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Huhtamaki withdraws 2020 outlook due to Coronavirus

Finnish packaging giant Huhtamaki has withdrawn its financial outlook for 2020, in response to the Coronavirus pandemic.

The company said that the pandemic is "creating disturbance in global trading conditions and the demand for food-on-the-go packaging is being significantly impacted".

For this reason, it has withdrawn its 2020 outlook, which was published with its annual results in February. At the time, the company said it expected trading conditions to remain relatively stable during 2020. In addition, it said capital expenditure was expected to be around at the same level as it was in



Héaulmé: "Strong balance sheet and sound financial position will help us navigate this crisis"

2019 - with the majority of the investments going to business expansion.

It says that this outlook is no longer valid. The company will provide a new outlook "when impacts of

the changing business environment on its trading conditions in 2020 can be assessed in a reliable manner", it said.

"We are committed to maintaining our strong balance sheet and sound financial position which will help us navigate this crisis," said Charles Héaulmé, president and CEO.

In 2019, Huhtamaki reported a 10% growth in sales, to nearly €4.4bn (US\$4.7bn).

Profitability, in the form of adjusted EBITDA, rose 14% to exceed €456m (US\$488m). Currency fluctuations had a positive effect of €90m (US\$96m) on sales.

In 2019, it opened a

flexible packaging unit in Egypt and acquired Everest Flexibles in South Africa and Mohan Mutha Polytech in India.

At the same time, Huhtamaki has completed the full acquisition of its Brazilian joint venture company Laminor, a specialist in tube laminates. The acquisition enables Huhtamaki to expand its tube laminate business, which is an important part of its flexible packaging offering. Laminor has around 130 employees and had net sales of around €25 million in 2018. Its sales will be reported as part of the flexible packaging division from 1 April 2020.

➤ www.huhtamaki.com

IK hits out at European Plastics Pact

Germany's packaging association *Industrievereinigung Kunststoffverpackungen* (IK) has responded critically to the European Plastics Pact – a partnership of public and private organisations initiated by France, the Netherlands and Denmark – that has published tough new targets for plastic packaging and disposable plastic recycling up to 2025.

The IK said the pact was "pure actionism, raising false expectations and thus doing more harm than good to the recycling industry", adding that it "remains disappointingly vague on the real levers". What is needed, it argues, is not more targets but better design of the framework conditions to ensure that existing ones can be met.

Dr Isabell Schmidt, IK's Managing Director for Circular Economy, said:

IMAGE: INDUSTRIEVEREINIGUNG KUNSTSTOFFVERPACKUNGEN



IK Managing Director Dr Isabell Schmidt says pact targets are "pure actionism"

"The EU has already set concrete goals in its plastics strategy, the Circular Plastics Alliance is pursuing them with courage, and in Germany the sharp rise in recycling quotas under the new packaging law is already demanding a joint effort along the value chain."

Even the best recyclability, she said, is of no use if authorities do not ensure

that plastic waste is collected separately and sent for recycling. IK said that enforcing EU-wide landfill restrictions and extending deposit systems for drinks bottles throughout Europe is vital, but added that the Plastics Pact is "surprisingly soft on these points".

IK also said the Plastics Pact's target of 30% of plastic packaging consisting of recycled materials by 2025 is unrealistic given that regulation effectively prevents this in the food sector, which is the main packaging consumer. It also criticised the target 20% reduction in plastics by 2025. That often "means substituting them with non-recyclable paper-plastic composites or glass packaging that is questionable from a climate point of view," Schmidt said.

➤ <http://kunststoffverpackungen.de>

Since the Coronavirus pandemic took hold, plastics companies have responded swiftly to the needs of the medical industry. Here are just a few examples, from across the world.

Collin gets new production line up and running quickly

Germany-based Collin has quickly assembled a production line - including an extruder, slot die and a calender with winder - to make protective shield film in its technical centre.

"We already produce PET film for medical sectors such as hospitals and pharmacies," said Friedrich Kastner, CEO of Collin Lab & Pilot Solutions.

Its cooperation with NGR gives it a ready source of material, he added.

"Due to our core competences, we were in a position to assemble a production line very quickly," he said.

With the line, Collin



calenders PET films with a thickness from 250 to 450 microns for visors, though thinner and thicker films can also be produced. The machine can be used in calender and in cast mode.

The machine can perform film casting, as well as extrusion coating of packaging films and non-woven fabrics for hygiene and medical products.

> www.collin-solutions.com

Cutting PET sheet for masks

Aimplas of Spain is cutting and supplying transparent PET sheets - from a reel donated by Manufacturas Arplast - to manufacture protective face shields and distribute them to hospitals. At the same time, it is carrying out a feasibility study to manufacture masks with replaceable filters.

Due to the shortage of protective equipment for healthcare workers, Aimplas has also donated equipment - including arm sleeves, disposable gowns, masks and protective suits - to health centres in Valencia.

> www.aimplas.es

Simona donates PET sheet to local shops

Simona of Germany has donated 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 a local business organisation - and says other shops can pick up sheets free of charge.

> www.simona.de



Speciality film for medical face masks

Solvay has begun supplying medical-grade transparent film to Boeing for making face shields - to protect hospital and medical staff from the Coronavirus.

The thermoplastic film is manufactured from Solvay's Radel polyphenylsulfone (PPSU) or Udel polysulfone (PSU) - transparent speciality

polymers that are widely used in medical devices because they are sterilisable and can withstand aggressive disinfectants.

"Boeing is providing face shields - now in critical demand - for healthcare workers, and we are proud to help make that possible," said Jeff Hrivnak, healthcare

global business development manager for Solvay Specialty Polymers.

Boeing approached Solvay due to its experience in the use of advanced composite and adhesive materials on multiple commercial and defence programmes.

> www.solvay.com



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AMI announces new dates for plastics industry expos in Essen

AMI has announced that its four focused plastics industry exhibitions, which were scheduled to take place at Messe Essen in Germany on 3-4 June, have now been postponed to 7-8 October 2020.

Uncertainty created by the Coronavirus (Covid-19) led to the decision to delay the Compounding World Expo, Plastics Recycling World Expo, Plastics Extrusion World Expo and Polymer Testing World Expo.

Rita Andrews, head of exhibitions at AMI, said "We have been reviewing the fast-changing situation daily, and we have been consulting with exhibitors, Messe Essen, local government and

health authorities. Our primary concerns are for the health and safety of all attendees at our events, and delivering the very best audience for our exhibitors. With these factors in mind, we have taken the decision to postpone the expos to 7-8 October."

The shows will remain in the same two halls at Messe Essen, retaining the same floorplans with five free-to-attend conference theatres. The aim is to retain the existing conference programmes, augmented with additional speakers over the coming months.

AMI announced the decision to postpone the expos on 23 March.

Andy Beevers, events director at the company, said: "We felt it was important to make and announce this decision now, in order to end the current uncertainty and to allow exhibitors, speakers and attendees to plan effectively for the new dates."

Exhibitor numbers for the 2020 shows are up by over 80% compared to AMI's launch event in 2018. More than 1,500 people have already registered to attend the 2020 expos and their bookings will transfer automatically to the new dates.

> <https://www.ami.international/exhibitions>

Clear sheet for face shields

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

In just 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

Primex is ramping up production of its face shields

shields according to Doug Borgsdorf, head of the design and fabrication division of Primex.

Other Primex divisions have also begun making products, including vials for a Coronavirus test kit.

> www.primexfabrication.com



KP boosts Brazil pharma film capacity



Klockner Pentaplast (KP) has completed a "significant expansion" at its pharmaceutical packaging film facility in Cotia, Brazil.

KP says that the expansion will give it extra coating capacity, to support rapid growth in the South American pharmaceuticals market.

A new coating line has increased KP's South American coating capacity by over 30%, which will help to shorten lead times. The added capacity will help KP meet the growing need for coated PVdC blister products that offer a high barrier.

"This expansion supports a growing demand for high-barrier protective packaging for pharmaceuticals," said Tracey Peacock, president of pharmaceutical, health & specialties at KP Films.

> www.kpfilms.com

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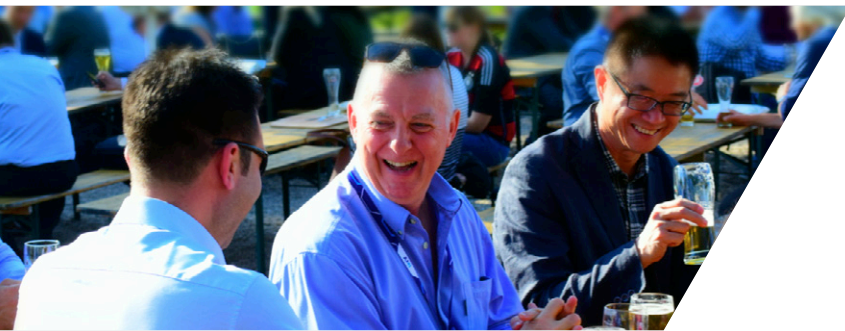
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Interpack put back until February 2021

Messe Düsseldorf has postponed its Interpack trade fair in response to the Coronavirus pandemic.

The event, due to take place on 7-13 May this year, will now be held from 25 February to 3 March 2021.

The organiser says it is following the recommendation of the German



Interpack has been postponed until 2021

government's crisis management team, and its assessment of the risk of major events. In addition, there is a general ruling, issued by the city of Düsseldorf on 11 March 2020, in which major events with more than 1,000 participants present at the same time are generally prohibited.

"The decision was taken in consultation with our advisory board and sponsoring associations," said Werner Dornscheidt, chairman of the board of management of Messe Düsseldorf.

Richard Clemens, managing director of the VDMA Food Processing and Packaging Machinery Association, added: "The Coronavirus represents a major challenge for the mechanical engineering sector. The possible effects of the pathogen - with an incalculable risk of infection - the threat of quarantine for returnees and considerable travel restrictions make it impossible to hold the Interpack in May. The new date ensures reliability in planning."

> www.interpack.com

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German converters report decline in sales and volume

GKV, the organisation that represents German plastics processors, reported a dip of around 1% in turnover last year.

It said that sales fell to €65.1bn in 2019, a fall of 1.2% compared to 2018. Within this, domestic sales fell nearly 2% to around €40bn, while exports fell almost 1% to just under €25bn.

As well as decreased turnover, processing volumes also fell - by around 1.2% to 14.6 million tonnes of plastic. In the same period, the industry's workforce increased marginally (by 0.3%) - taking numbers to 336,000 by the end of 2019.

The number of processing plants rose by 3%, to just over 3,000 facilities.

GKV's figures are not broken down into specific processes (such as extrusion). However, the packaging sector - which is likely to account for a large proportion of the film and sheet extrusion activity - saw a slight dip in the amount of material processed (from 4.5m to 4.4m tonnes), while turnover in the sector fell by 0.3% to remain at just under €15bn.

All figures apply to plants with more than 20 employees, said GKV.

> www.gkv.de



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Variants of agricultural film - which may control anything from temperature to light transmission - can improve the yield of a wide variety of crops. Lou Reade reports



Crop control: the use of plastic film in agriculture

Horticultural crops need all kinds of protection - from the effects of insects and disease, to weather conditions such as excess heat and cold. In northern European climates, there is a particular focus on shielding plants from excess cold, and providing a better growing climate.

Pat Flynn, trade association manager of the **Commercial Horticultural Association** in the UK, told delegates at last year's *Agricultural Film* conference - organised by **AMI** - in Barcelona, Spain: "Over the years, growers have recognised the benefits of providing protection to crops. We can grow crops that are not usually viable in our climate - such as sweet potatoes in Scotland."

Many improvements in UK agriculture over the last 30 years have been down to the use of protection provided by polyethylene films, she said.

"Structures have evolved to the extent that they now offer an equivalent to glass, but at less than 25% of the cost."

Some improvements in greenhouse film include: UV transmission; thermicity; cooling; light transmission and diffusion; photo-selectivity - manipulating selected wavelengths of light to control crop

growth; reduction of dripping, misting and fogging; higher strength and puncture resistance; and the greater use of renewables in production.

The reasoning behind some of these films is sometimes surprising - such as the ability to control UV transmission. Along with a direct improvement of crops - in aspects such as flavour and colour - it can also help in insect control.

"The ability to block UV to 380nm can greatly reduce the ability of insects to fly, as they can see in this spectrum," she said. "This is an important tool for growers looking to reduce pesticide use."

Films with higher thermicity can reflect around 90% of captured heat back into the structure, offering greater energy saving than traditional film. The reverse effect, cooling can also be important - even in the UK. For instance, by keeping growing blueberries at a cooler temperature, this delays the harvest date - which coincides with a gap in the global market. Photo-selective films can mimic certain habitats: letting through green light mimics the shade of a forest canopy, while blue light changes the ratio of near to far red - which naturally dwarfs plants without the need for chemicals. >

Main image:
A special film developed by Braskem helps to ensure that bananas grow at the right temperature

Right: Mulch film is critical to improving the yield of many types of crop

Going bananas

Though bananas are never likely to crop naturally in the UK - even with the help of agricultural film - their growth can be improved in other countries.

They thrive in hot countries - including India, China, the Philippines and Brazil - and can suffer from 'chilling'. If they are exposed to temperatures below 13°C while they are growing, this can show up on the skin, and spoil the flavour.

Lower temperatures can change physical and cellular membranes - some of which is irreversible. An example is browning below the skin (which is seen when the banana is peeled). The peel itself can be dull - and banana itself loses texture and flavour.

Existing solutions for this include wrapping the banana bunches in polyethylene or paper, to protect them from the lower temperatures. However, Brazilian chemical giant **Braskem** has taken part in a project to develop special films that do this more efficiently said Ana Paiva, of agro market development at the company.

Braskem developed different film formulations of PE film which could be silver or blue in colour, 25 or 35 microns thick, and with or without a thermal additive. This was used in combination with a PE thermal blanket, which was 3-5mm thick. One particular formulation was found to keep the minimum temperature above 13°C, while keeping the maximum temperature at about 38°C.

The most efficient formulation was a three-layer film that was 25 microns thick. It included 61% LLDPE, 10% LDPE, 4% blue masterbatch and 25% thermal additives masterbatch. The blanket included a 5mm foam extrusion, made chiefly from LDPE.

"The thermal blanket, combined with the PE film, increases the temperature of bunches by up to 6°C, improves visual quality and increases market opportunities for smallholder farmers," she said.

Mulch control

As well as controlling air temperature, plastic films can also control soil temperature. Mulch films are spread on the ground, around the growing plants. This control soil temperature, as well as helping to protect the plant from pests.

Issues with mulch film include longevity, recyclability, the presence - or absence - of chemicals that can leach into the soil, and, increasingly, biodegradability.

Kompuestos of Spain has developed new material grades for making biodegradable mulch film. Gregory Coue, technical manager at the company, told delegates that there was a need for 'greener solutions'.



He said there were many issues to using mulch film, including: the cost and effort of recovering the film; the difficulty in cleaning used mulch film before it can be recycled; the poor quality of any recyclate obtained; and the fact that a large amount of mulch film remains in the soil - or is landfilled.

He said that conventional LDPE mulch film accumulates at a rate of 463kg per hectare per decade. At the same time, they cannot be down-gauged, as this increases the relative rate of contamination and decreases the recovery rate.

"This is where biodegradable plastics bring value," he said.

Coue said that biodegradable film accumulates at a maximum level of 281kg per hectare - which falls to zero if cultivation stops for two years.

The company's Biokomp grade for soil biodegradation is partially bio-based, but biodegrades fully in soil, he said. The film offers high mechanical strength, and downgauging potential for thin agricultural and horticultural film - including mulch film, cover film and silage film.

It can be used to make black, transparent and coloured mulch films.

Biokomp is scheduled for commercial release in the first half of 2020, he said.

Using agro waste

Pilar Vilanueva, a researcher in the extrusion department of Spanish research organisation **Aimplas**, told delegates how by-products from agro-industrial waste can be used to within new

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Above: Tomato crops in greenhouses can be improved by the use of smart film that manages the amount of light available

biodegradable mulch film.

In the Agrimax project, bio-waste from crops such as tomatoes, olives and potatoes can be processed into a multitude of useful products, ranging from food additives to mulch film.

The project has two biorefineries, which process the waste material. For instance, one part of the project takes wheat bran and extracts monomers as anti-oxidants for use in mulch film.

To make the new mulch film, Aimplas and

partners take commercial biopolymers and create new proprietary formulations, using various oligomers and additives derived from agricultural waste.

“Different compounding methodologies are used to modify the commercial biopolymers with the oligomers and additives,” she said.

In several cases, the new additives help to delay the thermal degradation of the commercial biopolymers. For instance, a ‘neat’ polymer that starts degrading at 284°C can have this raised as high as 353°C with the addition of specific additives.

At the same time, TGA has been used to show that oxygen induction time (OIT) can also be improved. This proves that the new formulation has better anti-oxidant properties. Ageing tests also showed that the additives helped to improve mechanical strength and inhibit bacterial growth.

Further work in this area is likely to include: evaluating the processability on blown film lines; obtaining mono-layer and tri-layer films with optimisation of the addition of the films; and finding a correlation between functional groups of oligomers (such as double bonds and free hydroxyl groups).



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Smart materials

Silke Hemming, head of the greenhouse technology research team at **Wageningen University and Research Centre** in The Netherlands, told delegates how it had developed smart materials for greenhouses - including film that manages the amount of light available.

The long-term goal of the research is to produce new greenhouse systems that use sunlight in a very efficient way - thanks to the use of smart and adaptable materials.

"Solar light, in any climate zone, is converted into a form that is exactly needed by the crop to produce fresh products with a high yield and good taste, with a minimal input of natural resources," she said.

She said that a 1% increase in light intensity let to similar yield increases across a range of crops - from lettuce and radish to tomato and cucumber.

Some ways to improve light transmission through film include self-cleaning ability, high transmission material, removing droplets and using special coatings. For instance, self-cleaning film can boost transmission by 10-20%, she said.

Other films can improve the transmission of

diffuse light - which is particularly effective for improving tomato and cucumber yields. An effective method was to combine high light transmission with effective diffusion.

Other areas of research include: materials that transmit far infrared (FIR) light - which can lead to energy saving; humidity control, using ultra-porous membranes; and switchable materials, which can alternate between high light intensity, diffuse light and coloured light.

■ AMI's next Agricultural Film conference is held in San Diego, USA on 18-19 August 2020 (see [website](#)). The next event in Europe is on 9-11 November, in Barcelona in Spain (see [website](#)).

For more details on either event contact Rocio Martinez (rocio.martinez@ami.international) on +44 117 314 8111.

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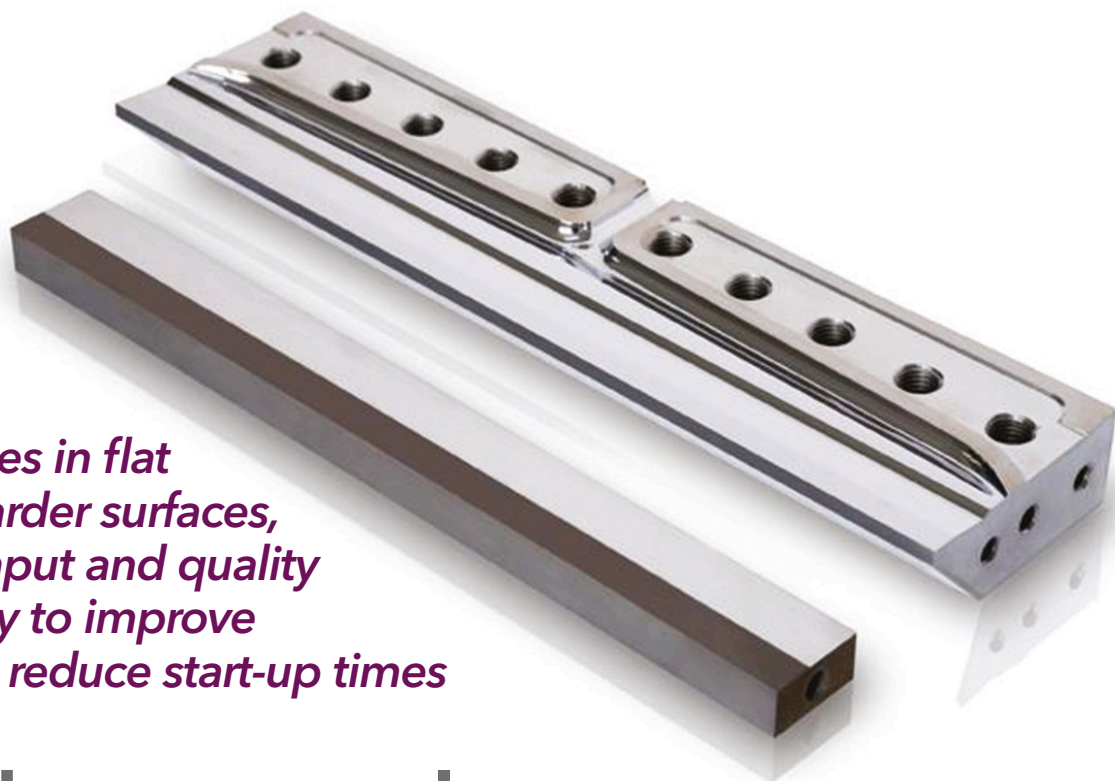
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Recent advances in flat dies include harder surfaces, higher throughput and quality - and the ability to improve tolerances and reduce start-up times

Straight story: latest in flat die technology

Flat dies - whether for cast film, or sheet, or even coating - are constantly being refined, in order to deal with the changing needs of production processes. This can range from complex changes of the internal geometry to surface treatment processes to make the external surfaces more robust.

JC Times of China recently developed a method of making its die surfaces harder and more wear resistant. The company says that, following several years of research, it has developed a "nanoscale diamond alloy" surface treatment technology, which it says offers good thermal conductivity, chemical and thermal stability, and wear resistance.

JC says that it can solve problems such as adhesion on the die surface coating layer, to ensure uniform coating.

The technique allows a die surface hardness up to HV 900 1000 - which is far superior to chromium plating. JC says that high-end film production will not scratch the die flow surface - which helps to extend the service life of the die head.

At the same time - in collaboration with a Japanese partner - the company has used tungsten carbide spray coating to increase the hardness of its die lips. The plating layer can reach a hardness of HV 1100-1300 and is superior to both chrome plating and nickel plating, says the company.

A surface finish of 0.01-0.02 microns produces a

wear-resistant, low-friction surface, which can be used in the production of optical film and other products, it says.

Touchless performance

The new Reflex Touchless die from **Cloeren** formed part of a major display at K2019 - a huge cast film line from SML of Austria.

SML said its PowerCast XL stretch film line had a start-up time of less than five minutes, hands-free production changes and very high output. At the show, it was seen producing ready-to-use 12 micron high-elongation film for the European market.

With help from innovations including Cloeren's 5,435mm-wide die, the line reached 525 m/min within five minutes. In this time, the thickness cross-profile variation of the film was lower than 0.24 micron 2-Sigma, making it ready for sale.

Cloeren says that its new die is designed to improve product quality and increase production yields through faster, more efficient product changes. It was developed following three years of research, which included multiple installations on full-scale production lines.

Rigid packaging

At an open house even, prior to K2019, **Bandera** of Italy demonstrated a new flat-die extrusion line for

Main image:
JC Times says its nanoscale diamond alloy surface treatment boosts wear resistance



Above and left: An automatic die helped Innovia improve tolerances and reduce start-up times in shrink film production for soft drink bottles



the rigid packaging sector - which was mainly dedicated to the production of five-layer rigid PET and PLA film for food packaging applications.

Visitors had the chance to see the flat-die technology extrusion hardware - called Condor Line. According to

Bandera, the line offers a new way of supporting converting companies in facing challenging production targets.

The project includes a complete flat-die extrusion line equipped with an in-line extrusion coating section - comprising nine extruders as a whole. The line represents a valuable research instrument for its reference sector, as actual industrial output requirements are implemented for research, says the company.

In the company's Extrusion Academy laboratory, it is possible to test polymers with advanced materials for new compounds, like PEEK or PLA with Graphene or 2DMaterials.

The event will be disclosed to major players, inviting them on a one-to-one basis to make them fully exploit the potential involved, provided the issue of prior confidentiality agreements.

Bandera recently began supplying flat dies to Italian film extruder AMB - a long-time partner in blown film. The latest line chosen by AMB is equipped with two twin-screw extruders, and allows a production capacity for high quality films that exceeds 3 tonnes/hour. AMB has also equipped the plant with state-of-the-art hardware, creating "an industrial production island for ensuring the expected growth of the market and to face new challenges".

Replacement die

Asia Poly Films Industries, an Indian producer of biaxially oriented polypropylene (BOPP) packaging film, has reduced downtime and increased throughput on its lamination-grade film line since changing to an EDI Autoflex die from **Nordson EDI**.

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

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

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

Using the same extruder, controls, and polymer recipe, the new die also produces film with lower haze and better gloss, he added.

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

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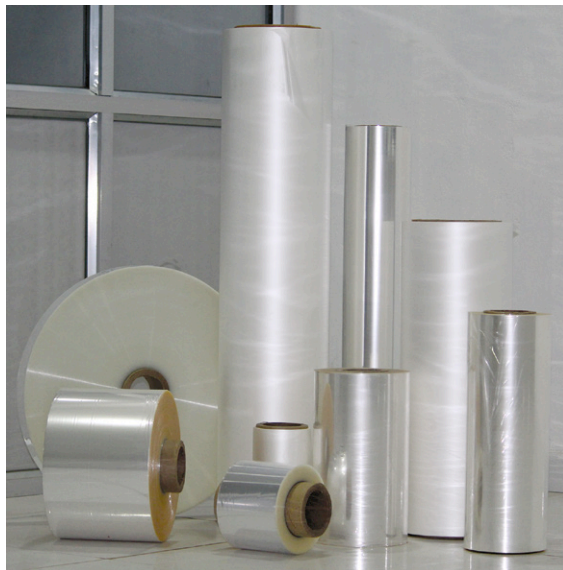


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Right:
Switching to a Nordson EDI die helped Asia Poly Films Industries improve the quality of its BOPP films



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

Tolerance boost

In a similar way, **Innovia** has switched to a new automatic die from Nordson EDI, for making shrink films - helping it to improve tolerances and reduce start-up times.

Innovia makes transparent film that is then printed on the inside surface, placed over a container and made to conform to its surface by means of heat shrinking. On one of its cast film lines - which processes a polystyrene blend into monoaxially-oriented film - it had been producing out-of-tolerance products.

The new die is an EDI Autoflex VI-RE H40 unit. Like the die it replaced, the Autoflex die is an automatic one, using data from a computerised downstream gauging system to adjust the transverse thickness profile by making changes to the flexible upper lip of the die.

"In comparison with our previous die, the new one produces more uniform film with 30% better tolerances," said Giuseppe Ronzoni, plant manager at Innovia. "The automatic control of the flexible lip is faster and more accurate, and start-ups are faster than before."

At start-ups, the rapid gauge profile adjustment provided by the Autoflex system reduces the time before saleable product is produced. Also helping to shorten start-ups is the design of the flow channel, or manifold, inside the die.

"The greater uniformity of the film produced with the EDI die reduces the potential for gauge bands on the product roll," said Ronzoni. "This leads to less stretching of the final product and better printing results."

Several areas of the Autoflex die are critical in improving product quality. Its flexible lip, for instance, is made up of thermally-actuated adjuster blocks that expand or contract to adjust the lip gap in areas of the film that are thicker or thinner than the target dimension.

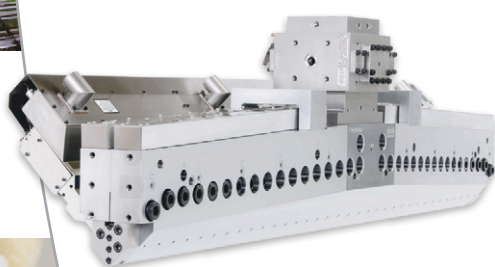
"The upper lip of the Autoflex die is more flexible in that the adjustments to the lip gap take place more rapidly," said Patrick Meinen, polymer dies product manager for Nordson.

Another critical factor for ensuring product quality is the length of the lip land - the lip surface just before the die exit. This can be made longer or shorter, to optimise product thickness, flatness, and surface finish. One problem of the original die is that its lip land was too short.

"In our Autoflex die, we optimised the lip land to control the product profile and manage die pressure," said Meinen.

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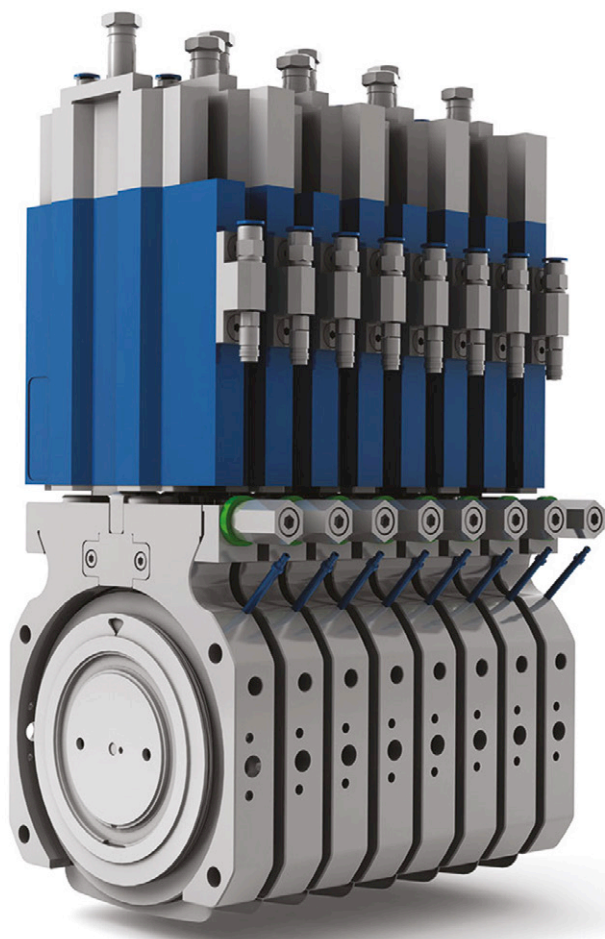
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A cut above: latest in slitters and winders

Recent innovation in slitter-rewinders include narrow knifeholders, a modelling program for the slitting process, and a modernising retrofit of 30 year-old machines

The emergence of larger and larger web widths - bringing economy of scale - brings with it the problem of slitting into more and more sections, for application such as labels, tape and many other kinds of end product.

At the same time, some end users are preferring to adapt their existing machinery and adapt it to cope with increasing demands. Recently, for instance, **Goebel IMS** retrofitted and modernised two of its slitter-rewinders - which have been operating in the market for 30 years.

The company has around 11,000 slitter-rewinders in various locations. In this case, a customer was asking for a retrofit on two Monslit models.

"The machines are used to process plastic films for packaging industries," said Harald Loos, head of electrical design at Goebel IMS. "One machine is in Canada, the other in the USA."

To meet future requirements, the lines had to be modernised. In some cases, this also included the cabling.

"In the area of cables and wires, a lot has happened in recent decades - and we wanted to incorporate these new developments into the retrofit," said Loos.

When cutting film, the web material is unwound from a mother roll of up to 12m wide on the slitter rewinder and cut lengthwise into narrower strips. These webs are fed to winding stations, where they

are rewound in the new width. One winding station can have two winding arms, of which up to 48 can be mounted on the traverse of the slitter rewinder. The winding arms can be moved two-dimensionally - left and right, to set the desired width of the web, and in a swivel movement to the front.

Sensors and actuators such as command devices, AC servo motors, positioning drives and valves are installed in each winding arm to perform the winding and movement processes. This means that the new cable must power, encoder and servo cables for driving the motor, and also several data cables. When developing the special cable, Goebel wanted to introduce additional data cables without significantly increasing the cable diameter, as well as balancing tension and pressure.

The company designed a special fastening clip to fasten the cable to the winding arms, via the outer sheath of the cable. The inner braiding ensures that mechanical tension acts only on the sheath.

The two redesigned Monoslit machines are now back at the customer's sites.

"With the new cabling, the machines are ready for the next 30 years," said Loos.

Narrow slitting

At the LabelExpo exhibition in Brussels last year, **Dienes** of Germany presented its DS4 knife holder - which has a honeycomb structure - and its Dienes

Main image:
The DS4 shear cut knife holder from Dienes can be nested closely together allowing for slit widths from 19mm

Making savings using in-line slitting

Davis-Standard has released a series of blogs on the winding process.

According to Duane Smith, product manager of specialty winding at the company: "When looking for ways to meet or exceed productivity and profitability goals, every non-value-added activity must be eliminated."

Users should consider the fact that each time a roll of material is handled, the chance of roll damage is increased, he said. In a typical scenario, a roll is loaded into the unwind of a

slitting and rewinding operation and multiple layers of the outside diameter are removed. The sheet is then threaded through another machine and jogged until the sheet runs true. After that, the slitters are engaged, and the slit webs are brought to the new cores.

"All of this generates waste and lost product," he said.

One of the best ways to simplify this process and boost profitability is to slit and wind shippable quality rolls

as part of the production line. Moving to an in-line arrangement could save \$0.05-0.10 per lb of production cost, he said.

"Just as important, by slitting and winding high-quality rolls with proper density control on your process, quality deviations such as moisture or caliper are more easily identified and corrected," he said.

The series of blogs is available on Davis-Standard's website.

➤ www.davis-standard.com

Label Slit 4.0 slitting system.

Dienes says that the DS4 shear cut knife holder is its smallest model, used for slitting the narrowest cutting widths. It is an intuitively operable and stable, and is designed for the slit widths from 19mm. Thanks to its honeycomb structure, it can be nested so closely together that the narrowest slit widths - as required in labels and adhesive tape production - can be achieved. It offers highest stability, a separate control of the slitting pressure and vertical adjustment, as well as clean, dust-free cutting edges. Despite its slim shape, a full 360° blade protection is integrated.

At the same time, its fully automatic Dienes Label Slit 4.0 slitting system uses individual knife holders, allowing labels to be cut from a wide variety of materials. This, says the company, means that it offers high flexibility and minimal downtimes.

"Due to the modular design, shear cut, crush cut or razor blade cutting can be used as an alternative, depending on requirements," said the company.

Slitting analysis

Dienes has also developed an analysis tool called TEOC ('The End of Coincidences') that digitally captures and optimises slitting processes. Data from the process is collected and analysed, allowing converters to make predictive forecasts, reduce machine downtime and increase productivity.

"Coincidence will thus come to an end," said the company.

TEOC has been available to customers since the end of 2019.

It displays limit values and average values, and includes notifications sent, interrelations aggregated, and forecasts made.

The platform is independent of the location of the slitting systems, and communication between TEOC and the system is based on current, standardised and encrypted protocols. On request, TEOC can also be offered locally with an optimised scope of services.

Overall, says Dienes, it will lower production costs, raise product quality and increase slitting know-how. The company will provide support throughout the operation, help machine operators operate the system and enable predictive maintenance.

Web winding

Atlas Converting unveiled a compact turret slitting rewinding machine at K2019 last year.

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

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

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

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

A new control system uses a flat touchscreen terminal to allow simple operation. This is used to input the most commonly used functions, such as speed, tension and lay-on pressure. It uses symbols rather than words - so is not language-sensitive.

A line-laser guide core positioning system enables the operator to reload new cores quickly



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and accurately, which minimises set-up time. Individual laser alignments can be set as low as 25mm.

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

Reduced downtime

At K2019, **Kampf** of Germany highlighted its ConSlitter series of slitting machines.

The latest design of ConSlitter CTRU helps to reduce downtime - especially when processing small batch sizes and increase throughput, says Kampf. The machine can also be set up as part of a networked production system. For optimum use of the ConSlitter, Kampf offers coordinated automation with other machines such as roll marking systems, palletising and packaging units.

These new digital services are based on its integrative platform, called the@vanced. It allows Kampf machines to be networked, to integrate



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

their built-in sensors with production planning and control systems and external software platforms. At the exhibition, it showed a digital line and contrast sensor from BST Eltromat installed in the new ConSlitter, making automatic positioning possible when the production information is transferred.

The company also presented its new PrimeSlitter. Working widths of over 10m, finished roll diameters of 1,500mm and speeds of up to 1,500 m/min are features of the new PrimeSlitter Black-Line range.



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Kampf has started a joint project – with Windmüller & Hölscher and Brückner – on the Digital Rolling Protocol (DRP) as part of Industry 4.0.

The aim is to develop a common standard with which a DRP can be created for each produced roll.

From the raw film material to the finished product ready for sale, important data from each production step can be collected and exchanged across machine and manufacturer boundaries using special identification numbers.

This technology offers many new possibilities for film manufacturing, says Kampf, including: better traceability in the event of a reclamation; and automated machine setting, including optimisation of important setting parameters.

Teflon handling

Nepata of Germany says that winding, slitting and cutting Teflon sheets is quite a challenge.

It says that its machines can handle the thickness of the material as well as its slippery surface.

The company says that its solutions can process all types of PTFE film because: its rewinding



machines process media with a thickness of up to 1 mm; the automatic cross cutter has different torque levels (so develops optimal cutting forces for every type of material); and, a novel slitting blade, with large-area bevelled edge, penetrates well into the material and has its own high heat capacity.

Above:
Kampf's
ConSlitter
series helps to
reduce
downtime,
especially for
small batch
sizes

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Chemical recycling, which converts waste polymers back into monomers, could help boost recycling rates for film and sheet waste such as packaging. Lou Reade reports



Chemical recycling: staying in the loop

Mechanical recycling of plastics continues to increase - in schemes such as the VinylPlus, which is likely to hit its target of recycling 1 million tonnes of PVC annually in Europe.

However, some plastics products - especially in film and sheet form - can be very hard to recycle. One reason behind this is that items such as food packaging are difficult to collect - and may not be part of a recognised recycling scheme. There are other issues too, such as the challenge in recycling multi-layer packaging - because of the difficulty in separating the different layers.

One proposed solution, which is still in its early days - but has enormous potential - is to recycle some plastics chemically rather than mechanically. The principle is not new, but the idea has huge momentum: almost every major plastics producer is developing its own chemical recycling technology - and was making lots of noise about it at last year's K2019 exhibition.

The technology is likely to be used to recycle 'low value' items - such as plastics bags - and 'hard to recycle' products such as multi-layer food packaging. While something like a PVC window frame or a cracked plastic pipe is relatively easy to collect and recycle mechanically, this is not the case for smaller items. As a consequence, they may be incinerated, sent to landfill or - worse - end up as litter.

BASF, Ineos, Dow and Sabic are among those developing ways to recycle waste polymers back into monomers - which can then be used as an alternative feedstock to make new polymers. This, say the companies, lowers the carbon footprint of the new plastic - as it is not made directly from crude oil.

Pyrolysing plastics

Chemical recycling works by converting polymers back into monomers. This is done using pyrolysis at around 400°C. Mixed, shredded plastic waste is

Main image:
Neste and Ravago plan to process more than 200,000 tonnes/year of waste plastic using chemical recycling

Right: This food pouch, with barrier layer, was made using a chemically recycled polymer from Sabic

heated to this temperature in the absence of oxygen. This breaks the polymer chains back into the monomers from which they were made.

The resultant liquid - known as pyrolysis oil - can be considered an alternative to crude oil-derived naphtha. In this state, the pyrolysis oil can be used as a fuel. However, plastics producers want to take it one step further and feed it into the cracker as a raw material.

"Pyrolysis is not the same as chemical recycling," said Servé Pelsers, senior project manager for corporate sustainability at **Sabic**

Europe, who manages the company's chemical recycling project. "After pyrolysis, the oil needs to be put through a cracker in order to make new plastics - and close the loop."

However, the oil must first be decontaminated - to make it suitable for adding to a traditional steam cracker - and saturated, through hydrogenation. Once these processes are complete, the oil is suitable for use in a traditional cracker - and as the basis for making virgin polymer.

Last year, Sabic started upgrading pyrolysis oil - which is supplied by its partner, Plastic Energy - at a plant in the Netherlands. Pelsers describes the plant's size as "between pilot and worldscale" and says that it offers a proof of concept for chemical recycling. Small volumes of alternative feedstock have already been fed into its Chemelot plastics production site in Geleen, in the Netherlands. This has allowed the company to offer small amounts of 'certified polymer' to selected customers.

In time, Sabic intends to scale up the plant and



make it fully commercial by 2021.

"This would allow us to make certified polymers in larger volumes than we can currently offer," he said. "In future, we intend to substitute as much naphtha as we can with alternative feedstocks."

Promising market

Other chemical companies have their own versions of the same principle. German chemical major **BASF** is also working on similar technology, which it calls Chem-Cycling.

"We see it as a valuable addition to mechanical recycling," says Christine Bunte, senior manager for industry advocacy and environmental policy at BASF.

As well as dealing with low value and hard-to-recycle plastics, chemical recycling can handle certain types of waste plastics more effectively.

"If a waste plastic contains a certain substance - such as an additive or flame retardant - this will not be removed by mechanical recycling," she said. "Chemical recycling allows you to purify waste plastics that are contaminated in some way - such as by engine oil."

BASF recently invested €20 million in Norwegian company Quantafuel, which specialises in pyrolysis and purification of plastic waste. Quantafuel's plan was to start a pilot plant in Skive, Denmark in early 2020 - with a nameplate capacity of 16,000 tonnes/year of pyrolysis oil. BASF has first refusal on the purified oil for at least the first four years of production, for use in its ChemCycling process.

However, the Coronavirus pandemic has pushed

Generating fuel from marine waste

On a relatively small scale - but addressing a vital need - the RepescaPlas project plans to apply chemical recycling to marine litter, to make fuel for fishing boats.

In the two years since the project began, five tonnes of marine litter has been recovered. The project, now in its final year, expects to use pyrolysis to make products from this litter.

The waste recovery process made it possible to use low-density polyethylene (LDPE) to build a composting

machine - made of 50% recycled material and marine waste. Recovered PET was used to make merchandising items to publicise the project. This material came from marine waste as well as recycled material.

To make use of the litter collected, mechanical recycling will be optimised to improve material properties and increase the percentage of marine debris that can be used in final products.

The final aim is to use technologies

such as pyrolysis to make new products that can actually be used by fishermen's associations. Studies are being carried out to determine the feasibility of setting up plants in ports to obtain fuel that can be used by sea-going vessels.

"This would be an excellent example of the circular economy at work," said Spanish research organisation Aimplas, which is a partner in the project.

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Major players in chemical recycling

Many major chemical companies are looking to introduce alternative feedstocks - including those derived from plastics waste - into their operations.

BASF has invested €20m in Quantafuel, which will supply BASF with purified pyrolysis oil from its plant in Denmark. Resource management company Geminor will supply Quantafuel with 20,000 tonnes/year of mixed plastic waste - which it says would otherwise be incinerated. 'Certified' grades made in this way have already been supplied to users including Südpack.

Braskem of Brazil has begun trials to convert post-consumer products such as grocery bags into pyrolysis oil - and ultimately new plastics. The research was run with three local

partners, including the Polymer Engineering Laboratory at the Alberto Luiz Coimbra Institute of Graduate Studies and Research in Engineering of the Federal University of Rio de Janeiro. At the recent K2019 exhibition, Braskem said it had run successful initial trials of pyrolysis oil on one of its crackers.

Clariant - in a project with Neste - is using raw materials such as waste cooking oil as a monomer source. Clariant has already produced a range of additives - including flame retardants and processing aids - using this approach. The additives offer 'drop in' performance, it says - meaning they can directly replace their fossil-based equivalents.

Dow has signed a deal with Fuenix - which will make pyrolysis oil from

plastic waste and supply it to Dow for use at its polymer production facilities at Terneuzen, in the Netherlands. At the same time, Dow has fed UPM's wood-derived BioVerno naphtha to make a commercial product - a plastic barrier coating for paperboard carton.

Ineos has supplied chemically recycled polystyrene (PS) to German dairy producer Muller, to make yoghurt pots. The company has signed a number of tie-ups to advance the chemical recycling of PS in both Europe and North America.

Sabir takes pyrolysis oil from its partner, Plastic Energy, and refines it for use in a cracker in the Netherlands. It is already producing 'certified grades' of plastic - which it calls Trucircle - for end users including Tupperware and packaging specialist Walki.

the implementation phase back.

"It is unlikely that the pyrolysis reactors will be fully commissioned within Q1," said the company. "The commissioning team - consisting of seven engineers from the supplier - were placed under quarantine in Jinan, China following their visit to the Danish Visa Application Centre in Beijing."

The company said it was looking at commissioning the pyrolysis reactors without their physical presence.

"This is not straightforward, as their presence is required for the contractual handover of the equipment," said the company. "We continue to

commission other equipment and systems - but are unable to confirm a start-up date until the situation is under control and travel bans are lifted, or we have worked out an alternative solution."

Alternative feedstock

Up to now, BASF has used relatively small amounts of pyrolysis oil. Like Sabir, it is putting this into its system, so that some of the plastic it makes is derived from 'green' feedstock. Producers and end users are very keen to publicise their environmental credentials, so use a technique called 'mass balance' to sell a designated amount of 'certified' polymer.

"It's similar to the approach taken by energy suppliers who sell green tariffs," said Bunte.

For instance, by feeding a certain amount of 'green feedstock into the cracker, a corresponding amount of end product - such as a plastic - can be 'certified' as being made from it. Some users of plastics have already paid a premium for these grades - which, like 'green electricity', are identical to their 'standard' equivalent.

There are rules in place for mass balance. For instance, a company can only produce its 'certified' grade at a plant where it uses alternative feedstock. It must also account for typical production losses before determining how much 'certified' product it can sell.

"We're all looking for a common way to calculate

Below: BASF is planning to increase the amount of pyrolysis oil it uses in its steamcracker



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it – which must be credible,” she said.

Several end users have already used BASF’s certified grades to make products. Südpack, a European producer of film packaging, has made a polyamide film and polyethylene film that were processed into specially sealed packaging for mozzarella.

“Film packaging must fulfill important roles – such as product protection, hygiene and shelf life – while using a minimum amount of plastics,” said Johannes Remmele, managing partner at Südpack. “That is why it is made of several materials and layers, with various properties and barriers. Through ChemCycling, we come closer to solving the problems associated with recycling of flexible packaging.”

While ‘certified’ grades – whether offered by Sabic, BASF or anybody else – have identical mechanical properties to the ‘non-certified’ grades, they help industrial companies meet sustainability targets.

Grand scale

Finland-based **Neste** and plastics recycler **Ravago** have revealed plans to process more than 200,000 tonnes/year of waste plastic through chemical recycling.

Chemical recycling of plastic waste will enable the petrochemical industry to meet its recycling targets and develop a more sustainable, climate-friendlier offering, said the partners.

“Ravago’s geographical reach and expertise in plastics recycling – together with Neste’s record in upgrading challenging refinery feedstock – provide an excellent foundation for demonstrating and scaling up chemical recycling with speed,” said Mercedes Alonso, executive vice president of renewable polymers and chemicals at Neste.

Neste aims to process more than 1 million tonnes/year of plastics waste from 2030.

“With this, we could contribute to increasing the

annual recycling rate of post-consumer plastic waste by 25-30% from the current level in Europe,” she added.

Chemical recycling will enable the companies to upgrade even coloured and mixed plastic packaging waste into high-quality raw material for making new plastics, chemicals and fuels. (Neste is a major producer of renewable diesel and jet fuel.) The new raw material could even be used in sensitive applications, such as primary food packaging, or pharmaceutical and healthcare applications.

Theo Roussis, CEO of Ravago, added: “We have been mechanically recycling polymers for nearly 60 years – but chemical recycling should be part of a sustainable solution that our society requires today.”

Oil replacement

Dow is also taking the pyrolysis oil approach. It has signed a deal with Netherlands-based Fuenix, which will make pyrolysis oil from plastic waste and supply it to Dow for use at its polymer production facilities at Terneuzen in The Netherlands.

The agreement contributes towards Dow’s commitment to incorporate at least 100,000 tonnes of recycled plastics into its products sold in the European Union by 2025.

“We’ve already ordered 10 tonnes of oil from Fuenix,” said Romain Cazenave, marketing director of packaging for EMEA at Dow. “The next step is to ramp it up. We want to use this in our normal feedstock stream.”

While ‘closing the loop’ – using plastic waste as a feedstock – is symbolically important to the plastics industry, there are other ways to replace fossil feedstocks. Dow is doing this, in an agreement with Finland-based UPM. UPM is a papermaker, but its subsidiary UPM Biofuels produces a range of chemicals – such as biofuels – from paper industry waste. One of its products, called BioVerno naphtha, can replace fossil-based naphtha.

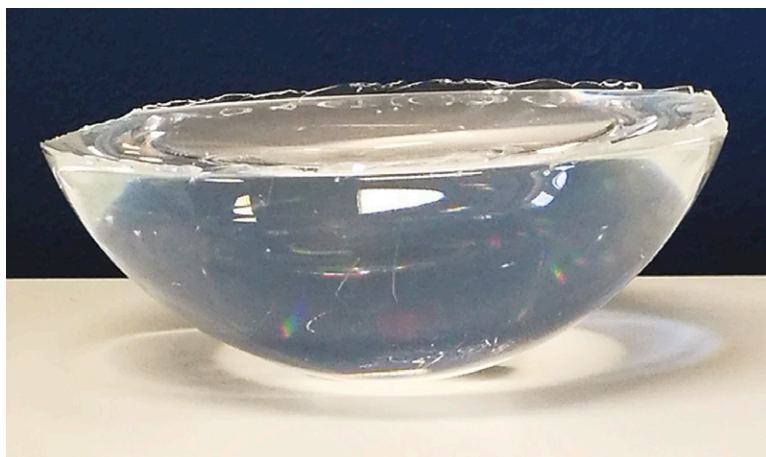
The raw material for making it is crude tall oil – a residue of the pulp-making process. This ‘wood-based naphtha’ can be mixed with ‘conventional’ naphtha during production.

“At one point, we could be using naphtha from the refinery, some from chemical recycling and some from UPM,” said Cazenave.

Dow has already produced plastics from BioVerno naphtha, and put it into commercial use. In a joint project, Dow – with Finnish dairy Arla and Norwegian packaging company Elopak – has created a paperboard carton with a plastic barrier coating derived from BioVerno naphtha.

The technology was applied to around 40 million cartons last year, saving an estimated

Below: Ineos has produced virgin polystyrene from previously polymerised material



180,000 tonnes of fossil-based plastics – and cutting the packaging's carbon footprint by around one-fifth, said the company.

Styrene solutions

Ineos has focused its chemical recycling efforts on polystyrene (PS). The company is running projects in both Europe and North America to depolymerise – then repolymerise – waste PS.

In North America, it has teamed up with Agilyx to develop a PS chemical recycling facility. The facility will be able to process up to 100 tonnes/day of post-consumer PS. Proprietary technology from Agilyx breaks the PS down to its molecular base monomers – which can be used to create new styrenic polymers.

The Agilyx process can handle PS that is contaminated with food and other organics. Earlier in 2019, Ineos and Agilyx also revealed plans for collaborate on a commercial scale PS chemical recycling plant in Europe.

Prior to this, Ineos had been working on depolymerising polystyrene for some time through its Resolve project in Germany. Here, in partnership with leading academic institutes, it has been assessing the practicality of recycling post-consumer PS – which is often dirty and potentially mixed with other types of plastic.

Last year, Ineos supplied small amounts of chemically recycled polystyrene to German dairy producer Muller – which has made yoghurt pots from the material. The two companies are working on a project that will gradually scale up in size: it began last year at lab scale, will move up to pilot scale this year – with plans for a commercial-scale plant in 2022.

Michiel Verswyvel, global R&D manager at Ineos Styrolution, said: "Our next step is to scale up the use of recycled styrene in our products to several tonnes in 2021."

Future moves

While plastics companies are being very vocal about their progress in chemical recycling, the volumes are currently tiny in comparison with their total throughput. To put it into context, Dow recently ordered 10 tonnes of pyrolysis oil from its partner Fuenix – yet each of its ethylene crackers in the Netherlands has a throughput of around 600,000 tonnes/year. For now, chemical recycling is still in its very early days. However, the fact that major chemical companies have committed resources to it – and both they and their customers are under pressure to abide by tough recycling targets – makes it a technique with huge promise of commercial success.

■ AMI will run a conference on chemical recycling in Hamburg, Germany on 3-4 November later this year.

For more details, contact organiser Olivia Poole (olivia.poole@ami.international) on +44 (0)117 314 8111.

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Left: Dairy manufacturer Muller has produced yoghurt pots using Ineos' chemically recycled polystyrene

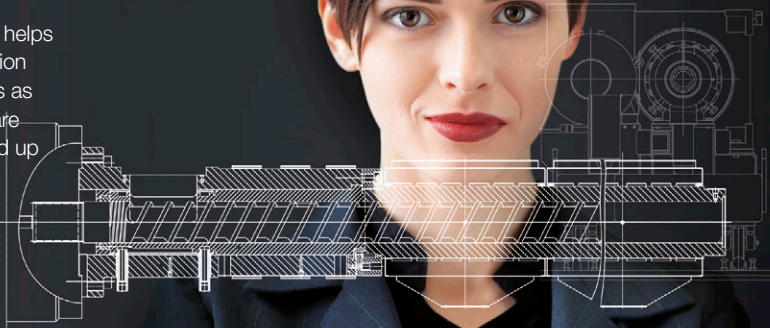


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PET

EconCore develops honeycomb cores from recycled PET material

Recycled polyethylene terephthalate (rPET) honeycomb is now commercially available to licence from EconCore. The company conducted two years of research, to develop the best way of processing used PET into a continuously produced honeycomb core.

EconCore was awarded a grant to fund research over a two-year period from Flanders Innovation and Entrepreneurship (VLAIO), a Belgian government agency that finances strategic and industrial research.

The rPET honeycomb core is typically made from more than 95%

recycled PET from a variety of sources such as bottles and food packaging. It is a cost-effective solution as it does not require much pre-production processing to achieve a product that outperforms PP honeycombs.

Wouter Winant, technical manager at EconCore, said: "Our technology has been proven to work with many thermoplastics. Adapting it to use PET and rPET honeycomb is another great step forward. By adjusting the content of additives or fillers, we can optimise the performance characteristics."

Part of the project involved adapt-

ing the equipment in order to increase production efficiency, which was done in partnership with extruder manufacturer Meaf.

While companies can now license EconCore technology to make honeycomb core sandwich panels from rPET, the development is ongoing.

"We will continue to push the boundaries for more demanding applications," said Winant. "We are learning how to adapt our technology for lower volume, high-specification applications."

➤ www.econcore.com

BOPP

Better embossing performance

Innovia Films has developed Rayoface mBoss, a BOPP film that has been engineered to offer long-lasting premium embossing performance.

Richard Southward, global product manager for labels, said: "At 130 microns, it has a premium feel and offers high conversion and labelling efficiencies due to its exceptional dimensional stability."

The product has a high level of opacity, even when wet, and is suitable for use with a wide range of inks and foils as well as textured varnishes.

"Third party trials have shown the longevity and robustness of the embossed features through the supply chain, ensuring the on-shelf impact and brand experience that Rayoface mBoss can generate," said Southward.

➤ www.innoviafilms.com



PP

Polypropylene films for recyclable pouches

Profol says that its CPPouch family of films provide flexible packaging pouch structures that are completely recyclable - and do not require the use of foil or solvents.

The films meet the packaging industry's need for highly functional, single-material solutions that can be more easily separated and recycled.

CPPouch polypropylene film - for stand-up and pillow pouches - offers high functionality and differentiated performance for narrow web and traditional pouch converting markets. As well as improved sustainability and recyclability, PP-based pouches can offer operational efficiency and can be designed for low haze, directional tear and higher stiffness advantages in comparison with PE pouches. To expand on solutions where this pouch film can be used, a version suitable for retort applications is being developed.

"Our CPPouch gives manufacturers an important tool for improving sustainability of packaging materials," said Mark VanSumeren, director of new business development at Profol.

CPPouch solutions include a coextruded, PP-based film material. There are no extra lamination steps and no need for adhesive curing, which allows pouch manufacturers to increase production speed and reduce costs, says the company.

➤ www.profol.com



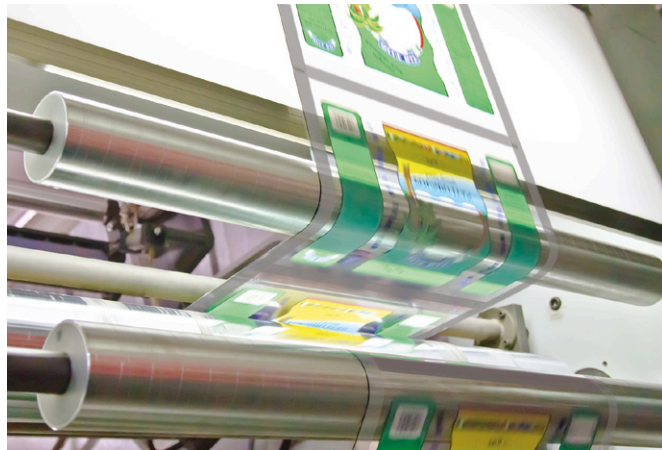
INSPECTION

Inspecting packaging film on both sides simultaneously

Isra Vision says that its PrintStar inline inspection solution offers continuous quality and process control of printed images, lamination, and coatings - including metallised surfaces.

A medium-sized packaging producer is already using the system for applying cold seal adhesives to flexible packaging. The expertise gained from the inspection is used to further improve printing processes.

After printing, flexible film is moved to the laminator, where a patterned adhesive is applied to the reverse of the film. The application must then be aligned with the print on the front in the precise position in the register at a speed of up to 1,000 feet per minute. Another challenge is that the various films are typically finished with reflective surfaces.



The system detects all defects in the cold seal and monitors the process to ensure that the coating is even, free from voids, and aligns with the repeating print. Using high-resolution LCCD cameras - combined with ultrabright LED lighting - PrintStar detects both individual and recurrent cold seal defects in real-time. Both sides of the film are checked with the same system platform.

The system allows users

to set acoustic alerts to warn them if the cold seal application is misaligned with the print - freeing up operators to handle other tasks while the inspection is running.

Isra's technicians helped the packaging producer to find the ideal location for installing the cameras in its existing machine set-up. The inspection system was ready to use immediately after installation, offering reliable inspection results quickly.

➤ www.isravision.com

CHEMICAL ANALYSIS

Screening samples for plasticisers

Actus Analytical has developed an FTIR method to screen polymer samples and detect ortho-phthalate plasticiser to levels of 0.1%.

The method is positioned as a quality control tool to allow processors to quickly determine whether or not a sample contains an ortho-phthalate. FTIR is well suited for this kind of quality control tasks, says the company, because it is a non-destructive, simple, and inexpensive test that gives immediate results. In addition, the chemometric model allows its use by non-technical personnel.

The technique was developed for the Agilent 4500 FTIR, which the company says is well suited to the task due to its power and patented permanent calibration.

➤ www.actusanalytical.com

SHEET EXTRUSION

Airlite Plastics expands sheet capacity

US-based sheet producer Airlite Plastics has expanded production at its plant in Nazareth, Pennsylvania with a semi-customised Davis-Standard sheet line.

The new line supports various thicknesses and textures of Airlite's thin-gauge sheet production. This includes its Orthoform sheet used in fabricating orthotics and prosthetics.

Davis-Standard engineered the line for strict repeatability, gauge control, product consistency and low scrap, which are essential to Airlite's process-

es. It operates five lines at the plant.

Tony Alfieri, vice president and general manager of this division of Airlite, said that the correct equipment combination is important because thin-gauge sheet production is challenging. His plant schedules operations around processing a mix of sheet thicknesses from 0.16 to .25in (4-6mm), and with different textures ranging from smooth to haircell. For instance, sheet used for Orthoform is drape-formed using a very specific resin.

Key components of the new line include a Thermatic III extruder, DS-eVue control system, screen changer package, die, melt pump, and XP Express PS series roll stand system with a unique roll configuration to ensure quality and consistency.

"Engineering and installing a complete sheet line is a huge undertaking with a lot of attention to detail," said Alfieri. "Knowing we have the technology to make that happen is critical."

➤ www.davis-standard.com

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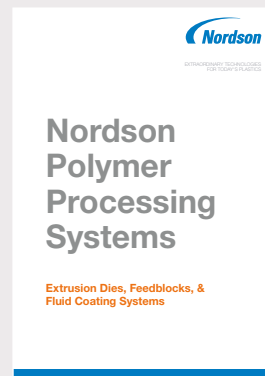
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This new brochure from Colines focuses on extrusion lines for the production of barrier films for vacuum and modified atmosphere packaging to preserve foodstuffs and medical products.

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Luuka Plastics

Head office:	Kampala, Uganda
Managing director:	Badru Muwanga
Founded:	1986
Ownership:	Private
Employees:	Around 900
Profile:	Although Luuka Plastics was founded in 1986, this was as a general trading company. In 1993, it began trading in a variety of flexible packaging bags in finished form. In 2004, it started producing bags of its own, with a single extruder, printing machine and cutting machine. Later, in 2008, it began laminating films - and in 2016 expanded into injection and blow moulded products.
Product lines:	The company's main product line is polyethylene films and bags. These are produced for a wide range of applications, including milk, rice, tea, sugar and bread. Material is supplied in roll and bag form, and either plain or printed. In addition to PE, Luuka offers other substrates, including BOPP, CPP and PET, in either clear or metallised versions. In addition, the company offers HDPE and PP woven sacks, for applications such as food grain or construction products.
Factory location:	The company makes all its products at a new 12-acre manufacturing facility in Namanve industrial park, north of Kampala. As well as supplying the home market, Luuka exports to local economies, including Kenya, Tanzania, Rwanda, Burundi, Congo and South Sudan. The production facilities include extrusion, printing and converting machines. In parallel, the company runs a well-developed recycling plant that closes the loop in its production cycle. It recycles in-house waste and post-consumer waste.

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Film and Sheet FORTHCOMING FEATURES EXTRUSION

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

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Materials handling
Barrier film
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June 2020

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Downstream equipment
Plastic pouches

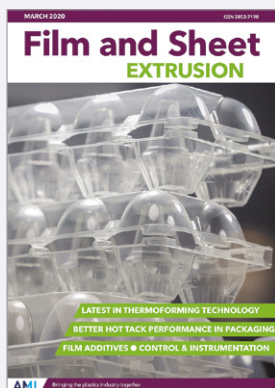
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Film and Sheet March 2020

The March issue of Film and Sheet Extrusion has features on the latest applications in thermoforming, additives for film production and optimised film structures with hot tack/seal integrity.

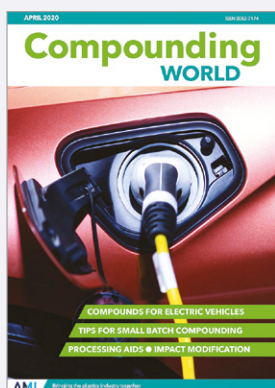
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Film and Sheet January/February 2020

The combined January/February edition of Film and Sheet Extrusion examines the latest developments in film technology, plus new polymer analysis equipment and some innovative medical materials and applications.

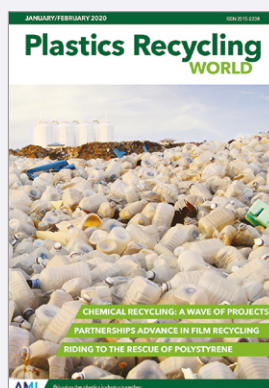
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Compounding World April 2020

The April edition of Compounding World takes a look at the opportunities for compounding companies as car makers turn their attention to electric vehicles. Other features cover small batch compounding, impact modification and innovations in lubricants.

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Plastics Recycling World January/February 2020

The January-February of Plastics Recycling World takes a deep dive into chemical recycling, with features on the many technologies being developed for polyolefins and polystyrene. Plus the latest on film recycling technology and projects.

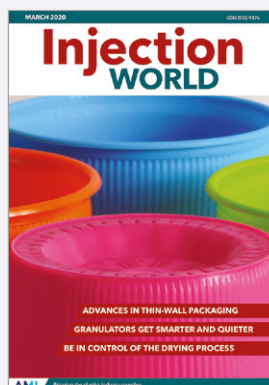
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Pipe and Profile April 2020

The April edition of Pipe and Profile Extrusion takes a look at some of the latest innovation in PE100 pipes. It also examines new developments in process control and instrumentation, extrusion standards and material size reduction.

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Injection World March 2020

The March edition of Injection World magazine looks at the latest mould and machinery developments for thin wall moulding. Plus the latest introductions in granulation and material drying technology.

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	3-6 August	Chinaplas, Shanghai, China	http://www.chinaplasonline.com
	29 Sep-1 Oct	Interplas, Birmingham, UK	www.interplasuk.com
	7-8 October	Plastics Extrusion World Expo Europe, Essen, Germany	https://eu.extrusion-expo.com
	13-17 October	Fakuma, Friedrichshafen, Germany	www.fakuma-messe.de
	4-5 November	Plastics Extrusion World Expo USA, Cleveland, USA	www.extrusion-expo.com/na/
	8-11 November	Pack Expo, Chicago, USA	www.packexpointernational.com
	23-26 November	All4Pack, Paris, France	www.all4pack.com
2021	2-4 December	Plastic Expo, Tokyo, Japan	www.plas.jp/en-gb.html
	4-7 May	Plast 2021, Milan, Italy	www.plastonline.org/en
	17-21 May	NPE 2021	www.npe.org

AMI CONFERENCES

18-19 August 2020	Agricultural Film, San Diego, USA
14-16 September 2020	Stretch & Shrink Film, Barcelona, Spain
14-16 September 2020	Polymer Sourcing, Hamburg, Germany
22-23 September 2020	Stretch & Shrink Film Asia, Bangkok, Thailand
28-30 September 2020	Biax Film, Madrid, Spain
3-4 November 2020	Chemical Recycling, Hamburg, Germany
9-11 November 2020	Agricultural Film, Barcelona, Spain
16-18 November 2020	Waterproof Membranes, Bonn, Germany
17-19 November 2020	Multilayer Flexible Packaging, Vienna, Austria

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

PLASTICS RECYCLING
WORLD EXPO

POLYMER TESTING
WORLD EXPO

7 - 8 October, 2020
ESSEN, GERMANY

PLASTICS EXTRUSION
WORLD EXPO

COMPOUNDING
WORLD EXPO

4 - 5 November, 2020
CLEVELAND, OHIO

www.ami.international/exhibitions