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# PLASTISCOPE

The Official Journal of the Organization of Plastics Processors of India

Volume No. 13

• Issue No. 12

• Mumbai

• June 2025

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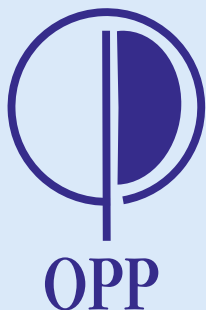
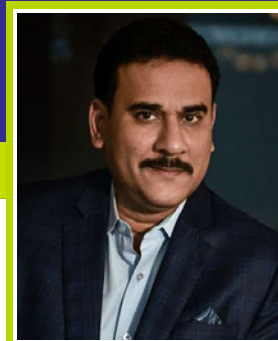


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# FROM THE PRESIDENT'S DESK

Mr. Pradeep Rathod



## CONTENTS

From the President's Desk .....	3
News From India .....	26
Plastic Products and New Technologies .....	40
Plastic Raw Materials .....	49
Plastic Machinery .....	53
Circular Economy/ Bio-plastics/ Recycling .....	56

Dear Members,

Greetings from Organization of Plastics Processors of India!

Shri B. K. Goenka, Chairman, Welspun World has consented to be the Chief Guest at our 41st Annual Meet. He is an Indian billionaire businessman and the Founder and Chairman of Welspun World, a multinational conglomerate. He has also served as President of the ASSOCHAM. The details of OPPI Annual Meet will be informed to you shortly. I appeal to all OPPI members to ensure that they are present for the OPPI Annual Meet.

I have been emphasizing on exports of plastic products since the share in exports of plastic products from India is just 1% in the global exports of plastic products.

Organization of Plastics Processors of India is jointly promoting conferences on – "Boosting India's Export of Plastic Finished Products by 4X in 3 Years." The objective of this conference is to make India Global Sourcing Hub for plastic finished products. The first conference is being held on 17th July 2025 at Le Méridien, New Delhi. Thereafter this conferences will be held in Ahmedabad and Mumbai. I appeal to all OPPI members to participate in these conferences.

Commerce Minister Shri Piyush Goyal has stated that the entire cost of registering MSME products in new global markets will be funded by the government. "I am thinking of coming out with a scheme that any MSME that needs to spend any amount of money to register their products anywhere in the world, particularly for new products, new markets, new exporters, the government will fund the whole cost," he said on June 9 while addressing an Indian business delegation.

This initiative is expected to become a key component of the Export Promotion Mission (EPM), which comprises 12 components. These include easy credit facilities for MSMEs, e-commerce export support, facilitation of overseas warehousing, and global branding activities to seize emerging export opportunities.

As informed to you earlier OPPI has tied up with Tibro Tours Pvt. Ltd. for K 2025 packages. A large number of Indian companies connected with plastics could not visit K 2022 since slots for Schengen Visa Appointment were not available for long periods of time. I hope all OPPI members have taken action for timely receipt of Schengen Visa.

It is a matter of satisfaction that there is a ceasefire in Iran – Israel war. The continuation of this conflict would have resulted in disruptions of the Supply Chain.

As you are aware OPPI Directory will be published in January 2026. In case, if you have not mailed the updated information to OPPI Secretariat, kindly do the needful at the earliest.

With Best Wishes,

**Pradeep Rathod**  
President, OPPI

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**





Organization Of  
Plastics Processors Of India

## ADVERTISEMENT IN OPPI DIRECTORY- 2026

With the fast changing business environment and the growing competitive world, it becomes important for all those connected with the Plastics Industry to increase the visibility of their activities.

Organization of Plastics Processors of India will be publishing Membership Directory 2026. The directory will be distributed to all OPPI members, Plastic Associations in India, Major Chambers of Commerce and Industry/Industry Associations in India and abroad, Trade Promotion Organizations, Financial Institutions and Diplomatic Missions.



### Unique features associated with OPPI Directory 2026:-

- ✓ OPPI Directory distributed in all International exhibitions promoted by OPPI. Advertisers get noticed by the importers in various countries.
- ✓ Advertisement in OPPI Directory gives wide publicity to products and services of advertising company.
- ✓ MNCs setting shop in India refer to OPPI Directory for outsourcing their requirement of plastic products from India.
- ✓ Multi-national Retail Chains refer to OPPI Directory for outsourcing their requirements of plastics based goods; flexible packaging material etc.
- ✓ Foreign Plastics Processing Machinery Manufacturers, polymer producers etc. consider OPPI Directory as a reliable aid to reach their target customers in India.

### Please Contact

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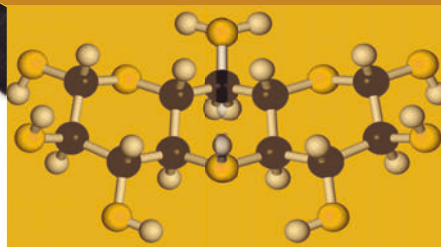
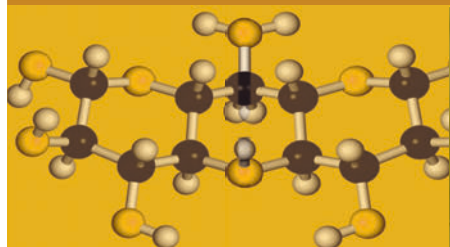
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A world without plastic is entirely possible.  
Only, a little inconvenient.



The truth is, replacing this truly versatile material is easier said than done. Be it stainless steel, glass, natural fiber cloth, ceramics or even tree-free paper, what most people do not realise is that the carbon footprint of materials other than plastic is way higher, especially when taken at scale. What we should concentrate on instead is its judicious use through the principle of **reduce, reuse and recycle**.

To know more, follow [fnpindia.com](https://fnpindia.com)

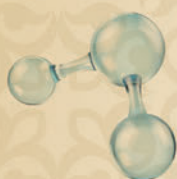


**Fight Pollution Not Plastics** - A Reliance initiative, supporting Indian Centre for Plastics in the Environment (ICPE) to eradicate plastic pollution and creating awareness about responsible use of plastics.

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# CONFERENCE ON BOOST INDIA'S EXPORT OF PLASTIC FINISHED PRODUCTS BY 4X IN 3 YEARS

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# 2025

THURSDAY, 17<sup>th</sup> JULY



Le Méridien,  
New Delhi



9:00 AM to 5:00 PM

### LAUNCHING OF THE EXPORT STUDY OF PLASTIC FINISHED PRODUCTS FOR 21 COUNTRIES

## CONFERENCE HIGHLIGHTS

Increase in Exports of  
Plastic Finished Products  
by 4X in 3 Years

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Export Footprint

Plastic Export Success  
Stories: Lessons from  
Industry Leaders

Sessions on Business  
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Market Diversification

Role of Technology in  
Enhancing India's  
Plastic Exports

Sessions on Quality,  
Compliance, Communication,  
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Country wise Market Guidance

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## Cambodia's Economic Outlook for 2025 Shows Strong Growth!

We warmly welcome all relevant companies to participate in this year's Cambodia International Machinery Fair!

With over 220 companies will attend the show, this is a golden opportunity to explore and develop your presence in Cambodia's growing market.

Don't miss your chance to be part of this exciting event!

### MARKET NEWS!

#### Gross Domestic Product (GDP) Growth:

The Cambodian government anticipates a growth rate of 6.3% for 2025, driven by expansions in key sectors:

- Industrial Sector: Projected to grow by 8.6%.
- Service Sector: Expected to increase by 5.6%.
- Agricultural Sector: Forecasted to rise by 1.1%.

#### Manufacturing Sector Expansion

In 2024, the number of manufacturing enterprises in Cambodia reached 2,316 as of November, marking a 10% increase from the previous year. This expansion reflects the sector's robust development and the establishment of new manufacturing facilities.

#### Rising Machinery Imports

##### Government Initiatives and Economic Outlook.

The Cambodian government has implemented policies aimed at diversifying the industrial sector and promoting investment in manufacturing. These efforts are expected to further boost the demand for machinery and equipment. The Asian Development Bank projects Cambodia's economic growth at 5.8% for 2024 and 6.0% for 2025, indicating a favorable environment for continued industrial expansion.

### Prices

#### Bare Space

**USD 210 / sqm ( Min 36 sqm = USD 7,560 )**

Standard Package: Carpeting, 3 folding chairs, 1 round table,  
1 information desk, 1 waste basket, wall partitions, fascia name, 2 spotlight,  
1 fluorescent light, one 5-AMP power point

#### Shell Scheme

**USD 240 / sqm ( Min 9 sqm = USD 2,160 )**

• Corner fee 10% surcharge

• 5% VAT excluded

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## Organization Of Plastics Processors Of India

# CIMIF

The 9<sup>th</sup> Cambodia Int'l  
**Machinery**  
Industry Fair

## 6 – 9 August 2025

Diamond Island Convention &  
Exhibition Center  
Phnom Penh, Cambodia



Exhibition Venue	Diamond Island Convention and Exhibition Center (Tonle Bassac Commune, Chamkarmorn Dist., Diamond Island City, Phnom Penh, Cambodia)
Exhibition Date and Time	August 6 (Wed.) – 9 (Sat.), 2025 Show Times: 09:00 – 17:00 (Last day will close at 15:00)
Organizer	Yorkers Trade and Marketing Service Co., Ltd.
Co-organizer	Cambodia Chamber of Commerce
Official Supporter	General Directorate of Trade Promotion, Ministry of Commerce (TPD) Korea Packaging Association (KOPA) Ministry of Industry, Science, Technology and Innovation (MISTI)
Show Management	Chan Chao International Co., Ltd.

### The Largest Specialized Machinery Exhibition at Cambodia

After a long break, CIMIF is back again! Before COVID-19, we attracted 8,000 to 10,000 professional visitors yearly. In 2025, CIMIF will once more provide a great opportunity for exhibitors to reach a large portion of the international machinery industry in Cambodia.

### High Potential Market

Due to many countries having lifted pandemic regulations and the global economy recovering, Cambodia's GDP growth is expected to pick up again. It is predicted increase by 6.3 percent in 2025. The Kingdom is considered as one of the most open and dollarized economies among ASEAN members, and provides numerous benefits to foreign investors.

### Officially Supported by the Cambodian Government

CIMIF is co-organized with the Cambodia Chamber of Commerce.

### Why Exhibit in CIMIF?

- > CIMIF – The Only International Machinery Industrial Fair in Cambodia.
- > CIMIF – The Best Platform to Reach Potential Buyers.
- > CIMIF – Your Gateway to ASEAN Market.

### Shell Scheme:



Includes: 1 Carpet Floor, 1 3-Sided System Panel, 1 Set of Fascia Panels, 1 Reception Desk, 1 Round Table, 3 Chairs, 1 Fluorescent Light, 2 Spotlights (100W), 1 Waste Basket, 1 5A/220V Single Phase Socket Plug

### Space Only

Includes: Name of Exhibitor in Catalogue



### Exhibitor Benefits

#### 1 Exhibitors Profile

Exhibitors at IPF are entitled to numerous event and promotional opportunities. The organizer would like exhibitors to have the maximum branding exposure at the show, so please take advantage of any and all benefits.

#### 2 Online Product lists

Five Products Information for visitors' reference will be uploaded to website for free. Additional product lists will be charged upon request.

#### 3 Exhibitor Press Release

One Exhibitor Press Release will be uploaded to website for free. Additional Press Release will be charged upon request.

#### 4 Invitation Card

The Organizer offers free invitation cards for exhibitors to invite their suppliers or clients. The Organizer reserves the right to the quantity of invitation cards.

#### 5 Visa Invitation Letters

The Organizer issues invitation letter to exhibitors for applying visa upon request.

### Remarks:

- Each Shell Scheme Booth, will be provided with 220V/5A electricity free of charge. Additional power supply and drainage will be at exhibitor's expense.
- The raw space booth is without partition, carpet, or any display facility. Booth facilities are available on a rental basis from the official contractor.

Deepak Lawale, Secretary General, ORGANIZATION OF PLASTICS PROCESSORS OF INDIA,  
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## VIETNAMPRINTPACK 2025

The 23<sup>rd</sup> Vietnam Int'l Printing & Packaging Industry Exhibition

10-13 September 2025

Saigon Exhibition & Conference Center (SECC)

Ho Chi Minh City, Vietnam



We have the pleasure of  
inviting you to participate  
in VietnamPrintPack 2025  
scheduled from 10-13  
September 2025 at Saigon  
Exhibition & Conference  
Center (SECC),  
Ho Chi Minh City,  
Vietnam

### 2024 VIETNAM EXPO AT GLANCE

Exhibitors  
362

Gross Space  
(sqm)  
19,850

Booths  
900

Visitors  
20,660

#### ●●● PARTICIPATION FEES:

- ✓ Shell Scheme (Minimum 9 sqm): USD 320
- ✓ Including Needle Punch Carpet: Wall Partitions, Carpet, Company Fascia, 3
- ✓ Folding Chairs, 3 Spotlights, 1 Reception Table, 1 Round table, 1 Dustbin, 1 Single Phase 5 amp/ 220v Plug.
- ✓ Raw Space Only (Minimum 36 sqm): USD 300/sqm

Please fill up the contract form attached herewith and Email scanned copy of filled Application form to [secretarygeneral@oppindia.org](mailto:secretarygeneral@oppindia.org)

#### GET IN TOUCH Deepak Lawale, Secretary General, ORGANIZATION OF PLASTICS PROCESSORS OF INDIA



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We have the pleasure of inviting you to participate in VietnamPlas 2025 scheduled from 17<sup>th</sup> – 20<sup>th</sup> Sept., 2025 at Saigon Exhibition & Convention Center (SECC), Ho Chi Minh City, Vietnam

## VietnamPlas 2025

The 23<sup>rd</sup> Vietnam International  
Plastics & Rubber Industry  
Exhibition  
17<sup>th</sup> – 20<sup>th</sup> Sept., 2025  
Saigon Exhibition &  
Convention Center (SECC)  
Ho Chi Minh City, Vietnam

### SHOW REPORT 2024

GROSS SPACE 23,000 SQM	EXHIBITORS 700
BOOTHS 1,100	COUNTRIES & REGIONS 20
VISITORS 20,390	EXHIBITOR SATISFACTION 88%
VISITOR SATISFACTION 86%	

### PARTICIPATION FEES:

- Standard Booth: USD 340 / sqm (Min. 9 sqm)
- Includes : Wall Partitions, Carpet, Company Fascia, 3 Folding Chairs, 3 Spotlights, 1 Reception Table, 1 Round table, 1 Dustbin, 1 No. of 5Amp/220V single phase power socket (max. 600W)
- Raw Space: USD 310 / sqm (Min. 18 sqm)
- \*Corner Fee: 10% surcharge based on Total amount.
- \*The prices above exclude VAT at 5%.

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### ORGANIZATION OF PLASTICS PROCESSORS OF INDIA

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## Govt Plans Scheme to Support MSME Exporters in Registering Products Abroad, Says Piyush Goyal



The government is planning a scheme to fully fund product registration costs for MSME exporters in new markets. This move is part of a broader Export Promotion Mission.

In a bid to enhance India's export performance and promote the presence of MSMEs in new international markets, Commerce and Industry Minister Piyush Goyal announced that the government is working on a scheme to support exporters. The scheme will specifically target registration expenses of new products in unfamiliar markets, forming part of the wider Export Promotion Mission (EPM) outlined in the Union Budget.

## Government to Bear Full Cost of Export Product Registration

Commerce Minister Shri Piyush Goyal has stated that the entire cost of registering MSME products in new global markets will be funded by the government. "I am thinking of coming out with a scheme that any MSME that needs to spend any amount of money to register their products anywhere in the world, particularly for new products, new markets, new exporters, the government will fund the whole cost," he said on June 9 while addressing an Indian business delegation.

This initiative is expected to become a key component of the Export Promotion Mission (EPM), which comprises 12 components. These include easy credit facilities for MSMEs, e-commerce export support, facilitation of overseas warehousing, and global branding activities to seize emerging export opportunities.

## Boosting Brand Value and Strengthening Trade Infrastructure

The EPM is structured into two major segments: Providing Trade Finance Support (NIRYAT PROSAHAN) and Driving International Holistic Market Access (NIRYAT DISHA). With exports reaching \$825 billion in 2024-25, up from \$778 billion in the previous fiscal year, MSMEs contribute over 40 per cent to the country's export volume.

Minister Shri Goyal urged Indian exporters to focus on brand building and value addition.

Goyal further highlighted progress on Free Trade Agreements (FTAs), already signed with the UAE and Australia, with ongoing talks with Oman, New Zealand, and the EU.

### Conclusion

The upcoming MSME export scheme and broader trade initiatives reflect the government's push to enhance market access, reduce operational costs for small exporters, and boost India's presence in the global trade network. With FTAs, branding efforts, and infrastructure upgrades in motion, India aims to solidify its position as a competitive global exporter.

### Cosmo First Commissions New BOPP Packaging Manufacturing Line with Capex of Rs. 400 Crores+ and World's Most Advanced Technology

- One of the world's highest capacity lines with an annual output of **81,200 MT**
- Increases the company's total BOPP capacity by approx. **40%** to **2,77,000 MT** per annum



**New Delhi, 2nd June 2025:** Cosmo First, a global leader in films for packaging, lamination, labelling and synthetic paper announces the successful commissioning of new BOPP (Biaxially Oriented Poly Propylene) Film Line on 1st June 2025 with Capex of Rs. 400 crores+ at Company's existing manufacturing plant located at Aurangabad, Maharashtra. The new line boasts an annual rated capacity of 81,200 MT with the world's most advanced technology. With the commissioning of the new line, the Company's annual BOPP capacity will increase by approx. 40% to 2,77,000 MT.

Speciality sales at Cosmo First have been growing at a CAGR of 10% for the last 6 years. The new BOPP Line will support Cosmo in further expanding its product portfolio across speciality films and packaging. The Company plans to further strengthen its speciality films product portfolio with several new products in the pipeline, expected to be launched in the upcoming quarters.

Speaking on the development **Mr. Pankaj Poddar, Group CEO, Cosmo First**, said, "We expect the line to get filled fast due to current favourable gap in demand and supply in the domestic industry. Further, the new BOPP film line shall be eligible for state govt. incentives besides being the most cost-efficient line in India. The Company's focus will be on taking full leverage of the new investments including BOPP line and grow specialty film sales."

### JPFL Films' INR 700 - Crore Film Line Expansion

JPFL Films is investing over INR 700-crore to install new BOPP, PET and CPP film lines in Nashik, boosting capacity and reinforcing market leadership.



Commissioning is expected within two to three years (Image: JPFL Films)

JPFL Films will invest over INR 700-crore to set up three new film lines — a 42,000 - tonnes per annum BOPP (biaxially oriented polypropylene) line (Line 10); a 55,000 - tonnes per annum PET (polyethylene terephthalate) line (Line I); and an 18,000-tonnes per annum CPP (cast polypropylene) line (Line 3) — at its Nashik facility, with commissioning expected within two to three years.

The move follows a 43% year-on-year rise in net revenue in the first nine months of FY 2024 – 25 and is designed to address pricing pressures and strengthen market share through advanced technology and sustainable production.



JPFL Films, a material subsidiary of Jindal Poly Films, announced the expansion on 13 May. The new capacity is in addition to the ongoing BOPP Line 9 project announced in August 2024.

“This expansion enhances our ability to meet and exceed customer expectations with a diverse range of high - performance films,” said Vinod Kumar Gupta, CEO of JPFL Films. “A majority of products made on these lines will focus on sustainability and creating a greener future. It also improves operational efficiency and positions us well for future business upturns.”

The three new lines — BOPP Line 10, PET Line I, and CPP Line 3 — are expected to be among the most advanced in the market, featuring enhanced width, output, equipment quality, and process efficiency.

With flexible packaging remaining one of the most lucrative sectors, serving food, beverage, personal care, and pharmaceutical industries, JPFL Films' expansion reinforces its position as a technological leader and reliable global supplier.

(Source: WhatPackaging? / 14.05.2025)

## PET Recyclers Face Bankruptcy as FSSAI Delay Licenses

The delay in production could lead to investments of around Rs. 8,000 crore, going to waste. Half of these were funded with bank loans, which could turn into non-performing assets (NPA).



Representative image for plasticCredit: iStock Photo

Bengaluru: The delay in granting of licences by Food Safety and Standards Authority of India (FSSAI) to the factories set up for recycled polyethylene

terephthalate (PET) could push a majority of them into bankruptcy, the Association of PET Recyclers - Bharat (APR), said in a press note on Monday, 2nd June 2025.

While five of these companies have been granted licenses by FSSAI, as many as 15 fully commissioned plants are awaiting clearance from the regulator to commence commercial production, after setting up shop in January 2025.

The delay in production could lead to investments of around Rs. 8,000 crore, going to waste. Half of these were funded with bank loans, which could turn into non-performing assets (NPA).

“Prime Minister Modi's statements on the push for sustainability enthused our members and they got the world's best technology, matching international standards and set up a plant. We even invited members from FSSAI and others to verify the plants did everything the government wanted us to but we are being left high and dry due to their casual attitude,” Shailendra Singh, Director General, APR Bharat told DH.

Plastic Waste Management Rules were introduced in 2016 with industry stakeholders being involved in the making of the regulation. Since then, various amendments have been made based on industry feedback and issues. In 2022, there was a mandate for companies to use 30% recycled food-grade plastic, which was to come into effect from April 1, 2025.

These guidelines, which should have been in place at least 2-3 months before April 1, 2025, were actually notified only in the last week of May 2025, pushing the timeline for issuing licenses further.

“Brands are unable to comply with the Ministry of Environment, Forest and Climate Change of India's mandate, as there isn't enough recycled capacity. Hence, there was an expectation that the government will announce some sort of referral, either in timeline or will reduce the target but neither of that has happened,” Singh added.

(Source: DECCAN HERALD / 03.06.2025)



## Chemco and Kandoi Partner to Invest ₹450 Crore in rPET - Based FIBC Bag Manufacturing in Gujarat



Image: PET Planet

In a significant move towards sustainable packaging, Chemco Group, a major player in PET conversion and Kandoi Group of Industries, known for its expertise in technical textiles, have entered into a joint venture to set up two advanced manufacturing plants in Vapi and Dahej, Gujarat. The ₹450 crore investment will focus on producing FIBC (Flexible Intermediate Bulk Container) bags made entirely from recycled PET (rPET).

The new facilities will implement a closed - loop system that handles everything from collecting and washing PET bottles to tape extrusion, weaving, and final bag production. This approach ensures high-quality, traceable products with minimal environmental impact. The plants aim to recycle over 10 million PET bottles daily, or about 3.6 billion annually, while running entirely on renewable energy. The initiative will provide a stronger, low-carbon alternative to traditional polypropylene and polyethylene packaging.

Ram Saraogi, Chairman of Chemco Group, stated, "This venture is a step forward in creating a circular economy built on India's strengths. We aim to transform everyday PET waste into durable industrial packaging, benefiting businesses, communities, and the environment. Our goal is to position India, particularly Bharat's industrial regions, as a global hub for sustainable manufacturing, where innovation and impact go hand in hand."

Niranjan Agarwal, Managing Director of Kandoi Group, added, "This collaboration combines the expertise of two industry leaders committed to

circularity. We're excited to set a new standard for high-performance, export-ready packaging made entirely from recycled PET."

In addition to its environmental objectives, the project is designed to promote social equity, generating over 2,500 direct and indirect jobs in areas such as collection, processing, logistics, and manufacturing. The initiative also aims to formalize India's informal waste collection sector by partnering with Urban Local Bodies (ULBs) and municipal corporations, offering stable employment, better working conditions and integration into a more efficient waste management system.

The rPET-based FIBC bags will comply with India's Extended Producer Responsibility (EPR) guidelines and global ESG standards. The joint venture's end-to-end control over sourcing, recycling, and production provides a scalable solution for sustainable, compliant industrial packaging with reliable recycled content and traceable supply chains. Commercial production is scheduled to begin by the end of 2025, with plans for phased capacity expansion and exploration of export markets to make India a leading supplier of sustainable industrial packaging solutions.

Chemco Group is a leading PET processing company in India, recognized for its expertise in advanced packaging, closures and technical textile solutions. The group is committed to innovation in sustainable plastic technologies and operates across various industries with a strong manufacturing presence.

Kandoi Group is India's foremost producer of technical textiles for packaging, with deep experience in FIBC bags, geotextiles and raffia-based materials. Known for its large-scale operations, consistent quality and international reputation, the group brings significant strength to the joint venture.

## Ahmedabad Municipal Corporation to Reuse Plastic Waste in Roads

This move aligns with the global 'Ending Plastic Pollution' campaign. The AMC plans to test the use of single-use and multi-layer plastics in asphalt, aiming to reduce plastic waste and enhance road durability. Municipal engineers have been instructed to conduct trials to assess the feasibility and benefits

of this approach. This initiative is part of a broader strategy to address plastic pollution in the city. The AMC has introduced several measures, including stricter enforcement of the plastic ban at the ward level and public awareness campaigns promoting eco-friendly alternatives such as cloth bags, glass bottles, and recyclable containers.



The Ahmedabad Municipal Corporation (AMC) is revisiting a decade - old initiative : incorporating plastic waste into road construction.

Additionally, the AMC is setting up bottle banks to collect empty cold drink and mineral water bottles, offering incentives for citizens who deposit them. A campaign for solid waste segregation is also underway, accompanied by strict fines for littering in public spaces. Educational seminars and essay competitions are being organized in schools to raise awareness about the dangers of single-use plastic. Tree planting programs will be held to celebrate World Environment Day, and regular inspections at bus terminals will ensure compliance with the plastic ban. Despite a five-year-old ban on plastic bags below 120 microns, single - use plastic continues to be a significant challenge. The AMC hopes that these renewed efforts will lead to visible progress in reducing plastic waste in both streets and landfills.

The use of plastic waste in road construction has been shown to increase the durability and lifespan of roads. According to experts, roads constructed with plastic-infused asphalt can last up to 10 years, compared to the usual 5-6 years for conventional roads. The plastic mix also helps prevent potholes and cracks, making roads more resilient to weather conditions. This initiative not only addresses the issue of plastic waste but also contributes to building sustainable infrastructure in the city. By repurposing plastic waste, the AMC is taking a significant step towards creating a more eco-friendly and resilient urban environment.

As the AMC moves forward with this plan, it will be crucial to monitor the effectiveness of these measures and ensure that they lead to tangible improvements in both waste management and road quality. The success of this initiative could serve as a model for other cities grappling with similar challenges.

## BMC Plans to Convert C&D, Plastic Waste into Construction Materials

In an innovative approach, the Bhubaneswar Municipal Corporation (BMC) plans to launch a unique initiative to transform construction and demolition debris and low-value plastic waste into construction materials. As part of the plan, the civic body will process about 4-5 tonnes of recyclable construction waste and 2-3 tonnes of low-value plastic waste generated daily in the city. According to official reports, the city generates over 50 tonnes of construction and demolition (C&D) waste daily, which is currently being disposed of at two designated locations due to the absence of proper processing facilities. Additionally, more than 200 tonnes of low-value plastic waste is being sent to cement factory kilns for co-processing.

BMC officials said it will blend the two types of waste to produce construction materials, which will be primarily used in govt projects. The corporation is currently seeking an expert agency to establish and operate a dedicated facility for the purpose. "We are committed to finding scientific solutions for waste disposal. We will be partnering with an experienced agency to implement the project effectively," city mayor Sulochana Das said.

Sources said the blending technology will provide a practical solution for managing plastic waste. The new technology will enable the production of various construction materials, including paver blocks, drain slabs, kerb stones, side walls, drain gratings and drain trenches, they added.

Environmental expert Bijay Mishra praised the initiative and said that blending concrete waste with low-value plastic is an innovative approach that can enhance properties of concrete while addressing environmental concerns. Construction debris often found dumped in various parts of the city despite previous enforcement efforts. Resident Pratap Acharya highlighted the problems caused



by improper waste disposal. "Many dump construction materials on the roads, creating traffic hazards and increasing accident risks. The dumping practice is quite rampant in almost every part of the city. BMC needs to take proactive steps to address the concern," Acharya said.

BMC officials said that the success of the project could serve as a model for other cities facing similar waste management challenges, potentially revolutionizing how urban areas handle construction and plastic waste.

### **Disruption of Rare - Earth Magnet Supplies beyond 30 Days can Impact Vehicle Production : Report**

"The supply squeeze comes just as the auto sector is preparing for aggressive EV rollouts... most built on PMSM platforms," says Crisil Ratings Senior Director Anuj Sethi.



Rare - earth magnets, low in cost but critical in function, could emerge as a key supply - side risk for India's automotive sector if China's export restrictions and delays in shipment clearances persist, Crisil Ratings said in a statement.

Disruption in rare-earth magnet supplies lasting beyond a month can impact production of passenger vehicles, including electric models, weighing on the domestic automobile industry's growth momentum, a report on Tuesday, 10th June 2025 said.

"The supply squeeze comes just as the auto sector is preparing for aggressive EV rollouts. Over a dozen new electric models are planned for launch, most built on PMSM platforms," Crisil Ratings Senior Director Anuj Sethi said.

While most automakers currently have 4-6 weeks of inventory, prolonged delays could start affecting vehicle production, with EV models facing deferrals or rescheduling from July 2025, he added.

A broader impact on two-wheelers and ICE Pvs may follow if the supply bottlenecks persist for an extended period, Sethi said.

"The shortage of rare earth magnets is forcing automakers to reassess supply - chain strategies. Despite contributing less than 5 per cent of a vehicle's cost, these magnets are indispensable for EV motors and electric steering systems," said Crisil Ratings Director Poonam Upadhyay.

Automakers are actively engaging with alternative suppliers in countries such as Vietnam, Indonesia, Japan, Australia, and the US, while also optimising existing inventories, she noted.

"With applications across EVs and ICE vehicles, a prolonged supply squeeze could disrupt production of PVs and 2Ws, making this low-cost component a potential high-impact bottleneck for the sector," she said.

Rare - earth magnets are integral to Permanent Magnet Synchronous Motors (PMSMs) used in Evs for their high torque, energy efficiency and compact size.

Hybrids also depend on them for efficient propulsion. In internal combustion engine (ICE) vehicles, the use of rare earth magnets is largely limited to electric power steering and other motorised systems.

In April this year, China, the world's dominant exporter of rare earth magnets, imposed export restrictions on seven rare earth elements and finished magnets, mandating export licences.

The revised framework demands detailed end-use disclosures and client declarations, including confirmation that the products will not be used in defence or re-exported to the US.

With the clearance process taking at least 45 days, this added scrutiny has significantly delayed approvals.

And the growing backlog has further slowed clearances, tightening global supply chains.

### Feeling the heat

India, which sourced over 80 per cent of its 540 tonnes magnet imports from China last fiscal, has started to feel the impact.

By end-May 2025, nearly 30 import requests from Indian companies were endorsed by the Indian government, but none have yet been approved by the Chinese authorities, and no shipments have arrived.

During the pandemic, rare earth magnet supplies remained stable, unlike semiconductors, reinforcing reliance on just-in-time inventory without building strategic buffers.

However, while semiconductors have a globally diversified supply base, over 90 per cent of rare earth magnet processing is concentrated in China, with limited short-term alternatives.

Recognising the risk, the government and automakers are taking action on two fronts, Crisil said.

In the short term, the focus is on building strategic inventories, tapping alternative suppliers and accelerating domestic assembly under Production Linked Incentive schemes.

For the long term, reducing import dependency will hinge on fast-tracking rare earth exploration, building local production capacity and investing in recycling infrastructure, Crisil stated.

### FSSAI Issues Comprehensive Guidelines for Use of Recycled PET in Food Contact Materials (FCM - rPET)

The Ministry of Health and Family Welfare, through the Food Safety and Standards Authority of India (FSSAI), issued the **Guidelines for Acceptance of Recycled Polyethylene Terephthalate (PET) as Food Contact Material (FCM-rPET)**. These guidelines, published on 23rd May, 2025, provide regulatory provisions for the safe use of recycled PET in food packaging applications.

### Key Highlights:

#### 1. Application & Scope

- Applies entirely to the recycling/operation process of converting post-consumer PET used for food applications into recycled PET as Food Contact Material (FCM - rPET) resins suitable for manufacturing Food Contact Materials.
- Covers the acceptance criteria for using FCM-rPET resin in Food Contact Materials.
- Applicable only to recycling technologies approved by the Food Safety and Standards Authority of India (FSSAI).
- Not applicable to the production of recycled PET intended for non-food grade consumer applications.

#### 2. Definitions

- **Food Authority** – means the Food Safety and Standards Authority of India (FSSAI) established under Section 4 of the Food Safety and Standards Act, 2006.
- **Manufacturer** – means the operator of an approved recycling process and/or a manufacturer of FCM-rPET as per FSSAI-approved technology.
- **Materials**
- **Virgin PET (vPET):** PET derived via poly - condensation of ethylene glycol and terephthalic acid.
- **Post-Consumer Food Grade PET:** vPET and FCM-rPET packaging collected from households or institutions, including returns from the distribution chain.
- **PET Resin:** Aggregated fragments from grinding and washing of post-consumer or pre-consumer industrial PET, intended for food application.
- **Recycled PET (FCM-rPET):** Post-consumer PET resin that has undergone validated decontamination to meet purity levels suitable for direct food contact.



### 3. Approved Recycling Processes

Only recycling technologies that include at least one decontamination step to reduce contaminants to safe levels for food contact are permitted. Acceptable recycling processes include:

- **Super-Clean Recycling Process:** A conventional recycling process with an integrated decontamination step involving surface treatment, high heat, and/or high vacuum in a controlled environment.
- **Melt-in Recycling Process:** Involves vPET production incorporating decontaminated PET flakes in molten form using high heat and vacuum treatment.
- **Paste-in Recycling Process:** A virgin PET (vPET) production process incorporating PET flakes in paste form through partial glycolysis, coupled with contaminant removal systems such as chemical distillation and vacuum degassing.
- **Chemical Recycling Process:** Involves pyrolysis or full depolymerization of PET flakes into purified monomers like ethylene glycol and terephthalic acid or dimethyl terephthalate, in accordance with ISO 15270. These purified monomers may be used to produce PET of virgin quality. Manufacturers using chemical recycling must submit application and relevant dossier as per Form I to FSSAI.

**Note:** Conventional Recycling Processes that involves washing, melting, extruding, and pelletizing PET flakes without a decontamination step are not permitted for producing food contact materials.

### 4. Testing Requirements

The following tests are mandated to validate the safety of FCM-rPET:

- **Challenge Test:** Validates the decontamination efficacy by spiking PET with chemicals of varying molecular weights and polarities and analyzing residual concentrations post-recycling. Must be repeated upon any process or input change.
- **Extraction Test:** a quantitative analysis of substances present in recycled Polyethylene terephthalate (PET) as Food Contact Material (FCM-rPET).

- **Migration Test:** Analyses substances migrating from vPET or FCM-rPET resin containers into food; results must comply with specific and overall migration limits as per applicable plastic contact material standards.

All tests must be conducted in NABL/ILAC-accredited laboratories, following standards IS: 12252, IS 9845, IS 9833 and their latest amendments.

### 5. Process Requirements

#### I. Process Input

- Input materials must meet minimum quality standards for FCM-rPET resin and be controlled based on process validation criteria as identified by performance of the challenge test.

#### II. Process Validation

- **Decontamination efficiency must meet one of the following:**
- **Resin-based criterion:** Contaminants  $\leq 220 \mu\text{g/kg}$  in resin (via Challenge Test).
- **Food-based criterion:** Contaminants  $\leq 10 \mu\text{g/kg}$  in food or simulant (via Migration Test).
- FCM-rPET must conform to PET specifications as per IS: 12252.

#### III. Process Output

- To ensure consistent FCM-rPET quality, the output must be regularly monitored through chemical analysis, using either extraction tests on the resin or migration tests on finished food contact products.
- Sensory testing of FCM-rPET shall be conducted in accordance with ISO 13302 or equivalent.

#### IV. Process Operation and Management

- Recycling process must follow Good Manufacturing Practices with a defined quality assurance program. Critical quality parameters, supply chain records, and safety data must be maintained to validate decontamination efficiency and ensure full product traceability.

## 6. Marking and Labelling Requirements

- **Label Specifications for FCM-rPET Products:** The label must display the percentage of recycled resin used (X%), along with the abbreviations and terms: r (recycled), FCM (Food Contact Material), and PET (Polyethylene Terephthalate).
- **Label statement:** “The packaging material is made with recycled PET.”

## 7. Documentation Requirements

FCM-rPET manufacturers, converters, beverage bottlers, food packers, and FBOs shall maintain and provide the following documentation to downstream entities and the Food Authority upon request:

- a. Declaration of Compliance: Manufacturer's written confirmation that FCM-rPET complies with IS: 12252.
- b. Regulatory Opinion: No Objection Certificate (NOC) or No Objection Letter (NOL) issued by a competent authority validating the recycling process for post-consumer food-grade PET.
- c. Supply Chain Records: on product traceability and quality assurance demonstrating safety compliance at all supply chain levels.

## 8. Authorization Process

Manufacturers shall apply to the Food Authority for recycling process approval by submitting the required details as per Form - I. Recycling plants producing r-PET resins will undergo annual audits.

### The Food Authority shall:

- a. Authorize or reject applications based on assessment (as per Form - II),
- b. Maintain a registry of all authorized manufacturers and processes on the FSSAI website.
- c. Request additional information from recognized manufacturers as needed.

## Starlinger Equipment for Lakhdatar

Indian packaging producer Lakhdatar International Pvt. Ltd. has invested in Starlinger machines for woven plastic packaging production.

The order comprises Starlinger's latest generation of tape extrusion technology and tape winders, as well as state-of-the-art circular looms for producing high-quality OPP laminated woven polypropylene bags. Lakhdatar already works with a lamination line with OPP feature from Starlinger. The newly ordered machinery will be delivered mid - 2025.

“We are proud to be the partner of a renowned family-owned company like Lakhdatar International, a pioneer on the Indian packaging market,” said Franz Steiner, Regional Sales Director of Starlinger. “We appreciate the trust and confidence Lakhdatar is placing in us and look forward to a long and fruitful cooperation.”

“With this investment we are gearing up to bring even more innovation, sustainability, and efficiency into our manufacturing process,” said Nitish Goel, CMD of Lakhdatar International Pvt. Ltd. “The new equipment from Starlinger enables us to stay ahead of the curve with high-speed tape extrusion and weaving, producing top - quality, sustainable packaging products.”

## EU India Join Hands to Find Innovative Research Solutions to Marine Pollution and Waste to Hydrogen



Image: Business Standard

The European Union (EU) and India launched two new significant research and innovation initiatives under the EU-India Trade and Technology Council (TTC), with a total investment of €41 million (₹394 crore). These initiatives will drive collaborative solutions to pressing environmental challenges and foster cutting-edge technological advancements.

Coordinated under the EU's Horizon Europe programme and co-funded by Indian ministries (MoES and MNRE), the two research calls will bring together researchers, startups, and industries from



the EU and India to develop sustainable, scalable solutions with global impact. By strengthening the EU-India partnership, these initiatives operationalize the TTC's goals and reinforce the commitment to joint innovation.

### • **Combatting Marine Pollution**

The first call focuses on combating marine pollution, particularly the pervasive issue of marine plastic litter.

Co-funded by the EU (€12 million/~₹110 crore) and Indian Ministry of Earth Sciences (₹90 crore/~€9.3 million), this call seeks innovative solutions to monitor, assess, and mitigate the cumulative impacts of various pollutants, including microplastics, heavy metals and persistent organic pollutants.

The resulting research will contribute to global efforts, including the support international commitments such as the UN Decade of Ocean Science for Sustainable Development and contribute to the objectives of the EU's Zero Pollution Action Plan and India's National Marine Litter Policy. By driving collaborative research and innovation, this initiative aims to protect marine ecosystems and promote sustainable development.

This call builds on earlier momentum, including a workshop on e-vehicle charging standards held in February and a successful matchmaking initiative that connected Indian and EU startups with potential partners and investors.

### • **Waste - to - Renewable Hydrogen Solutions**

The second call focuses the development of waste-to-renewable hydrogen technologies. Hydrogen has emerged as a key area of collaboration between the EU and India, given its strategic role in driving the clean energy transition, enhancing energy security and meeting long-term climate objectives.

This call, co-funded by the EU (€10 million/~₹97 Core) and India's Ministry of New and Renewable Energy (₹90 crore/~€9.3 million), aims to develop efficient, cost-effective and environmentally friendly methods for hydrogen production.

Both calls are open to European and Indian organisations, including companies, SMEs, startups, research institutions, universities, non-governmental organisations (NGO) and individual researchers. The submission deadlines are 2 September 2025 for the hydrogen call and 17 September 2025 for the marine pollution call.

Additional joint research calls are envisaged for 2026, including on recycling of batteries for electric vehicles and potential cooperation on wastewater treatment. Together, all these initiatives represent a **joint investment of around €60 million under the TTC framework.**

EU-India Trade and Technology Council (TTC) The EU-India Trade and Technology Council (TTC) is a high-level strategic coordination platform aimed at strengthening the bilateral partnership on trade, technology, and innovation. The decision to establish the TTC was jointly announced by European Commission President Ursula von der Leyen and Indian Prime Minister Narendra Modi in April 2022. The Council was formally launched in February 2023, and its first ministerial meeting took place in May 2023.

As the EU's second TTC (after the EU-US TTC), this mechanism reflects the growing geopolitical and economic alignment between the EU and India. It aims to promote secure, sustainable and inclusive economic development while safeguarding shared democratic values.

**EU-India Research & Innovation Cooperation:** The EU-India Research and Innovation (R&I) Cooperation is a longstanding and strategic partnership, anchored in the 2001 Agreement on Scientific and Technological Cooperation and renewed recently in 2020. An EU India Joint Steering Committee oversees the partnership which supports joint research in key areas such as health, energy, digital and green technologies, water, and climate. It also promotes researcher mobility, startup networking, and innovation. With over 200 joint projects to date, this growing cooperation is evolving toward mission - driven, co - funded initiatives delivering tangible global impact.

## **Balrampur Chini Mills Launched India's First Bioplastic brand: Balrampur Bioyug on May 27, 2025 at Mumbai's Jio World Convention Centre, in the Presence of Hon'ble CM, Maharashtra, Shri Devendra Fadnavis**

The event opened with a traditional lamp lighting ceremony, attended by dignitaries including Shri Sharad Pawar (MP), Shri Manoj Kr. Singh, IAS, Chief Secretary & IIDC, Uttar Pradesh & officials from BCML.

Strategically located next to BCML's sugar mill in Kumbhi, Uttar Pradesh, the forthcoming PLA facility is set to become India's first industrial - scale biopolymer plant, with a capital investment of ₹2,850 crores, to be commissioned in October 2026. It integrates sugarcane-to-PLA conversion in a single, renewable energy-powered plant, making it a global first.

## **SK Chemicals Signs MOU with Malaysia's Leading Kitchenware Manufacturer LH Plus "Accelerates Expansion into Southeast Asian Market with Sustainable Materials"**

SK Chemicals has partnered with Malaysia's leading company to expand its presence in the kitchenware materials market.

SK Chemicals (CEO and President: Ahn Jae-hyun) announced on the 15th that it has signed an MOU with Malaysia's kitchenware manufacturer LH Plus (LH PLUS Sdn. Bhd.), to supply copolyester and circular recycled plastic materials.

LH Plus, based in Malaysia, is a manufacturer of plastic kitchenware, selling approximately 6 million products annually, including food and beverage containers. It is the number one company in Malaysia in terms of production and sales volume in the kitchenware sector and supplies various products to renowned global brands.

Under the MOU, SK chemicals will supply LH Plus with up to 2,000 tons of ECOZEN—a copolyester containing biomass—and SKYPET CR—a circular recycled PET made from waste plastics—by 2027.

The 2,000 tons of raw materials can produce approximately 100 million 1-liter water bottles. The two companies will also collaborate on developing new kitchenware products using ECOZEN and SKYPET CR materials and expanding their reach among global brands.

ECOZEN is a high-performance material known for its glass-like transparency, making it ideal for food containers where visibility is essential. It is free of bisphenol A (BPA), an environmental hormone, making it a safe and reliable choice for cookware and kitchenware.

SKYPET CR, produced using advanced depolymerization technology, breaks down waste plastics at the molecular level and transforms them into raw materials, ensuring the same quality and properties as petroleum - based PET. Unlike mechanically recycled plastics, which are typically used in textiles and furniture, SKYPET CR can be used for a wide range of products that traditionally rely on petroleum-based PET, including food and beverage containers and tableware. It also addresses consumer concerns regarding hygiene and safety.

Callum Chen, CEO of LH Plus, stated, "SK chemicals offers a diverse product portfolio, ranging from high-heat-resistant, transparent copolyesters to circular recycled plastic materials." He added, "This MOU will enhance our ability to meet the growing demand for sustainable kitchenware solutions, including recycled and bio-based materials."

Kim Eung-soo, Head of the Green Materials Business Division at SK chemicals, stated, "The adoption of eco-friendly plastic materials, including recycled plastics, is steadily increasing across the Asia-Pacific kitchenware market." He added, "By partnering with LH Plus, we aim to deliver optimized solutions from materials to finished products and accelerate our expansion in the kitchenware market."

## **Indorama Ventures Takes a Further Step into the High - Potential Indian Market through a Stake in Packaging Company EPL**

Indorama Ventures Public Company Limited (IVL), a global sustainable chemical company, progressed its business decision to invest in the high-potential Indian market



through the purchase of a 24.9% equity stake in EPL Limited from Blackstone. The completion of the financial investment in EPL, helps Indorama Ventures take advantage of growth opportunities in emerging markets and build on Indorama Ventures' existing footprint.

EPL provides an attractive platform for tapping into India's investment landscape, and is well positioned to benefit from the trend of global manufacturers seeking to diversify their supply chains. As its fast-developing economy plays an increasing global leadership role, the Indian government is promoting local industry through attractive policies.

At its annual Capital Markets Day on 5 March, Indorama Ventures outlined ambitious expansions plans in a new era of growth. In a departure from its previous M&A-led model, the company is partnering with major industry peers, to explore long - term growth opportunities unlocked by fundamental changes in global markets. Part of the plan is to identify opportunities to leverage Indorama Ventures' sizeable existing manufacturing operations in India, which currently include PET resins, polyester filaments and yarns, nonwoven fabrics and ethylene oxide derivatives. The minority stake in EPL helps unlock future growth potential, especially considering Indorama Ventures' existing product offerings and geographical presence.

All of Indorama Ventures' business segments of Combined PET, Fibers, Indovina in India have a significant presence in India, with plans to grow and create a more diversified and resilient portfolio. The company has a successful 35-year track record of identifying adjacent businesses with experienced leadership teams and highly synergistic management cultures and growth paths.

Mr. Alope Lohia, Group CEO of Indorama Ventures, said, "India represents one of the most exciting opportunities in global packaging and chemical markets today, where Indorama Ventures has natural advantages including our existing footprint in diverse businesses. My family's Indian heritage is also an attribute as we seek to build close partnerships with peer companies in India—many of them family owned—to leverage our mutual scale and capabilities and invest in one of the most dynamic economies in the world. Our stake in EPL aligns with this strategy. Their global reach, innovative high - quality products, focus on sustainability and solid management team make

them a natural fit, and our combined deep experience in our respective businesses will drive value immediately."

EPL is the largest global specialty packaging company, manufacturing laminated plastic tubes catering to the FMCG and Pharma space. Employing over 3,500+ people representing over 25 different nationalities, EPL functions in eleven countries through 21 state-of-the-art manufacturing facilities and is continuing to grow every year.

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## Konspec Offers UV Stabiliser MB

Polymers and plastic products, when exposed to sunlight and harsh environmental conditions often degrade over time. Ultraviolet radiation breaks down molecular chains leading to discolouration, brittleness and reduced lifespan. This poses a significant challenge for industries relying on plastics for packaging, agriculture, automotive and more where functional longevity and aesthetics of substrates are critical. Konspec's UV Masterbatches are specialised additives incorporated into plastics during manufacturing to protect them from UV-induced degradation. These concentrated blends of UV stabilisers and absorbers enhance the durability of plastic products, ensuring they retain their mechanical properties and appearance even under prolonged exposure to sun.

These masterbatches are available in various grades including food and non-food grade, medium and high pesticide resistance for mulch and greenhouse films and content protection for PET bottles. Therefore, they can be deployed in sectors such as agriculture, automotive, building and construction, flexible and rigid packaging, electrical and electronics, fibre and textiles, sports and leisure, toys and household products. These masterbatches are compliant with global standards including ROHS, REACH, FSSAI, USFDA, EU (no) 10/2011, EN-71 etc.

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## HMEL Crosses Landmark Milestone of 2 Million MT Polymers Sales during FY 24 - 25

HPCL-Mittal Energy Ltd. (HMEL), India's major oil refining and petrochemical company, is proud to announce achieving an astounding 2 million metric tonnes of polymers sales during 2024 - 25,

surpassing expectations and reinforcing its position as an industry trailblazer. This accomplishment is the result of HMEL's unwavering commitment to understanding customer needs and providing tailored solutions for niche applications across various polymer segments.

HMEL has undertaken a massive - USD 3 billion expansion in the field of petrochemicals increasing its polypropylene capacity to 1.0 million MT/annum and adding polyethylene capacity of 1.2 million MT / annum, catering to the major application segments. This was the first full year of operations of the new plant featuring pioneering technologies from world-class licensors.

"Reaching this milestone underscores our commitment to understanding and meeting our customers' unique needs said Prabh Das, MD and CEO, HMEL.

"This achievement reflects our ability to innovate and deliver value to our esteemed customers, while advancing safe, sustainable and economical polymer solutions that reduce India's import dependency and support the Make in India initiative," he continues.

### Kandui Launches Eco - Friendly Odour Neutralizer Additive for Recycled Plastics

Articles made from reprocessed plastics can sometimes develop unpleasant odours due to volatile organic compounds that can be absorbed or generated during the recycling process or from the original material's use. Kandui has developed an odour neutralizer additive masterbatch, which is a cost-effective solution for long-lasting and efficient odour control improving the product quality and enhancing consumer satisfaction.

This additive masterbatch is eco-friendly, non-toxic and safe. The grade also complies with RoHS directives making it consumer friendly. It is also easy to incorporate its performance can be customized and it can be used in, virgin as well as in recycled material. The dosage level is 3-4% and can be optimized based on odour severity.

Applications include blow and injection moulded containers, flexible packaging automotive interiors, packaging with recycled content, household goods, garden products, industrial equipment etc.

(Source: POLYMERS Communique)

### Dhunseri's BOPP Film Manufacturing Project in Kathua

Shri Manoj Singh, Lieutenant Governor of Jammu and Kashmir laid the foundation stone of Dhunseri's Rs. 1,240 crore BOPP film manufacturing project in Kathua on June 8th, 2025.



### Praj Industries and ThyssenkruppUdde to Collaborate on Polylactic Acid Manufacturing Technology

Praj Industries Limited and UhdInventa-Fischer (UIF), the polymer division of ThyssenkruppUdde, have entered into a partnership to develop and supply integrated technology for the production of Polylactic Acid (PLA). The collaboration brings together Praj's experience in biotechnology and UIF's background in chemical processing to support more efficient and scalable PLA production.

The agreement focuses on addressing the growing need for alternatives to conventional fossil-fuel-based plastics. PLA, a biodegradable polymer derived from renewable sources, is increasingly used in packaging, textiles, and other applications. The joint solution will cover the full production chain, from converting feedstocks into lactic acid through to the polymerization of PLA, with flexibility to produce various grades suitable for both food and industrial use.

**Dr. Pramod Chaudhari, Founder Chairman of Praj Industries,** emphasized the company's broader goals in renewable materials, referencing its Bioprism portfolio and recent initiatives such as the establishment of a biopolymer innovation center with ICT Mumbai and the launch of a demonstration facility near Pune. The site focuses on lactic acid and lactide production for research and validation of bioplastic technologies.



The joint offering is designed to be compatible with various agricultural inputs, including second-generation feedstocks, making it suitable for deployment in multiple regions. Both companies aim to support long-term efforts in sustainable material production, contributing to the shift away from non-biodegradable plastics.

Praj Industries, India's leading industrial biotech company, has been at the forefront of innovations in the environment, energy, and agri-processing sectors for over 40 years. The company has a global footprint, with over 1,000 customers in more than 100 countries.

Praj's flagship platforms, Bio - Mobility® and Bio-Prism®, are central to its contributions to the global bioeconomy, offering renewable transportation fuel technology solutions and renewable chemicals and materials technologies. Praj's state-of-the-art R&D facility, Praj Matrix, supports its mission of advancing a clean energy-based bioeconomy. The company's portfolio spans Bio-energy solutions, critical process equipment, breweries, zero liquid discharge systems, and high purity water systems. Praj is committed to being a responsible corporate citizen and is listed on the Bombay and National Stock Exchanges of India.

### Shivtek Spechemi's New Hazira Facility to be Operational by 2027



Shivtek Spechemi Industries Ltd., a Gurugram-based speciality chemicals manufacturer and a part of the Shiva Group of Industries, has announced that its new manufacturing facility near Hazira will be operational by 2027.

The facility, involving investment of Rs. 60-crore and spread across over 1 million square feet, will have a production capacity of 2,50,000-mtpa by 2027-28

and pioneer the production of bio-based additives, solvents, and speciality petrochemicals. The company said the location offers easy access to major ports including Hazira, Dahej, Kandla, and Mundra, ensuring seamless connectivity for both imports and exports. The expansion is further supported by a 5,000-KL storage facility and a dedicated warehousing space of 1,50,000 square feet for export orders and products from the company's existing Dahej (Gujarat) plant.

In April this year, Shivtek Spechemi had first announced plans to invest Rs. 650-crore to set up manufacturing facilities in Gujarat and Rajasthan. The company had said the upcoming plants would collectively add a capacity of 500,000-mtpa, raising Shivtek's total capacity to 650,000-mtpa from its current 150,000-mtpa across three operational plants in Dahej (112,800-mtpa), Kurnool, Andhra Pradesh (22,800-mtpa), and Rajpura, Punjab (14,400-mtpa).

### DRDO Develops High - Pressure Polymeric Membrane for Sea Water Desalination

Defence Research & Development Organisation (DRDO) has successfully developed indigenous nanoporous multilayered polymeric membrane for high - pressure sea water desalination. Defence Materials Stores and Research & Development Establishment (DMSRDE), the Kanpur - based laboratory of DRDO, has developed the technology for desalination plant in Indian Coast Guard (ICG) ships, based on their operational requirement to address the serious challenge of stability when exposed to chloride ions in saline water. The development has been completed in a record time of eight months.

DMSRDE, along with ICG, successfully carried out initial technical trials in the existing desalination plant of Offshore Patrolling Vessel (OPV) of ICG. The initial safety and performance trials of the polymeric membranes were found to be fully satisfactory. The final operational clearance will be given by ICG after 500 hrs of operational testing.

Presently, the unit is under testing and trials on OPV. This membrane will be a boon for desalination of sea water in coastal areas after certain modifications. It is another step by DMSRDE in the journey of Aatmanirbhar Bharat.

(Source: Govt. of India Press Information Bureau / 15.05.2025)

# PLASTIC PRODUCTS AND NEW TECHNOLOGIES



## KHS has set an Impressive New Benchmark by Engineering One of the World's Lightest PET Bottles for Still Beverages to Date

### Less is more

- PET bottle development for still beverages sets standards
- Close cooperation between KHS and Husky Technologies
- Development time of just four months



KHS has set an impressive new benchmark by engineering one of the world's lightest PET bottles for still beverages to date. Under the working title of Factor 101, in close cooperation with Canadian-based injection molding technology equipment and

services provider Husky Technologies, a container has been produced that uses just 5.89 grams of material to hold 591 milliliters of product. This is equivalent to the 20-ounce size common in the United States.

At DrinkTec 2017 KHS presented its Factor 100 concept as a feasibility study that featured a PET bottle weighing approximately five grams with a capacity of 500 milliliters. A number of optimizations have now been made to the further development, as KHS packaging designer Fabian Osterhold in Hamburg explains. "With such extreme lightweighting, what's known as the top load is especially important. This value tells us how sturdy the bottle is from a vertical perspective. It determines whether the container can be stacked or not and survive transportation undamaged."

### Extremely robust lightweight

To increase stability, the shoulder design of Factor 101 has been modified and the bottle body reinforced with functional webbing. Moreover, Osterhold and his colleagues have developed a base with a pop-in effect. Here, the base pops inwards to a certain degree when a top load is applied, increasing the internal pressure and therefore the stability of the bottle.

Two hundred newtons is a common top load threshold in the industry; at 220 newtons, the Factor 101 exceeds this. In order to achieve this high value for a PET bottle used for still beverages, adapting just the container shape wasn't enough. "The preform design also needed to be developed further," emphasizes Osterhold. This is why KHS joined forces with the specialists at Husky. The company has a wealth of



expertise as the world's leading equipment supplier of PET preform injection molding systems and services and has been in cooperation with KHS for many years.

### Challenging coordination

Technically speaking, the stretching factors from blank to bottle and the resulting preform dimensions were especially important here. The relation of length to wall thickness is particularly relevant to injection molding. In this context, KHS addressed the specifications and feasibilities of the stretch blow molder and bottle design, while Husky made the necessary modifications to the preform. "The focus here was on the exact profiling of the preform made possible by KHS technology," Osterhold ascertains. "Focus lamps in the heater on our InnoPET Blomax Series V, for example, make for extremely precise temperature profiling directly under the bottle neck ring. This ensures that no material stays unstretched. In turn, this considerably reduces the amount of plastic used."

### 30% less material

Compared to the standard lightweight PET container holding 500 milliliters of still water that usually weighs seven grams on the US market, the joint KHS/Husky product requires 30% less material. It can also be manufactured entirely from rPET.

However, bottle geometry is just one factor. "Line compatibility in the highcapacity range of up to 90,000 bottles per hour was a key challenge," says Osterhold. "The main issues here were conveying, labeling and the secondary packaging. In the shrink tunnel, for instance, special attention had to be paid to the bottle shoulder – and the bottle of course shouldn't fall over during conveying."

### High - speed development

"Not only the weight but also the time in which the project was implemented are possibly record-breaking," Osterhold states. Thanks to the great teamwork between Husky and the many KHS departments involved in the development process, the project was successfully concluded in just four months.

### Great interest on the market

Factor 101 was first presented live by Husky at the NPE 2024 plastics trade show in Orlando, Florida, in May of last year. The extreme lightweight

was met with great interest in the industry. "The bottle in this form is of particular relevance to contract fillers who operate under great cost pressure," believes Osterhold. The prime target markets are the United States, the Middle East and South America. The first projects are already in preparation.

### In conversation with Frank Haesendonckx, head of Stretch Blow Molding Technology at KHS and Michael Müller, Director of Aftermarket PET Tooling for Husky Technologies

**Haesendonckx:** Factor 101 is an excellent example of how we're combining Husky's engineering expertise in preform manufacturing with our proficiency in bottle design and production. Our joint aim is to produce a high-quality, high-performing, lighter weight result than either of us could do working on our own. Or, as I like to put it: for us, one plus one is greater than two.

**Müller:** We see great benefit in combining our technical expertise and envisage leveraging this for future projects. Here, Factor 101 acts as a starting point for discussion of a lightweight program and optimization of current packaging systems and solutions.

**Haesendonckx:** We aim to combine more cost-efficient preform and bottle manufacture with improved performance – also above and beyond Factor 101.

**Müller:** We're joined by a common spirit and goal – namely working towards developing sustainable packaging.

### Avantium and Bottle Collective in Partnership to Launch PEF Fiber Bottles

Partnership expects PEF to provide higher strength and improved barrier properties.

Avantium N.V. announced its partnership with the Bottle Collective, aimed at showcasing fiber bottles made from Dry Molded Fiber (DMF) technology. Avantium's plant - based polymer polyethylene furanoate (PEF) will be integrated into the DMF bottle process, enhancing the barrier performance and sustainability of the bottles.

The Bottle Collective was launched in 2023 by PA Consulting and Pulpac, a Swedish R&D and intellectual property company behind the proprietary

production process of DMF. The technology uses renewable pulp and cellulose resources to produce low - cost, fiber - based packaging. The process produces lower CO2 emissions than conventional plastic and conventional wet molding options while also reducing water use. The Bottle Collective has already developed the first functioning prototype bottles. Brand partners, including Diageo, Opella and Haleon, have also joined the Bottle Collective to continue developing and scaling fiber bottles.



Avantium's PEF will be integrated into dry molded fiber bottles. Source: Avantium

Avantium will provide PEF to the Bottle Collective for injection molding and blowing liners for the fiber bottles. According to the company, the barrier

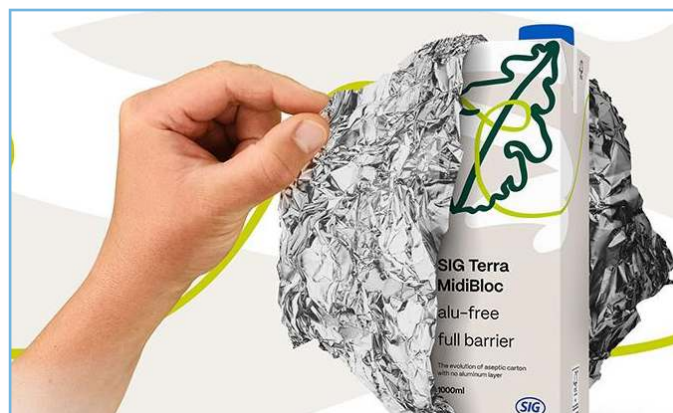
properties of PEF will protect the taste and fizziness of the packaged drinks and lead to a longer shelf life. PEF also has higher mechanical strength than conventional plastics, enabling thinner packaging and thereby reducing the amount of material required.

"Together with global brand partners such as Opella, Diageo and Haleon, the Bottle Collective can fast-track the development of world-first Dry Molded Fiber bottles. Our polymer PEF can play a crucial role in enhancing the sustainability and performance of these bottles, offering superior barrier properties and mechanical strength. This partnership aligns perfectly with Avantium's mission to create innovative, plant-based solutions that contribute to a circular economy," says Bineke Posthumus, director of business development at Avantium.

### **SIG Launches World's - First Alu Layer - Free Full Barrier Solution for Multi - Serve Aseptic Cartons, Further Reducing Carbon Footprint by Up to 61%**

SIG, the pioneer of aseptic carton packaging without aluminum layer, announces the commercial launch of another industry-first: SIG Terra Alu-free + Full barrier for multi-serve aseptic cartons. Building on the success of this groundbreaking packaging

material innovation in the field of single - serve cartons – with over 300 million packs sold in China since 2023 – SIG is scaling up the world's first, aluminum-layer-free full-barrier packaging material to multi-serve aseptic cartons and ready to provide it at scale to customers around the globe.



The groundbreaking packaging structure for multi-serve cartons with no aluminum layer cuts the carbon footprint of SIG's standard aseptic cartons by up to 61%<sup>1</sup> when combined with forest - based polymers<sup>2</sup>. Made of more than 80% paper, the material simplifies the packaging structure to only two main raw materials that can all be linked to renewable sources.

#### **Performance and compatibility:**

The packaging material offers the same full barrier protection as standard aseptic cartons and the same full shelf life of up to 12 months. It can seamlessly run on existing SIG carton filling lines with full performance including high-speed of up to 24,000 packs per hour on SIG filling lines for small-size cartons and up to 15,000 packs per hour on filling lines for multi-serve cartons with only minor, low-cost adaptations. The plug-and-play solution is enabling SIG customers worldwide to make use of the additional environmental benefits that come with the alu layer-free full barrier packaging material suitable for a wide range of beverages without compromising product quality or production performance.

"At SIG, we are leading the industry transition to alu-layer-free aseptic carton packaging materials. With our full barrier material with no aluminum layer, we are offering a powerful differentiator and embodiment of sustainability in aseptic carton packaging, unlocking new opportunities for packaging sensitive product categories such as plant - based products, juices, and nutritional beverages. As a result, our SIG Terra portfolio now



offers an aseptic carton solution without aluminum layer for all product categories we serve, without compromising on shelf life”, said Christoph Wegener, Chief Markets Officer at SIG.

### **Simplifying packaging structures:**

Decarbonizing the food and beverage industry is more important than ever. In aseptic cartons, an aluminum layer is traditionally used to protect food and beverage products from oxygen and light. Although aluminum accounts for just around 5% of a standard aseptic carton, it accounts for up to 25% of its carbon footprint in a full - barrier package. Removing the aluminum layer is a significant step in reducing the already low carbon footprint of standard SIG aseptic cartons even further and simplifies the packaging structure from 3 to just 2 main raw materials, thereby increasing the share of paper to over 80%.

### **Pioneering the industry:**

SIG is the pioneer in its industry and introduced a packaging material without an aluminum layer for aseptic cartons in 2010: SIG Terra Alu-free – developed for plain liquid dairy products. Drawing on its extensive knowledge and experience with alu-layer-free structures and building on the success of SIG Terra Alu-free, the company has continued to grow its aluminum - layer - free aseptic carton portfolio – with every solution reducing the already low carbon footprint of standard SIG aseptic cartons even further. With SIG Terra Alu-free + Full barrier SIG expanded the alu layer-free options for wider use with oxygen-sensitive products such as fruit juices, nectars, flavored milk or plant - based beverages. SIG aims to roll out SIG Terra Alu-free + Full barrier to all flagship aseptic carton formats, both small - size and multi - serve, suitable for all beverage and dairy categories step by step.

Since launching the first alu-layer-free aseptic carton in 2010, SIG has sold over 4 billion packs featuring no aluminum layer, including 300 million alu-free full-barrier cartons. These milestones reinforce SIG's leadership in sustainable aseptic packaging.

Gavin Steiner, Chief Technology Officer at SIG: “Sustainability is integral to our business, and we strive to create a regenerative food packaging system. Looking ahead, SIG plans to raise the paper content in its aseptic cartons to at least 90%

including closures by 2030, with an interim target of 85% without closure this year – further boosting renewability, lowering carbon footprints, and with the potential to streamline the recycling process for aseptic cartons, only requiring the separation of paperboard and polymers.”

## **Faerch Unveils Innovative Hot Drinking Lid Made from Recycled PET Plastic for a Circular Drinking Experience**



Faerch is proud to announce the launch of the recycled PET hot drinking lid – designed to provide a circular solution for the coffee and beverage industries. By making the switch to rPET lids, businesses can elevate their brand,

meet evolving consumer expectations, and ensure they're doing their part in creating a circular economy. Sustainability, compliance, and convenience unite in a seamless circular solution, advancing the goal of reducing waste and promoting greater circularity worldwide.

“This launch is more than just a lid — it's a step toward reshaping the industry. At Faerch, we believe true innovation means creating solutions that serve both people and the planet. Our recycled PET hot drinking lid empowers businesses to lead with purpose, proving that convenience and sustainability can, and must, go hand in hand,” says Michelle Lykke Barbesgaard, Director of Group Product Management.

### **Leading the Charge in Sustainable Innovation:**

With Faerch's rPET hot drinking lid, the future of beverages is here. Crafted from up to 85% recycled PET plastic and fully recyclable into food - grade packaging, Faerch's innovative hot drinking lid is all about making a real difference – for your business and the planet. By reducing carbon footprints and enhancing sustainability credentials, it's the perfect solution for coffee chains and beverage providers who want to stand out as forward-thinking brands. As consumers demand more from the brands they trust, Faerch's hot drinking lid allows businesses to show they're serious about sustainability. Not only will your customers thank you, but you'll be making an impact that matters.

## Ahead of the Curve: Legislative Compliance Made Easy

The regulatory landscape for packaging is evolving rapidly, but there is no need for concern. Faerch's rPET hot drinking lid ensures coffee chains and beverage providers stay ahead of the legislative curve. Designed for circularity and to comply with upcoming sustainability laws, this lid facilitates a seamless transition to more responsible practices.

## Convenience Meets Responsibility:

In today's fast-paced world, convenience is key and at Faerch we've ensured that our latest innovation doesn't compromise the drinking experience. With a secure fit and smooth and exceptional leak resistance, it's the perfect choice for busy consumers. Whether it's the morning rush or an afternoon pick-me-up, the rPET lid delivers, combining practicality, durability, and support for a cleaner future.

## Shaping the Future of Coffee and Beverages:

Faerch's rPET hot drinking lid isn't just a product – it's a movement. A movement towards a more sustainable, responsible, and circular future. This is your opportunity to lead the way in the coffee and beverage industries, demonstrating that your brand is as committed to the planet as it is to providing quality drinks. It's time to act – and with Faerch, the future is looking brighter, one cup at a time.

## EcoVerHighPlus: A Recyclable - Ready Innovation for Coffee Packaging in Partnership with Delica, Part of Migros Industries

Constantia Flexibles, a leader in flexible packaging, has successfully implemented EcoVerHighPlus, an innovative mono PP laminate now transforming coffee packaging. Developed in close partnership with Delica AG, belonging to the group Migros Industrie AG – a leading Swiss producer of premium chocolate, snacks, cooking products, and coffee – this soft bag combines more sustainability with top-tier performance.

Tobias Acker, Market Product Manager for Beverages at Constantia Flexibles, emphasized the significance of this achievement: “This project highlights the positive impact of close collaboration. Thanks to our

partnership with Delica AG we have successfully launched one of the first recyclable-ready mono PP laminates for coffee soft bags on the market. This represents a meaningful step forward for both the industry and the environment.”



A representative of Migros Industrie added: “EcoVerHighPlus has proven to be a reliable, high-performance solution, demonstrating excellent runnability on vertical form-fill-seal (VFFS) machines without requiring any equipment modifications. After initial fine-tuning to optimize the laminate, the project quickly became a one-shot success story.”

Constantia Flexibles and Migros Industrie continue to lead the way in responsible packaging solutions for the coffee industry by delivering functional, high-quality solutions with recyclability at the forefront.

## Syensqo to Supply Circular Duradex™ PPSU ECHO for Pigeon's SofTouch™ Baby Bottles



Syensqo, a leading global provider of high-performance materials and chemical solutions, is pleased to announce that Pigeon Corporation has decided to use its circular Duradex™ polyphenylsulfone (PPSU) ECHO for their premium SofTouch™ nursing bottles. This high-purity food-contact polymer is produced with 38% certified circular<sup>1</sup> feedstock, attributed by mass balance and verified under the International Sustainability and Carbon Certification (ISCC) PLUS regime.



Duradex™ PPSU ECHO is an amorphous, naturally amber - transparent polymer that lends Pigeon's nursing bottles an inherently non-stick, and highly stain - and scratch - resistant surface. It provides exceptional hydrolytic stability, shatter - proof toughness and heat resistance up to 180°C for more than 1,000 steam or hot water sterilization cycles, as well as dishwasher cycles, with no risk of any damage. Notably, the high-purity PPSU material does not absorb any odors and is free of artificial pigments as well as phthalates and bisphenols, ensuring a safe and healthy feeding experience.

Pigeon's SofTouch™ premium nursing bottles made with Duradex™ PPSU ECHO will be launched on the market shortly. Syensqo's circular polymer is available worldwide.

1 The ISCC (International Sustainability and Carbon Certification) defines circular materials as materials that are reused, recycled or further used instead of being landfilled or used for energy.

### Vidya Polymer Achieves Superlative Metal Bond Strength for BOPET Using BOBST AluBond® on VISION K5



Vidya Polymer is a fully owned business entity, established in 2009 pioneering in providing the best quality of rotogravure printed flexible packaging material delivering security, freshness and convenience, for food, beverages, medicines etc. Supported by a team of dedicated, energetic and experienced professionals, who understand specification of clients and their product requirements. The expert professionals evolve and implement exclusive quality control programs from pre-press to the final dispatching of the products, which ensures precision printing, lamination and slitting and creates immense brand visibility.

Mr. Ankur Bansal, Managing Director of Vidya Polymer commented "The BOBST VISION K5 with AluBond® has fulfilled our expectations to achieve

higher metal bond strength at 2.7 OD, 450 grams / 25mm on BOPET. We are happy to have BOBST as our most trusted solution partner and they have proved to be very reliable with their service and support. The performance of the AluBond® technology has met our expectations in terms of metal adhesion and barrier properties. It has enabled us to enhance our product quality while aligning with our sustainability goals. The reliability of the machine, combined with BOBST's technical expertise, makes them a trusted long-term partner in our journey towards innovation and growth."

Seeking to secure high barrier properties without compromising film quality, Vidya Polymer turned to BOBST's state-of-the-art metallizing technology and procured a BOBST VISION K5 2450mm equipped with AluBond® which has successfully demonstrated their sustainability vision forward.

### Customer Endorsement - BOBST AluBond® with VISION K5 metallizer - Innovation at its core

"In another expression of his satisfaction, Mr Bansal added, "The BOBST system has transformed our production process by delivering extraordinary metal bond strength, notably enhancing the barrier properties of our films."

BOBST's AluBond® technology represents a breakthrough in metallizing processes by achieving outstanding metal adhesion on the most used substrates mainly BOPET. The BOBST VISION K5 in conjunction with our AluBond® technology provides a unique robust and reliable metallizing solution. The VISION K5 has the smallest footprint in the industry and can handle a variety of substrates including heat sensitive and thin gauge films and provides the largest coating window in the industry. The machine is equipped with Hawkeye, an in-line optical density deposition control and defect monitoring system. At full metallizer speed, Hawkeye detects, counts and categorizes pinholes and other defects, alerting the operator so the issue can be rectified immediately resulting in less film waste.

At BOBST, we are committed to delivering technologies that help our partners thrive. Vidya Polymer's success story with BOBST AluBond® and the VISION K5 metallizer is a testament to the transformative power of our innovative solutions. We look forward to continuing our collaboration as we drive forward the future of sustainable packaging.

## **DYMAG®, BORBET and Advanced International Multitech Forge Strategic Partnership to Advance Carbon Wheel Technology**



DYMAG® TECHNOLOGIES LIMITED, a wholly owned subsidiary of BORBET GmbH, and ADVANCED INTERNATIONAL MULTITECH CO., LTD. (AIM) have announced a strategic partnership to accelerate the development and industrialisation of carbon hybrid and composite wheel technology for the automotive and motorcycle industries.

This collaboration brings together DYMAG's industry-leading expertise in carbon wheel technology, BORBET's position as one of the world's foremost premium aluminium wheel producers for OEM and Aftermarket, and AIM's advanced manufacturing capabilities as Taiwan's largest carbon composite products company to establish a new standard in lightweight, high-strength wheel solutions.

### **DYMAG® – A Pioneer in Patented Carbon Automotive Wheels:**

With a heritage spanning over 50 years, DYMAG® has been at the forefront of carbon wheel technology since the mid - 90s, pioneering the world's first commercial carbon wheels for automotive and motorcycle applications. Long before other manufacturers entered the market, DYMAG® developed and patented a unique carbon hybrid wheel design, engineered to offer unmatched durability, impact resistance, and stiffness.

This innovation is built on more than five decades of elite motorsport and high-performance wheel engineering, including deep expertise across carbon fibre, magnesium, and forged aluminium technologies.

Today, DYMAG's patented BX-F™ carbon wheel designs are being adopted by major OEMs, as automotive manufacturers increasingly recognise the performance, efficiency, and safety benefits of lightweight carbon hybrid wheels.

### **BORBET: A Global Leader in Premium Aluminium Wheels:**

BORBET GmbH, founded in 1881 and based in Hallenberg - Hesborn, NRW, is a leading global manufacturer of light alloy wheels. BORBET supplies over 30 car manufacturers and is highly regarded in the specialised trade. The company has seven locations worldwide and uses state-of-the-art technology to ensure the highest quality. BORBET's vision is to shape and optimise the mobility of tomorrow. BORBET focuses on continuous research and development to stay ahead of trends in the evolving automotive industry and create sustainable, future-oriented solutions. The company places the highest value on environmental compatibility and social responsibility. BORBET's light alloy wheels are an expression of technology and style, helping shape a progressive, sustainable future for mobility.

### **AIM: Taiwan's Leading Carbon Composite Manufacturer:**

ADVANCED INTERNATIONAL MULTITECH (AIM) is a global leader in carbon composite technology, recognised as a premier supplier of high-performance carbon sports equipment and a leading manufacturer of carbon composite products in Taiwan. With more than 30 years of experience in composite design, manufacturing, and process innovation, AIM has built deep expertise in precision production and advanced materials engineering. These capabilities enable cost-effective, scalable manufacturing of DYMAG's carbon hybrid wheels, delivering cutting-edge lightweight wheel technology to global OEM and aftermarket customers. Leveraging this strong foundation, collaboration with DYMAG® and BORBET will further accelerate product optimisation and enhance OEM market integration.

### **Why This Partnership Matters: A Global Manufacturing and Supply Chain Strategy:**

The collaboration leverages BORBET and AIM's established supply networks, AIM's scalable production infrastructure, and DYMAG's technical expertise to create a robust, high - quality supply solution for global markets. Through close technical



alignment and coordinated development efforts, carbon hybrid wheels can be seamlessly integrated into OEM production lines, delivering a validated, lightweight solution for the vehicles of tomorrow.

### A New Era for Carbon Wheel Technology:

By uniting DYMAG's groundbreaking, patented BX-F™ designs, BORBET's OEM expertise, and AIM's advanced manufacturing, this partnership is setting a new industry benchmark for lightweight, high-performance, and safety-focused wheel technology. The collaboration is a critical step toward widespread adoption, ensuring enhanced durability, efficiency, and performance for modern automotive and motorcycle applications.

**CHRISTOPHER SHELLEY, Executive Chair, DYMAG®:**

"This partnership enables DYMAG® to bring our carbon wheel technology to the rapidly expanding OEM market, supporting the industry's shift towards lightweight, high-performance solutions."

**BURKHARD PLETT, CEO, BORBET:**

"By combining BORBET's OEM expertise with DYMAG's pioneering carbon wheel technology, we are creating a scalable solution that will redefine high-performance wheels for automakers worldwide."

**MIKE CHOU, General Manager, AIM Group:**

"Our manufacturing expertise in advanced composites, combined with DYMAG's patented wheel technology, positions us to bring industry-leading lightweight solutions to market at scale."

### IFCO Expands its Reusable Coral Fish Crate Range across Southern Europe

IFCO, a global leader in reusable packaging containers (RPCs) for fresh products, is expanding its specialized Coral fish crate portfolio across Southern Europe. Designed to meet the needs of seafood logistics, the Coral fish crate now comes

in more sizes, offering unmatched sustainability, hygiene and operational flexibility for the transport of fresh and frozen fish.



### Seafood logistics

#### Meeting the growing needs of seafood logistics

Over the past five years, IFCO has made significant progress in providing reusable solutions for the seafood supply chain, now working with 20 top retailers across Spain and Southern Europe. This expansion is driven by the company's commitment to provide sustainable alternatives to single-use packaging like expanded polystyrene (EPS).

All crates are part of IFCO's SmartCycle™ pooling system, contributing to a circular economy and supporting digital traceability from catch to consumer. Recognizing the sanitation needs of fish logistics, the fish crates undergo a dedicated washing regime.

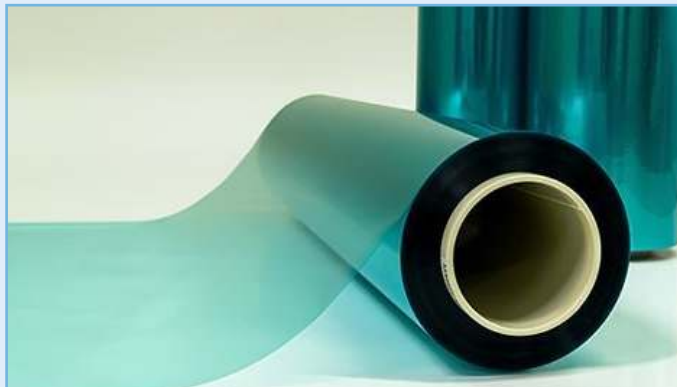
This process includes elevated temperature washing with specialized detergents and disinfectants to ensure food-grade safety.

#### Expanded IFCO Coral fish crate range with new sizes for greater flexibility

IFCO's Coral crate range has been enhanced with additional sizes to better serve the market's evolving needs.

These new sizes enable retailers and producers to select the optimal solution based on their unique supply chain requirements.

## Asahi Kasei Launches New Series of Sunfort™ Dry Film Photoresist as Material for Back - end Processing of Advanced Semiconductor Packaging used in AI Servers



Asahi Kasei has developed the TA Series of Sunfort™ dry film photoresist as a new product designed to meet growing demand in the field of advanced semiconductor packages used in applications such as artificial intelligence (AI) servers. This product is positioned as a strategic offering within Asahi Kasei's Material sector, aiming to strengthen its footprint in the rapidly growing market for next-generation chip packaging. The dry film delivers an ultra - high resolution with conventional stepper exposure systems and laser direct imaging (LDI) systems, which transfer circuit patterns onto substrates during packaging, contributing to enhanced performance and precision in back-end processes.

Sunfort™ dry film photoresist is a mainstay of Asahi Kasei's Electronics business, comprising electronic materials and electronic components, which is positioned as a First Priority business to drive growth from fiscal 2025–2027 under the medium - term management plan “Trailblaze Together.”

Interposers serve as a bridge between chips and substrates and are used along with package substrates in advanced semiconductor packages. These components require a large area, high - multilayer structures, and increasingly sophisticated technologies for forming high-density microwiring. In photolithography, liquid resist has long been the

mainstream photoresist material for the redistribution layer (RDL) due to its superior resolution. In contrast, dry film photoresist offers advantages for panel-level processing (which involves larger surface area than conventional wafer-level processing), such as ease of handling and ease of processing on both the top and bottom sides of the substrate, but have not been adopted for RDL formation due to limited resolution performance.

Developed based on Asahi Kasei's long experience with photosensitive material together with new material design, the TA Series enables fine wiring formation in panel - level packages and similar applications. The TA Series allows for patterning with a resist width of 1.0  $\mu\text{m}$  using LDI exposure in the 4  $\mu\text{m}$  pitch design required for RDL formation (see Figures a and b). The resulting fine resist pattern can be plated by a semi - additive process (SAP, a method for forming fine conductive patterns using partial electroplating) followed by resist stripping to form a 3  $\mu\text{m}$  wide plating pattern in a 4  $\mu\text{m}$  pitch design (Figure c).

Sunfort™ dry film photoresist will continue to play a key role in developing panel - level packaging technology as panel sizes grow. The new TA Series allows manufacturers to achieve finer wiring with greater production efficiency, helping to reduce cost and increase yield in advanced semiconductor packaging. Asahi Kasei's TA Series comes at a pivotal time as demand in AI, automotive, and IoT markets grows.

“The development of the TA Series comes after years of close collaboration with our customers and a deep understanding of their most pressing pain points. Through this development, we address the evolving requirements of semiconductor packaging in AI, automotive, and IoT applications,” said Yu Hasegawa, Managing Executive and Senior General Manager of the Electronics Interconnecting Materials Division at Asahi Kasei. “With growing demand, particularly in Asia and North America, we at Asahi Kasei are enhancing our global support framework to deliver timely solutions and technical services tailored to regional needs.”





## Ascend Begins Production of High-Purity Acrylonitrile

Ascend Performance Materials announced the production of high-purity acrylonitrile at its Chocolate Bayou plant in Alvin, Texas, after the installation and commissioning of new purification equipment.

"We're excited to provide our high-purity acrylonitrile into new end-markets and support technologies that drive innovation and sustainability," said Alex Mihut, vice president of performance chemicals at Ascend. "This advancement not only strengthens our product portfolio but also reinforces our commitment to delivering essential materials that meet the evolving needs of our customers and the industry."

Acrylonitrile is used to make a variety of polymers and synthetic rubbers. High-purity acrylonitrile has applications in aerospace, renewable energy technologies, water treatment and healthcare. Ascend's equipment was funded in part through a contract with the U.S. government to ensure the supply of vital raw materials for the domestic production of nitrile rubber gloves.

"This is a significant milestone in this site's 63-year history," said Scott Van Wagener, senior site director of the Chocolate Bayou plant. "We continue to invest in technologies that grow our site and support our customers' growth."

Besides high-purity acrylonitrile, Ascend will further expand capabilities in Chocolate Bayou to include acetonitrile production. Acetonitrile is primarily used in the manufacturing of pharmaceuticals.

## ELIX Polymers Presents New Colour Trends for Several Industries



ELIX Polymers has developed a range of new colours inspired by the latest trends and tailored to meet the specific requirements of various industries. These innovative colours can be produced using different resins from the ELIX Polymers product portfolio, including ABS, ABS/PC and PC/ABS. Additionally, these colours are compatible with the more sustainable E-LOOP products that contain recycled content.

Metallic colours such as gold, silver and bronze are particularly appealing for interior automotive parts, as well as for consumer goods and electrical and electronic (E&E) applications. By removing the need for painting, these colours can help to reduce both costs and the carbon footprint.

Natural colours are another trend from the furniture industry and for interior decorative parts for the transportation segment. Stone and graphite effects have been developed in the ELIX colour laboratory, as consumers are looking for more natural, sustainable and warm colours.

These new colours have been presented to designers from various industries, generating significant interest. Early-stage technical cooperation is crucial to achieve the best possible results, especially considering the sensitivity of these special colours during the injection moulding process. ELIX Polymers has extensive experience in colour development at their Tarragona laboratory, offering a wide range of OEM colours, as well as RAL and Pantone options for different base resins.

The ELIX Polymers laboratory is well equipped with advanced resources, including light booths, various colour measurement devices and ageing chambers. These facilities allow comprehensive evaluation of the light stability of the developed colours, ensuring their durability and consistency over time. The ELIX Polymers team is highly skilled and experienced in developing innovative colours, keeping abreast of the latest trends in pigments and colorants. Their expertise allows them to continuously offer new and exciting colour options to meet evolving market demands.

ELIX Polymers' extensive colour portfolio already includes a vast array of options tailored for the automotive, medical and consumer goods sectors, among others. These colours are designed to meet the stringent regulatory requirements and performance standards of each industry. For the automotive sector, ELIX offers pre-coloured ABS and ABS blends that comply with the high durability and aesthetic appeal standards set by the most important OEMs. In the medical industry, ELIX provides colours that meet rigorous regulatory standards for biocompatibility and sterilisation. For consumer goods, the focus is on providing vibrant, durable colours that enhance product appeal, while meeting safety and performance criteria.

In collaboration with KraussMaffei, ELIX Polymers has successfully injected several colours into turtle-shaped parts, showcasing both high gloss and low gloss finishes. These parts will be exhibited at the K Fair, at the ELIX Polymers booth in Hall 5, Stand 5D02.

## Borealis Invests to Increase Capacity for Recyclable, Lightweight Polymer Foam Solutions

- Borealis invests over EUR 100 million in new High Melt Strength polypropylene (HMS PP) line at its Burghausen, Germany, facility. The start-up is planned for the second half of 2026
- Borealis Innovation Headquarters in Linz, Austria, spearheaded breakthrough innovation in design for recycling with Daploy™ High Melt Strength polypropylene (HMS PP)
- The new line will triple Borealis' supply capability for fully recyclable HMS PP that enables high-performance and lightweight foam solutions



Borealis continues to invest in growth through sustainable solutions that are transforming the polymer industry. Its facility in Burghausen, Germany, is significantly expanding production capacity for an innovative polymer foam solution called Daploy™ High Melt Strength polypropylene (HMS PP). This investment - totaling over EUR 100 million - addresses growing global demand for recyclable, high-performance foam solutions. The new line, scheduled to start up in the second half of 2026, will triple Borealis' supply capability for fully recyclable HMS PP. This expansion enables the transition to more circular and recyclable material solutions for customers in the consumer products, automotive, and building and construction industries.



The development of Daploy HMS PP took place at Borealis' Innovation Headquarters in Linz. The new product provides exceptional foamability, lightweight properties, and mechanical strength - characteristics that support material efficiency and help cut both costs and CO2 emissions. It is suitable for use in monomaterial solutions, which are easily recyclable at end of life.

By supporting the sustainability principles of Reduce, Reuse, and Recycle, Daploy HMS PP addresses the growing demand for recyclable solutions across multiple industry segments:

- The properties of Daploy HMS PP make it ideal for a wide range of consumer products applications, such as reusable coffee cups and food packaging. As a lightweight, recyclable material that supports reuse, it helps packaging producers meet the requirements of the EU Packaging and Packaging Waste Regulation (PPWR).
- In the automotive industry, Daploy is used for ultra-lightweight foamed interior and under-the-hood components. Typically 60-90% lighter than non-foamed alternatives, these components help improve fuel efficiency and reduce carbon emissions. It also enables zero-waste production as all production trim-offs can be easily recycled. In addition, Daploy makes it possible for these parts to be constructed from a single material, facilitating recycling at the end of the vehicle's life.
- In the building and construction sector, Daploy HMS PP is used to replace heavier materials in insulation and paneling applications. Its durability, strength and heat resistance ensure excellent performance, while its lightweight properties and recyclability improve the sustainability of these components.

The expansion is another example of Borealis' dedication to delivering innovative, high-quality products that advance sustainability, and reinforces its leadership in the PP market.

"In line with our We4Customers strategy, this investment creates value for customers by enabling them to design recyclable, foam-based products for a wide range of high-performance applications," explains Craig Arnold, Borealis Executive Vice

President Polyolefins, Circular Economy Solutions and Base Chemicals. "By expanding production, we're ensuring a reliable supply of this advanced material to help our customers achieve their sustainability goals and deliver high-performance solutions."

Visitors to K 2025 will have the opportunity to explore a range of Daploy HMS PP solutions at the Borealis and Borouge stand Hall 6, Stand A43 and discuss how these grades can help them meet their sustainability and performance goal.

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## HR Organo Chem Partners with Toray to Distribute High - Performance Engineering Plastics

HR Organo Chem, a trusted brand for distribution of advanced materials, is now associated with Toray's high - performance engineering plastics, known for their exceptional quality and technical superiority. Toray's materials are engineered to deliver outstanding mechanical strength, thermal stability, UV resistance and aesthetic appeal, making them ideal for automotive, electronics, consumer goods and construction applications.

Toray's technical expertise shines through their precisely formulated grades optimized for specific processing methods and end - use requirements. Their ASA and PMMA / ASA offerings provide outstanding UV resistance and colour retention, while their ABS and PC / ABS blends deliver the perfect balance of impact strength, heat resistance and processability.

As your trusted partner, HR Organo Chem ensures reliable supply, technical support and customized solutions ensuring optimal material selection and processing parameters for your unique applications.

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## New Bio - Based Polyamide 6 Resins under the DOMAMID® Brand from DOMO Chemicals

In line with our corporate mission to develop polyamide solutions that contribute to a more sustainable world, DOMO has adopted the mass balance approach with the aim of providing bio-based raw materials to our customers.





The entire portfolio of DOMAMID® PA6 base polymers is now available with the International Sustainability and Carbon Certification (ISCC) PLUS certification, offering increased customer choice while maintaining high quality standards.

ISCC PLUS is a globally recognized certification that focuses on sustainable production through the mass balance approach. This innovative method seamlessly integrates bio-circular and circular materials into existing production processes, ensuring meticulous tracking and verification from their entry into the production process to the final product. This Chain of Custody is supported by Circularise, a provider of mass balance software solutions.

DOMO Chemicals now offers an extended range of medium, high and low viscosity DOMAMID® MBB (Mass Balanced Biocircular) solutions with up to 69% bio content without compromising performance.

#### **Not competing with the food value chain:**

At DOMO, we prioritize bio-circular materials, which are derived from waste of biological origin (like used cooking oil), and circular- technical materials, which come from non - biological waste (such as textiles, plastics, and end-of-life applications). We focus on these over pure bio materials derived from agricultural sources that compete with the food value chain.

#### **Key benefits of Mass Balance**

- Enables faster transition to sustainable alternatives
- Reduces fossil - based feedstock and waste generation
- Provides the same high quality products you're used to, now with bio-derived, renewable materials

- No need to re-homologate
- Up to 69% renewable content
- Identical prime grade properties
- Third party certified
- Traceability Chain of Custody powered by Circularise

#### **Endless application with net ZERO:**

These solutions reduce CO<sub>2</sub> emissions by up to 100% compared to virgin - based materials produced in the same facility. These materials, which have an incredibly low CO<sub>2</sub> footprint, are perfect for food and pharmaceutical packaging, technical and textile yarns, and as a base for innovative engineering plastics solutions. DOMO Chemicals invites customers and stakeholders to explore these sustainable solutions and join in advancing environmental responsibility in the industry.

#### **Braskem and SCGC JV to Source Ethanol for New Bio - Ethylene Plant in Thailand**

BRASKEM announced that Braskem Siam, the joint venture between Braskem and SCG Chemicals has signed a Letter of Intent to purchase ethanol from Thailand's Mitr Phol Bio Fuel for its upcoming bio-ethylene plant. Mitr Phol Bio Fuel, a subsidiary of Mitr Phol Group, is renowned for its strong commitment to sustainability, encompassing the entire process from feedstock sourcing to production. This agreement secures Braskem Siam's feedstock supply and reinforces its commitment to contribute to the development of the local ethanol value chain.

The new bio - ethylene plant in Thailand - the first of its kind outside of Brazil - will almost double the existing production of Braskem's I'm greenT bio-based polyethylene globally. The strategic location in Thailand seeks to leverage the kingdom's ethanol production and proximity to growing demand for sustainable products around Asia.



## Aerodry's CHD Series Crystallizers for Efficient PET Recycling

Aerodry's CHD series crystallizers are designed for efficient PET recycling, providing continuous crystallization of amorphous PET. This advanced technology quickly turns PET into a stable crystalline form, ensuring a smooth and fast recycling process. A key feature of the CHD series is its ability to speed up startup times, reducing downtime and boosting productivity.

By preventing issues like lumping that can disrupt material flow, the crystallizers help maintain consistent quality throughout the recycling process. Additionally, the continuous crystallization process reduces energy consumption, making the system cost-effective. The CHD Series is ideal for PET recyclers who utilize large volumes of recycled PET material and to optimize their operations and achieve better results with less energy. Aerodry's innovation leads the way in sustainable PET recycling, offering a reliable solution to meet the growing demand for recycled materials.

## Unimark Hi - Tech Solution Offers Maguire ULTRA Dryer - Next - Generation Drying Technology

Unimark Hi-Tech Solutions LLP offers the Maguire ULTRA dryer that revolutionizes plastic drying with vacuum technology, delivering faster drying, lower energy use and reduced scrap compared to traditional desiccant dryers.

- **Speed:** Dry materials 6x faster than desiccant dryers, cutting drying times from hours to minutes. This means faster startups and quick material changes, boosting productivity.
- **Energy Savings:** Using vacuum instead of energy-intensive desiccant regeneration reduces consumption by 60-70%, lowering costs and CO<sub>2</sub> emissions.
- **Better Quality and Less Scrap:** Shorter heat exposure prevents thermal degradation, ensuring consistent drying and reducing defective parts.
- **Rapid ROI:** Savings from energy, efficiency and maintenance result in fast payback.
- **Reliability:** Industry leading 5 - year warranty on manufacturing defects.

## KBM Makes Recycling Smarter with Space Saving High Output Machine

Transform post-consumer waste into high-quality, application-ready granules with KBM Extrusions Machines Pvt. Ltd.'s advanced recycling and compounding machine. Designed for efficiency and performance, this compact machine combines recycling and compounding in one seamless process. This machine is built to incorporate your LDPE, HDPE and PP waste, along with a range of input materials – be it masterbatch, virgin resin or additives being dosed in.

Engineered with double venting, high-output dosing and space-saving design, it delivers superior granule quality, while maximizing production efficiency. Say goodbye to multi-step operations and hello to a streamlined, single-machine solution that minimizes footprint without compromising output. Whether you are manufacturing packaging, automotive parts or consumer goods, the recycled compounded granules from KBM machine are ready to go straight into your product line.

## German Machinery Orders Down, Recovery in Sight

For the third consecutive year, Germany's plastics machinery industry remains under pressure, and only a swift rebound in orders could prevent further revenue contraction in 2025.



Despite a difficult 2024, there are early signs of recovery in 2025 for German manufacturers of plastics and rubber processing machinery and equipment.

According to the latest figures released by the sector's division within VDMA, order intake — adjusted for inflation — fell by 21% last year compared to 2023, while sales declined by 19%. These results are even worse than the projections published last autumn, and they come on the heels of an already weak 2023, when orders had dropped by 22%, although revenues had still managed to grow slightly.

"We have had three very long years in which hardly any new orders were placed, and companies were pushed to their limits," commented Ulrich Reifenhäuser, chairman of the VDMA Plastics and Rubber Machinery Association.

In response, German manufacturers have widely adopted **short - time work** schemes to mitigate the effects of declining demand and, increasingly, have

resorted to **layoffs**. "It is all the more gratifying that we are emerging from the **first quarter** of **2025** with a glimmer of hope," added Reifenhäuser. "Orders have picked up noticeably again (price-adjusted **up 5%** compared to the same period last year); only sales are still lagging behind, as expected, with a decrease of 17%."

According to the association's estimates, **revenue** for the **current year** could remain **flat** — under the most favorable scenario — if order volumes continue to recover in the coming months. In a less optimistic outlook, with delayed investment decisions pushing revenues into 2026, the industry could face an additional **5% decline** in annual turnover. All of this comes against the backdrop of uncertainty caused by U.S. trade policy direction under the Trump administration.

"We currently assume that the bottom has been reached in terms of order intake," noted **Thorsten Kühmann**, managing director of the VDMA Plastics and Rubber Machinery Association. "The industry will work its way up from this level in small steps over the next few months. This means that the **K** trade fair in October is coming at just the right time," Kühmann continued. "Companies will be able to present their solution expertise and innovations to a hopefully investment-friendly crowd of customers."

## Italy Machine Sales Down 2%

AMAPLAST, the trade association for Italian Plastics and rubber machinery manufacturers, says sales from its members fell slightly in 2024, despite rising exports.

Although Amaplast and the MECS Statistical Study Centre did not report the exact figure, they said sales were down by about 2% compared to 2023-putting the final figure at around €4.7 billion.

The dip comes despite a near-2% rise in exports-reaching a total of just over €3.6bn. This is the fourth consecutive year in which exports have increased - helping to offset losses in the domestic market, said Amaplast. Exports make up nearly three quarters of sales, it added.

Export highlights included increased deliveries to Mexico, France, China, Turkey, Brazil and India, but reductions to the US, Spain, Poland and Germany.



"Nonetheless, Germany remains the top destination for Italian exports," it said.

Italy machine sales down 2%

"This appears even more encouraging when compared to the results of German manufacturers who saw a 30% collapse in domestic sales and order intake in 2024."

Export markets that grew include Turkey (15%) and Brazil (86%)-which it called an all - time record driven by strong demand for high tech machinery"- while China and India both saw increased sales of 15%.

Declining markets include Spain (6%), Poland (19%), US (4%) and Romania (20%).

Exports of extruders and injection moulding machines fell by 7%, while flexographic printing machines grew 5%. Italian manufacturers have already seen encouraging signs this year, though a turnaround - or more pronounced stabilisation of indicators - may not be seen until the second half of the year, it said.

## ENGEL Expands Market Share Amid Global Uncertainty

The globally operating ENGEL Group has closed the 2024 / 25 financial year with a turnover of approximately EUR 1.5 billion. Despite a continued decline in market conditions, the injection moulding machine manufacturer held its ground against European competitors and continued to expand its market share – driven by innovation and targeted regional strategies.

### Resilience in a challenging market

Although revenue fell by nearly 10% compared to the previous year, ENGEL has demonstrated its resilience. The past financial year was marked by reduced investment activity and a significant drop in incoming orders across all areas of industry. ENGEL not only remained stable in this environment, but also systematically increased its market share in multiple sectors and regions. "We have learnt to remain capable of action during crises - and once again proven that ENGEL can act

reliably and with foresight even under difficult conditions," says Stefan Engleder, CEO ENGEL Group.

### Segment performance: Strategic progress despite headwinds

To address the global decline in demand, ENGEL is pursuing a triad strategy focused on Europe, the Americas and Asia. This approach is supported by independent hubs with sales, sales support, production and after sales – strengthening local presence and technological innovation.

Particularly in the areas of automation and service, the company has launched key initiatives to enhance customer proximity, delivery reliability, and solution orientation. "Especially in economically challenging times, the importance of a reliable service partner becomes clear. Our goal remains to ensure maximum system availability throughout the entire lifecycle," says Engleder.

While the automotive sector continues to face structural uncertainties, interest is growing in solutions for lightweight construction and alternative materials. In technical injection moulding, ENGEL was able to strengthen its market position through expertise in applications technology, despite the overall market trend. The Packaging division proved to be much more resilient, benefiting from an increase in demand. The Medical division remained stable, with sustained interest in specific applications such as auto-injectors helping to offset a slight overall decline.

### Investing in young talent for the long term

International apprentice training remains a cornerstone of ENGEL's personnel development efforts. Worldwide, a total of 397 apprentices are currently completing their training at ENGEL, including 227 in Austria. In today's competitive labour market, developing young talent remains a key pillar of the long-term personnel strategy.

"We are making targeted investments in the next generation of skilled professionals – offering hands-on training and international development opportunities. This enables us to maintain our ability to innovate well into the future," says Engleder.

# CIRCULAR ECONOMY/ BIO-PLASTICS/ RECYCLING



## Diamond Recycles Co<sub>2</sub> Emissions; Alterra Supports Viva Energy

Diamond Infrastructure Solutions is recycling waste Co<sub>2</sub> emissions to create sustainable chemicals, fertilisers and materials like plastics. Meanwhile, Alterra has produced 9.5 tonnes of plastic pyrolysis oil from end-of-life plastics at its facility, which has been processed by Viva Energy's Geelong refinery.

There have also been multiple announcements from SK Chemicals. The company has helped LH Plus expand within the kitchenware materials market.

(Source: Interplas Insights)

## Amcor and Fedrigoni Unveil Breakthrough Recycle-Ready Wet Wipe Packaging

Amcor (NYSE: AMCR, ASX:AMC), a global leader in developing and producing responsible packaging solutions, has partnered with Fedrigoni - a global reference in the manufacturing of specialty papers for packaging, self-adhesive labels, graphic media and RFID - to develop a recycle-ready flexible packaging solution for wet wipe application.



The combination of Amcor's AmPrima® Plus flow wrap and Fedrigoni's semi-rigid label has produced a wet wipe pack that is recycle-ready in its entirety, and can be recycled in polyethylene (PE) recycling streams across Europe.

This collaboration marks a significant breakthrough for the home and personal care industry. It accelerates the sector's transition to recycle-ready packaging in line with regulations such as the EU's Packaging and Packaging Waste Regulation (PPWR), which aims to reduce packaging waste and make all packaging on the European Union's (EU) market recyclable by 2030.

The mono-material solution from Amcor and Fedrigoni unlocks advantages for brands, including potential savings in Extended Producer Responsibility (EPR) fees, reduced plastic usage and a reduction in their packaging's carbon footprint.



The PE based flow wrap, combined with the PE based semi-rigid label, offers excellent functionality and wipe performance throughout the lifetime of the pack. The new wet wipe packaging solution has been certified as recyclable by RecyClass and Institut cyclos - HTP.

Additionally, Amcor's AmPrima® Plus flow wrap solution can incorporate post-consumer recycled (PCR) content, paving the way for greater PCR integration ahead of the 2030 PPWR mandate, which will require plastic packaging to contain a minimum percentage of recycled content.

The unique composition of the AmPrima® Plus wet wipe pack, combined with a patented semi-rigid label from Fedrigoni, allows brands to cut the weight of their packaging by up to 15% when compared to traditional, multi-material packs with a rigid label. The new pack has a lower carbon footprint by up to 55%, as calculated by Amcor's ASSET life cycle assessment methodology, which is certified by The Carbon Trust. The solution's weight - optimized design also helps brands save on EPR fees, with a possible reduction of up to 35%.

**Georey Gendebien, Marketing Manager, Home & Personal Care** at Amcor says: "Innovation requires cooperation and collaboration. By combining the AmPrima® wet wipe ow wrap with Fedrigoni's semi-rigid label, Amcor and Fedrigoni have achieved something special – a complete pack that is designed for recycling in the PE recycling stream."

**Federico Lanzi, Marketing and R&D Director at Fedrigoni Self-adhesives** says: "As a challenging and technical sector, improving the recycle-readiness of home and personal care products will be instrumental to the success of the PPWR regulation. By combining Fedrigoni's leadership in adhesive labelling with Amcor's expertise in responsible packaging, we are proud to offer a solution that champions customer - centric design. This collaboration also represents an acceleration in the Fedrigoni Group's innovation processes and is consistent with our ESG strategy to 2030, which aims to have 100% of materials designed for optimal recyclability and end - of - life recovery."

## Trioworld's Circular Solution for Plastic Aprons is Being Introduced in Region Stockholm

Trioworld and Region Stockholm have entered into an agreement on a circular solution for personal protective equipment (PPE).

In the agreement, Trioworld's solution has created a closed loop for plastic aprons that includes the entire supply chain – from collection to recycling and granulation of the recycled plastic waste, which is used in the process of making new aprons.



### Protective aprons with recycled plastic

Region Stockholm is responsible for healthcare, public transport and regional development in the County of Stockholm. The unique solution that Trioworld offers not only reduces the environmental impact and the amount of primary plastic material used in public healthcare. It also adds robustness to the supply chain - with aprons that are recycled and produced in Sweden.

### The future of healthcare aprons in Sweden

"We are very proud of the trust placed in us by Region Stockholm," says Johan Lantz, Sales Director National Accounts at Trioworld Industry Division. "This marks a significant milestone for Swedish healthcare, as they are now taking the step towards circulating and recycling aprons, which are second only to plastic gloves in terms of consumption volume at Swedish hospitals. This innovative solution is now available within the Swedish industry, with local production emphasizing sustainability and robustness," continues Johan Lantz.

(Source: Trioworld / 14.05.2025)



## Ayuda En Acción, Indorama Ventures and IMG Group Launch Major Recycling Partnership to Tackle Waste Crisis in Mali



- New 'Bamagreen' initiative aims to drive circular economy and empower nearly 2,000 people, including displaced women and youth.
- 100,000 people expected to benefit from city-wide reforestation and waste education campaigns.

**Bangkok, Thailand & Madrid, Spain May 14, 2025** – In response to Mali's escalating environmental crisis, three leading organizations—**Ayuda en Acción, Indorama Ventures, and IMG Group** — have joined forces to launch 'Bamagreen,' a transformative recycling and reforestation project in the capital city of Bamako.

This initiative is the first under the **Plastic2Prosperity** program, developed through the **adaPETation®** network by IMG Group. The project will strengthen plastic circularity while generating tangible socio-economic benefits, particularly for vulnerable communities including conflict-displaced populations, women and young people. This partnership aims to demonstrate how recycling not only benefits the environment but also generates socio-economic opportunities in complex settings.

### Creating Jobs and Regenerating Communities

At the heart of the initiative is a commitment to inclusive development. Bamagreen will directly engage around 1,950 individuals — 40% of them women — in stable, dignified employment opportunities through recycling and environmental awareness efforts. In addition more than 100,000 people are expected to benefit from city-wide reforestation and waste education campaigns.

The program will bolster the recycling capabilities of local social enterprise ECOBUILD and introduce integrated environmental education to reduce the impact of unmanaged plastic waste in Bamako, where open dumping and deforestation are accelerating pollution and desertification.

### A Shared Vision for Circular Impact

"This agreement reflects our commitment to sustainability and to creating opportunities for the most vulnerable populations," said Jean Christophe Gerard, Regional Coordinator for the Sahel at Ayuda en Acción. "We are not only addressing an environmental problem but also providing economic opportunities for those who need them most."

"At Indorama Ventures, we believe that waste is not just a problem—it's a powerful opportunity," said Yash Lohia, Executive President and Chairman of the ESG Council at Indorama Ventures, a global sustainable chemical company. "By raising awareness and investing in circular solutions like Plastic2Prosperity, we can transform environmental challenges into engines of socio-economic growth. This project in Mali shows what's possible when we work together to regenerate communities and our planet."

Carlota Calonje, Social Impact Manager at IMG Group, added: "Bamagreen embodies everything we aim to achieve with adaPETation®: transforming environmental challenges into opportunities to empower people and rebuild communities. This is only the beginning — we aim to scale this model to other regions where plastic is part of both the problem and the solution." also emphasized the importance of "supporting sustainable livelihoods, particularly for women and youth, while addressing urgent environmental priorities through circular economy models."

(Source: Indorama Ventures / 14.05.2025)

## Viva Energy Achieves Major Milestone in Plastic Recycling After Processing Waste Plastic Oil

Viva Energy is delighted to announce that this week it successfully processed more than 9.5 tonnes of plastic pyrolysis oil (PPO) at its refinery



in Geelong, demonstrating the suitability of the facility for establishing a large-scale waste plastic facility in Australia.

This is a major step forward in Viva Energy's plans to establish a waste plastic recycling facility with Cleanaway, which – with its national collection and processing footprint – has been exploring options for collecting and sorting used plastic.

This week's trial proved Viva Energy has the capability to process large volumes of PPO – a critical step in the establishment of a national solution for Australia's waste plastic problem.

While Viva Energy has processed small volumes of PPO in the past, this volume allowed testing of both the Geelong Refinery infrastructure capability and downstream product - quality impacts. The PPO processed in Geelong was made from waste plastic in Akron, Ohio, in the USA, by Alterra, a leading developer of plastic recycling technology. Viva Energy obtained approval to import this quantity PPO to allow the demonstration to proceed, reflecting the sort of PPO volumes that will be produced from the future Advanced Recycling project.

The focus of the trial was on whether contaminants would impact either the design of the joint venture facility or the ability of the Geelong Refinery to process PPO volumes at scale. The learnings from this trial will be used to inform new packaging design standards to maximise the volumes of soft plastics that can be processed through advanced recycling technologies.

Viva Energy and Cleanaway are continuing a full feasibility study into the plastic recycling project, with the Front - End Engineering and Design (FEED) phase expected to start in 2026 once details of the Australian Government's packaging reform have been finalised.

Bill Patterson, Viva Energy's Executive General Manager – Refining, said it was exciting to see a new future emerge for the refinery. “Over many decades our facility has played an important role in preserving our sovereign manufacturing capability and keeping the country moving,” Mr Patterson said. “We will continue to manufacture the fuels essential for our standard of living, but we will now play an additional critical role establishing a circular economy and helping to address Australia's waste plastic issue.”

Valerio Coppini, Alterra's Chief Commercial Officer said Alterra's thermochemical liquefaction process technology would be critical in efforts to renew discarded plastic back into its original building blocks.

“The Alterra technology has proven the ability to add value to end - of - life, post - consumer plastics by successfully converting them into feedstock for chemicals and new plastic production,” Mr Coppini said. “Following the successful trial at the Geelong Refinery we are looking forward to growing together with Viva Energy and Cleanaway in Australia to divert discarded plastics from landfill, displace virgin, fossil - derived material, and reduce GHG emissions.”

(Source: POLYMERS Communique / 31.05.2025)

## NOVA Chemicals Commissions One of the World's Largest Polyethylene Film Mechanical Recycling Facilities

NOVA Chemicals Corporation (“NOVA Chemicals”) announced the commissioning of its first polyethylene (PE) film recycling facility, “SYNDIGO1,” located in Connersville, Ind. The facility is one of the largest and most sophisticated plastic film mechanical recycling facilities in the world. SYNDIGO1 spans 450,000 sq.ft. and will recycle 145,000 bales of end - of - life plastic film to produce over 100 million lbs. of SYNDIGO™ recycled PE (rLLDPE), suitable for food - and non - food grade packaging applications. Full production is expected by early 2026.

NOVA Chemicals commemorated the achievement by hosting a grand opening event with nearly 100 attendees including NOVA Chemicals CEO Roger



Kearns, Novolex Chairman and CEO Stan Bikulege, Indiana Secretary of Business Affairs Mike Speedy, Indiana State Senator Jeff Raatz, Indiana State Representative Lindsay Patterson, Mayor of the City of Connersville, and representatives from the offices of U.S. Senators Young and Banks and Congressman Jefferson Shreve. Attendees also included representatives from NOVA Chemicals' Board of Directors, Novolex executives and employees, customers, Engineering, Procurement and Construction (EPC) firms, and Original Equipment Manufacturers (OEM). The ceremony marks the completion of 22 months of planning, construction and scale-up, and the facility's readiness for mechanically recycling PE film and the production of high-quality recycled PE.



"Our SYNDIGO1 facility is a tangible example of what motivation, collaboration, and market demand can do together," said Kearns. "At NOVA, we have decades of experience in developing products that make our lives better. As of today, we're not only a petrochemicals producer but also a recycler of polyethylene. We're diverting plastic waste from landfills and turning it into new, quality products that help keep our food fresh or safely transport goods and materials to store shelves."

"Indiana is proud to be the home of NOVA Circular Solutions' new Mechanical Recycling Facility, which will be an industry leader in plastic film recycling. This facility will support around 125 Hoosier jobs and will be a great asset to the Connersville community as well as another world-class example of Indiana's leadership in the materials industry," said Indiana Governor Mike Braun

In July 2023, NOVA announced the intention to build the facility and work with Novolex to operate the facility, capitalizing on its nearly 20 years of experience in operating plastic film recycling facilities. In 2024, the facility's mechanical recycling process received a first-of-its-kind Letter of Non-Objection (LNO) from the U.S. Food and Drug Administration confirming its ability to produce post-consumer rLLDPE that is suitable for food-contact applications. In April 2025, the facility achieved the Recycled Material Standard certification from Green Blue, which verifies that the SYNDIGO recycled polyethylene produced at the facility is 100% post-consumer recycled content. Today, three of four lines are in operation, and the facility will be fully operational by the end of 2025.

### Meeting customer and consumer demand for recycling and recycled materials

"There continues to be high interest from converters, retailers, and brand owners for recycled polyethylene, and our state-of-the-art facility accelerates our ability to meet this demand," Kearns added. "We can leverage the latest technologies to ensure plastic film is recycled and re-used."

NOVA Chemicals is working with several leading manufacturers and distributors to incorporate recycled polyethylene into flexible packaging, including Charter Next Generation, M.Holland, Osterman & Company, Petoskey Plastics, PolyExpert, Pregis, Sigma Plastics Group, and Winpak. According to McKinsey, the demand for post-consumer recycled plastic will triple by 2030 to about 90 million tons<sup>1</sup>. And, according to a recent NOVA Chemicals survey, 75% of consumers agreed that companies should increase the use of packaging made from recycled materials.

### Quality feedstock and reducing plastic waste from the environment

SYNDIGO1 in Connersville works with major retailers and distribution centers across the U.S. to collect back-of-store polyethylene film which provides consistent and clean feedstock for recycled PE. The facility will collect on average 400 bales of plastic film each day, or 14,000 bales each month. For context, the film collected and diverted from landfills each year is equivalent to filling four professional football fields to the top.

of the goal posts. Plastic film waste will be processed into pellets and sold as NOVA Chemicals' SYNDIGO recycled linear, low-density polyethylene (rLLDPE), which is suitable for a wide variety of packaging applications — from trash can liners to food packaging. A grade of SYNDIGO rLLDPE has FDA compliance for all food types under Conditions of Use B through H and can be used to add recycled content for the full scope of food packaging applications including pantry staples, refrigerator items, and freezer packaging.

### Connersville community investment:

As part of its grand opening celebration, NOVA Chemicals announced a \$25,000 (USD) donation to Fayette Community Foundation to establish the NOVA Chemicals Community Impact Fund to support local programs and projects including youth development and education to health and human services, public safety, and community betterment. The donation is eligible for a matching fund grant from the Lilly Endowment Inc.'s GIFT VIII initiative, which matches eligible contributions at a rate of \$2 for every \$1 donated. Fayette Community Foundation will receive an additional \$50,000 from Lilly Endowment.

(Source: POLYMERS Communique/ 31.05.2025)

### TOMRA Unveils Automated Collection Point for Reusable Takeaway Food Packaging

Building on the world's first "open - managed" reuse system for hot and cold drink cups in Aarhus, Denmark, TOMRA Reuse this week unveiled at the Reuse Economy Expo a Reuse Collection Point (RCP) capable of handling food packaging. The new reverse vending machine (RVM) demonstrates the next step in TOMRA's Rotake solution: a fully integrated platform for collecting, transporting, sanitizing, quality-assuring and redistributing reusable takeaway containers.

### An integrated infrastructure handling all parts of the reuse value chain

TOMRA's Rotake system relies on serialized QR codes to track every item's journey:

- **Distribution:** Cafés, bars and restaurants serve drinks and meals in QR-coded reusable containers.
- **Collection:** Consumers return used items to conveniently located RCPs.
- **Sanitization & Quality Check:** Returned containers are automatically cleaned and inspected.
- **Redistribution:** Approved containers are redeployed to participating outlets through distribution partners as a recurring subscription on on-demand via an online portal.

By comparing the number of rotations against single-use alternatives, the system delivers hard data on carbon and waste savings. According to a Eunomia study, reusable plastic cups must be used at least six times to out-perform the lowest-impact single-use option (recycled cardboard cups) on environmental metrics.

### Enabling vibrant European city lives – with cleaner and healthier places to live and play

"European cities come alive in summer — coffee on the go, park picnics, open-air festivals, and more. But this vibrancy also drives litter and waste," said Geir Sæther, SVP and Head of TOMRA Reuse. "With over 50 years of expertise in deposit return systems, TOMRA Reuse makes reuse as convenient as single use. Our new Reuse Collection Point extends that convenience to food packaging, helping cities tackle their growing waste challenges."

Since the launch of the city-wide cup pilot in January 2024, Aarhus consumers have paid a DKK 5 deposit for reusable cups — redeemable instantly at collection points across the city center. To date, more than 1 million cups have been returned, yielding an 85% redemption rate and substantial reductions in single-use waste.



### Expanding to new cities and venues

TOMRA Reuse is now recruiting new city partners, targeting densely populated European hubs. The three - year pilot in Aarhus continues through 2026.

“Effective circular systems combine bold environmental targets, supportive regulations — such as bans or levies — and consumer incentives to shift behavior,” added Sæther. “Our open - managed approach adapts to any QR - coded packaging, providing cities and event organizers with a turnkey solution.”

In addition to city pilots, TOMRA is fast-tracking Rotake Venue, optimized for large events and stadiums with high throughput and instant collection needs. A working demonstration is on display at the TOMRA stand this week at the Reuse Economy Expo.

### Also introducing solution customized for the French CITEO ReUse project

The Reuse Collection Point is not the only product launching from TOMRA at the Reuse Economy Expo. TOMRA is also introducing the TOMRA T70 Dual BottleGlide – a customized solution developed to support the CITEO ReUse project in France. Based on the TOMRA T70 Dual platform, it has been specifically adapted for the return of reusable glass bottles. The zigzag bottle return system is designed to slow and align bottles to prevent damage, allowing them to be effectively sanitized and reused by producers, instead of being downcycled or discarded.

“Effective reuse systems need three things: smart infrastructure, regulation, and user incentives,” added Stéphan Arino, Vice President of Public Affairs at TOMRA. “With TOMRA Reuse and TOMRA Collection, we provide the backbone cities and producers need to comply with EPR obligations and deliver a functional circular system.”

“As France and the EU continue to push for circularity through regulations like PPWR, TOMRA Collection France is proud to offer solutions that are ready today,” said Paul Fabiano, Managing Director, TOMRA Collection France. “Our participation in the Reuse Economy Expo is an important opportunity to connect with partners, cities, and businesses ready to act on reuse.”

(Source: POLYMERS Communiqué/06.06.2025)

### AeroFlexx's Innovative Liquid Packaging Receives Critical Guidance Recognition from Association of Plastic Recyclers

AeroFlexx, a leader in sustainable packaging, has received Critical Guidance Recognition for recyclability from the Association of Plastic Recyclers (APR) for its proprietary mono-material AeroFlexx Pak.



APR's Critical Guidance Recognition is one of the most widely accepted benchmarks for evaluating plastic packaging and provides independent validation and credibility that the AeroFlexx Pak is designed for recyclability. Under the APR Design® Recognition Program, innovations must undergo rigorous third - party testing and independent review to ensure they meet the stringent requirements of the Critical Guidance test protocol FPE-CG-01. Achieving this comprehensive recognition confirms compatibility of PE - based films and flexible packaging innovations with film reclamation systems sourcing post - consumer films from store drop-off collection points or, in some cases, curbside collection.

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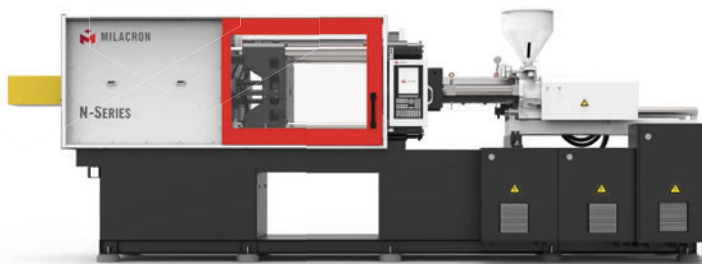
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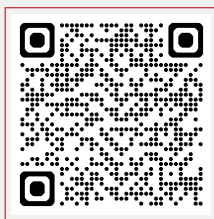
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