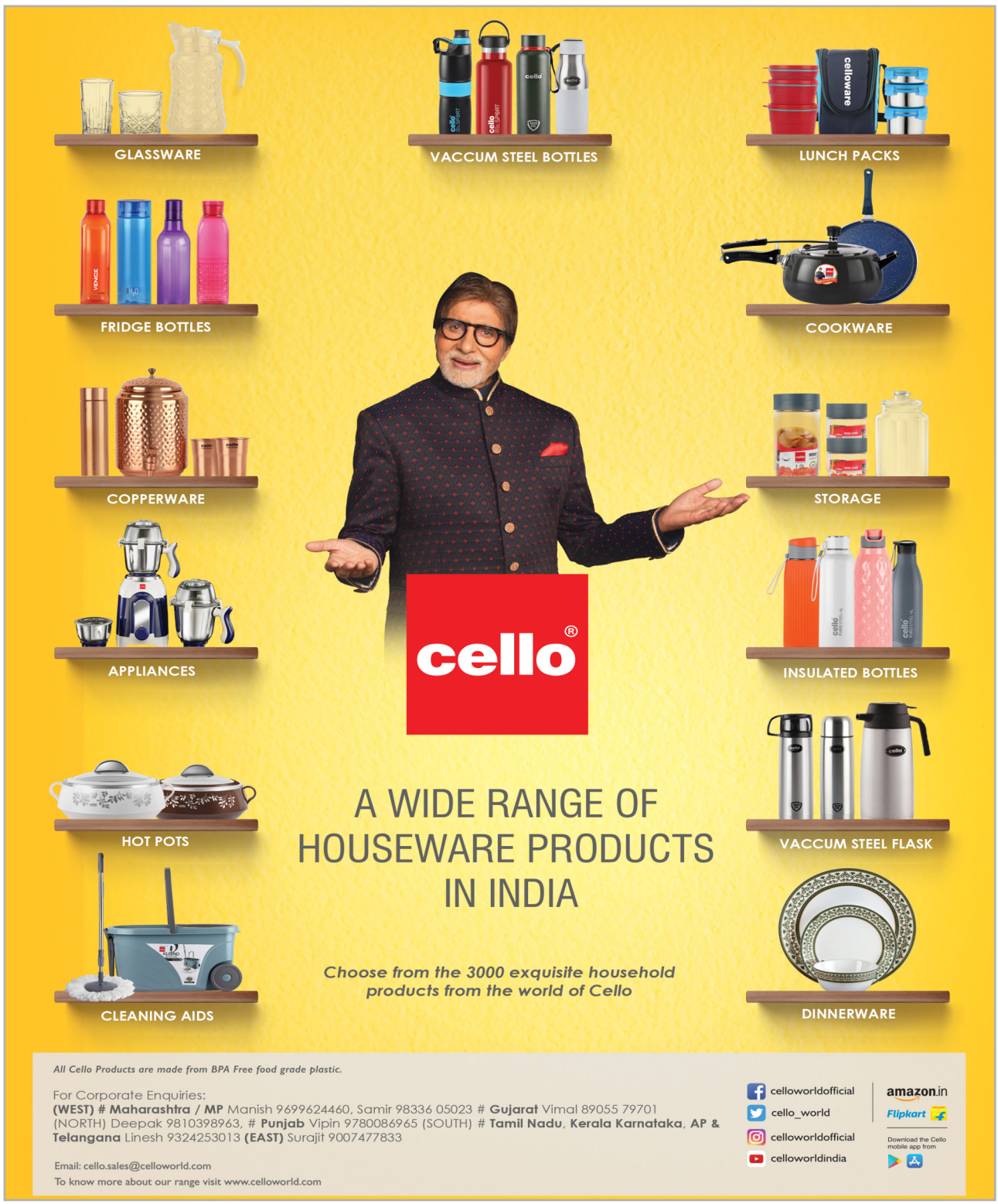
R.N.I. No. MAHENG/2012/45652

PLASTISCOPE

The Official Journal of the Organization of Plastics Processors of India

Volume No. 13 • Issue No. 04 • Mumbai • October 2024



STEER

CO-ROTATING TWIN SCREW EXTRUDERS PLANT ENGINEERING
REPLACEMENT PARTS REFURBISHING PROCESSING SECTION

FOR EVERY COMPOUNDING NEED!

omega
1.71 DO/DI

Perfect for engineering plastics, effect pigments, biopolymers, natural fibers, carbon black, colors and other shear-sensitive & low bulk density materials.

mega SPECIAL
1.55 DO/DI

Perfect for colours, legacy engineering thermoplastics, blends and high volume manufacturing.

ALPHA
1.49 DO/DI

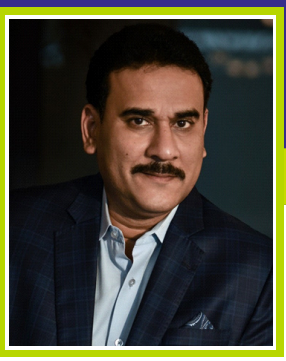
Perfect for round the clock production for general compounding applications

For more information: Sunil Dutt, +(91) 99001 01518, sunil.dutt@steerworld.com

www.steerworld.com

FROM THE PRESIDENT's DESK

Mr. Pradeep Rathod



OPP

CONTENTS

Dear Members,

Greetings from Organization of Plastics Processors of India!

I have taken over the Presidentship of the Organization of Plastics Processors of India (OPPI). As informed to you, my predecessors have been the stalwarts of the Indian Plastics Processing Industry. Each one of them has contributed for the development of the Indian Plastics Processing Industry and OPPI. I will make every effort to continue their legacy.

I propose to take a delegation of OPPI members to the middle-east countries to consider and explore the feasibility of setting up there downstream Plastics Processing Plants. The basic objective is to take advantage of the low fuel cost, nearness to sources of plastic polymers, almost no transportation cost and negligible taxation. OPPI secretariat will circulate the details to you when all details are finalised.

We will also submit a memorandum to the Department of Chemicals and Petrochemicals, Government of India requesting for establishment of Plastic Park in Rajasthan which is one of the best destinations for setting up plastic processing units because of nearness to polymer producers, Ports, Delhi - Mumbai Corridor, etc.

OPPI will be organizing a visit to PlastIndia International University, Vapi. University of Massachusetts Lowell is partnering with PIU to prepare 21st century workforce. PlastIndia International University (PIU) is India's first institution dedicated to plastics and sustainability, established under the aegis of PlastIndia Foundation. The details of the visit will be circulated by OPPI Secretariat.

As you are aware there are very large imports of even ordinary plastic products from China at rates lower than our own cost of production for those items. We have been requesting Ministry of Finance, Ministry of Commerce and Department of Chemicals and Petrochemicals to increase the custom duties on plastic goods from 10% to 20%. We will take up this issue more vigorously with all concerned ministries at highest levels to ensure protection of Indian Plastic Processors.

I will be happy to receive suggestions from you pertaining to the programs to be organized for the development of the plastics industry.

With Best Wishes,

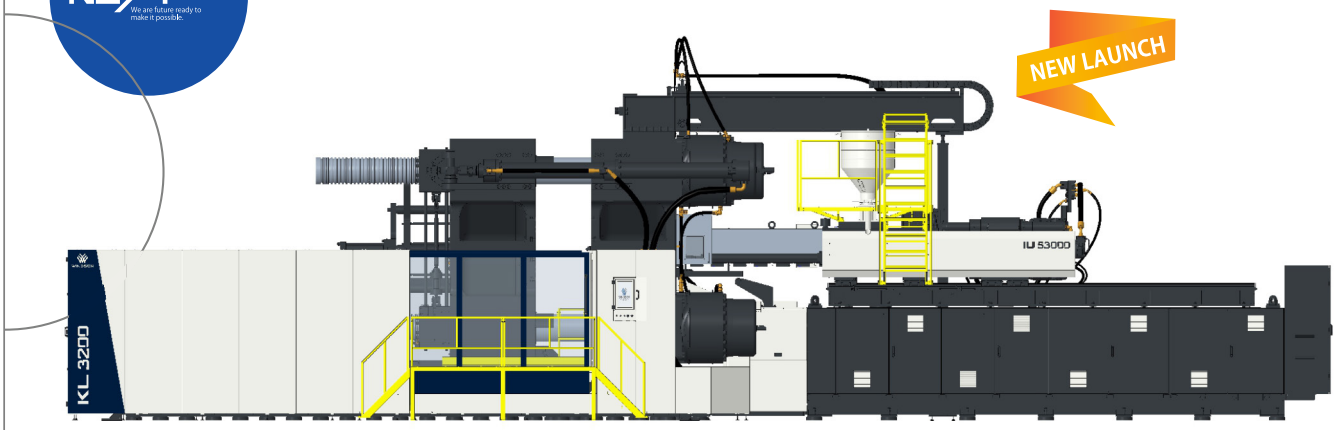
Pradeep Rathod
President

Printed, Published and Edited by:
DEEPAK LAWALE on behalf of **ORGANIZATION OF PLASTICS PROCESSORS OF INDIA,** Printed at **DESIGN WORLD CREATIONS,** Unit No. 204, A-Wing, Suashish IT Park, Off. Dattapada Rd, Borivali East, Mumbai - 400 066 and Published from ORGANIZATION OF PLASTICS PROCESSORS OF INDIA, 404/405, Golden Chambers, New Link Road, Andheri (West), Mumbai 400 053.
Editor: **DEEPAK LAWALE**

th ANNIVERSARY

WINDSOR
Partner in Progress

FUTURE NEXT
We are future ready to make it possible



350 to 8000 Ton

WINDSOR UNVEILS KL 3200, INDIA'S LARGEST TONNAGE "MAKE IN INDIA" INJECTION MOULDING MACHINE.

Inaugurated by Shri Balvantsinh Rajput
Hon'ble Cabinet Minister, Industries, Micro, Small & Medium Industries, Cottage, Khadi & Rural Industries, Civil Aviation, Labour & Employment, Govt. of Gujarat

On September 19, 2024, Windsor Machines Ltd. took a monumental step forward in the Indian plastics processing industry by launching the KL3200, India's most giant two-platen patented injection moulding machine, Proudly "Made in India." This historic event was further honoured by esteemed government dignitaries, reinforcing the significance of this achievement in promoting domestic manufacturing prowess and enhancing our capability to be **"Atmnirbhar"** for large and critical mechanical parts.

This innovation comes at a pivotal time, as the demand for larger machines grows across various industries, including Automotive, White Goods and appliances, Industrial, Logistics, and many more. With a relentless focus on innovation, Windsor Machines has consistently pushed the boundaries of what's possible in plastics processing.

At the inauguration, **Vinay Bansod**, the Executive Director & CEO of Windsor, said, "We are proud to introduce a State-of-the-art machine, a key milestone in Windsor Machines' journey of innovation. KL3200, a proudly **'Made in India'** machine, supports our vision of **'Atmanirbhar Bharat'** and meets the growing needs of the industries. At Windsor, we remain committed to providing cutting-edge solutions that help our customers succeed".

Manoj Singh, the Sr. General Manager of Sales & Marketing, has expressed that 'The introduction of KL3200 is a game-changer for our sales strategy and overall business growths. This solidifies our position as a leader in the market, allowing us to better cater to the increasing demands of domestic and international customers and deliver exceptional value and long-term partnerships.

The introduction of KL3200 follows the successful launch of the KL1600, KL2000 and KL2300 machines. This further expands the company's portfolio to meet the ever-growing need for significant plastic components in a compact, efficient, and cost-effective manner.

Key highlights:

- Generous Clamp & Injection specification with multiple benefits
- Widest range and Uniform Design concept: 350 to 8000 Ton
- "Patented" Jaw Clamping & Same Platen for improved reliability
- Better Product Quality
- Proudly100 % Made in India
- Footprint reduction by 15-20%
- Improved reliability
- High Price-to-Performance ratio

Setting New Standards in Manufacturing Excellence, the Indian industry was previously heavily reliant on high-tonnage machines or large-scale components imports. Windsor Machines has changed that narrative by developing advanced manufacturing capabilities within India. The KL3200 and its predecessors showcase Windsor's ability to nurture and elevate the Indian MSME sector, making India self-sufficient in producing world-class injection moulding machines.

Windsor's ongoing collaboration with local partners ensures that even the largest and most complex components are made in India. This has set a new standard for the Indian manufacturing ecosystem, benefiting the company and India's entire plastics processing industry. The biggest and the highest parts were manufactured by our proud Partners (Suppliers), who paved the way for others to follow and benefit the industry towards making **"Atmanirbhar Bharat."**

As Windsor continues to drive innovation, the company is already working on developing machines of bigger sizes, further broadening its range of high-tonnage two-platen machines. These new models are expected to continue Windsor's legacy of providing cutting-edge solutions prioritising performance, reliability, and cost-effectiveness.

Windsor Machines Ltd. remains committed to leading the industry with technology-driven solutions that align with its customers' evolving needs. The KL3200 is not just a machine—it is a testament to Windsor's vision of empowering industries with advanced, reliable, and future-ready machinery, helping shape the future of India's plastics manufacturing sector.

With KL3200, Windsor Machines sets new benchmarks, delivers exceptional performance, and drives the Indian plastics industry towards self-reliance and global leadership.

"Brace Yourself for the Arrival of Our Next Groundbreaking Colossus"

For more details, visit us on **www.windsormachines.com**

IPF Bangladesh

OPP
Organization Of
Plastics Processors Of India

THE 17TH BANGLADESH INTERNATIONAL

Plastics, Packaging and Printing Industrial Fair

12th ~ 15th February, 2025

Venue: Int'l Convention City Bashundhara (ICCB

Organizers: Yorkers Trade & Marketing Service Co., Ltd. Bangladesh Plastic Goods Manufactures & Exporters Association

2024 KEY FIGURES

18,000 SQM / 800 BOOTHS / 354 EXHIBITORS / 18 COUNTRIES AND REGIONS / 25,974 INT'L BUYERS

- **Plastic:** Plastic Bending Machinery, Blow Molding Machines, Extruding Machines, Plastic Compounding Equipment, Plastic Cutting Machines & Cutters, Die Cutting & Casting Machines, Plastic Dryers & Mold Heaters, Injection Molding Equipment, Mold Cleaning Equipment, Spin Casting Equipment, Thermoforming Machines.
- **Quality Detection Instrument and Equipment:** Measuring & Detection Equipment, Temperature Controller & Components, Electronic Automatic Instrument, Monitoring Device.
- **Machinery Parts and Accessories**
- **Packaging:** Converting Machinery, Packaging Machinery, Packaging Materials, Raw Materials & Auxiliaries, Fiberboard Packages, Paper Bags and Folding Cartons, Rigid Packages, Glass Bottles & Tin Cans. Flexible Packaging, Quality Control Systems, Dosing, Coding & Marking Systems, Physical Distribution Systems, Logistics, Research Centers, packaging Magazines & Associations.
- **Printing:** Printing Machinery & Accessories, Packaging Print & Process Systems, Printing Materials & Supplements, Post-Printing Machinery & Equipment, Coating Equipment.

PLASTIC

- Local annual sales is around TK28,000 crore (US$3.25 billion)
- Export in the first 5 months of FY22 is 29.8% higher compared to the same period of FY21
- New investments focus on personal protective equipment, medical equipment and toys
- Government promotes industry-friendly policies to develop skilled manpower, attract foreign investment, ensure technological advancement and the overall development

PRINTING

- Printing market size in Bangladesh is around TK12,000 crore (US$1.39 billion)
- Earnings from paper sector in the July - November period of FY22 is 15.3% higher than that of FY21
- Workplaces and educational institutions reopening after pandemic make the demand for paper and paper products increase
- The country's first printing industrial park will come into operation in 2024, expected to propose more new investments

PACKAGING

- Export surges bring in new possibilities for Bangladesh packaging market
- The budding e-commerce accelerates digital economic growth and supports corrugated packaging
- Packaging paper market revenue size is projected to grow at a CAGR of 5.2% during 2021-2027
- International leading packaging enterprises such as Tetra Pak and ALPLA plan to build factories in Bangladesh to seize market share and provide innovative packaging solutions in food & beverage, personal-care, and pharmaceuticals sectors

BOOTH PRICES

- **Corner fee: Surcharge 10 %**
- **The prices below do not include 5% VAT**

Shell Scheme: USD$ 320/sqm, Min.9sqm=3m x 3m= 9 sqm = USD$2880

9sqm including : carpeting, 3 folding chairs, 1 reception desk (with lock), 1 round table, 3 spot lights, 1 waste basket, wall partitions, fascia name, one 5-AMP power point

Bare Space
USD$ 290/sqm, Min. size 18sqm

DEEPAK LAWALE, SECRETARY GENERAL ORGANIZATION OF PLASTICS PROCESSORS OF INDIA

404/5, Golden Chambers, New Link Road, Andheri (W), Mumbai - 400 053 INDIA

MOB:- +91 9322591715
Tel.: +91-22-66923131/32

secretarygeneral@oppindia.org
www.oppindia.org

Designed By Polymerupdate.com

OPP
Organization Of
Plastics Processors Of India

ORGANIZATION OF PLASTICS PROCESSORS OF INDIA

37 YEARS OF SERVICES TO PLASTICS INDUSTRY

SERVICES OFFERED BY OPPI

Deepak Lawale, Secretary General
ORGANIZATION OF PLASTICS PROCESSORS OF INDIA,
404/5, Golden Chambers, New Link Road, Andheri (West), Mumbai – 400053.
Tel: +91-22-66923131 / 66923132 | Fax: +91-22-26736736 | Email: secretarygeneral@oppindia.org | Website:- www.oppindia.org

OPP

Organization Of
Plastics Processors Of India

ADVERTISEMENT

ADVERTISEMENT IN DIGITAL

PLASTISCOPE IN WEB EDITION AND FLIP BOOK FORMAT

Reach your targeted customers with Advertisement in Digital Issues of Plastiscope.

Digital Plastiscope is read by 1,50,000 readers consisting of Directors/Owners, Production Managers, Maintenance Managers/ Engineers, Sales & Marketing Managers, Materials Managers, etc. of Companies connected with Plastics.

THE TARIFF +

The tariff for **Full Page – 18.5 cm. X 23.5 cm.** multi-coloured Advertisement on the inside pages of monthly Digital Plastiscope is only **Rs. 5000/- + GST @5%.**

For Booking Advertisement Please Contact

Deepak Lawale, Secretary General
ORGANIZATION OF PLASTICS PROCESSORS OF INDIA
404/405, Golden Chambers, New Link Road,
Andheri (West), Mumbai – 400053.
MOB:- +91 9322591715,
Tel.: +91-22-66923131/32
Email: secretarygeneral@oppindia.org

OPP

ORGANIZATION OF PLASTICS PROCESSORS OF INDIA

OFFICE BEARERS 2024-2025

PRESIDENT

Mr. Pradeep Rathod
Chairman and Managing Director
CELLO WORLD LIMITED

VICE PRESIDENT

Mr. Ravish B Kamath
CEO
BIG BAGS INTERNATIONAL PVT. LTD.

TREASURER

Mr. Hemant Minocha
Director
RAJIV PLASTIC INDUSTRIES

Seminar on-" Crucial Role of Smart and Efficient Maintenance in Plastics Processing Industry" Held On 20th September 2024 at The Galaxy, The Park, Kolkata.

Organization of Plastics Processors of India organized 13th Edition of Seminar on-" Crucial Role of Smart and Efficient Maintenance in Plastics Processing Industry" at The Galaxy, The Park, Kolkata on 20th September 2024.

The Inaugural Session of the Seminar was chaired by Mr. Chandan Sengupta, Director, Rungta Greentech Limited.

Lighting of the Traditional lamp was done by Mr. Chandan Sengupta, Prof. Anup Ghosh, Mr. Lalit Agrawal, Mr. A. N. Sasmal and Mr. Nanda Kumar.

In Welcome Address, Mr. Deepak Lawale introduced the Chief Guest as follows – "Mr. Chandan Sengupta spent 23 years with Haldia Petrochemicals Limited (HPL). He was Senior Vice president and Head of Marketing & Commodity Business. He regularly participates in the Seminars, Webinars, Panel Discussions in India and Abroad. Mr. Chandan Sengupta was Regional Chairman of the Indian Chemical Council for the Eastern India."

Mr. Chandan Sengupta in his Keynote Address made the following points:-

- Indian Plastics Federation (IPF) and OPPI should collaborate more frequently on programs like this, for mutual benefit and more importantly for advancement of the industry.
- In India most of the growth has been attributed to the setting up of petrochemical complexes and has been termed "supply driven growth". This possibly was due to the fact that the initial petrochemical complexes were based in the Western India and the large plastic processors all started in that part of the country.
- For the industry to have made the rapid progress that it has in the last two decades, when the per capita consumption went up from 3 kgs per head per year to more than 13 kgs, it required equal contribution and development of the machinery manufacturers, the catalyst and chemical producers, and the other ancillary services.
- In fact, there were several instances where advances in the machinery had forced the polymer producers to make the necessary adjustments in the specifications of polymers for achieving the best synergy of advanced machinery with appropriate polymer characteristics. Mr. Chandan Sengupta cited the examples of PP Raffia and BOPP as examples.
- He complimented OPPI's role in assembling such a galaxy of top machine manufacturers, which was indeed commendable.
- For the industry to operate at good profitability and grow further, reliability was the major factor, and the topic selected by OPPI for the seminar adequately addressed that.
- Another area Mr. Sengupta stressed upon was the need for machine manufacturers and polymer producers too much more actively collaborate with the academic world to find solutions and improve upon the current situation.

- As had been stated in the perspective plan prepared by the DCPC for 2030 and 2047, the demand for polymers as well as other petrochemical products were expected to show steady and healthy growth.

- As polymers and the downstream ecosystem are major contributors to the Indian GDP and enabler of economic progress, it was imperative that all the stakeholders like polymer producers, machinery manufacturers as well as the chemicals and additive suppliers continuously interacted with each other, to maintain high growth in the future.

- 2 decades back India was dependent on imported machinery for producing top quality polymer products. Tremendous progress made in the interim, today the Indian machineries were at par with any available in the world.

- Mr. Sengupta urged all the stakeholders to continuously collaborate with each other to make the $ 5 trillion economy a reality at the earliest.

- Mr. Sengupta hoped that similar conferences would be organised in the Eastern region on a regular basis by OPPI.

During the Seminar the following Presentations were made: -

Sr. No.	Topic of Presentation	Speaker
1.	Maintenance Awareness for Productivity & Profitability/ "How To Save Money Using Extrusion Process Control"	Mr. Kinjal Patel NU-VU CONAIR PVT. LTD.
2.	Selection and Sizing of Power unit with Servo System for Injection Molding machines	Mr. Jitendra Hissaria, EBYTS MOTION PVT. LTD.
3.	Adding New Lease Of Life To Old Machines With Energy Conservation - Alternatives For Conventional Systems	Mr. Prashant Kolte BAUMULLER INDIA PVT. LTD.
4.	Increase Your Uptime And Profitability By Automatic & Accurate Dosing	Mr. Chintan Mehta PRASAD KOCH – TECHNIK PVT. LTD.
5.	Latest Trends And New Innovation Toward Energy Efficiency In Plastic Industry.	Mr. T. Nanda kumar WITTMANN BATTENFELD INDIA
6.	Mobil Lubrication Services	Mr. Deepak Mishra EXXONMOBIL LUBRICANTS PVT. LTD.
7.	Best Maintenance Practices For Improving The Productivity And Reliability Of Injection Moulding Machines	Mr. C. K. Vijayan SHIBAURA MACHINE INDIA PVT. LTD.
8.	Key Role of Hydraulic Maintenance to improve Efficiency, Productivity, Reliability of Injection Molding Machines	Mr. Jaimin M. Ghoricha, WINDSOR MACHINES LTD.
9.	Mould Maintenance	Mr. Guru Prasad Puranmath MUTUAL ENGINEERING PVT. LTD.
10.	Export Opportunities For Plastic Goods From India	Mr. Nilotpal Biswas Plastics Export Promotion Council

At the end of the daylong Seminar, “Lucky Draw” was held. Gifts were sponsored by Cello World. The “Lucky Draw” prizes were won by Mr. Ajaya Kumar Samantasinghar, TENTY LIMITED and Mr. Kishore Kumar Sahu, CIPET, Bhubaneswar.

Mr. Nanda Kumar proposed Vote of Thanks on behalf of Organization of Plastics Processors of India.

All participants appreciated the Quality of presentations and also the arrangements made for the Seminar.



Lighting of the Traditional Lamp

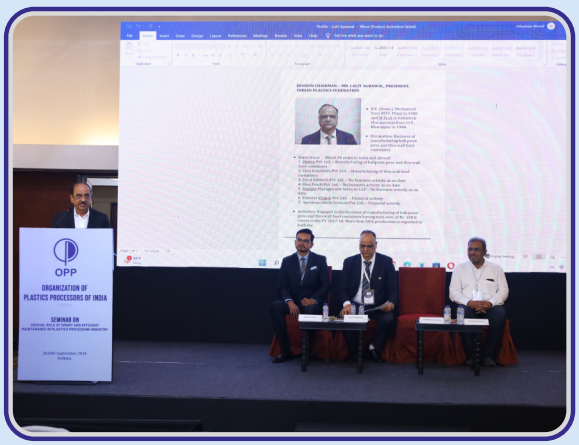
Mr. Deepak Lawale delivering the Welcome Address.

Mr. T. Nanda Kumar, WITTMANN BATTENFELD INDIA proposing Vote of Thanks on behalf of OPPI.


Mr. Chandan Sengupta delivering Keynote Address.

Mr. Chintan Mehta, PRASAD KOCH – TECHNIK
presenting bouquet to Mr. Chandan Sengupta on behalf of OPPI.

Mr. A. N. Sasmal, SHIBAURA MACHINE
presenting memento to
Mr. Chandan Sengupta on behalf of OPPI.



Introduction of Mr. Lalit Agrawal, IPF
being done by Mr. Deepak Lawale.

Mr. Lalit Agrawal addressing the participants as
Chairman of the First Technical Session.

Sections of the Participants.

Mr. Kinjal Patel, NU-VU CONAIR PVT.
making his Presentation.

Mr. Prashant Kolte, BAUMULLER INDIA
delivering his talk.

Mr. Jitendra Hissaria, EBYTS MOTION PVT. LTD.
Addressing the Seminar

Mr. Kinjal Patel receiving Memento
from Mr. Lalit Agrawal.

Mr. Lalit Agrawal handing over Memento to Mr. Jitendra Hissaria (left) and to
Mr. Prashant Kolte (right)

Mr. Deepak Lawale introducing
Prof. Dr. Anup Ghosh (Session Chairman).

Prof. Dr. Anup Ghosh making
remarks as Session Chairman

Mr. Chintan Mehta, PRASAD KOCH –
TECHNIK making his Presentation.

The Galaxy, Park Hotel was filled to the brim.

Mr. Deepak Mishra,
EXXONMOBIL LUBRICANTS making his Presentation.

(L to R) M/s Deepak Lawale,
Deepak Mishra, Prof. Anup Ghosh,
Nanda Kumar and Chintan Mehta.

Mr. A. N. Sasmal giving an exercise to the Delegates.

Mr. C. K. Vijayan,
SHIBAURA MACHINE INDIA PVT. LTD.
making his Presentation.

Mr. Jaimin Ghoricha, WINDSOR MACHINES
making his Presentation.

Mr. Deepak Lawale presenting Memento to
Mr. A. N. Sasmal.

Mr. A.N. Sasmal handing over Mementos to Mr. C. K. Vijayan and Mr. Jaimin Ghoricha.

Mr. Guru Prasad Puranmath, MUTUAL ENGINEERING making his Presentation on Mould Maintenance.

Mr. Nilotpal Biswas, Regional Manager, PLEXCONCIL giving details of exports of Plastic Products

Prof. Kinsuk Naskar receiving Memento from Mr. Deepak Lawale.

Mr. Gopal Paramanik, SHIBAURA MACHINE INDIA PVT. LTD. receiving Memento from Mr. Deepak Lawale.

Mrs. Priyanka G. Puranmath handing over Memento to Mr. Ajaya Kumar Samantasinghar, TENTY LIMITED first Winner of Lucky Draw.

Mr. Kishore Kumar Sahu, CIPET, Bhubaneswar Winner of Lucky Draw with Mrs. Priyanka G. Puranmath & Mr. Deepak Lawale.

India's First Biopolymer Facility Inaugurated in Pune

In a significant step towards positioning India as a **global leader in biotechnology and sustainable solutions, Dr. Jitendra Singh,** Union Minister of State for Science and Technology, inaugurated **India's first Demonstration Facility for Biopolymers at Jejuri** in Pune in October 2024.

Partner

- This pioneering facility has been developed by Praj Industries and represents a critical milestone in India's effort to transition from fossil-based plastics to eco-friendly alternatives, focusing on Polylactic Acid (PLA) bio plastics.
- The initiative highlights the country's commitment to sustainability and Prime Minister Narendra Modi's vision of a 'Net Zero' carbon economy by 2070.

Key Highlights:

First - of - its - kind Facility

- India's first demonstration plant for biopolymers, specifically focused on the production of PLA bio plastic, marking a step forward in addressing global plastic pollution.

Sustainability Focus

- The facility showcases India's resolve to transition from fossil-based plastics to eco-friendly bio plastics, vital for combating the global plastic crisis.

Economic Growth

- **India's Bio Economy has grown over $150 billion in 2023 and is expected to reach $300 billion by 2030,** driven by sustainable biotech solutions.

Green Growth

- This development aligns with the Green Growth emphasis in the Union Budget 2023-2024 and India's aim of becoming a 'Net Zero' carbon economy.

India's Leadership in Biotech

- **Global Ranking:** India now **ranks 12th globally in biotech and 3rd in Asia-Pacific**, with the largest vaccine manufacturing capacity and the 3rd largest startup ecosystem, Singh said in a speech.

- **Biotech Ecosystem:** The biotech startup ecosystem has flourished, **growing from 50 startups in 2014 to over 8,500 in 2023, supported by 95 bio-incubators.**

BioE3 Policy

- **The BioE3 Policy (Biotechnology for Economy, Environment, and Employment), approved by the Union,** is an essential step towards sustainable growth in the context of climate change, depletion of non-renewable resources, and waste management challenges.

Partnerships Driving Innovation

- Dr. Singh emphasized the importance of collaborations between industry, academia, and government for translating innovative ideas into tangible solutions.

- This facility will **enhance India's ability to lead in biotechnological innovation** and reduce the country's environmental footprint.

Future Vision

- The new facility symbolizes the beginning of a new chapter in India's bio economy and technological innovation, setting the stage for achieving India's Amrit Kaal goals for the next 25 years in biotechnology, sustainable development and global leadership.

Nearly 40,000 Km of Rural Roads Constructed Using Plastic Waste: Government

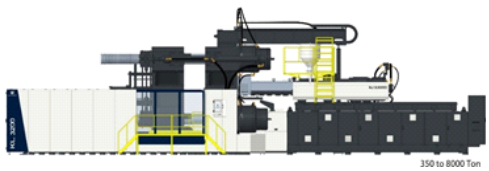
New Delhi: Nearly 40,000 km of rural roads constructed using plastic waste till date with 13,000 km completed in the last two years alone, a senior official said on Tuesday. Speaking at a media interaction, Secretary, Department of Drinking Water and Sanitation (DDWS), Vini Mahajan said over 55 per cent of villages have been declared 'ODF Plus Model' while 5 lakh waste collection vehicles are in operation and there is a significant progress in grey water and plastic waste management.

Under the Pradhan Mantri Gram Sadak Yojana, nearly 40,000 km of rural roads have been built using this sustainable technique, with 13,000 km completed in the last two years alone, she said. "These innovations showcase our commitment to sustainability and the future of sanitation in India," she added.

She emphasized the invaluable collective support from all Central ministries, states and UTs to the 'Swachhata Hi Seva-2024' campaign.

Mahajan highlighted that sanitation is a societal issue that unites us all, driven by cohesive leadership from the highest levels to local communities. Cleanliness, she noted, is not just a milestone but an ever-evolving journey, with behavior change at its core.

WINDSOR
Partner in Progress



WINDSOR Unveils KL 3200, India's Largest Tonnage "MAKE IN INDIA" Injection Molding Machine.

On September 19, 2024, WINDSOR MACHINES LTD. took a monumental step forward in the Indian plastics processing industry by launching the KL3200, India's most giant two-platen patented injection molding machine, proudly "Made in India." This historic event was further honoured by esteemed government dignitaries, reinforcing the significance of this achievement in promoting domestic manufacturing prowess and enhancing our capability to be "Atmnirbhar" for large and critical mechanical parts.

Inaugurated by Shri Balvantsinh Rajput Hon'ble Cabinet Minister, Industries, Micro, Small & Medium Industries, Cottage, Khadi & Rural Industries, Civil Aviation, Labour & Employment, Govt. of Gujarat.

This innovation comes at a pivotal time, as the demand for larger machines grows across various industries, including Automotive, White Goods and appliances, Industrial, Logistics, and many more. With a relentless focus on innovation, Windsor Machines has consistently pushed the boundaries of what's possible in plastics processing.

At the inauguration, Vinay Bansod, the Executive Director & CEO of Windsor, said, "We are proud to introduce a State-of-the-art machine, a key milestone in Windsor Machines' journey of innovation. KI3200, a proudly 'Made in India' machine, supports our vision of 'Atmanirbhar Bharat' and meets the growing needs of the industries. At Windsor, we remain committed to providing cutting-edge solutions that help our customers succeed".

Manoj Singh, the Sr. General Manager of Sales & Marketing, has expressed that 'The introduction of KL3200 is a game-changer for our sales strategy and overall business growths. This solidifies our position as a leader in the market, allowing us to better cater to the increasing demands of domestic and international customers and deliver exceptional value and long-term partnerships.

The introduction of KL3200 follows the successful launch of the KL1600, KL2000 and KL2300 machines. This further expands the company's portfolio to meet the ever - growing need for significant plastic components in a compact, efficient, and cost - effective manner.

Key Highlights:

- Generous Clamp & Injection specification with multiple benefits
- Widest range and Uniform Design concept: 350 to 8000 Ton
- “Patented” Jaw Clamping & Same Platen for improved reliability
- Better Product Quality
- Proudly100 % Made in India
- Footprint reduction by 15-20%
- Improved reliability
- High Price-to-Performance ratio

Setting New Standards in Manufacturing Excellence, the Indian industry was previously heavily reliant on high-tonnage machines or large-scale components imports. Windsor Machines has changed that narrative by developing advanced manufacturing capabilities within India. The KL3200 and its predecessors showcase Windsor's ability to nurture and elevate the Indian MSME sector, making India self-sufficient in producing world-class injection molding machines.

WINDSOR'S ongoing collaboration with local partners ensures that even the largest and most complex components are made in India. This has set a new standard for the Indian manufacturing ecosystem, benefiting the company and India's entire plastics processing industry. The biggest and the highest parts were manufactured by our proud Partners (Suppliers), who paved the way for others to follow and benefit the industry towards making “Atmanirbhar Bharat.”

As WINDSOR continues to drive innovation, the company is already working on developing machines of bigger sizes, further broadening its range of high-tonnage two-platen machines. These new models are expected to continue Windsor's legacy of providing cutting - edge solutions prioritizing performance, reliability, and cost - effectiveness.

Windsor Machines Ltd. remains committed to leading the industry with technology-driven solutions that align with its customers' evolving needs. The

KI3200 is not just a machine—it is a testament to WINDSOR vision of empowering industries with advanced, reliable, and future-ready machinery, helping shape the future of India's plastics manufacturing sector.

With KL3200, Windsor Machines sets new benchmarks, delivers exceptional performance, and drives the Indian plastics industry towards self-reliance and global leadership.

“Brace Yourself for the Arrival of Our Next Groundbreaking Colossus”

For more details, visit on www.windsormachines.com

India Surpasses Japan to Become 3rd Largest Power in Asia Power Index

India has overtaken Japan to secure the position of the third-largest power in the Asia Power Index, according to a statement released by the Ministry of Information and Broadcasting on Wednesday. This achievement marks a significant shift in the geopolitical landscape of the Asia-Pacific region. The ministry attributed India's rise to its dynamic growth, a youthful population, and its expanding economy, all of which have solidified the country's standing as a regional force. "In a major shift, India surpassed Japan to become the third-largest power in the Asia Power Index, reflecting its increasing geopolitical stature," ANI quoted the ministry as saying.

Launched by the Lowy Institute in 2018, the Asia Power Index evaluates 27 countries across the Asia-Pacific region, focusing on their ability to shape and respond to external geopolitical challenges. The index uses eight core measures such as Economic Capability, Military Capability, and Diplomatic Influence to assess the power of each country. The ministry highlighted that India's rise in the 2024 edition of the index reflects its post-pandemic recovery and economic resurgence. India experienced a 4.2-point boost in Economic Capability, primarily driven by its strong GDP growth and status as the world's third-largest economy in Purchasing Power Parity (PPP) terms.

"India has shown remarkable post - pandemic economic recovery, contributing to a 4.2-point rise in its Economic Capability. India's massive population and strong GDP growth reinforce its standing as the world's third-largest economy in PPP terms," the statement added.

India's Future Resources score also saw a notable increase of 8.2 points, highlighting its potential demographic advantage. Unlike aging populations in China and Japan, India's youthful demographic is expected to fuel continued economic expansion and workforce growth in the coming years. The report further noted India's growing influence in multilateral diplomacy and regional security. India's active participation in groups like the Quad and its leadership in regional dialogues have bolstered its position in regional security without the need for formal military alliances. Additionally, defense deals such as the BrahMos missile agreement with the Philippines point to India's expanding geopolitical ambitions.

(**Source**: The Economic Times / 25.09.2024)

India's Container Handling Capacity to Witness Twofold in Five Years: Sonowal

Minister of Ports, Shipping, and Waterways says it will create two million job opportunities across the country.

India will witness a twofold increase in its container handling capacity in five years, Minister of Ports, Shipping, and Waterways Sarbananda Sonowal said on Wednesday (September 25, 2024).

It is projected to reach 40 million TEUs (twenty-foot equivalent unit), creating two million job opportunities across the country in the same period.

"Recognizing the strategic importance of shipbuilding and ship repair, the Ministry is developing dedicated clusters in Maharashtra, Kerala, Andhra Pradesh, Odisha, and Gujarat. We are also allocating more than 3,900 acres in Kandla and VOC Port for the development of hydrogen manufacturing hubs, positioning India as a leader in clean energy," Mr. Sonowal said briefing the media on the accomplishments of the government in 100 days.

The performance of major ports has improved, with traffic increasing by 4.87% in 2024 and Visakhapatnam Port ranking among the top 20 in the World Bank's Container Port Performance Index, the Minister said on India's maritime outlook. The Jawaharlal Nehru Port Authority (JNPA) at Navi Mumbai is going to become the first Indian port to attain a container handling capacity of 10 million TEUs in the coming months, he said.

After 25 years since the establishment of the Kamarajar Port, the addition of Vadhvan Port marks a significant milestone in India's maritime journey, alongside the recent notification of Galathea Bay as a major port, Mr. Sonowal said underscoring that the Vadhvan Port, India's first major port project of the 21st century, was poised to become one of the largest all-weather deep-water ports with a capacity of 298 MMTPA. This mega port is expected to create 1.2 million employment opportunities and place an Indian port among the top 10 container ports globally, significantly improving international shipping connectivity and reducing transit times and costs, he stated.

Another key project highlighted by the Minister was the Tuticorin International Container Terminal on the east coast, which, he said, would serve as a major transshipment hub, saving up to $200 per container and providing an estimated annual foreign exchange savings of $4 million. The Ministry also successfully executed a landmark Deendayal Port encroachment drive, reclaiming 200 acres of encroached land for port-led industrial development, Mr. Sonowal said. As part of Greening Initiatives, the Ministry launched the green tug transition programme and allocated land for green hydrogen projects at the Deendayal Port, he said.

Mr. Sonowal said the international cruise terminal at Visakhapatnam had been operationalized, boosting both domestic and international maritime tourism prospects.

(**Source:** The Hindu Times / 26.09.2024)

J&K on Track for 100% Waste Segregation by 2025: Government Tells NGT; Submits 6 Months Report

With 3.91 Lakh MTs of legacy waste remediated, 17.58 lakh MTs targeted under SBM 2.0

SRINAGAR: In a recent submission to the National Green Tribunal (NGT), the Government of Jammu & Kashmir presented its six-monthly progress report, detailing efforts to comply with the Municipal Solid Waste (MSW) Management Rules of 2016.

The report, in response to the NGT's directives from October 2022, highlights the Union Territory's ongoing initiatives, achievements, and areas requiring further attention in managing solid and liquid waste across its districts and urban local bodies (ULBs).

The report outlines a comprehensive approach adopted by the Jammu & Kashmir administration to tackle the challenges of MSW. With 78 Urban Local Bodies (ULBs), including two Municipal Corporations, generating over 1,632 metric tons of waste daily, the UT has implemented a

decentralized waste management model. This model includes segregation at the source, door - to - door collection, transportation, and disposal at designated sites.

In smaller ULBs, the focus has been on pit composting and Material Recovery Facilities (MRFs) to process dry waste. Larger towns like Jammu, Srinagar, and Anantnag, which generate over 20 tons per day (TPD) of waste, are seeing the establishment of integrated waste management facilities. Notably, Srinagar Municipal Corporation has successfully installed underground bins for waste collection, and Jammu Municipal Corporation is moving forward with the construction of a 210 TPD bio-methanation plant to process wet waste.

Achieving 100% segregation at the source remains a key target for the UT. As of now, segregation levels vary across regions, with some areas reporting up to 82% segregation. The administration has set December 2025 as the deadline to achieve full segregation across all ULBs. To support this, extensive IEC (Information, Education, and Communication) activities are being conducted, involving public awareness campaigns, door - to - door visits, and community mobilization efforts.

In addressing liquid waste, the report notes that the UT generates approximately 430 million liters per day (MLD) of wastewater. Currently, 166.36 MLD of wastewater is treated through operational Sewage Treatment Plants (STPs) across the region. Additional STPs with a capacity of 101.64 MLD are under construction, reflecting the UT's commitment to preventing water pollution, particularly in its rivers and lakes.

One of the significant challenges highlighted in the report is the remediation of legacy waste, which has accumulated over years in various dumping sites. The administration has made substantial progress in this area, with 3.91 lakh metric tons of legacy waste already remediated. Efforts are ongoing to remediate an additional 17.58 lakh metric tons under the Swachh Bharat Mission (SBM) 2.0 initiative, with the goal of completing all remediation by December 2025.

The progress report also sheds light on the steps taken to strengthen infrastructure for waste management across the Union Territory. In the last six months, the Jammu & Kashmir administration has focused on upgrading waste collection and transportation systems in various ULBs. For example, Jammu Municipal Corporation (JMC) has deployed a fleet of 112 auto tippers and 66 e-rickshaws to ensure efficient door-to-door waste collection. Additionally, the construction of transfer stations and the procurement of modern waste processing equipment are underway, further enhancing the capacity to handle the growing volume of waste.

The establishment of decentralized Solid Waste Management (SWM) facilities has been a priority for smaller ULBs. These facilities are designed to process both dry and wet waste locally, reducing the burden on larger waste treatment centers. The introduction of Material Recovery Facilities (MRFs) in all ULBs and the construction of composting pits are crucial components of this decentralized approach. The administration's goal is to ensure that by December 2025, 100% of the waste generated in the UT will be scientifically processed.

(**Source**: The News Now / 03.09.2024)

Kerala College Student Receives Indian Patent for Method to Produce Methane from Plastic Waste

In a remarkable achievement, Abel Abraham Jacob, a Commerce student at Saintgits College of Applied Sciences, Kottayam, Kerala, has been awarded an Indian patent for his innovative research on converting plastic waste into methane. His invention, titled “Production of Methane from Plastic Waste by Combined Autogenic Pyrolysis and Fluidized Bed Gasification,” was officially patented on August 29, 2024, following a year - long journey of determination and experimentation.

The seeds of Abel's passion for environmental conservation were sown in childhood, deeply influenced by his grandfather, M. A. Chacko, who

ostered in in him a love for nature. Abel recalls a vow he made to his grandfather to protect the environment by any means necessary. Despite pursing a degree in Commerce, his concern for environmental issues never faded.

Abel's breakthrough idea came while travelling by train, where he noticed piles of plastic waste scattered across various locations. This disturbing sight ignited his desire to tackle the plastic waste problem. His opportunity to dive deeper into environmental research came when he joined the Climate Change vertical of YUVA at Saintgits College, where he began exploring ways to convert plastic waste into a useful resource. After extensive research, including 25 unsuccessful attempts, Abel achieved success on his 26th trial. His invention involves a novel method of producing methane from plastic waste through a combination of autogenic pyrolysis and fluidized bed gasification. This groundbreaking technology earned him the prestigious Indian patent and widespread recognition for his environmental innovation.

Abel's journey wasn't without challenges. His initial discussions with Dr. Vishnuprasad from the Department of Chemical Engineering were met with skepticism, as his idea appeared unfeasible according to existing literature. However, Abel's persistence and enthusiasm convinced Dr. Vishnuprasad to assist him in developing multiple prototypes, one of which eventually worked. After overcoming several objections during the patent examination process, the official hearing for his research was held virtually on July 25, 2024, and successfully defended with the support of Puthran Associates.

Abel's parents, Abraham Jacob, a Quality Control Inspector at Kuwait International Airport, and Syno Jacob, a nurse at Jahra Hospital, Kuwait, are overjoyed at their son's success. Currently pursuing a B. Com. in Computer Applications at Saintgits, Abel continues to live with his grandmother, Annamma Chacko, in his ancestral home in Puthuppally. His achievement has brought pride to his family, college, and community.

Abel's story is a testament to his perseverance, ingenuity, and unwavering commitment to environmental preservation, demonstrating that passion and innovation can transcend academic boundaries.

(**Source**: ONMANORAMA / 11.09.2024)

US TechCamp & APChemi Collaboration: Advanced Recycling in Waste Management

APChemi solidifies its position as a leading authority in pyrolysis by spearheading a transformative training session at TechCamp Pune, organized by the U.S. Department of State's Bureau of Educational & Cultural Affairs (ECA) and Symbiosis International University. The event convened over 45 dedicated waste management professionals who are now eligible to apply for grants and funding from the U.S. government. In a significant stride toward sustainable urban waste management, APChemi's CEO, Suhas Dixit, led an intensive workshop titled "Re-designing Sustainable Urban Waste Management."

"We are honoured to collaborate with such esteemed institutions and share our expertise in pyrolysis technology," said Mr Dixit. "Witnessing the enthusiasm and innovative ideas from participants reinforces our belief that together, we can drive meaningful change."

Key Highlights:

- Interactive Discussions on Pyrolysis Technology: Engaged participants in exploring cutting - edge advancements and applications in plastic waste conversion.
- Hands-On Training Sessions: Provided practical insights into advanced recycling methods, equipping professionals with actionable skills.
- Collaborative Project Development: Facilitated teamwork through TechCamp worksheets, fostering the creation of impactful waste management solutions.

APChemi's involvement underscores its commitment to advancing sustainable practices and educating industry leaders on the transformative potential of pyrolysis.

About APChemi: As a masters in pyrolysis technology, APChemi offers patented solutions that convert plastic waste into valuable resources, aligning with the principles of a circular economy. Our cutting-edge research and innovative processes position us at the forefront of addressing the global plastic waste crisis.

(**Source**: APChemi / 28.09.2024)

ECOMARK: Eco Labelling that Enable Consumers to Make Informed Purchase Decisions and Encourage Green Industries in India

The Ministry of Environment, Forest and Climate Change, Government of India, has announced the "ECOMARK Rule, 2024" (Rule) on September 26, 2024. This initiative aims to promote the demand for environmentally friendly products that minimize their adverse environmental impacts, aligning with the principles of "LIFE" (Lifestyle for Environment).

The ECOMARK will be awarded to products that meet specific environmental criteria related to resource consumption and impact on climate change, biodiversity, energy use, waste generation, emissions, pollution, and the use of hazardous substances. This Rule is designed to foster energy efficiency, resource conservation, and circular economy practices, while also combating misleading claims about environmental product characteristics.

Conditions for Granting ECOMARK

ECOMARK is an environmental label awarded to products that meet specific standards set by the Bureau of Indian Standards (BIS). To receive an ECOMARK, a product must have a valid license or a certificate of conformity under the BIS Act of 2016. It must also comply with the criteria listed in the First Schedule of the Rule related to environmental impact.

Key Criteria for ECOMARK:

- **Pollution Reduction:** The product should help decrease pollution by minimizing waste and harmful emissions during its life cycle.
- **Recyclability:** It must be recyclable or made from recycled materials, or both, ensuring that it can be processed again after use.
- **Resource Conservation:** The product should reduce the use of non-renewable resources, such as fossil fuels and certain minerals, helping to preserve the environment.
- **Environment Friendly Materials:** It should avoid using materials that negatively affect the environment, contributing to sustainable practices.

Factors Considered for ECOMARK Eligibility:

When assessing a product for ECOMARK, several factors are taken into account:

- **Production Process:** This includes evaluating the source of raw materials and how the product is made.
- **Natural Resource Use:** The extent to which natural resources are utilized in the production is examined.
- **Environmental Impact:** The overall impact of the product on the environment is considered, including the effects of emissions and waste produced during manufacturing.
- **Disposal and Packaging:** How the product and its packaging can be disposed of or recycled at the end of their life cycle is an important factor.
- **Extended Producer Responsibility (EPR):** Compliance with guidelines that require producers to take responsibility for their products throughout their lifecycle is evaluated, where applicable.
- **Utilization of Waste and Recycled Materials:** The use of recycled materials in the product contributes positively to its environmental rating.
- **Recycling Suitability:** The ease with which the product can be recycled is considered.
- **Non-Hazardous Substances:** Preference is given to products that use non-hazardous materials instead of harmful substances in their production.

To obtain an ECOMARK for a product, applicants must submit an application to the Central Pollution Control Board (CPCB). The CPCB will verify whether the product meets specific criteria within 60 days. If

the product complies, the ECOMARK will be granted, valid for three years or until criteria change. After three years, holders can apply for renewal, following the same procedure. Each year, by May 31, ECOMARK holders must submit an annual report online to the CPCB for the previous year. The CPCB will review these reports and send a summary to the Ministry of Environment by July 31.

The Central Pollution Control Board (CPCB) can cancel or suspend an ECOMARK if it finds that the holder provided false information or hid required details. The holder will be given a chance to explain before any action is taken. If the holder disagrees with the decision, they can appeal to the Central Government within 30 days. The Central Government may accept late appeals if there is a valid reason. After reviewing the case, the Central Government will make a decision based on the findings of their inquiry. Entities that have been approved for the ECOMARK must clearly display it on their products and any unauthorized display will lead to penal consequences.

Web Portal for ECOMARK

The Central Pollution Control Board will create a web portal to:

- Allow people to apply for the ECOMARK.
- Enable ECOMARK holders to submit annual reports.
- Register Verifiers and auditors.
- Register agencies that monitor compliance with ECOMARK Rules.

This portal will streamline the process for managing ECOMARK applications and ensuring products meet environmental standards.

In summary, obtaining an ECOMARK requires that a product not only meets specific standards of quality and safety but also demonstrates a commitment to reducing environmental harm through its design, production, and lifecycle management. By adhering to these criteria, products can earn this eco-label, signaling their sustainability to consumers.

(**Source**: IndiaLaw LLP / 03.10.2024)

India - UAE Investment Treaty Implemented from Aug 31, 2024: FM Sitharaman

India-UAE BIT Is Expected To Increase The Comfort Level And Boost The Confidence (Photo: PTI)

The government said bilateral investment treaty (BIT) signed between India and the UAE has been enforced from August 31 this year.

The BIT was signed on February 13 this year at Abu Dhabi, UAE, and it entered into force with effect from August 31, 2024, the finance ministry said.

Enforcement of this pact with the UAE gives continuity of investment protection to investors of both the countries, as the earlier Bilateral Investment Promotion and Protection Agreement (BIPPA) between India and the UAE signed in December 2013 expired on September 12 this year.

As per the treaty, the UAE investors must have to exhaust domestic remedies (for at least three years) before commencing arbitration under the BIT. The time period earlier was five years.

The other key features of the pact included provisions of closed asset-based definition of investment with coverage of portfolio investment; treatment of investment with obligation for no denial of justice, no fundamental breach of due process, no targeted discrimination and no manifestly abusive or arbitrary treatment.

It also includes the scope carved out for measures such as those related to taxation, local government, government procurement, subsidies or grants and compulsory license; and no investor claim in case investments is involved with corruption, fraud, round tripping.

However, while providing investor and investment protection, balance has been maintained with regard to the state's right to regulate and, thereby providing adequate policy space.

The UAE is the seventh largest with a share of 3 per cent in the total foreign direct investment (FDI) received in India, with cumulative investment of about USD 19 billion from April 2000-June 2024.

India also made 5 per cent of its total overseas direct investments in the UAE to the tune of USD 15.26 billion from April 2000 - August 2024.

India-UAE BIT is expected to increase the comfort level and boost the confidence of the investors by assuring minimum standard of treatment and non-discrimination while providing for an independent forum for dispute settlement by arbitration.

"The treaty is expected to pave the way for increased bilateral investments, benefiting businesses and economies in both countries," the ministry said.

Both countries have also implemented a free trade agreement, which came into force on May 1, 2021.

(**Source:** Business Standard / 07.10.2024)

Registration - cum - Membership Certificate Not Mandatory for Exporters to Seek Scheme Benefits: DGFT

The commerce ministry's arm DGFT has clarified that registration-cum-membership certificate is not mandatory for exporters to seek benefits under schemes like duty drawback and remission of state levies. According to the Foreign Trade Policy, a Registration-cum-Membership Certificate (RCMC) is required for exporters in order to avail benefits under the policy. Holding the certificate can also help exporters in availing benefits with respect to customs and excise.

The certificate is issued by export promotion councils and commodity boards.

The Directorate General of Foreign Trade (DGFT) has said that schemes such as duty drawback, rebate of state and central taxes and levies (RoSCTL) and remission of duties and taxes on export products (RoDTEP) fall under the category of remission - based schemes.

These schemes are aimed at remitting duties or taxes on exported goods.

For these schemes, "the requirement of an RCMC does not apply. Exporters can claim benefits under these schemes without obtaining an RCMC," the DGFT has said in a trade notice.

In a separate order, the DGFT has clarified that import/ re-import of "Exhibits and Samples" for demo, display, exhibition and participation in fairs or participation in India or abroad shall be regulated under specified norms of the foreign trade policy.

They would not be subjected to the requirement of import authorization or registration under Import Monitoring Systems subject to other compliance, it added.

(**Source:** The Economic Times / 08.10.2024)

SHUBHAM EXTRUSION Gears up for Global Expansion after NPE 2024

SHUBHAM EXTRUSION, recently showcased its brand at NPE 2024, held from 6th to 10th May in Orlando, Florida. With a spacious 30 x 20 booth (approx. 55.74 sqm), the company made a significant impression amongst the audience.

This year's event proved to be a pivotal moment for SHUBHAM EXTRUSION, drawing an unprecedented number of visitors from South America, North America, Europe and Africa. The increased diversity and volume of footfall underscored the company's growing reputation and appeal across various international markets.

Coatings Enhance Adhesion on Recycled Plastic Devices

AkzoNobel introduces coatings for consumer electronics made from recycled plastics, offering strong adhesion, low VOC emissions and sustainable curing technologies.

A professional grade series of coatings from AkzoNobel (Amsterdam, Netherlands) enables recycled plastics to make consumer electronics. The coatings have been designed for items made from post-consumer recycled (PCR) plastics. One of the main coatings challenges with PCR plastics is adhesion because the materials originate from various sources.

Company researchers have created a coating which provides a durable adhesive layer that adheres firmly to the surface of the substrate, the company says.

AkzoNobel has developed primers, polyurethanes and UV coatings designed for the PCR materials. As well as having reduced VOC (volatile organic compound) emissions compared with solvent-based counterparts, the range also features more sustainable technologies including low-temperature baking and UV curing. This minimizes energy consumption and speeds up the curing process.

(**Source:** Products Finishing / 28.09.2024)

Chadwicks Introduces Sustainable Lidding to the Scandinavian Market

Chadwick's innovative range of sustainable lidding includes a new product that will be showcased at scan pack in Sweden: the rPET pre-cut lidding films. These have up to 50% post-consumer resin (PCR), minimizing the use of virgin plastics to reduce carbon emissions.

Chadwick's rPET lidding is in line with European sustainability initiatives and represents a great effort to lower carbon emissions. It's approved for food contact and is suitable for butter, dips, spreads, yoghurts and beverages, offering the same quality as standard PET pre-cut lidding.

As Paul Whelan, Chief Technical Officer at Chadwicks, notes, "The addition of rPET lidding with 50 percent PCR to our product portfolio for the Scandinavian

market is a key milestone. It offers the same technical properties as virgin plastic, but with a reduced carbon impact and substantial use of recycled material in the supply chain which we see as the right thing to do."

Chadwicks

But rPET lidding isn't the only innovation Chadwicks will present at Scanpack. The company will also introduce:

1. A **resealable pre-cut lid** to get rid of plastic over - caps. This helps produce stay fresh while reducing plastic use

2. An Aluminium pre - cut lidding that can be sealed across different container types, including PP, PET, Paper PE and glass

The latter acts as a barrier property and helps protect against light, moisture and oxygen, keeping the product fresh. It is fully recyclable and can be used for hot fill applications. It is also compatible with high - speed production lines and heat - sealing processes.

Epoxy Rebar Company Reinforcing Roads of the Future

Providing epoxy - coated rebar with the ultimate corrosion resistance is Simcote's focus for the infrastructure industry it serves.

In the infrastructure industry, where durability, quality and corrosion resistance are paramount, there are only about a dozen U. S. companies that lead the industry in the coating and fabrication of epoxy-coated reinforcing steel. Simcote (St. Paul, Minnesota), founded in 1978, is one of these manufacturers and was in fact one of the first that saw the potential of epoxy coating for reinforcing steel when 3M repurposed technology used in the pipe coating industry during the 1970s.

The 100 - employee company solely produced epoxy-coated rebar primarily for the Department of Transportation to build roads and bridges in its first 35 years in business and is still mostly dedicated to the epoxy rebar industry. However, within the last 10 years or so, it has added custom coating to its offerings at its second facility in Marion, Ohio.

Epoxy coating is an environmentally friendly, nonhazardous product and is essential for protecting rebar from water and salt produced by vehicles on the road, which can cause rebar rust and corrosion. Source (all photos): Simcote

Simcote's main customers, though, are other black bar fabricators or supply houses within the rebar sector. "They are users who are looking for us to supply the epoxy portion of their large concrete reinforcing job," explains David Simmet, CFO at the company and grandson of the founder. "We focus on partnering with our customers to provide fabricated epoxy-coated rebar delivered straight to their job site that is coated and fabricated to the specifications that they have provided."

The company's third location is poised to open soon in Sedalia, Missouri, where it will produce strictly epoxy-coated rebar.

The Epoxy Process

Epoxy coating is an environmentally friendly, nonhazardous product that, according to Simmet, is the most budget-friendly and sustainable option for corrosion resistance. The epoxy coating technology is essential for protecting rebar from water and salt on the road, which can cause rebar rust and corrosion.

This custom product passes through the company's Gema powder booth where it is coated with ASTM A775 or A934 powder from a DOT-approved powder coating manufacturer.

The safe manufacturing process of epoxy coating on straight rebar involves four

crucial steps which are typically the same everywhere epoxy coating rebar takes place, Simmet says. However, not every epoxy-coated rebar operation is like Simcote, which fabricates the bars after coating. Some do not offer the fabrication step.

According to Simmet, these are the steps for effective epoxy coating to the specifications of ASTM A775 and A934 for rebar coating and ASTM A1078 for dowel bar coating:

1. **Surface preparation:** The 60-foot bundles of steel bar that are delivered from the mill are blasted with steel grit at high speeds to remove any rust or debris. The blasting process also creates a surface profile necessary for proper epoxy adhesion.

2. **Heating:** The clean bars are heated to the powder manufacturer's specifications using Ajax and ESC induction heaters.

3. **Epoxy coating:** The heated bars pass through the company's Gema powder booths where they are coated with ASTM A775 or A934 powder from a DOT - approved powder coating manufacturer (IFS coatings, Sherwin Wiliams and Akzo Nobel), ensuringa uniform and durable green or purple epoxy layer.

4. **Cooling and fabrication:** The coated bars are then cooled via a water quench tank, rebundled and then fabricated on machines that cut and bend the rebar for the required specifications. Each bundle's unique information is tracked throughout this whole process to ensure proper sourcing and certification information is provided to the end customer.

Epoxy Coating Nonstandard Products

In 2012, Simcote started a small custom coating line for a customer that requested fully epoxy-coated dowel baskets for highway construction. The process gradually evolved to include epoxy coating for large sheets of mesh meeting the guidelines of ASTM A884 and small concrete reinforcing accessories such as rebar couplers, hook bolts, bar supports and transverse bar assemblies.

Simcote solely produced epoxy-coated rebar primarily for the DOT to build roads and bridges in its first 35 years in business and is still mostly dedicated to the epoxy rebar industry. However, within the last 10 years or so, it has added custom coating to its offerings, which includes construction accessories.

Unlike the straight bar line used for coating rebar, products to be custom coated with epoxy go through a more traditional monorail line, Simmet explains. "This coating line resembles a more traditional hanging paint line with a high weight capacity," he says. "Products are loaded onto hangers, and then go through a large steel grit blaster, an infrared oven to heat the product, then a powder booth and finally a cure oven to cure the epoxy before being unloaded from the monorail."

The company houses two continuous custom coating lines. The first is dedicated to small rebar accessories with maximum dimensions of 3 ft. by 2 ft. by 15 ft. Its second custom line is ideal for large products with maximum dimensions of 8 ft. 3 in. by 2 ft. by 30 ft.

To aid in tracking customer orders for the custom contract jobs, in 2023, the company partnered with Steelhead Technologies (Calumet Township, Michigan), provider of customizable ERP software. The software has been instrumental in optimizing the custom coating line by clarifying work orders and itemizing costs all the way through the process.

"Steelhead enables the guys in the shop to focus on coating and not worry about tracking data," Simmet says.

Simcote also owns a coil coating line that enables the epoxy coating of coiled rebar. These are commonly used to create rebar spirals used in concrete columns.

Steel Rebar Market Outlook

Material price fluctuation has been one of the challenges facing the rebar industry in recent years, especially during the COVID-19 pandemic when the price of steel almost doubled, Simmet says. It has since contracted over the last couple years.

This Simcote employee is fabricating epoxy-coated rebar on an automatic bender used to bend the steel and cut it to the customer's specifications.

Because the steel market is softening, rebar companies like Simcote will be faced with more competition. According to grandviewresearch.com, the steel rebar market in the U.S. is expected to expand at a compound annual growth rate of 5.5% from 2022 to 2030 because of increasing investment by government and private players in the infrastructure segment. Thus, long-term investment in infrastructure projects is projected to boost the demand for steel rebar. It is more difficult to forecast the demand within commercial construction, which has dwindled recently because of higher interest rates.

Although Simmet is aware the steel market is softening, he points out that the most important aspect of a highly volatile market is the increased need for rebar fabricators to be in constant contact with both suppliers and customers to meet the market's current demands. He adds that it is critical to keep in mind the associated risks when dealing with long-term contracts.

Reinforcing Quality

Of the challenges that face Simcote and the rebar industry, Simmet stresses that producing a quality product is the most critical focus. The company fixates on corrosion resistance as the crux of the industry and ensures that its staff is highly trained and skilled in the production of rebar to quality standards.

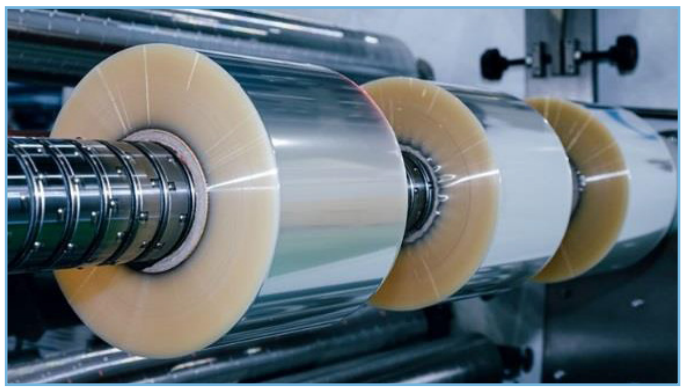
In addition to its custom coating line, Simcote also owns a coil coating line that enables the epoxy coating of coiled rebar. These are commonly used to create rebar spirals used in concrete columns.

"We have a great team at Simcote," Simmet says. "A lot of our employees have been doing this for a very long time, are skilled and know the product well. I think that's one of the reasons we have been around for a long time and are experts in the field. We know what our customers need."

He recognizes that, unlike some coaters that produce products decorative in nature, rebar coating is about function — with a thicker application of 8-12 mils of coating thickness to keeping moisture and chloride away from the rebar. Ultimately, maintaining high quality standards is Simcote's role in building bridges that stand the test of time, Simmet concludes.

(**Source:** Products Finishing / 23.09.2024)

Clear Amorphous Nylon for Flexible Food Packaging



Source: NYCOA

A transparent amorphous high-temperature 6I/6T nylon copolymer has been launched for packaging and precision molded applications by Nylon Corp. of America (NYCOA). More specifically, the new NY-Clear 6I/6T series is targeted for use in flexible food packaging and coated beverage paperboard stock requiring high strength, stiffness and hydrolysis resistance. The NY-Clear portfolio consists of grades which are optimized for injection molding components with high dimensional stability and gloss as well as grades optimized for blown film and extrusion applications.

These nylon copolymer grades boast high clarity and strong permeation resistance with up to 30% higher resistance on oxygen, CO2 and water vapor transmission over competitive materials in the market. Such copolymers are known to offer higher temperature resistance, lower moisture absorption and better retention of properties compared to nylons 6 and 66. Moreover, NY-Clear grades can be used in higher temperature applications such as oven bags. Amorphous nylons are known for their excellent dimensional stability, high Tg, heat deflection temperature (HDT), low creep at elevated temperatures and good chemical resistance compared to many high-performance engineering plastics. NYCOA says significant cost benefits can be realized for amorphous nylons sourced from the company's Manchester, New Hampshire, production facility, compared to imported resins.

Custom Automation for Stack Mold Applications

WITTMANN has developed dual high-speed, top-entry robots to provide faster cycle times, lower payload requirements and flexible process flow in stack mold applications.

Injection molding machine, robot and auxiliary equipment supplier WITTMANN USA, Torrington, Connecticut, has developed a custom robotics package targeting stack mold applications. WITTMANN says applying dual high-speed top-entry robots can create cells with faster cycle times, lower payload requirements and flexible process flow.

Molders with stack mold applications have normally opted for dual vertical-arm robots to automate part handling, but WITTMANN says these systems can lack the speed and payload required for the job.

In a release, Jason Long, VP of sales for WITTMANN, related that many customers ask his company to quote dual vertical - arm robots for stack mold applications, but in most cases, WITTMANN'S high-speed, top-entry robot cells have proven to be more robust and quicker for those applications.

WITTMANN notes that its standard high - speed robots can be mounted to run even the most complex stack mold applications. These cells normally offer cycle times of seven to 12 seconds, without requiring special robots or causing abnormal wear and tear on dual vertical - arm robots, which can happen for robots not designed for quicker cycles. In terms of flexibility, the cell can also be designed with different mounting stands to enable smaller footprints, integrated conveyor systems or other downstream equipment for pre molding or post molding automation. The robots can be programmed to work together or can run individually, where one robot can be used when standard two - plate molds are run in the same machine.

WITTMANN is designing dual high - speed, top - entry robots systems for stack mold applications. Source: WITTMANN

(**Source:** Plastics Technology / 04.06.2024)

Unveiling the GoFLC 6548: An Innovative Step Forward in the World of Folding Large Containers

goplasticpallets.com, is constantly evaluating and adding to product portfolios to ensure their customers to have quick access to a range plastic pallets, pallet boxes and containers for every scenario – from seamlessly integrating with sophisticated automated systems, to boosting efficiency across picking and packing operations, to exporting goods overseas. The latest product to be added to their growing range is the GoFLC 6548 < https://www.goplasticpallets.com/product/goflc-6548>, an innovative folding large container. Sales Director Dan Starnes gave the lowdown.

Hi Dan. What makes the GoFLC 6548 stand out in the market for folding large containers?

The logistics and manufacturing industries constantly seek robust, reliable, and space-saving solutions for transporting goods. The GoFLC 6548 is an outstanding addition to our range of folding large containers, offering innovative design and enhanced functionality.

What makes it unique is its molded size of 1600mm x 1200mm, which is quite unusual in the industry. Typically, when you need a container larger than the standard 1200mm x 800mm or 1200mm x 1000mm footprints, you'd have to cut and weld two boxes together. This process often compromises the strength and integrity of the container. However, the GoFLC 6548 is manufactured at this size, ensuring robustness and durability, which is unmatched in the market.

How does the GoFLC 6548 compare to other containers in the GoFLC range?

The GoFLC range has been a popular choice for many of our customers over the years, especially the GoFLC 960 and 980 models. These products have earned their reputation for being reliable, space-saving, and cost - effective solutions for a variety of industries.

We believe the new GoFLC 6548 continues this tradition, but on a greater scale, offering a significantly larger capacity of 1206 liters (GoFLC 960: 625 litres; GoFLC 980: 847 litres), while maintaining the same high standards of strength and durability.

What industries will benefit most from the GoFLC 6548?

The GoFLC 6548 is particularly well-suited for the engineering, manufacturing, recycling and waste management sectors. These industries often require strong containers that can handle large, heavy materials. The GoFLC 6548's high load capacities (dynamic: 2700kg; static: 4500kg) make it ideal for these demanding applications.

How does the GoFLC 6548 contribute to operational efficiency and sustainability?

One of the standout features of the GoFLC 6548 is its collapsible design, which not only makes it easy to store when not in use, but also dramatically reduces the space required during return transport.

When the container is collapsed, it measures just 354mm. As a result, it occupies far less space in trailers, which helps to cut down on the number of return journeys needed. This in turn lowers transportation costs, fuel consumption, and carbon emissions. By optimizing trailer space, businesses can significantly reduce their environmental footprint while maintaining efficient logistics operations. In today's climate, where sustainability is increasingly important, the GoFLC 6548 is an ideal solution for businesses looking to enhance their green credentials without compromising on functionality or strength.

Finally, if a customer asked you to summarize the GoFLC 6548 in a 20 second pitch, what would you say?

The GoFLC 6548 provides a unique combination of strength, size, and sustainability. It's perfect for businesses that need a large container that can handle heavy-duty loads while offering practical space - saving features when not in use. The innovative molded size and collapsible design set it apart from other containers on the market.

(**Source:** Go Plastic Pallets / 16.09.2024)

LyondellBasell and Dacia Develop a Recycled Solution for the Iconic Duster Model

Lyondellbasell (NYSE: LYB) and Dacia proudly announce a groundbreaking collaboration for the exterior design of the All-New Dacia Duster model. Renowned for its rugged elegance, the All - New Dacia Duster now features the sturdy "Starkle®" material, made possible by the CirculenRecover portfolio from LYB. These innovative CirculenRecover polypropylene (PP) compounds incorporate recycled materials and bring a unique aesthetic to the All-New Duster model.

"The development of CirculenRecover polymers exemplifies our unwavering commitment to creating solutions for everyday sustainable living," says Alexandre Martin, LYB business development manager Transportation. "This innovative material not only elevates the aesthetics of vehicles but also aligns with our customers' sustainability goals."

This CirculenRecover polymer, a PP compound that includes 20% recycled PP based on mechanical recycling, is derived from post - industrial waste diverted from the manufacturing process of goods such as flexible packaging. Compared to using virgin materials, this reduces CO2 emissions, underscoring Dacia's dedication to sustainability. CirculenRecover is incorporated into the Dacia "Starkle®" material, which is used in exterior parts such as bumpers, trims, and body side moldings across the All-New Duster model.

Beyond achieving performance for automotive exteriors, CirculenRecover polymers offer a mold - in- color special effect with particles to highlight the use of recycled content. This single - material solution eliminates extra steps, enhances design efficiency, and can help improve the potential recyclability of the parts. This refreshing "Starkle®" design instills the All - New Dacia Duster with distinctive character, catering to end consumers' increasing awareness of recyclability.

"Our collaboration with LYB has resulted in a leading-edge solution for the automotive industry, "says Damien Laplane, Cross Car Line & Brand Experience Leader at Dacia. "It serves as a powerful demonstration that recycled materials can be both aesthetically pleasing and high - performing."

The All - New Dacia Duster demonstrates that sustainability and modern aesthetics can seamlessly coexist. With this collaboration, LYB and Dacia are setting a new standard for automotive design and inspiring the automotive industry to embrace a more sustainable future.

You can see the CirculenRecover portfolio in action during Fakuma at the LYB stand B1-1112. To learn more about the LYB Circulen portfolio, click here.

Circulen is a trademark owned by the LyondellBasell family of companies and is registered in the U.S. Patent and Trademark Office.

(**Source:** LyondellBasell / 16.09.2024)

ARC Technologies LLC (ARC), a Division of Hexcel Corporation, Provider of Advanced Composites Structures, Materials and other Unique Products

Review capabilities in advanced composites and other specialty materials structures, focusing on electromagnetic signature reduction and other unique capabilities.

The composites industry plays a crucial role in developing lightweight and durable materials for a range of applications, including those critical to national defense. One key focus area is the development of advanced structural materials and manufacturing technologies that support next-generation space, missile and aircraft systems for the U.S. Department of Defense (DOD).

ARC Technologies LLC (ARC), a division of Hexcel Corporation, based in Amesbury, Massachusetts, is a provider of advanced composites structures, specialty materials and other unique products that provide the U.S. Department of Defense with advanced capabilities to protect service members while in harm's way. This team's specialty is to understand a specific need from a program office, PEO, platform manufacturer or other offices within the DOD. With that understanding, the team can design a solution, develop a prototype for test and evaluation, perform extensive in - house testing — including electromagnetic, environmental and structural testing — and then partner with the customer through platform evaluation.

The Hexcel Amesbury division has a team of engineers on staff, including mechanical, chemical, electrical and research and development specialists

that can provide design, testing and manufacturing capabilities to service customer requirements from concept through production.

This presentation will illustrate capabilities in advanced composites and other specialty materials structures, focusing on the Hexcel Amesbury team's niche in electromagnetic signature reduction and other unique capabilities.

(**Source:** CompositesWorld / 26.04.2024)

Custom Molder Pivots when States Squelch Thriving Single - Use Bottle Business

Currier Plastics had a major stake in small hotel amenity bottles until state legislators banned them. Here's how Currier adapted to that challenge.

Single - use plastics bans forced hotel amenity bottles to evolve from small sizes to larger, reusable or multiuse, wall - mounted versions. Source: Currier Plastics

What happens when you've made large investments to become the North American leader in a plastic bottle market and then state governments wipe away that business with the stroke of a pen? That was not an academic question for Currier Plastics, a midsize injection and blow molder in upstate Auburn, New York, when its position in small hotel amenity bottles for products such as shampoos and lotions was threatened by state crackdowns on single - use plastic packaging.

"We had a pretty substantial involvement in that sector," says Ron Ringleben, Currier's vice president of business development. "We had more than two decades' relationships with three of the major hotel amenities supply companies in North America. We believe we had a 65% share of custom bottles and caps for these single-use personal-care packages. Five to six years ago, that was 35% of our overall business."

Those hotel amenity bottles were typically 1.5 to 3 ounces in size, with 60% of them being extrusion blow molded (EBM) HDPE and 40% being injection stretch - blow molded (ISBM) PET. At the peak of Currier's involvement in 2018-2019, its production of these bottles and caps exceeded 1 billion parts per year.

To acquire its dominant market position, Currier invested more than $15 million in equipment, including five Aoki single-stage ISBM presses and multiple EBM machines, including one large Kautex extrusion shuttle. "In 2015, that was the first all-electric shuttle in North America," Ringleben says. "It has 12 parison heads and 24 cavities, able to mold a couple hundred million bottles a year on one machine." The EBM machines produce single- and dual-layer HDPE bottles in eight to 24 cavities.

At the apex of Currier's small amenity bottle production in 2018-2019, market changes were already afoot, Ringleben recalls. "We recognized that we had too high a share of our business tied to one market, and it was one that wasn't showing much growth, since the hotel business was saturated."

Then came rumblings from state legislators against single-use plastics. According to Ringleben, "In 2019, just before COVID struck, a lot of our hotel supply customers approached us about upcoming legislation against these bottles. They talked about going to larger bottles."

California's Santa Cruz County passed the first such ban in 2018, outlawing single-use plastic hotel amenity bottles smaller than 12 ounces by the end of 2020. The entire state of California followed suit in 2019 with a ban that took effect in 2023, covering single-use toiletry bottles of less than 6 ounces. Washington State also passed a bill last year to eliminate single-use plastic toiletry bottles by Jan. 1, 2027, for hotels with 50 or more units and by Jan. 1, 2028, for smaller establishments. New York State passed such a measure in July 2024, to take effect Jan. 1, 2025, prohibiting "hospitality care" bottles in sizes under 12 ounces and applying to hotels with more than 50 rooms. Other states are said to be weighing similar moves.

The transition to larger, reusable hotel amenity bottles has cut into Currier's cap injection molding business. Caps for small amenity bottles were molded in eight to 64 cavities. Ringleben notes that today's larger amenity bottles have pumps, some of which are imported.

Says Ringleben, "Starting in 2017, our strategy has been to leverage our expertise in high-volume injection and blow molding into health care markets like in vitro diagnostics, life science and others that require custom design, precise specification and medical-grade processes. We upgraded our quality system to a medical-conforming ISO 13485, hired medical - experienced engineers and built ISO Class 8 clean room space."

Currier shifted its business strategy toward medical, healthcare and life sciences containers. Source: Currier Plastics

Currier still serves some lingering demand for smaller amenity bottles, but Ringleben expects this to be only short term. Last year was a watershed in the transformation from small to larger bottles. Toward the end of the first quarter of 2023, small hotel amenities dropped by 65% from the previous year. Without Currier's diversification strategy, that market cratering would have been devastating for the company. Instead of hundreds of millions of parts, volumes of amenities shrank to the tens of millions. Today, Currier serves the same three hotel amenities providers with less than 100 million bottles and caps.

"We've transformed our business model. We repurposed most of the assets that were once used for hotel amenities, which now constitute only 5-7% of our business, into health care. We're an industry leader now in diagnostic reagent containers in PET and HDPE. In vitro diagnostics is big for us. These products have up to a 20 - year life cycle and are highly customized, which suits our capabilities."

Last year, Currier opened a second plant in Auburn, with its second Class 8 clean room and the company's first injection - blow molding capacity. Notes Ringleben, "We are one of the few companies worldwide to offer extrusion blow molding, injection blow molding, and injection stretch-blow molding in ISO Class 8 clean rooms. That's part of our value proposition."

Currier still has open capacity on four to five of its eight Aoki machines' ISBM PET capacity but is looking toward growth in medical to take up the slack. Ringleben notes that Currier has a couple of PET health care applications, including one for reusable hydration containers, and some food and beverage packaging in PET as well. Overall, health care now accounts for more than 50% of Currier's $60 million sales, and the company is pushing to elevate that share to 75%.

(**Source:** Plastics Technology / 16.10.2024)

Fighting Dust and Noise in Regrind Operations

Mayhew Basque Plastics implemented lower speed granulators to deal with challenging materials.

Mayhew Basque Plastics is a division of Mayhew Steel Products, a manufacturer of punches, chisels and other hand tools. In addition to molding the tool handles, the plastics division makes cable ties and custom-molded components for other products. The company's injection molding operation uses PA66, glass - filled PA6 and glass - filled PP.

Mayhew operates granulators directly at press side, enabling operators to reintroduce regrind immediately back into the production process — but not without challenges over the years. The materials molded by Mayhew, with short cycle times, are very hot when they come out of the mold, which can impact grinding efficiency.

Mayhew first trialed a screen less granulator design, the WITTMANN S Max 3. The screen less technology cuts in a single pass, whereas in a screened granulator the granules remain in the cutting chamber and can potentially be cut multiple times before passing through. In Mayhew's operation, it found that the screen less low-speed design produced regrind with minimal fines and significantly reduced dust. For some applications, it needed greater throughput, so it turned again to WITTMANN, implementing the ML 33, a low - speed bladed granulator.

Braskem America Introduces Bio-Circular Polypropylene (PP): A Sustainable Solution for the Restaurant and Snack Food Industries

Derived from used cooking oil, Braskem's new mass-balanced Bio-Circular PP represents a significant step towards a circular economy, helping to displace fossil fuels.

Braskem the largest polyolefins producer in the Americas, as well as a global market leader and pioneer producer of biopolymers on an industrial scale announced the launch of its **innovative bio-circular polypropylene (PP),** which it sells under the brand name WENEW. WENEW is a groundbreaking advancement in sustainability for the restaurant and snack food industries. Derived from used cooking oil (UCO), this certified bio-circular ISCC Plus mass-balanced product represents a significant step towards a more sustainable economy, helping to displace fossil fuels.

Braskem's bio-circular PP is designed to promote circularity in the food industry by repurposing UCO. This approach not only reduces the reliance on fossil fuels but also supports environmental sustainability. Bio - circular PP is identical to traditional PP in properties and performance, ensuring a seamless transition for our clients.

Bill Diebold, Vice President, Braskem America Polyolefins, stated, "Our bio-circular PP is currently being supplied to various converters which support the Quick Service Restaurant (QSR) industry. Ideal users include QSR chains, retail food suppliers, traditional restaurants, and snack food companies especially those seeking to enhance circularity from their cooking oil usage. This versatile material is suitable for a wide range of applications, including food packaging, flexible packaging (such as films), and consumer goods."

Bio-circular PP addresses critical environmental concerns by displacing fossil - based sources of propylene and promoting circularity. UCO is collected and repurposed upstream to produce certified bio-circular ISCC Plus propylene. Braskem has partnered with several suppliers in the value chain who, through their production facilities, convert bio-circular feedstock into polypropylene, creating a sustainable loop. As a mass-balanced product, Braskem's bio-circular PP retains the same properties and performance as traditional PP, allowing continuous integration into existing downstream converter production and end-of-life recycling processes.

"The launch of our bio-circular PP marks a pivotal moment in pursuing sustainability within the restaurant and snack food industries. By adopting this innovative solution, companies can play a crucial role in promoting circularity and reducing their

environmental impact. Join us in embracing a greener future with bio-circular polypropylene," commented Courtney Keller, Sustainability Commercial Manager, Braskem America.

Exel Composites Launches Commercial Scale Use of Bio - Based Resins

Key Highlights:

- Exel Composites announced a new purchasing agreement with chemical manufacturing giant INEOS for over 100 metric tons of its ENVIREZ bio - based resin system.
- The resin is made with 23% bio-based glycol and reduces carbon emissions by 21% compared to traditional options.
- ENVIREZ resin is manufactured in the INEOS' production site in Kilpilahti, Finland, from where a tanker truck transports full tanks locally to Exel Composites' factories in Finland, minimizing waste and emissions.

Sustainable composites manufacturing specialist Exel Composites announced a new purchasing agreement with chemical manufacturing giant INEOS for over 100 metric tons of its ENVIREZ bio-based resin system. This deal will serve as a springboard for Exel Composites to phase out its use of hydrocarbon-derived resins. The Finnish pultrusion expert hopes to lead the composites industry towards a more sustainable future with zero change in material performance.

This specific INEOS ENVIREZ resin's chemical composition features 23 percent bio-based glycol, compared to traditional crude oil - sourced hydrocarbon resins. Resultantly, the carbon equivalent emissions in the manufacture of this resin are 2.89 CO2e kg including biogenic carbon, as opposed to fossil-based equivalent resin's 3.68 CO2e kg*.

This represents a 21 percent drop in the associated manufacturing emissions and, in the context of the agreed 100 metric tons of resin, a reduction of 79 thousand kilograms of CO2 released.

“The manufacturing industry simply won't reach its sustainability targets through isolated initiatives,” said Kim Sjödahl, VP of technology and sustainability at Exel Composites. “We know that genuinely making a difference means adapting our central processes and incorporating more eco-friendly materials into our high - volume manufacturing.

“All our evaluation and testing confirms INEOS' information: its drop-in bio-based solution yields the same technical performance as with the fossil-based resins. Customers won't notice any difference between the two,” continued Sjödahl.

Exel Composites' customers will have the choice of switching to this resin or keeping the original composition in the products that they purchase, but Sjödahl is confident that the composites community shares Exel Composites' appetite for Scope Three emissions reduction.

“Whether from partnerships with INEOS or our other suppliers, Exel is proud to help lead the community in the journey towards sustainability,” explained Sjödahl.

“Together with our long-standing customer Exel Composites, we are committed to addressing more than just our own Scope 1 and 2 emissions by implementing sustainable product solutions throughout the value chain,” said Daniel Blanco, product manager for UPR & VER at INEOS Composites EMEA.

“Our ENVIREZ technology platform spans resin solutions based on bio-based and circular feedstocks, helping reduce the product's carbon footprint compared to conventional fossil - based raw materials,” explained Blanco.

The two partners' further limit emissions and waste involved with the resin delivery. The ENVIREZ resin is manufactured in the INEOS' production site in Kilpilahti, Finland, from where a tanker truck transports full tanks locally to Exel Composites' factories in Joensuu and Mäntyharju, Finland.

“Utilizing bulk deliveries means no separate packaging is used for the deliveries, reducing the need for virgin materials, recycling and logistics. It further reduces the resin waste internally, and internal handling. All this helps in offsetting the higher cost of the resin itself,” said Sjödahl. The factory crew pumps up to 25 metric tons of ENVIREZ resin directly into the bulk storage tanks, from where it is ready to use for daily production.

DOW Launches REVOLOOP™ Recycled Plastics Resins for Cable Jackets

- Product launch supports customer sustainability goals and marks a notable milestone in Dow's commitment to advancing circularity.
- This additional offering in the REVOLOOP™ Recycled Plastics Resins portfolio allows customers in all regions to incorporate post-consumer recycled (PCR) content into cable jacketing without compromising high quality and performance.

Dow (NYSE: DOW) has announced the launch of a range of REVOLOOP™ Recycled Plastics Resins that incorporate post-consumer recycled (PCR) material into cable jacketing to help address customers' varying needs and circularity goals across the globe.

This latest addition to the REVOLOOP™ Resins portfolio prioritizes similar performance as virgin plastic material for cable jackets while offering sustainability benefits, marking a milestone in Dow's commitment to advancing circularity.

Adopting PCR into wire and cable products helps divert plastic waste from landfills and the natural environment by introducing it to the circular ecosystem, underscoring Dow's ambition to "Transform the Waste" by commercializing three million metric tons of circular and renewable solutions annually by 2030.

“With the launch of REVOLOOP™ Resins for the global wire and cable industry, we are expanding our sustainability portfolio while helping our power and telecommunications customers meet their own targets,” said Edit Berczi, global wire and cable marketing manager for Dow's Packaging and Specialty Plastics business. “This offering, along with our steadfast commitment to quality and reliability and the high importance we place on safety, helps support our customers' approach to PCR across the globe.”

By combining its vast industry knowledge, cutting-edge technology development and reliability as a trusted one-stop-shop supplier for the wire and cable industry, Dow is contributing to a transformation in the processing and application of PCR ingredients – offering customers more global options to meet their goals.

About Dow: Dow (NYSE: DOW) is one of the world's leading materials science companies, serving customers in high-growth markets such as packaging, infrastructure, mobility and consumer applications. Our global breadth, asset integration and scale, focused innovation, leading business positions and commitment to sustainability enable us to achieve profitable growth and help deliver a sustainable future. We operate manufacturing sites in 31 countries and employ approximately 35,900 people. Dow delivered sales of approximately $45 billion in 2023. References to Dow or the Company mean Dow Inc. and its subsidiaries. Learn more about us and our ambition to be the most innovative, customer-centric, inclusive and sustainable materials science company in the world by visiting . www.dow.com

---

Abu Dhabi's ADNOC to Acquire Covestro

Covestro has signed an investment agreement and supports ADNOC's public takeover offer to all of its shareholders.

An investment agreement has been signed by Covestro with certain entities of ADNOC (Abu Dhabi National Oil Company) Group, including ADNOC International Limited (ADNOC International) and its subsidiary, ADNOC International Germany Holding AG (bidder). When this transaction is finalized, two Middle Eastern companies — SABIC and ADNOC — will control a big chunk of engineering thermoplastics. Covestro's major engineering thermoplastics include Makrolon PC, Apec high-heat PC and Makroblend PC/PBT blends, as well as the Texin and Desmopan family of TPU resins and composites.

The signed agreement stipulates, among other items, that the bidder will make a public takeover offer for all outstanding shares of Covestro at a price of €62.00 per share. In addition, ADNOC International is committing itself to fully supporting the company's “Sustainable Future” strategy. At the same time, the board of management and the supervisory board of Covestro decided that upon completion of the transaction, the company's share capital shall be increased by 10% (18.900.000 shares) and that, at and subject to closing, the new shares shall be issued to the bidder against payment of a price per share equal to the offer price, thus, based on an offer price of €62.00 against a total amount of €1.17 billion, under simplified

exclusion of subscription rights. Shareholders benefit from a premium of 54% on the unaffected share price, prior to any media coverage of a potential transaction.

Says Covestro's CEO Dr. Markus Steilemann, "We are convinced that the agreement reached with ADNOC International is in the best interest of Covestro, our employees, our shareholders and all other stakeholders. With ADNOC International's support, we will have an even stronger foundation for sustainable growth in highly attractive sectors and can make an even greater contribution to the green transformation. We regard ADNOC International as a financially strong and long-term oriented partner with whom we will further drive our successful "Sustainable Future" strategy in all market conditions. Our complementary growth strategies, shared commitment to advanced technologies, innovation and sustainability are key cornerstones of our partnership."

Partnership enables expansion of Covestro's position in attractive growth markets. It has a clear growth strategy and is already making progress in its strategic transformation that will further expand its position in attractive growth markets. ADNOC International sees Covestro as the foundational platform of its Performance Materials and Specialty Chemicals business, and says it is convinced of Covestro's strategic perspective and its vision to become fully circular.

In the joint Investment Agreement, which runs until the end of 2028, Covestro and certain entities of the ADNOC Group, including ADNOC International, have agreed on the main cornerstones of the partnership. In particular, the agreement contains several obligations on the part of ADNOC International to maintain Covestro's existing business activities, corporate governance and organizational business structure. ADNOC International has assured Covestro of its full support for Covestro's "Sustainable Future" strategy and intends to fully support Covestro in further executing on this strategy.

Dr. Sultan Ahmed Al Jaber, ADNOC managing director and group CEO, said: "As a global leader and industrial pioneer in chemicals, Covestro brings unmatched expertise in high-tech specialty chemicals and materials, using advanced technologies including AI. This strategic partnership is a natural fit and aligns seamlessly with ADNOC's ongoing smart growth and future proofing strategy and our vision to become a top 5 global chemicals company. It represents a pivotal step for both organizations and embodies our disciplined approach to investing in strategic assets that drive long-term value and unlock new growth opportunities, while reinforcing our commitment to diversifying ADNOC's portfolio. Our aligned strategies uniquely position us to meet the growing global demand for energy and chemical products, while accelerating the transition to a circular economy."

In compliance with the German Securities Acquisition and Takeover Act (Wertpapiererwerbs- und Übernahmegesetz, WpÜG), the offer document, which is expected to be available within six weeks, and other information pertaining to the bidder's public takeover offer will be made available on the following website after approval by BaFin (Bundesanstalt für Finanzdienstleistungsaufsicht) — www.covestro-offer.com.

ExxonMobil Announces Launch of Signature Polymers: A New Portfolio Brand Focused on Delivering Best - in - Class Service & Partnership in the Polymers Industry

ExxonMobil has announced the introduction of Signature Polymers, a new approach to service and partnership with customers and the broader value chain. The stated brand ambition of Signature

Polymers is to become the industry's most valued global partner through improved service and partnership. ExxonMobil will introduce new programs that inspire and inform the way it positions products and provides support to help customers innovate, strategize, and grow. This approach will enable customers to be more confident in meeting the value chains complex challenges by removing complexity and inspiring enhanced collaboration.

Key Points:

- Polyolefin products now combined under a single portfolio brand, Signature Polymers.
- Several new initiatives & strengthened programs to demonstrate this commitment to customers, some examples include:

1. Established customer commitments to underpin the enhanced approach to serving customers & the broader value chain.

2. New "PolyView" events to facilitate industry dialogue through sharing market insights and bring together the broader value chain.

3. Signature polymers product architecture standardization and naming simplified to improve portfolio navigation and product selection.

4. A new Signature Polymers Academy focused on delivering training and workshops for our customers in key markets.

"We are proud of the long history we have growing with our customers in markets around the world. As our industry faces increasing challenges, we believe our position as a leading global polyolefins supplier puts us in a unique position to deliver a new level of service and partnership to our customers," said Juhan Robberts, Senior Vice President, ExxonMobil. "We are elevating our customer experience and launching our new brand structure as a commitment to this promise to deliver enhanced service and partnership."

To better equip team members to serve as partners, all Signature Polymers employees are enrolled in comprehensive training to recognize methods and opportunities to listen, learn, and collaborate to ultimately meet customer needs and enhance customer experience.

The Signature Polymers group is providing platforms to facilitate collaboration and exchange of ideas. New, exclusive PolyView industry events are designed to increase dialog between industry leaders and bring together experts from across the value chain to address the challenges and opportunities in the Plastics Industry.

Borouge Partners with Union Pipes Industry to Support Circular Economy with Recycled Polyolefins

Borouge's recycled polypropylene will be used by UPI to produce industrial pallets to support Borouge's global logistics operations.

Borouge and UPI signing ceremony. Image courtesy: Borouge

Abu Dhabi, United Arab Emirates: Borouge Plc, a leading petrochemical company known for its innovative and differentiated polyolefin solutions, announced the signing of an AED20 million agreement with Union Pipes Industry (UPI), a leading UAE-based manufacturer, to supply UPI with 100% post-consumer recycled (PCR) polypropylene that will be used to produce customised pallets for Borouge's logistics operations.

Borouge serves customers in over 50 countries across Asia, the Middle East and Africa, providing creative solutions for a wide range of industries that contribute to addressing global challenges and improving people's everyday lives, such as climate change, food waste and scarcity, access to fresh water, energy transition, healthcare support and waste management.

Khalfan Mohamed AlMuhairi, SVP MEAE Borouge, said: "Borouge's partnership with UPI demonstrates our commitment to leveraging innovation and technological solutions to enhance end-of-life recyclability and promote the use of recycled polypropylene across all the industries we serve. Recycling and sustainability are integral to Borouge's long-term strategy. We continue to champion circular business models through national and global partnerships that are enhancing the quality and availability of recycled polyolefins.

Borouge is driving socio-economic progress by working with customers and partners to provide circular solutions that will transform their industries while supporting their sustainability goals. The company continues to invest in innovation to develop solutions that use post-consumer recycled polyolefins

and industrial recycled materials, reducing the dependency on fossil fuels and promoting sustainable production.

Qassim Abdulrahman Al Sharafi, Chairman of the Board of Directors of Union Pipes Industry (UPI), said: "This marks another milestone in our long standing partnership with Borouge, which spans more than 25 years and is a testament to its commitment to supporting the growth of the local economy, which UPI is a part of. This collaboration has resulted in the delivery of polyethylene pipes made from high-quality Borouge materials to over 60 countries worldwide. We are excited to be part of the solution in minimizing plastic waste and contributing to the circular economy."

As part of the agreement, Borouge will supply quality assured recyclates to UPI for the production of pallets using two of its partners, Qonexa and Intraco Pallet. The pallets are then used by Borouge to deliver the company's innovative products to customers around the world. To support the circular economy, using recycled polypropylene based plastics pallets, which in comparison to traditional pallets have a longer life span, by up to three times, and are safer and more hygienic, as plastic pallets are not susceptible to insect infestation and do not require fumigation.

Borouge is committed to exploring and driving opportunities that support a circular economy and delivering a more sustainable future. The company's sustainability ambitions include its pledge to reach Net Zero carbon emissions for Scope 1 and 2 by 2045, Borouge has set interim 2030 goals of reducing greenhouse gas (GHG) emissions intensity by 25% and energy intensity by 30%.

(**Source:** ZAWYA / 02/10/2024)

Insight Polymers & Compounding Unveils New Conductive Products Line

The new conductive products line will also be produced for injection molding and extrusion.

A new line of conductive and static dissipative products initially targeted for additive manufacturing pellet printing has been launched by Insight Polymers & Compounding. Moreover, the company plans to translate its success with the additive manufacturing compounds into injection molding and extrusion, and back these offerings with technical support and testing services.

Source: Insight Polymers & Compounding

Says Matt Torosian, the newly hired Insight Polymers sales and market development manager who will lead the effort, "Our new products and services comprise compounding for reactive polymer modification as well as conductive, wear and friction, and structural materials for vertical markets such as electronics, industrial, medical and consumer applications. Plus, we can meet material requirements and unmet needs with technical capabilities such as reactive extrusion, polymer modification and advanced conductive materials that utilize carbon nanotubes, graphene and conductive carbon."

According to Insight Polymers director of operations A.J. Pasquale, the company can dial in essential physical and conductive properties, and validate the results with new testing capabilities.

The Hidden but Vital Role of Plastic Extrusions in the AI Boom

Mark Fenwick, technical sales manager at Condale Plastics Ltd, explores the integral role of plastic extrusions in data center infrastructure and the meteoric expansion of AI.

Key Highlights:

- Plastic extrusions are essential components in data centers, protecting cables, wires and electronic components from short circuits and enabling the smooth operation of complex AI processes.
- The rapid expansion of AI is driving an increase in the demand for data centres, coupled with the rise of computational power required for AI applications.
- Condale offers a unique blend of thermoplastics that are re - processable, reducing waste and contributing to a circular economy.

A recent report claims data centers consumed an estimated 460 terawatt-hours (TWh) of electricity in 2022. That's 2% of all electricity use, worldwide – and this figure is projected to rise sharply, potentially doubling by 2026 and tripling by 2028, due to the ever - increasing computational power needed for artificial intelligence (AI). While still in relative infancy, the impending AI boom will skyrocket the global need for processing power. As data centers expand to accommodate this new demand, we're focusing on an integral infrastructure component: the high temperature-resistant plastic extrusions vital for a data centre's safety, efficiency, and reliability.

Engineering - grade performance

The data centre environment is characterized by high heat loads, stringent safety requirements, and the need for robust, durable infrastructure. As mission-critical environments, data centres house intricate webs of high - voltage electrical systems that power complex AI operations. Here, extrusions play a crucial role. Meticulously designed to shield cables, wires, and delicate electronic components, they create barriers that prevent potentially catastrophic short circuits. This equipment protection ensures the seamless flow of data-intensive AI processes, highlighting the vital role of plastic extrusions in data centre safety and reliability.

Although we provide a number of components for data centers, such as cable management and trunking units, we have a unique focus on producing specialized, engineering - grade thermoplastic insulators for bus bars within electrical conduits.

Bus bars, the copper or aluminium units responsible for carrying the high - energy current required to power servers, must be securely housed in aluminium casings. Our linear extrusions, manufactured from a cutting - edge blend of polymers, insulate these bus bars within their housings, preventing the conductor from coming into contact with the aluminium housing, which would otherwise make the entire structure live with electricity. As insulating high-wattage electricity generates significant amounts of heat, our electrical insulating materials have a high Relative Thermal Index (RTI) value to ensure heat resistance and the integrity of electrical systems, even under extreme conditions.

Cost - effective innovation

We can work directly with our partners to pick the most precise material for their needs — whether for an application that requires high-impact or high-temperature resilience or fire retardance — to ensure there is no need to balance performance with financial restraints.

Plastic extrusions offer a compelling solution in comparable electrical safety properties at a fraction of the cost compared to traditional components. This affordability does not compromise on quality; in fact, our advanced plastic polymers are continually being developed to meet the evolving needs of data centers, achieving substantial cost savings without sacrificing safety or performance.

Sustainability in focus

As the world grapples with the environmental impact of technology, the plastics industry is increasingly prioritizing sustainability.

There's no denying that plastic is an essential part of our daily lives, found all around us. The key is focusing on how we reuse and recycle it responsibly. At Condale Plastics, we are committed to reducing the use of virgin materials in our products, contributing to a circular economy, and minimizing waste.

Our unique blend of thermoplastics offers the advantage of being re-processable, as our extrusions can be re-chipped, melted, and reused in-house. Unlike thermosetting plastics, such as tires, which can't be reheated. According to legislation, all recycled content must be traceable to ensure quality and adherence. While industry regulations, such as UL certifications, limit the amount of recycled content we can incorporate, we currently reintegrate up to 15% recycled materials, primarily from our own production scrap. This helps prevent waste from going to landfills while maintaining strict compliance with fire-retardant and safety standards.

Our commitment to sustainable design aligns with environmental goals and makes sound economic sense, as it reduces material costs while addressing concerns about the environmental impact of growing energy demands in data centers.

Extrusions in the evolving AI landscape

As AI continues to reshape the technological landscape, we're already actively collaborating with our partners to prepare them for explosive growth.

Our plastic extrusions' exclusive properties and manufacturing precision are essential for ensuring safe and efficient data center operation. And we're not merely keeping pace with data expansion; we're innovating materials and evolving to stay ahead of the steep curve. Understanding the value of extrusions can empower informed decisions about data center design and maintenance, safeguard investments in the AI boom, and provide critical solutions to the challenges ahead.

Ensuring Repeatability: The Key to Effective Injection Molding Automation

One of automation's key promises is repeatability: the same movement to the same location, time and time again. But to achieve that, all elements involved — robot, machine, EOAT, mold — must be in and stay in alignment.

As finding and training talented staff becomes ever more difficult, injection molders across the country are looking to improve their current automation and add more. While automation is a perfect fit for molding, it can come with some growing pains and at times feel like a step backwards.

If your robot is alarming every 5 minutes, leaving parts in the mold, damaging the parts or dropping them on the floor, it may feel like the automation you installed to take the place of the operator now requires a technician to stand by and babysit it. All automation is reliant on repeatability — the same thing needs to happen, the same way, on every cycle. When everything is repeatable, automation works great — that is what it is good at. The more variation you add, the more problems you will see; so let's look at some of the sources of variation and how to deal with them.

Variation from Robot Alignment

A largely overlooked source of variation in molding automation is the alignment of the robot to the machine. If the robot wrist is not parallel to the platen, it will be difficult to get the end of arm tool to line up with the mold properly. Adding an alignment check to the robot preventive - maintenance plan will allow you to correct any misalignment before it affects your production. This can be as simple as bringing the wrist plate up to the platen and visually checking for misalignment; or you can be more precise, mounting a dial indicator to the robot and checking alignment across the platen. Misalignment can be corrected in two places: at the point where the robot base is mounted to the machine (usually the stationary platen) and at the wrist itself.

Variation from Mold Alignment

Not having a level mold can cause problems in automation as well. Just 1 degree off level causes a 0.2-in. position shift across 12 in. That will be the difference between cleanly picking the part and running into it with the gripper fingers. Most molders have their techs level the mold before clamping it in. The tech sets his bullet level on the mold; eyeballs it to see that the bubble is on center; and clamps it in. For a two- to four-cavity mold with easy-to-grip parts, that may work fine. For large molds with small parts and delicate features, consider adding alignment pins to the back plates of the molds and sockets to the movable platen. This is a one - time expense that will ensure correct mold alignment on every setup.

Variation from EOAT Alignment

When the end-of-arm tool (EOAT) is attached to the robot wrist you have potential for misalignment to the robot wrist and to the mold. I highly recommend using a quick - disconnect system for the EOAT. This ensures correct alignment to the robot wrist every time with minimal effort. For large, multi-cavity tools, I also recommend including alignment points for the EOAT in the mold design. For those, I usually use two small taper - lock fittings. The female fitting gets installed on the mold, and the male fitting mounted to the end-of-arm. Then when you set up the end-of-arm, you can use the taper locks to align the EOAT to the mold before tightening down the mounting bolts.

Other Variation from EOAT

Each different mold you run will have its own EOAT. Many end-of-arms are built using aluminum extrusions commonly known by the trade name 80/20. Many manufacturers offer EOAT build kits that mount to the aluminum extrusion and allow you to build custom EOAT by attaching suction cups, grippers, fingers, etc. to the extrusion in the correct position. The shortfall of this method is that adjustable EOAT can, and will be, adjusted. It can also come out of adjustment over time due to rough handling and storage, or movement and vibration during production. Also common with these types of EOAT is a large number of air/vacuum tubes zip-tied onto the end-of-arm. This makes it more difficult to set up repeatedly, as the hoses get tangled, and If they're not properly traced they can cause the end-of - arm to not function properly.

Many of these sources of variability can be addressed through a proper preventive - maintenance schedule and setup procedures. The EOAT, however, needs a little bit more thought. Designing the EOAT to minimize variability from the start will save hours of headache, adjustment and alarms. Consider a 3D-printed EOAT as a solution to those design problems. 3D printing provides three advantages that reduce variability and increase automation uptime:

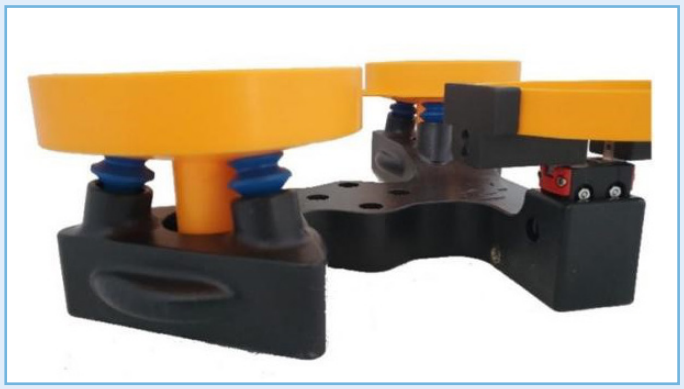
By 3D printing end -of - arm - tool, channels to manage and conceal airlines can be printed in. Photo Credit: Savage Automation

No More Air Lines Mess:

3D printing end-of-arm tooling allows molders to eliminate the tangle of air and vacuum lines and provide clean cable management for part - detection sensor wires. Everything can be run through the body of the EOAT with printed internal channels. Now the end-of-arm is simple to set up because there are fewer connection points with no tangle of wires and tubing.

Purposeful Design

3D printing allows the EOAT to be designed to match the part exactly. Instead of installing a suction cup on an adjustable-angle bracket, the mounting port is just printed on an angle so that the suction cup is permanently fixed in the correct position. Nests can be printed into the tool for parts with a complex geometry or delicate features. Part-detection mounting becomes simple and intuitive because you can print the exact features you need as part of the end-of-arm body.



By printing the suction cups at an angle, this EOAT is able to more effectively and consistently grab parts.

Lighter Weight:

It may not be as obvious, but heavy EOAT contributes significantly to variation in automation. A lightweight end-of-arm has less inertia when moving and thus takes less time to stabilize after a high-speed traverse. It is also less likely to wander out of alignment as it runs. A lighter end-of-arm puts less stress on robot servomotors and belts, extending time between PMs and preserving accuracy of the robot axis.

If your shop is looking to add your first robot, or your 50th, eliminating variability will help you get the most out of your molding automation. Add items to your PM schedule that ensure proper alignment of the robot. Document your mold setting and leveling procedures, and consider adding positive alignment features to your molds, machines and EOAT. Remember that EOAT is as important to your successful automation, if not more so, than the robot itself. A solid initial investment using the latest 3D-printing technology will pay dividends in repeatability and uptime.

Precision Processing Requires Precision Equipment

Moretto offers plastics processors and micro molders for a broad suite of auxiliary solutions targeted specifically for precision processing.

It's a given that precision plastics processing requires precision equipment. But, the ability to deliver precision equipment that actually provides real solutions can be a challenge.

In injection molding, for example, the trend towards miniaturization in medical, electronic and micromechanical devices is driving the demand for micro molding, where, in some cases, only a handful of pellets are needed to produce a part. Similar trends are ongoing in extrusion, particularly in ultra-tight tolerance, thin-wall tubing for medical and other similar applications, where in some cases the part can be only as thick as a strand of hair.

A great example of this approach is in the micro molding market where assessing the need requires a holistic approach toward equipment selection. Ideally, the molder should look beyond the shot size and output capabilities of the injection press and extruder, and also beyond the capabilities of the tooling itself. Auxiliary equipment for these applications must be selected based on the specific end-use needs of the application.

In North America this may require a shift in the way processors evaluate their equipment needs. Many molders and extrusion processors will admit that they often purchase equipment — auxiliary units in particular — sized above their current needs in anticipation of what they might require in the future.

In applications such as micro molding and precision extruders, where less than 15 pounds per hour is being fed into the systems (sometimes much less), this could result in material waste and inefficiency. This can be especially problematic in these types of demanding markets, as resin tends to be expensive and cost efficiencies and cost savings are always part of the production equation. Equipment footprint is a critical factor that must be considered as well, as more processors are moving their production systems to cells to help maximize usable space efficiently.

Moretto offers a broad suite of auxiliary solutions targeted specifically for precision processing. Whether as a standalone piece of equipment, or combined in a linear process system, across the board these devices are compact yet robust, durable yet maintenance-friendly, powerful yet energy efficient and provide the accuracy that these applications require.

Moretto's Auxiliary Equipment Solutions

Conveying Solutions: Single-Phase Hopper Loaders and Receivers

Take conveying, for starters. An ideal resin-conveying system should maximize uptime by ensuring that waste is minimized, and maintenance is less frequent. Moretto's KASKO single-phase hopper loaders meet these requirements in a compact and functional package.

The rugged, all-stainless-steel hoppers resist rust and corrosion. They fit easily atop processing machines, dryers and blenders. A spring-assist feature permits the lid to be opened easily, allowing safe and easy access for cleaning and maintenance. And, while filter cleaning is overlooked in many processing plants, KASKO is automatically cleaned to keep the vacuum motor and the overall loader up and running.

A discharge access door provides easy inspection of discharge valve; there is no need to pull the receiver out of the blender or drying hopper. The unit is also quiet, registering less than 76 db(A). KASKO is equipped with the soft-start system and air inlet with vortex effect that significantly increases the filter's autonomy.

You won't have to worry about external cables either, an important feature in molding cells, where they can be trip hazards. The control electronics are integrated in the machine through a metal profile to be protected against shocks and dust.

For operations with multiple processing machines, using a centralized conveying system with low maintenance 3-phase conveying power and vacuum receivers in place of self-contained vacuum motors makes the most sense. Moretto has designed the KASKO series of receivers, powerful yet quiet 3-phase vacuum pumps and centralized dust collectors integrated with their One Wire 3 central vacuum controls, the first self-adaptive conveying system on the market based on the plant's effective needs including the conveying distance to the receivers, the feeding time and the line cleaning time.

Moretto's KASKO single-phase compact hopper loader.

One Wire 3 can manage up to 80 devices including receivers, vacuum units and automated resin routing systems, called “Dolphin.” The intuitive 10 - inch, object - oriented touchscreen interface is designed for the overall control of these processes inside the plant.

Drying Solutions: Efficiency, Precision in a Small Package

Micro molding applications often require use of hygroscopic materials that need to be precisely and meticulously dried. Under-drying a material will lead to splay, among other processing issues. Over-drying will tend to make parts brittle and prone to fail. Moretto has several solutions for these demanding applications, notably around its XD Mini and X Comb technologies.

The Moretto line of XD Mini Dryers has become a solution for processors around the world, with more than 15,000 units in operation at plants globally. Thanks to compact dimensions, the XD Mini Dryers can be installed directly onto the processing machine. They are suitable for drying a range of engineering resins such as nylon 6, PBT, PEEK and several materials commonly used in medical, optical, electronics and telephony. These materials are, in fact, in continuous evolution and development and require extensive treatment to ensure that the finished product meets the strict standards required.

The XD Mini line of twin, self-regenerating desiccant towers is based on Zeolite technology that provides a constant -62°F (-52°C) dew point. Available exclusively from Moretto, Zeolite is one of the world's most efficient moisture absorbers. It thoroughly dries the regulated compressed air flow sent to the hopper. The airflow adjustment is automatic in the XD Miniseries. Once operators set just two parameters on an advanced color touchscreen control –

material type and hourly throughput – the dryer automatically manages and adjusts airflow to treat the resin with a significant energy efficiency.

Moretto's Mini-Dryer range: on the left, the XD Mini TX and on the right the XD Mini XM.

Another standard feature, adaptive airflow is an anti-stress feature that prevents over-drying the polymer. The use of the OTX (Original Thermal eXchanger) hopper significantly enhances the performance of the drying unit, making the drying process extremely energy efficient. The OTX is a patented unit fabricated in durable stainless steel with Moretto's elegant Spyro finish.

Moretto's XD Mini XM series is ideal for medical and optical applications. In this design, the OTX hopper is made of clear Pyrex, so its contents are clearly visible.

Multiple connection possibilities via USB and MODBUS serial ports enable these products to be seamlessly integrated in Moretto's supervision and management system (MOWIS), as well as connectable to individual instruments for process data collection. Multiple versions are available for connection to a Master 300 palmtop device for improved ergonomics in multi hopper applications, or in the case of on-machine installations.

Moretto is well-known around the world for its innovative approach to R&D and product development. New products and solutions are designed to simplify the production of plastic products. This makes Moretto a preferred strategic partner for high-technology applications in the medical, electronics and packaging fields. The overriding concern in these markets is for products that improve human life and enhance company competitiveness, always with the goal of achieving smart and sustainable energy use.

Another solution-oriented example is in polymers used for producing high-tech products in small dimensions and high volumes that require special care during the transformation process, beginning with the very first steps of the production cycle. External factors such as ambient temperature and moisture greatly affect the result. Therefore, a system that ensures consistency and stability is crucial to generate high quality products, while at the same time maintaining consistent product characteristics. This is where Moretto's X Comb range dryers have found a home.

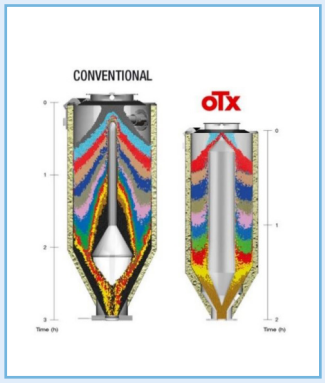
Moretto's X COMB dryer.

Moretto X Comb dryers are a range of super-compact dehumidifying systems that guarantee excellent resin drying performance, regardless of external ambient conditions. The all-electric dryers are ideal for advanced polymers requiring high levels of dehumidification for the technical product being produced. Outstanding performance is achieved by a honeycomb desiccant rotor with molecular sieve made of Zeolite that provides a constant -76°F (-60°C) dew point.

Similar to the XD Mini Dryer line of mini dryers, the X Comb line also features the adaptive anti stress feature that ensures a constant temperature of the polymer by avoiding thermal stress or over-drying and contributing to an intelligent use of energy, all while maintaining production performance at the highest level. The result is tailored drying performance, perfectly aligned with the needs of the resin. And most important, the X Comb series (like all Moretto dryers) align their operation with changes in consumption, so it is the polymer itself that drives the process by modifying their air volume, never changing their drying temperature.

How Variable-Flow Turbo Compressors Make a Difference

The secret to the X Comb's precise control of drying parameters is two Moretto - developed, variable-flow turbo compressors designed to supply only the required airflow needed to optimize drying performance and keep energy consumption in check.



Comparison between a conventional hopper and OTX.

X Comb drying systems are combination hopper and dryer units, mounted to a common throat, ready to be mounted to a processing machine throat. Located adjacent to the drying hopper window is a quick reference readout of the actual process temperature within the drying hopper, plus a row of indicator lights that provide an instant recognition of normal drying operation.

The side of the dryer includes a full-color, compact touchscreen control panel where dryer settings are made and process details are displayed along with explanatory graphics. An onboard library of 100 resin parameters is provided and stored within the control, allowing users to instantly access parameters for easy programming of the dryer for operation. User-customized programs can be easily stored in the dryer for future use, as well. Dryer start-up requires operator input on a color screen only of the resin to be dried and the expected throughput. All other aspects of operation are performed automatically upon start-up, modulating dryer performance accordingly and minimizing energy consumption.

Each X Comb dryer includes a Moretto OTX drying hopper matched to the throughput and resin type. The unique design of the OTX is the result of literally years of development by Moretto in search of reliable, high-level dehumidification of resins with minimum energy usage.

Each hopper is encased in Moretto's exclusive Spyro stainless steel finish, providing optimum insulation and durability. Inside, a unique internal cylinder aligns resin into a uniform mass flow while assuring dehumidified air reaches every pellet. The result is a compact hopper, typically 33% smaller in size than competitive models, and providing a higher level of energy reduction up to 66%. Easy, tool-free access complements the design for cleaning and material changes.

X Comb dryers are available in seven models ranging from 5.3 to 52 lbs. per hour of drying capacity and may be enhanced by a series of additional accessories that can create even more drying efficiency.

Blending Solution: Elevating Precision in Micro dosing

In micro molding and precision extrusion applications, expensive polymers and additives must be dosed judiciously to avoid waste. Moretto's recently launched DGM 20 Gravix is the latest addition to its acclaimed DGM multicomponent gravimetric blender series. The DGM 20 Gravix has been specifically designed for the production of small components where high blending accuracy is paramount.

Moretto DGM 20 Gravix blender.

The DGM 20 Gravix embodies Moretto's commitment to innovation, featuring the exclusive double eyelid shutter valves — a hallmark of precision that sets Moretto apart from competitors. This design ensures the accurate dispensing of resin, regrind, or additives with unparalleled blending accuracy.

Designed to meet the unique demands of low throughput applications with a capacity of up to 44 pounds per hour, the DGM 20 Gravix incorporates Moretto's proprietary Rotopulse technology that allows control and dose batch up to 0.00017 lb (0.08 grams).

This innovative solution ensures precise blending, eliminating wasting of expensive additives and mitigating mistakes. The mixing chamber is hemispherical, eliminating dead spots in the mixing chamber so that every pellet is discharged into the machine throat.

Double eyelid shutter valve on Moretto DGM 20 Gravix machines.

Along with its compact footprint, the DGM 20 Gravix is engineered for easy accessibility, easy cleaning, rapid material changes and tool - free maintenance. Its design emphasizes efficiency, from the dust-tight sealed front door to the tool-free removable weigh bin and mixing chamber, ensuring a clean, efficient blending process with no residual cross - contamination.

The stainless-steel supply chambers are equipped with sight glasses and can be easily swapped out for production changes and cleaning. This attention to detail ensures that the DGM 20 Gravix is not only a perfect fit for molding machines or extruders but also meets the stringent precision requirements of high value manufacturing processes.

Heat Transfer Solutions: Optimizing Defined Temperatures and Energy Savings

Precisely controlling mold temperature is crucial to ensure the quality of the final product.

The use of temperature control units (TCU) responds to processors' needs to bring the fluids of the production lines to very high temperatures in a defined time range. Keeping these temperatures stable for certain periods of time is therefore of key importance and allows optimization of the production cycle and energy consumption.

TE-KO ZERO is a high-performance/ low energy consumption temperature control. It is equipped with a heat exchanger that enables it to work up to 203°F (95°C) and a vibration pump, suitable for working on small molds with narrow passages, guaranteeing constant performance and extreme silence. Made of stainless steel, and suitable for microinjection or extrusion, the TE-KO ZERO is compact and reliable with a heating power of 0.6 kW and offers a simple user interface thanks to the LED control panel.

Moretto TE KO Zero temperature controller.

Connectivity Solution: Tying it All Together

MOWIS is the advanced supervisory control for all Moretto automation that simplifies the management of complex systems and enables connectivity between machines, processes, departments, plants and factories. The platform was entirely developed and designed by Moretto.

Through MOWIS the user controls the status of each piece of equipment and each operation of the system. It manages material usage and production batches, sets and/or modifies process parameters, creates a history, schedules workflow and creates real-time process reports and statistics. MOWIS provides information on the status of machines and identifies their maintenance needs from a predictive perspective and, using historical data, enables forecasting through statistical algorithms and machine learning techniques. Via the OPC UA protocol, Moretto's MOWIS communicates bidirectionally with MES (Manufacturing Execution System).

The ability to deliver precision equipment that provides real solutions when processing precision, ultra-tight tolerances can be a challenge. But this is where Moretto shines, whether it be auxiliaries for material handling/conveying, drying, and blending, temperature control units and more.

Processors producing tiny, high-precision parts need to think holistically when it comes to evaluating and specifying machinery for production. You might be tempted to think the job is done once you've selected the properly sized molding press/extruder and tooling packaging. But the role the right auxiliaries play in keeping part quality and consistency in check can't be overstated.

(**Source:** Plastics Technology / Moretto / 24.09.2024)

Feeders Now Furnished with Portable Touchscreen Controller

New portable controller maintains functionalities of previous controller while introducing significant enhancements.

A new Portable Touchscreen Controller (PTC) is now available across all gravimetric and optometric feeders from Movacolor. (Optometric dosing involves a dosing disk and an optical sensor to count plastic pellets individually.)

Designed with flexibility and efficiency in mind, the PTC reportedly reshapes the way production processes are managed. It is said to maintain the functionalities of the previous controller while introducing significant enhancements to meet the demands of modern production management.

Source: Movacolor

These include:

- Ergonomic 8" full-color touchscreen for easy navigation and control, providing an intuitive, user-friendly interface.
- Single CAN-bus cable offering up to 15 meters of portability, enabling convenient placement and increased flexibility during maintenance and production tasks.
- Storage capacity for up to 1,000 recipes with Basic Recipe Mode (BRM) for faster setup times and more efficient operations.
- Manage up to 15 gravimetric solutions from one control screen, enhancing production flexibility and simplifying workflow management.
- Multiple mounting options, including screws, ties, CMB, VESA and magnetic mounts for easy installation in any environment
- Continuous data logging and process monitoring, ensuring efficient and flexible production management.

(**Source:** Plastics Technology / Moretto / 03.10.2024)

Medical Tubing: Use Simulation to Troubleshoot, Optimize Processing & Dies

Extrusion simulations can be useful in anticipating issues and running "what-if" scenarios to size extruders and design dies for extrusion projects. It should be used at early stages of any project to avoid trial and error and remaking tooling.

Perhaps the most important application of tubing is in the medical field for such functions as delivering intravenous medication, restricting blood flow, tying off wounds, in catheter systems and numerous other purposes. Ensuring that medical devices function and perform properly can truly be a case of life or death. Medical staff must be absolutely sure that their tools are going to perform safely and not pose a health risk to the patients or the environment in which they are used.

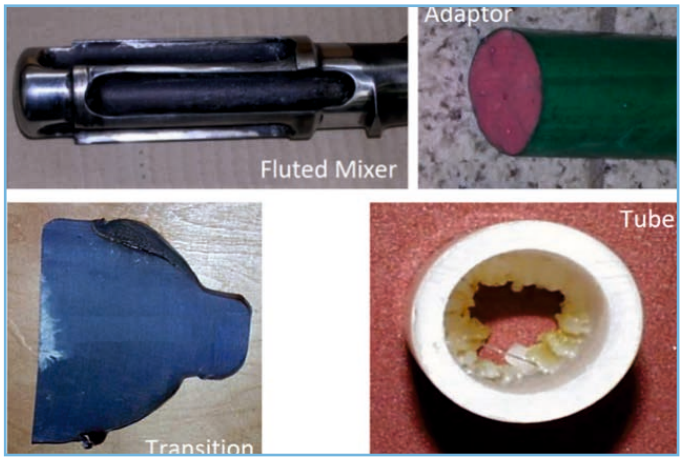


FIG 1 Common problems in medical tubing extrusion: Degradation in an oversized fluted mixer; polymer stagnation along the wall of an adapter; degradation in the transition from the breaker plate to the adapter; and periodic discharge of degraded material from the inner surface of a tube die.

Typical problems in medical tube extrusion include polymer degradation, long product-development time, sensitivity or instability of the process, die design, and high scrap rates (see Fig. 1). These problems can be reduced or eliminated by properly engineering and optimizing the equipment and process conditions. What causes degradation, for instance? Answers would include low shear stress, long residence time, operator errors, excessive temperature and very high shear stress.

We were recently engaged by a processor that was using an 18- and a 25-mm extruder with L/D ratios of 24:1 and 30:1, respectively, for a medical tubing project. A die was made for the project, but trials indicated degradation of material, polymer stagnation, burns at transitions, marks on the extruded product, and tolerance variations. We used VEL (Virtual Extrusion Laboratory from Compuplast) simulation software to reduce the trial and error that would otherwise be involved in finding the source(s) of these problems and the resulting waste in time, money and materials.

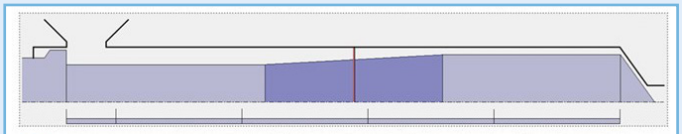


TABLE 1 Process Conditions Used in the Simulation

Output	1.5 kg/hr
Screw Diam.	18 & 25 mm
L/D Ratio	24 & 30 (respectively)
Temperature Profile 1 (C)	190, 190, 205, 205
Temperature Profile 2 (C)	210, 210, 205, 205

Shear Rate and Shear Stress

Table 1 (above) shows the typical barrel heater temperature settings this processor was using. The following equation describes the relationship between the shear stress, shear viscosity, and shear rate:

$\tau = \eta \times \gamma$

Where:

τ = Shear Stress
η = Shear Viscosity
$\dot{\gamma}$ = Shear Rate

Figure 2 shows typical shear-viscosity versus shear-rate data for TPU at five temperatures. This type of material data is required for proper engineering of the extrusion equipment. The values in the graph emphasize how the viscosity varies with temperature and shear rate.

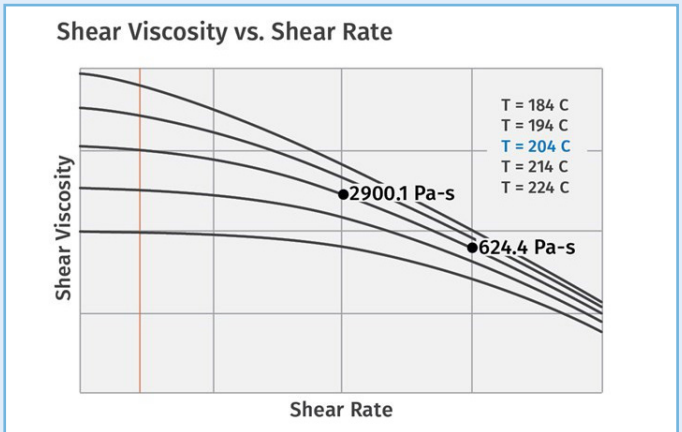


FIG 2 Typical shear-viscosity vs. shear-rate data for TPU at five temperatures (T). The values in the graph emphasize how the viscosity varies with temperature and shear rate.

Shear thinning is a common behavior for polymers in general, and it is the main material characteristic that determines how a material will flow through a die. The shear stress that the material exerts on the metal wall (wall shear stress) determines whether the system will be "self-cleaning" or will promote degradation. Without sufficient wall shear stress, a layer of essentially stagnant material will be formed and, over time, will degrade.

Maintaining adequate wall shear stress helps avoid this type of degradation and allows the equipment to operate for a longer time before it needs to be disassembled and cleaned. What is a sufficiently high shear stress? Well, it is not known for certain and may depend on the type of polymer, but here are some design values that have been used successfully.

- LDPE: 30 kPa
- PVC: 35 kPa
- HDPE: 30 kPa
- LLDPE: 30 kPa
- EVOH: 50 kPa

(Shear rate should be more than 8 1/s)

Note that these are "design values" and have some safety factor included to allow for variations in production rate. The actual critical values are probably 50 to 70% of the above reported figures.

Extruder Simulation

Table 1 shows a sketch of an extruder screw profile (flights not shown) along with typical process conditions. In this case, the required output is 1.5 kg/hr.

That screw geometry and process conditions were selected to simulate the performance of an 18- mm screw. Figures 3 and 4 show the shear rate and shear stress along the screw, respectively.

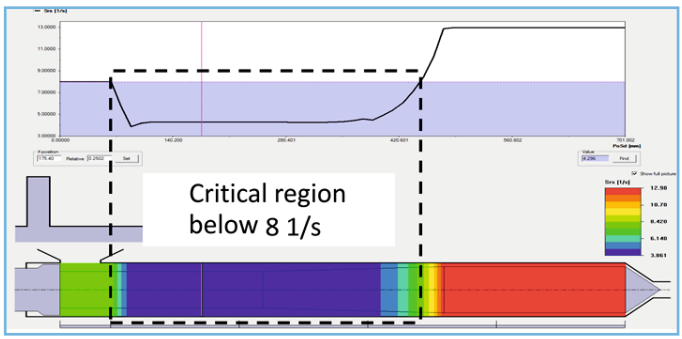


FIG 3 Shear-rate profile along the screw. The blue-shaded area in the graph shows the region below a "critical value," which should be avoided. The critical wall shear rate is 8 1/s and a large portion of the screw surface is below this value.

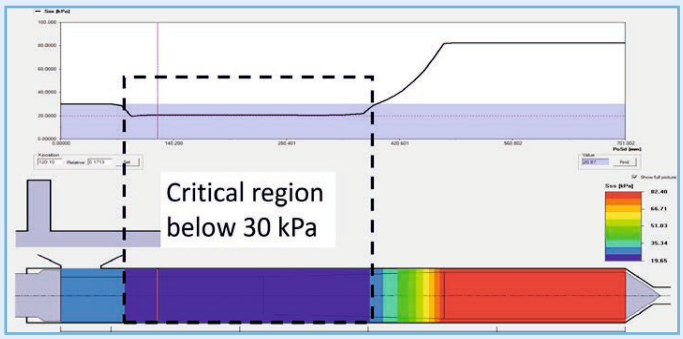
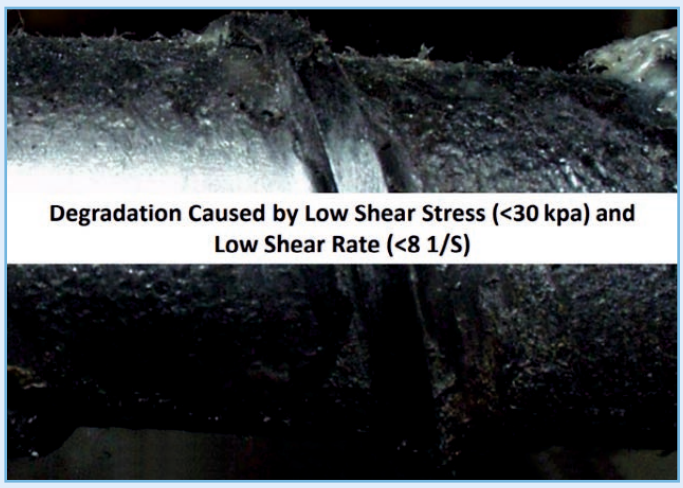


FIG 4 Shear-stress profile along the screw. As the blue-shaded area reveals, a large region of the screw surface has a wall shear stress below the "critical value" of 30 kPa.

The blue shaded area in the graphs shows the region below a "critical value," which should be avoided. The critical wall shear rate is 8 1/s and a large portion of the screw surface is below this value (Fig. 3). Figure 4 is the corresponding graph of the wall shear stress and shows that a large region of the screw surface has a wall shear stress below 30 kPa. Such "critical values" have been determined empirically by a large number of flow fields and correlating observations of degraded materials on walls to shear rate and shear stress.

Figure 5 shows a screw surface with a layer of degraded material caused by low shear rate and shear stress. Degraded material on the screw can appear as black specks in the product, affecting product quality and aesthetics.



Material degradation on the screw surface.

Table 2 summarizes the minimum shear rate and shear stress on the existing 18- and 25-mm diam. screws, at various process conditions for a throughput of 1.5 kg/hr.

TABLE 2 Problematic Process Conditions (Targeted Output: 1.5 kg/hr)

Diameter, mm	Temperature at Setup, C	RPM 1/min	Shear Rate 1/s	Shear Stress kPa
25	190, 190, 205, 205	9.8	2.4	25.3
18	190, 190, 205, 205	2.4	4.9	41.2
25	210, 210, 205, 205	12.8	2.6	16.5
18	210, 210, 205, 205	28	5.1	20.4

All of the conditions the processor proposed resulted in very low wall shear rates and some also had low wall shear stresses. The conclusion was that the processor's extruders were too large for such a low-output extrusion project.

Table 3 shows a simulated DOE in which different designs were evaluated for adequate shear rate and shear stress at the required output. The predicted temperature variation is also shown.

Results of simulations using the VEL software in Table 3 revealed that the 15-mm design generated sufficient wall shear rate and wall shear stress, while also providing acceptable melt-temperature variation. A new, smaller extruder with the optimized screw was installed, and the processor reported significant reduction in scrap during startup and complete elimination of black specks in the product.

TABLE 3 DOE Using Simulation (Targeted Output: 1.5 kg/hr)

Original Screw	Scaled Diam., mm	RPM 1/min	Min. Shear Rate, 1/s	Minimum Shear Stress, kPa	Temperature Variation, C
Design 1 (25 mm)	18	44.3	9.8	41	3.4
	15 ✓	78.8	15.8	59.1	5.4
	12	121	19.5	79.2	8.8
Design 2 (25 mm)	18	43.1	9.3	39.5	3.2
	15 ✓	76.4	15	57	5.2
	12	132	10.4	65	7.8

In this project, it was found that the equipment available to the manufacturer was too large for the relatively low output that was required for this project. Consequently, the polymer was degrading on the screw surface. Ultimately, simulations identified a smaller extruder, with a screw optimized for the low rate, more applicable for the project.

It was also determined through simulations that the die was not optimized, as it also had many regions of low shear rate and low shear stress on the metal surface, where the polymer would ultimately degrade. It is often difficult to realize that there is degraded material forming in the die if it occurs on

the inner surface. Follow-up analyses that helped the manufacturer design a die better suited for the project are planned for a follow-up publication.

About the Author: Dr. Ben Chouchaoui is a technical consultant for Windsor Industrial Development Laboratory Inc., Windsor, Ont., where he has worked since 2009. In his career, he has boosted technical capabilities of employers in FEA/CAE and CFD/CAM; established laboratory and simulation tools for demanding functional systems; correlated numerical calculations to processing and durability tests of products; supervised engineers; managed government-funded research; developed and maintained accounts (clients); and trained new engineers and R&D personnel in FEA and CFD. Contact: 226-340-7212; bencho@windsorlabs.ca.

(**Source:** Plastics Technology / 15/10/2024)

How to Decrease the Extrudate Temperature in Single - Screw Extruders

In many cases, decreasing the discharge temperature will improve product quality and perhaps even boost rate. Here are ways to do it.

Many plasticating, smooth-bore, single-screw extrusion processes benefit from decreasing the extrudate or discharge temperature. These processes include foam sheet, pipe and profile extrusion, and blown film.

For example, foam sheet will typically have a higher quality when the extrudate temperature is decreased. This is because the foam will be less likely to collapse at the lower discharge temperature, maintaining a low foam density and high surface aesthetics. For pipe and profile extrusion, a lower extrudate temperature will provide improved cross sections by reducing resin sag or the distortion of the profile by reducing the resin movement due to gravity. Blown film processes become more stable with a lower extrudate temperature, proving less variation in film thickness in the machine direction. Moreover, all these processes could have a rate increase if the extrudate temperature can be reduced.

There are several short-term and a few long-term solutions to this technical problem. The simplest short - term solution is to decrease the barrel temperatures that cover the metering section and mixer. As a guide, every reduction of 10°C on the metering section barrel zones will decrease the extrudate temperature by 2-3°C. This guide works well for 3.5-inch diameter extruders and smaller that do not have worn screws and barrels.

For larger diameter extruders and extruders that are worn, the decrease in temperature will be less than 2oC. The barrel temperature zones that cover the solids conveying section and melting section should not be decreased. If these zone temperatures are decreased, poor solids conveying and possibly flow surging can occur and the melting process may not be complete.

Reducing the discharge pressure will allow an increase in the specific rate and a decrease in the discharge temperature. The specific rate is simply the rate divided by the screw speed. The best short-term solution to decreasing the discharge pressure is to replace fine mesh screens with screens that have a coarse mesh such as to reduce the restriction to the flow. For example, a 6-inch diameter extruder running a 1 dg/min (2.16 kg, 190oC) melt index (MI) resin at 1,600 lbs/hr as a function of discharge pressure is shown in Figure 1. For a fine mesh screen in the filter pack or for a fouled screen, the discharge pressure can be relatively high.

In the case of Figure 1, the maximum discharge pressure was 3,500 psi with a discharge temperature of nearly 237oC. If a courser screen could be used, the discharge pressure might be able to be decreased to 2,000 psi and a discharge temperature of 234°C. This operation decreased the discharge temperature by about 2.3°C. The plant, however, has decreased the level of filtering which could decrease the value of the product. The reduction in filtering ability may not be worth the small reduction in discharge temperature.

The Gear Pump Option

Two additional long-term options are possible. The first and highest cost option is purchasing and installing a gear pump. The pump would be positioned between the extruder and the filter pack. Gear pumps typically operate with an inlet or suction pressure of about 700 to 1,200 psi, and it would discharge at a much higher pressure at a metered rate. Thus, the discharge pressure of the extruder would be the inlet pressure to the pump.

Mobile Sorting Container to Tackle River Plastic Pollution

Stadler and Everwave have launched a project for the development of the world's first mobile sorting container, SortX, to combat plastic pollution in rivers.

The SortX mobile sorting container enables the efficient separation of various materials, allowing waste to be sorted into recyclable and non-recyclable categories. This capability ensures that plastics collected from rivers can be processed to close the waste loop. Designed for mobility, SortX is compact, quick to set up, and ready for operation. At 6 tons, it is suitable for sea transport without restrictions, providing flexibility in deployment across various locations, including remote areas where waste can be sorted directly at the collection site.

The immediate processing and recycling of waste on-site enhances the efficiency of cleanup operations and reduces the environmental impact associated with transport. Additionally, SortX eliminates the need for extra infrastructure or costs for interim waste storage. With the mobile sorting container, it is also possible to test the feasibility of new, permanent sorting stations at desired locations.

Equipped with four manual sorting containers and a robust wooden floor, the container is designed for versatile use in various environments. The frequency-controlled sorting belt allows for adjustable speed settings, optimizing the sorting process for different materials and personnel.

Equipped with four manual sorting containers and a robust wooden floor, the container is designed for versatile use in various environments. The frequency-controlled sorting belt allows for adjustable speed settings, optimizing the sorting process for different materials and personnel.

The SortX prototype has been in operation in Kukës, Albania, since mid - June. everwave's garbage collection boat gathers the waste, which is manually sorted on the riverbanks before being fed into the sorting container. Initial results are promising: around 30,000 kg of waste has been collected, with the SortX sorting container processing approximately 30m3 per hour. Due to the high proportion of PET bottles in the collected waste, about 80% is recyclable.

(**Source:** Recycling Magazine / Stadler / 12.09.2024)

Plastic Waste Management Market to Witness Growth Acceleration by 2024 - 2032

The global plastic waste management market is set to experience remarkable growth over the coming years, as sustainability initiatives gain momentum worldwide. In 2022, the market was valued at USD 33.6 billion and is expected to reach USD 51.3 billion by 2032, growing at a CAGR of 4.7% from 2023 to 2032. As environmental concerns surrounding plastic pollution continue to rise, the demand for efficient waste management strategies is higher than ever. Governments, industries, and consumers alike are pushing for stronger initiatives to reduce plastic waste, providing significant opportunities for growth in this market.

Market Overview

Plastic waste management refers to a systematic approach involving the collection, sorting, recycling, and disposal of plastic materials. These efforts aim to reduce the environmental impact of plastics, which have become a major pollutant threatening ecosystems and biodiversity. While plastics offer undeniable utility in industries such as packaging, healthcare, and construction, improper disposal and single - use products have created a global crisis.

Plastic waste management solutions seek to address these issues by enhancing recycling capabilities, promoting waste minimization, and developing innovative disposal technologies. The market benefits from heightened environmental awareness, governmental regulations, and the drive toward a circular economy.

Market Drivers

Rising Environmental Awareness and Regulatory Initiatives: Growing concerns over the detrimental effects of plastic pollution on oceans, wildlife, and human health have prompted various governmental policies aimed at curbing plastic waste. Legislation encouraging plastic recycling and sustainable production is driving market growth as companies adapt to stringent waste disposal standards. The European Union's Circular Economy Action Plan and similar initiatives across the globe are compelling industries to adopt eco - friendly practices, thus boosting the demand for plastic waste management services.

Technological Advancements in Recycling

Advancements in plastic recycling technologies are contributing to market expansion. New developments in chemical recycling, pyrolysis, and biodegradable plastics are making it easier to convert waste into reusable materials, thus reducing the need for raw plastic production. These innovations also offer cost-effective solutions for industries, further encouraging the adoption of advanced waste management strategies.

Circular Economy Initiatives

The circular economy model, which emphasizes reducing waste and reusing materials, is another key driver in the plastic waste management market. Corporations and governments are increasingly investing in circular economy initiatives, which focus on maximizing the lifecycle of plastic products through recycling and re-manufacturing. This shift from a traditional linear economy (make-use-dispose) to a circular one is anticipated to play a crucial role in the future of plastic waste management.

Market Strategies

Strengthening Recycling Infrastructure: One of the primary strategies to enhance plastic waste management is the development of a robust recycling infrastructure. Governments and companies are working together to set up efficient collection and sorting systems that allow for the seamless recycling of plastics. By improving waste management frameworks, regions can reduce landfill dependency and ensure that a larger portion of plastic waste is properly processed.

Public-Private Partnerships (PPP): To tackle the growing issue of plastic waste, collaboration between governments and private companies is crucial. Public - private partnerships are driving investments into waste management systems, enabling local municipalities to implement advanced solutions, and creating incentives for businesses to reduce their plastic footprint.

Emphasis on Consumer Awareness: Raising awareness among consumers about the impact of plastic pollution is another strategic approach. Governments and NGOs are promoting behavioral changes through educational campaigns that encourage the use of reusable products, proper waste segregation, and participation in recycling programs. Greater consumer involvement is expected to further boost demand for sustainable waste management solutions.

Corporate Sustainability Commitments: Companies are also integrating sustainability into their corporate strategies, setting ambitious targets for plastic waste reduction and adopting eco - friendly packaging. Major corporations, including those in the fast-moving consumer goods (FMCG) sector, are pledging to use more recycled content in their products. This trend is contributing to the growing demand for recycled plastics, thus fueling the growth of the plastic waste management market.

Market Benefits

Reduced Environmental Impact: Effective plastic waste management solutions mitigate the environmental damage caused by plastic pollution. By improving recycling processes and reducing plastic waste leakage into oceans and landfills, the market plays a vital role in addressing one of the most pressing environmental challenges of our time.

Economic Opportunities: The rise of the plastic waste management market presents numerous economic benefits. Job creation in the recycling and waste management sectors is expected to grow, alongside opportunities for technological innovation in waste processing. Companies that invest in sustainable waste solutions may also see cost savings in the long term by reducing raw material dependency.

Support for Global Sustainability Goals: The market is aligned with global sustainability efforts, such as the United Nations Sustainable Development Goals (SDGs), particularly those targeting responsible production and consumption (SDG 12) and climate action (SDG 13). Effective plastic waste management solutions help industries and governments meet their sustainability targets, contributing to a healthier planet.

Future Market Aspects:

The plastic waste management market is expected to witness significant growth through 2032, driven by:

- Government regulations promoting environmental sustainability and waste reduction.
- Technological innovations that enhance recycling capabilities, making waste management more efficient.
- The adoption of circular economy principles that focus on reducing waste and maximizing the lifecycle of plastic materials.
- Corporate social responsibility (CSR) initiatives that emphasize sustainable practices and green production.

Conclusion: The global plastic waste management market is on a steady growth trajectory, backed by regulatory initiatives, technological advancements, and increasing environmental awareness. As businesses, consumers, and governments unite in the fight against plastic pollution, the market is poised to see continuous innovation and expansion. By embracing sustainable strategies and improving recycling infrastructure, the industry will play a critical role in building a more sustainable future.

(**Source:** openPR/ 27.09.2024)

UC Berkeley Researchers Crack the Code on Recycling Plastic

Scientists at UC Berkeley say they've cracked the code to reduce the amount of plastics that pollute the earth. The researchers have come up with a chemical recycling process that pulls apart the chains of the most commonly used plastic.

“We're trying to turn the plastics back into the raw materials that made them, which are gasses,” said grad student RJ Conk, who led the research.

Plastic scrap

He said that once the plastic is broken down, it can be recycled and used again. Study co-author John Hartwig says they basically cracked the code on recycling plastics so that less pollution clutters the planet.

“Much of the plastic that we're not supposed to put in our recycling stream we could consider as a feedstock for creating new plastics,” he said. “And by doing that, we're not going to make more plastic. We're just going to take less carbon out of the ground and less petroleum out of the ground to make the plastics that we're already making.”

Hartwig does note that putting the recycling process into practice “will take many steps,” and that plastics that include PVC, polystyrene, or contaminants like food dye still can't be recycled.

“But I think what we've shown is that this could be feasible to do, and I think before this people didn't think that was possible,” he said.

(**Source:** KNX News)

QM Recycled Energy Installs a Modular Waste Pre - Treatment System

The modular, automated Q20 QMRE pre-treatment system ensures that all relevant polymers are extracted correctly. This is a stepping stone in the company's effort to develop a UK - wide network of plastic waste - 2 - oil systems.

Exclusive to QMRE, the Q20 features a bale shredder, friction cleaner, fines segregation and a wet shredder to help reduce the plastic waste to a suitable size for VIXLA. It also has a sink float tank for the polymers, which are later compressed and dried in a cyclone before entering the storage silo. These are then moved into the VIXLA plastic waste - 2 - oil system.

The Q20 integrates with the VIXLA V5 modular plastic waste-2-oil system, which processes about 20 tonnes every day. This means 20 tonnes less of end-of-life plastics in the environment.

Originally built in Europe to QMRE's specifications, the Q20 is now being commissioned for trials.

As Tim StClair-Pearce, QMRE CEO, states, "The delivery of the Q20 pre-treatment system is an important stage in QMRE's development. We now look forward to receiving the VIXLA system very shortly.”

Dave Garbett, QMRE Property & Sales Director, adds, "Thanks to the skills of the contractors and the preparatory work of QMRE staff, what could have been a difficult installation passed off perfectly.”

(**Source:** Interplas Insights / 04.10.2024)

MILACRON®

Your Plastics Processing Partner

Milacron Injection Molding Solutions for Automotive Applications:

- Electrical and Electronics Systems
- Under the Hood
- Instrument Panel and Interior Components
- Exterior Body

For over 50 years, Milacron has pioneered advanced injection molding solutions, fueling the growth of global automotive manufacturers. Today, we continue to set industry benchmarks through innovation in plastics processing, a comprehensive product portfolio, IIoT-enabled solutions, and a PAN-India network that ensures proactive service support. With Milacron, you're not just investing in injection molding technology- you're partnering with a leader committed to driving your success forward.

enquiry@milacron.com | +91 72279 09818 | milacron.com | FOLLOW US Milacron India