

# Injection WORLD



INJECTION MOLDING  
& DESIGN EXPO

**SHOW PREVIEW**



**THE RISE OF RECYCLED MATERIALS**

**MEDICAL MOULDING DOES MORE**

**DIGITAL HELP FOR INJECTION MOULDERS**

# GET THE APP..

# Injection WORLD

## Read Injection World anywhere on your phone or tablet

The *Injection World* app is available free-of-charge for iPads, iPhones and a huge range of Android-based tablets and smartphones. Aside from enabling off-line reading, the app also gives you fast access to our archive of back issues allowing you to build up your own library. And if you opt for the free subscription on installation, all future editions will arrive on your device automatically.

The *Injection World* magazine app has already been downloaded more than 25,152 times by readers in 141 different countries. Why not try it out yourself? You can find the app in Apple's App Store and in the Google Play Store. Just search for "*Injection World*" or "AMI Plastics". Or click the relevant button below.



The *Injection World* app is sponsored by

# CLF

## Injection Molding Solutions

Chuan Lih Fa (CLF) Machinery Works Co. Ltd was founded in 1966 and has evolved from a local factory offering small size plastic injection molding machines to become an international brand with diverse models delivering complete plant optimization and services globally. CLF is now focused on R&D, manufacture and sales of injection molding machines and is known for its super-large, high precision and superior performance models. CLF constantly upholds its pursuit of excellence for quality and sustainable injection molding technology.

[www.clf.com.tw/en](http://www.clf.com.tw/en)



# Injection WORLD

## 5 News

News from across the global injection moulding industry: TecPart reports lower sales among members; Samvardhana Motherson to buy Dr Schneider Group; Platinum Equity to acquire HC.

## 13 The rise of recycled materials

The need to include recycled plastics in new products is set to grow, driven by legislative and OEM pressures. Materials producers are aiming to meet these needs, writes Chris Saunders  
COVER PHOTO: BMW

## 25 Digital help for injection moulders

The latest digital machine functions can help with a range of issues from energy efficiency to the shortage in skilled operators, according to machinery companies. By David Eldridge

## 30 Preview: Injection Molding and Design Expo

The Injection Molding and Design Expo is back in Michigan, US, this month. Injection World previews exhibitors at the two-day event.

## 44 Medical moulding does more

New materials and machinery for medical moulding are helping to raise performance and precision. Mikell Knights reports on recent developments.

## 53 Preview: Plast 2023

Preview of some of the injection moulding exhibitors at Plast which has returned as a live event after the Covid pandemic.

## 62 Diary



## COMING NEXT ISSUE

› Electrical & Electronic › Surfaces & Decoration › Materials Handling

## CONTACT US

**AMI**

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

DOWNLOAD MEDIA DATA

### EDITORIAL

**Editor-in-Chief:** Chris Smith  
chris.smith@amiplastics.com  
**Editor:** David Eldridge  
david.eldridge@amiplastics.com  
**Senior Staff Writer:** Chris Saunders  
chris.saunders@amiplastics.com  
**Contributing Editors:**  
Mark Holmes - editorial@compoundingworld.com  
Mikell Knights - mikell.knights@amiplastics.com  
**Events and Magazines Director:** Andy Beevers  
andy.beevers@amiplastics.com

### ADVERTISING

**Advertisement Manager:** Claire Bishop  
claire.bishop@amiplastics.com T/ +44 (0)7905 848744  
**Head - Business Development:** Paul Beckley  
paul.beckley@amiplastics.com T/ +44 (0) 117 311 1529  
**Advertising Sales (China/Hong Kong):** Maggie Liu  
maggie.liu@ringiertrade.com T/ +86 13602785446  
**Advertising Sales (Taiwan):** Ms Sydney Lai  
sydneylai@ringier.com.hk T/ +886-913625628  
**Advertising and Expo Sales (India):** Yogesh Vyas  
yogesh@exhibetter.com T/ +91 9920735930

© Copyright Applied Market Information. No part may be reproduced without the prior written permission of the publisher.

# You're invited to the Injection Molding and Design Expo

The 2023 edition of the Injection Molding and Design Expo is happening this month and I am inviting readers of *Injection World* magazine to join me at the event. The trade show and its accompanying conferences are taking place on September 20-21, 2023, in Novi, Michigan, USA. There is free attendance at the event for every *Injection World* reader who registers for a ticket at the [event website](#).

The Injection Molding and Design Expo, which was first held in May 2022, is organised by AMI – publisher of *Injection World* – and Crain Communications – publisher of *Plastics News*. The exhibition features 100 leading companies from across the supply chain. In this issue there is a preview of the exhibiting companies (page 30).

At the event, the conference theatre and learning space are hosting 50 expert speakers over the two days, covering market trends, innovative technologies, exciting applications and successful business strategies.

I'm looking forward to moderating a panel discussion on 'How do we become more sustainable?' on the first day of

the event. Panelists include:

John Manderfield, Innovation and Design Fellow, **Altium Packaging**, Susan Kozora, Director, Advanced Materials Engineering, **International Automotive Components (IAC)**, Grey Parker, Principal and CEO, **Sundberg-Ferar** and Michael Evans, Vice President of North American Operations, **Amcort**

Other companies speaking at the event include: Teel Plastics, Yanfeng Automotive Interiors, Westfall Technik, Radius Packaging, Medbio, Champion Plastics, RJG, Routsis Training, TK Mold & Engineering, Team 1 Plastics, Cavalier Tool, Beaumont, MMI Engineered Solutions, AutoForecast Solutions, Paulson Training Programs, Decatur Mold and many more. Check out the full programs [here](#).

**I hope you can join me in Novi.**

**David Eldridge**  
Editor  
**Injection World**

Register for your **FREE** exhibition and conference ticket today



INJECTION MOLDING & DESIGN EXPO

SEPTEMBER 20-21, 2023

SUBURBAN COLLECTION SHOWPLACE, NOVI, MI, USA

THE COUNTDOWN IS ON  
Less than a month to go



REGISTER FOR FREE

# TecPart reports gloom in German industry

TecPart, the Association of Technical Plastic Products in Germany, reports that sales among the country's plastics processors were €38bn in the first half of 2023, dropping by 4.6% compared to the previous year.

Construction, the area with the highest turnover, lost the most with sales down by almost 11%, while packaging was down by 5.9% and consumer goods by 1.7%. The downward trend is attributed to inflation and higher interest rates.

However, TecPart members in technical part production experienced an increase in activity of 3%, equating to €10.7bn. This is said to be primarily a result of recent growth in vehicle



**Michael Weigelt, Managing Director of TecPart**

production, which the VDA says is up by 15% on 2022.

The outlook is less optimistic in other areas where there are clear signs of a diminishing economy for the second half of 2023. TecPart members' orders

within important sectors like mechanical engineering, the electrical industry, and construction, have been reduced and there are said to be limited follow-up orders. This weakness in demand is leading to a surplus of plastics being produced which has depressed prices.

Michael Weigelt, Managing Director of TecPart, said: "If the economic framework conditions are not improved quickly and significantly, we will have too few companies [able to] finance the transformation wanted by the government. Without the economic driving force of Germany, Europe is also in danger of failing."

> [www.tecpart.de](http://www.tecpart.de)

## DuPont to sell 80% of Delrin unit

DuPont has confirmed plans to sell 80% of its Delrin acetal (POM) business to private equity group TJC (formerly The Jordan Company) by the end of the year, subject to regulatory approvals.

The deal is valued at around \$1.8bn. The unit being sold produces acetal homopolymers, used in high-load mechanical applications such as conveyer belts, safety restraints, gears and medical devices.

DuPont Executive Chairman and CEO Ed Breen said the deal "largely completes our planned exit of the former M&M segment, advancing our position as a premier multi-industrial company. We are excited to partner with TJC given their successful track record of creating value through an operations-focused approach and are confident in their ability to drive growth and opportunity for employees and customers of the Delrin business."

> [www.dupont.com](http://www.dupont.com)

## US Merchants' growth plan

US-based tote box manufacturer US Merchants has opened a new production plant in Phoenix, AZ, equipped with 69 injection moulding machines including several all-electric, 2,000-ton LS Mtron machines. A second facility is

coming to Houston, and the company also plans to open further plants in Montreal and the UK.

Speaking about the planned UK facility, company president Jeff Green said: "It will be our first overseas plant and it will

lead us into a lot more business with the warehouse clubs and mass merchants in Western Europe. We already sell products in the UK, Spain, France, Iceland, and more, and we expect that to grow."

> <http://usmerchants.com>

## Netstal appoints sales agent for Mexico

Injection machine maker Netstal has appointed iTech-Global as sales agent for Mexico. Based in Querétaro, iTech-Global has a strong presence in the region and considerable expertise in the same market segments as Netstal's core business. Under the agreement, Netstal will continue to operate the

service and spare parts business internally from its site in Querétaro.

Doug Haberman, President of Netstal's US subsidiary and sales director for the Americas region, said: "We are extremely excited to add an agency with iTech's credibility to our sales team. Their experience and

position in the PET preforms and packaging segments are a perfect complement to our focus areas. With the relaunch of the Netstal brand in Mexico, we have found the ideal partner to expand our business in this strategically important region."

> [www.netstal.com](http://www.netstal.com)



**IN BRIEF...**

Jochen Pernsteiner has become the new Sales Director/Head of Sales at Austrian injection moulding machinery maker **Wittmann Battenfeld**. Pernsteiner joined the company in 2018 and succeeds Valentina Faloci. [www.wittmann-group.com](http://www.wittmann-group.com)

Austrian manufacturer Semperit has successfully completed the acquisition of Rico Group, a specialist in production of LSR components which generated revenue of around €90m in the financial year 2022 and employs more than 500 people. [www.semperitgroup.com](http://www.semperitgroup.com)

Automotive supplier **Magna** has completed a \$17m expansion of its lighting division in Querétaro, Mexico. The move comes after the company won multiple business awards from automakers. [www.magna.com](http://www.magna.com)

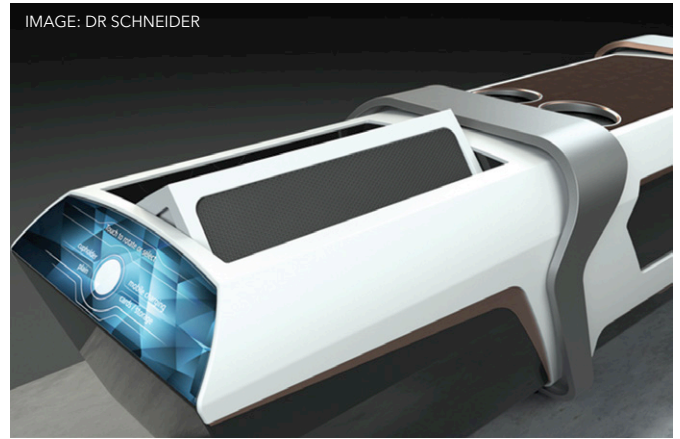
# Samvardhana Motherson buys Dr Schneider Group

Assets and shares of the insolvent German automotive injection moulder Dr Schneider Group have been bought by Samvardhana Motherson International.

Dr Schneider's sales last year were €472m, but it filed for insolvency in September 2022 due to what it called an "unsuccessful operational and financial restructuring". The German manufacturer of high-end and integrated electronic interior components and systems employs around 4,500 people in seven facilities across five countries.

It produces air-vents, decorative interior polymer components with illumination and has a strong presence in premium vehicles.

Motherson, a Tier 1 supplier of polymer-based interior modules, is said to



**Virtual demonstrator of a modular centre console created by Dr Schneider**

be working closely with automotive OEMs towards enhancing interior experience. With this acquisition, it will gain access to a larger range of components and be able to offer these technologies to other emerging countries and customers. The overall value of the transaction is around €118m and is

expected to be closed by the third quarter of the 2023-24 financial year, said Motherson.

Commenting on the deal, Vivek Chaand Sehgal, Chairman of Motherson said: "We see a lot of synergies and untapped potential in this business, especially on the R&D side."

[www.motherson.com](http://www.motherson.com)

## Omega Plastics increases capacity in UK



IMAGE: OMEGA PLASTICS

UK-based integrated plastic injection moulding group Omega Plastics has increased capacity at both Signal Plastics and Omega Plastics. Signal Plastics, based in Washington, Tyne and Wear, has acquired a Yizumi 700-tonne injection moulding machine equipped with a Sepro robot and a conveyor belt in order to meet increasing demand from an existing customer.

In addition, Omega Plastics, based in Gateshead, has established a dedicated tool trial cell equipped with two injection moulding machines, a 40-tonne machine and a 100-tonne machine, to support its UK toolroom and in-house tool manufacture. This specialised validation facility enables the company to test and validate new tools without any impact on ongoing production processes.

Over the past five years the group, which has annual sales of £14m, has expanded its injection moulding machines from 23 to 30 machines while further investments have been made in warehousing and material handling systems.

<http://omegaplasticsgroup.co.uk>

HIGH PERFORMANCE SOLUTIONS FOR

# LEADING MEDICAL APPLICATIONS.



SCAN ME



Precision meets speed and cleanliness. The all-electric ELION is the ideal injection molding machine for the cost-effective mass production of consumables for in-vitro diagnostics, primary packaging and drug delivery systems, as well as healthcare and medical disposables.

- Clamping force range 800-2800 kN
- Cleanroom equipment adapted to your product requirements
- Perfect precision and reproducibility
- Excellent overall equipment effectiveness
- Added productivity boost with NETSTAL Smart Operation (available as an option)
- Leading price-performance ratio
- Worldwide customer service

More details on [www.netstal.com](http://www.netstal.com)



NEW SERVICE

Machine calibration according to ISO/IEC 17025:2017 on-site at customer's premises





# Platinum Equity acquires HC Companies in US

In August investment firm Platinum Equity, whose portfolio includes injection moulding machine maker Husky Technologies, completed the acquisition of horticultural container manufacturer HC Companies in the US.

Financial terms were not disclosed, but HC Companies President and CEO Bob Mayer will continue with the business.

Headquartered in Twinsburg, Ohio, HC operates six manufacturing locations and distribution centres in the US and Canada. It produces planters, pots, and accessories for the greenhouse, nursery and retail markets, including fibre and biobased solutions produced with post-consum-

IMAGE: HC



HC has six manufacturing sites for horticultural containers

er and post-industrial recycled materials.

Platinum Equity Managing Director Nick Fries, said: "We believe HC is an attractive platform for additional growth, both organically and through new acquisitions in adjacent product categories, seg-

ments, channels and geographies."

Platinum previously owned Orbit Irrigation, a manufacturer of smart watering technologies and other irrigation and garden products and grower supply goods.

> <https://hc-companies.com>

## Moldtecs' new plant in China

Automotive supplier Moldtecs, a partner of mobility company Amaneos, opened its first production plant for plastic components in Taicang, China, on 2 August.

Mathieu Purrey, CEO of Amaneos, said: "We wanted to expand our successful cooperation with global OEMs in the Chinese market and at the same time expand our business with local OEMs in Taicang."

Apart from India, China is said to have the fastest growing automotive market in the world. Statistics show that the number of electric cars shipped from China to Germany more than tripled in the first quarter of 2023.

> <https://moldtecs.com>

# Hella to build new sustainable HQ

Hella, the automotive supplier operating under the Forvia umbrella brand in which Faurecia took a majority stake last year, is to build a new complex at the

site of its current HQ in Lippstadt, Germany.

Hella CEO Michel Favre said: "Our historic company headquarters undoubtedly has tradition. Nevertheless,

its infrastructure, buildings and premises no longer reflect what we stand for as an automotive supplier: technological strength and leadership in innovation. We

therefore plan to build new headquarters that shows Lippstadt's strong role in the global Forvia network [and] creates an attractive working environment for our employees as well as a new urban landmark for the city."

The site has a gross floor area of 70,000 m<sup>2</sup> and will be constructed with the highest levels of sustainability in mind. It will be operated in a CO<sub>2</sub>-neutral manner and utilise features such as rainwater retention and green roofs. It will also benefit from the creation of a green campus.

> [www.hella.com](http://www.hella.com)

IMAGE: HELLA



Hella's current HQ in Lippstadt, Germany



# Be the first ...

GMP  
Cleanroom



## ... for modern medical technology.

The medical sector poses many challenges for machines and production environments. Stable, repeatable processes based on validated parameters and the constant reduction of operating costs are the challenges of our time. ENGEL machines have been developed to meet your production requirements. **Get connected – and talk to our experts in the medical sector right now.**

Visit us at  
**Fakuma**  
Hall A5  
Booth 5203

**ENGEL**  
be the first

[engelglobal.com/medical](http://engelglobal.com/medical)



# Injection Molding and Design Expo adds free training seminars

The **Injection Molding and Design Expo** has announced a programme of educational talks including training seminars from leading specialists in the field. They will take place in the Learning Space, a new free-to-attend conference theatre at the exhibition that is being held on 20-21 September in Novi, Michigan, USA.

Experts from four of the industry's leading training companies - Beaumont, Paulson, RJG and Routsis - will give a series of seminars on a range of practical methods for improving the productivity and profitability of moulding operations.

On the first day of the expo, Jennifer Schmidt, Senior Instructor at Beaumont Technologies, will cover injection moulding simulation, looking what is needed to deliver reliable and trustworthy results. She will be followed by Todd Bryant, Senior Technical Instructor and Product Developer at Paulson Training Programs, who will address four key plastic variables in injection moulding. In particular, he will look at how these can be used to develop successful troubleshooting and training strategies.

The second day of the event will include a seminar on best practices in purging techniques and procedures that will be given by Daniel Stephens, Vice President at Routsis Training. Later that day, RJG trainer Jacque Gibson will



IMAGE: AMI

discuss how to improve profitability by making quality plastics parts every time.

These four seminars are just one part of a packed programme in the Learning Zone. There are more talks covering a range of useful tips for troubleshooting and process optimisation. Additional speakers will address business and management issues. For example, Missy Rogers, President of Noble Plastics, will give a keynote presentation on meeting the challenges of hiring and retention for manufacturers.

The other keynote talk is on implementing sustainable solutions in injection moulding and will be given by two representatives from Teel Plastics - Steve Schick, Chief Technical

Officer, and Christian Herrild, Director of Growth Strategies.

It is one of two conference theatres at the event, with the other hosting a series of industry debates featuring senior representatives from Altium Packaging, Amcor, Champion Plastics, IAC, Medbio, MMI Engineered Solutions, Radius Packaging, Sundberg-Ferar, Team 1 Plastics, Westfall Technik, Yanfeng Automotive Interiors and many more.

View the full programme for the Learning Zone and the Conference Theatre at the event [here](#).

To find out about more about the Injection Molding and Design Expo and to register for your free ticket, please visit:

[www.injectionmoldingexpo.com](http://www.injectionmoldingexpo.com)

## Berry reduces costs as sales decline

Packaging provider Berry Global's third quarter 2023 results show net sales of \$3.2bn, down from \$3.7bn in the same period in 2022, and EBITDA of \$522m, down from \$550m. Net income was \$143m, a dip of 30.9%.

Chairman and CEO Tom

Salmon said: "We continue to prioritise structural cost improvements, enhance operating efficiencies, and successfully shift our portfolio toward high-value growth products across all our businesses. Our cost actions, including site rationalisations,

moving business to more cost-efficient facilities, and labour cost reductions, have resulted in significant annualised cost savings of \$140m."

In August it was announced that the company's board of Directors had

unanimously elected Kevin Kwilinski, currently President and CEO of Multi-Color Corporation, as new CEO, effective 2 October 2023. Salmon will remain in an advisory role until the end of the year.

[www.berryglobal.com](http://www.berryglobal.com)

# MAKE A **DIFFERENCE** WITH RAW MATERIAL PRODUCER

with its standard products and tailor-made solutions





# Single-Serve Capsules

26-28 September 2023 | Barcelona, Spain

Connecting industry professionals to explore the latest developments and trends in the single-serve capsules industry

Hear from our expert speakers, including:



**Martyna Fong**  
Director Market Intelligence  
AMI



**Andrea Vittadello**  
Sustainability Project Manager  
Mérieux NutriSciences Italia



**Eileen Gordon-Laity**  
Secretary General  
European Coffee Federation



**Dr. Marcel W. Hüppi**  
CEO  
Nootrie AG

SECURE YOUR PLACE TODAY

Sponsored by:



Supported by:





IMAGE: BMW

# The rise of recycled materials

*The need to include recycled plastics in new products is set to grow, driven by legislative and OEM pressures. Materials groups are aiming to meet these needs, writes Chris Saunders*

The use of post-industrial plastics waste is not a new concept for injection moulders, but the introduction of sustainability goals in EU legislation and in the strategies of OEMs means recycled content is becoming increasingly important, from both post-industrial and post-consumer sources.

In recent times, the use of recycled materials has grown in packaging and increasingly in automotive applications, white goods and electrical and electronics (E&E) applications where the need is for engineering polymers that incorporate recycled material and also meet performance requirements. For example Audi, BMW and other groups are developing applications that use recycled plastics, with extra impetus expected to come from the European Commission's plans for a 25% recycled plastics content target in its revision of the EU's End-of-Life Vehicles Directive (see [page 21](#)).

Polymer producers and compounders have responded with the launch of new grades of polyolefins, styrenics and engineering plastics that have a proportion of material recovered by mechanical recycling, or are mass-balanced versions of

virgin grades for which the producer has partly used chemically recycled plastic feedstock.

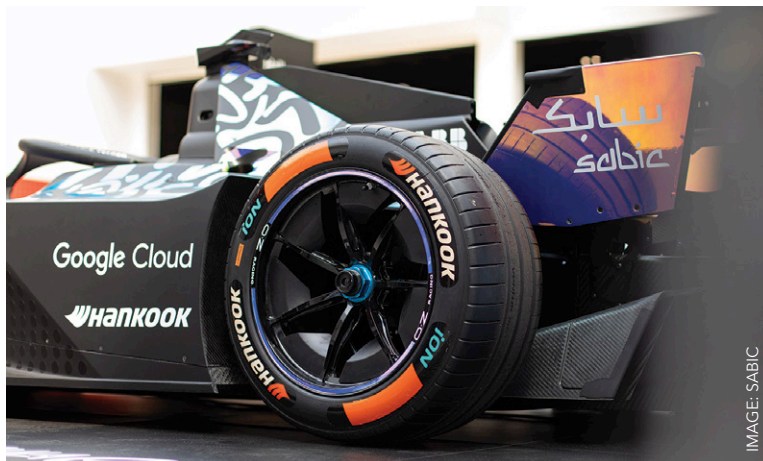
Compounding group **Benvic** has steadily grown its in-house recycling and compounding capabilities in line with its corporate expansions over the past five years. Mechanical recycler Ereplast was acquired in 2018 and has been steadily integrated into the mainstream of Benvic's business, which was built upon PVC products but has since widened to include polyolefin and other compounds.

"Mechanical recycling is key to Benvic's future. We recognise it as a major ingredient in our mix going forward," says Eric Grange, Benvic's Product Marketing Manager.

The company says the tasks of the compounder start with evaluating the incumbent material and the application for retrofitting with recycled material. Possible new manufacturing techniques also need to be considered and developed accordingly - two shot injection moulding, for example, with a core of recycle and an outer virgin material.

"If a wholesale retrofit is not entirely possible then the mechanical recycle needs to be consid-

**Main image: BMW Group has set itself the target of increasing the proportion of secondary materials in its brands' new models from around 30% at present to 50%**



**Above: The Genbeta electric race car includes recycled thermoplastics from SABIC**

ered as part of the overall material matrix – as filler for example,” says Benvic. “PVC recyclate is a great candidate in this respect. One ultimate target would be to integrate a recycled PVC matrix with recycled or bio-based fillers for applications in agricultural or construction sectors.”

In addition to Benvic’s base business in PVC compounds, other group materials are also the subject of recycling development work, including DotCore PP and DotFlex TPEs. The company says it is working closely with its current customers, to custom manage the shift towards recycled materials.

Applications with recycled content are making a name for themselves on the big stage. In July, the Genbeta electric car developed in connection with Formula E racing, which includes recycled thermoplastics from **SABIC**, set a new Guinness World Record for the fastest speed achieved indoors of 135.9 mph. SABIC’s role in the programme, which is aimed at exploring new materials and technologies for future EV race and road cars, is part of its collaboration with the world’s first all-electric FIA World Championship. Compared to other alternatives, the SABIC materials enable more design freedom through their inherent processing mouldability. The Genbeta’s Wheel fins are injection moulded with SABIC’s mechanically recycled thermoplastics from its Trucircle circular materials.

As for the volume automotive market, SABIC says it is targeting instrument panels, front end modules and tailgates with its mechanically recycled Stamax PP copolymer which contains postconsumer waste.

A consortium led by automotive

supplier **Hella** – which also includes **Covestro**, BMW, Geba Kunststoffcompounds, the Fraunhofer Institute for Mechatronic Systems Design IEM, the Heinz Nixdorf Institute, and Hamm-Lippstadt University of Applied Sciences – aims is to optimise sustainability throughout the entire life cycle of a vehicle. The research project, called NALYSES, which started in October 2022, is designed to last three years and is funded by the German Federal Ministry of Education and Research. Central to the project is the development of a sustainable car headlamp, which incorporates recycled materials.

**Borealis** says that around 150,000 tonnes/yr of products they currently manufacture in Europe are circular. These include recycled and renewable polymers and chemicals as well as renewable hydrocarbons. The company says: “We use mechanical recycling to make products with the highest possible value and quality, and continue looking into developing newer technologies for mechanical recycling with partners with the sole objective of delivering products of the highest quality. Borcycle M is our transformational advanced mechanical recycling technology driving the transition to a circular polyolefin industry by creating highest quality materials in the most energy efficient way. The technology is ever-advancing, using value chain collaboration and Borealis’ expertise and experience to unlock the potential of recycled material in ever-more demanding applications.”

In October 2022, Borealis announced a significant expansion with the construction of a new commercial-scale advanced mechanical recycling plant in Austria with a capacity of over 60,000 tonnes/yr. In June this year it agreed to acquire Italian company Rialti, a leading producer of mechanically recycled PP compounds for injection moulding and extrusion.

Producers of engineering plastics have also made progress with recycled material developments. **Domo Chemicals** has received, for the first time in the polyamide industry, the UL RTI electrical rating on a mechanically recycled sustainable PA66. The new UL card file E44716 was published on 24 April, and certifies an RTI

**Right: The Nalyses project is looking at how products and raw materials can be reused as long as possible in a circular economy, focusing on the example of a sustainable car headlamp**



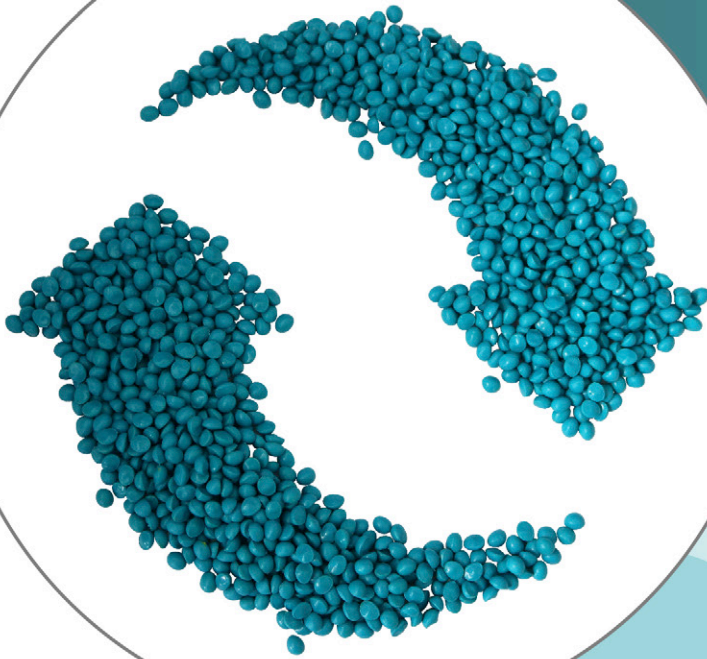
IMAGE: COVESTRO



A Material Difference

# Dryflex<sup>®</sup> Circular

TPEs with Recycled Content



We used to think in  
*straight lines*  
Now we think in  
*circles*

*Visit us at*



**B1-1115**

 **HEXPOL<sup>®</sup>**  
TPE

hexpolTPE.com  
circular@hexpolTPE.com

AMI | Events

# Performance Polyamides

12-13 September 2023 | Cologne, Germany

[Click here to download the agenda](#)

Developing new formulations and applications for high performance polyamides

Hear from industry leading speakers including:



**Pierre Furtwengler**  
Technical Polymers Specialist  
Renault



**Dr. Tamim P. Sidiki**  
Global Marketing Director  
Mobility  
Envalior



**Dr. Sebastian Neubauer**  
Platforms Cluster Industrial Manager  
Valeo Powertrain Systems  
Driveline



**Dr. Laurent Tribut**  
Plastic Materials,  
Distinguished Technical Expert  
Schneider Electric



**Thomas Prenveille**  
R&D Group Leader High Performance Polymers  
Arkema



**Louise Anne Fillot**  
Product Development Manager - Automotive Market  
DOMO



**Esra Atasoy**  
R&D Project Manager  
Eurotec



**Dr. Sebastian Hoerold**  
Head of Technical Business Development Flame Retardants  
Clariant

LAST CHANCE TO BOOK - SECURE YOUR PLACE TODAY



electric value of 130°C from 0.74 to 3 mm (all colours) for the recycled PA66-based, 30% glass-reinforced halogen-free Technyl 4Earth A1E 60G1 V30, classified UL 94 V0 @0.75.

For E&E applications, halogen-free flame retardant (HFFR) materials are essential for fire safety. At the same time, manufacturers want to reduce their CO2 footprint and incorporate more recycled materials. This new compound facilitates both requirements, and achieved the first short term UL yellow card certification back in 2022. A full long-term mechanical rating is expected at the end of 2023. In terms of product performance, the Technyl 4Earth HFFR provides the same level of flame retardancy with 50% recycled content as with virgin material.

The Technyl 4Earth range is derived from a process that transforms post-industrial technical PA fabric scraps into prime-quality PA. Domo's proprietary technology ensures both consistent material quality and security of supply to meet fast-growing demand for more sustainable high-performance applications. While PA66 is based on recycled airbag scraps, PA6 consists of recycled film and yarn scraps. These sustainable grades

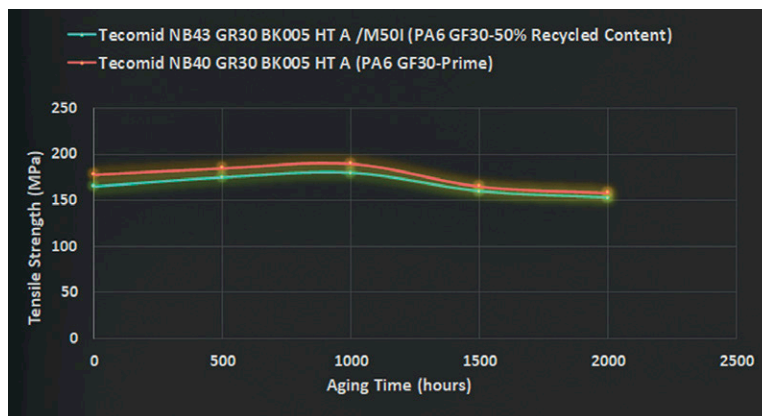


IMAGE: EUROTEC

deliver levels of mechanical performance comparable to traditional PA6 and PA66, and Domo is now looking to add lighter shades to the range to meet colour requirements.

The new Pulse GX50 ECO PC/ABS recycled resin from materials producer **Trinseo** has been incorporated by a German automotive OEM and is said to already be delivering a lower CO2 footprint, 29% less energy consumption, 22% lower water consumption, and 24% less global warming potential than alternative plastics. The Pulse GX50 ECO PC/ABS, made with 30% recycled content and

**Above: Performance graph for Eurotec's Tecomideco NB43 GR30 BK005 HT materials**



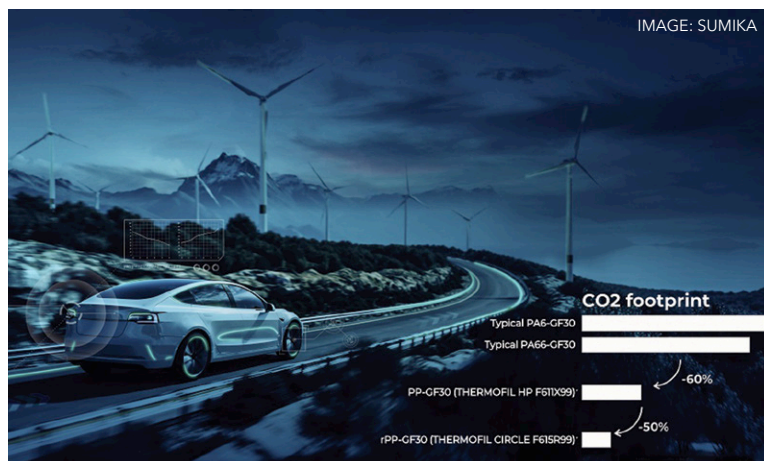
Driven by expertise

## Customized colors and functional additives for ocean-bound RPET

Replace virgin PET with socially sourced ocean-bound plastic to reduce the carbon footprint of your end application and support disadvantaged communities.

[www.sukano.com](http://www.sukano.com)





**Above: Sumika Polymer Compounds Europe says its Thermofil HP and Thermofil Circle PP materials cut carbon emissions**

developed using Trinseo’s Pulse GX technology, is comparable in performance to its virgin equivalent and has robust technical features including superior flow properties, low-temperature ductility, and low density.

Compound producer **Eurotec** offers tailored solutions to functional applications using up to 100% recycled formulations developed using waste from different polymers and fillers. Tecomideco is the commercial name given to recycled PA compounds produced from textile fibre waste, which, according to tests, display comparable properties to virgin materials. Eurotec’s sustainable production process involves the elimination of metal and other contaminants from textile fibre waste, turning the waste to granules on extrusion lines, and then subjecting it to a drying and metal separation process. Using this method, and carrying out characterisation, viscosity, mechanical, and thermal testing, the company says it is able to deliver reliable, traceable material solutions.

**Properties and behaviour**

Eurotec develops its recycled formulations depending on the requirements and demands of the customer. For example, Tecomideco NA43 GR30 BK005 HS (PA66, 30% glass fibre reinforced, heat stabilised, black, post-industrial recycled) displays good thermal, chemical, and long-term mechanical properties. It is predominantly used for pedal guards, cooling fan guards, air intake manifolds, oil pans and engine covers. Meanwhile, Tecomideco NA43 GR30 BK005 HT A/M50I (PA66, 30% glass fibre reinforced, long-term heat and hydrolysis stabilised, black, 50% post-industrial recycled grade) is intended for use in cooling systems that require glycol resistance. It meets OEM specifications, and retained stability for more than 1,000 hours at 135°C. Tecomideco NB43 GR30 BK009/M65I (PA6, 30% glass fibre reinforced, black, 65% post-industrial recycled grade) is suited for

replacing metal in railings due to its high mechanical performance and UV stability.

Tecomideco NA40 CF30 BK111 HS (PA66, 30% recycled carbon glass reinforced, heat stabilised, black) provides a 225 MPa tensile strength and an 18,000 MPa tensile modulus. Thermal ageing performance, required for many critical components in automotive applications, is a property that has come to be expected from sustainable products.

In addition to PA materials, Eurotec offers Tecole-neco PP materials with recycled content which are aimed at under-hood parts such as brackets, clips, etc, in automotive applications. Glass fibre reinforced homopolymer PP grades contain packaging waste and display similar mechanical properties to virgin materials and customised MFI values in line with the part design, the company says.

Waste PC and PET bottles are another source of feedstock for Eurotec. Tecotekeco BC44 UF65 BK013 MB/M65C (PC/ABS, unfilled, impact modified, heat stabilised, black, 65% post-consumer recycled grade) is designed for parts that require high impact modification, good surface finish, and dimensional stability, while Tecotekeco BC44 UF65 BK012 XA80/M65C (PC/ABS, unfilled, flame retardant-Br, Cl free heat stabilised, black, 65% post-consumer recycled grade) has V0 flame rating and satisfies mechanical and impact properties even for large parts where surface quality is critical. Tecopeteco PT74 GR30 WH180 XA70 (PET, 30% GF, flame retardant, heat stabilised, post-consumer recycled grade) is currently used for lamp sockets owing to its high glow wire levels and good flammability characteristics.

**Sumika Polymer Compounds Europe** and **Hexagon** have partnered to digitise the performance of new sustainable automotive-grade PP compounds. Sumika’s short glass-fibre polypropylene (GF-PP) Thermofil HP and recycled polypropylene (GF-rPP) Thermofil Circle offer carmakers performance equivalent to incumbent engineering plastics, but with up to a 60% lower carbon footprint.

The partners say there is a need in cars for lightweight components to maximise energy efficiency, but their environmental performance throughout the lifecycle is also an important consideration. With suppliers and manufacturers constantly striving to break new ground and the industry moving at breakneck speed, there is precious little useable data in the public domain, something which is hindering new developments, they say. But Hexagon thinks it has found a way around this.

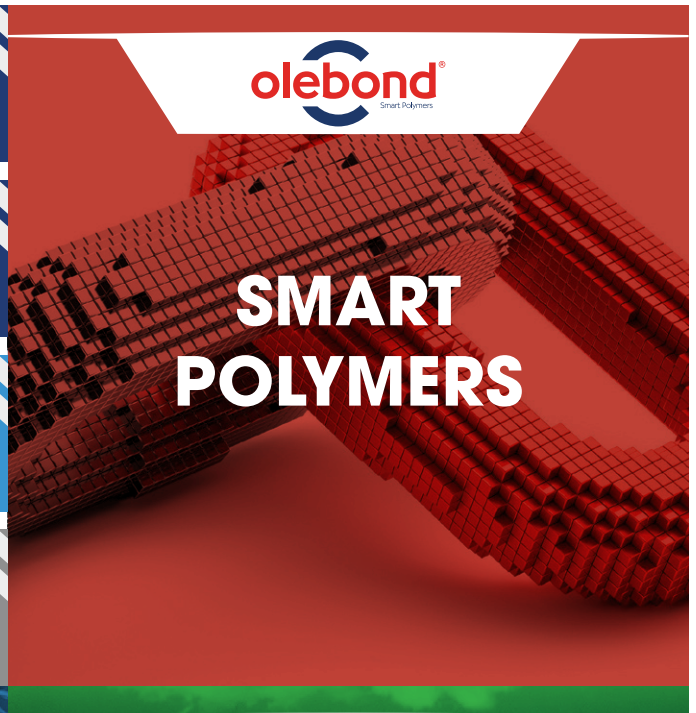
“Limited material behaviour data is a barrier to sustainable eMobility innovations because automotive engineering teams have not been able to put

# Tisan

*Compounds Made of  
Engineering Plastics*

<b>Hyperpol®</b> PPS and PPA COMPOUNDS	<b>Tislamid®</b> PA6 and PA6.6 COMPOUNDS	<b>Tisester®</b> PBT COMPOUNDS
<b>Tisakril®</b> ABS COMPOUNDS	<b>Tisarbon®</b> PC COMPOUNDS	<b>Tisaform®</b> POM COMPOUNDS
<b>Tisapel®</b> PET COMPOUNDS	<b>Tisoplen®</b> PP COMPOUNDS	<b>Tisren®</b> PS COMPOUNDS

<b>Tisetilen®</b> PE COMPOUNDS	<b>Tisblend®</b> BLEND COMPOUNDS
-----------------------------------	-------------------------------------



*Plastics Engineer*

*www.tisan.com.tr*

AMI | Events

# Thin Wall Packaging

28-29 November 2023 | Cologne, Germany

Save 15%\*  
when you  
book before  
29 September  
2023

Embracing sustainable and circular innovations  
to meet the changing requirements of the  
food packaging value chain

Explore innovations across the sector, evaluate solutions and discover business opportunities with fellow packaging professionals.

Harness the knowledge of the industry. Speakers include:



**Joachim Quoden**  
Managing Director  
EXPRA



**Johannes Musseleck**  
Head of Global  
Sustainability  
INEOS Styrolution



**Gabriella Sartori**  
Marketing Manager PP  
Consumer Packaging and  
Consumer Goods EU  
LyondellBasell



**Jivan Ibrahim**  
Business Development  
Manager  
Perstorp

Sponsored by:

**oerlikon**  
hrsflow

\*Discounts cannot be used in conjunction with other offers. Offer ends 29 September 2023.

SECURE YOUR PLACE



new materials through the rigorous virtual durability and safety tests required for automotive endorsement,” says Guillaume Boisot, Head of the Materials Centre of Excellence at Hexagon. “Our unique multiscale material modelling technology accelerates the adoption of SPC Europe’s groundbreaking recycled materials by making it possible for product development teams to accurately simulate a component and subject it to established automotive engineering test and validation.”

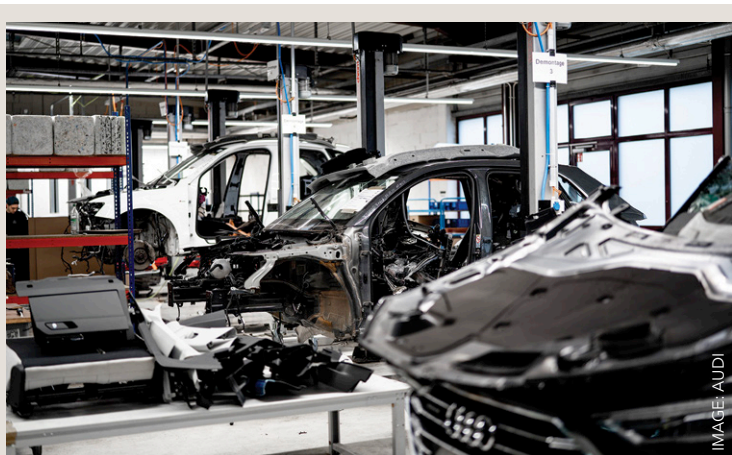
This vital data gives product development teams the ability to evaluate the suitability of GF-PP compounds in new designs. Hexagon conducted a rigorous testing and physical validation programme with SPC Europe to produce highly accurate multi-scale behavioural models of its Thermofil HP grades and Thermofil Circle portfolio of recycled PP grades.

Each material grade has a model that simulates the materials’ mechanical and environmental performance throughout a component’s lifecycle. The encrypted proprietary material models can be accessed by SPC Europe customers through Hexagon’s Digimat software which is interoperable with popular CAE software tools such as MSC Nastran, Marc, and third-party software.

A recent collaboration has involved **Cabopol Polymer Compounds**, which has over 60 years of experience in the research, development, and production of thermoplastic and crosslinked compounds, teaming up with Dunlop Protective Footwear. As part of this strategic partnership Cabopol has created R-Polyprime, which includes 30% recycled material content, for use in Dunlop’s PVC footwear. R-Polyprime is described as the next generation of Polyprime compounds, which can be customised to meet specific needs. The new compounds meet all major footwear requirements and standards, such as REACH and RoHS regulations, while maintaining the same properties as virgin materials.

#### CLICK ON THE LINKS FOR MORE INFORMATION:

- > [www.benvic.com](http://www.benvic.com)
- > [www.sabic.com](http://www.sabic.com)
- > [www.eurotec-ep.com](http://www.eurotec-ep.com)
- > [www.hella.com](http://www.hella.com)
- > [www.covestro.com](http://www.covestro.com)
- > [www.borealisgroup.com](http://www.borealisgroup.com)
- > [www.domochemicals.com](http://www.domochemicals.com)
- > [www.trinseo.com](http://www.trinseo.com)
- > [www.sumikaeurope.com](http://www.sumikaeurope.com)
- > <https://hexagon.com>
- > <https://cabopol.com>
- > <https://environment.ec.europa.eu>



## European Union plans 25% recycled plastics target in new cars

The European Commission has set out its plans for replacing the End-of-Life Vehicles (ELV) Directive which it hopes will lead to an annual reduction of 12.3m tonnes of CO<sub>2</sub> emissions by 2035. There is a particular focus on plastics: a key proposal is for at least 25% of plastics used to build a vehicle comes from recycling, and of that amount 25% would come from recycled ELVs.

There were positive industry responses to the Commission’s proposals announced in mid-July. Virginia Janssens, Managing Director, Plastics Europe, said: “Many of the plastics used in the automotive industry are high performance products which require the highest quality of polymers available, and which can be very difficult to recycle. Therefore, the ambitious 25% recycled content targets proposed by the Commission can only be met with a combination of mechanical recycling, and innovative technologies such as chemical recycling.”

The European Automobile Manufacturers’ Association (ACEA), however, was more concerned that the new proposals risk duplicating or complicating already existing rules and industry best practices on sustainable design.

“We are committed to the design-for-sustainability principle, and high recycling rates prove that these practices work,” said Sigrid de Vries, ACEA’s Director General. “While the proposal is pushing for ambitious recycled content targets, European auto manufacturers believe law makers should instead focus on ensuring a coherent legislative framework that balances conflicting waste, product, and chemical regulations for vehicle.”

ACEA said that vehicles are one of the most complex products to design on the market, comprising a diverse range of parts composed of multiple materials where recycling technologies may not yet be available. It argues this is particularly true for the increasingly greener and more intelligent vehicles entering the market. For example, it said some newer models use carbon fibre reinforced materials that can reduce carbon footprint and energy consumption but are challenging to recycle and can contaminate waste streams.



# INJECTION MOLDING & DESIGN EXPO

LEARN  
FROM THE  
INDUSTRY  
EXPERTS

SEPTEMBER 20-21, 2023  
NOVI, MI, USA

Hear from expert speakers including:



Susan Kozora  
Director, Advanced  
Materials Engineering,  
**International Automotive  
Components**



Christian Herrild  
Director of Growth Strategies,  
**Teel Plastics**



Tom Frank  
CEO, **Radius Packaging**



Bill Wood  
Economics Editor, **Plastics  
News**



Jeff Ignatowski  
President, **Champion  
Plastics**



Jeff Stout  
Executive Director, Global  
Innovation, **Yanfeng  
Automotive Interiors**



Chuck Lee  
President, **Medbio**



Mark Gomulka  
CEO, **Westfall Technik**



Carla Bailo  
President & CEO/ President  
elect, **COS Consulting/SAE  
International**

REGISTER  
FOR FREE  
HERE

Organized by:



Brought to you by:



**REGISTER  
FOR FREE  
TODAY**



John Manderfield,  
Innovation and Design  
Fellow, **Altium Packaging**



Daniel Stephens  
Vice President,  
**Routsis Training**



Missy Rogers  
President, **Noble Plastics**



Doug Callahan  
President & Owner, **MMI  
Engineered Solutions**



Todd Bryant  
Senior Technical Instructor  
& Product Developer,  
**Paulson Training  
Programs**



Grey Parker  
Principal and CEO,  
**Sundberg-Ferar**



Jennifer Schmidt  
Senior Instructor,  
Simulation, **Beaumont  
Technologies**



Craig S. Carrel  
President and Partner,  
**Team 1 Plastics, Inc.**



Jacque Gibson  
Trainer, **RJG**



Tim Galbraith  
General Manager,  
**Cavalier Tool &  
Manufacturing**

Check out the two-day programs for each of the theaters [here](#)



# AMI | Events

# Polymers in Footwear

5-6 December 2023 | Nuremberg, Germany

**BROWSE  
THE AGENDA  
PREVIEW**

Connecting the polymers and footwear supply chain to explore the latest industry innovations and trends

Listen to industry leaders including:



**René Medel**  
Senior Digital  
Creation Engineer  
[framás](#)



**Charlotte Herdt**  
Global Sustainability  
Programme Manager High  
Performance Polymers  
- Specialty Polyamides  
[Arkema](#)



**Martino Colonna**  
Associate Professor of  
Polymer Chemistry  
[University of Bologna -  
RE-SPORT](#)



**Dr. Sarah Karmel**  
Chief Science Officer  
[Rheon Labs](#)



The event was a great opportunity to catch up with companies we work with and also to meet material vendors to start new business. The presentations covered a variety of different topics, which made it really interesting.



Puma

\*this discount cannot be used in conjunction with other offers. Offer ends 29 September 2023.

Sponsored by:



**SAVE 15%\* - BOOK TODAY**

# Digital help is at hand for injection moulders

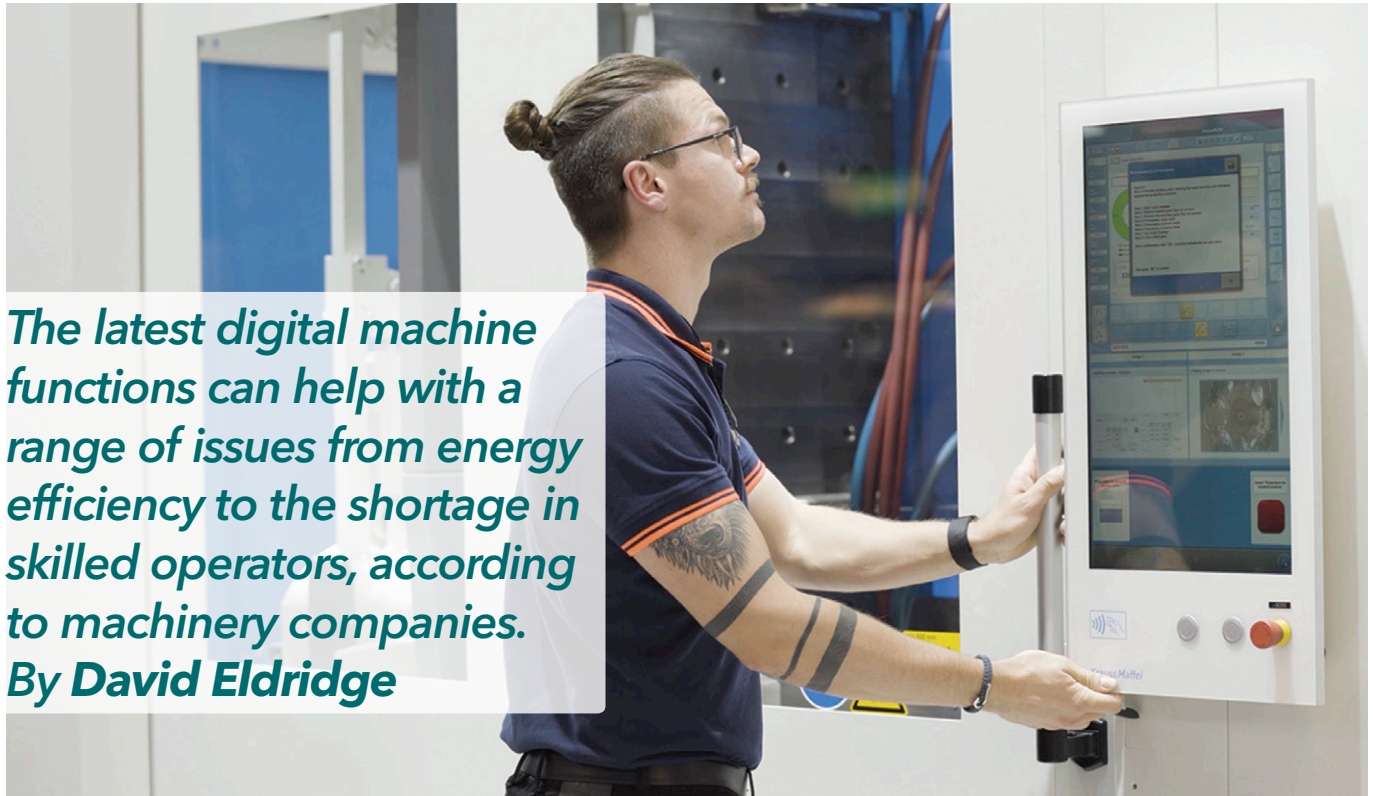


IMAGE: KRAUSSMAFFEI

*The latest digital machine functions can help with a range of issues from energy efficiency to the shortage in skilled operators, according to machinery companies.*  
By David Eldridge

Major injection moulding machine companies have developed digital functionality integrated into machines and ancillary equipment which provide benefits in production efficiency, process stability, product quality and more. Recent offerings also aim to help moulders with industry issues such as energy costs and labour shortages.


In July, **KraussMaffei** spoke of a new digital development called SmartOperation which machine operators without in-depth prior knowledge of injection moulding technology can benefit from. It says the new function enables defect-free machine operation, increases process stability and boosts efficiency in production.

"SmartOperation offers our customers the opportunity to significantly reduce the error rate in the operation of injection moulding machines. In addition, we are presenting a solution to counteract the global shortage of skilled workers," says Bastian Eberle, IMM Product Manager at KraussMaffei.

SmartOperation is said to work in an intuitive way which enables separation between process settings and the actual operator interface. The

machine operator is guided through the entire production process in a clear and structured manner by means of simple instructions. This ensures a standardised, optimum production process, says KraussMaffei.

The initial set-up of the process is done by an expert, after which the setting pages are locked and the possibilities for intervention are severely limited. "From this point on, the production can be controlled with only two buttons: a green button for the start of production or the next step and a red button for the previous step or the end. In this way, the machine operator is guided step by step through the process with simple work instructions," says the company.

Moulders can use the SmartOperation machine function on all KraussMaffei machines with an MC6 control system and it can also be retrofitted to existing machines. "By retrofitting SmartOperation, we enable our customers to operate even older machines according to the latest technology and to equip the current machinery for the future," says Dennis Hölzl, Product Manager - Digital & Service Solutions at KraussMaffei. 

**Main image:**  
**KraussMaffei**  
**says its new**  
**SmartOperation**  
**function**  
**enables simple**  
**machine**  
**operation**



IMAGE: ARBURG



**Above: The Efficiency Arena at Arburg's annual customer event in Germany in March**

SmartOperation is the latest addition to the group's SmartMachine product family. Among the other products are APCplus and DataXplorer which analyse the injection moulding process on the basis of the data and automatically adjust the process for optimisation. "The result and advantage of all SmartMachine products are significantly higher process stability and thus increased production efficiency in injection moulding," says KraussMaffei.

**Sumitomo (SHI) Demag** started the roll-out of its new MyAssist digital tool in January following its debut at the K2022 show. This machine-based tool records real-time series data and evaluates information held by the machine's control unit, including pressure, temperature or injection profiles, and always relates this to a shot or injection, a component or cycle. "This level of process transparency enables a customer to understand every single production state," says Thomas Schilling, Digital Solutions Product Manager.

The corresponding browser application runs within the customer network and can be used on all devices. All data remains with the customer to ensure security. As well as accessing live data collated by individual control systems on injection moulding machines, MyAssist also allows for corresponding comparisons to be performed on historical data. "Through this creation of an interactive database, customers can select, record, trace and analyse the most relevant key performance indicators in much greater depth," says Schilling. Historical data can also be used for product-related information in the European Commission's planned digital product passport.

Sumitomo (SHI) Demag says: "When information such as CO<sub>2</sub> consumption and recycling rate are recorded during the production of a component, it creates more robust documentation of its corresponding ecological footprint. Additionally, rising shortages of qualified personnel requires greater

process transparency and easier operation. With MyAssist, machine data becomes more usable when performing subsequent analysis. Also, the product offers complete documentation and a knowledge-based troubleshooting feature."

At **Arburg's** annual open house event in March at its HQ in Lossburg, Germany - renamed Anniversary Days just for 2023 in recognition of the 100<sup>th</sup> anniversary of the Hehl family business that owns Arburg - the company's Efficiency Arena centred on the key topics of digitalisation, resource conservation and the circular economy. Here, there were nine stations for visitors, six on the topic of ArburgGreenworld and three on ArburgXworld, where Arburg and selected partners demonstrated how digitalisation and innovative solutions enable a sustainable circular economy.

A key exhibit was a hybrid Allrounder machine that produced Fischer dowels from the Greenline series. The plastic product consists of 50% castor oil. The machine was equipped with the recycle package and Arburg's new AXW Control RecyclatePilot, which ensures a stable shot weight by means of adaptive process control and can compensate for fluctuating material qualities. In the demonstration, the sprues were ground immediately and fed back into the process as post-industrial recycle. Arburg also presented its sustainability strategies, the ArburgXworld customer portal and the ALS host computer system in the Efficiency Arena.

At the Fakuma 2023 show in Friedrichshafen, Germany in October, Arburg is adding extra elements. In its new ArburgSolutionworld feature, it will discuss how it can support customers facing a shortage of skilled workers, in addition to energy and efficiency needs. The company says its Action Plan: Energy includes energy advice, machine updates and consumption measurements to help customers save resources and energy, especially in these economically and politically tense times.

The Arburg host computer system ALS, along with individual processes and customer-specific manufacturing solutions, will be used to demonstrate at Fakuma how high quality standards can be maintained despite price and cost pressures that moulders face. Visitors can also find out how they can use digital services such as the ArburgXworld customer portal and smart assistance functions from the Gestica control system to help deal with the shortage of skilled workers.

On every **Wittmann Battenfeld** machine at its Fakuma 2023 stand, an energy measurement will be carried out using the IMAGOxt software, a proprietary development from the Wittman Digital business. This provides visualisation of the energy



consumption of the machines and equipment connected. It also calculates directly the CO<sub>2</sub> consumption and energy savings already realised. All values calculated can be documented in reports and be used for long-term analyses.

The program is available as a web application either as an optional extension to the TEMI+ MES program from Wittmann or as a stand-alone program.

The company says: "This will be of particular interest as soon as there are funding options for new energy-saving investments in place in EU countries. The IMAGOxt program is certified according to DIN ISO 50 001. Consequently, the investment costs for this product are eligible for funding contributions in Germany."

At a TEMI+ workstation at Wittmann's Fakuma stand, visitors will have an opportunity to gather detailed information about the TEMI+ MES program and the IMAGOxt energy management software, as well as receive advice concerning energy management improvements and resulting cost cuts for their company.

**Engel** says it is making it easy to monitor mould temperature control with its new Eco-Flomo

temperature control water manifold system which it will show at Fakuma 2023. Eco-Flomo enables continuous monitoring of all injection mould cooling and temperature control circuits and ensures transparency during the temperature control process. The company says it detects irregularities to help boost process stability and reliability.

Eco-Flomo is integrated into an Engel injection moulding machine's CC300 control unit. To make this possible, the new temperature control system uses the company's iQ Flow control software platform for mould temperature control. The pressure, temperature and flow rate values are presented on the machine display and are also saved on the system to ensure complete documentation. This is often necessary to satisfy record-keeping requirements in the medical technology or automotive industries.

**CLICK ON THE LINKS FOR MORE INFORMATION:**

- > [www.kraussmaffei.com](http://www.kraussmaffei.com)
- > [www.sumitomo-shi-demag.eu](http://www.sumitomo-shi-demag.eu)
- > [www.arburg.com](http://www.arburg.com)
- > [www.wittmann-group.com](http://www.wittmann-group.com)
- > [www.engelglobal.com](http://www.engelglobal.com)

*Reduce CO<sub>2</sub> with*  
**MATERIAL SMART.info**

*We know how*  
**WE**  
*can help*  
**YOU**  
*develop products with reduced carbon footprint*

*See you at*  
**FAKUMA**  
*stand no.*  
**B1/1309**  
*Welcome!*

*- Because we care*  
**polykemi**   
BRINGS OUT THE BEST IN PLASTICS



# INJECTION MOLDING & DESIGN EXPO

WHERE  
MOLDERS  
MEET

SEPTEMBER 20-21, 2023  
NOVI, MI, USA

## RECENT VISITOR SIGNUPS

Recent visitor registrations have included molders, tier one suppliers, OEMs and end users

ABC Inoac Exterior Systems

ABC Technologies

Advanced Molding  
Technologies

Altium Packaging

Aptar

Bergstrom

Bericap

Brose

Cardinal Health

Cardinal Medical Specialties

Cascade Engineering

Command Electronics

Cree Lighting

Danaher

Electrolux

Ford Motor Company

Forvia-Faurecia

Freudenberg Medical

General Motors

Greiner Assistec

Humanscale

IAC

Inoac

Integra Biosciences

Kraft Heinz

Mann + Hummel

Marelli

Molex

Newell Brands

OXO

Plastic Omnium

Plastivaloire America

Prism Plastics

Radius Packaging

Reed City Group

Rivian

Rivian Automotive

Shape Corp

Stellantis

Stryker

SyBridge Technologies

Tokai Rika (TRAM)

Valeo

Viking Plastics

WestFall Technik

Yanfeng Automotive

Interiors

**And many more...**

**CLICK HERE TO REGISTER  
FOR A FREE TICKET**

**REGISTER  
FOR FREE**



**CONFIRMED EXHIBITORS INCLUDE**



Organized by:



Brought to you by:





# US show brings together moulders and suppliers



*Injection Molding and Design Expo is back in Michigan this month. Here we preview exhibitors at the two-day event*

**Main image:**  
**The venue for the expo is located in Novi, Metro Detroit**

The second Injection Molding and Design Expo takes place at the Suburban Collection Showplace in Novi, Michigan on September 20-21. Organised by AMI and Crain Communications, the free exhibition and conference is backed by their respective magazines *Injection World* and *Plastics News*.

The first event took place in Detroit, Michigan in May last year, attracting 135 exhibitors and more than 2,000 visitors. "The reaction to our first expo was very positive, with exhibitors and visitors appreciating its clear focus on injection molding, plus its Michigan location," said Andy Beevers, Events Director at AMI.

The Suburban Collection Showplace in Novi, Metro Detroit, is a 460,000 square foot facility, which is conveniently located directly off the I-96 expressway and features ample on-site parking.

The exhibitor list in this preview provides visitors with a comprehensive range of suppliers to the injection moulding industry, covering injection moulding machinery, auxiliary equipment, robots and automation, resins and compounds, testing, training, software and many more products and services.

Companies that have booths at the 2023 edition of the Injection Molding and Design Expo include: ACS Group, Ampacet, Bamberger Polymers, Beaumont Technologies, Bole Machinery, Cavalier Tool & Manufacturing, Chase Plastic Services, Die-Sep, DME, Entec Polymers, Frigel, INCOE, Krauss Maffei, LS Mtron, Meusburger, Milacron, Moldex3D, Nexeo Plastics, NYCOA, PCS, Polykemi, Progressive Components, Quest Polymers, Rampf, Ranger Automation, RJG, Routsis Training, Staubli, Tederic North American Machinery, Wilmington Machinery, Yushin and many more.

Visitors can also freely attend the Conference Theatre and Training Space at the event. Keynote speakers, panel discussions on industry topics and presentations from exhibitors will be hosted in the Conference Theatre. In the Training Space, visitors can learn from experts on subjects including process optimisation, faster tool changes, energy efficiency and more.

To find out more about the exhibition and conference and how to register for free tickets, visit the Injection Molding and Design Expo website:

**[www.injectionmoldingexpo.com](http://www.injectionmoldingexpo.com)**



# mastip™

hot runner solutions

## Your Partner in Multi-Material Moulding

Mastip has extensive experience supplying solutions for multi-material and multi-colour applications. Talk to the team today to simplify your production, deliver superior quality parts and save time and money on product assembly.

Benefits of Multi-Material Moulding Include:

- Reducing tooling costs and maintenance
- Designing distinctive, unique products
- Improving product functionality e.g. soft handle grips for tools
- Eliminating assembly times and costs
- Improving strength of products
- Improving cycle times
- Lowering overall labour costs
- Increased part complexity reducing the likelihood of counterfeiting



**Mastip Technology Europe**

Phone +33 7 67 92 48 50 | [mastip@mastip.eu](mailto:mastip@mastip.eu) | [www.mastip.com](http://www.mastip.com)  
North America | Europe | Asia | South America | Africa | Australasia



**Right:**  
**Continuous  
 blender from  
 Advanced  
 Blending  
 Solutions**

**3D Parts Unlimited**

3D Parts Unlimited, an MSC Company, is a 3D printing parts provider.

> [www.3dpartsunlimited.com](http://www.3dpartsunlimited.com)

**3R Ferramentaria e Usinag**

3R Moldes is an injection mould tool manufacturer based in Santa Catarina, Brazil. It says: We specialize in designing and manufacturing thermoplastic injection moulds for automotive industry, home appliances industry and plastic connectors industry.

> [www.3rmoldes.com.br](http://www.3rmoldes.com.br)

**ACS Group**

The ACS Group manufactures a comprehensive line of auxiliary products for the plastics processing industry, which includes size reduction equipment (granulators and shredders), material conveying equipment, metering and blending devices, heat exchangers (mould temperature controls units and chillers), drying systems, and hydraulic presses.

> [www.acscorporate.com](http://www.acscorporate.com)

**Advanced Blending Solutions**

Advanced Blending Solutions is a leading manufacturer and designer of material handling, blending, desiccant drying, and controls for the plastics industry.

> [www.adv-blend.com](http://www.adv-blend.com)

**AEC**

Application Engineering Company offers a broad portfolio of packaged and central chillers, plus equipment for blending, drying, conveying, and size reduction.

> [www.aecinternet.com](http://www.aecinternet.com)

**AIC Plasti-Co**

Plasti-Co has an extensive inventory of finished barrels, screws and valves enabling short lead times, with over 2,600 screws, 850 barrels and 2,600 valves in stock.

> [www.aic-plastico.com](http://www.aic-plastico.com)

**Alkegen**

Alkegen is an equipment company focused on battery technologies, filtration media, specialty insulation and more. These include its RapidFire Radiant Heater Bands for barrel heating

in injection moulding.

> [www.alkegen.com](http://www.alkegen.com)

**Ampacet**

Ampacet is a global masterbatch supplier offering custom colour, special effect, high performance and sustainable products. It is showing its new Spectro 4.0 in-line machine colour vision, measurement and correction technology.

> [www.ampacet.com](http://www.ampacet.com)

**ASS End-of-Arm Tooling**

ASS is an industry leader in end-of-arm-tooling and automation components for the plastics industry.

> [www.eoat.net](http://www.eoat.net)

**Atmospheric Plasma Solutions**

APS provides atmospheric plasma products in manufacturing and maintenance markets, which removes coatings and prepares the surface for better adhesion.

> <https://apsplasma.com>

**Bamberger Polymers**

Bamberger Polymers is a leading international distributor of commodity and engineering resins, both branded and private label.

> <https://bambergerpolymers.com>

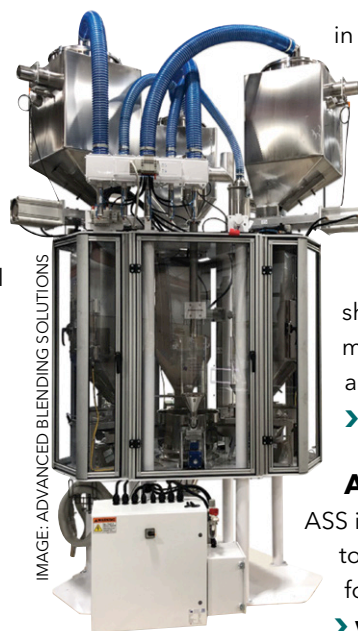
**Beaumont Technologies**

Beaumont Technologies helps companies improve their moulding and engineering processes through manufacturing, education, and consultative support.

> [www.beaumontinc.com](http://www.beaumontinc.com)

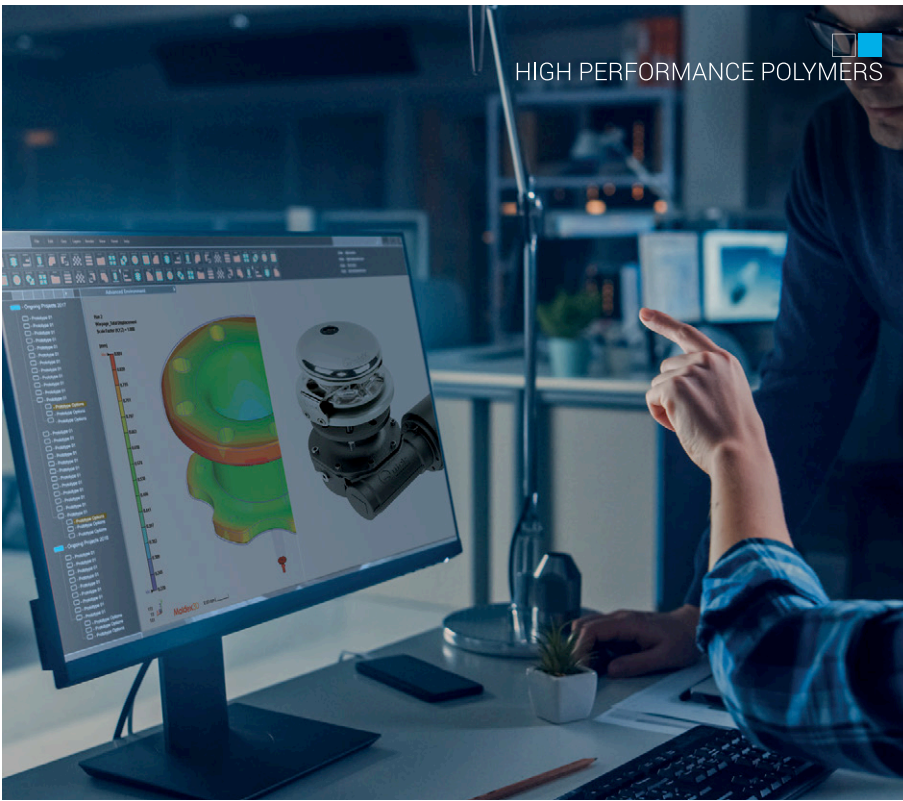
**Bole Machinery**

Bole Machinery focuses on innovative R&D, design, and manufacture of precision injection moulding machinery. Its machine ranges include: its hydraulic or electric two-platen DK series; energy-efficient, hydraulic-servo EKS toggle series; the FE (Fully



**Right: Machine  
 in the Bole MK  
 series**





## Replacing metals with performances.

Lightweighting, mechanical performance and sustainability are some of the requirements driving the market to search for metal alternatives. RadiciGroup can offer you the best solutions, thanks to its Engineering Service competences to achieve "first time right" projects.

**Let's explore together the new possibilities of our engineering polymers.**



radilon®

radiflam®

radistrong®

AMI | Events

# Plastic Closure Innovations

4-6 June 2024 | Barcelona, Spain

**SAVE 20%\***  
when you book today

## Highlights from 2023



**140+**  
Attended



**15**  
Sponsors and Exhibitors



**30**  
Countries Represented



**10+**  
Hours of Networking

\*Discounts cannot be used in conjunction with other offers. Offer ends 15 December 2023.

**SECURE YOUR DISCOUNTED PLACE**

# AMI | Events

# Executive Summit

October 11-13, 2023 | Hilton Head Island, SC, USA

Request to attend

Senior leaders in strategy, innovation, design and sustainability gather at this exclusive invite-only event to tackle key challenges facing the plastic packaging market.

Hear from industry experts including:



**Laci Scourfield**  
Vice President of  
Marketing and Global  
Brand Owner  
Berry Global



**Vanessa Veit**  
Senior Purchasing  
Director, American  
Group  
Lactalis



**Brian Schuman**  
Principal, Strategic  
Investments  
PepsiCo



**Laurel Spencer**  
Senior Vice President  
Global Sales and  
Marketing  
Amcor



**Keefe Harrison**  
CEO  
The Recycling  
Partnership



**Emma Beard**  
Vice President Global  
ESG Reporting  
& Engagement  
Mondelez



**Wendy Warner**  
VP Fast Moving  
Consumer Goods  
TekniPlex



**Ed Ferguson**  
Chief Sustainability  
Officer  
BlueTriton Brands

Contact [Paul Beckley](#) to get involved as an attendee or sponsor.

Sponsored by:



Supported by:



Electric) series; high-speed HK Packaging series; Carbon Fiber Intelligent Molding CIML series; multi-component MK series.

➤ [www.boleamerica.com](http://www.boleamerica.com)

### CAMM

The Canadian Association of Moldmakers (CAMM) is Canada's leading national association representing mouldmakers, service providers and suppliers to the global mouldmaking industry.

➤ <https://canadianassociationofmoldmakers.com>

### Cavalier Tool & Manufacturing

Cavalier produces more than 200 medium to large plastic injection moulds per year for applications in housewares, material handling, heavy trucks, sport recreational vehicles, air conditioning, industrial components.

➤ [www.cavaliertool.com](http://www.cavaliertool.com)

### Chase Plastic Services

Chase Plastic Services is a distributor with a portfolio that offers more than 35,000 varieties of specialty, engineering, and commodity thermoplastics from the industry's leading manufacturers and global suppliers.

➤ [www.chaseplastics.com](http://www.chaseplastics.com)

### Chroma Color

Chroma Color says it is a technology-leading specialty colour and additive masterbatch supplier delivering critical aesthetics, technical innovations, and sustainable solutions to plastics processors and brand owners.

➤ <https://chromacolors.com>

### Cumberland

Cumberland is a leading manufacturer of size reduction equipment, providing a broad range of recycling equipment to the plastics and industrial recycling industries.

➤ [www.cumberlandplastics.com](http://www.cumberlandplastics.com)

### CUMSA USA

CUMSA is a family owned and operated company, headquartered in Barcelona, Spain, which designs and manufactures standard components for plastic injection moulds.

➤ [www.cumsa.com](http://www.cumsa.com)

### Custom Etch

Custom Etch says it is the largest laser texture supplier in North America with a range of eight machines currently.

➤ [www.custometch.com](http://www.custometch.com)

[www.injectionworld.com](http://www.injectionworld.com)

### Decatur Mold Tool & Engineering

Decatur Mold Tool & Engineering is an injection mould manufacturer that also offers contract machining services and short-run plastic part production., and Cincinnati. Decatur Mold is an ITAR Compliant, Woman Owned Small Business.

➤ <https://decaturmold.com>

### DME

The company's product line includes hot runner systems, control systems, mould bases, components and supplies.

➤ [www.dme.net](http://www.dme.net)

### Duro-Chrome

Duro-Chrome says it has mastered the art of conforming anodes, replacing, rebuilding and repairing moulds to protect longevity and providing even coatings, tight tolerances and unique finishes.

➤ <https://duro-chrome.com>

### EAS Mold and Die Change Systems

EAS develops, produces and sells components and turnkey systems for quick tool changes on plastic injection moulding machines as well as on presses, stamping and die casting machines.

➤ <https://easchangesystems.com>

### EFS Plastics US

EFS is a mechanical recycler of post-consumer plastics. It produces recycled PP and PE materials for injection moulding and extrusion.

➤ [www.efs-plastics.ca](http://www.efs-plastics.ca)

### Electro-Matic

Electro-Matic supplies automation components and solutions to leading manufacturers. It produces the Minijector injection moulding machine.

➤ [www.electro-matic.com](http://www.electro-matic.com)

### Entec Polymers

Entec distributes POM, ASA, PMMA and other engineering materials in the US, Canada, Mexico and beyond.

➤ [www.entecpolymers.com](http://www.entecpolymers.com)

### Frigel North America

Frigel is a leading international manufacturer of



IMAGE: ELECTRO-MATIC

**Above:**  
**Electro-Matic's**  
**Minijector**  
**injection**  
**moulding**  
**machine**



process cooling equipment and systems for the plastics industry. Frigel North America provides sales, service, parts, engineering and ready-to-ship inventory for the US, Canada, the Caribbean, Mexico and Central America.

> <https://frigel.com>

**General Polymers**

General Polymers Thermoplastic Materials says its mission is to provide a focused approach in thermoplastic distribution that focuses on a limited line of supply partners to maximise and provide focus on individual product line strategies.

> [www.GP-Materials.com](http://www.GP-Materials.com)

**Harmo America**

The company offers take-out robots and peripheral equipment for injection moulding.

> [www.harmo-america.com](http://www.harmo-america.com)

**Hasco America**

Hasco is a leading supplier of standard mould bases, plates, components, and hot runners which has 38 global locations, offering technical support and stock.

> [www.hasco.com](http://www.hasco.com)

**Hilco Technologies**

Hilco's operations include rapid prototyping, custom scientific injection moulding, gas-assist injection moulding, pad printing, small assembly.

> [www.hilcotech.com](http://www.hilcotech.com)

**ID Additives**

ID Additives offers full lines of chemical foaming agents, purging compounds, plastic mould cleaners, preventative maintenance cleaning systems, and other additives for the plastics industry.

> [www.idadditives.com](http://www.idadditives.com)

**Imperial Industries**

Imperial Industries says its bulk storage silos and tanks are fabricated in a state-of-the-art facility using the latest technology for superior design flexibility, product quality, and the industry's fastest turnaround time.

> [www.imperialind.com](http://www.imperialind.com)

**Incoe Corporation**

The company offers hot runner systems, service,

filling simulation and on-site technical support.

> [www.incoe.com](http://www.incoe.com)

**Keyence Corporation of America**

Keyence manufactures microscope and measurement systems for users to meet quality requirements.

> [www.keyence.com](http://www.keyence.com)

**Kongskilde Industries**

Kongskilde offers pneumatic material handling systems and custom-engineered conveying solutions.

> <https://kongskilde-industries.com>

**Kosmek USA**

Kosmek USA is a global provider of quick mould change systems and auxiliary equipment for injection moulding machines.

> [www.kosmek.co.jp](http://www.kosmek.co.jp)

**Krauss Maffei**

KraussMaffei's product and service range covers all technologies in injection moulding, extrusion and reaction processing, and additive manufacturing, which it says gives it a unique selling proposition in the industry.

> [www.kraussmaffei.com](http://www.kraussmaffei.com)

**Ktony Industries**

Ktony is an injection moulding company, designing injection moulding tools as well as producing plastic products.

> [www.ktony.com](http://www.ktony.com)

**LS Mtron**

LS Mtron Injection Molding Machines' US headquarters are in Duluth, GA (near Atlanta), and its Tech Center is in Wood Dale, IL (near Chicago). The company also has a large machine testing and Tech Center in Brownsville, TX, and a Parts and Service Center in San Diego.

> <https://show-lsinjection.com>



Above:  
Sprue-picking robot from Harmo America



# Fire Resistance in Plastics

20-22 November 2023 | Berlin, Germany

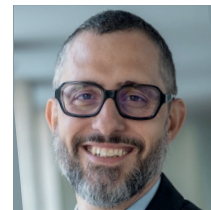
**SAVE 15%\***  
when you book before 8 September 2023

Hear from experts including:

Discover the latest developments in fire retardant technologies



**Franck Gyppez**  
Head Of Fire Safety Systems Technoplatform  
**Nexans, Representing Europacable**



**Andrea Castrovinci**  
Professor, SUPSI, and Member of the Board of Directors  
**SIP Swiss Industrial Promotion SA**



**Tobias Moss**  
Manager Innovation and Application Development  
**Budenheim**



**James Mitchell**  
Global Development Director  
**Trinseo**



**Sander Kroon**  
Director of Advocacy Europe  
**ICL Group, on behalf of BSEF**

Sponsored by:



\*Discounts cannot be used in conjunction with other offers

**SECURE YOUR DISCOUNTED RATE TODAY**





# AMI Plastics World Expos

EUROPE

PLASTICS RECYCLING  
WORLD EXPO

COMPOUNDING  
WORLD EXPO

PLASTICS EXTRUSION  
WORLD EXPO

11-12 September 2024  
Brussels, Belgium

Belgium here we come!

Secure the best stand location  
on our brand-new floorplan

[CLICK HERE TO BOOK YOUR STAND](#)



**Lumafield**

Lumafield's X-ray computed tomography platform gives you a deep view inside of objects, including plastic parts, to see features that have never been visible until now.

> [www.lumafield.com](http://www.lumafield.com)

**MAC Automation Concepts**

MAC offers a wide range of automation technologies including conveyors, automatic fill systems and cleanroom products.

> [www.macautomation.com](http://www.macautomation.com)

**Meusburger US**

Meusburger is a leading company in the field of high-precision standard mould parts.

> [www.meusburger.us](http://www.meusburger.us)

**Micro Interface Design**

Micro Interface Design provides dosing and dispensing solutions for colourants and additives.

> <https://midexx.com>

**Milacron**

Milacron is a global industry and technology leader in the manufacturing of injection moulding and extrusion machines. It is an operating company of Hillenbrand.

> [www.milacron.com](http://www.milacron.com)

**Moldex3D**

Moldex3D is a world leading CAE product which enables process simulation for the plastic injection moulding industry.

> [www.moldex3d.com](http://www.moldex3d.com)

**Nexeo Plastics**

Nexeo Plastics is a global group offering innovation and technical support in thermoplastic resin distribution.

> [www.nexeoplastics.com](http://www.nexeoplastics.com)

**Nexthermal**

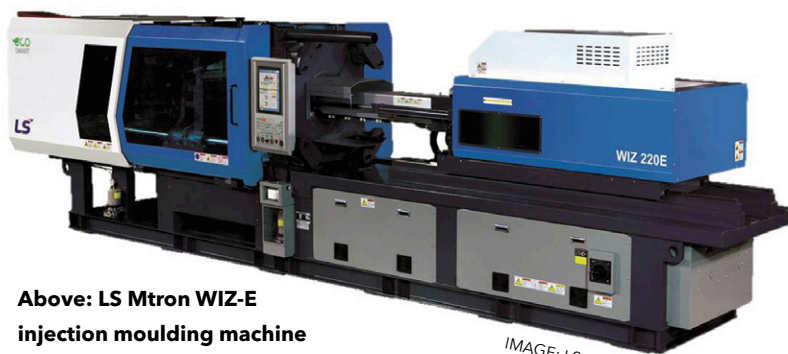
Nexthermal is an electric heater manufacturing company that focuses on custom designing electric heaters, systems and assemblies.

> [www.nexthermal.com](http://www.nexthermal.com)

**Ningbo Jianlin Mold**

Ningbo Jianlin Mold is a supplier of automotive injection moulds based in China.

> [www.jianlinmould.com](http://www.jianlinmould.com)



Above: LS Mtron WIZ-E injection moulding machine

IMAGE: LS MTRON

**NYCOA**

Nylon Corporation of America is a leading manufacturer of specialty engineered nylon resins.

> <https://nycoa.com>

**Oscos Systems**

Oscos Systems' focus is the design and manufacture of hot runner systems and components.

> <https://oscosystems.com>

Left: Oscos' Self Contained Valve (SCV) nozzle system



IMAGE: OSCO

**Paulson Training**

Paulson helps plastics engineers, technicians, operators, and others learn the fundamentals and advanced topics of moulding through intensive online courses, instructor-led seminars and machine simulation.

> [www.paulsontraining.com](http://www.paulsontraining.com)

**PCS Company**

PCS Company offers standard, off the shelf, and custom, made-to-order die and mould making supplies throughout North America.

> [www.pcs-company.com](http://www.pcs-company.com)

**PGI Plastics**

PGI is a distributor of thermoplastic resins with a worldwide network of suppliers and partners in several countries.

> <https://pgiplastics.com>

**Polykemi**

Polykemi is a producer of thermoplastic compounds based on both prime and/or high quality recycled raw materials.

> [www.polykemi.se](http://www.polykemi.se)

**Progressive Components**

Progressive Components' ProFile Mold Monitoring and Asset Management System is a cloud-based system that can be customised to suit the needs of OEMs, moulders and mould builders based on use

IMAGE: RANGER



**Above: Ranger Automation provides Made-In-USA robots**

cases and roles. The company also makes the mould-tracking CVe Monitor.

> <https://procomps.com>

**Quest Polymers**

Quest Polymers is a full-service supplier of precision injection moulded components and assemblies.

> [www.questpolymers.com](http://www.questpolymers.com)

**Rainbow Colors**

Rainbow Colors provides colourant for a variety of polymers.

> [www.rainbowcolorsinc.com](http://www.rainbowcolorsinc.com)

**Ranger Automation**

Ranger provides Made-In-USA robots for injection and structural-foam moulding.

> <https://rangerautomation.com>

**Riken Americas**

Riken Americas is a PVC and TPE compounder with facilities in Kentucky and New Jersey. Its compounds are primarily used in automotive, fenestration, and marine markets.

> [www.riken-americas.com](http://www.riken-americas.com)

**RJG**

RJG is a global, full-service injection moulding solutions company.

> <https://rjginc.com>

**Routsis Training**

Routsis Training says its Rightstart programme can improve the knowledge base and skill set of an entire workforce.

> [www.traininteractive.com](http://www.traininteractive.com)

**Royce Global**

Royce Global is a New Jersey based dye and specialty chemical supplier.

> [www.royceglobal.com](http://www.royceglobal.com)

**Sasol Chemicals**

Sasol's Polymer Additives business has supported the injection moulding industry with processing aides and mould release agents that help resolve common in-process defects of injection moulded parts, such as short shots, flash, flow lines, jetting, streaks, weld lines, warpage and delamination.

> [www.sasol.com](http://www.sasol.com)

**Sesotec**

Sesotec is one of the world's leading manufacturers of metal detection, X-ray, metal separation, check

Global digital plastics magazines, apps and newsletters from AMI

Process-specific digital plastics publications; available online; on tablets; on smartphones

2023 Media data

# SPREAD THE WORD

Let the world know about the good things your company is doing by advertising in *Injection World* magazine. Download the media pack to find out about our forthcoming features, global readership, and cost-effective advertisement packages.

<http://bit.ly/IWmedia19>

weighing, and optical sorting systems.

> [www.sesotec.com](http://www.sesotec.com)

**Simcon**

Simcon's CADMOULD is a 3D injection moulding simulation software, which allows engineers and designers to meticulously optimize plastic components for manufacturability.

> [www.simcon.com](http://www.simcon.com)

**Slide Products**

Slide Products is a leading brand of processing aids for injection moulders and mould makers.

> [www.slideproducts.com](http://www.slideproducts.com)

**Stäubli**

Stäubli's expertise is in loading and mould clamping, energy connection, and robotic systems for the plastics industry.

> [www.staubli.com](http://www.staubli.com)

**Sterling**

Sterling is a leading company in temperature control units for plastics and industrial applications.

> [www.sterlco.com](http://www.sterlco.com)

**Stucchi**

Stucchi is a leading global manufacturer of hydraulic quick coupler products, providing reliable quick disconnect solutions.

> [www.stucchiusa.com](http://www.stucchiusa.com)

**Swoosh Technologies**

Swoosh Technologies delivers manufacturing software and services solutions focused on improving machining quality and output.

> [www.swooshtec.com](http://www.swooshtec.com)

**SyBridge Technologies**

SyBridge Technologies now offers rapid prototyping and digital technologies in addition to multi-cavity tool design, design for manufacturability (DFM) and after-market services.

> [www.sybridge.com](http://www.sybridge.com)

**Synergeering Group**

Synergeering Group is a direct service bureau for what it says are the world's largest and most durable additive manufacturing and 3D rapid prototype parts.

> [www.synergeering.com](http://www.synergeering.com)

[www.injectionworld.com](http://www.injectionworld.com)

**Tederic North American Machinery**

The company is the North American distributor and service provider for Tederic Injection Moulding Machines.

> [www.tederic-na.com](http://www.tederic-na.com)

**Uniglobe Kisco**

Uniglobe Kisco is a distributor of advanced materials in the automotive industry, and of the Seiki Valve and Spear hot runner system.

> <https://uniglobekisco.com>

**VEM Tooling**

VEM is a mould-making company.

> [www.vem-tooling.com](http://www.vem-tooling.com)

**Werth**

Werth is a leading measurement technology company.

> <https://werthinc.com>

**Wilmington Machinery**

Wilmington Machinery is a leading provider of low pressure injection moulding machines for plastic pallets, material handling and general purpose moulding applications.

> [www.wilmingtonmachinery.com](http://www.wilmingtonmachinery.com)

**Yudo**

Yudo is a company specialising in hot runner systems.

> <https://yudo.com>

**Yushin America**

Yushin America offers a wide range of automation, from robots for parts removal and pack-out to automation for assembly, decoration, inspection, and packaging. It also provides end-of-arm tools and conveyors.

> [www.yushinamerica.com](http://www.yushinamerica.com)



IMAGE: STERLING

Left: Sterlco TC120 Series temperature control unit

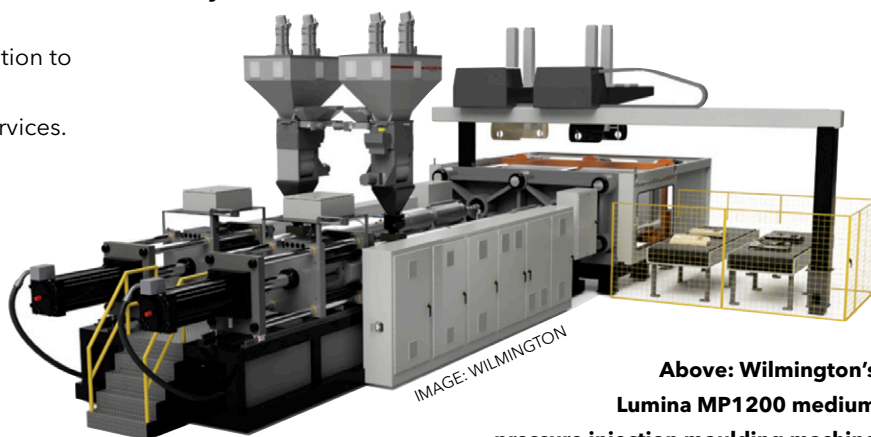


IMAGE: WILMINGTON

Above: Wilmington's Lumina MP1200 medium pressure injection moulding machine





# AMI Plastics World Expos NORTH AMERICA



November 15-16, 2023 // CLEVELAND, OH, USA

## Last booths remaining!

320+ exhibitors already confirmed including:

- 
- 
- 
- 
- 
- 
- 
- 
- 
- 
- 

# BOOK YOUR BOOTH TODAY



COMPOUNDING  
WORLD EXPO

PLASTICS EXTRUSION  
WORLD EXPO

PLASTICS RECYCLING  
WORLD EXPO

POLYMER TESTING  
WORLD EXPO

# REGISTER FOR A FREE TICKET



and many more - view the growing list [here](#)

Brought to you by:

Compounding  
WORLD

Plastics Recycling  
WORLD

Pipe and Profile  
EXTRUSION

Film and Sheet  
EXTRUSION

Injection  
WORLD

# Medical moulding does more

*New materials and machinery for medical moulding are helping to raise performance and precision. Mikell Knights reports on recent developments*



IMAGE: SABIC

**Main image: SABIC has introduced LNP CRX PC copolymer resins for demanding medical applications**

Incumbent materials used in a range of medical products face challenges from updates in grades that enhance processability or performance, including bio-compatible formulations based on renewable feedstocks that reduce carbon footprint while meeting ever-stringent regulations.

For their part, equipment suppliers are partnering with companies along the value chain to offer advanced injection moulding technologies, and smart and connected moulding cells with higher levels of process monitoring, analysis and control. Increasing demand for sterile devices and customised medical devices are becoming more achievable due to flexible moulding techniques and updated cleanroom technologies.

**Below: Arburg Allrounder 630 H in cleanroom set-up**

Medical product manufacturers are innovating based on these advances in materials and machinery,

with devices that are miniaturised with complex geometries, more resistant, lighter and more precisely designed components and devices. The rise of remote healthcare and telemedicine has led to the development of self-administered drug delivery systems and remote monitoring equipment that can be used by patients at home.

**Arburg** integrated its injection moulding machinery and processing functions with innovative equipment from third-party companies in a multi-material medical application that realises time and cost savings while increasing production efficiency.

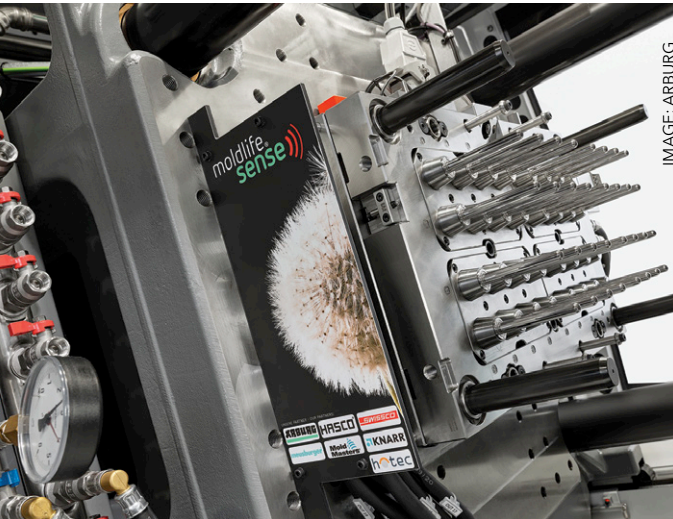
An Arburg Allrounder More series electric-toggle clamp machine, designed specifically for multi-component injection moulding, was the central control device in a moulding cell assembled and demonstrated at the K2022 show to produce two-component covered luer connectors in a special 4+4 cavity mould from German mould specialist **Braunform**. The 10 mm diameter, 11 mm long luer connector is produced using PP and TPE in a cycle time of around 10 s, where the PP component has a part weight of 0.2g and the TPE component has a part weight of 0.05g.

The mould incorporates Braunform's patented RotaricE2 concept, introduced last year at the K show, that integrates mould actions like capping, unscrewing and assembly functions into the mould, eliminating the need for a second mould and additional assembly line. Six mould functions are



IMAGE: ARBURG





combined in the mould, helping to achieve 45% overall production savings. The tool is also designed using Braunform's MED mould concept which incorporates electric drives and corrosion resistant steels for use in cleanroom medical applications.

Arburg's Gestica control on the Allrounder More 1600 series machine monitors or controls many key aspects of the overall production process. Gestica monitors the four servo-electric drives from Arburg's sister company AMKmotion which are incorporated into the Braunform RotaricE2 tool to control internal mould sequences, including core-back, lifting the lid, capping the closures, and unscrewing the luer threads.

In the same moulding cell, Arburg integrated a six-axis industrial robot from Yaskawa into its Gestica control for the first time, where it removed the finished parts from the mould with a four-fold gripper. The robot presented the luer connectors to an inline camera for inspection then deposited the parts into containers separated by mould cavities via a drawer system. The robot can be programmed directly through the Gestica machine controller. Arburg planned to add the Yaskawa industrial robot to its automation range starting Spring 2023.

Arburg also implemented a new solution for communication between mould and machine that highlights the advantages of a digitally networked medical moulding production cell. A turnkey system featuring an Arburg Allrounder 630 H machine in a cleanroom setup produced blood vials from PET in a 32-cavity tool from **Hack** at last year's K show. The blood vials have a shot weight of 227 g and were produced on a 7.5 s cycle time.

A Moldlife Sense computer system, which enables the complete life cycle of the part to be monitored, was designed, and implemented by Arburg at the K show, together with the coopera-

tion of development partner Hack. The Arburg moulding machine communicates with the mould, hot runner controller, material dryer and automation via the Gestica control system and OPC-UA.

The system in the demonstration consists of two cameras that capture images or video of mould separation and part ejection, sending the data directly to the injection moulding machine's controller via OPC-UA. There are also four displacement sensors and four knock sensors for the tie-bar guidance. "In this way, even minor deviations, such as slider and ejector movements, can be detected, process changes recognised at an early stage and damage to the mould reliably avoided," Arburg says. A Waldorf side-entry robot removes the parts from the mould, placing them on a two-level table where four cameras offset by 90° conduct a visualised inspection. Test results can be visualised on a screen at the production cell.

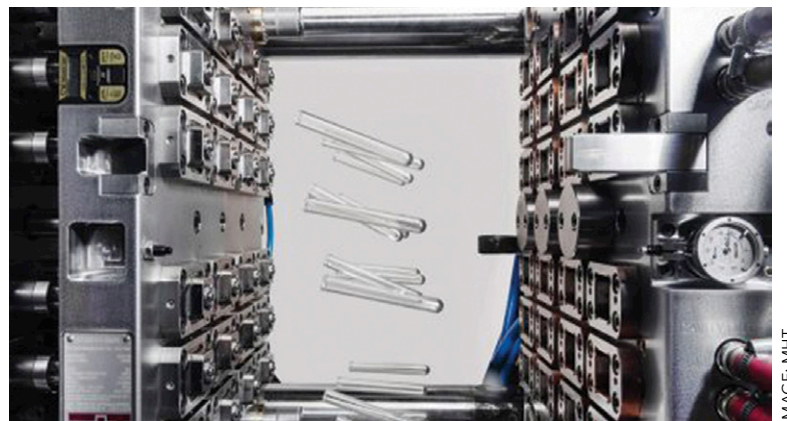
The Hack dashboard can be displayed directly in the Gestica machine controller and opened via the network per integrated browser. Malfunctions and performance-dependent maintenance intervals can be displayed through the controller. The hot runner controller, special PET material dryer and the automation are connected to the Gestica control via OPC-UA, allowing the monitoring of various aspects of the process, such as the temperatures of the hot runner and dryer, or energy management.

**MHT Mold & Hot Runner Technology** and **Kebo** announced a partnership in January to provide complete blood collection tube (BCT) solutions to their customers. MHT develops, manufactures, and distributes injection moulds and hot runner technology for PET applications, including BCTs for the medical packaging industry. Kebo develops, manufactures, and distributes high-performance injection moulds and hot runner solutions for medical, pharmaceutical and laboratory products in the medical industry.

The companies say there is a strong market need for diagnostic and laboratory applications,

**Left: At K2022, Arburg showed the Moldlife Sense system in a partnership with Hack**

**Below: MHT and Kebo have started a partnership to provide complete blood collection tube solutions**



and they see synergies of working together and cooperating to develop their businesses. MHT will bring in its leading expertise for BCT injection moulds and PET hot runners, while Kebo will bring in its expertise for medical injection moulds and hot runner solutions. Both companies will expand their businesses by providing comprehensive BCT solutions to their customers. Kebo and MHT can offer reliable system solutions “for the complete BCT product portfolio like test tubes, caps, rubber plugs, tube holders, luer adapters, needle hubs and protective caps,” says Ralf Berthold, Head of Projects at Kebo.

**Sipa**, the Italian PET container machinery and mould maker, has developed a special cold-half core-centering technology for BCTs that makes it possible to adjust the core alignment from the front face of the tooling’s cold half, in contrast to competing solutions that require access to the back of the core plate. Sipa’s patent pending development makes any adjustment easier and faster to carry out during production.

The new injection mould tooling solution, specifically for medical applications, encompasses applications from wide cell culture containers to deep and narrow BCTs. According to the company, production of high-quality BCTs requires that the wall thickness around the circumference is within very tight tolerances. The company says that “while such criteria also apply to more common PET products like bottle preforms, consistently high performance over long-term production is more difficult to ensure with BCTs”.

This is because BCTs have a diameter much smaller than regular preforms, and the various components of the mould also have reduced dimensions. For example, the cores for a BCT mould have a small diameter and hence less stiffness than preform cores. “As a result, they are more likely to flex under the pressure of the PET melt if the wave front during injection is not perfectly symmetrical,” says Sipa. Injection pressures used in BCT moulding need to be higher than in preform production, due to the higher length and thickness ratios of the BCTs. This puts

the mould components under greater stress and increases the potential for deflection of the cores.

The cold-half core-centering technology from Sipa makes it easier to fine-tune the positions of the cores, correcting the slightest deviation from the set value. The processor can make adjustments to the mould while it is still in the machine by accessing the front face, moving half of the mould. Competing operations that require access to the back of the mould also require that at least part of the mould be taken out of the injection moulding machine, disassembled, adjusted, reassembled, and then refitted to the machine.

**Sumitomo (SHI) Demag’s** North American debut of its Super High Response (SHR) injection machine model at this year’s MD&M West show involved moulding 48 mm long, 255 g carbon-black enhanced electrically conductive pipette tips for capacitive liquid level sensing in a 64-cavity tool in a 6 s cycle time.

The SE130EV-A-SHR model, part of the company’s SE-EV-A all-electric product line, features increased acceleration/deceleration capabilities from the injection unit and increased filling speed from the ultra-high-pressure screw, which offers a 30% increase in maximum injection pressure compared to the standard specification.

The unit delivers a maximum injection speed of 1,000 mm, where 100% shot weight can be injected in 0.1 s. The SE130EV-A-SHR model also features a high-precision clamp motion control and a multi-toggle clamp force control offered in a high-cycle mode in which filling begins during clamping, for improved cycle time, or a gas-release mode in which filling begins during low-pressure clamping for improved part quality, says Bob Brady, North America Business Development Manager. The medical application demonstration was designed to showcase the machine’s capabilities for thin-wall high precision applications. Brady also says that clients making products for the medical industry are increasingly activating the company’s Flow Front Control (FFC) technology in its machines to prevent the production of flash and short shots that can occur in different cavities of a multi-cavity tool.

FFC can be programmed to pause the injection stroke for a few milliseconds, giving any air trapped inside a mould cavity the chance to be evacuated, rather than burning the flow front of material entering a mould cavity. The milliseconds used by FFC to achieve more uniform filling in each cavity

**Below: A model in Sumitomo (SHI) Demag’s Super High Response machine range**

IMAGE: SUMITOMO (SHI) DEMAG





AMI | Events

# Polymer Engineering for Energy

5-6 December 2023 | London, UK

**SAVE 15%\***  
when you book before 22 September 2023

Hear from experts including:

Enabling operational efficiency in the oil and gas sector and beyond



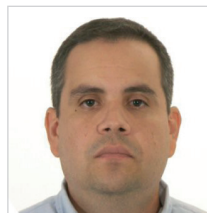
**Randi Berggren**  
Senior Engineer  
Materials Technology  
Equinor



**Claudio Jarreta**  
Non-Metallic Materials Specialist  
Petrobras



**Carine Lacroix**  
R&D Program Manager  
GRTgaz RICE



**Carlos Fernandez-Lopez**  
Principal Engineer - Non-Metallics  
ExxonMobil



**Denis Melot**  
Expert Non-Metallic Materials & Coatings  
TotalEnergies

Headline sponsor:



Also sponsored by:



\*This discount cannot be used in conjunction with other offers.

**SECURE YOUR DISCOUNTED RATE TODAY**



## Rigid packaging industry. Get unrivalled resources to support your business objectives

[Click here for more information](#)

Our market intelligence and events are here to help you move forward in this changing landscape

### Specialist topics include:



#### **Thin wall packaging**

Insights to help you discover new technologies, applications and opportunities



#### **Single-serve capsules**

Explore the latest innovations and select the right solutions to secure your business growth



#### **Plastic closures and bottles**

Examine design developments, plus ways to improve production, efficiency and sustainability

of a multi-cavity tool shortens the overall pack and hold time, keeping the overall cycle time the same, says Brady.

At K2022, **Netstal** demonstrated production of pipette tips in 64 cavities on an all-electric Elion 1200. The system solution included a precision mould from Otto Männer and a high-speed handling system from Micro Automation. The processed material was an electrically conductive compound from Premix, which was specially developed to produce pipette tips for in-vitro diagnostics.

**Material moves**

Among developments in medical materials, **SABIC** has expanded its portfolio of LNP CRX polycarbonate copolymer resins with two grades that overcome the drawbacks of incumbent PC resins and co-polyester resins used in medical or healthcare applications when exposed to disinfectants or aggressive chemicals.

Its new LNP Elcres CRX1314TW copolymer, along with its biomass-balanced equivalent LNP Elcrin CRX1314BTW copolymer, offer a combination of robust chemical and impact resistance, thin-wall transparency, dimensional stability and processability.

The distinct combination of properties offered with the two materials includes transparency equivalent to that of PC resins at thin-wall geometries of 0.8 mm to 1.0 mm, and translucency at higher thicknesses. They also deliver high impact resistance across a wide temperature range (down to -40°C), excellent dimensional stability and good processability. Both grades meet the UL94 HB standard for horizontal burning.

The grades feature exceptional resistance to harsh disinfecting chemicals, such as quaternary ammonium compounds, alcohols and peroxides, which can lead to the environmental stress cracking of medical device displays and covers. LNP Elcres



IMAGE: SABIC

**Left: SABIC has introduced new grades in its LNP CRX PC copolymer resins for the healthcare and consumer products industry**

Elcrin CRX1314BTW, which offers up to a 42% reduction in carbon footprint according to a life cycle assessment (LCA), and LNP Elcres CRX-1314TW both avoid the tradeoffs associated with incumbent materials.

This includes amorphous PC resins which provide excellent clarity and dimensional stability for tight part tolerancing but deliver insufficient chemical resistance to harsh disinfectants. Similarly, semi-crystalline materials, while offering higher inherent chemical resistance, exhibit significant shrinkage and part warpage that can negatively affect part tolerances. Due to high moisture absorption, such materials may be difficult to process, and can generate excessive scrap resulting from surface defects. Amorphous co-polyesters may also be incompatible with harsh disinfectants and may exhibit processing tradeoffs that may lead to potential production losses.

Initial target applications include clear covers, screens, and display lenses. SABIC says the new



**YOUR PARTNER FOR RECYCLED THERMOPLASTICS COMPOUNDS**



THE NEW BENVIC RECYCLED BASED COMPOUNDS

[www.benvic.com](http://www.benvic.com)



VISIT US AT  
**FAKUMA**  
STAND  
**B5-5220**



copolymer resins can meet the healthcare industry's growing need for high precision, vibration-free assembly technology by providing near-infrared (NIR) transmission optical properties that are required for laser welding and are said to enable leakproof, low stress welds without the need for adhesives.

In 2022, SABIC introduced four new grades of LNP CRX PC copolymer resins for the healthcare and consumer products industry, featuring sustainability, thin-wall flame retardancy (FR), low-temperature ductility and UV stability. The advanced materials include the incorporation of non-brominated/ non-chlorinated flame retardants, and they also comply with thin-wall FR ratings, offering the potential to reduce part thickness and raw material usage, says Joshua Chiaw, Director, Business Management, LNP & Noryl, Specialties for SABIC.

SABIC says its new LNP Elcres CRX7412U copolymer, and its biomass-balanced version, LNP Elcrin CRX7412UB, are candidates for replacing incumbent PC, ABS and polyester/co-polyester materials in thin-wall applications such as diagnostic and monitoring devices, durable medical equipment, and housings.

The materials offer limited biocompatibility according to ISO 10993 Part 1 standards for toxicity, Part 10 standard for skin sensitization and Part 23 standard for irritation. The resin delivers excellent mechanical performance, notably a good balance of impact and ductility. LNP Elcrin CRX7412UB offers a reduction in carbon footprint up to 36% when compared to the fossil-based version, enabling it to earn ISCC Plus designation, the company says.

SABIC also developed LNP Elcres CRX7416U and its biomass-balanced version LNP Elcrin CRX7416UB to address the increasing importance of thin-wall moulding in the design of smaller and lighter-weight applications like portable and hand-held medical equipment and wearable electronics, as well as for demanding consumer electronics and mobility applications such as mobile device housings and battery covers. The new grades maintain their high chemical resistance while adding value through improved thin-wall FR capability.

LNP Elcrin CRX7416UB also offers a reduction in carbon footprint of up to 36% compared to the fossil-based version. Critically reviewed SABIC primary data, combined with the latest

manufacturing data and industry average estimates was used in the cradle-to-gate comparison of the resins.

**Ineos Styrolution** has introduced a new acrylonitrile styrene acrylate (ASA) grade designed specifically for small medical device housings and casings. The new Luran S MED 797S SPF30 extends the company's ASA product family and delivers strong chemical resistance, impact strength, UV resistance and excellent flowability.

Luran S MED 797S SPF30, available in NR (Natur) and in white (WT000112), shows excellent chemical resistance against alcohols such as IPA, ethanol or propanol, or alcohol-based disinfectants. It also shows good resistance against quaternary ammonium or glutaral based disinfectants, making it a material of choice for clinical environments, the company says. The material exhibits high impact strength, specifically at room temperature and at low temperatures

(5°C), which contributes to better protection of devices by avoiding cracking failures if a device drops to the floor. Ineos Styrolution says the material is a compelling alternative to standard ABS materials.

The company also developed Luran S ECO MED 797S SPF30 BC40, a new Luran S grade that uses renewable feedstock, based on a biomass balance process certified under ISCC Plus. The 40% mass-balanced renewable content results in a carbon footprint reduction of up to 52% compared to fossil-based Luran S, according to Bernd Elbert, Market Development Manager.

**Repsol** has developed a range of biomass-balanced (ISCC Plus certified) polyolefins for the medical and pharmaceutical industries that offer a negative carbon footprint on a cradle-to-grave methodology under the ISO 14067 standard. According to Repsol, a first-generation range includes sustainable organic oils in the feedstock, while its second-generation range is based on organic waste. The newly developed materials meet the strict cleanliness and safety requirements for medical and pharmaceutical device applications, the company said. The materials meet European pharmacopeia standards and offer healthcare product makers an opportunity to reduce CO<sub>2</sub> emissions, while prioritising product safety.

**Right: Ineos Styrolution has introduced a new ASA grade designed specifically for small medical device housings and casings**





**Polyplastics** this year launched its Duracon POM (polyoxymethylene or acetal) PM series for medical applications with the commercial availability of two acetal grades in the new product line. Target applications for the high-performance polyacetal materials include surgical instruments, drug delivery and medical device applications.

Materials in the Duracon POM PM portfolio exhibit excellent slip and wear properties, allowing for lower friction and thus more design freedom, especially in moving parts of medical devices and instruments. The materials also show superior heat and moisture durability compared to competing medical material grades. Duracon POM PM can be sterilised under hot steam and ethylene oxide (EtO) sterilisation conditions, the company said.

The formulations are designed for global regulatory compliance including ISO 10993 and USP Class VI biocompatibility/cytotoxicity, FDA Drug Master File (DMF) and Device Master File (MAF), and EU 10/2011 and FDA food contact 21 CFR 177.2470.

Polyplastics introduced PM09S01N, a standard viscosity grade that complements the company's high-purity Topas cyclic olefin copolymer (COC) materials for a range of medical applications. The Duracon POM PM grade delivers the reliable mechanical properties and mouldability expected from POM.

It also rolled out PM27S01N, a high-flow grade for drug contact and delivery applications that enables reduced wall thickness, miniaturisation and lower weight for various medical devices that are becoming more complex and highly functional.

**Röhm** expanded its Cyrolite portfolio of polymethyl methacrylate (PMMA or acrylic) materials with the introduction of two acrylic-based copolymer compounds at this year's MD&M West trade show in Anaheim, California, that it says provides a superior balance of properties for medical devices.

Cyrolite G-20 CP is a PMMA-based copolymer said to ensure the integrity of photosensitive substances such as oncology drugs, antibiotic, and antifungal agents that require superior UV-light protection. It is designed for use in applications that require UV-light protection in infusion therapy medical devices, including filter housings, luer connectors, needleless connectors, check valves and Y-sites.

Typical properties of Cyrolite G-20 CP include five times the impact resistance of unmodified acrylics and excellent processability. The copolymer compound is said to offer excellent bonding to PVC tubing and can be thermal bonded, ultrasonic



IMAGE: POLYPLASTICS

or laser welded. It brings good heat resistance and is said to offer resistance to EtO, gamma and E-beam sterilisation, the company says.

Röhm also introduced Cyrolite MD zk6, an amorphous, impact modified, thermoplastic compound based on PMMA with high impact resistance, ductility/toughness, and medium heat resistance, and is suitable for the medical device and diagnostics industry. The material can be used in lower melt flow rate applications and is suited for applications including dialysis cassettes, test packs, filter housings, microfluidics, luers, tube connectors, IV catheter hubs, and Y sites.

Typical properties include three times the impact resistance of unmodified acrylics, excellent dimensional stability, and improved tensile elongation. The product offers high light transmission with little haze and can be thermal bonded, ultrasonic and laser welded. It forms an excellent bond with PVC tubing.

Röhm offers the Cyrolite compounds in formulations for injection moulding or extrusion lines with 3-zone general purpose screws.

**Above: Polyplastics has launched its Duracon POM PM series for medical applications**

**CLICK ON THE LINKS FOR MORE INFORMATION:**

- > [www.arburg.com](http://www.arburg.com)
- > [www.braunform.com](http://www.braunform.com)
- > <https://hack-formenbau.de>
- > [www.kebo.com](http://www.kebo.com)
- > [www.mht-ag.com](http://www.mht-ag.com)
- > [www.sipsolutions.com](http://www.sipsolutions.com)
- > [www.sumitomo-shi-demag.us](http://www.sumitomo-shi-demag.us)
- > [www.netstal.com](http://www.netstal.com)
- > [www.sabic.com](http://www.sabic.com)
- > [www.ineos-styrolution.com](http://www.ineos-styrolution.com)
- > [www.repsol.com](http://www.repsol.com)
- > [www.polyplastics.com](http://www.polyplastics.com)
- > [www.roehm.com](http://www.roehm.com)



# MATERIALS FOR ENERGY EXPO

11-12 SEPTEMBER 2024  
BRUSSELS EXPO, BELGIUM

## Showcasing materials to enable the energy transition

### REASONS TO EXHIBIT WITH US



**Secure relationships** with new and existing clients



**Gather intelligence on market trends** and future customer needs



**Promote technologies** to a receptive audience



**Contribute to the energy transition** and promote cross-industry collaboration



**Gain a competitive advantage** and grow your new business leads



NEW FOR  
2024

[CLICK HERE TO BOOK YOUR BOOTH](#)

Organised by:

**AMI**





# Plast returns as a live expo

*Plast last took place as a live event in 2018 before the Covid pandemic disrupted exhibition schedules. Here we preview some of the injection moulding exhibitors at the 2023 show*

Italy's major plastics exhibition Plast takes place on 5-8 September at the Fiera Milano fairgrounds in Rho-Pero, following a five-year hiatus when the Covid pandemic prevented it being held as a face-to-face event. In 2022 the Plast organiser Promaplast ran a new sustainability event called GreenPlast as a bridge event between the 2018 and 2023 live editions of Plast.

More than 1,200 exhibitors had registered for Plast 2023 by June, compared with 1,500 at the 2018 show. Mario Maggiani, Managing Director of Promaplast, has been positive about the 2023 show's potential, saying two-thirds of exhibitors are Italian and the rest international (branches of foreign enterprises located in Italy are counted as Italian).

Plast 2023 comprises six halls: Halls 9 and 11 for raw materials suppliers; 13 and 15 for extrusion; and 22 and 24 for injection moulding, blow-moulding, and auxiliaries. In addition to three satellite

shows - dedicated to rubber (Rubber), additive manufacturing (3D Plast), and innovative polymers (Plast-Mat) - the event will host conferences and workshops, plus a new feature organised by The Innovation Alliance.

Sustainability is once again a major theme at Plast, to which can be added the topical issue of energy efficiency. Arburg says it is responding to buyers' desire to save energy and Italy's increased need for sustainability by having a presence at Plast 2023. Raffaele Abbruzzetti, Managing Director of Arburg Italy, says: "After the summer break, it's the right time for players in the plastics industry to have a fresh start, look around and find ideas that can make them more competitive."

Plast 2023 is open to visitors from Tuesday 5 September to Friday 8 September from 9.30am to 6.00pm. Find out more information and how to register at the show website: [www.plastonline.org](http://www.plastonline.org) >

**Main image:**  
**The wait is over for visitors to the Plast exhibition in Milan, who last attended the show in 2018**



IMAGE: ARBURG



**Above: Arburg is showing its new Allrounder 470 H milestone machine at Plast 2023**

A highlight at the **Arburg** stand at Plast this year is a demonstration of production with solid silicone. In the 100<sup>th</sup> anniversary year of the Hehl family business, Arburg is launching a new generation of machines with the Allrounder 470 H, which combines an electric clamping unit and hydraulic injection unit. The machine presented in Milan has a special configuration and will produce parts from solid silicone for the first time.

On the stand of Arburg partner Sverital there is an LSR moulding demonstration with an electric Allrounder 470 A and a special pump system. In the cooperation between Arburg's Italian team and Sverital, Arburg machines are offered to customers with all the accessories needed to operate an injection moulding system of this type.

For packaging moulders, Arburg is showing an electric Allrounder 570 A Comfort producing PP flip-top closures for bottles in the beauty care sector. Partners include Exxon Mobil as material supplier and Italian mould manufacturer Giurgola Stampi. The Gestica control system has various assistance functions for cycle times and filling and the process is managed via OPC UA interfaces to hot runners and the cooling system.

An electric Allrounder 720 A Ultimate will have its Italian premiere at the show. The machine, complete with size 1300 injection unit, will be using injection compression moulding to produce environmentally friendly, thin-walled IML cups made from biomass balanced PP mono-material. A 4-cavity mould from Brink will be used to demonstrate the ICM process. Integrated into the production cell is a side-entry robot from Brink that inserts the labels, removes the finished cups and stacks them on a conveyor belt.

A chemically recycled mass balanced PP is used in another demonstration which shows how the use of a second mould and thus an additional assembly line can be eliminated. An Allrounder More

**Right: The new Boy XS E for micro injection moulding**

1600 produces four ready-to-use Luer connectors, with the PP component weighing 0.2 g, while the soft TPE component weighs only 0.05 g. The 4+4-cavity mould features RotaricE2 technology from Braunform.

➤ [www.arburg.com](http://www.arburg.com)

**Boy** is showing two injection moulding machines at Plast which it calls "a small giant and a big dwarf". Being shown on the stand of its Italian representative STATE Technologies, the Boy XS E and Boy 100 E hybrid are the smallest and one of the largest models in Boy's product portfolio.

The Boy 100 E hybrid is producing PP gift boxes in combination with the Boy-Handling LR 5. In the specially developed servo-electric injection unit with the international size SP170, the injection and metering movements are driven electro-mechanically via two servo motors, which are completely detached from the machine hydraulics. In combination with the protective housing, the fully automated production unit has a footprint of only 9 m<sup>2</sup>.

The new Boy XS E, which is the successor to the highly successful Boy XS, has the proven servo drive of the Boy E series. Energy efficiency, high dynamics and extremely smooth running characterise the compact injection moulding machine with 100 kN clamping force, says Boy. The machine demonstrates its strengths mainly in micro injection moulding and sprueless production in single-cavity moulds.

The new machine is optionally available with two different clamping platen configurations. In the standard version for conventional mould sizes up to 160 mm (diagonally up to 205 mm clear width between the tie bars) as well as with a special mould holder (75 x 75 mm for micro moulds). Even in the standard version, the Boy XS E offers the advantage of an injection unit that can be adjusted in height by up to 25 mm, thus enabling decentralised gating.

➤ [www.dr-boy.de](http://www.dr-boy.de)



IMAGE: BOY



**CMG Granulators** says its new SL series is a range of low speed screen-less granulators for injection moulders which have unique attributes, leading to the highest degree of regrind quality, efficiency of operation, ease of cleaning and the best application flexibility. The range consists of four models, for capacities going from 5 kg/h up to 30 kg/h.

SL granulators are designed to produce the most homogeneous regrind shape and dimensions, without any dust. The rotor cutters perform a fine and precise cut of the parts to regrind and do not fracture or crush them as conventional screen-less granulators do. The sector grinding elements are available in three different sizes, to obtain the most adequate regrind size for the injection process. CMG says the great advantage of dimensionally adequate regrind is most appreciated when the SL granulator is coupled with small tonnage injection moulding machines.

At Plast 2023, CMG will also present the EV916 and EV616 models from its Evoluzione series, suitable for the most critical operating conditions, for wet or dry granulation, with granulation capacity from 2,000 to over 5,000 kg/h. CMG is introducing a brand new cutting chamber design for its Evoluzione granulators. The new rotor configuration allows the rotor blades to cut the plastic feedstock perpendicularly against the bed blades, obtaining the highest degree of cutting penetration and precision.

Other products on show at CMG's stand include granulators from: its new G26 line, which features integral sound enclosure and an innovative feed hopper design to accommodate the widest variety of shapes and dimensions for the parts to grind; and the G17 series for small regrind.

➤ [www.cmg-granulators.com](http://www.cmg-granulators.com)

**Engel** says its Plast stand is showing a wide range of solutions for different industries and requirements. At its Expert Corners, visitors can find out how complex production processes can be simplified, regardless of the specific area of application.

The performance of Engel's iQ smart assistant systems will be demonstrated in a production cell based on an all-electric Engel E-mac 265/80 injection moulding machine with a clamping force of 80 tonnes. The cell is equipped with a four-cavity mould for the production of PBT automotive connectors. An Engel Viper linear robot in the new size 4 will remove the components from the mould and place them on the conveyor belt.

The company says the all-electric drives of the E-mac machine contribute to a high degree of energy efficiency, further enhanced by the E-floMo and E-temp temperature control technology integrated with the smart iQ Flow control assistant system, which saves 4,000 kWh in one year of operation at full capacity. The E-floMo temperature-control water manifold system monitors and regulates the flow rate, pressure, temperature and temperature differences. Based on these parameters, iQ Flow control assistance actively regulates the temperature difference in the individual circuits. This means that the thermal conditions in the mould remain constant at all times, even if there are fluctuations in the system.

Engel highlights moulding with recycled material in an application developed in collaboration with Alpa Group, Brink and IPB Printing. This allows post-consumer rPET containers (in this case, a round 125 ml thin wall container) to be produced in a single injection moulding process step, without the need to use preforms. The production cell features an Engel E-speed 280/50 injection moulding machine, a hybrid machine with electrical clamping unit and hydraulic injection unit for the high performance requirements of thin-wall injection moulding.

In another demonstration, a fully automated production cell produces 7 mm blade valves made of LSR, used in a very wide range of applications in cars, medical technology and packaging. Engel says what all of these applications have in common is the very strict process consistency requirements in terms of injection moulding production.

The cell combines an E-victory machine and smart digital assistance using mould and plasticising technology from Nexus. Production is fully automated in a 64-cavity mould with an Engel Easix articulated robot and an integrated vision control system.

➤ [www.engelglobal.com](http://www.engelglobal.com)

**Frigel** is introducing the latest developments in cooling and mould temperature control at Plast 2023. The new Microgel Syncro technology can reduce cycle times by up to 40%, achieved through

**Left: PBT automotive connectors produced by an Engel E-mac equipped with all the company's iQ assistant systems**

digital synchronisation with the moulding process. The Syncro control unit supplies cold water to the mould only in the cooling phase, drastically reducing its duration. The Microgel Syncro product line features more than 10 models, with cooling capacities from 16 kW to 56 kW and heating capacities from 12 kW to 24 kW.

The Microgel RS range of temperature control units, which are available as single zone (RSM units) and dual zone (RSD) machine-side units, are designed for moulding throughputs ranging from 10 to 240 kg/hr. The new range includes advances in temperature accuracy over the entire control range (-5 to 90° C), pumping performance and energy efficiency.

Frigel has expanded its adiabatic cooling product family line with the Ecodry MDK range, designed to allow the flexible configuration of modular adiabatic solutions for small to large plastic factories. MDK takes advantage of some of the technological advances already introduced in the LDK range. The new Ecodry MDK is designed to integrate easily into existing Ecodry 3DK systems, of which Frigel has an existing installation base of thousands of units.

➤ [www.frigel.com](http://www.frigel.com)

Auxiliary equipment group **Moretto** says that one of its Plast highlights, the OTX hopper, is the result of sophisticated mathematical simulations used in its design which ensures a regular material flow, guaranteeing correct drying of each granule being processed. The optimisation of the process parameters has enabled the hopper size, airflow and treatment time to be reduced by 40% for the same hourly output.

The use of a smaller hopper allows the application of a smaller dryer. Moretto has developed the Hyper Flow Turbo project capable of generating up to 2,400 m<sup>3</sup>/h of compressed air with the aim of creating a machine capable of using as little energy as possible. Compared with the regular Hyper Flow technology, Hyper Flow Turbo for the same performance consumes 4.8 kW/h, providing energy savings of 11.7 kW/h and cost savings of €35,800 per year, the company claims.

X Comb is the latest addition to the company's range of dehumidifiers which has compact dimensions, making it suitable for treating small quantities of highly hygroscopic technical polymers. Moretto calls it a highly energy-efficient product intended for production-intensive sectors such as medical, optics and electronics.

Moisture Meter has the ability to detect the percentage of residual moisture in the polymer without the need for off-line sampling. It is able to provide in real time the moisture value of the plastic granule after drying, allowing the operator to fix the situation if the resin has not been properly treated. Different versions are available depending on the type of installation and the hourly output of the polymer to be treated.

Moretto has a wide range of blenders, including the DGM Gravix 20, the new gravimetric batch blender developed specifically for high-precision dosing of small percentages of material. The 20 series is built on the model of the Gravix series, but features a renewed design that improves granule flow.

The storage line also includes Silcontrol, a system designed to control the loading of plastic granules into storage silos. The material, identified via a special barcode reader, is matched to the correct silo by interrogating the database.

➤ [www.moretto.com](http://www.moretto.com)

**Piovan** says that visitors to its stand at Plast will be able to see its the complete range of dedusting, feeding, conveying, storage, dehumidification, dosing, temperature control and cooling systems. A central feature is a system equipped with Modula centralised drying system, Easylink+ automatic coupling station, Quantum gravimetric batch blend with remote mixer, Easy3+ system centralised transport management, all of which is monitored by Winfactory 4.0, the Piovan supervision software to maximise efficiency of production processes.

On show for the first time in Italy will be Condenso, Piovan's fume condenser that minimises energy consumption and emissions thanks to a heat exchanger that transfers energy from the incoming hot air to the outgoing air, reducing the thermal gap with the dehumidifier with lower costs for both cooling and heating.

In Piovan's Aquatech brand, visitors can see the Aryacool+ adiabatic dry cooler, DigitempEvo water-cooled thermochiller and two models of the Easytherm water-cooled thermoregulators, one with an open system and the other pressurised.

➤ [www.piovan.com](http://www.piovan.com)

**Wittmann Battenfeld** is showing a SmartPower 400/750H/210S/525L Combimould machine at Plast, producing a re-usable three-component coffee-to-go cup with lid, which highlights its foam moulding technology. The Borneables biomass-balanced materials from Borealis are used for both parts and the mould is supplied by Haidlmair. A



IMAGE: MORETTO

**Above: A Plast 2023 highlight for Moretto is the new OTX hopper**



special feature of this mould is the use of hybrid elements in the mould plate to optimise cooling.

Another demonstration shows a spirit level being produced on a SmartPrimus 90/350 machine with the new B8X control system. The machine comes with the CMS Lite condition monitoring system from Wittmann and a special automation cell for assembly, checking and conveying. The spirit level is produced from ABS in a 1+1-cavity mould supplied by Sola.

A further machine on display will be an all-electric EcoPower 110/350 LIM with the new B8X control system producing four different closing caps for beverage cans and bottles from LSR in a single injection moulding process, using a 4-cavity mould from Nexus. The open design of the EcoPower's injection unit enables easy integration of the LSR metering unit.

In addition to the robots and auxiliary appliances connected to the machines on display, numerous Wittmann robots will be shown, including: a WP80 sprue picker, a W918 robot with R9 control system, a Primus 48T, and a Sonic 108 high-speed robot.

From its range of dryers, the company will



IMAGE: WITTMANN

showcase Drymax Plus 30 dry air dryers and drying batteries consisting of Drymax and Silmax batteries, as well as a Codemax coupling station.

Among the other Wittmann equipment at Plast will be temperature controller models Tempro Basic C90, C120 and C140, as well as a Tempro Plus D two-circuit appliance. From the group's granulator range will be one S-Max 1 and one S-Max 2 screenless granulator, and a G-Max 9.

> [www.wittmann-group.com](http://www.wittmann-group.com)

**Above:**  
**Wittmann**  
**Battenfeld's**  
**SmartPower**  
**400/750H/**  
**210S/525L**  
**Combimould**  
**machine**

AMI | Events

# Single-Serve Capsules

March 19-20, 2024 | Boston, MA, USA



Exclusive rate available for brand owners and roasters

# Moving to Boston, MA

Connect with the global supply chain to discover innovations, challenges and opportunities for plastic and metal capsules

\*Discounts cannot be used in conjunction with other offers. Offer ends September 22, 2023.

**SAVE 20%\* BY BOOKING TODAY**

The image features a background of two hands holding a large quantity of small, round, green pellets. The AMMI logo is positioned in the top left corner, with the letters 'A', 'M', and 'I' in a dark blue color and the second 'M' in a lighter blue color. The overall theme is sustainability and recycling.

# AMMI

## Maximise your business growth in the recycling and sustainability sector

**AMMI's essential reports and events for recycling and sustainability**

### **Market reports and database include:**

#### **Database**

- ▶ Plastics Recyclers in Europe and Turkey

#### **Market reports**

- ▶ Chemical Recycling Global Status
- ▶ Mechanical Plastics Recycling Industry Europe
- ▶ Mechanical Plastics Recycling Industry Global
- ▶ Feedstock Availability for Plastics Recycling Europe 2022
- ▶ Recycling of Flexible Polyolefin Films Europe
- ▶ Recycling of Agricultural Films Europe
- ▶ Rigid Polyolefin Recycling Europe

**Take advantage of our unique expertise to innovate and grow your business**

## Upcoming events from AMI

---

### Plastics Recycling Technology

10-12 October 2023

Vienna, Austria

---

### Plastics Recycling World Expo

15-16 November 2023

Cleveland, OH, USA

---

### Recycling Flexible Packaging

22- 23 November 2023

Barcelona, Spain

---

### Plastics Sustainability Strategies

5-6 December 2023

Dusseldorf, Germany

---

### Plastics Recycling

6-7 March 2024

Bangkok, Thailand

---

### Chemical Recycling

12-13 March 2024

Houston, TX, USA

---

### Chemical Recycling

June 2024

Germany

---

### Plastics Recycling World Expo

11-12 September 2024

Brussels, Belgium



[Find out more](#)

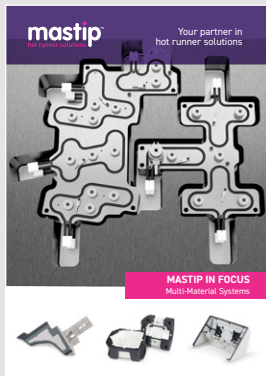
**AMI**



# Download these new product brochures

Simply click on the brochure cover or link to download a PDF to your PC or smartphone

## MASTIP: MULTI-MATERIAL MOULDING



This 10-page publication from hot runner technology company Mastip provides guidance on multi-material moulding and includes case studies on a variety of applications and the hot runner system set-up.

[CLICK HERE TO DOWNLOAD](#)

## POLYKEMI: CUSTOM COMPOUNDS



This 12-page brochure provides an introduction to Polykemi and its range of custom engineered plastic compounds. It includes details of production locations, subsidiaries, R&D capabilities and quality certifications.

[CLICK HERE TO DOWNLOAD](#)

## KORSINI



In this newsletter, IML company Korsini provides updates on company developments, awards, certification and its portfolio of in-mould label products for injection moulding and other processes.

[CLICK HERE TO DOWNLOAD](#)

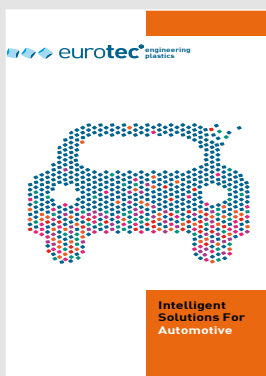
## TISAN: ENGINEERING COMPOUNDS



Tisan Engineering Plastics has more than 40 years of experience developing injection moulding compounds for applications in automotive, home appliances, E&E and other sectors. Find out more about Tisan's wide range of materials in this brochure.

[CLICK HERE TO DOWNLOAD](#)

## EUROTEC: AUTOMOTIVE COMPOUNDS



This brochure presents the full range of Eurotec's engineering polymer compounds for automotive applications, including interior, exterior and under the hood. Read all about Eurotec's innovative products and tailor made services.

[CLICK HERE TO DOWNLOAD](#)

## SUKANO: BIO-MASTERBATCHES



Switzerland's Sukano offers a full range of bioplastic masterbatches and compounds to allow processors to maximise the performance of bio-based resins such as PLA and PHA and to simplify and speed up processing.

[CLICK HERE TO DOWNLOAD](#)

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

# 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



## Injection World July/August 2023

The July-August 2023 issue of Injection World magazine contains features on colour suppliers responding to sustainability pressures, changes in packaging, and the latest in LSR. Plus there is a feature about Arburg celebrating 100 years as a family business.

[> CLICK HERE TO VIEW](#)



## Injection World June 2023

The June edition of Injection World explores what equipment makers are doing to help cut energy costs. It also looks at the impact of EU packaging waste regulations on the single-serve capsule sector, as well as reviewing developments in bioplastics and 3D print.

[> CLICK HERE TO VIEW](#)



## Compounding World August 2023

The August edition of Compounding World looks at wood plastic composites, PVC plasticisers, high temperature compounds, and the latest in process control; plus all the regular features and news from the global industry.

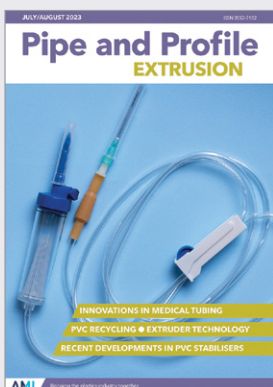
[> CLICK HERE TO VIEW](#)



## Plastics Recycling World July/August 2023

The July/August edition of Plastics Recycling World magazine looks at how car makers are ramping up their plans to use recycled plastics. Plus, the latest developments in chemical recycling, washing technology, and innovation in recovering ABS-base polymers from WEEE material streams.

[> CLICK HERE TO VIEW](#)



## Pipe and Profile July/August 2023

The July-August issue of Pipe and Profile Extrusion has features on medical tubing, PVC additives, PVC recycling and new extruder technology; plus all the regular features and news from the global industry.

[> CLICK HERE TO VIEW](#)



## Film and Sheet July/August 2023

The July-August edition of Film and Sheet Extrusion has a cover article on advances in bioplastics, including projects using wood, carbon dioxide and cellulose as raw materials. Other features look at sustainability developments in stretch and shrink film and plastic pouches.

[> CLICK HERE TO VIEW](#)

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

2023	<b>5-8 September</b>	Plast 2023, Milan, Italy	<a href="http://www.plastonline.org/en">www.plastonline.org/en</a>
	<b>20-21 September</b>	Injection Molding & Design Expo, Novi, MI, USA	<a href="http://www.injectionmoldingexpo.com">www.injectionmoldingexpo.com</a>
	<b>20-23 September</b>	T-Plas, Bangkok, Thailand	<a href="https://www.tplas.com/">https://www.tplas.com/</a>
	<b>26-28 September</b>	Interplas, Birmingham, UK	<a href="http://www.interplasuk.com">www.interplasuk.com</a>
	<b>28-30 September</b>	Central Asia Plast World, Almaty, Kazakhstan	<a href="https://plastworld.kz/?lang=en">https://plastworld.kz/?lang=en</a>
	<b>5-7 October</b>	PackPrintPlas Philippines, Manila, Philippines	<a href="https://www.globallinkmp.com/packprintplas">https://www.globallinkmp.com/packprintplas</a>
	<b>17-21 October</b>	Fakuma, Friedrichshafen, Germany	<a href="http://www.fakuma-messe.de">www.fakuma-messe.de</a>
	<b>15-16 November</b>	Compounding World Expo USA, Cleveland, USA	<a href="http://www.compoundingworldexpo.com/na/">www.compoundingworldexpo.com/na/</a>
	<b>22-25 November</b>	PlastEurasia, Istanbul, Turkey	<a href="https://plasteurasia.com/en/">https://plasteurasia.com/en/</a>
	<b>28 Nov-2 Dec</b>	IPF Japan 2023, Chiba, Japan	<a href="https://www.ipfjapan.jp/english/">https://www.ipfjapan.jp/english/</a>
<b>13-15 December</b>	Arabplast, Dubai, UAE	<a href="https://arabplast.info/">https://arabplast.info/</a>	
2024	<b>4-6 March</b>	Plast-Alger, Algiers, Algeria	<a href="https://www.plastalger.com/">https://www.plastalger.com/</a>
	<b>6-10 May</b>	NPE 2024	<a href="http://www.npe.org">www.npe.org</a>
	<b>11-12 September</b>	Compounding World Expo EU, Brussels, Belgium	<a href="http://www.compoundingworldexpo.com/eu/">www.compoundingworldexpo.com/eu/</a>


## AMI CONFERENCES

<b>12-13 September 2023</b>	Performance Polyamides, Cologne, Germany
<b>26-28 September 2023</b>	Single-Serve Capsules, Barcelona, Spain
<b>11-13 October 2023</b>	Executive Summit, Hilton Head Island, SC, US
<b>28-29 November 2023</b>	Thin Wall Packaging, Cologne, Germany
<b>5-6 December 2023</b>	Polymers in Footwear, Nuremberg, Germany
<b>5-6 December 2023</b>	Polymer Engineering for Energy, London, UK
<b>7 December 2023</b>	Polymers in Hydrogen and CCUS, London, UK

For information on all these events and other conferences on film, sheet, pipe and packaging applications, see [www.amiplastics.com](http://www.amiplastics.com)

# DON'T MISS A SINGLE ISSUE

Register now for your free subscription at:  
[www.injectionworld.com](http://www.injectionworld.com)

And don't forget to tell your colleagues, customers and suppliers about the magazine. You can use the share button (the  symbol in the browser) to help spread the word.

