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Germany will start collection of perforated film later this year

IK, the German association for plastics packaging and films, says that its ERDE initiative will begin collecting perforated films later this year.

The films are used in the cultivation of crops such as strawberries, lettuce and early potatoes. Farmers will be able to return the films to ERDE collection points across Germany. The collected film will be mechanically recycling.

The scheme was agreed between suppliers of perforated film to the German market – RKW Agri of Germany and Sotrafa from Spain – ERDE management and ERDE's system operator RIGK.

"We are pleased we can now offer our perforated film customers an attractive disposal concept under the ERDE umbrella, which recovers the valuable raw materials via recycling," said Stefan Kwiatkista, sales and business development manager at RKW Agri

ERDE already collects silage and stretch films, bale nets, baler twine and asparagus film. Farmers will be able to deliver pre-cleaned perforated films to ERDE collection points or arrange for an on-site collection. Perforated film is the second film for special crops – along with asparagus film – in the scheme.

The latest addition to the scheme came after testing results from last year. Boris Emmel of RIGK said: "In a pilot project, we proved that the problem of sand and organic residues sticking to perforated films could be sufficiently solved via pre-cleaning by the farmer and post-cleaning by the recycler."

› **https://kunststoffverpackungen.de/en/**

SI plans to boost capacity

Additives manufacturer SI Group is to invest more than US$50 million across three manufacturing sites in North America, to boost antioxidant capacity.

The additives are used in segments such as food packaging, automotive and construction.

"This expansion plan is a direct result of our efforts on growth and responding to our customers' needs," said Chuck Reardon, VP for plastics solutions.

The new capacity is expected to come online in the second half of 2022. The projects are expected to create short-term construction jobs, followed by permanent manufacturing jobs once construction is complete.

› **www.siigroup.com**

European demand steady for single-ply membranes

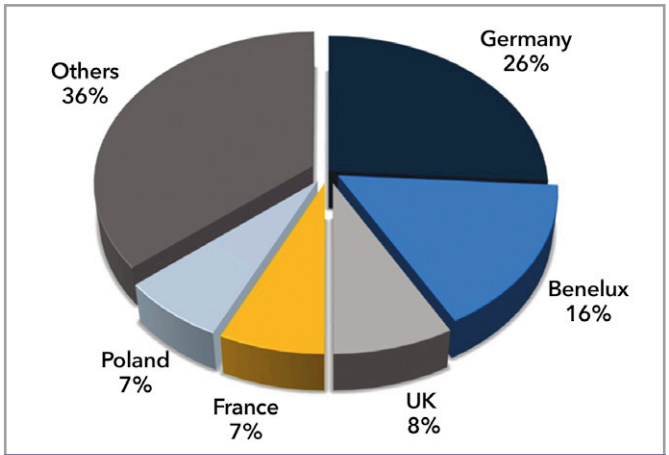
European demand for single-ply roofing membranes was sustained by strong demand from Germany in 2020.

According to a study from AMI, demand for roofing materials dropped sharply in early 2020 before recovering strongly – ending the year only slightly lower than 2019, as measured by demand for polymeric membranes.

Although roofing membrane demand fell in France, Italy and the UK, this was offset by growth in Germany.

"While materials are usually selected for their ability to meet long-term performance criteria, in 2020 the key parameter was ease of installation," said Sylvia Tabero, the report's author.

The report predicts that single-ply roofing membranes will gain market share because they offer better durability and aesthetics, plus easier installation and re-roofing capability.



The market for single-ply membranes iin Europe 2020
Source: AMI

Leading specialist suppliers of single ply membranes in Europe include Carlisle, Firestone Building Products, Protan, Renolit and Sika.

Several large bitumen membrane producers – such as Bauder, BMI, IKO, Mapei and Soprema – also make single ply membranes, having entered the market either via acquisition or greenfield investment.

■ *The European Market for Single Ply Membranes* is a multi-client research report. For further information, contact John Nash (**john.nash@ami.international**) on +44 117 924 9442.

› **www.ami.international**

Q1 demand for Italian machinery increases

Italian plastics machinery manufacturers have seen double-digit growth in orders and turnover for the first quarter of this year, compared to the same period in 2020.

Trade association Amaplast said that sales rose by 12 percentage points in the quarter, thanks mainly to a rise in demand for replacement parts in the domestic market (which was up 16%). At the same time, export sales rose 10% in the period.

Orders for new machinery and systems rose by 64%, again due largely to domestic demand and investment incentives. Export orders also rose, but by a more modest 8%.

"The first quarter of this year confirms our early forecasts," said Mario Maggiani, director or Amaplast.

Amaplast is optimistic for the second quarter, especially for exports – with demand forecast to rise by 18% and sales by more than 50%. Orders for the period are expected to rise by 4%.

However, he said the outlook was not "free of uncertainties and concerns" – citing political and commercial tensions, a rise in raw material and transportation costs, and ongoing spikes in Coronavirus infections.

"We are unlikely to see a return to pre-crisis levels this year, but the momentum we have built up has given many companies greater optimism," said Maggiani.

› **www.amaplast.org**

Spartech gets a new owner

US-based film and sheet extruder Spartech has changed hands – after Nautic Partners sold its majority share to The Jordan Company (TJC).

Both TJC and Nautic are private equity firms. Nautic will remain a minority shareholder in Spartech.

Spartech is a custom manufacturer of acrylics and other engineered extruded plastics. Its products include cast and extruded sheet, speciality film laminates and thermoformed packaging. It has a network of 14 plants across North America.

› **www.spartech.com**
› **www.nautic.com**
› **www.thejordancompany.com**

Cosmo results rise by 4%

India-based Cosmo Films says it enjoyed higher sales and profits in its latest set of results.

The company reported a sales increase of around 4% in its latest financial year, to reach around INR23bn (US$423m). EBITDA rose more than 50% to around INR4bn (US$80m).

Results in the final quarter of the year were stronger than the previous three quarters, driven by continued growth of speciality films in both domestic and overseas markets. In this period, sales rose 28% and EBITDA grew by 62%.

"Speciality films sales have grown over the last three years, and their growth this year surpassed 20%," said Pankaj Poddar, CEO of Cosmo Films.

› **www.cosmofilms.com**

RKW converts to green power in W. Europe

Film manufacturer RKW says it has converted all its plants in western Europe to green electricity.

The company recently converted four plants in France and Belgium to clean energy. This follows a similar move at its German plants.

It estimates this will save around 100,000 tonnes/year of carbon dioxide. Compared to the electricity used at its 18 plants worldwide, this is a reduction of more than 60%, it says.

IMAGE: RKW

RKW has begun using green energy at all its west European production plants

"This is an important contribution to protect the climate – but there is so much more we want to do," said Harald Biederbick, CEO of RKW.

In the future, the company plans to convert more production sites to green electricity – while also focusing on efficiency measures.

"Every kilowatt hour saved helps protect the environment and reduces costs," said Biederbick – citing examples such as LED lighting in production halls and energy-efficient motors.

› **www.rkw-group.com**

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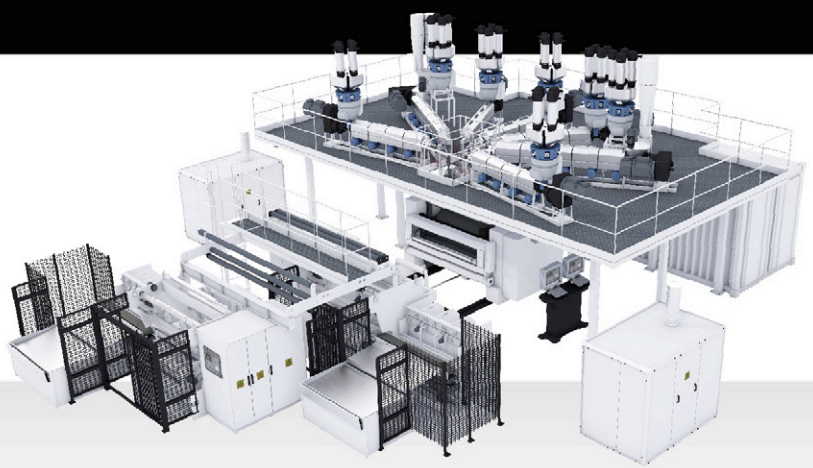

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Europe missed 2020 PVC recycling target 'due to Covid'

The impact of the Coronavirus pandemic on the European recycling sector caused VinylPlus to miss its final target on PVC recycling.

The organisation set a voluntary target to recycle 800,000 tonnes/year of PVC by last year. It fell just short of its final target in 2019 – but slipped further behind in 2020 due to the shutdown of recycling plants. The amount of PVC recycled and re-used in 2020 was around 730,000 tonnes – a decline from the 771,000 tonnes reported for 2019.

"The Covid-19 pandemic provoked severe market disruption during the first half of 2020," said Brigitte Dero, managing director of VinylPlus. "Recycling operations decreased in Europe, as many companies were forced into lockdown."

Although the situation improved in the second part of the year, "a complete recovery from the first wave of Covid-19 was not possible", she said.

"In view of these circumstances, PVC waste recycling within the VinylPlus framework still reached 731,461 tonnes – above 91% of the programme's 2020 target," said Dero.

Window profiles account for around half of all recycled PVC in Europe – but recycling volumes here fell by 3% (equivalent to around 10,000 tonnes) last year. Similarly, cable recycling volumes were down by around 20% (around 20,000 tonnes). In contrast, recycling of flexible PVC and film was almost unaffected between 2019 and 2020.

VinylPlus has now set two new targets: to recycle 900,000 tonnes/year of PVC by 2025, and 1m tonnes/year by 2030.

"These targets are still realistic – but there are some legal uncertainties that might affect the results," said Dero.

IMAGE: VINYLPLUS

Dero: "The pandemic provoked severe market disruption during the first half of 2020"

As an example, she points to the implications of the Basel Convention amendments – which "pose significant challenges for the movement of PVC into and out of the UK". Another example is the restriction of lead in recycled PVC: the EU Commission has still not decided on a way forward, which is causing ongoing uncertainty.

When it set its original goal to recycle 800,000 tonnes/year of PVC, VinylPlus also committed to find ways to recycle 100,000 tonnes/year of 'difficult to recycle' plastics – but soon dropped the target.

However, it says that new technologies may help it to make progress here – such as with its Oreade and Thermovinyl processes.

"The scale-up of chemical recycling technologies still requires a good deal of innovation and solid R&D work," said Dero. "The progress in all these technologies in the next decade will certainly enable recycling of more 'difficult' PVC waste."

On a positive note, VinylPlus says that the recycling network is now largely back to normal levels of operation, with recyclers of both flexible and rigid PVC "optimistic".

› **www.vinylplus.eu**

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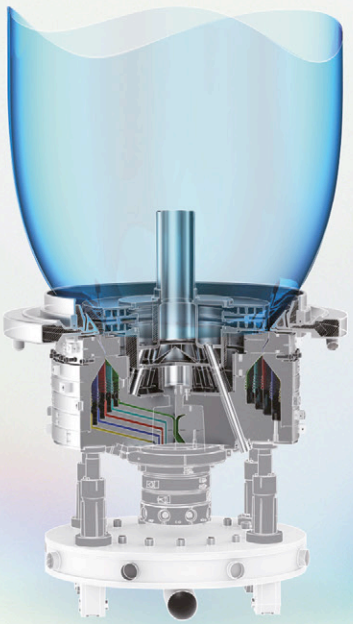

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Italian machinery firm accused of tax evasion

Italy's financial authority Guardia di Finanza (GdF) said on 20 May it had implemented a "preventative seizure" on movable and immovable assets worth more than €9 million related to a plastics machinery maker based in Varese as part of a tax evasion investigation.

In a statement, GdF alleged the company (which it did not identify) had, with the assistance of tax consultants also under investigation, used companies located in the UK and the British Virgin Islands to move revenues to offshore accounts.

It claims more than €9.5m of tax was avoided over the period from 2010 to 2018.

Italy's La Repubblica newspaper has identified the plastics machinery company as Omipa, a family-owned specialist in solid and hollow profile sheet systems based at Morazzone in Varese.

Omipa managing director Fabio Cazzani told *Film and Sheet Extrusion* on 28 May that the company had not received legal notification of any action being taken against it so was unable to provide clarification or further detail.

He said Omipa's business activity remains "solid as always".

› **www.omipa-extrusion.com**

IMAGE: WM THERMOFORMING

Forty years of forming

WM Thermoforming Machines recently celebrated its 40th anniversary. The Swiss company starting using 2D CAD systems in the mid-1980s – but upgraded to 3D CAD in 2003.

Not long after, in 2005, it launched its first machine with an in-mould steel rule cutting system. Before this, the company had produced an early all-electric machine.

"We were not the first, but it is notable that we built a fully electric machine as early as 1994," said Luca Oliverio, sales director at WM.

More recently, the company developed its Twist range and Flex 92, which allow mounting of competitor moulds.

› **www.wm-thermoforming.com**

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Fresh prints: advances in printing technology

Developments in printing for extruded film and sheet range from high-speed gravure and offset machines to digital presses that can change print jobs quickly for short-run products

IMAGE: W&H

Main image: US-based StarPak has become W&H's largest Vistaflex customer, having recently installed a new press

The rise of plastic packaging – especially for food – has led to a parallel advance in package decoration. Brand owners demand sophisticated packaging designs – and the latest printing technologies help to deliver that at industrial scale.

Windmöller & Hölscher says it is breaking new ground in the gravure market with its updated Heliostar II press – which runs at production speeds of up to 600 m/min.

Its overall performance has been increased by improved production stability and control even at top speeds, says the company.

Production stability and overall control – even at high speed – is now possible thanks to the installation of a new sensor tracking system and the use of Supergrip idler rollers. The sensor system ensures fast register control – which is no longer pneumatically controlled but motorised, to ensure a faster response to material movements in the press. With the Supergrip idler roller, W&H has developed a technology that guides the material through the machine in a more stable manner.

The new gravure printing press is also more highly automated, with simple, intuitive machine operation and handling guaranteed by the central Procontrol panel – with direct access to all machine functions and quality parameters. All production parameters can be recorded and used for further downstream processes via W&H's Ruby IoT system.

The Heliostar II series is ideal for printing MDO-PE films, says the company, and includes two machine types. Heliostar II S is flexible and can be configured for all packaging films and laminates – as well as special customer requirements. Heliostar II A is positioned in the market with up to 10 printing units for the core area of flexible packaging.

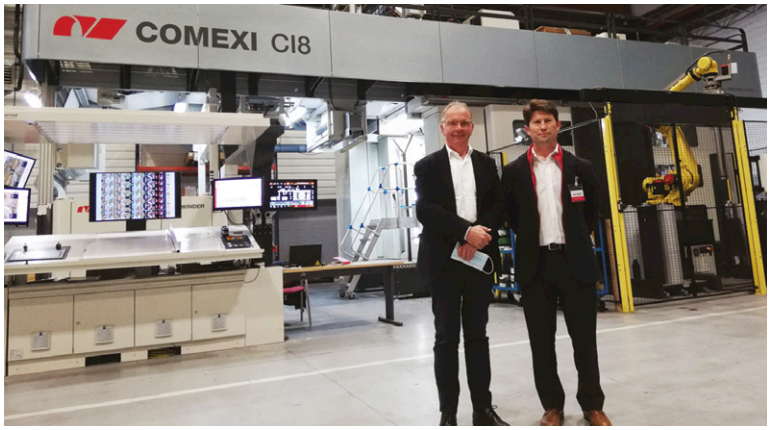
New installations

W&H has also reported two successes in North America – with new installations of printing machinery.

Firstly, Houston-based StarPak is boosting capacity with three new presses (one Vistaflex and two Miraflex II), as well as a Varex II blown film line. The 67in, 10-colour Vistaflex press is up and running – making StarPak W&H's largest Vistaflex customer worldwide. The company has also ordered two 52in, 10-colour Miraflex II presses, which will be operational later this year along with the 134in, five-layer Varex II.

As well as high speed, benefits of Vistaflex include the ability to prepare and store up to five additional jobs while the press is running. Line

IMAGE: COMEXI



Above: Jiménez Godoy has bought a second offset printing machine from Comexi

speeds can reach 2,625 ft/min. The Miraflex II range is capable of speeds of up to 2,000 ft./min. One Miraflex II will be equipped with an in-line flexo station.

In addition, it has installed a Miraflex II press at Millennium Flexible Packaging of Canada. The 52in, eight-colour press is the company's first machine from W&H and has been operational since November 2020.

"We can now offer even higher quality standards and faster turnaround times, which is essential for the increasing demands of the food packaging industry," said Zaid Kassab, VP of operations at Millennium.

Second installation

Spanish flexible packaging company **Jiménez Godoy** has bought a second Comexi Offset CI8 machine from **Comexi**.

The machine will be installed at the company's headquarters in Murcia in southern Spain.

"The acquisition of this second offset press will allow us to increase production volume and offer our clients productive security," said Francisco Jiménez, managing director of Jiménez Godoy.

The press combines the advantages of offset variable size printing with central drum technology. It is ideal for short and medium size runs, embraces the demand of time to market and printing quality, reduces operative cost, and has less of an environmental impact, says Comexi.

It also has faster changeover times than other conventional technologies. Furthermore, the The CI8 provides maximum flexibility through the combination of multiple SKUs within the same print job, which reduces changes and waste.

Printing is done without solvents and frontal printing, with electron beam (EB) protective varnishes. This allows for the replacement of laminated products, or a reduction in the number of layers due to the chemical, thermal and scratch resistance of EB lacquers. The EB curing system consumes low energy and provides high productivity, with low migration inks and low odour.

"Comexi's central drum offset printing allows to be faster, regarding both pre-press and job changeover," said Felip Ferrer, offset brand manager of Comexi's printing division. "The cost of pre-press is lower than other conventional printing technologies, as a new job can be executed in less than two hours – and an entire set of seven plates accomplished in under 20 minutes."

Printing validation

Flexible film manufacturer **Polysack** has validated its products for printing with HP Indigo digital presses.

Its recyclable film – called Pack'N'Cycle – can be used to make products such as stand-up pouches, films and shrink labels

"The ability to combine our recyclable film with HP Indigo's printing capabilities allows businesses to create packaging that fits their brand while remaining environmentally conscious," said Yanir Aharonson, CEO of Polysack.

Printela, a flexible packaging converter based in Lithuania, has chosen Polysack's recyclable film combined with HP Indigo's digital printing press to create customised packaging.

"By using Pack'N'Cycle films – an efficient replacement for polyester – our HP Indigo digital pouch factory efficiently produces different recyclable pouches consistently," said Valdas Buksnys, general manager of Printela.

Yair Gellis, head of flexible packaging development at HP Indigo, added: "The HP Indigo digital printing solution for flexible packaging offers brands sustainability advantages including lower waste."

Printed lidding

US-based **Tekni-Plex** has invested around US$2 million in a new narrow web, flexographic press to meet demand for printed lidding for large medical devices.

The press, which is 17in wide, is located at the company's facility in Ashland, Massachusetts. It includes a web cleaner for the base material and an inline vision system to ensure that printing meets

IMAGE: POLYSACK

Right: Printela has created customised packaging using Polysack film with HP Indigo's digital printing press

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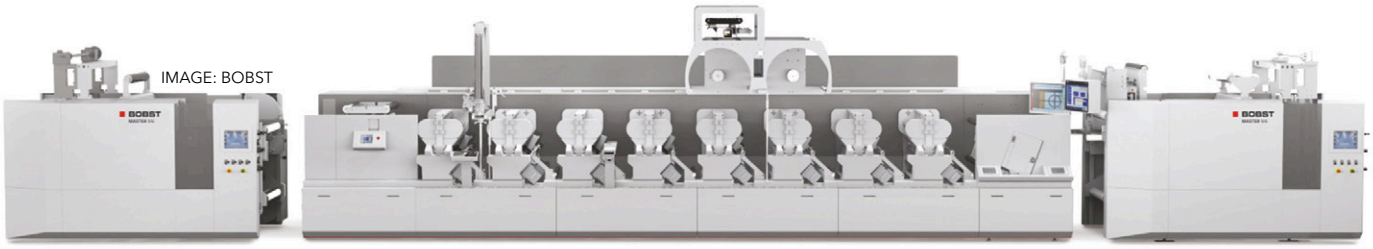


Above: German flexpack manufacturer Derschlag recently installed a flexographic press from Bobst

stringent medical device requirements. It also features 360-degree registration adjustment. Controlled ink densities produce high quality dots in a simple and repeatable fashion.

Tekni-Plex says the new press will significantly reduce lead times, delivering standard materials in two-to-four weeks. This will help medical device manufacturers reach the market more quickly, it says. The four-color press will be used to die-cut coated lidding, using proprietary heat seal coating formulations.

"With more emphasis on minimally invasive procedures, such as laparoscopies, medical device manufacturers are designing larger devices to accommodate the latest practices," said Timm Goodmanson, vice president of the flexible division at Tekni-Plex. "These require larger thermoformed trays and lidding to contain them. Our investment will handle these demanding applications."

Family favourite

Derschlag, a family-owned packaging manufacturer based in Germany, has invested in a nine-colour flexographic press from **Bobst**.

It says that the Master M6 inline press forms part of a large expansion at the company's site in Bad Berleburg, in North Rhine-Westphalia. In addition to the new press, the company installed additional die-cutting and converting machinery. By the end of this year, the company says its two production sites will cover a combined area over 8,000 sq m of factory facilities and warehousing.

"This investment in the latest equipment is necessary in order to keep up with growth and changing demands," said Michael Scholz Jr, managing partner at the company.

To meet demands for more short and mid-size orders – and increased sustainability – the company chose the Master M6 UV flexo press, which is designed for high flexibility in the production of food packaging applications.

The press handles all types of substrates for labels and flexible packaging and can be fitted with multiple printing and inline finishing processes – including screen and gravure printing. When configured for flexible packaging, unsupported films from 12-micron PET and 18-micron BOPP can be printed, as well as PVC shrink films.

"For our specific needs, we found that Bobst offered the best solution with regard to the technical possibilities," said Scholz. "The Master M6 was the right choice because of the reduced set-up time and the possibility to print a wider range of different substrates."

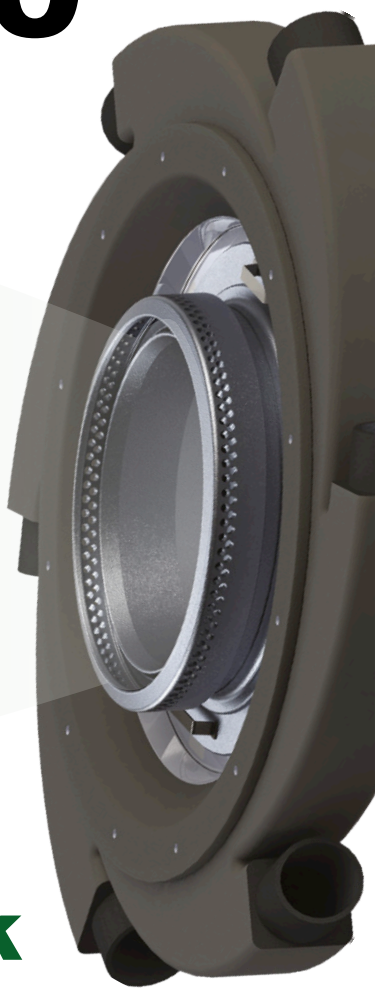
The machine can be equipped with DigiFlexo registration and pressure adjustment for non-stop production through a fully digitalised press operation. Job changeovers can be performed in less than one minute with only a small amount of waste.

"It sets a new benchmark for us and gives us extended capabilities," said Scholz.

Online demo

Earlier this year, Bobst hosted a gravure printing and laminating virtual event from Italy –including a

MacroCool D10



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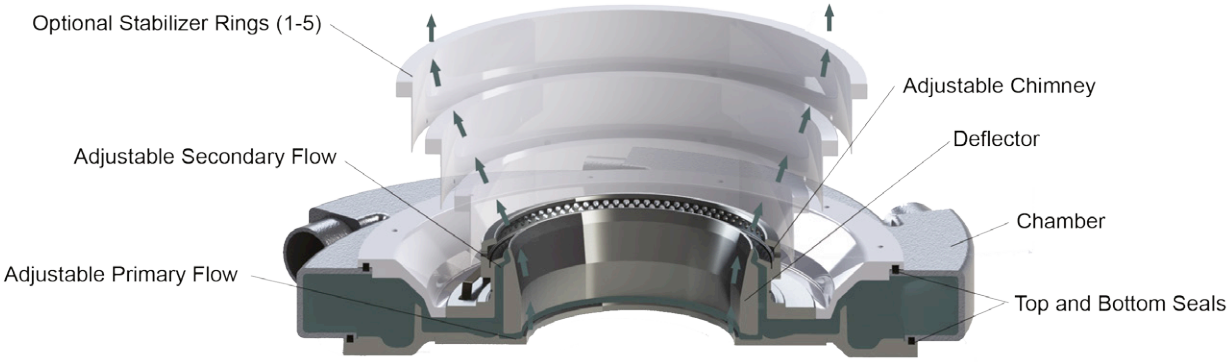

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Right: Mondi has boosted production capacity in Russia

demonstration of its multi-technology Nova D 800 laminator. The Nova D 800 demonstrated a lamination job running at 400 m/min coating solvent-based adhesive directly on an 8-micron aluminium foil substrate.

Bobst said the PET-Alu foil substrate combination showed that its compact laminator could handle complex applications – such as retort pouches – used in the food, beverage, cosmetic and pharma segments. Features of the Nova D 800 include the availability of a Bobst flexo trolley for high-speed coating of solvent-based adhesive with high solid content. The machine is also available with automatic winders.

Sachet printing

V-Shapes, which manufactures single-dose sachets that can be opened with one hand, has introduced a reel-to-reel printer for its products.

The VS Dflex printer uses Memjet's DuraFlex multi-colour A3+ printhead and water-based pigment inks and the ColorGate production server to deliver printing at 1600 dpi at up to 24.7m/min (90 ft/min).

This makes it easy to print flexible packaging onsite, eliminating the need to outsource printing or tie up other printing equipment in the plant – especially for shorter runs of customised sachets.

VS Dflex inks were designed for food packaging and specially formulated for quick drying after printing, allowing the substrate to be ready for use with the V-Shapes Alpha fill and seal packaging/converting machine. The VS Dflex touchscreen interface makes it easy for operators to manage the printing process, with minimal training required.

"We have always wanted to make high-quality printing available for our packaging and converting machines, to meet customer demand for faster time to market, personalisation and more," said Christian Burattini, CEO of V-Shapes.

Earlier this year, V-Shapes integrated a TrojanLabel T2 high-volume digital inkjet press with its own Prime packaging machine.

Below: V-Shapes has introduced a reel-to-reel printer, allowing easy printing on its sachets

This allows high quality 1600 dpi in-line printing on sachets. The TrojanLabel T2 digital inkjet printer prints at up to 12 in/sec with Memjet printheads.

"Beginning with a roll of substrate, the V-Shapes vertically integrated solution produces unit dose packaging with high-quality branded content on the upper or front layer," said Burattini.

Russia expansion

Packaging specialist **Mondi** last year added new capacity at two of its plants in Russia.

The company has installed a new machine at its Pereslavl facility, which will help it to expand printing capacity. This will allow it to offer both flexographic and rotogravure printing to customers.

At the same time, Mondi installed a nine-layer co-extrusion line at its plant in Aramil, to produce high-barrier films. The company will now offer a range from mono-materials to multi-layer high-barrier laminates. This will help it to meet rising demand for sustainable packaging for the confectionery, food and dry and wet pet food markets.

"Russia is an important region for Mondi, which is why we have integrated the supply between both Aramil and Pereslavl, now called Consumer Flexibles Russia," said Peter Orisich, CEO of Mondi Flexible Packaging. "Offering flexibility as well as products that are sustainable by design are a top priority for this region."

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Cool running: air ring advances

Air rings are a vital supporting technology to the blown film die – helping to ensure everything from bubble stability to overall productivity

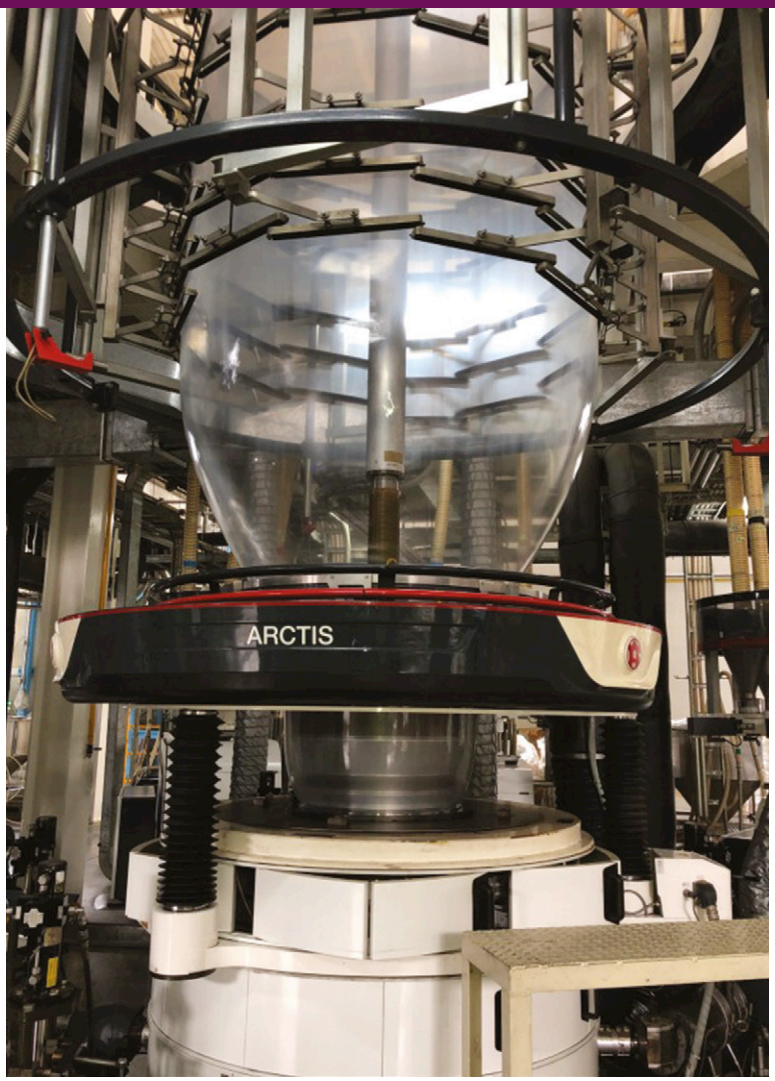

IMAGE: W&H

Main image: Retrofitting a blown film line with an XP cooling ring from W&H helped to raise output

Blown film extrusion is used extensively to make everything from garbage bags to agricultural film. The die is a crucial element in creating the film, but one piece of technology inextricably linked to it – the air ring – is also vital to production efficiency and final film quality.

PT Plasindo Lestari – an Indonesian producer of films for various applications, recently retrofitted a five-layer Varex blown film line from **Windmöller & Hölscher** with an XP cooling ring.

The company, based in Jakarta, makes high-end films for food, beverage, home care and personal care packaging. The cooling ring retrofit immediately led to a significant increase in output, it said.

"We have already used W&H's expertise to upgrade one of our non-W&H blown film lines with a W&H P2K profile-controlled air ring," said Timothy Cahyadi, COO of PT Plasindo Lestari. "This turned out very well for our production."

The company also runs a number of quite new Varex lines, and W&H suggested it could raise production on one of them with a similar refit.

"W&H were pretty sure they could make this work – but before we bought the upgrade we challenged them to come into the plant and prove it first," he said.

A W&H technician fine-tuned the line, to establish an output benchmark.

After restarting it with the new air ring – an Arctis XP – running the same structure, an improvement in bubble stability was seen – making it clear that output could be increased further with the bubble still holding steady.

Three different products were tested on the retrofit – leading to increased outputs 12-23%, depending on the product. This increase was even seen on technology that was just three years old. Retrofitting older lines is expected to provide even higher increases, according to W&H's Line Audit and Retrofit Solutions unit..

"We were surprised and excited when the line was restarted – but the output increase tells only half of the story," said Cahyadi. "When running at a higher rate, the new air ring delivers even better width and gauge uniformity, and the whole production runs more consistently. It feels like the bubble is kept in a kind of circular vice. Even the nightshift operators manage to do quick changeovers without losing the bubble."

The XP cooling ring was introduced at K2019 and is now available as a retrofit – not just for W&H machines, but for lines from other manufacturers. ❯

IMAGE: REIFENHAUSER

Above: Kdesign is now part of Reifenhauser, which now owns a majority stake

Air ring takeover

Reifenhäuser has acquired a majority stake in Kdesign, a specialist in the manufacture of air cooling rings and measuring systems for blown film extrusion lines.

With the acquisition, Reifenhäuser has expanded its in-house expertise in cooling, controlling, measuring and calibrating blown films – saying this will give its customers in the sector a clear competitive edge.

Kdesign remains an independent company within Reifenhäuser and its business and customer relationships will continue unchanged. Joachim Lange and Richard Zimmermann will continue to head the company as managing directors.

"In blown film production, cooling and control have a decisive impact on the quality of the end product," said Bernd Reifenhäuser, CEO of Reifenhäuser. "Kdesign already offers the best technology on the market for this, which we are now combining with our extrusion technology."

Current Kdesign customers are also due to benefit because – as part of Reifenhäuser – Kdesign now has access to a large international service network and a major research and development centre for plastics extrusion.

Richard Zimmermann, managing director of Kdesign, said: "We will be able to be closer to our customers in the future. Our location is just 20 minutes away from Reifenhäuser's headquarters."

Air ring tips

Davis-Standard has published a series of online guides on the blown film process – including guidance on both dies and air rings. Its latest guide looks at air rings, which are used to cool and control the film bubble as it inflates – which is key to productivity and film quality.

The cooling system comprises a blower, chiller, ducting and air ring entry (which may require a manifold) to distribute the chilled air around the die exit. In addition, an annular lip directs air onto the film bubble for cooling and stability.

"It's important the blower and chiller provide sufficient cool air for optimal air ring performance," says the guide.

The ducting between the remote air supply and

Deep cleaning for blown film dies

Pharmaceutical packaging manufacturer Polycine of Germany is using vacuum pyrolysis cleaning technology from **Schwing** to ensure that its blown film dies are free of residues.

Polycine's products include three-layer films, which are used as primary packaging for pharmaceutical or medical products. So, they must be produced in a high-class cleanroom environment.

"We monitor and control the entire production process online to ensure the highest product quality," said Gert Klemann, technical manager at Polycine.

The company is using Schwing's vacuum pyrolysis system (Vacuclean) to remove polyolefins from the die, without leaving any residue. This results in clean channels that guarantee consistent flow behaviour of the melt and avoid cross-contamination by foreign material.

There are significant advantages compared to mechanical cleaning methods – or the use of cleaning granules, chemicals, welding torches or flames – says Klemann.

"The blown film die head can be cleaned, assembled and dismantled with minimal effort and without any damage," he said.

Polycine regularly uses six blown film dies. How often they are cleaned depends on the individual production orders: there is no specific cleaning interval. With Vacuclean, parts can be fully cleaned and returned to production – which reduces maintenance costs, plant downtime and production losses.

During the cleaning process, a multi-layer blown film die head is processed in a Vacuclean system. It can clean die heads with diameters up to 1.7m that weight up to 12 tonnes. First, any remaining plastic inside the die head is gently melted off under vacuum. Any further remnants of plastic are further heated to around 450°C.

Schwing's vacuum pyrolysis technology ensures that its blown film dies are free of residues

IMAGE: SCHWING

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IMAGE: DAVIS-STANDARD

Above: Davis-Standard's Vector is a single-inlet air ring with a patent-pending dual lip design

the air ring can also affect performance if it is too long, takes too many bends or is not insulated. Measuring the temperature and flow rate of chilled air at the air ring inlet is also advisable.

Internal bubble cooling (using an IBC device) directs chilled air to the bubble's inner surface – while exhausting warmer air – to maintain bubble size. Adding an IBC can boost output by 20% or more, if cooling is the only limitation.

"An IBC system also requires chilled air capacity, plus two more blowers for inlet and exhaust streams, as well as some type of bubble diameter sensing and control device," says Davis-Standard.

The most effective air ring design depends on the type of film and degree of flexibility needed. If a blown film line mainly produces one type of polyolefin film – with a structure designed to run fast and stable – then elevated air rings and triple lip air rings allow these film structures to run at very high outputs. However, these air rings are not as easily adjustable for large BUR ranges or other films that behave differently – such as a barrier film with heavy, low-melt strength PA and EVOH.

A good compromise

A dual lip air ring is often a good compromise for reasonably high output rates, and also offers flexibility to run different types of films. Flexibility comes from three main features:

- the ability to adjust the fraction of air directed to the hottest resin exiting the die lip, via the lower lip;
- a suitable expansion angle leading to the upper lip; and,
- control over the angle and expansion of the main flow of air from the upper lip, allowing adjustment of the low-pressure region that results in 'bubble lock'.

Most air rings have additional features above the air orifices, which help stabilise and support the bubble. Some can improve cooling by directing chilled air closer to the bubble surface. These extra supports must match the size and shape of the bubble – which varies based on the film structures (resins) and the width of the film.

"Other types of air rings have been designed for specific applications, such as heavy-duty shipping sacks and HDPE," says Davis-Standard.

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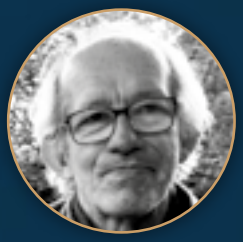

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IMAGE: SHUTTERSTOCK

Qualities including surface appearance, pesticide resistance and recyclability can all be affected – in a positive way – by using the correct masterbatch formulation

Formulation masterplan: latest in masterbatches

Masterbatch is a convenient way for extruders to incorporate a range of additives to their formulation, whether this is for process improvement or the performance or appearance of the final product.

Tosaf says that its ZD masterbatches for pearlised BOPP film can help manufacturers raise quality and production efficiency. When added during processing they help to make film properties as opacity, gloss, and thickness more uniform across the entire width – even for films with reduced density or high yield.

The masterbatches are suitable for making pearlised and white-pearlised films in a density range from 0.55 to 0.80 g/cm^3 – with ZD1738HP optimised for up to 0.65 g/cm^3 and ZD2446HP for medium to higher densities. Typical packaging applications include soap, confectionery, ice cream and baked goods. It can also be used for wrap-around, in-mould, cut-and-stack and pressure-sensitive labels.

"We know the common problems encountered in the production of pearlised and white-pearlised films," said Saeed Agha, product manager at Tosaf. "Our products enable manufacturers to combine meeting tight specifications with high yields."

Tosaf has also developed a range of additive masterbatches that are tailored to the production of biorientated polyethylene (BOPE) film. The portfolio includes slip, antiblock, antistatic and antifog additives. The ability to use them individually or in combination gives manufacturers high flexibility in meeting specific product requirements.

Stretching validation

Tosaf has worked with film stretching equipment manufacturer Brückner to validate the processing properties of the BOPE masterbatches. The pilot tests show that films produced with them meet high optical and functional requirements without compromising mechanical properties.

The company has also demonstrated processing properties to show that the new additives are suitable for the production of inline machine direction oriented (MDO) films.

Main image: Tosaf says its ZD masterbatches for pearlized BOPP film can help raise quality and efficiency

Right: Tosaf's LD masterbatches can prevent 'hotspots' on backlit surfaces

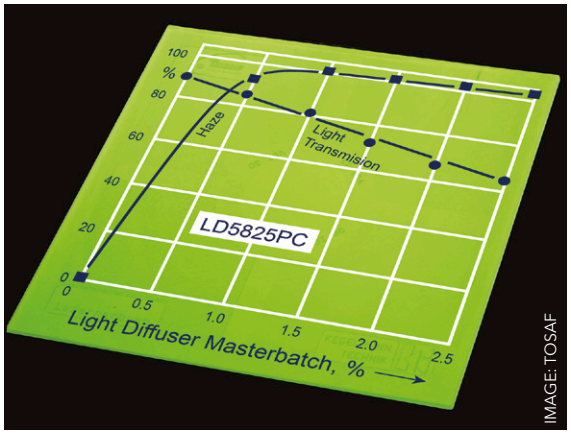

IMAGE: TOSAF

In addition, Tosaf has developed a range of light-diffusing (LD) masterbatches that can prevent 'hotspots' on backlit surfaces. The company says that many LED light sources have a problem creating uniform diffused light, which causes the hotspots.

The masterbatch contains micro-fillers, whose performance has been optimised following laboratory trials. The trials addressed properties such as material, refractive index, transparency, geometry and dimensions. As a result, only small amounts of masterbatch – around 1-2% – are needed to scatter the light in a transparent material, usually PMMA and polycarbonate.

At the same time, light transmission and mechanical properties of the base material have been largely retained. In addition to colour-neutral grades, combinations with specific colourings and other functional properties such as UV stabilisers are available.

LD masterbatches give extrusion companies more flexibility without the need to keep diverse stocks, says Tosaf – adjusting the targeted light scattering properties for each application and material thickness by varying the quantity added.

"Producers of extrudates for lighting technology are not usually able to incorporate the light-scattering additive themselves, because of the large amount of apparatus needed," said Rudolf Reinhart, product manager at Tosaf Color Service. "Our easy-to-process LD masterbatches open the way for them to achieve flexibility, because they are designed for products without streaks or other defects."

Examples of light scattering parts include backlit decorative elements for interior and exterior automotive parts, with other potential applications in areas such as white goods, furniture design and consumer electronics, says Tosaf.

Stable performance

Michael McLaren, a research scientist at **Ingenia Polymers**, told delegates at AMI's *Agricultural Film* virtual conference how UV stabilisation – in the form of a masterbatch – can be applied to greenhouse film.

The company uses hindered amine light stabilisers (HALS) in its formulations. Its objective in developing the masterbatch was to evaluate a range of HALS formulations, and develop an optimised, mid-range package for greenhouse film with pesticide resistance.

This involved accelerated testing under UV-B to determine mechanical failure point for formulations of interest. The test film was a 150-micron octene-LLDPE monolayer. From here, the company developed two HALS packages.

IP1368 is an optimised, mid-range performance combination of greenhouse film stabilisers. It is recommended for greenhouse film and other agriculture film with pesticides exposure. The second, IP1369, is aimed at higher performance – with a recommended service life beyond four years, with pesticides exposure. Both grades can be used in typical greenhouse film structures where combinations of LDPE-EVA and LLDPE are used. Dosage levels will vary depending on film thickness, structure and desired service life, said the company.

Ingenia is continuing to evaluate the films with accelerated xenon testing, to develop extra performance data.

Silicone rebrand

DuPont has rebranded its full portfolio of silicone masterbatches for thermoplastics as Multibase products. The brand applies to all legacy Dow Corning silicone-based masterbatch products.

The company says that the initiative builds on the global brand awareness of Multibase. The products are used in a broad range of industries, including packaging. The brand change does not affect formulations or product properties.

"Polymer manufacturers often face new challenges in tailoring their materials to address changing needs," said Jacek Madry, global business leader for Multibase at DuPont.

"Our Multibase additives offer many options for extending properties, enhancing processing and reinforcing materials."

The most recent product is Multibase AMB-12235, for multi-layer polyethylene (PE) blown film. This masterbatch combines an anti-block agent with a compatible, permanent slip additive to improve film processing and ensure consistent quality.

Future products will look to extend the lifespan of end-use applications, cut energy consumption and scrap generation, and reduce formulation complexity to promote recyclability. ›

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NIR certification

Ampacet has obtained COTREP certification for its NIR-sortable black masterbatch Rec-NIR-Black PE 302 (1900302-E), which is used in PP rigid packaging applications.

Following COTREP protocols, recycling companies Pellenc ST and Tomra have performed dynamic NIR sorting tests on black PP trays containing 6% of the masterbatch. Tests showed that rigid packaging formulated in this way can be detected by an NIR scan and are oriented towards PP flow with the same sorting performance – including quality and percentage of detection, as other PP household rigid packaging materials.

Most black plastic packaging can only be disposed of through landfill, or used for energy recovery. Packaging using these masterbatch products can be scanned by near-infrared technology for automated sorting in recovery facilities.

The product is also suitable for NIR-sorting of PE rigid packaging for return into the PE recycling stream.

"These masterbatches allow companies to use black packaging on the French market without incurring the malus tax (10% for 2020) applied on top of the Ecotax," said Philippe Hugelé, strategic business manager for moulding at Ampacet. "They provide a significant contribution to the recyclability of black plastic waste and help to support the circular economy."

Natural approach

Palsgaard of Denmark has expanded capacity of its Einar plant-based polymer additives by opening a new 10,000 tonnes/year pellet line.

IMAGE: PALSGAARD

Above: Palsgaard's new 10,000 tonnes/year pellet line expands capacity of its Einar polymer additives

The pellet line is not exclusively for Einar products, as it is also used for other food and non-food products. However, it does allow the company to expand its Einar line. This includes anti-fog and anti-static additives in several grades tailored to film and other processes. Other parts of the portfolio include slip additives, ageing modifiers, mould release agents and dispersing aids. All its products have FDA and EU food-contact approvals.

"We see growing demand for more natural materials to reduce fossil depletion and waste," said Ulrik Aunskjær, global industry director for non-food business development in Palsgaard's polymer additives division. "Our expanded production capacity boosts the availability of food-grade plant-based surfactants and modifiers."

The expanded pellet line also addresses the needs of compounders and processors who want to use Einar products directly, rather than as part of a masterbatch formulation. This applies in particular to anti-static additives for food and other

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packaging applications, where pelletised products offer a clean, straightforward process.

One advantage for Einar products is the easy dosing. Pellets are similar in size and shape to typical PP pellets, which makes dosing and mixing a simple task, says Palsgaard.

"Not all Einar products can be finished as a pellet – only the ones with a high melting point," said the company. "These types of products are mainly used as anti-stats in PP. They are added either by the polymer producer or as a neat additive at the sheet extrusion line."

Palsgaard is also making other investments – in spray cooling, and in reaction, distillation and esterification plants – that will double production capacity at its Juelsminde plant by 2024. In total it expects to invest 750 million Danish Kroner (€100m, or US$119m) in the expanded capacities.

Adding the new pellet line is the first step in Palsgaard's plan to double its capacity by 2024.

China expansion

The China-based subsidiary of **Colloids** recently expanded manufacturing operations with an extra 4,000 sq m unit next to its current facility in Changshu.

Colloids Plastic (Suzhou) will commission extra production lines over the coming year – allowing it to increase annual capacity to 18,000 tonnes.

"Expanding our operation in Changshu provides us with an excellent platform for our future growth in China and Asia Pacific," said Craig MacDougall, general manager of Colloids China. "The additional investment in Changshu Economic Development Zone (CEDZ) means we can expand our operation quickly and efficiently while maintaining high service levels."

Colloids opened its masterbatch manufacturing plant and R&D facilities in China in 2016. Changshu, a jurisdiction of Suzhou in Jiangsu province, is about two hours northwest of Shanghai.

Russell Livesey, CEO of Colloids, added: "This is an exciting milestone in our continued growth in the region. It is a credit to our Chinese team that they have generated the revenues required to make this further investment in such a short period."

Fog reduction

At the recent Chinaplas 2021 exhibition, **Avient** unveiled its new generation of anti-fog additive, called Cesa Nofog Plus, which helps prevent fog

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IMAGE: AVIENT

Left: Avient's new anti-fog additive works for both hot and cold packaging

for both hot and cold packaging.

By reducing moisture accumulation, Cesa Nofog Plus helps prolong the shelf life of packaged foods. It can clear fogging quickly in hot conditions, and within five minutes in cold conditions, says Avient. Lids and protective films made with the additive – which is safe for food contact – also remain clear, so that consumers can see food quality directly.

The additive can be used in both rigid and flexible food packaging, including mono- and multi-layer structures. It is suitable for thermoformed sheets as well as transparent food packaging, agricultural, and protective films.

"By helping to maintain the freshness of food in packaging and limiting the growth of bacteria and fungi, it's possible to reduce food waste and improve food hygiene," said Say-Eng Lee, vice president and general manager for the company's colour and additives division in Asia.

Available as a solid masterbatch, the additive can be extruded with packaging resins without the need for extra equipment. It is compliant with US FDA and EU regulations.

PCR packaging

At the same time, Avient has launched its Rejoin PCR masterbatch for polyolefin packaging applications. Made with post-consumer recycled (PCR) polyolefin as a carrier resin, it allows a part to be made completely from PCR.

Masterbatch is generally made using virgin material as the carrier resin. This means that at typical let-down ratios, the finished product would contain 3-5% non-recycled plastic. Rejoin PCR is available in customisable colours and special effects.

"Many people consider the use of colorants and additives that rely on virgin resin carriers to nullify the claim of 100% PCR, so we developed a solution that could help customers deliver fully on their sustainability commitments," said Bob Lee, marketing director at Avient's colour and additives division in Asia.

The masterbatch combines pigments and functional additives into a single solution without negatively affecting colour or mechanical properties. It can be added during production using standard equipment with little to no impact on processing – and allows for full recyclability of the end product.

Fighting infection

Sukano says that its PLA-based antiviral masterbatches are effective against the SARS-Cov-2 virus.

The antiviral effect was tested by a laboratory that specialises in microbiological tests against the virus according to ISO 18184:2019 (fabrics) and ISO 21702:2019 (film extrusion).

"We tested against both SARS-Cov-2 and Influenza H1N1," said Michael Kirch, global head of R&D for Sukano. "We are delighted with the outcome of the tests and we now have confirmation on the deactivation of the viruses, giving customers additional trust and confidence while using our additive masterbatch in their application."

Sukano's antiviral masterbatches work by integrating an antiviral additive into the polymer, using proprietary formulation and technology. This then helps prevent viral transmission through product surfaces. The additive is consistently active on the surface of the product, without being released into the environment.

The active ingredient is a registered preservative in the EU, Switzerland and USA. However, to claim antiviral effect, producers using the masterbatches must test the final product, have the results confirmed by a specialised external laboratory, and comply with local legal regulations.

In addition, Sukano last year developed an NIR-detectable black masterbatch, which is included on the French positive list by CITEO and COTREP. It allows products such as black PET trays and pots to be recycled more easily.

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'Down the line' equipment such as static control or surface analysis systems helps to ensure smooth production – and raise the quality of the final product

IMAGE: HOSOKAWA ALPINE

Raising quality: advances in downstream equipment

Downstream equipment – ranging from stretching machinery to inspection systems – is critical in ensuring that extruded film or sheet makes the grade before it is shipped to the customer. In most cases, it helps to improve product quality.

Hosokawa Alpine has developed a vacuum roll for its machine direction orientation (MDO) lines, which helps to raise the quality of oriented film.

"This will significantly improve the production of fully recyclable mono-material films and contribute to the packaging solutions of the future," said Holger Niemeier, head of the blown film division at Hosokawa Alpine.

MDO technology is based on monoaxial orientation, which can adapt and improve properties such as barrier performance, optics and film thickness. Depending on the MDO design, the film runs over eight to 12 rolls, two of which are stretching rolls. The second of these is now a vacuum roll with a porous surface. Due to the vacuum inside the stretching roll, the film is guided tightly against the roll. This significantly improves flatness and the MDO film is optimally prepared for lamination or printing.

If the second of these is a vacuum roll – with a porous surface – the internal vacuum will hold the film more tightly against the roll. This improves flatness, which prepares the MDO film optimally for lamination or printing.

Hosokawa's MDO technology is crucial in the production of mono-material polyethylene (PE) film – which are easier to recycle than typical multi-layer film.

Main image: Hosokawa's MDO lines are used to make mono-material PE film, which is easier to recycle than multi-layer film

MDO adds efficiency

SML of Austria says that its latest machine direction orientation (MDO) lines boost production efficiency thanks to a dual frame system design. Other benefits include high production speed and shorter downtimes.

The new design consists of two independent frames with an inline adjustable stretching gap. The frames are relocatable to each other, and the variable distance between them precisely defines the length of the stretching gap.

"Ultimately, the essential mechanical properties of the film in the machine and cross direction are determined by the length of the stretching gap and the stretching speed," said Robert Preuner, head of R&D at SML. "Our system guarantees maximum

Right: SML's latest MDO lines boost production efficiency thanks to a dual frame system design

control of film properties and high production speeds."

Cleaning and service times are also reduced, which has a clear effect on line efficiency and profitability, he said.

The dual-frame design offers stretching according to both the short gap and the long gap procedure. This means the lines are not limited to processing polyolefins. Applications for advanced MDO film include stand-up pouches, PET films for twist or lamination film, films for shrink-sleeves, label films and foamed MOPP films, such as for cable insulation tapes.

IMAGE: SML

Static control

UK-based **Meech** has launched its SmartControl Touch, which offers remote monitoring of static control systems.

The new unit allows users to monitor, control and adjust the multiple connected Hyperion ionising bars and sensors via an integrated touchscreen – or remotely via a mobile phone, tablet or desktop.

"SmartControl Touch has been designed in line with the growth of Industry 4.0 technology, which is helping businesses maximise productivity and quality of output," said Adam Battrick, sales director at Meech International.

It includes a 10in integrated touch screen and data logging, and is compatible with Meech voltage and distance sensors – to make monitoring the performance of Hyperion static control bars easier than before. The unit can connect up to six devices, with an additional 12 per expansion unit. In total, it can monitor and control up to 30 devices.

Fast, easy installation means it can fit seamlessly into operations. With voltage and distance sensor compatibility, SmartControl Touch offers more accurate neutralisation of all charges on materials, says Meech. Data logging provides graphic representation of performance, which can be exported for additional analysis.

"Static charges have always been a threat to productivity," said Battrick. "SmartControl Touch is designed to keep unwanted static under control and ensure smooth-running and safe production lines."

Below: Meech's SmartControl Touch offers remote monitoring of static control systems

IMAGE: MEECH

On show online

Vetaphone has opened a new showroom and demonstration facility at its headquarters in Kolding, Denmark.

Designed to showcase its range of corona technology, the exhibits – which include treatment units for applications as diverse as extrusion, high-speed printing, converting, and narrow web – can all be seen in action. This allows Vetaphone to discuss customer requirements and match a particular system to a specific production environment.

"We are proud to be the inventors of the corona process, and of the work we have done in surface treatment over the past seven decades," said Frank Eisby, CEO of Vetaphone. "The new showroom is another important link in our strategic programme of education and excellence."

The showroom fits with the change of business processes brought about by the global pandemic, says Vetaphone. With the short-term demise of trade shows, and increased awareness of online communication technology, customers can combine personal visits to the showroom with online meetings to build a technical and commercial partnership, says the company.

Jan Eisby, CSO of Vetaphone, adds: "We know that many customers are unable to visit us in Kolding. Now, we can take our showroom to customers – wherever they are in the world."

The showroom completes a three-phase building plan that began with the opening of a new headquarters in 2017 followed by the launch of a test lab facility last year.

However, Vetaphone's expansion is not restricted to its base in Denmark. The company has recently signed up four new agents in Asia. These are FPT Engineering (Thailand), Song Song (Vietnam), Colorblend (Malaysia) and Merindo Makmur (Indonesia).

Holger Selenka, areas sales manager for Asia at Vetaphone, said: "Asia has special requirements that must be addressed by people with the right expertise and understanding of the local market. I'm confident that these new appointments will make a significant difference to our business."

Quality control

Jaya Nurimba – an Indonesian film manufacturer – recently installed process control technology from **NDC** to help it improve product quality. Its prod-

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Right: The FSA100EXT film surface analyser from OCS can be retrofitted to third-party extrusion lines

ucts are used to package a wide range of foods, including snack foods, biscuits and cookies, meat, oil, frozen foods and household products.

The company wanted to gain better process insight and improve product quality on its cast polypropylene (CPP) lines. To do this, it installed an integrated measurement system from NDC, comprising an FG710e on-line near-infrared (NIR) gauge, AccuTrak O-Frame scanner and 8000TDi process controller.

The system provides high-speed gauging performance and offers versatile measurements of basis weight and film thickness across a range of products. The gauge is unaffected by changes in process and ambient conditions, such as light fluctuations, temperature, relative humidity, air quality, web flutter and batch-to-batch substrate variations. NDC's 8000 TDi process visualisation software can be configured for a range of applications – including fixed-point or multi-scanning.

Since installing the measurement system, Jaya Nurimba has seen several benefits, including improved product quality, higher productivity, less scrap and shorter change-over times.

Surface analysis

Optical Control Systems (OCS) of Germany says that its FSA100EXT film surface analyser is available as a retrofit on third-party extrusion lines.

The optoelectronic inspection system provides real-time defect analysis with customer-specific results, says OCS.

Upgrading an existing extrusion line with the FSA100EXT optimises quality control in the polymer production process, it says – to improve product quality. The customised frame allows easy and quick adaptation into the existing plant.

State-of-the-art camera technology is concealed in the customised OCS frame. The V2 camera technology consists of a high-resolution dual-line CMOS camera and a user-specific high-performance LED. This combination enables optimal defect detection in transparent, opaque and coloured polymer film, says OCS.

With the OCS FSA100 software, measurement results are analysed according to customer specifications and defects are classified accordingly – providing information about the film quality.

Print inspection

Swiss manufacturer Suedpack Bioggio has used the PrintStar 100% inspection system from **Isra Vision** to inspect the print quality of its packaging films.

The system, equipped with Isra's Advanced

IMAGE: OCS

Hazing Detection assistant, enables early detection of colour hazing on transparent films – which is invisible to the human eye. In addition, the retrofitted QuickProof module compares the print image with the reference file before production begins. Using both systems prevents customer complaints, as well as unnecessary material waste, says Isra.

In advanced hazing detection, an additional bank of cameras enables slight colour hazing on a transparent substrate to be detected across the entire web width – even during printing. (Hazing is a faint – but unwanted – colour transfer in non-image ranges.) Wear to the doctor blade can result in barely visible colour hazing appearing on the product motif. These effects are invisible to operators at high production speeds – and are typically not detectable by inspection systems. This means that these defects would often only be detected at a very late stage.

The company estimates it has saved 10-15 minutes per order. As there are multiple orders per day, this amounts to significant time savings.

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EPTs

Noryl GTX used to make honeycomb core structure

Netherlands-based EconCore has developed new honeycomb cores for laminated sandwich panels using SABIC's Noryl GTX polyphenylene ether (PPE) blend.

The new honeycomb core has higher heat performance and dimensional stability and lower water absorption compared to those made with traditional thermoplastics. This enables the new core material to be used in demanding applications such as some automotive, e-mobility and photovoltaic components.

Combining the new core with thermoplastic composite skins – to make all-thermoplastic sandwich panel – also facilitates easier recycling.

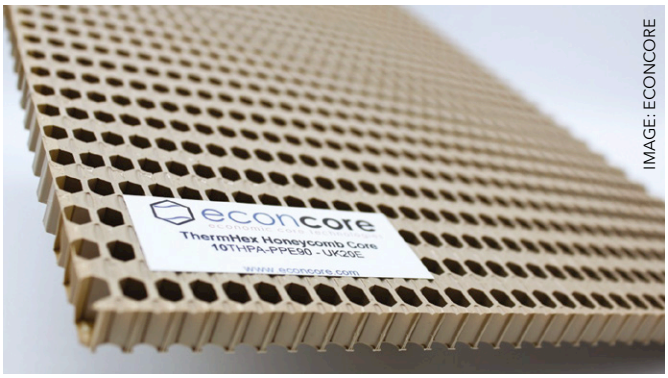

IMAGE: ECONCORE

"We have been very impressed with Noryl GTX's ease of use in conversion and appreciated the fact that it works well in our existing equipment," said Tomasz Czarnecki, chief operations officer at EconCore.

EconCore's honeycombs are made from a single continuous thermoplastic sheet.

Noryl GTX provides high heat resistance during processing of up to 240°C (465F. Compared to nylon, it has lower water absorption and a lower density, which reduces part weight. It also has high impact performance and stiffness across a wide temperature range. SABIC is developing a grade with low-temperature impact performance for potential use in honeycomb cores for electric vehicle (EV) battery protection.

› **www.sabic.com**

BOPP

Higher thermal resistance

Innovia Films has extended its Propafilm range of transparent speciality packaging films.

The new film, CHS, offers better thermal resistance and shrinkage properties compared to conventional polypropylene (PP) films, it says.

"With CHS, we have developed a BOPP film with enhanced functionality that can be used in new application areas," said Paul Watters, product development manager for packaging.

The film has been designed to replace traditional outer web films in laminates for applications such as pouches and lidding in various food markets.

› **www.innoviafilms.com**

PET

Mono-materials for thermoformed MAP

AMB of Italy has developed TotalMono PET – mono materials for use in thermoformed MAP packaging applications.

The PET top and bottom film solutions offer high barrier protection for sensitive foods. The ability to reduce thickness leads to a wide range of possible gauges – and weight reduction without affecting performance.

AMB base and rigid films are available at all standard gauges from 200my to 800my with a low or high barrier and including a possible downgauge from APET/PE. Lid films are available at gauges from 37my up to 60my – with a low or high barrier function. All barriers are non-EVOH, as EVOH has a negative impact on PET recycling stream.

A further feature of these films is their seal strength. They offer a lower seal initiation temperature and the ability to adjust sealing temperature compared to multilayer solutions. Sealing is provided by a lacquer – which also acts as an antifog, so there is no need for antifog lacquering. Despite downgauging, the material offers robust tear resistance during processing, says AMB.

› **www.ambpackaging.com**

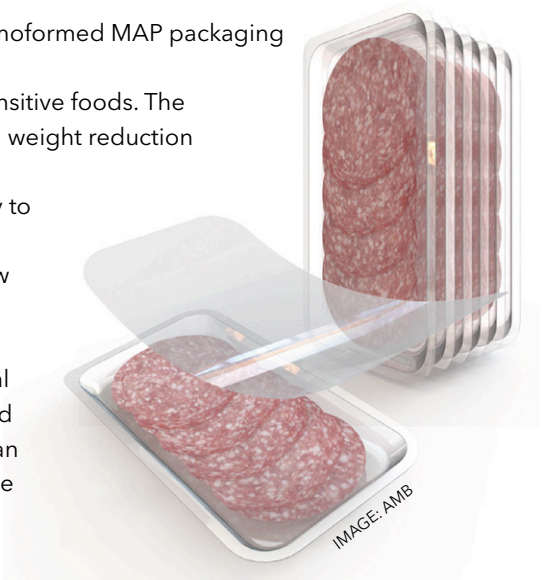
IMAGE: AMB

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BLENDERS

‘Bridge breaker’ improves blender dosing accuracy

Maguire Products has improved the dosing accuracy of high-capacity gravimetric blenders with a pneumatic device that fits within one of the hoppers.

The device, which Maguire calls a ‘bridge breaker’, is now available on its three largest blender series (the 1200, 2400, and 3000). These have maximum throughput capacities of 5,000 kg/hr, (11,000 lbs/hr) and can blend up to 12 ingredients. The bridge breaker has two elements: a hopper insert that directs material straight down onto the dispensing valve; and a rotary device that operates automatically while the dispense valve is open. The device pulses rapidly between clockwise and anti-clockwise movement, to enhance material flow through the dispense valve.

IMAGE: MAGUIRE

The device helps to improve dosing accuracy of regrind, recycled plastics and other ingredients that tend to obstruct flow through the dispense valve of the hopper. The hopper insert – a vertical alternative to the sloping wall of the hopper – can be retrofitted to any blender currently in operation, says the company.

“The bridge breaker addresses the growing demand for recycled content in plastic products and the increasing use of regrind as a means of reducing production costs,” said Frank Kavanagh, vice president of sales and marketing. “We developed it to help one of our customers solve a problem.”

A microprocessor makes corrections from batch to batch, including adjustments to compensate for variations in extrusion rate or bulk density, maintaining overall batch accuracy to +/- 0.1%.

› **www.maguire.com**

DRYERS

App gives control to dryers

Dri-Air has developed a desktop app that can control a large number of dryers.

SmartView is a web-based application that can control multiple dryers using their unique IP addresses. This allows control from a single screen without the need to visit the plant floor.

The app, available with SmartTouch controlled dryers, allows all dryers to be controlled from a central location. It shows dryer status, dewpoint, hopper status, regeneration status and the dryer’s IP address. From this screen, operators can start and stop dryers, set hopper temperatures and even customise the names of individual dryers.

Dri-Air previously introduced the SmartTouch controls in 2020.

› **www.dri-air.co**

ANCILLARIES

Melt pump boosts PLA production

Maag has supplied an X6 class melt pump technology to a facility that converts sugar – from corn – into the bio-based polymer PLA.

The company says that the facility reduces carbon emissions in two ways: firstly, it uses plant-based resources instead of hydrocarbons to make plastics; and secondly, its X6 gear pumps help to save energy consumption.

The pumps are used in the polymerisation stage and in devolatilisation – where unreacted lactide is removed from the PLA melt to raise product quality. In the last stage, Maag’s melt pumps build up enough pressure to process the melt through the downstream equipment, as far as the underwater pelletiser.

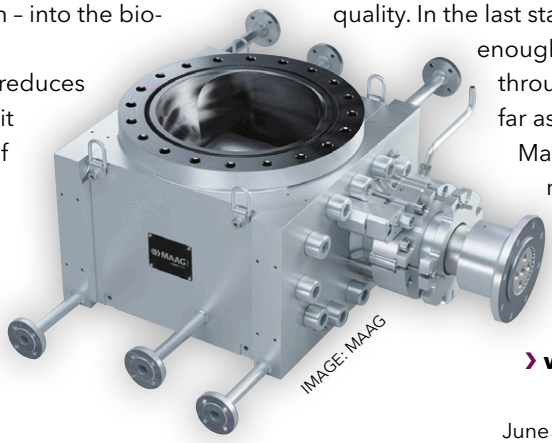

IMAGE: MAAG

Maag says that the key feature of its X6 melt pump technology is the reduced back-flow, which helps to save up to 50% energy and cut material recirculation in the pump of about 50%, says Maag.

› **www.maag.com**

RECYCLING

Shredder-extruder recovers production material during drip-tape manufacture

Pure Loop – part of Austria's Erema Group – has developed a shredder-extruder combination that has been used to make recycled pellets during the production of drip tapes and irrigation pipes.

Manufacturers with this kind of system are reusing up to 20% of production waste without any loss of quality, compared to production from pure virgin material.

"This level of reuse can be significantly increased thanks to the high quality of the recycled pellets," said Manfred Dobersberger, managing director of Pure Loop. "The high demands on the recycling process result from the high volume of the bulky input material as well as the material composition."

The system combines an ISEC Evo shredder-extruder – with double degassing – and and Erema laser filter. In the laser filter, three scrapers remove contaminants, which mainly consist of silicone. The filter's high efficiency enables high throughput rates in the recycling process and high quality of the recycled pellets, said the company.

The recycling machine can process bulky hose bundles as well as other production waste such as start-up lumps and regrind material or complete rolls with drip tapes. Single-shaft shredders and double feed ram systems flexibly adapt to individual logistic requirements and – thanks to the conical transition to the extruder – the material is compacted, and oxygen is reduced, so that the plastic is processed very gently.

The recycling concept has already impressed irrigation system producers in countries including the USA, Israel, Italy and Mexico.

They operate recycling plants with throughputs of 100-500 kg/h and reuse the recycled pellets in proportions of up to 20% to make thin-walled tapes and thick-walled pipes. However, practical tests have shown that even higher proportions of recycled pellets could be used in the end product, said the company.

"Even for very thin drip tapes – with a wall thickness of 100 microns – we were able to use a proportion of 10% recycled pellets in a 48-hour trial without any loss of quality," said Dobersberger.

› **www.pureloop.at**
› **www.erema.at**

FOAMING

Foaming unit cuts raw material costs

Meaf has added a Promix physical foaming installation to its in-house extruder test and demonstration line, which it says can help save on material costs.

In film and sheet extrusion, raw materials typically account for 70% or more of production costs. Ways of reducing this include using more recycled material – such as regrind skeletal waste or bottle-flakes – or by using filler components such as calcium carbonate. Another way is by using foaming.

IMAGE: MEAF

"Physical foaming offers significant material-saving potential for extrusion processes," said Roald de Bruijne, sales manager at Meaf. "Promix is setting new standards in micro-cellular foam products with a very homogeneous cell structure and high process stability while using CO2 and N2 blowing agents."

Adding Promix equipment to the line can lead to density reductions of 5-30%, says Meaf. The process can reduce the cost of plastic raw material by 20% compared to conventional packaging, due to the weight saving.

The micro foam process offers high rigidity, insulation and insensitivity to scratch marks, and a low energy consumption per kg. Processors can work with multiple types of materials in one extruder, including PET, PE and PLA. Foamed and non-foamed sheets can be produced on the same line, even allowing for multilayer A/B/A sheet (where the A-layer is a non-foamed and the B-layer is a foamed material).

› **www.meaf.com**

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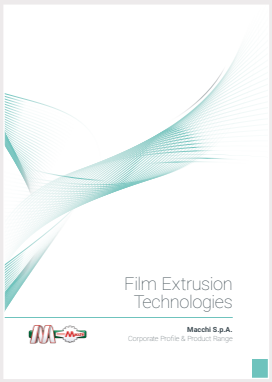

This 28-page brochure from Macchi covers the company's wide range of film extrusion technologies including coextrusion lines, wide webs, die heads, take offs, winders, trim recovery and control systems.

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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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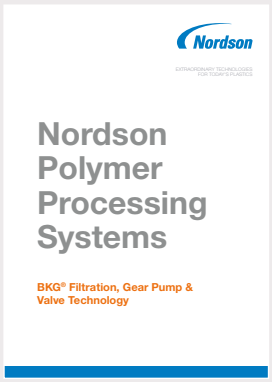
NORDSON: FILTRATION SYSTEMS



The BKG range of filtration systems and screen changers from Nordson Polymer Processing Systems are detailed in this six-page brochure which also features products from BKG's ranges in gear pump and valve technologies.

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PALSGAARD: PLANT-BASED ADDITIVES

Palsgaard produces an extensive range of sustainable, plant-based additives that can be used to enhance the performance and processing of many polymers. Find out more about its products and how to use them in this brochure.

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GLOBAL COLORS GROUP

Find out about Global Colors Group in this brochure showcasing the group companies, their vision and focus on quality, R&D, technology and sustainability. Its portfolio includes colour, white and black masterbatches.

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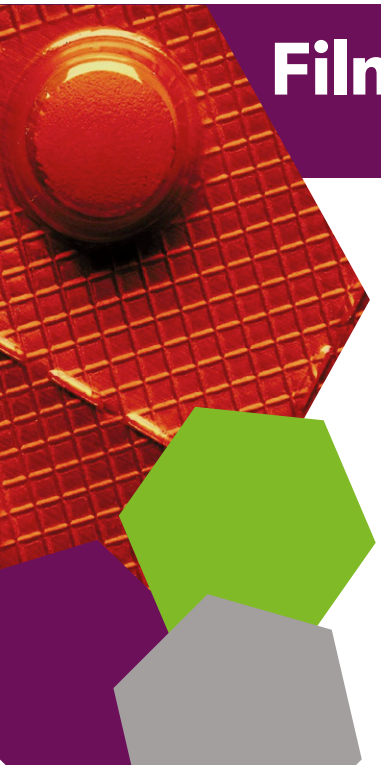
If you would like your brochure to be included on this page, please contact Claire Bishop claire.bishop@ami.international. Tel: +44 (0)1732 682948

Polysack Flexible Packaging

Head office:	Nir Yitzhak, Israel
CEO:	Yanir Aharonson
Founded:	1974
Ownership:	Private
Employees:	Around 70
Profile:	Polysack, which was founded in 1974, is a specialist in flexible packaging film for applications including high-shrink labels, confectionery wrappers and agricultural film. It also supplies film to third-party converters, for use in industries such as food, beverages and agriculture. Its use of machine direction orientation (MDO) helps it to produce films with higher strength, optical and barrier properties – while also allowing downgauging, it says.
Product lines:	The company's products fall into four main categories: consumer goods; agriculture; beverages; and confectionery. In consumer goods, its mono-oriented films (such as Polyphane Pack 'n' Cycle) are used to make products such as stand-up pouches. They are made only from polyethylene, so are more easily recycled, says Polysack. Its agricultural films are used for applications such as shading screens for greenhouses. In beverages, its films – such as Polyphane Fit STS – are used mainly for wrap-around shrink labels for bottles. In confectionery, its Polyphane Twist is a proprietary PE film for wrapping chocolates and other products.
Factory location:	Polysack's production facility is located in Nir Yitzhak. Here, it has a capacity of around 8,000 tonnes/year of mono-oriented HDPE production – with plans to expand that over time. The company also has three distribution centres – two in Europe and one in the USA.

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



Film and Sheet Extrusion FORTHCOMING FEATURES

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

July/August 2021
Bioplastics
Plastic pouches
Stretch/shrink film
Thermoforming

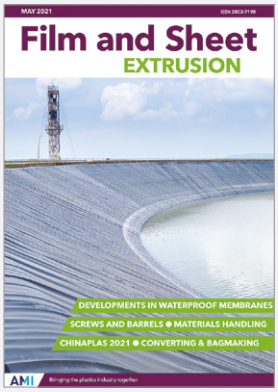
September 2021
Multi-layer packaging
PVC plasticisers
Laboratory extruders
PEWE Europe preview

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
May 2021
The Film and Sheet Extrusion May edition has features on waterproof membranes, materials handling, converting & bagmaking and screw and barrel technology. There is also a review of extrusion exhibitors at Chinaplas 2021.

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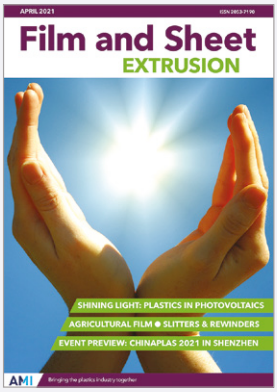

Film and Sheet
April 2021
The Film and Sheet Extrusion April edition has features covering advances in photovoltaics, agricultural film and slitters and rewinders. There is also a preview of Chinaplas 2021, the first major plastics exhibition to take place in over a year.

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Compounding World
May 2021
Features in the May issue of Compounding World look at the latest developments in halogen-free flame retardant compounds, how natural fibres and fillers are helping sustainability, and new compounds for 3D printing.

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Plastics Recycling World
May/June 2021
The May/June edition of Plastics Recycling World looks at options for recycling in-house and post industrial waste plastics. It also explores developments in shredding technology and additives for improving polymer compatibility, as well as US recycling regulation.

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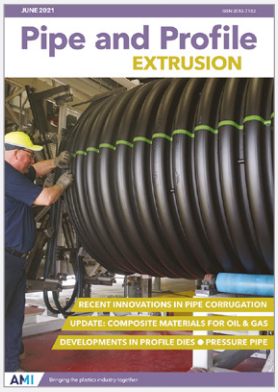

Pipe and Profile
June 2021
Features in the June issue of Pipe and Profile Extrusion cover recent innovations in corrugated pipe technology, plastic pipes in the oil and gas sector, pressurised pipe applications and profile extrusion dies. Plus a review of the Chinaplas 2021 exhibition.

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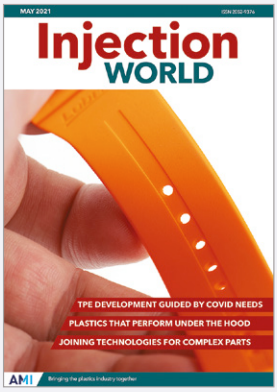

Injection World
May 2021
The May issue of Injection World has features on how thermoplastic elastomers are in big demand in medical products such as face masks, under-the-hood engineering plastics and new joining technologies. Plus news of AMI's US injection moulding expo in 2022.

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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

2021	**14-18 September**	Equiplast, Barcelona, Spain	www.equiplast.com
	21-23 September	Plastics, Printing & Packaging, Dar-es-Salaam, Tanzania	www.expogr.com/tanzania/pppexpo
	29-30 September	Plastics Extrusion World Expo Europe, Essen, Germany	https://eu.extrusion-expo.com
	12-16 October	Fakuma, Friedrichshafen, Germany	www.fakuma-messe.de
	25-27 October	Plastic Print Pack Nigeria, Lagos, Nigeria	www.ppp-nigeria.com
	3-4 November	Plastics Extrusion World Expo North America, Cleveland, USA	https://na.extrusion-expo.com
	8-12 November	Plastico Brasil, Sao Paolo, Brazil	www.plasticobrasil.com.br
	15-18 November	Arabplast, Dubai, UAE	www.arabplast.info
	1-3 December	Plast Print Pack West Africa, Accra, Ghana	www.ppp-westafrica.com
2022	**25-28 January**	Interplastica, Russia, Moscow	www.interplastica.de
	17-21 February	PlastIndia, New Delhi, India	www.plastindia.org
	8-11 March	Plastimagen, Mexico City	www.plastimagen.com.mx
	5-8 April	FIP, Lyon, France	www.f-i-p.com
	26-30 September	Colombiaplast, Bogota, Colombia	www.colombiaplast.org
	3-7 October	Plastex, Brno, Czech Republic	www.bvv.cz/en/plastex
	1-3 December	Plastic Print Pack West Africa, Accra, Ghana	www.ppp-westafrica.com

AMI CONFERENCES

1-3 June 2021	Plastic Pouches **VIRTUAL SUMMIT**
8-10 June 2021	Stretch & Shrink Film **VIRTUAL SUMMIT**
22-24 June 2021	Thin Wall Packaging **VIRTUAL SUMMIT**
28-30 June 2021	Multilayer Flexible Packaging **VIRTUAL CONGRESS**
27-29 July 2021	Smart Packaging **VIRTUAL SUMMIT**
17-19 August 2021	Agricultural Film **VIRTUAL CONGRESS**

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

PLASTICS EXTRUSION WORLD EXPO

COMPOUNDING WORLD EXPO

29 - 30 September, 2021
ESSEN, GERMANY

3 - 4 November, 2021
CLEVELAND, OHIO

www.ami.international/exhibitions