercial officer (CCO) at Covestro. "At the same time, we are responding to the growing demand for speciality films in this region."

Covestro says the project is the first step in a global expansion in plastic film production. The total investment of more than €100 million will include expanding the infrastructure

and logistics to shorten delivery times. More than 100 new jobs will be created worldwide, says the company.

Within this, Covestro has already converted a co-extrusion film plant in Guangzhou, China, for the future. At its South Deerfield site in the USA, the efficiency and quality of film production has also been improved. The next task will be to expand film production in Dormagen, Germany where the company is building up new coextrusion capacity. This project is scheduled for completion by the end of this year.

➤ www.covestro.com

Pellet loss plan for 2022

PlasticsEurope, the trade association representing plastics manufacturers, has published its Operation Clean Sweep (OCS) annual progress report - which details efforts to stop plastic pellet loss.

It includes a plan to develop a European zero pellet loss certification scheme by 2022. It will set common requirements that will be audited regularly by accredited third parties. It aims to have all member companies audited by 2025.

➤ www.plasticseurope.org

Amcor claims world first with recyclable retort packaging

Amcor and Nestlé say they have developed the first recyclable flexible retort pouch.

The new high-barrier pouch, which uses Amcor's AmLite HeatFlex Recyclable technology, makes its debut in the Netherlands in October 2020, as packaging for wet cat food.

The partners collaborated during the product development process, testing for heat resistance, machine performance, shelf-life and recyclability in the real world. Retort flexible packaging typically cannot be recycled because it is



made from multiple materials.

"We have created a unique solution that for years was thought impos-

sible," said Michael Zacka, president of Amcor Flexibles EMEA. "This high-barrier, heat-resistant, packaging can be easily recycled within plastic recycling streams."

The new pouch meets the packaging guidelines for a circular economy recently published by the Ceflex Consortium.

Graham Houlder, project coordinator and workstream consultant for Ceflex, said: "Recyclable retort packaging is a revolutionary advance and will have a huge impact in pet food and beyond."

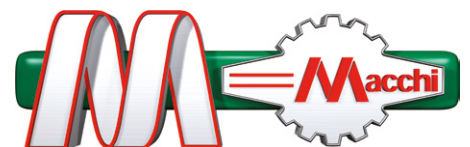
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Polyplex to expand US BOPET film capacity

Film extruder Polyplex is to expand BOPET film output at its US facility in Alabama.

The company will add a 10.6m wide line at its plant in Decatur, which has a capacity of 50,000 tonnes/year. It will be installed beside the company's existing PET line. At the same time, the company will increase resin capacity from 58,000 to 86,000 tonnes/year.

The total investment is around US\$103 million, says the company. Construction

is expected to begin in mid-2021, with production starting around one year later.

"This expansion will help tap into the growing shift towards local supply in regional markets and pull market share away from imports," said the company.

Polyplex says that the arrangement - of two lines running simultaneously, beside "captive resin manufacturing", will help to reduce overall cost and raise competitiveness.

"It will give Polyplex USA a market leadership position, similar to what we have achieved in other geographies," said the company.

Polyplex is an Indian-owned company. It is the majority shareholder in Polyplex Thailand - which in turn owns the US subsidiary. The parent company posted sales equivalent to US\$638m, a decline of nearly 2% compared to the previous year.

➤ www.polyplex.com

NatureWorks ups PLA output

US-based PLA plastic producer NatureWorks says it is raising output by 10%.

It says that a "suite of manufacturing technology projects", including lactide monomer purification efficiency, will deliver the increased capacity of its Ingeo biomaterials.

Installation is underway at its facility in Blair, Nebraska, which is scheduled to be completed by the end of 2021.

"The market continues to evolve due to the Covid-19 pandemic and the demand for bio-based alternatives to petrochemical-based plastics," said Rich Altice, president and CEO of NatureWorks. "This purification technology is one of many additional capital improvements we are actively working on at our facility in Blair. At the same time, we continue to pursue a potential future second manufacturing site outside the US to serve our international markets."

➤ www.natureworkslc.com

LG Chem develops bioplastic

LG Chem of South Korea says it has developed a new biodegradable material.

The transparent material has properties equivalent to resins such as polypropylene, says LG - and has 20 times the elongation of existing biodegradable materials.

The company expects the new material to have broad use, especially in areas such as packaging.

LG says it has received confirmation that over 90% of the material was decomposed within 120 days according to industrial biodegradable certification standards.

➤ www.lgchem.com



LG will continue to carry out bioplastics research

Hanmere starts growing via acquisition

UK-based packaging company Hanmere Polythene has expanded its footprint by acquiring Plasmech Packaging.

The company says the move will help it to start building a pan-European business.

"Plasmech is a good strategic fit, serving a similar customer base and market segment," said Glen Morris,

CEO of Hanmere Polythene. "Their expertise will enable us to offer a broader product range to our shared customer base."

In addition to the takeover, Hanmere plans to install extra extrusion capacity. New extrusion equipment will boost capacity to 1500 tonnes/year of food-grade PE - widening the company's capabilities to film of 3000mm

width and 15 micron thickness. The extra capacity is expected to come onstream in late 2021.

"We aim to create a business with the facilities, machinery and expertise to use plastic more efficiently in food manufacturing - reducing the environmental impact of plastic while maintaining high quality," said Morris

➤ www.hanmere.co.uk

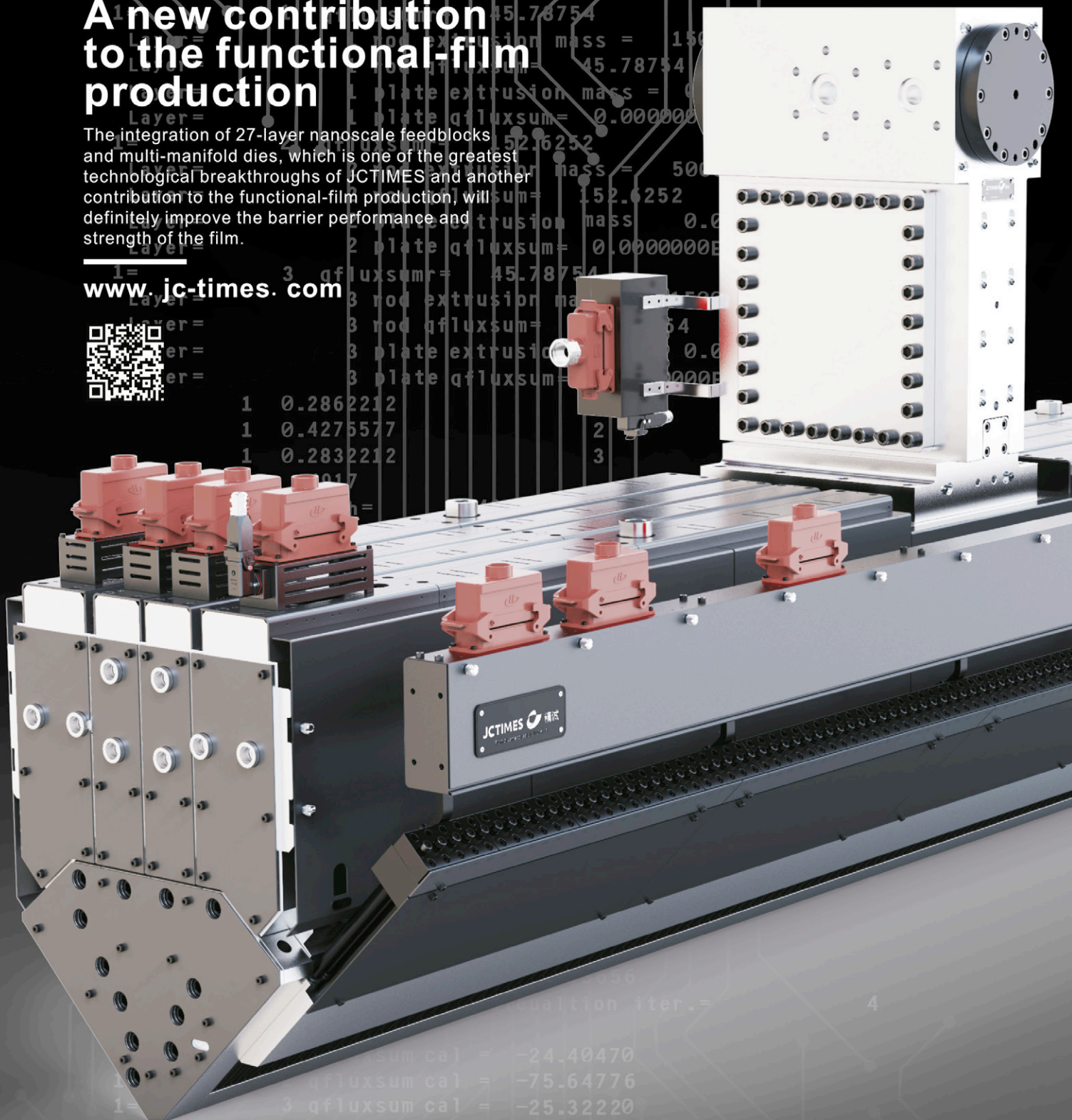
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A new contribution to the functional-film production

The integration of 27-layer nanoscale feedblocks and multi-manifold dies, which is one of the greatest technological breakthroughs of JCTIMES and another contribution to the functional-film production, will definitely improve the barrier performance and strength of the film.

www.ic-times.com



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US gains from plastics trade with neighbours

Mexico and Canada remain the largest export markets for the US plastics industry.

The annual Global Trends report from the US Plastics Industry Association, revealed 2019 exports of more than US\$15 billion to Mexico and \$12bn to Canada. The US had a trade surplus of almost US\$10bn with Mexico.

Though the report found that the industry's trade surplus decreased to US\$400 million in 2019 (down 25% compared to 2018), global plastics demand remains solid. The US plastics industry had trade deficit of nearly \$14bn with China – which was also its

third largest export market. At the same time, the US had a \$2.5 bn trade surplus with China for plastic resin.

In 2019, total US plastics industry exports fell by 2.9%, while imports were 2.8% lower.

Although US resin producers continued to enjoy a cost advantage over most foreign producers, US resin exports decreased by 2% in dollar terms from 2018 to 2019," said Perc Pineda, chief economist at the association. "Lower trade figures are expected this year – due mainly to the global economic slowdown – but the trade outlook for 2021 is positive."

➤ www.plasticsindustry.org

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As well as expanding rPET, KP has added pharmaceutical film capacity in Virginia

KP expands rPET capacity

Klöckner Pentaplast is to expand extrusion capacity of post-consumer recycled PET in North America.

The expansion, of 17,500 tonnes/year, will "significantly increase" its capacity for thermoformed recyclable protein trays in North America, says KP.

The multimillion-dollar capacity expansion will be spread across the eight North American locations that are best situated to serve its sustainable consumer and protein packaging customer base, it said.

The expansion, which includes special "super-cleaning technology", supports customer demand for a

higher percentage of post-consumer recycled (PCR) content in consumer and health packaging.

"As major brands announce initiatives that includes post-consumer and recyclable packaging, we will be positioned to service those market needs for the foreseeable future," said Scott Tracey, CEO of KP.

In March this year, KP announced a 30% capacity expansion at its Cotia, Brazil location, and in June broke ground at its central Virginia location – which increased pharmaceutical films capacity by 6,000 tonnes/year.

➤ www.kpfilms.com



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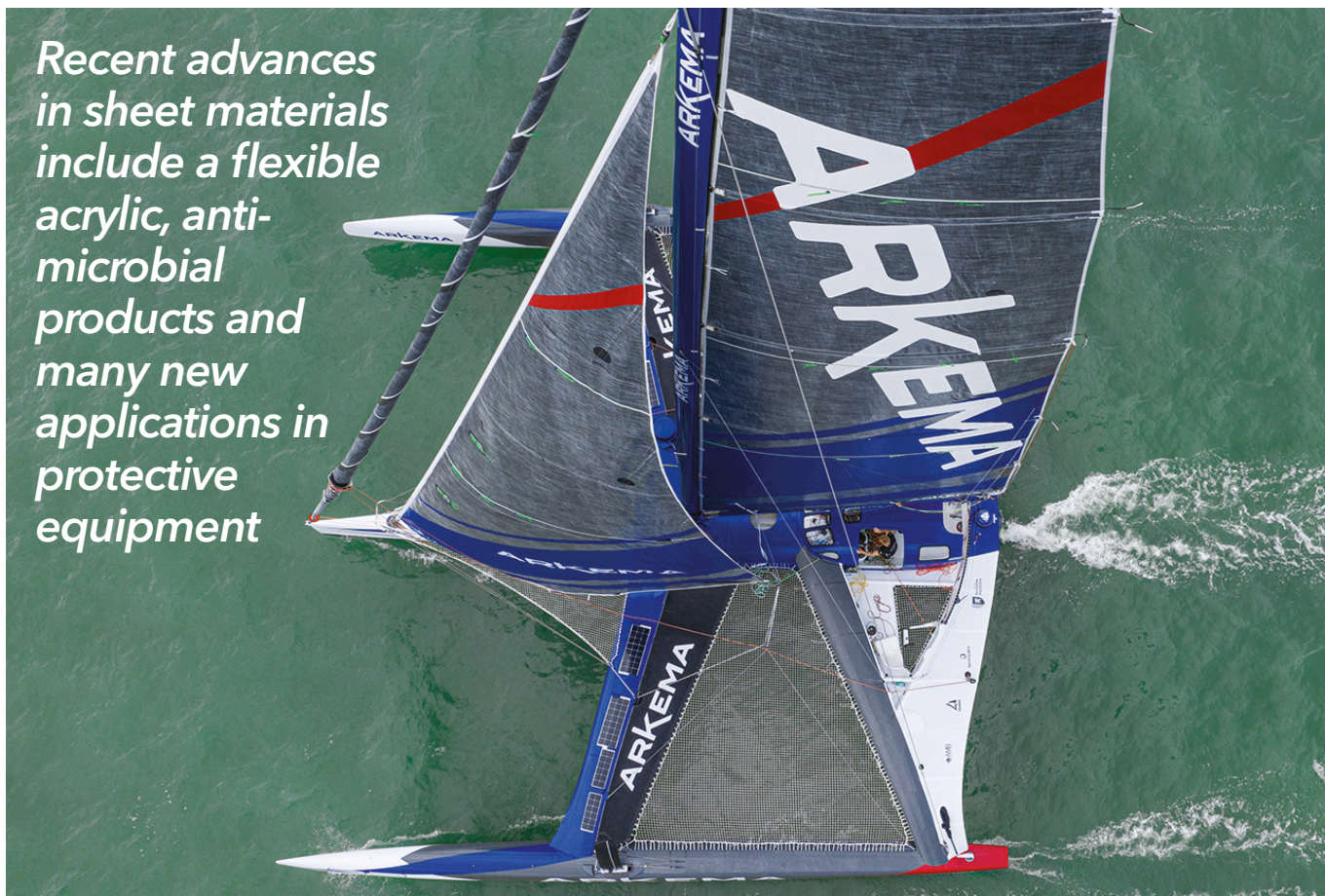
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Recent advances in sheet materials include a flexible acrylic, anti-microbial products and many new applications in protective equipment



Going flat out: advances in plastic sheet materials

Sheet processing is on an upward curve right now – due mainly to the need for personal protective equipment, but other innovations are also coming through.

Altuglas International – part of Arkema – says it has developed the first flexible acrylic sheet, for instance.

ShieldUp Flex gives designers more freedom to shape their 2D pieces and simplifies the manufacturing processes, says the company. An example is seen in the glazing for the Arkema 4 trimaran.

The sheet can be bent manually, without thermoforming. This flexibility has been achieved without the use of plasticisers, and without altering the material's properties. ShieldUp Flex is also chemical- and impact-resistant, making it applicable to projects that require transparency, durability, lightweight, shock resistance and flexibility.

Lalou Roucayrol, who built the Arkema 4 trimaran, was looking for a specific combination of

benefits: high visibility and shock resistance under extreme weather conditions; significant weight reduction; and easy window installation. Eliminating the thermoforming step allowed the designers to manually bend the cut sheet to shape and glue it directly to the boat.

"It was the product we'd been waiting for: reduced weight, better resistance and, above all, flexible implementation without the need for a long and painstaking thermoforming phase," said Roucayrol.

ShieldUp Flex also opens up design possibilities for 2D curved pieces, says the company – including traditional PMMA applications such as vehicle glazing, industrial glazing, signage, lighting, interior architecture and design and Covid-secure protective screens.

Protected shields

US-based **Plaskolite** says that its new Amgard

Main image:
The Arkema 4 trimaran uses flexible acrylic sheet from Altuglas within its design

anti-microbial safety shield is formulated with silver ion technology that prevents the growth of micro-organisms on the surface.

The Coronavirus pandemic has led to widespread use of transparent safety shields in environments such as schools, shops and restaurants. Plaskolite says that its new product – available as either acrylic or polycarbonate sheet – provides an extra line of defence between cleanings.

“The deployment of safety shields is an important part of reopening plans for businesses, schools and institutions,” said Ted Trautman, technology director at Plaskolite. “Amgard protects the sheet against the growth of micro-organisms such as mould and mildew. It delivers the dual benefit of a physical barrier and an anti-microbial technology designed to protect the plastic’s surface.”

A scratch-resistant version of the sheet is available, which is also resistant to cleaning chemicals such as acetone and hydrogen peroxide.

Repelling bacteria

SABIC says that its Lexan Cliniwall AC6200 sheet provides an anti-bacterial and hygienic surface for areas such as hospital interiors.

The launch of the non-chlorinated, non-brominated opaque sheet comes as there is a rising need for infection prevention and sanitation control. Typical applications include hospitals, clinics, homes for the elderly, primary care centres, laboratories and pharmaceutical factories.

When tested over a 24-hour period at 35°C, the sheet showed greater than 99.99% reduction in MRSA and 99.999% reduction in *E. Coli* on its surface.

Right: Primex is ramping up production of its face shields



“The anti-bacterial material provides a layer of protection to interior wall cladding against the spread and multiplication of potential bacteria, making it an excellent choice for patient care and other hygiene-sensitive clinical operations,” said Peter van den Bleek, product manager at SABIC.

Sheet for shields

US-based **Primex Plastics** has begun producing clear plastic sheet for the manufacture of face shields.

In two days – in partnership with local company Reid Health – Primex designed and began making replacement face shields for Reid’s bio helmets, which protect clinical staff. Primex has also developed the stand-alone Primex Protect shield.

“The shield helps medical personnel and others on the front line conserve their critical N95 masks by adding an extra layer of protection,” said Reid.

After news of the development spread, Primex received requests from other hospitals and health systems, and is now on track to make more than 100,000 shields according to Doug Borgsdorf, head of the design and fabrication division of Primex.

Below: Lexan Cliniwall AC6200 sheet provides a hygienic surface for areas such as hospital interiors



Twin-wall for clean air

Sheet from **Simona** has been used in a device that helps to overcome environmental pollution.

In Australia, complaints about odours from industrial premises must be investigated by environmental protection officers. If a complaint is upheld, the company involved must take steps to prevent air pollution.

To deal with these types of cases, Bioaction has developed an air filter system called FiltMod. It is made using black Simona PE 100 twin-wall sheets because of their ease of processing, UV resistance, and high rigidity combined with low weight.

With the help of distributor Plastral, processor Hercules Plastics and Simona’s Technical Service Centre, the sheets are joined using butt welding.

As a result, the sheets are suitable for both large and small systems. Because the sheets are easy to process, the module can be built efficiently with a small fabrication team.

Simona says the benefits of the twin-wall sheet include: high rigidity, strength and break resistance; lighter weight than solid material, due to cavities; and a high level of sound insulation.

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Above:
Simona's PET
sheets,
supplied free
to local firms in
Kirn, Germany,
are covered
with a red
protective film

At the same time, Simona recently donated its transparent Simolux sheets – which are made from PET – to local shops in Kirn.

When used as partitions, they help to cut down on the transmission of the Coronavirus via droplet infection, says the company.

Simona has already donated 90 sheets to Gewerbeinitiative Kirner Land – a local business organisation – and says other shops can pick up sheets free of charge.

Sheet for visors

Northern Ireland-based injection moulder Denroy recently switched part of its production towards personal protective equipment (PPE) – including a face visor made using PET sheet from **Brett Martin**.

It is using 0.5mm Marpet-a FS sheet to make the face shields for health charity HeroShield – which has a supply contract with the National Health Service.

Denroy had initially used surplus, high quality plastic from its own facility, but once order volumes increased it needed a more specialised solution. The most critical part of the visor – the face shield – require high quality plastic sheet that was easy to cut and form, and simple to attach to other components. Denroy also needed a supplier that could reliably deliver high volumes of material.

"We have a long-term partnership with Brett Martin stretching back to 1971," said Gareth Deering, commercial manager at Denroy. "On top of their expertise, the plastic sheets they produce are reliable and adaptable."

Marpet-a FS sheet does not fog up, retains its shape, has strong resistance to scuffs and scrapes and has high chemical resistance. Deering expects

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Denroy to continue making visors for some time.

"We've manufactured over 600,000 visors for the NHS and anticipate this will continue to rise until the end of the year," he said. "We've also been shipping to the USA and Canada, as well as Italy and other countries in Europe."

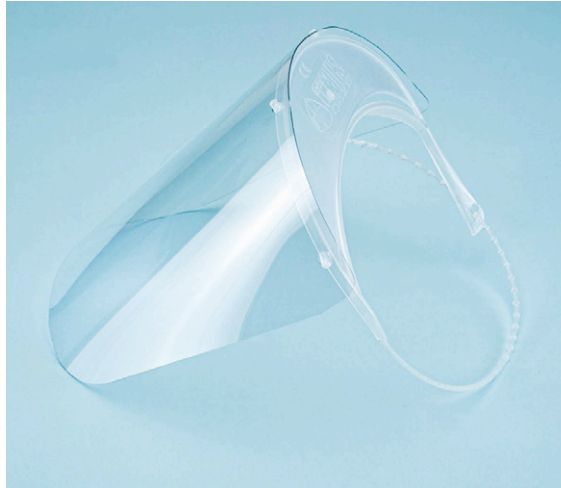
Brett Martin says that, since March, it has dedicated one of its production lines to Marpet-a FS sheet production.

Bulgarian investment

Israel-based **Plazit-Polygal** has invested the equivalent of around US\$6 million on a new extrusion line at its Panchim facility in Bulgaria.

The new facility is expected to increase the company's capacity and energy efficiency in the production of extruded PMMA and polycarbonate solid sheets. The new extrusion line will increase the company's capacity by an additional 7,000 tonnes/year.

The expansion includes the construction of a waste heat recovery system and the introduction and certification of an energy management system according to ISO 50001. These will help to improve energy efficiency, said the company.



Left: Northern Ireland-based Denroy has used Brett Martin's PET sheet to make personal protective equipment

"With the new solid sheet line - the biggest and most advanced line in our company - Panchim has become the largest company in the group," said Amir Abramovich, president and CEO of Plazit-Polygal.

Panchim has a production facility of 75,000 sq m and raises the company's annual capacity for extruded sheet above 24,000 tonnes, making it a leading European extruded sheet manufacturer. The bulk of production is intended for export to the



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Optimising production for PPE sheet

The Coronavirus pandemic has been a huge challenge – but has also created opportunities. Personal protective equipment (PPE) such as face shields – and products such as protective screens – are now big business.

Machinery supplier **Davis-Standard** says that sheet manufacturers need to assess whether their production lines are set up for optimal production.

Firstly, extruders must have

sufficient torque to process the selected resin – or to allow an increase in throughput speed.

Converters should also pay attention to ancillary products, such as melt pumps and dies.

“Since most sheet processes use a combination of regrind and virgin blends with variable bulk density, we recommend using a melt pump,” said the company.

Melt pumps reduce output

pressure variability to the downstream feedblock and die and improve machine direction thickness control.

Dies should ideally be built for the specific resin being processed. General-purpose dies can be used but will “operate with some sacrifice for performance such as the need to adjust die lips more frequently due to resin pressure changes within the die”, said Davis-Standard.

www.davis-standard.com



Existing extruders should be assessed in a number of ways:

- Evaluate motor horsepower and base gear in speed;
- Understand available extruder torque versus required torque for resins to be processed;
- Know the torque rating limit of the existing extruder gearbox (do not exceed the rating);
- Modify belt drive extruder gearboxes by changing the sheave ratio to meet the desired torque and/or gear in speed increase; and,
- Consider whether a direct-coupled motor gearbox requires a gear ratio change.

For new equipment:

- Ensure capabilities are engineered for a range of resins;
- Include extended field range motors;
- Consider vented and plugged extruder barrels for greater flexibility; and,
- Choose a flexible screw design for multiple materials.

European Union countries, but will also be sent as far as Israel, South Africa, Chile, Taiwan, and Tunisia.

Last year, the company expanded production at its plant in Vostok, Russia by adding a solid sheet line – in order to keep up with demand from the local market.

“We intend to expand our production to new polymer types, thus creating a situation in which Plazit-Polygal becomes a one-stop-shop for our customers in Russia,” said Maxim Svintsonnik, vice president of marketing.

At the same time, the company – which has operated for more than 15 years – says it has built up its distribution channels by establishing network of warehouses across the country.

Acrylic increase

Acrylic sheet producer **Rohm** has increased production of its Plexiglas sheet in response to demand for protective screens in shops.

As a result, the company increased production at its site in Weiterstadt, Germany.

Whether installed permanently or in the form of mobile partition walls, Plexiglas is impact resistant, easy to fabricate, and resists yellowing, says the company. Sheet for transparent separator walls is also available in a special version which is scratch-resistant on one side and has increased chemical resistance.

Separate to this, stretched Plexiglas – up to 20mm thickness – now meets the quality specification for the US MIL-P-25690 standard for the aviation industry. In particular, the certification proves the material’s chemical resistance, impact strength (against bird strikes, for example) and optical properties.

The sheets are made and stretched in Weiterstadt. The plant produces sheets up to 5.0 x 3.0m, which is twice the normal current size. Rohm says that stretched PMMA is superior to cast PMMA in

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Above: Dutch sheet supplier DuFor says its partner Cure has begun recycling PET in a 20 kg/hr pilot plant in The Netherlands

areas such as impact resistance and chemical resistance.

"With this successful certification, we are consolidating our position as a leading supplier of aviation materials and a driver of innovation in the sector," said Falk Majert, head of acrylic products at Rohm. "We offer cast and stretched PMMA from a single source. The certified stretched material opens up new design and innovation options - and further growth prospects for customers."

Increased demand

Oman-based **Octal** says it increased PET production by 15% earlier this year, in direct response to increased demand for food and beverage packaging.

Between February and May 2020, the company says it made and delivered 247,000 tonnes of PET sheet and resin. This was 15% higher than for the same period in 2019.

"We realise the vitality of the PET manufacturing industry for the continuity and security of the food supply chain," said Nicholas Barakat, CEO of Octal. "Our proprietary DPET sheet can adapt to more demanding performance requirements, providing a strong base on which to develop new products."

The company says that its D-PET process - which makes sheet directly from PET - offers "superior quality products with waste and cost reduction benefits, increased productivity for thermoformers and environmental advantages".

Octal says it is expanding to new geographical markets, including Latin America and Asia, as global demand for PET continues to increase.

Optimised production

Exolon is currently optimising production of transparent polycarbonate and polyester sheets, due to an increase in demand during the Coronavirus pandemic.

"There has been an increase in demand for transparent sheet material for medical protective barriers such as face shields and partitions, which has prompted us to adapt our production," said Jens Becker, managing director of Exolon. "Due to the increased demand, we have optimised our production lines accordingly."

The company has two production sites, in Belgium and Italy, employing around 250 people. As well as Vivak polyester sheet, it supplies Makrolon polycarbonate sheet - which it acquired earlier this year from Covestro.

Exolon is owned by the Serafin Group, based in Munich, Germany.

Recycled PET

Cure, a company that is developing a "low energy recycling solution for coloured polyester", has - says the project has recently started running a pilot plant.

The company, whose partners include Dutch PET sheet supplier **DuFor**, says the pilot plant - in Emmen in The Netherlands - has a capacity of 20 kg/hr in a continuous process.

"Cure has strong core technology and allows for modular add-on technologies, giving us flexibility to choose the best route depending on the type of polyester waste," said the company.

This year, it intends to test several waste streams and routes with its partners, in order to demonstrate the technology on the way to potential future commercialisation.

It recently won funding from the Dutch government under its DEI+ programme - which is aimed at pilots and demonstration programmes that aim to reduce CO₂ and help the country meet its climate targets.

Since July, Cure has been operating a pilot plant that recycles 20 kg/hr of PET in a continuous process.

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Improved techniques and materials – such as new polyolefin grades – are helping to drive innovation in thin wall packaging

Slimming down: latest in thin wall packaging

The importance of environmental performance is felt in all parts of the plastics industry – most notably in packaging. Packaging producers – and their suppliers – are under constant pressure to improve the ‘green’ credentials of their products, such as by using renewable materials, boosting recyclability or using less material.

Sabir has developed an all-PE packaging film for frozen foods, which offers opportunities for downgauging.

It is based on a mono web TF-BOPE film structure and has a thickness of 20 microns. Such a thin gauge provides a potential packaging material reduction of 35-50% compared to existing blown PE film in this type of application. The reduced thickness helps brand owners and retailers reduce their packaging material consumption. The packaging is recyclable and fits mono-PE recycling streams, says the company. It was developed in collaboration with film suppliers/extruders Ticinoplast and Plastchim-T, and machinery manufacturer Syntegon Technology.

TF-BOPE film, made from the company's LLDPE

BX202 material, offers tear direction, low tear strength and provides easy unidirectional opening. Compared to conventional solutions, it offers better visibility of packaged products due to higher light transmission and lower haze.

The 20-micron film was successfully tested on Syntegon's vertical form, fill and seal machines, which feature the new PHS 2.0 sealing technology. This reduces the amount of clamped film by 25% and increases packaging speed by up to 25%. The TF-BOPE film also requires less cooling time which increases packaging speed. During tests, a constant speed of 130 bags per minute was achieved.

“This new solution allows for more sustainable packaging without any compromise on productivity and consumer convenience,” said Stephan Eltink, business director for PE in Europe at Sabir.

TF-BOPE stands for tenter frame biaxially oriented polyethylene – a PE grade that can run in tenter frame machines traditionally used to make biaxially oriented polypropylene (BOPP) film. TF-BOPE can replace multi material laminates into a mono-PE structure.

Main image:
SABIR's
TF-BOPE film
has been used
to make
20-micron thick
packaging film
for frozen
foods

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PET replacement

Braskem has developed a new grade of polypropylene (PP) that it says can replace PET in consumer packaging applications such as ready meal packaging.

The company says that the PP thermoforming grade, part of its Inspire series, has optical properties that approach PET – as well as thermal properties that exceed those of PET and traditional random copolymer polypropylene.

The new grade is suitable for thermoformed applications that demand a balance of clarity and heat resistance, such as store and restaurant pre-prepared and ready-to-heat meals. The higher heat resistance allows the containers to be used in the dishwasher for continued re-use.

"Inspire resins offer a balance of performance and sustainability with a simplified pellet management solution," said Alexandre Elias, vice president of polyolefins at Braskem America. "They allow thermoformers to use a single pellet for a wide-range of applications that require varying levels of stiffness, clarity or impact – creating a simplified inventory approach. This grade is designed as an ideal solution to replace PET because of its recyclability and unique properties."

Earlier this year, Braskem completed construction of its new PP production line in La Port, Texas in the USA. The new facility has a capacity of over 450,000 tonnes/year of homopolymer, impact copolymer and random copolymers.

Hot meals

The SuperLight container from **Superfos** has been used for the new MakeGusto range of Italian ready



meals for the export market.

SuperLight uses a combination of plastic and cardboard to provide a user-friendly solution for the products where boiling water is added to the ingredients to create a meal. The inner part of the packaging is made of a plastic that withstands the heat, while the cardboard on the outside makes it comfortable to hold. After use, it is easy to separate the cardboard from the plastic for recycling.

"We want to bring the taste and tradition of Italy to countries outside Europe – and make it extremely easy for the end-user to prepare our rice or pasta meals," said Francesco Loconte, product development manager at Antaar&S, which developed the MakeGusto range. "The SuperLight cup from Superfos perfectly supports our ambition."

The range comprises five varieties, such as Pasta Alfredo, all sold in a 400ml SuperLight cup. This size is perfect for the 55g of ingredients. There is no lid, as a plastic film protects the contents before use. The cup allows a fast, smooth process on the filling line. Because it contains no aluminium, this is an

Above: The SuperLight container from Superfos combines a heat-resistant plastic with a cardboard exterior

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Right:
Verstraete's
SuperClear IML
helps to create
a 'no label'
look on
packaging

advantage at the end of the line, where the product is checked by X-ray and a metal detector.

PET modification

Sukano has developed an impact modifier masterbatch for use with PET packaging including films and thermoformed sheet.

The product can be used with cold, flash frozen and room temperature applications. It allows the creation of mono-material PET structures for products such as frozen food trays. It can be used with both virgin and recycled PET.

"With our impact modifier portfolio, customers have a recyclable alternative to replace products made of, for instance, amorphous co-polyester or GAG film structures - while enjoying the benefits that go beyond mechanical properties modification," according to Alessandra Funcia, head of marketing at Sukano.

The product improves durability and toughness, impact resistance and shatter resistance - and allows the use of a greater proportion of RPET in a formulation.

At the same time, there is no loss in transparency, says the company.

Michael Kirch, global head of R&D, added: "It allows cold, flash frozen and room temperature trays to be fully recyclable."

In addition, the company says that its melt enhancer masterbatches make multiple recycling cycles possible. They improve processing stability and mechanical performance, allowing the use of higher proportions of recycle.

"Since different end application require different product performances - and processing technology is not uniform - our specialists designed a portfolio that enables the selection of the most accurate and appropriate chemistry," said the company.



Clear appeal

Verstraete IML has developed an in-mould label from ultra-transparent film - called SuperClear IML - which helps to create a 'no label' look on packaging.

Dutch packaging producer Haval Disposables has used the new label for an on-the-go tomato snacks container. It worked with Verstraete for two years on the development.

"We have years of experience in IML," said Ron Kastermans, product manager of Haval Disposables. "Creating this tomato container was a feat of ingenuity."

During the production process, Haval normally sprays the label itself. For the new tomato container, it sprayed up through a hole in the bottom of the label.

While standard transparent IML labels give a good view of the packaging's contents, the label is still clearly visible -- which slightly diminishes the transparency, says Kasterman.

"Thanks to SuperClear IML, the label is fully integrated into the packaging, and the tomatoes' appearance and colour are an eye-catcher on the shelves," he said. "On top of that, the containers have a tamper evident closure. This guarantees consumers that the product hasn't been opened before, which means that it's fresh."

Jan Van Iseghem, regional sales manager for Verstraete IML, added: "The packaging gives the product a unique look and is also 100 per cent recyclable - a key aspect in terms of the circular economy of plastics."

CLICK ON THE LINKS FOR MORE INFORMATION:

- > www.sabic.com
- > www.braskem.com
- > www.superfos.com
- > www.sukano.com
- > www.verstraete-impl.com

Thin wall conference to run in December



AMI has unveiled the programme for its *Thin Wall Packaging* conference, which takes place on 2-3 December in Cologne, Germany.

Featured companies and organisations include Verstraete IML, PlasticsEurope, Deca, Sabic, Borealis, Braskem, Milliken and Illig.

The conference is relevant to all members of the supply chain including brand owners, retailers, packaging companies, food experts, researchers, test houses, materials and manufacturing experts. As well as delivering quality papers, the conference offers cost-effective networking opportunities.

For more details, contact conference portfolio manager Maud Holbrook on +44 117 314 8111 (maud.holbrook@ami.international), or visit the [conference page](#).

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Building a future: film and sheet in construction

Alongside the concrete and steel, plastics – and especially plastic film – play a key role in the construction sector

Plastic is not typically associated with the construction industry, yet a host of film and sheet products – including housewrap, flooring and packaging – are fundamental to successful construction applications.

Fabrics company **Low & Bonar** has signed a licensing agreement with **EconCore** to use its thermoplastic honeycomb technology in a new type of underlay flooring.

Low & Bonar says that its expertise in performance materials, coupled with EconCore's production process to make lightweight thermoplastic honeycomb sandwich panels, has led to the creation of Colcore underlay – which offers strength and acoustic performance.

The floor underlay product is delivered on a roll, rather than as a rigid panel. The product concept was developed during 2018, with a series of testing, learning and further optimisation. Relevant industry qualification tests were achieved to show that the

product meets and exceeds industry standards.

Colcore Sonic is lightweight and thin but with a high compression strength. It has good sound-proofing and levelling characteristics. The product is also easy to handle, store and install, says the company. It can be used with a range of hard flooring types such as vinyl click systems, flexible vinyl, laminate, hardwood and ceramic flooring.

"Even with the latest generation of levelling compounds, preparing subfloors prior to the installation of vinyl click flooring is time-consuming," said Soon Joo Bovenschen, new technology manager at Low & Bonar. "Unrolling, cutting and positioning this underlay system is all it takes to smooth out uneven surfaces in minutes rather than hours or days."

Testing showed that Colcore reduced impact sound by 20 dB and produced an airborne sound transmission of 57 dB – which the company said was "considered to be a comfortable sound level". ➤

Main image:
A close-up of Low & Bonar's Colcore Sonic shows the combination of honeycomb core and non-woven performance fabric

Right:
Colcore Sonic
 is lightweight
 and can be
 fitted under-
 neath click
 flooring
 systems

Tomasz Czarnecki, COO at EconCore, added:
 "This license agreement is a result of intensive work
 between our companies. We have combined our
 production and material technologies, respective
 know-how and dedication."

Recycling waste

Trioplast of Sweden is taking part of a collabora-
 tive project to develop an efficient collection and
 recycling system for plastic packaging used in the
 construction industry.

The CirEm project was set up in Sweden – ini-
 tially as a feasibility study in 2019 – to determine
 ways to handle high-quality plastic packaging. The
 second stage of the project began in September
 and runs for two years until summer 2022.

Fifteen Swedish companies will now collaborate
 to develop and test an efficient collection and
 recycling system for this packaging.

"We see that plastic packaging creates a lot of
 waste and if we can exert influence – so that old
 plastic packaging can be returned to the manufac-
 turer and become new plastic products – so it will
 be a big step towards a better environment," said
 Henrik Björk, assortment manager at Optimera,
 one of the project partners.

During the project, partners will, among other
 things, carry out a number of fundraisers with
 plastic packaging. The collection points will be
 selected to show a breadth of different workplaces
 and their different challenges.

"The project is timely, as new collection require-
 ments for construction and demolition waste came
 into force on 1 August 2020," said Marianne
 Hedberg, of project partner Byggföretagen. "To
 speed up the sorting of plastic, we must be able to
 show that the material is useful and can be turned
 into new products."

Another recycling project – this time in the USA
 – involves packaging specialist **Berry Global** and
 building products manufacturer **Azek**. Together,
 they will recycle more than 13,000 tonnes of waste
 plastic into usable products.

Berry will provide a stream of mixed, post-indus-
 trial scrap – from its plants across North America –
 to Azek, which will use it to make wood-plastic
 composite (WPC) decking. Azek's portfolio includes
 a number of wood-replacement products.

"This expands our recycling initiatives and
 enables us to increase the overall sustainability of
 our manufacturing operations," said Jesse Singh,
 CEO of Azek.

The deal will help both companies lower the
 environmental impact of their operations.

Tom Salmon, chairman and CEO of Berry Global,



added. "Through continued sustainable partnering
 up and down the plastics supply chain, we are
 further exhibiting the power of plastics to help
 move the world toward a circular economy."

Sandwich capacity

Paneltim, a Belgium-based manufacturer of plastic
 sandwich panels, recently increased capacity after
 the addition of a new welding line.

The new machine is used to weld together
 half-panels with dimensions of 2,600 x 1,000mm. It
 has been designed to optimise safety, quality and
 capacity in order to boost output, said the company.

Pallets of half panels are stacked and processed
 automatically over two welding lines and then
 restacked on a single pallet. The finished panels have
 a high tensile strength and a fixed set thickness.

Each panel is provided with a unique laser code
 and its parameters are logged – which allows 100%
 traceability, says Paneltim.

Recently, the company also installed a new
 shredder at its plant – allowing it to grind its
 leftover panels and re-use the material in produc-
 tion.

"Although we aim to avoid waste in the course
 of our production process, we cannot prevent the
 creation of residues such as excess pieces and
 chips," said the company. "We try to collect as
 much as possible."

The plastic is re-ground to produce the com-
 pany's 'Recy panels'. Paneltim says that, as its
 products are typically made from a single material
 (PP or HDPE), they can be completely recycled.

Flame retardant PET

DuPont Teijin Films has introduced a range of
 clear, flame-retardant polyethylene terephthalate
 (PET) films.

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Above:
Construction sites are commonly covered with durable plastic sheet

Now commercially available from DuPont, Melinex FR32x PET films have achieved UL's VTM-0 flame rating classification, in accordance with ANSI/UL 94 and are halogen-free.

"Our team has succeeded in bringing these novel VTM-0 rated films from R&D to production, and now we can provide cost-effective flame-retardant polyester film solutions to our customers in large quantities," said Scott Gordon, business development manager, DuPont Teijin Films.

Standard PET films are known for their physical durability, chemical resistance, low water absorption and overall reliability at affordable cost. The new Melinex films provide a high fire rating with a very low haze (around 1%). The films are now produced on large assets with a thickness range of 75-175 microns and roll widths up to 1600mm. They can be used in a range of applications including laminate structures for construction.

It's a wrap

At last year's *Housewrap* conference – organised by **AMI**, and held in Florida, USA – delegates saw more examples of how high-quality film can be used in the building and construction sector.

Bill Lippy, CEO of US-based **Fi-Foil**, explained how air barrier film can be used in a wide range of applications. Air barrier film falls within a wider category of reflective products, which in general are used to reduce emittance of heat from a building into the environment. They can be used in a wide range of spaces, from lofts to the building envelope.

"Air leakage can have a detrimental effect on buildings, which can result in increased energy costs," he said.

For this reason, he said that air barriers are a requirement in most building codes – in order to control the unintended movement of air.

Fi-Foil's range of Skyflex air barriers can be used

to prevent air and moisture from penetrating the building envelope – while allowing a controlled level or permeability. Skyflex VT, for instance, uses a polyethylene (PE) mesh – called CLAF – that has a 50% open area. This is thermally laminated to a microporous film.

The laminate is then metallised and coated, for durability and corrosion protection for high vapour-transmitting applications.

"The coating keeps the metal surface from corroding or losing its low emittance properties," said Lippy.

Sticking point

Marysusan Couturier, principal scientist at **GCP Applied Technologies**, explained the difference between mechanically attached and fully adhered housewrap – and the advantages of the latter.

She cited research from Syracuse University and Oak Ridge National Laboratory, which carried out tests on both types of membrane. These were monitored over the course of a year for temperature, moisture and other factors – such as initial and final air leakage.

Membranes were attached to a test wall. The wall with the mechanically attached membrane had at least 450% more air leakage than a membrane that was fully adhered.

She pointed out that a small void will transport 100 times more moisture than can pass through a 4 x 8ft sheet by vapour diffusion.

The issue of air leakage is important because it affects indoor air quality: warm, internal air can accumulate in vulnerable components and cause mould, she said.

A 16-month tests at Syracuse University assessed test walls after 16 months for both types of membrane. Mechanically attached membranes suffered a number of problems, including leaks at the seam tape and window flashing. In comparison, the adhered housewrap showed no lateral air movement – and showed no increase in air leakage over the test period.

CLICK ON THE LINKS FOR MORE INFORMATION:

- www.lowandbonar.com
- www.econcore.com
- www.trioplast.com
- www.berryglobal.com
- www.azekco.com
- www.paneltim.com
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How smart packaging can boost recycling

Two collaborative projects are driving the use of smart packaging - and digital technology - to improve the recycling of plastics packaging

Smart packaging has come a long way over the years - from early examples like tamper evidence, to more recent innovations such as QR codes. Now, a number of projects are using the power of smart packaging to try and improve the recycling process - a key issue within plastics right now.

More than 85 plastics industry companies are involved in a project that assesses whether 'digital watermarks' can improve the sorting and recycling of plastic packaging in the European Union.

The project, dubbed Holy Grail 2.0, is organised by the **European Brands Association** (AIM), and has partners from along the length of the packaging value chain. They include converters such as Avery Dennison, Constantia Flexibles and Mondi and machinery suppliers including Reifenhäuser.

Digital watermarks are hidden codes, no larger than a postage stamp, that cover the surface of consumer packaging - like an invisible barcode. The marks encode a wide range of information such as the manufacturer of the packaging, what types of plastics it uses in its construction, and whether it is for food or non-food use.

Watermark detection

The aim is to determine whether the digital watermark can be detected and decoded by a standard, high resolution camera on a sorting line - once the packaging has reached a waste sorting facility. In addition, can the line use this information to sort packaging into the correct recycling streams? If it can, this would lead to the creation of more accurate sorting streams - and higher-quality recyclates.

As well as acting like a 'recycling passport', digital watermarks could also be used in other



areas such as consumer engagement, supply chain visibility and retail operations, says AIM.

Digital watermarks were first investigated under the New Plastics Economy programme of the Ellen MacArthur Foundation, as a potential way of improving post-consumer recycling. The technology passed a basic proof of concept on a test sorting line. The latest iteration of the project will take place on a greater scale - leading to an industrial pilot to prove the viability of digital watermarks in this area.

"The three key ingredients are innovation, sustainability and digital - which are combined to [work] towards a clean, circular and climate neutral economy," said Michelle Gibbons, director general of AIM.

"Collaboration is the way forward to achieve the EU's circular economy goals."

Graeme Smith, head of product sustainability for flexible packaging and engineered materials at project partner **Mondi**, added: "We believe packaging should be sustainable by design, and see the need to improve the sorting and separation of packaging waste as part of a circular economy. Digital watermarks have the potential to make this a reality." ➤

Main image:
Digital watermarking could help to improve recycling rates for plastic packaging



Above: Polifilm Extrusion will investigate how R-Cycle is applied in the wholesale trade, by watermarking its stretch film

Quality recycling

Reifenhäuser is involved in a similar project within the plastics industry, called **R-Cycle**. This project, in collaboration with machinery manufacturers including Arburg and Bruckner, has already developed an open data platform to aid recycling.

Benedikt Brenken, head of the R-Cycle initiative, said: "With R-Cycle, we can make a valuable contribution to HolyGrail 2.0 by providing a tried-and-tested data platform to collect and store packaging properties behind watermark codes. The key is to define the recycling-relevant data in a global standard and collect this data across the whole value chain."

R-Cycle works by mapping recycling-related data digitally during the production, conversion and filling stages of packaging – and providing this data to third parties. Relevant parameters are entered into a database automatically, using an Internet of Things (IoT) gateway. Films are labelled using invisible marking technology and serialised with identification numbers.

Once packaging has been disposed of by the consumer, it is identified during the recycling process, using its identifying mark. Materials are then sorted into pure fractions by retrieving the recycling data that was previously stored – allowing them to be re-used in the most appropriate applications.

Several pilot projects have already begun, involving raw material suppliers, retailers and independent institutes. The projects focus on developing recyclable and recyclate-containing recipes, marking technologies, and the deployment of the standardised data environment.

Flexible approach

In one project, Reifenhäuser has teamed up with **Comexi** on a project to recycle flexible pouches. It intends to show that using R-Cycle concept can

optimise the process – by storing relevant production data and a clear ID mark on recycled packages.

Ralf Wiechmann, head of film innovation at Reifenhäuser, said: "This is the only way to avoid downcycling these applications and achieve a genuine circular economy for plastic packaging."

The project began by selecting two different film recipes for two different pouch types, both based on a PE-only design – making them easier to recycle than typical PE/PET laminates.

Typically, a sorting plant will scan packaging using NIR sensors, which allows it to sort the material into pre-defined fractions (such as PP or PE). Extra information – such as the contents of the packaging, and details of the printing inks and adhesives used – was usually kept secret – but is now shared along the value chain.

The two pouch types are now marked by an individual, machine-readable ID, so the sorting plant may put them in two different recycling fractions. This helps raise the quality of the final recyclate, allowing it to be used in higher quality products.

"R-Cycle really becomes interesting when current developments – such as de-inking, solvent-based sorting of polyamide in polyolefin packaging, or large-scale chemical recycling – are applied to post-consumer waste," said Wiechmann. "When that happens, R-Cycle will be able to provide special fractions for specific recycling."

A second project involves stretch film producer **Polifilm Extrusion**, which will investigate how R-Cycle is applied in the wholesale trade. Its film is typically used to wrap pallets before they are delivered to wholesalers and retailers.

Polifilm's cast-film line was networked to the R-Cycle data platform, and all recycling-related data was stored during production of the film rolls. Later, during sorting and recycling, this data is retrieved by a mark on the film.

The company is supplying around 150km of stretch film to Metro Gastro, based near Cologne in Germany. In the pilot project, film is recovered separately, and used to make new stretch film.

"This is a major step to complement our activities in the use of recyclate, such as our PCR stretch film," said Hikmet Kalkan, managing director of industrial and agricultural films at Polifilm.

CLICK ON THE LINKS FOR MORE INFORMATION:

- www.aim.be
- www.mondi.com
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MASTERBATCH

Polypropylene concentrate uses non-halogenated flame retardant



US-based compounder Dynamic Modifiers has introduced a flame-retardant polypropylene concentrate/masterbatch.

PAL NH-LS Performance FR is a non-halogenated, non-antimony vapour phase flame retardant concentrate for use in the production of a range of products, including film and thicker gauge extruded parts.

Exposure to flame results in a UL-94 V-2 level of flame-retardant performance in thicker gauge extruded parts and rapidly self-extinguishing behaviour without consuming the test specimen. When used in fibres or tape yarns it meets many of the vertical burn requirements of textile/film flame retardant standards, such as NFPA 701, says the company.

The PP concentrate contributes little to the overall specific gravity of the final product, preserving the lightweight properties characteristic of polyolefins. It is non-toxic, sustainable and yields advantages for brand-owners to gain LEED points in the Green Building market.

The product is also water-repellent, printable and chemically resistant – and can be tailored for specific needs, such as with UV resistance, colour and glass fibres.

Unlike many non-halogenated FR materials, the concentrate does not contain heavily loaded magnesium hydroxide – which can affect mechanical properties.

➤ www.dynamicmodifiers.com

RECYCLING

Yoghurt pouches recycled using pyrolysis

Enval's zero waste to landfill scheme in the UK has gained a new partner – organic dairy brand Yeo Valley Organic – enabling consumers to recycle the company's new Little Yeos yoghurt pouches.

Consumers can now request a free recycling kit from Yeo Valley Organic's website. This will enable them to send the pouch, minus the lid, in a pre-paid envelope

to Enval, which uses pyrolysis to carry out chemical recycling of waste plastics.

Enval's technology separates the plastic and aluminium from the pouches. This will ultimately create a circular process for aluminium recycling, as waste materials will be turned into the building blocks used to manufacture new materials before being reintroduced into the supply chain.

"It's a real vote of confidence to see Yeo Valley Organic joining us," said Carlos Ludlow-Palafox, CEO of Enval.

➤ www.enval.com



LABELS

BOPP label is carbon neutral

Innovia Films has developed Encore C45cn, which it says is the first carbon neutral BOPP label film.

Encore C45cn is ISCC certified and will contribute to reducing carbon footprint and reducing the use of fossil resources, says the company.

"In addition to being carbon neutral, Encore C45cn is a high MD stiffness 45 micron BOPP bubble film for automatic label dispensing performance," said Stephen Weber, key account director for labels at Innovia Films. "This could allow the replacement of standard 50 micron films, giving a further 10% material saving."

➤ www.innoviafilms.com

BOPP

Anti-microbial BOPP film fights a range of bacteria

Cosmo Films of India has developed a novel BOPP-based clear thermal lamination anti-microbial film.

The film is effective against a broad range of bacteria and inhibits germ growth. It also shows positive effect against bacteria including *Staphylococcus aureus* and *Escherichia coli*.

It has an extrusion coated surface with low temperature melting resin, which enables easy lamination of film on paper products by heat and pressure. This technology is safe, affordable and can

be easily replicated into all types of labels, flexible packaging solutions and synthetic paper, says the company.

"Amid the Coronavirus pandemic, we all are searching for ways to stay safe and healthy," said Pankaj Poddar, CEO of Cosmo Films. "Our antimicrobial technology will prove to be effective against a broad range of bacteria."

In addition, Cosmo Films introduced a BOPP-based coated film which slowly releases a fragrance over time.

The film is matte finished

on one side, while other is extrusion-coated for thermal lamination applications. Through initial tests, the films have proven to remain fragrant for more than two months. It is expected that the film would continue to release its fragrance for almost six months. It is available in 24 microns thickness and is suitable for thermal or wet lamination.

The film can be used for applications such as catalogues, book covers, cosmetics packaging for cosmetics and personal care items.

➤ www.cosmofilms.com

STRETCH FILM

Pallet film based on PCR

Trioplast of Sweden has launched of a manual stretch film made from 75% recycled material, of which at least 51% is from post-consumer recycled (PCR) sources.

Magdalena Bengtsson, product manager for pallet stretch film at Trioplast, says the company has long experience of products based on recycled material.

"This gives us a major advantage now that we are transferring this knowledge to more product areas within increasingly advanced applications," she said.

Last year, Trioplast says it was the first company to present a PCR-based agricultural stretch film.

The company offers a number of sustainability concepts, including Triolean (downgauging with sustained or increased performance), Triogreen (products based on renewable raw materials) and Trioloop (products made from recycled plastic).

"Using PCR in a stretch film is a ground-breaking move that is a major step forwards in transitioning transport packaging into a circular economy," said the company.

Trioplast has a patent pending for the use of PCR in its stretch films.

➤ www.trioplast.com

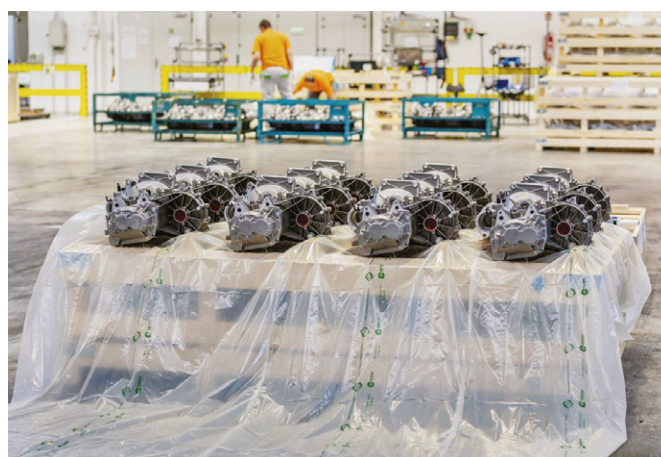
PATENTS

New patent for protective films

Cortec has been awarded another patent in the field of vapour corrosion inhibitor (VCI) films.

The new patent covers Cortec's latest technology, EcoShield VpCI-226, a nitrite-free film that protects metals from corrosion. It follows other patents that Cortec has been awarded for its VCI films with recycled or biodegradable content, and films with fire retardant additives.

Metal parts packaged in EcoShield VpCI-226 receive continuous protection against salt, humidity, condensation, moisture, aggressive



industrial atmospheres and dissimilar metal corrosion. Vapour-phase corrosion inhibitors in the film vapourise and condense on metal surfaces in the enclosed package, protecting exterior as well as

hard-to-reach interior surfaces. It provides protection during storage and shipping, virtually eliminating rusting. It protects multiple metal types, says Cortec.

➤ www.cortecvci.com

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CALENDERING

Five-roll PVC line supplied to pharmaceutical customer

Comerio Ercole of Italy has delivered a five-roll, 2000mm wide PVC calender line to a European producer of calendered materials for pharmaceutical applications.

The installation is complete, and commissioning is expected to start soon. The installation includes a five-roll calender with take-off, embossing and cooling units. All prewarming equipment has been supplied, along with post-calender ancillary devices.

The 'recipes' for the line were finalised in the company's laboratory, where a small PVC calendaring line is used for R&D.

"It is a great advantage



to have a lab calendaring line - with extruder and mixing devices - where process development can be simulated and verified in advance," said Riccardo Comerio, CEO of Comerio Ercole.

Earlier in the year, the company delivered two similar five-roll lines - in widths

of 2400mm - for a pharmaceutical customer in the Far East. The two lines includes a longitudinal stretching unit that is designed to prevent transversal shrinkage of film during stretching phase - as well as an in-line embosser and a thermo-regulated cooling unit.

➤ www.comerco.it

WINDERS

Upgrade for roll pusher

Atlas Converting has made a semi-automated roll pusher system upgrade to its ER610 slitter rewinder.

The floor mounted, rack and pinion electrically driven roll pusher uses a steel arm to transverse the length of the rewind shafts.

Rewind shafts are rotated backwards, to 'unchuck' finished rolls. This saves the operator time, as there is no need to manually unchuck the finished rolls or check that any chucks may be in the chucked (open) condition.

The upgrade helps raise efficiency, says Atlas.

➤ www.atlasconverting.com

RECYCLING

Intelligent cameras to separate waste

Danish researchers are developing a camera-based system that can separate plastic waste according to type.

With a €3 million grant from Innovation Fund Denmark, Aarhus University has teamed up with recycling companies Vestforbrænding, Dansk Affaldsminimering and Plastix to develop technology that could increase the purity of recycled plastic materials. When implemented at plastic recyclers, it could help to increase the use of recycled plastics.

The project, called Re-Plast, aims to recycle plastic to a purity of at least 96% by polymer type - as well as sorting according to unwanted colours and filler materials.

"Different polymers are virtually

impossible to mix," said Mogens Hinge, assistant professor at the department of engineering at Aarhus University, who is heading the project. "For this reason, we want to develop equipment that can separate different plastics according to their specific properties - using three different types of cameras."

This will make it possible to categorise plastic waste according to its exact properties, and then divide it into fractions that are actually usable, she says.

The separation, controlled by artificial intelligence, uses CMOS, hyperspectral and terahertz cameras - which together photograph the properties of the plastic material as it travels along a conveyor-belt system.

A CMOS camera is an ordinary digital camera, as used in smartphones. The hyperspectral camera registers more wavelengths than the human eye, so can read the unique spectral signatures of different plastic types. The terahertz camera registers the refractive index of materials.

Terahertz technology provides a detailed image of the properties of a given plastic, allowing it to characterise material properties very accurately, said the researchers.

"By coupling the spectroscopic signals with chemical composition, we can achieve pure plastic fractions, which can then be recycled," said Hinge.

➤ www.international.au.dk

➤ www.plastixglobal.com

STRETCH FILM

Stretch films with PCR benefit from testing on full scale extrusion lines

Colines has tested a set of stretch films that use up to 60% recycled material.

The tests, in collaboration with ExxonMobil, were run on its AllRollEx extrusion lines.

"We performed high-quality reels, with a wide range of thicknesses and percentages of recycled materials," said Nicola Lombardini, R&D manager at Colines.

The tests took the films up to 400% ultimate pre-stretch value (ultimate strain) on a standard film production.

"Even when using a very high grade of recycled material, the reels offered good optical and mechanical qualities, perfectly suitable for today's new market requirements," said Lombardini. "This is impressive if we consider that we used up to 60% of post-con-



sumer recycled (PCR) material."

He said this was possible because AllRollEx lines are equipped with technology such as the new gel down screw (GDS) and BigMouth in-line refeeding system.

Colines says that the use of PCR – rather than post-industrial recycled (PIR) materials – is a significant step forward.

Eraldo Peccetti, executive president and co-founder of Colines, said: "After having made perfect reels with up to 90% PIR material, we had a further proof of the extreme flexibility of our AllRollEx lines in production."

Dirk Van der Sanden, senior market development lead at ExxonMobil, added: "Experience on developing films with recycled materials is limited, so it is critical to provide advice to customers on how to best combine the capabilities of the production unit with those of our performance polyethylene."

➤ www.colines.it

TESTING

New software allows simplified testing

Chatillon has introduced a new generation of its ForceTest 2.0 force testing software. When combined with a digital force gauge from the Chatillon DF II Series, it gives a flexible force testing system, says the company.

At the same time, it can expand functionalities from the force gauge, while benefiting from live test graphs and data analysis functionality.

ForceTest 2.0 is the latest edition of the software that features an intuitive

user interface to ensure that tension, compression, torque, peel and friction tests are simple to set up, and that test results are accurate and easy to read. Step-by-step, wizard-driven menus guide users through creating test programs, while indicating the progress achieved.

Basic force measurement such as tensile and compression test formats – including pull to break, pull to limit, compress to rupture and compress to

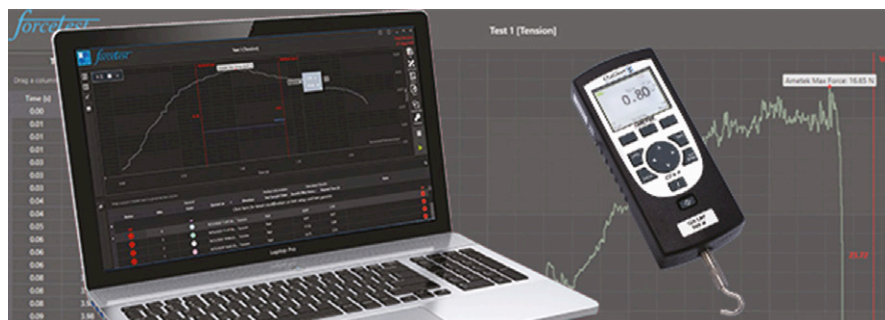
limit – are easily performed. Graphs can be viewed in real time on the screen while the test is running. Upper and lower limits may be set as control limits and captured in the test reports.

To reduce setup time, the software offers commonly used test types to be selected. Once a template is created, it allows users to auto load the last test performed, and open previously saved tests as a template for new tests.

Results can be exported in a range of formats, including PDF, Word and RTF. Custom test report templates are available, and the reports can easily be dropped into local or networked directories.

The software is Windows-based and operates using the Windows 10 operating system. Custom chart colours can easily be set for viewing.

➤ www.ametektest.com





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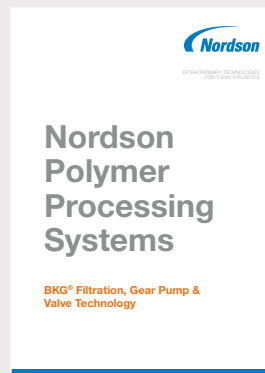
COLINES: BARRIER FILMS



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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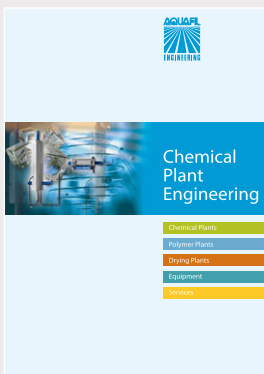
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Cotnyl

Head office:	Buenos Aires, Argentina
President:	Ary Nosovitzky
Founded:	1986
Ownership:	Private
Employees:	Around 100
Turnover:	Around US\$11 million (Source: Dun & Bradstreet)
Profile:	Cotnyl, founded in 1986, has grown into a major producer of plastic packaging in Argentina. Its products include polypropylene (PP) and PET packaging for a range of markets including catering and delivery. Its in-house capabilities include sheet extrusion and thermoforming. It has recently begun making protective masks.
Product lines:	The company's products are used widely across industry. Its thermoformed trays are used for catering (such as microwave trays), food delivery and food presentation. In addition, it offers plates and pots. The company is increasingly offering products with recyclable content - and says it is the first in Argentina to obtain local approval to produce packaging made of 100% recycled PET. The company says it offers around 400 different products across 15 product lines.
Factory location:	Cotnyl makes its products at its main factory in San Martín, an industrial zone within Buenos Aires. It recently invested in a Multi-Rotation System (MRS) extruder from Gneuss, which allows it to process recycled PET gently. This ensures a high degassing and decontamination performance. The material processed on the line has received food contact approval. The company has a partner in Chile - Food Pack - through which it sells its products.

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

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

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Screenchangers/melt filtration
Foamed sheet technologies
Static control/web cleaning
Polyolefin additives

January/February 2021

Bioplastics
Materials testing/quality control
Agricultural film
Medical materials and applications

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

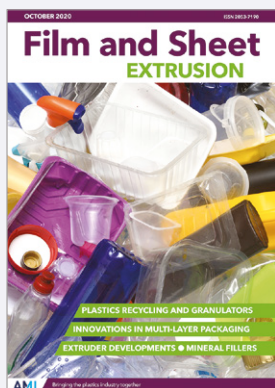
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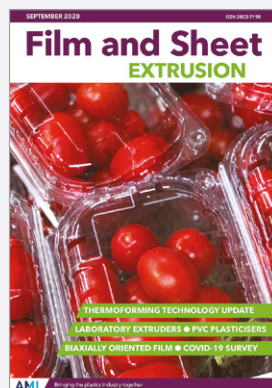
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Film and Sheet October 2020

The October edition of Film and Sheet Extrusion looks at how machinery and materials suppliers are helping film and sheet producers include more recyclate in their products. Plus articles on the latest extrusion lines, mineral fillers and more.

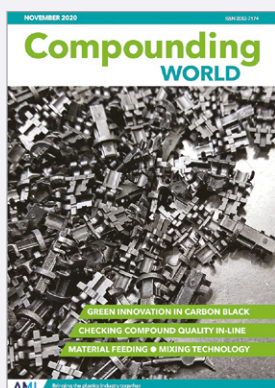
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Compounding World November 2020

The November issue of Compounding World looks at how innovations are providing sustainability solutions in carbon black. Other features focus on checking compound quality in-line, developments in material feeding and the latest in mixing technology.

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Plastics Recycling World September/October 2020

The September/October 2020 issue of Plastics Recycling World magazine explores how better processing and smarter design is improving rigid plastics recycling, plus a review of the latest innovations in sorting technology and extruders for re-compounding.

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Pipe and Profile October 2020

The October 2020 edition of Pipe and Profile Extrusion magazine explores the latest developments in oriented PVC pipes (PVC-O). It also takes a look at some new applications of pipe inspection technology and materials handling equipment.

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The October edition of Injection World magazine delves into the new smart technologies emerging in injection machine control. It also explores some innovative surface decoration concepts and reviews developments in plastics for the fast growing e-mobility sector.

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GLOBAL EXHIBITION GUIDE

2020	2-4 December	Plastic Expo, Tokyo, Japan	www.plas.jp/en-gb.html
	2-5 December	Plasteurasia, Istanbul, Turkey	www.plasteurasia.com/en
2021	25 February-3 March	Interpack, Dusseldorf, Germany	www.interpack.com
	9-11 March	Plastimagen, Mexico City, Mexico	www.plastimagen.com.mx
	7-9 April	Plastics Printing Packaging, Dar-es-Salaam, Tanzania	www.expogr.com/tanzania/pppexpo
	13-16 April	Chinaplas, Shenzhen, China	www.chinaplasonline.com
	4-7 May	Plast 2021, Milan, Italy	www.plastonline.org/en
	17-21 May	NPE 2021, Orlando, USA	www.npe.org
	1-2 June	Plastics Extrusion World Expo Europe	https://eu.extrusion-expo.com
	15-18 June	FIP, Lyon, France	www.f-i-p.com
	22-25 June	Colombiaplast	www.colombiaplast.org
	29 June-1 July	Interplas, Birmingham, UK	www.interplasuk.com
	14-18 September	Equiplast, Barcelona, Spain	www.equiplast.com
	12-16 October	Fakuma, Friedrichshafen, Germany	www.fakuma-messe.de
	3-4 November	Plastics Extrusion World Expo USA	https://na.extrusion-expo.com
	15-18 November	Arabplast, Dubai, UAE NEW DATE	www.arabplast.info
	9-11 December	Plast Print Pack West Africa, Accra, Ghana	www.ppp-westafrica.com

AMI CONFERENCES

3-4 November 2020	Chemical Recycling Europe VIRTUAL CONFERENCE
2-3 December 2020	Thin Wall Packaging Europe, Nuremberg, Germany
2-4 February 2021	Polyethylene Films North America, Coral Springs, USA
4-5 March 2021	Chemical Recycling North America, Houston, USA
23-24 March 2021	Specialty Packaging Films Asia, Bangkok, Thailand
13-14 April 2021	Breathable Films Europe, Berlin, Germany
2-4 June 2021	Plastic Pouches Europe, Barcelona, Spain
8-10 June 2021	Stretch & Shrink Film Europe, Barcelona, Spain

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

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WORLD EXPO

POLYMER TESTING
WORLD EXPO

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WORLD EXPO

COMPOUNDING
WORLD EXPO

3 - 4 November, 2021
CLEVELAND, OHIO

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