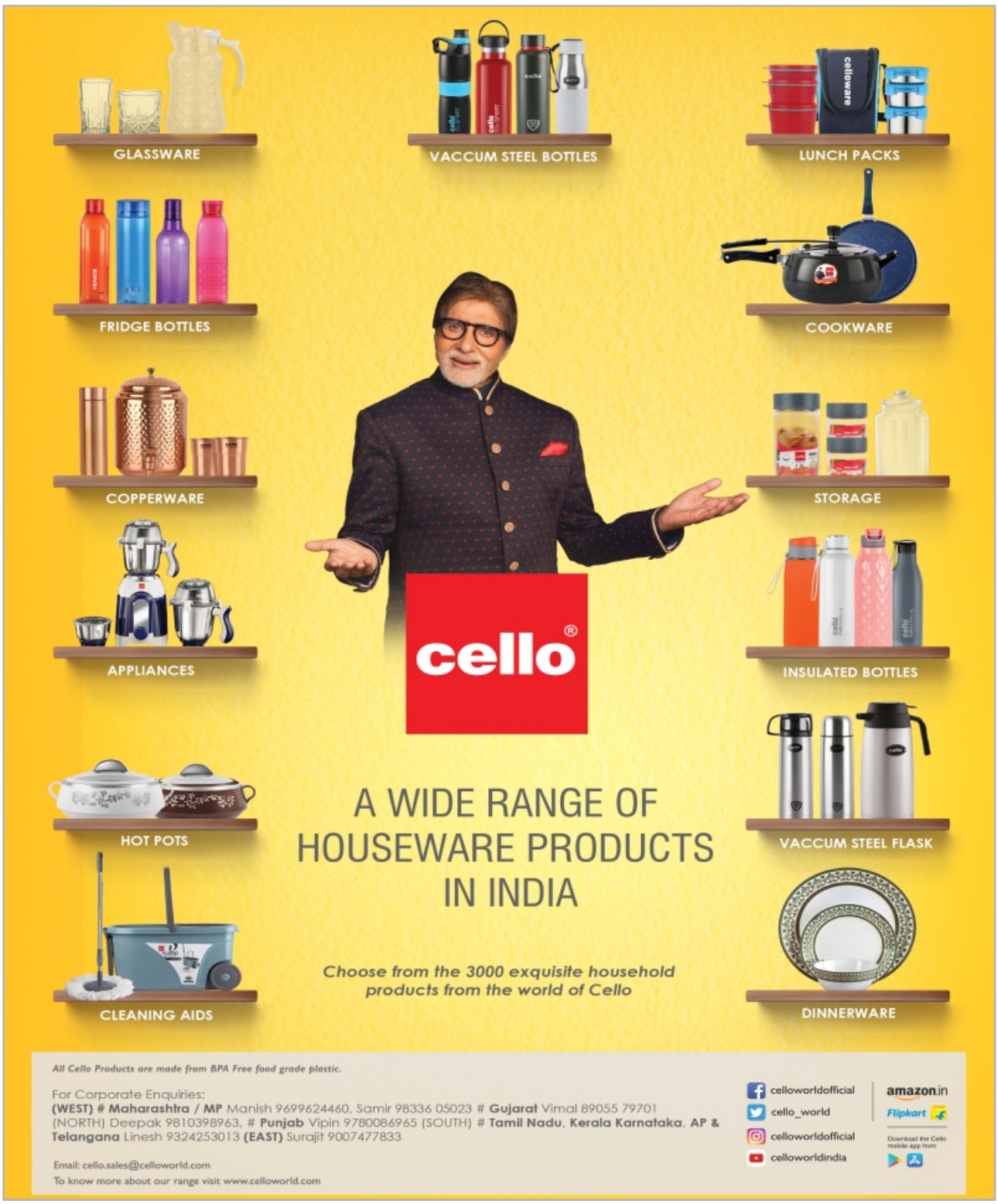
R.N.I. No. MAHENG/2012/45652

PLASTISCOPE

The Official Journal of the Organization of Plastics Processors of India

Volume No. 12 • Issue No. 05 • Mumbai • November 2023



STEER

SHEAR CONTROL. SHEER BRILLIANCE.

DISCOVER A NEW WORLD OF COMPOUNDING INNOVATION AT STEERWORLD.COM

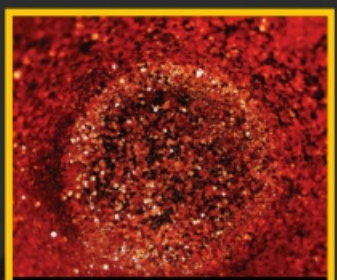
STEER's advanced platforms come with patented task-oriented special elements that provide better control over shear, kneading and stirring. They deliver superior quality, process efficiency and open up a world of new possibilities with their ability to handle shear-sensitive and other difficultto- manage materials.

STEER's OMEGA 1.71 Do/Di high volume, high torque, intelligent processor is perfect for shear-sensitive and low bulk density materials.

COLOURS

AUTOMOTIVE LIGHTWEIGHTING

HIGHLY-FILLED MASTERBATCHES



EFFECT PIGMENTS

BIOMATERIALS

NATURAL FIBERS

STEER's MEGA SPECIAL 1.55 DO/DI co-rotating twin-screw extruder is perfect for colours, legacy engineering thermoplastics, blends and high volume manufacturing.

For more information write to sunil.dutt@steerworld.com or call 99001 01518

FROM THE PRESIDENT's DESK

Mr. Dilip Parekh

OPP

CONTENTS

Dear Members,

Greetings from Organization of Plastics Processors of India!

In our series of Seminars on - "Crucial Role of Maintenance in Plastics Processing Industry", 10th Edition of the Seminar was held on 22nd November 2023 at The Deltin, Daman. A detailed report on the Seminar with photographs is included in this issue of Plastiscope. The next Seminar on - "Crucial Role of Maintenance in Plastics Processing Industry" will be held on 12th January 2024 at Bangalore and thereafter at New Delhi on 23rd February 2024. I appeal to all members to take advantage of these Seminars and reduce the down time of their machines to almost nil.

The Intergovernmental Negotiating Committee-(INC-3) was held at Nairobi, Kenya. INC-4 will be held at Ottawa, Canada from 21st April to 30th April 2024. INC-5 will be held in Busan, South Korea from 29th October – 1st November 2024. Organization of Plastics Processors of India has nominated Senior Members with commitment to the Task Force constituted by Plastindia Foundation. We will keep you updated on this issue from time to time.

The Quality Control Order on Polyethylene Materials for Moulding and Extrusion (Quality Control) IS 7328:2020 is due for implementation from 5th January 2024. Organization of Plastics Processors of India has strongly recommended to keep various grades of Polyethylene for which India Import dependent out of the preview of IS 7328: 2020 and exempt them.

With Best Wishes,

Dilip Parekh
President

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

YIZUMI | HPM

PLASTIVISION INDIA | 2023 | MUMBAI
DEC 07 08 09 10 11
INTERNATIONAL PLASTICS EXHIBITION & CONFERENCE

Join us at Booth Hall 1 – A1

SKIII Series Advance Injection Molding Machine

SKIII Series

New machine model Introducing in India

More effective

- Improved injection speed
- Improved plasticizing effect
- Shorter cycle time

More stable

- New clamping technology enhancement
- Injection unit structure and plasticizing components

More energy-saving

- New hydraulic circuit design
- Optimized structure of the injection unit for lower resistance and higher energy efficiency
- Upgraded servo system for higher energy efficiency

Further improved applicability

- Offer more specifications, more power, faster response, and more precise stage control. Wider range of product and raw material applications.

YIZUMI PRECISION MACHINERY (INDIA) PVT. LTD.

Address: Plot No.1062 – 1063, Sanand G.I.D.C. ,Phase – II, SANAND -382170, Ahmedabad

Tel: +91 90999 06175 Email: info.india@yizumi.com Web: www.yizumi.com

OPP
Organization Of
Plastics Processors Of India

IPF Bangladesh

The 16th Bangladesh International Plastics, Packaging and Printing Industrial Fair

24th - 27th January, 2024

Venue : Int'l Convention City Bashundhara (ICCB)

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

[Exhibit Profiles]

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

[Booth Prices]

✱ **Corner fee: Surcharge 10 %**

✱ **The prices above exclude VAT by 5%**

Shell Scheme: USD$ 320/sqm (Min.9sqm=3m x 3m= 9 sqm) = USD$2790
9 sqm including : carpeting, 3 folding chairs, 1 lockable counter, 1 round table, 3 spot lights, 1 waste basket, wall partitions, fascia name, one 5-AMP power point

Bare Space: USD$ 290/sqm

Deepak Lawale, Secretary General, **ORGANIZATION OF PLASTICS PROCESSORS OF INDIA**

: 404/405, Golden Chambers,
New Link Road, Andheri (West),
Mumbai - 400053.

: secretarygeneral@oppindia.org
: www.oppindia.org

: +91 22 66923131
: +91 9322591715

Organization Of Plastics Processors Of India

OPP

PLASTPOL

28th International Fair of Plastics & Rubber Processing
21st to 24th May 2024, Kielce, Poland.

The International Fair of Plastics and Rubber Processing PLASTPOL is Central and Eastern Europe's largest event for the plastics processing industry

The expos bring together leading Polish and international market companies; they showcase the latest solutions for plastics and rubber processing. Plastpol is much more than the offer of over 600 companies from 29 countries. There is also an immense dose of knowledge, conferences, discussion panels, seminars and networking meetings. Over the years, Plastpol has become the best platform for establishing relationships, and presenting premiere solutions and technologies. This is the right place for exchanging knowledge and signing international contracts and agreements.

7	600	29	15000
EXHIBITION HALLS	COMPANIES	COUNTRIES	VISITORS

Participation Fees:

- Open Area Indoors:- 530 PLN per sqm
- Extra Charges:- 15% extra for Corner Stall (2 sides open)
- 20% Extra Charges for 3 sides open, minimum 40 sqm.
- 25% extra charge for island (4 sides open) minimum 81 sqm.
- Registration Fees 620 PLN.
- Standard Stand Construction 105 PLN per sqm.

The Exhibitor can have stand construction made by an external company. Targi Kielce can prepare the complex stand and the price will be as per the design.

Page 1 of the Application Form, Brochure are attached herewith.

Please fill up the contract form attached herewith and Email scanned copy of filled Application form to **secretarygeneral@oppindia.org;**

DEEPAK LAWALE, SECRETARY GENERAL
ORGANIZATION OF PLASTICS PROCESSORS OF INDIA
404/5, Golden Chambers, New Link Road, Andheri (West), Mumbai - 400 053 INDIA
Tel: +91-22-66923131/32 **Email:** secretarygeneral@oppindia.org **Web:** www.oppindia.org

OPP
Organization Of
Plastics Processors Of India

ORGANIZATION OF PLASTICS PROCESSORS OF INDIA

37 YEARS OF SERVICES TO PLASTICS INDUSTRY

SERVICES OFFERED BY OPPI

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

Seminar On-"Crucial Role Of Maintenance In Plastics Processing Industry" Held On Wednesday 22nd November 2023 At The Deltin, Daman.

Organization of Plastics Processors of India organized 10th Edition of Seminar On-"Crucial Role Of Maintenance In Plastics Processing Industry" at The Deltin, Daman on 22nd November 2023.

The Inaugural Session of the Seminar was chaired by Mr. Satyendra Kumar, President, Daman Industries Association. Lighting of the Traditional lamp was done by all Session Chairmen.

During the Seminar the following Presentations were made: -

Sr. No.	Topic of Presentation	Speaker
1	The Crucial Role of Raw Materials and Maintenance in the Plastic Processing Industry	Mr. Kuldeep Mathur Sr General Manager – Marketing **AUTOTECH-SIRMAX INDIA PVT. LTD**
2	Adding Life to Your Machines: The Trends to Best Practices	Mr. Pravin Patel **B & R INDUSTRIAL AUTOMATION PVT.LTD.**
3	Best Maintenance Practices for Improving The Productivity and Reliability of Injection Moulding Machines	Mr. CK Vijayan Senior Manager, Customer care cell, SMI, Chennai **SHIBAURA MACHINE INDIA PVT LTD**
4	Adding New Lease of Life to Old Machines with Energy Conservation - Alternatives for Conventional Systems	Mr. Prashant Kolte Deputy General Manager **Baumuller India Pvt. Ltd**
5	Do and Don'ts General Maintanence of Twin Screw Extruders	Mr. Pramod Kumar Service Manager **STEER WORLD**
6	Importance of Maintenance in PVC / HDPE Pipe Processing Industry	Mr. Vivek Marathe Sr. General Manager **KABRA EXTRUSION TECHNIK LTD.**
7	Importance of Maintenance in Multy Layer Film Processing Industry	Mr. Sandeep Patil Sr. General Manager **KABRA EXTRUSION TECHNIK LTD.**
8	Maintenance Awareness for Productivity & Profitability/ "How To Save Money Using Extrusion Process Control"	Mr. Kinjal Patel Sr. Manager – Service **NU-VU CONAIR PVT. LTD**
9	Role of Purging Compound in Preventive Maintenance	Mr. Trilochan Pradhan (Area Sales Manager) **CHEM- TREND CHEMICALS CO PVT LTD**
10	Increase your Uptime and Profitability by Automatic & Accurate Dosing	Mr. Chintan Mehta Business Head, Projects & Automation **Prasad Koch – Technik Pvt. Ltd.**
11	MobilSerV Solutions – Beyond Lubrication	Mr. M Umamaheshwar Rao Field Engineering Services Manager (West) **EXXONMOBIL Lubricants Private Limited**

12	Key Role of Hydraulics In Injection Molding Machine Maintenance for. Improving Productivity and Profitability	Mr. Arvind Chaudhary Sr. Manager -WIN CSS Windsor customer spares & service **WINDSOR MACHINES LTD.**
13	Mould Maintenance	Mr. GuruPrasad Puranmath VP International Sales & Stretegic Initiative **MUTUAL ENGINEERING PVT. LTD**

At the end of the day long Seminar "Lucky Draw"was held. Gifts were sponsored by Mutual Industries Pvt. Ltd. The first Prize was won by Mr. Mangal Singh Gahlot, Jyoti Plastics Work Pvt. Ltd, Valsad. The second Prize was won by Mr. G. Govinda Rao, Mold-Tek Packaging Ltd.

Mr. Deepak Lawale, Secretary General, Organization of Plastics Processors of India thank Cello World Ltd for sponsoring Mementos presented to the Speakers and to the Session Chairmen. He also thank Gold Sponsor – EXXONMOBIL Lubricants Private Limited and KABRA Extrusion Tecknik Ltd.

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

Mr. Subba Bangera, Chairman, Active Biz Solutions. Pvt. Ltd (left) Presenting Bouquet to Mr. Satyendra Kumar, President, Daman Industries Association.

Mr. Aniruddha Sarin, Executive Director, TIPCO INDUSTRIES LTD. Lighting the Traditional Lamp.

Mr. Kuldeep Mathur, Sr General Manager – Marketing, Autotech - Sirmax (TIPCO Group) Making Presentation at the Seminar.

Mr. Ck Vijayan, Senior Manager, Customer Care Cell, SMI, Chennai, Shibaura Machine India Pvt. Ltd. delivering his talk.

Mr. Subba Bangera presenting
memento to Mr. Pravin Patel,
B & R Industrial Automation Pvt. Ltd.

Mr. Deepak Lawale presenting
memento to Mr. Subba Bangera

Mr. Haresh Pillay, Executive Director,
Time Technoplast Chairman of second Technical Session.

Mr. Vivek Marathe, Sr. General Manager,
Kabra Extrusion Technik Ltd. making his presentation.

Mr. Sandeep Patil, Sr. General Manager,
Kabra Extrusion Technik Ltd. delivering his talk

Mr. Kinjal Patel, Sr. Manager –
Service, Nu-Vu Conair Pvt. Ltd.

Mr. Pramod Kumar, Service Assistant Manager, Steer World receiving memento from Mr. Haresh Pillay.

Mr. Deepak Lawale presents memento to Mr. Haresh Pillay

Mr. Trilochan Pradhan, Area Sales Manager, Chem- Trend Chemicals Company Private Limited. Making his Presentation.

Mr. Chintan Mehta, Business Head (Projects & Automation), Prasad Koch – Technik Pvt. Ltd. Making his Presentation.

Mr. Prashant Kolte, Deputy General Manager, Baumuller India Pvt. Ltd, Session Chairman presenting memento to Mr. Chintan Mehta

Mr. M Umamaheshwar Rao, Field Engineering Services Manager (West), Exxonmobil Lubricants Private Limited. Addressing to the Delegates.

Mr. Guruprasad R Puranmath, Vice President,
Mutual Engineering Pvt Ltd
during his Presentation at the Seminar

Mr. Aniruddha Sarin, Executive Director,
TIPCO INDUSTRIES LTD receiving
memento from Mr. Deepak Lawale

Mr. G. Govinda Rao, Mold-Tek Packaging Ltd. receiving
"Lucky Draw" award from Mr. Deepak Lawale

Mr. Mangal Singh Gahlot, Jyoti Plastics Work Pvt. Ltd,
Valsad receiving first prize of the "Lucky Draw"
award from Mr. Deepak Lawale & Mr. M Umamaheshwar Rao

Delegates in rapt attention

NEWS FROM INDIA

Indian Oil Once More Selected Process Technology from LyondellBasell

LyondellBasell (NYSE: LYB), the world's largest licensor of polyolefin technologies announced that Indian Oil Corporation Ltd. (IOCL) has selected LyondellBasell's Hostalen "Advanced Cascade Process" (Hostalen ACP) technology for a new 200 kiloton per year (KTA) high density polyethylene (HDPE) plant. The new facility will be built in Panipat, India.

"This new license award by IOCL represents the second Hostalen ACP process technology line to be built at Panipat. This is a clear demonstration of the confidence of our customers in our capability, and their trust in our technology" said Neil Nadalin, Senior Director Global Licensing and Services at LyondellBasell. Nadalin added: "The well-known Hostalen ACP resins from LyondellBasell's low-pressure slurry HDPE process are much appreciated in India, as our technology enables operators to reliably and economically produce resins the Indian market demands".

The Hostalen ACP process technology manufactures high performance, multi-modal HDPE resins with an industry - leading stiffness / toughness balance, impact resistance, high stress cracking resistance and processing advantages used in pressure pipe, film, blow molding and caps & closure applications.

The Hostalen ACP plant will commence operations using Avant Z501 and Avant Z509-1 catalysts to produce a full range of multi-modal HDPE products.

New licensees can take advantage of LyondellBasell's in - house expertise of continuous production improvement, sustainable product development and catalyst knowhow, by optionally joining our Technical Service program.

In addition to the Hostalen ACP process technology, the LyondellBasell portfolio of licensed polyolefin processes and catalysts includes:

Spheripol – The leading PP process technology with more than 33 million tons of licensed capacity with globally recognized quality grades with leading monomer consumption and investment costs to make it the technology of choice.

Spherizone – The breakthrough multi - zone circulating reactor provides a unique and innovative platform to manufacture polypropylene products with novel architecture and enhanced properties.

Lupotech – The market leader on high pressure technology offers, with its high conversion rates and effective heat recovery system, the lowest operating and investment costs for the production of low density polyethylene (LDPE) and ethylene vinyl acetate (EVA) copolymers.

Avant – Advanced Ziegler - Natta, including non - phthalate, chromium and metallocene catalysts for entire range of polyolefin production.

Nestlé Makes Further Headway in Shaping a Waste - Free Future

Nestlé has made considerable progress in reducing its packaging, creating better packaging, and improving waste management. Since signing up to the Global Commitment on plastic waste five years ago, the company and other leading signatories have significantly outperformed the market at large in reducing virgin plastic and increasing recyclability, according to the latest report from the Ellen Macarthur Foundation.

"We are continually pursuing better packaging solutions where we can have a direct impact," said Antonia Wanner, Nestlé's head of ESG Strategy and Deployment. "With our in-house packaging experts and scientists, we are developing the next generation of packaging materials as well as redesigning packaging for the circular economy. In addition, we promote better infrastructure systems for waste management, advocate for harmonized regulation, and encourage behavioral change."

Using Less Packaging

Nestlé is working to reduce the amount of its packaging overall. The company has reduced its amount of virgin plastic packaging by 10.5% since 2018, and it is on track to get to one-third less virgin plastic by the end of 2025. Last year, for example, it launched new Nescafé Dolce Gusto capsules that have less plastic weight and will save more than 2 500 tonnes of polypropylene. In 2019, Nestlé passed peak virgin plastic consumption as well as peak carbon emissions, even as the business continued to grow.

The company cut the weight of its total product packaging by 200 000 tonnes in 2022, and with that, reduced its greenhouse gas emissions by 280 000 tonnes. It also reduced its number of packaging pieces by 14 billion last year. Nestlé's historic total packaging footprint was down from 4.7 million metric tons in 2018 to 3.6 million metric tons in 2022.

Nestlé is additionally testing packaging alternatives by piloting reuse and refill solutions. Since 2018, it has run over 20 reuse and refill pilots in 12 countries. In Germany, for example, Nestlé, in collaboration with start-up Circolution, has piloted reusable stainless-steel containers for Nesquik. Building on its learnings, the company continues to test different reuse and refill solutions around the world and advocate for the necessary enabling conditions.

Designing Better Packaging

At the same time as reducing its packaging, Nestlé is also increasing the use of recycled plastics in its packaging, contributing to the circular economy for plastics. At the end of 2022, 7.7% of the company's plastic packaging was recycled content, and it aims to get close to 30% by the end of 2025. In the UK, for instance, Nestlé's waters business has moved its entire Buxton Natural Mineral Water range to 100% recycled PET.

The company is also committed to designing 100% of its packaging for recycling systems. To date, 81.9% of Nestlé's total plastic packaging is already designed for recycling. Nestlé aims for more than 95% of its plastic packaging to be designed for recycling by the end of 2025.

Fostering Better Systems

For waste to be recycled, Nestlé relies on the development of infrastructure, but existing systems do not yet match the need. That's why the company supports governments in accelerating the development of infrastructure and actively advocates for a Global Plastics Treaty as well as well-designed Extended Producer Responsibility and Deposit Return systems.

Nestlé has partnered on 220 initiatives to develop well-functioning collection, sorting and recycling schemes in Europe, Africa, Asia, and Latin America. For example, with partners in Malaysia, it launched a door-to-door household waste collection program. As of the end of 2022, approximately 6000 tonnes of post-consumer waste had been collected, sorted and traded; nearly eliminating waste going to landfill.

Nestlé continues to support the packaging system transition. Its vision remains that none of its packaging ends up in landfill or as litter. It is committed to shaping a waste-free future.

Toray Expands Air Filter Business in India

Toray Expands Air Filter Business in India by Launching Production of High-Performance Offerings at Sri City Plant Oct 30, 2023 Toray Industries, Inc. Tokyo, Japan, October 31, 2023 – Toray Industries, Inc., announced today that a new facility at subsidiary Toray Industries (India) Private Limited began producing air filters earlier this month. These offerings for air purifiers and automotive and building air conditioners and air conditioners minimize pressure losses while delivering high dust collection efficiency. This is the first facility in India to integrate the production of everything from nonwoven fabrics for high-performance filter media through filter assembly. It has joined Toray Fibers (Nantong) Co., Ltd., in China, which makes nonwoven fabrics for air filters, in supplying the global market. Worsening air pollution has heightened

awareness in India of the need to deploy environmental measures. Toray looks to support rising demand for high-performance, high-quality air filters. In keeping with its commitment to local production for local consumption, Toray will set up a manufacturing, technology development, and sales structure in India to swiftly identify needs in that market and reflect them in developing new offerings, thus quickly catering to the increasingly sophisticated performance demand of its customers. Attaining sustainable growth is one of the basic strategies of Project AP-G 2025, Toray's medium-term management program. In driving to expand its business, the company has accordingly positioned air filters as products that enhance safely and help shrink environmental footprints. Toray will help further reduce environmental impacts through its new air filter facility in India. Profile of Toray Industries (India) Private Limited.

India to Become World's Second - Largest Solar Module Producer by 2025

India is set to emerge as the second-largest producer of solar modules by 2025, surpassing Southeast Asia, and is expected to cater mainly to the US demand, a Wood Mackenzie report has stated. This comes at a time when China is predicted to hold more than 80% of the global capacity for the solar module supply chain from 2024.

The report indicates that even as India plans to boost its module exports to the profitable US market, it grapples with high production costs due to a 25% basic basic customs duty on imported solar cells. There is speculation that to support the export ambitions, the Indian government might lower the duty on Chinese modules, which currently incur a 40% tax.

In contrast, the US, under the Inflation Reduction Act, is developing its own photovoltaic manufacturing capabilities. However, the absence of domestic production of wafers, cells, or glass means the US will remain dependent on imports, especially once President Biden's temporary waiver on solar import tariffs expires in mid - 2024.

Meanwhile, Southeast Asia's solar capacity, mainly driven by Chinese investments, and Europe's demand for protective tariffs on Chinese modules due to non-competitive prices, underscore the global shifts in the solar module supply chain.

The study further delves into China's lead in N - type cell technology and the anticipated impact on the market, with China accounting for 95% of the announced global expansions in this area.

The tightening of profit margins in the sector is causing challenges, yet the report suggests that vertically integrated manufacturers may still find opportunities for growth.

India's Plastics Exports Recover in Oct 2023 after a 12.5% Contraction in the Apr-Sept Period

India's plastics exports recovered in October due to a sudden spurt in pent-up demand despite global economy continued to pose an uncertain future amid escalating war in the Middle East and Russia's intensified offensive in Ukraine. As a major industrial product, the plastics industry reflects the growth in the country's economy, albeit with a lag of two to three months.

Data compiled by the Plastics Exports Promotion Council (Plexconcil), under the Ministry of Commerce & Industry, showed, India's plastics exports registered a growth of 9.4 percent to US$933 million in October 2023, compared to US$852 million reported in the corresponding month last year. The cumulative value of plastics export stood at US$ 6.51 billion from April to October 2023, registering a decline of 10 percent compared to US$7.32 billion reported in the corresponding period of the previous year. The decline was attributed to the weakness in global demand following a 12.5 percent contraction in exports reported in the April-September 2023 period.

A notable surge in exports was observed across almost all sectors in October. A study based on data from the Ministry of Commerce & Industry indicates that plastics exports witnessed a notable surge in October 2023 across almost all of the product panels such as floorcoverings, leather cloth & laminates; FRP & composites; FIBC, woven sacks, woven fabrics, tarpaulin; packaging items - flexible, rigid; cordage, fishnets and monofilaments; medical items of plastics; plastic pipes & fittings; plastic films and sheets; writing instruments and stationery; consumer and houseware products; plastic raw materials and human hair and related products.

India's October plastics exports indicators	
Particulars	**Growth (%)**
Consumer & houseware	6.3
Cordage, fishnets & monofilaments	17.3
FIBC, woven sacks, woven fabrics, & tarpaulin	20.5
Floor coverings, leather cloth & laminates	43.3
FRP & Composites	33.6
Human hair & related products	49.1
Medical items	15.3
Miscellaneous products	(-)44.1
Packaging items - flexible, rigid export	18.1
Plastic films & sheets	12.1
Plastic pipes & fittings	14.3
Plastics raw materials	4.0
Writing instruments & stationery	7.5
Total worth US$933 million	**9.4**

Source: Ministry of Commerce & Industry

Penetrating New Markets

Sribash Dasmohapatra, Executive Director, Plexconcil, said, "We are very pleased to see a positive movement in exports of most of the product segments the month of October. We hope that this trend continues into the next few months, and we are able to achieve overall growth despite the dampening performance in the past six months. As part of our efforts to promote Indian plastics exports, the Council recently organized buyer-seller meetings with Central American countries of Guatemala, El Salvador, Honduras and Mexico with the support of the Indian embassies in Guatemala (concurrently accredited to El Salvador and Honduras) and Mexico. Promotional meetings were also held with stakeholders in Costa Rica with support from the Embassy of India in Panama."

Furthermore, the council had a fruitful meeting with the Embassy of India in Washington DC and active discussions were held regarding making deeper inroads into the American market and reaching out to retail chains such as Walmart, Costco, Target etc who may be interested in sourcing plastic goods from India. "Central America is an emerging market and not only presents immense opportunities for exports, but its strategic location makes it the ideal gateway for North and South American continents. The Council plans to help exporters tap into opportunities in these markets," said Mr. Dasmohapatra.

Exports of cordage, fishnets and monofilaments experienced a significant increase of 17.3 percent in October 2023 due to greater sales of made-up fishing nets of nylon to countries like Chile, Kenya, Sri Lanka and the United Kingdom. In October 2023, the export of FIBC, woven sacks, woven fabrics, and tarpaulin demonstrated a significant positive growth of 20.5 percent due to increased sales of sacks and bags of plastics to certain African countries, and flexible intermediate bulk containers in general. Export of floor coverings, leather cloth and laminates surged by 43.3 percent during October 2023 on account of higher sales of floorcoverings of polyvinyl chloride (PVC) and textile fabrics impregnated, coated, covered or laminated with plastics to the United States of America. The export of decorative laminates also contributed to the growth.

"Export of FRP & composites was up by 33.6 percent on account of higher sales of articles of plastics and other materials. This export sector had faced challenges due to the economic downturn and elevated manufacturing costs in Europe, but it has now rebounded with increased sales. On the other hand, the Council will also be leading one of its largest trade delegations of over 73 participants under the India Pavilion to ArabPlast in UAE in December. We have been keenly monitoring data and identifying countries and regions with high export potential and such initiatives have been designed to extend our industry's outreach to these strategic markets," Dasmohapatra added.

Medical Plastics Exports Up

The exports of human hair and related products were up by 49.1 percent in October 2023 due to higher sales of human hair, unworked, whether or not washed or scoured to Myanmar and human hair, dressed, thinned and bleached to China. Medical items of plastics continued to perform well and its exports were up by 15.3 percent in October 2023 due to increase in sales of spectacle lenses - which has contributed immensely to the positive growth in export of this particular panel. India reported its highest-ever monthly export of spectacle lenses in October 2023. Export of miscellaneous products and items fell by 44.1 percent in October 2023 due to lower shipments of optical fibres, optical fibre bundles and cables.

The exports of packaging items (both flexible and rigid export) surged by 18.1 percent on account of higher sales of sacks and bags of plastics, carboys, bottles, flasks and similar articles for the conveyance or packaging of goods made up of plastics and articles for the conveyance or packaging of goods of plastics. India mainly exports packaging items (flexible and rigid) to North America and Europe.

Plastic films and sheets export were higher by 12.1 percent in October 2023 on account of improved sales of self-adhesive tape of plastics, films and sheets of polymers of ethylene, and films and sheets of polyethylene terephthalate. Indian exporters of plastic films and sheets informed that the export market has begun to show signs of improvement since the fag-end of June 2023 quarter, with demand for the BOPP starting to recover. They are, however, concerned about the introduction of new capacities and an expected surge in supply of BOPET films. However, export of Plastic pipes and fittings increased by 14.3 percent due to higher sales of rigid tubes and pipes of polymers of vinyl chloride and fittings like joints, elbows and flanges of plastics for pipes. The stabilisation in PVC prices helped increase the overall offtake.

Interestingly, the exports of plastic raw materials increased by 4 percent in October 2023 due to a rise in sales of polyethylene having a specific gravity of 0.94 or more, linear low density polyethylene and other acrylic polymers. Export of low - density polyethylene from India reported its highest-ever export in as many as two years in October 2023. Export of writing instruments and stationery improved by 7.5 percent in October 2023 due to increase in sales of ball- point pens to Algeria, Kenya, and Thailand.

Source : PolymerUpdate

MOU Between Pashupati Group and Borouge

Pashupati Group has announced the signing of a Memorandum of Understanding with Borouge, a leading Abu Dhabi - based petrochemical company providing polyolefin solutions for packaging.

Left side – Mr. Rainer Hoefling (CEO , Borouge Pte) Right side Mr. Bankey Goenka (MD, Pashupati Group)

This collaboration aims to create a synergy between the two companies by bringing together their individual expertise in developing innovative solutions in collection, sorting and recycling, as well as developing new sustainable materials for a better future.

Harnessing the collective wisdom and expertise of Pashupati and Borouge will help not only to anticipate the future but also to proactively create and lead it.

Sai Paks Develops Shrink Sleeve for Chitale Milk Bottle

Sai Paks calls this innovation for Chitale milk bottle sleeves a new generation sleeve. The product uses shrinkable gold cold foil specifically developed for the pure gold effect on shrink sleeves.

In February 2023, Chitale Bandhu Mithaiwale was about to launch a one-litre PET bottle for milk and was looking for a different kind of shrink sleeve. The company wanted the logo to be printed in gold.

In February 2023, Chitale Bandhu Mithaiwale was about to launch a one-litre PET bottle for milk and was looking for a different kind of shrink sleeve. The company wanted the logo to be printed in gold.

Sai Paks started by printing the artwork with surface - printed matte-effect and surface-printing gold foil. It did not work as the gold foil faded. Then Sai Paks received a special foil from Kurz. Still, the gold looked slightly faded. Then, a layer of varnish was applied, and finally, the intended result was achieved.

For the product, Sai Paks also developed the configuration of its new UV flexo press, which should have a hot air dual rewind after the ninth colour and then one more UV for extra curing for speciality coating.

Printed on 40-micron cast PVC, with CMYK plus white plus shrinkable gold foiling plus matte UV on the surface, 10,000 shrink sleeves were produced.

Birla Carbon Acquires Belgium Based Nanocyl

Aditya Birla group firm Birla Carbon on Wednesday announced the acquisition of Belgium - based Nanocyl SA for an undisclosed amount.

The acquisition will help the Aditya Birla group firm to drive Growth in battery materials for lithium-ion batteries, said a joint statement from Birla Carbon and Nanocyl.

The inclusion of Nanocyl's advanced multi - wall carbon nanotubes (MWCNTs) provides Birla Carbon with a remarkable range of solutions for conductive applications, it added.

PLASTIC PRODUCTS AND NEW TECHNOLOGIES

EV Chargers Made from Renewable PC

SABIC is enabling Charge Amps to manufacture electric vehicle (EV) chargers with a housing made from certified renewable PC, a first for the industry.

SABIC is supplying electronic manufacturer Charge Amps with its certified renewable grade Lexan PC, supporting the EV charger provider's commitment to develop the circular bio-economy and help mitigate climate change issues.

SABIC's renewable PC from its Trucircle portfolio is made from second - generation bio - feedstock that is not in competition with the food chain. The new industrial process contributes to reduce CO2 emissions in manufacturing and installation and fully meets EVSE (Electric Vehicle Supply Equipment) regulations.

Charge Amps Dawn is the latest EV charging station with a charging capacity of 22 kW in one socket, a certified MID (Measuring Instrument Directive) meter and 4G connectivity. Charge Amps Dawn Chassis contains in the range of 50 percent of ISCC PLUS certified bio-based renewable material from SABIC. The collaboration with the Nordic manufacturer that has a strong focus on sustainability throughout the whole production chain is yet another example of SABIC's commitment to help accelerate the world's shift to electric power, encapsulated in the company's Bluehero initiative.

Majed Al-Saadan, director, Building & Construction Segment, SABIC, comments, "SABIC offers selected plastic solution from our building & construction segment that can fulfill stringent industry standards for the making of EV support equipment in terms of safety, reliability, and in addition, offers efficiency in manufacturing, as well as better aesthetics compared to incumbent solution. Together with Charge Amps, we are going one step further by cutting carbon footprint from the production phase to support the world's transition to an electric future."

Jonas Hellström, mechanical design manager at Charge Amps, notes, "Design, innovation and sustainability are key priorities for Charge Amps. The bio - attributed plastic based on

renewable feedstock from SABIC allows us to combine lower carbon emissions with the premium exterior design that Charge Amps is known for. We strive to be in the forefront of technology. This strategic partnership with SABIC is a natural step to being a responsible player in the EV charging ecosystem."

On top of sustainability gains, EV charger manufacturers can benefit from increased functional integration and design freedom. For example, inner panels, indoor cabinets and consoles can be produced from a flame retardant (FR) PC to achieve dimensional stability, high impact resistance and aesthetic finishing. Furthermore, thin - wall FR capability can help reduce weight beyond that achieved by simply replacing metal, and can also free up space for additional components.

An Ai-Powered Plastic Sorting Project Led by Recycleye, Valorplast, and TotalEnergies has Delivered a World First Towards Food-Grade Polypropylene Mechanical Recycling

AI-powered plastic sorting project delivers world first in foodgrade sorting. An AI-powered plastic sorting project led by Recycleye, Valorplast, and TotalEnergies has delivered a world first towards food - grade polypropylene mechanical recycling.

Collaborative research project **OMNI** directed by Recycleye, Valorplast, and TotalEnergies to enhance the circularity of polypropylene (PP) food packaging led to ground - breaking results. The new technology based on Arti cial Intelligence (AI) and computer vision, coupled with an e cient decontamination process, provides a high-performing marketable solution to tackle the challenge of mechanically recycling polypropylene for food-contact applications.

Project **OMNI** is an innovative project aiming to leverage AI and Machine Learning for the identi cation and separation of food-grade PP from household post-consumer wastes. It is one of the 7 projects successfully selected in October 2020 by **CITEO**, a mission-led company reducing the environmental impacts of household packaging and paper, in the framework of a call for projects.

After 18 months of research, Project OMNI led to an alternative to digital and physical marking solutions which require system-wide packaging changes. In a demonstration unit, Recycleye built and trained an AI model based on wastes collected from 5 locations across France supplied and characterized by Valorplast. The AI and robotic sorting achieved a successful pick rate of 50% of the food-grade material, with >95% purity. This sorting activity produced material used for further decontamination on a semi-industrial pilot based on off-the-shelf mechanical recycling technologies. TotalEnergies then leveraged its polymer expertise to produce odorless, clean rPP suitable for high end packaging applications.

The novel developed process has demonstrated the efficient decontamination of food-grade PP waste sorted by AI and computer vision and opens new opportunities for circularity of polypropylene packaging.

Nathalie Brunelle, Senior Vice President, Polymers at TotalEnergies, said: “This project not only demonstrates how cutting - edge technology can improve material circularity, but also paves the way for a wider range of accessible applications for recycled polymers to serve our customers. It provides a concrete response to the challenge of managing end-of-life plastics, and fully support our ambition of reaching 1 million tons of circular polymers”.

Victor Dewulf, CEO of Recycleye added “We are extremely excited to see this successful application of our robust AI-powered sorting technology at a semi industrial scale. This application opens the possibility of creating new markets for recycled plastics materials; ultimately changing the economics of recycling”.

“Being able to recycle food - grade PP is a key factor in the establishment of a circular economy for PP packaging. AI is a promising route for achieving this objective” commented **Alban Cotard, Sales Quality and Development Manager at Valorplast.**

PROAMPAC Commercializes High - Performance Proactive PCR Retort Pouches

PROAMPAC a leader in flexible packaging and material science, is proud to announce its containing post-consumer recycled (PCR) material. This new offering is just one of the many options ProAmpac's platform provides retailers and brands looking for innovative solutions to meet their circular economy goals.

"At ProAmpac, we understand the importance of sustainability to our customers. ProActive PCR Retort pouches use less virgin resin than conventional pouches. By reducing the environmental

impact of our packaging, we are empowering our customers to make sustainable choices aligned with their goals. Together, we're forging a path towards a more sustainable approach to packaging." states Charles Golub, ProAmpac food and beverage market manager.

ProActive PCR Retort pouches oer uncompromised performance, speci cally designed for products requiring ultrahigh barrier and high - heat resistance, such as shelf-stable ready-to-eat proteins. The innovative technology ensures the pouches consistently uphold functionality, durability, and food safety throughout the retort and distribution processes.

ProAmpac's proprietary processing techniques result in pouches that meet stringent quality standards while exhibiting eye - catching graphics, providing a strong shelf presence.

Neste and Mitsui Chemicals Group Enable Food Packaging Made with Renewable Materials for CO-OP Brand in Japan

Neste Corporation, Press Release, 17 November 2023 at 9.00 a.m. (EET)

Photo: CO-OP's seaweed snack now comes in plastic packaging made with renewable materials.

Source: JCCU.

- Cooperation enables seaweed snack packaging made with renewable raw materials, further applications planned
- First packaging made with renewable plastics via mass balancing that has received the Japanese Eco Mark certification

Neste, Mitsui Chemicals and Prime Polymer, a subsidiary of Mitsui Chemicals, are working together to provide more sustainable food packaging solutions for CO-OP, a brand of the Japanese Consumers Co - operative Union (JCCU). In the first phase of the collaboration, biobased raw materials will replace fossil ones in the production of the packaging material for a seaweed snack. Going forward, the companies intend to introduce bio-based raw materials also to packaging for further products.

“Change begins with small things. In this case, it's slices of dried seaweed,” says Lilyana Budyanto, Head of Sustainable Partnerships APAC at Neste's Renewable Polymers and Chemicals business unit. “However, the impact of renewable plastics packaging isn't small at all. It's a crucial contributor to the sustainability transformation of the plastics industry and reducing emissions along the value chain. We are looking forward to the cooperation with Mitsui Chemicals, Prime Polymer and JCCU evolving.”

Neste provides renewable Neste RE™, a feedstock for polymers that is made entirely from bio-based raw materials. Through Mitsui Chemicals and the company's subsidiary Prime Polymer, the feedstock is processed into renewable

Cooperation enables seaweed snack packaging made with renewable raw materials, further applications planned First packaging made with renewable plastics via mass balancing that has received the Japanese Eco Mark certification polypropylene under the brand name Prasus™, which is then turned into food packaging for JCCU. The packaging made with renewable materials comes with the same quality and performance as previously, when it was produced from fossil feedstock. The sole differences lie in the reduced carbon footprint of the packaging and the replacement of fossil materials during its production. A mass balancing approach is applied to allocate the renewable material to the plastic packaging. The seaweed snack packaging is the first packaging made with renewable plastics via mass balancing that has received the Japanese Eco Mark certification.

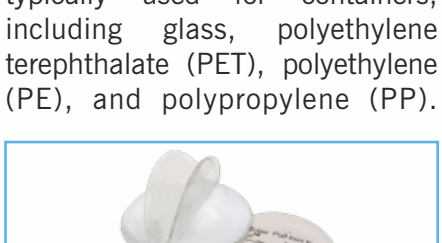
TekniPlex Consumer Products Introduces Tabbed Container Liners With Enhanced Ease of Opening and Barrier Protection

TekniPlex Consumer Products, a globally integrated provider of innovative solutions through materials science and manufacturing technologies, has introduced a series of tabbed container liners combining easier opening with exemplary product protection, as well as optimized shelf life for reduced product waste. The company's Edge Pull® and Simply Tab® solutions are compatible with a broad array of bottles and jars, making them ideal for products in sectors

ranging from food & beverage and cosmetics to pharmaceuticals and nutrition.

Edge Pull® is available in half-moon and off set tab configurations, while Simply Tab® features a dual tab design. Key to both solutions is a strong bond between tab and liner, providing smooth peel away without delamination. Each features an induction heat seal for superior barrier protection, and thick, durable tabs for ease of grip – a bene t especially attractive to consumers with dexterity challenges. Printed instructions help to further the products' hassle free consumer experience.

Exemplifying the sustainability-minded, product waste - counteracting purpose of premium liner solutions, TekniPlex Consumer Products' Edge Pull® and Simply Tab® are compatible with a wide variety of substrates typically used for containers, including glass, polyethylene terephthalate (PET), polyethylene (PE), and polypropylene (PP).



Tamper resistance and contamination prevention elements can be incorporated, and both unprinted and custom print options for enhanced brand messaging are available.

Participants in a consumer trial found Edge Pull® and Simply Tab® liners preferable to other tabbed liners. The results align with rising consumer desires for easy product access, integrity, and safety.

"With product waste and shelf life extension a mounting sustainability concern – particularly in the food industry liners can be critical both to preventing premature spoilage and maintaining package integrity," said Eldon Schaffer, CEO of TekniPlex Consumer Products. "Both Edge Pull® and Simply Tab® provide ample product protection to optimize shelf life while offering the added benefit of a more enjoyable, hassle - free consumer interaction, which can be a critical driver of brand loyalty."

Flint Group Evolution Launch Brings Recycling-friendly Coatings to The Global Market

Following its successful European launch during Labelexpo in Brussels, Flint Group's award-winning Evolution products are now available for narrow web printers worldwide. The latest innovation includes Food Contact Material (FCM) compliant technologies that enhance shrink sleeves and label recyclability.

Evolution products, aptly named because they enable packaging to be reused in ever-evolving forms, are designed to increase the yield of material reclaimed from the recycling process by enabling label material to be recycled at the same time as a PET bottle without risk of contamination. Using Evolution products, previously unrecyclable products can be reprocessed, potentially boosting reclaimed material yield by up to 10%.

In contrast, Evolution Varnish ensures that inks remain on the label during the caustic wash used in the recycling process. The varnish application avoids contamination of the washing solution while not impacting the floatability of the label, and therefore, the resulting quality of the reclaimed material is significantly improved. The protected ink can then be skimmed off with the floating label and directed to an alternative waste stream.

The Evolution product range, previously launched in North America, has been recognised by the Association of Plastic Recyclers (APR) for compliance with critical guidance for PET packaging and recently won the Environmental Sustainability category at the 2022 Global Label Awards at Labelexpo Americas.

The European versions of these products are entirely FCM compliant, and the Deinking Primer has been shortlisted in the pre-commercialised category at the Packaging Europe Sustainability Awards 2023. Pierre Dogliani, R&D Innovation Manager Narrow Web at Flint Group, said: "Labelexpo Europe brought together printers and converters worldwide where they discussed key trends throughout the narrow web industry. A significant observation was the increasing importance of recycling and circularity in packaging.

"Flint Group's Evolution range provides a way for businesses to actively contribute to a more sustainable future by supporting circular packaging in the label and flexible packaging industry. Furthermore, the European versions of Evolution products are designed for use with food packaging without compromising label quality as a true 'plug and play' solution. No changes are required to existing ink systems or curing processes, providing a seamless transition for new customers.

"With circularity continuing to dominate conversations around labels and packaging, Evolution Deinking Primer and Varnish are a technical breakthrough for the industry and will be key to printers and converters making better use of existing plastic resources."

Kraft Heinz Introduces First Fully Recyclable Ketchup Cap with Help From Berry Global

The launch by Kraft Heinz Company of its first fully recyclable cap for its famous squeezy ketchup bottle demonstrates the collaborative achievement utilizing the innovative design and manufacturing capabilities of Berry Global in supporting retail brands with a move towards more sustainable packaging solutions. Historically, Heinz sauce bottles used a flexible silicone valve to deliver a consistent portion of sauce per squeeze, but this was - often challenging to recycle. Together with Berry Global Heinz has now switched to a mono-material cap, manufactured in PP. This means it meets requirements for recyclability.

The project has been eight years, 45 prototypes and more than 185,000 hours in development, to ensure the optimum balance between functionality and sustainability. Berry was involved through the design and production process, from concept to the creation of the series tools in Berry's inhouse tool shop, as well as the development of the assembly equipment for industrial production.

Heinz followed a rigorous testing procedure to make sure the cap met the highest quality standards. An extended consumer survey confirmed that the new concept would be well received by the public, as it dispenses the same perfect amount of sauce every time without affecting the squeezability.

In fact, the study found that the new cap design helps consumers squeeze more ketchup out of the bottle when it is nearly empty – a testament to Berry's ability to look holistically at the overall solution to improve the cap's performance alongside its recyclability.

The concept won Rigid Pack of the Year for Kraft Heinz at the 2023 UK Packaging Awards.

Matthias Hammersen, Sales Director – Food Market at Berry Global, commented: "Heinz set us the kind of challenge that suits us and our development departments best: to reconstruct the design of the cap to make it fully recyclable, without affecting the performance that millions of consumers know and love. We're delighted that the finished result exceeds our initial expectations and actually improves the consumer experience."

The caps are being rolled out UK-wide on 400ml and bigger top-down bottles of Heinz Tomato Ketchup, including 50% Less Sugar and Salt varieties. In the future, the cap will also be rolled out across more of the Heinz sauces range in the U.K. and Europe. Heinz claims the move to the recyclable cap will save a potential 300 million plastic lids from being sent to landfill every year globally.

Jojo de Noronha, President of Kraft Heinz Northern Europe, said: "We know our consumers care about their impact on the environment and so do we, which is why we're delighted to see our innovative, more sustainable caps on Heinz Tomato Ketchup bottles across the UK. Although a small change, this makes it easy for the millions of Heinz lovers across the country to recycle their whole squeezy bottle at once – a small action with big potential for impact."

Aran's Bag in Box: The Right Solutions for Dairy and Liquid Eggs

Explore Aran Group's innovative Bag-in-Box (BIB) solutions, a sustainable liquid packaging for dairy and liquid eggs that reduces waste and elevates effciency

In an increasingly eco-conscious world, Aran Group is actively contributing by manufacturing Bag - in - Box (BIB) packaging solutions, recognized as the most ecofriendly packaging choice. These solutions apply to various liquid foods including milk products and liquid eggs, offering sustainable alternatives that stand in stark contrast to rigid plastic packaging. They ensure secure long-distance transport and contribute to reduced energy consumption by facilitating non-cooling transportation and featuring lighter packaging designs.

Sustainable BIB Solutions for Dairy Products: A Step Towards Environmental Responsibility

With a focus on dairy products such as milk, yogurt, cream, and butter, Aran has packaging options in 5, 10, 15, and 20 liters, catering to the wholesale market, including restaurants, hotels, and large kitchens. Also available in 1000-liter packages per request. These packages are fully recyclable, lightweight, and mono-material bags, replacing bulkier, less eco-friendly alternatives such as rigid plastic packaging. Aran's BIB solutions can be recycled in the common PE recycling streams since the barrier layer is not metalized and is based on less than 5% EVOH.

Innovative Filling Processes for Aseptic Quality

Diverse BIB solutions cater to varying dairy product needs, shelf-life goals, and storage conditions. For short - term refrigerated storage (2-3 weeks), PE-based bags are ideal, offering full recyclability. For an extended 12 - week shelf life without refrigeration, aseptic BIB bags with oxygen barriers are recommended. For this application, the process should be in a clean atmosphere environment. This technology serves as a popular solution, particularly in North America. For a longer shelf life of 6 months at room temperature, UHT (Ultra High Temperature) technology is applied. This requires the use of aseptic processes using specific equipment.

Effortless Product Dispensing with Tailored Fitments

Aran offers the flexibility of choosing the perfect fitment for your bag, ensuring the convenience of product emptying aligns with consumer preferences. Fitment options include regular pouring caps, suitable for one-time and repeated opening and closing. These caps can be obtained with or without proof of an opening mechanism. Additionally, Aran provides accessories like the Aran CMB, compatible with various dispensers. The CMB not only includes the right cap but also a dedicated tube, allowing a clean, gradual, and controlled product emptying process while safeguarding against impurities.

Catering to Global Filling and Dispensing Needs

Aran caters to a wide array of filling and dispensing machines worldwide. Their extensive experience spans over a decade, working closely with LACTALIS, one of the world's largest dairy product manufacturers. They provide tailored solutions to various countries where LACTALIS operates, exemplifying their global reach and expertise

Cutting Plastic Waste with Milkit Partnership

One example of Aran's commitment to sustainability is its partnership with Milkit, a dispensing system revolutionizing liquid handling. This collaboration has had a remarkable environmental impact, replaced traditional plastic jugs, and achieved an impressive 85% reduction in waste. By harnessing Aran's innovative bags, this eco-conscious solution has the potential to save over 1 billion plastic jugs annually.

Enhancing Hygiene and Efficiency with BIBs in the Liquid Egg Industry

Bag-in-Box (BIB) packaging offers a sustainable packaging solution to the liquid egg market, for hygiene and contamination - free work environments. These liquid egg packages, range from common 5, 10, and 20-liter sizes to 1000 - liter containers. An example of that is Aran's 1000-liter IBC package is used by Unilever for mayonnaise production.

Unlike dairy products, liquid eggs do not undergo high-temperature aseptic sterilization. Instead, dedicated pasteurization equipment gently heats them to 65 degrees Celsius. Since eggs are considered sensitive products, they have a limited shelf life of up to 90 days, requiring refrigeration, and occasionally necessitating aseptic bag usage due to regulatory compliance.

To grasp the profound impact of BIB packaging in the liquid egg market, it's essential to remember the conventional alternatives. In the past, liquid eggs were poured into regular PE bags or rigid plastic bottles and then subjected to freezing at minus 18 degrees Celsius. This process presented challenges, with the outer parts of the liquid eggs exposed to rapid defrosting while the core remained frozen. The introduction of BIB packaging a few decades ago transformed the industry, rendering the freezing of liquid eggs obsolete. BIB packaging offers a range of fitments, including standard pouring caps for one-time use or resealing, with options for proof of opening mechanisms. Additionally, caps with “pop-out” spouts provide added flexibility, accommodating various consumer needs and preferences.

Aran's Strategic Advantages: Delivering Sustainable Solutions Efficiently

Aran Group's sustainable BIB solutions are augmented by their strategic advantages. With manufacturing facilities in Israel, Spain, and the USA, Aran ensures proximity to major markets, providing quick responses, technical support, and speedy deliveries. This proximity significantly reduces the carbon footprint associated with transportation, aligning with Aran's commitment to sustainability. By being close to their customers and manufacturing locally, Aran ensures a seamless process from production to delivery, meeting market demands efficiently and sustainably.

Aran's Sustainable Legacy

As the world moves towards a more sustainable future, Aran Group offers innovation and responsibility in the packaging industry. Their BIB solutions not only revolutionize packaging but also emphasize environmental consciousness. By reducing waste, embracing recyclability, and providing efficient, localized service, Aran Group sets a high standard for sustainability, showcasing a responsible and forward - thinking approach that the industry can and should embrace.

Packaging Specialist ALPLA is Investing in Morocco and Planning Expansion

Joint venture with Diana Holding for PET preform, pallet and film production The internationally active ALPLA Group is expanding its presence in North Africa with its market entry in Morocco and setting the course for growth in the Maghreb. The plastic packaging specialist has acquired a majority stake in the packaging producer Atlantic Packaging and founded the joint venture ALPLA Morocco with the previous sole owner Diana Holding. In addition to PET preforms for the beverage industry, plastic pallets and films are produced at the plant in Tangier. Preform production has recently been tripled through investments in new machinery.

In its ongoing international expansion efforts, ALPLA now also provides safe, affordable and sustainable plastic packaging solutions in Morocco. By acquiring a majority stake in the packaging company Atlantic Packaging and establishing a joint venture with the previous sole owner Diana Holding, ALPLA is contributing its expertise and experience to the production of PET preforms for the regional markets in the Maghreb and for Western Africa. In addition to preforms, ALPLA Morocco also produces plastic pallets by injection moulding and packaging films by extrusion at its modern plant in Tangier. Currently, 32 people are employed at the site.

ALPLA Morocco's preform capacity has already been tripled in 2023 by two additional preform production lines. In the coming years, ALPLA is committed to increasing the portfolio of the Moroccan site through further local activities, potentially including bottle and closure production. This initiative aims to establish the groundwork for growth and sustainable packaging solutions in the North Western African Region.

Strategic Partnership

'Together with our strategic partner Diana Holding, we want to exploit the enormous potential of the regional markets, open up new segments and contribute our expertise as a global system provider for preforms, bottles and closures,' explains Christian Fessler, Managing Director Middle East and North Africa at ALPLA.

In addition to its packaging subsidiary, Diana Holding is primarily active in the agroindustrial sector. Through this joint venture, the family-run group is strengthening its packaging division, which was founded in 2007, by capitalising on its substantial bottling experience garnered over nearly 50 years as the former Coca-Cola Company bottler in the northern region of Morocco.

'Our joint vision is to be one of the leading suppliers of high-quality plastic packaging in Morocco and for Western Africa, and to offer innovative solutions. We created Atlantic Packaging with the vision of expanding its capacity through a strategic partnership. In ALPLA, which puts a great emphasis on the three P's: People, Planet, Profit, we have found the ideal partner for this project, enabling the creation of further synergies,' says Rita Maria Zniber, CEO of Diana Holding.

Production Capacity Tripled

The approximately 12,000 square metre plant in the free trade zone of Tangier is to be expanded in stages over the coming years. More than 20,000 square metres of space is available for future expansion. In the first stage, ALPLA Morocco has tripled its production capacity from the current 100 million preforms to around 300 million units per year. To this end, the company is investing in two new PET preform production lines.

'Through the location in Morocco, we can supply our global customers in northern Africa with the usual quality and flexibility, gain new business partners and expand our portfolio to include new areas. At the same time, we are creating new jobs by expanding our production volume,' says Javier Delgado, ALPLA Regional Managing Director Africa, Middle East and Turkey.

In addition to the know-how for the development and production of resource - saving plastic packaging made of recycled material, ALPLA Morocco is looking ahead to leverage its capabilities as a system provider and to introduce new technologies in the future. 'By manufacturing bottles, preforms and closures, as we already do in South Africa and Angola, we provide customers with successful products and sustainable solutions from a single source, giving them a market advantage,' says Delgado.

The joint venture was signed by the contracting parties on 31 August 2023, and approved by the local antitrust authorities. The parties have agreed not to disclose the terms and conditions.

About ALPLA Group

ALPLA is one of the world's leading companies in the manufacture and recycling of plastic packaging. Around 23,300 employees worldwide produce custom-made packaging systems, bottles, caps and moulded parts at 190 sites in 46 countries. The high-quality packaging is used in a wide range of areas, including for food and drinks, cosmetics and care products, household cleaning products, detergents and cleaning agents, pharmaceutical products, engine oils and lubricants.

ALPLA operates recycling plants for PET and HDPE in Austria, Germany, Poland, Mexico, Italy, Spain, Romania and Thailand. Other projects are being realised elsewhere around the world. www.alpla.com

About Diana Holding

Founded in 1956, Diana Holding is an agro-industrial holding company owned by the Zniber family and is one of Morocco's leading private companies with a turnover of more than $420 million. The agro-industrial group manages 8,300 hectares of land and employs around 7,000 people. Over the years, Diana Holding has made its mark on Morocco and beyond, employing a strategy of sustained growth and business diversification, as well as a commitment to internationalisation. The combination of its deep Moroccan roots alongside its international footprint has enabled the development of an integrated agro - industrial holding.

Diana Holding is led by Rita Maria Zniber as CEO and President.

www.dianaholding.ma

Caption

ALPLA-Morocco-Joint-Venture.jpg: ALPLA has acquired a majority stake in the packaging producer Atlantic Packaging and founded the joint venture ALPLA Morocco with the previous sole owner Diana Holding.

Information for Editorial

ALPLA, Erik Nielsen (Team Leader, Corporate Communications), tel.: +43 (0)5574 6021 701, email: erik.nielsen@alpla.com Pzwei. Pressearbeit, Joshua Köb, tel.: +43 (0)5574 44715 22, email: joshua.koeb@pzwei.at

---

Rocket Lab to Establish Space Structures Complex in Baltimore County to Supply Advanced Composite Products Internally and to Broader Space Industry

Rocket Lab to Establish Space Structures Complex in Baltimore County to Supply Advanced Composite Products Internally and to Broader Space Industry.

Senator Ben Cardin, Congressman Dutch Ruppersberger and Baltimore County Executive John Olszewski t cut the ribbon at the Middle River, Maryland facility that will become Rocket Lab's Space Structures Complex.

Designed to serve growing customer demand for composite products, the complex will also support Neutron launch vehicle development and supply.

Middle River, MD. November 17, 2023 – Rocket Lab USA, Inc. (Nasdaq: RKLB) ("Rocket Lab" or "the Company"), a leading launch and space systems company, today announced the expansion of its space systems business with a dedicated production and development complex designed to deliver a comprehensive suite of advanced composite products for the space industry and to further vertically integrate supply for the Company's internal needs across launch and space systems. Rocket Lab to Establish Space Structures Complex in Baltimore County to Supply Advanced Composite Products Internally and to Broader Space Industry

To support its growing composite product line, Rocket Lab is establishing a Space Structures Complex in Middle River, Maryland, which will support the development and manufacture of carbon composite spacecraft buses, structural panels and assemblies, satellite dispensers, aerostructures and heat shields, composite overwrap pressure vessels, solar panel substrates, launch vehicle structures and more. The site will also play a role in the development and long - term supply of carbon composite structures for Rocket Lab's new medium lift launch vehicle, Neutron.

Rocket Lab's Space Structures Complex will be established in the 113,000 square foot former Lockheed Martin Vertical Launch Building in Middle River, which has been home to aerospace manufacturing since 1929.

The new complex builds on Rocket Lab's deep heritage in advanced composite manufacturing, including the development of Electron, the world's first carbon composite orbital launch vehicle, as well as the Company's spacecraft buses, including the Photon Lunar spacecraft that delivered the CAPSTONE satellite to the Moon's orbit for NASA in 2022. Rocket Lab also currently manufactures and launches its in - house designed carbon composite Maxwell satellite dispensers, as well as advanced solar array substrates. Expanding on these products, Rocket Lab's new composite offering spans design and engineering, tooling and molds, manufacturing, assembly and testing for space applications.

"Rocket Lab is a world leader in advanced composites through our launch and spacecraft programs, so this is a natural progression as we continue growing our space systems offering," said Rocket Lab founder and CEO, Peter Beck. "We have the experienced team, manufacturing and test equipment, established supply chain, and heritage to deliver reliable composite products to the space industry at scale, and because we're deeply vertically integrated, we can do it fast and at competitive prices.

We're incredibly excited to bring advanced Rocket Lab composite products to market for our customers. We're grateful for the support from the State of Maryland, Baltimore County, Maryland Department of Commerce, Governor Wes Moore, Senator Cardin and Senator Van Hollen, Congressman Ruppersberger and others who have welcomed us to the state. We look forward to building a bright future in aerospace manufacturing

together." "We are excited to support Rocket Lab in expanding Maryland's efforts in the space industry," said Governor of Maryland Wes Moore.

"Renovating this significant Baltimore County site and creating dozens of new jobs will stimulate opportunity for the region, and we are certain that this new Rocket Lab location will become a prominent and successful facility in the state." "With new and emerging technologies, the Baltimore region has been nationally recognized as a leading tech hub. Rocket Lab's Middle River facility will be a welcome part of that developing identity," said Senator Ben Cardin. "This new facility will bring technological advancements and innovation that will propel us forward into the future of aerospace, allow Maryland to continue to stand out as a global competitor and stimulate economic growth throughout the state." "Our commitment to investing in and growing Maryland's space industry has boosted our economy and propelled our nation forward. Rocket Lab's establishment of a new assembly facility in Middle River will create good-paying jobs, contribute to the ongoing revitalization of manufacturing in Baltimore County, and further cement Maryland's status as a leader in American and international space exploration," said Senator Chris Van Hollen.

"Maryland is home to a unique and growing space industry that is helping the U.S. maintain its global competitiveness and national security and I am thrilled that Rocket Lab has chosen us to grow its business," Congressman Ruppersberger said. "This facility in Middle River is a historic site that has been home to aerospace manufacturing for decades and I am grateful that the tradition – and quality job creation – will carry on with Rocket Lab. I am hopeful this will generate a domino effect of innovation and economic development across the region." "We are fully committed to building a stronger economy, generating new jobs, and supporting our local workforce," said Baltimore County Executive Johnny Olszewski. "Rocket Lab's planned renovation to the former Lockheed Martin site in Middle River will honor our region's history of engineering and innovation while ensuring that our partnership leads to more job opportunities for our residents and communities."

To assist with project costs, in addition to significant support from Baltimore County, the Maryland Department of Commerce is providing a $1.56 million repayable loan through the Advantage Maryland program. Rocket Lab is also eligible for various other incentives and tax credits, including the Partnership for Workforce Quality program, the More Jobs for Marylanders program, and the state's Job Creation Tax Credit.

Rocket Lab currently undertakes composite work for launch vehicles and spacecraft across its facilities in Long Beach, California, Albuquerque, New Mexico, as well as Auckland and Warkworth, New Zealand. Composite development and manufacturing will continue at these locations, while the establishment of the new production complex in Middle River, Maryland, enables Rocket Lab to expand operations in proximity to the Company's growing assembly, integration and test complex in Virginia at the Mid - Atlantic Regional Spaceport and NASA Wallops Flight Facility, home to production, integration, and launch facilities for the Electron and Neutron rockets. The new Space Structures Complex expands Rocket Lab's existing footprint in Maryland, where the Company already operates a manufacturing facility for satellite separation systems and CubeSat dispensers in Silver Spring. + Forward Looking Statements + Forward Looking Statements This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. We intend such forward-looking statements to be covered by the safe harbor provisions for forward looking statements contained in Section 27A of the Securities Act of 1933, as amended (the "Securities Act") and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). All statements contained in this press release other than statements of historical fact, including, without limitation, statements regarding our launch and space systems operations, launch schedule and window, safe and repeatable access to space, Neutron development, operational expansion and business strategy are forward-looking statements. The words "believe," "may," "will," "estimate," "potential," "continue," "anticipate," "intend," "expect," "strategy," "future," "could," "would," "project," "plan," "target," and similar expressions are intended to identify forward-looking statements, though not all forward-looking statements use these words or expressions. These statements are neither promises nor guarantees, but involve known

and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements, including but not limited to the factors, risks and uncertainties included in our Annual Report on Form 10-K for the fiscal year ended December 31, 2022, as such factors may be updated from time to time in our other filings with the Securities and Exchange Commission (the "SEC"), accessible on the SEC's website at www.sec.gov and the Investor Relations section of our website at www.rocketlabusa.com, which could cause our actual results to differ materially from those indicated by the forward-looking statements made in this press release.

Any such forward - looking statements represent management's estimates as of the date of this press release. While we may elect to update such forward-looking statements at some point in the future, we disclaim any obligation to do so, even if subsequent events cause our views to change. Products Internally and to Broader Space Industry Senator Ben Cardin, Congressman Dutch Ruppersberger and Baltimore County Executive John Olszewski today cut the ribbon at the Middle River, Maryland facility that will become Rocket Lab's Space Structures Complex.

Designed to serve growing customer demand for composite products, the complex will also support Neutron launch vehicle development and supply. Middle River, MD. November 17, 2023 Middle River, MD. November 17, 2023 – Rocket Lab USA, Inc. (Nasdaq: RKLB) ("Rocket Lab" or "the Company"), a leading launch and space systems company, today announced the expansion of its space systems business with a dedicated production and development complex designed to deliver a comprehensive suite of advanced composite products for the space industry and to further vertically integrate supply for the Company's internal needs across launch and space systems. Rocket Lab to Establish Space Structures Complex in Baltimore County to Supply Advanced Composite Products Internally and to Broader Space IndustryTo support its growing composite product line, Rocket Lab is establishing a Space Structures Complex in Middle River, Maryland, which will support the development and manufacture of carbon composite spacecraft buses, structural panels and assemblies, satellite dispensers, aerostructures and heat shields, composite overwrap pressure vessels, solar panel substrates, launch vehicle structures and more.

The site will also play a role in the development and long-term supply of carbon composite structures for Rocket Lab's new medium lift launch vehicle, Neutron. Rocket Lab's Space Structures Complex will be established in the 113,000 square foot former Lockheed Martin Vertical Launch Building in Middle River, which has been home to aerospace manufacturing since 1929. The new complex builds on Rocket Lab's deep heritage in advanced composite manufacturing, including the development of Electron, the world's first carbon composite orbital launch vehicle, as well as the Company's spacecraft buses, including the Photon Lunar spacecraft that delivered the CAPSTONE satellite to the Moon's orbit for NASA in 2022.

Rocket Lab also currently manufactures and launches its in-house designed carbon composite Maxwell satellite dispensers, as well as advanced solar array substrates. Expanding on these products, Rocket Lab's new composite offering spans design and engineering, tooling and molds, manufacturing, assembly and testing for space applications. "Rocket Lab is a world leader in advanced composites through our launch and spacecraft programs, so this is a natural progression as we continue growing our space systems offering," said Rocket Lab founder and CEO, Peter Beck.

"We have the experienced team, manufacturing and test equipment, established supply chain, and heritage to deliver reliable composite products to the space industry at scale, and because we're deeply vertically integrated, we can do it fast and at competitive prices. We're incredibly excited to bring advanced Rocket Lab composite products to market for our customers. We're grateful for the support from the State of Maryland, Baltimore County, Maryland Department of Commerce, Governor Wes Moore, Senator Cardin and Senator Van Hollen, Congressman Ruppersberger and others who have welcomed us to the state. We look forward to building a bright future in aerospace manufacturing together."

"We are excited to support Rocket Lab in expanding Maryland's efforts in the space industry," said Governor of Maryland Wes Moore. "Renovating this significant Baltimore County site and creating dozens of new jobs will stimulate opportunity for the region, and we are certain that this new Rocket Lab location will become a prominent and successful facility in the state."

"With new and emerging technologies, the Baltimore region has been nationally recognized as a leading tech hub. Rocket Lab's Middle River facility will be a welcome part of that developing identity," said Senator Ben Cardin. "This new facility will bring technological advancements and innovation that will propel us forward into the future of aerospace, allow Maryland to continue to stand out as a global competitor and stimulate economic growth throughout the state."

"Our commitment to investing in and growing Maryland's space industry has boosted our economy and propelled our nation forward. Rocket Lab's establishment of a new assembly facility in Middle River will create good-paying jobs, contribute to the ongoing revitalization of manufacturing in Baltimore County, and further cement Maryland's status as a leader in American and international space exploration," said Senator Chris Van Hollen.

"Maryland is home to a unique and growing space industry that is helping the U.S. maintain its global competitiveness and national security and I am thrilled that Rocket Lab has chosen us to grow its business," Congressman Ruppersberger said. "This facility in Middle River is a historic site that has been home to aerospace manufacturing for decades and I am grateful that the tradition – and quality job creation – will carry on with Rocket Lab. I am hopeful this will generate a domino effect of innovation and economic development across the region."

"We are fully committed to building a stronger economy, generating new jobs, and supporting our local workforce," said Baltimore County Executive Johnny Olszewski. "Rocket Lab's planned renovation to the former Lockheed Martin site in Middle River will honor our region's history of engineering and innovation while ensuring that our partnership leads to more job opportunities for our residents and communities."

To assist with project costs, in addition to significant support from Baltimore County, the Maryland Department of Commerce is providing a $1.56 million repayable loan through the Advantage Maryland program. Rocket Lab is also eligible for various other incentives and tax credits, including the Partnership for Workforce Quality program, the More Jobs for Marylanders program, and the state's Job Creation Tax Credit.

Rocket Lab currently undertakes composite work for launch vehicles and spacecraft across its facilities in Long Beach, California, Albuquerque, New Mexico, as well as Auckland and Warkworth, New Zealand. Composite development and manufacturing will continue at these locations, while the establishment of the new production complex in Middle River, Maryland, enables Rocket Lab to expand operations in proximity to the Company's growing assembly, integration and test complex in Virginia at the Mid - Atlantic Regional Spaceport and NASA Wallops Flight Facility, home to production, integration, and launch facilities for the Electron and Neutron rockets. The new Space Structures Complex expands Rocket Lab's existing footprint in Maryland, where the Company already operates a manufacturing facility for satellite separation systems and CubeSat dispensers in Silver Spring.

Forward Looking Statements

This press release contains forward - looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. We intend such forward-looking statements to be covered by the safe harbor provisions for forward looking statements contained in Section 27A of the Securities Act of 1933, as amended (the "Securities Act") and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). All statements contained in this press release other than statements of historical fact, including, without limitation, statements regarding our launch and space systems operations, launch schedule and window, safe and repeatable access to space, Neutron development, operational expansion and business strategy are forward-looking statements. The words "believe," "may," "will," "estimate," "potential," "continue," "anticipate," "intend," "expect," "strategy," "future," "could," "would," "project," "plan," "target," and similar expressions are intended to identify forward-looking statements, though not all forward - looking statements use these words or expressions.

PLASTIC RAW MATERIALS

Japan : Scientists develop self - healing, stronger and partially biodegradable plastic

Scientists in Japan have developed a new version of plastic which is not just stronger and stretchier than the traditional version but also partially biodegradable. Besides, it can remember complex shapes which can be restored once it is heated.

Sustainable plastics

Scientists worldwide for long have been pursuing the goal of creating an eco - friendly alternative to traditional plastic due to its devastating impact on the environment.

Now, researchers at the University of Tokyo have successfully created “sustainable plastic,” which is based on an epoxy resin vitrimer.

What are vitrimers ?

Vitrimers represent a relatively recent category of plastics known for their impressive strength at low temperatures, while also possessing the unique ability to be reshaped numerous times when exposed to higher temperatures.

Nonetheless, they do have a notable drawback - extreme brittleness, as they cannot be stretched far before breaking.

To address this issue, researchers introduced a molecule called polyrotaxane into the plastic synthesis process, resulting in a novel plastic variant they've dubbed VPR, an abbreviation for "vitrimer incorporated with polyrotaxane." At lower temperatures, VPR's robust internal chemical bonds maintain its rigid shape, but as temperatures rise, to around 150 degrees Celsius, these bonds start to recombine, allowing the material to take on different forms.

Moreover, when heat and a solvent are applied to VPR, it readily breaks down into its constituent components. Submerging VPR in seawater for 30 days also led to a 25 per cent biodegradation, with the polyrotaxane breaking down into a potential food source for marine life.

Self - healing properties

“VPR is over five times as resistant to breaking as a typical epoxy resin vitrimer,” said Professor Shota Ando, a project research associate at the University of Tokyo Graduate School of Frontier Sciences.

“It also repairs itself 15 times as fast, can recover its original memorised shape twice as fast and can be chemically recycled 10 times as fast as the typical vitrimer. It even biodegrades safely in a marine environment, which is new for this material,” Ando added.

Lyondellbasell to Build Industrial - Scale Advanced Recycling Plant in Germany

LyondellBasell (LYB) announced it has made the investment decision to build the company's first industrial - scale catalytic advanced recycling demonstration

plant at its Wesseling, Germany, site. Using LyondellBasell's proprietary MoReTec technology, this plant will be the first commercial scale, single - train advanced recycling plant to convert post - consumer plastic waste into feedstock for production of new plastic materials that can be ran at net zero GHG emissions. The new plant is expected to have an annual capacity of 50,000 tonnes per year and is designed to recycle the amount of plastic packaging waste generated by over 1.2 million German citizens per year. Construction is planned to be completed by the end of 2025.

"We are committed to addressing the global challenge of plastic waste and advancing a circular economy, and today ' s announcement is another meaningful step in that direction," says Peter Vanacker, LYB CEO. "Scaling up our catalytic advanced recycling technology will allow us to return larger volumes of plastic waste back into the value chain. By doing this, we will have the ability to produce more materials for high quality applications, retaining value of plastics for as long as possible.

" The LYB MoReTec demonstration plant will close the gap for di cult to recycle plastics, such as mixed or exible materials that are currently sent to l and ll or incineration. Source One Plastics, a joint venture of LYB and 23 Oaks Investments formed in October 2022, will supply the majority of the sorted processed feedstock. The advanced recycled feedstock produced by the MoReTec facility will be used for the production of polymers sold by LYB under the Circulen Revive product line for use in a wide range of applications, including medical and food packaging.

The MoReTec difference

The MoReTec technology produces pyrolysis oil and pyrolysis gas. Pyrolysis oil is a substitute for fossil - based materials used in polymer production. Typically, pyrolysis gas streams are consumed as a fuel, however, the MoReTec technology enables the pyrolysis gas to be recovered as well, contributing to the production of polymer and displacing fossil - based feedstocks, which lowers direct CO2 emissions.

In addition, the proprietary catalyst technology lowers the process temperature, reduces energy consumption and improves yield. With lower energy consumption, the process can be powered by electricity, including electricity from renewable sources at net zero GHG emissions.

These differentiating advantages provide a carbon footprint advantage as well. The recovery of pyrolysis gas as feedstock, lower energy demand, electrical heating design, displacement of fossil - feedstocks, and recovery of waste plastic from incineration or land fill result in a significantly lower carbon footprint compared with fossil - based processes. This makes MoReTec a unique value proposition.

SABIC Debuts Higher PCR Content LNP™ ELCRIN™ Copolymer Resin With Enhanced Performance

SABIC, a global leader in the chemical industry, launched a new portfolio of 10 LNP™ ELCRIN™ copolymer resins that can reduce carbon footprint while delivering desirable performance properties and aesthetics. Adopting these polycarbonate (PC) - based copolymer materials, which contain up to 75 percent certified post - consumer recycled (PCR) content, can help customers advance their sustainability initiatives without sacrificing key attributes. Compared to competitive impact - modified PC resins containing PCR content, which can have performance limitations, the new LNP copolymer resins deliver high performance across the board. Depending on the grade, they may provide low - temperature ductility, chemical and weathering resistance, good flow for easy processing, transparency, a broad color space, UV stability and thin-wall flame retardance (FR) meeting the UI94 V - 0 rating at 0.6mm.

“Specialty thermoplastics formulated with mechanically recycled content are an important part of SABIC's net-zero strategy,” said Joshua Chiaw, Director, Business Management, LNP & NORYL, Specialties, SABIC. “Our new LNP copolymer resins offer customers across multiple industries fresh opportunities to significantly increase the amount of PCR content in their applications. This is the latest example of how SABIC leads in sustainable solutions that can help our customers meet growing demands for circularity from regulators, OEMs and the public.”

Upgraded Copolymer Resins Containing PCR Content

The new LNP copolymer resins represent a significant upgrade to SABIC's existing portfolio of

materials that were previously made with PCR content. They contain higher percentages of PCR content (50 to 75 percent) than previous products, and this content is certified by SCS Global Services. Also, they offer enhanced properties such as a wider color range for opaque materials, several transparent options and more FR choices. All FR grades in the new portfolio have received UL Solutions Yellow Cards.

One of the newly upgraded materials includes LNP ELCRIN EXL9253RCC copolymer resin, which contains 50 percent PCR content to reduce carbon footprint, while delivering excellent mechanical performance. This opaque material provides robust low-temperature ductility down to -30°C, good chemical resistance and weatherability, thin-wall FR (UL94 V0 @ 1.0mm) and a wide color space.

The sustainable LNP copolymer resins can significantly reduce carbon emissions vs. virgin PC materials while serving as drop-in replacements. For instance, LNP EXL1484RCC resin, a non-FR grade containing 75 percent PCR content, reduced global warming potential (GWP) by 53 percent compared to SABIC's virgin PC resin, while providing comparable flow and mechanical properties. Another new grade, flame-retardant LNP EXL7284RCC resin, also containing 75 percent PCR content, lowered GWP by 55 percent compared to virgin PC. Both GWP results are based on internal life cycle assessments.

In addition, the new LNP copolymer resin grades surpass competitive modified PC grades made with recycled content. While these competitors may contain similar percentages of PCR material, they can only deliver one or two of the enhanced properties offered by the SABIC grades.

Jenny Wang, Director, Formulation and Application, APAC, Specialties, SABIC, explained, “We overcame a dual challenge : incorporating high percentages of recycled content into these new materials while maintaining excellent properties. Thanks to the expertise of our team and our highly efficient copolymer chemistry, our new upgraded LNP materials achieve both the high PCR content and high performance including flame retardant as well as mechanical strength that our customers expect.”

CIRCULAR ECONOMY/ BIO-PLASTICS/ RECYCLING

Investment Funds to Boost Advanced Plastic Recycling.

Infinity Recycling, a growth capital firm that invests in advanced plastic recycling technology, has announced that its Circular Plastics Fund (CPF) has reached EUR 105 million in committed capital.

The latest round of funding comes from the European Investment Fund (EIF) and Bangkok - based GC Ventures. These investments bring Infinity Recycling closer to its target of EUR 150 million which it expects to close by the end of the year. The fund 'supports companies with scalable technologies that need financing for the industrial and commercial scale - up of their operations'.

EIF has invested EUR 50 million with the support of the European Investment Bank and the InvestEU programme, which is mobilising funds towards EU policy priorities in the 2021 - 27 period. EIF says that CPF's focus on advanced recycling processes will enable recycled plastic to regain 'virgin - equivalent properties' and play a role in improving industry circularity.

Changing habits

According to EIF's ceo Marjut Falkstedt, innovation is important in finding new ways to mitigate plastic use. 'The proportion of plastic packaging that is recycled is still far too low,' he says. 'A lot can be achieved by changing our habits but innovation is key to finding new ways of dealing with structural plastic use and making sure we use every piece of plastic as many times as possible.

Meeting people's needs

GC Ventures is a petrochemical and refining business, founded in 2011 and aligned with the Paris Agreement. Kamel Ramdani, senior vice president of the company, says that sustainability is key to the business' operations and commitments. 'Applying the circular economy principle to closed - loop plastic waste management, recycling, and upcycling is mandatory. This includes developing new solutions through innovation and their market impact to better meet people's needs.'

Dissolvable Plastics - A Lasting Solution for the Marine Crisis.

A group of scientists is hoping to create a new type of plastic that can be printed via a 3D machine and can break down in seawater within a month, in a bid to tackle the growing waste in our oceans. Ocean waste is a growing problem, with 30,000 tonnes of plastic leaking into Australia's marine environment each year. By 2050 it is estimated that 99 per cent of seabirds will have ingested plastic, which often leads to slow and painful deaths, data from the federal government shows. The amount of plastic in our oceans will also probably outweigh fish that same year. But Dr Ruirui Qiao from the University of Queensland's Australian Institute for Bioengineering and Nanotechnology is hoping to create a new type of plastic that can be printed via a 3D machine and could be used for any number of things, like medical equipment.

The hope is that once used, the plastic can break down in the ocean, leaving behind carbon dioxide and water. The team has created a prototype of the material and will begin testing it in ocean water over the coming months. It's a challenging task, Qiao said, because they need to make sure the plastic can degrade in an environment with a relatively low temperature, high salt content and very few organisms. “Our oceans are being clogged by long - lasting plastic containers, bags and even microplastics – which pose a significant threat to

ecosystems including millions of seabirds and mammals," she said. "Most of the materials that have been designed that are biodegradable, break down in the environment over several months. We are trying to make the process one month." She added there was limited research in this area, highlighting the importance of the scientists' work.

The project, which is run in partnership with the Chinese Academy of Sciences, has received $125,000 from the Queensland - Chinese Academy of Sciences Collaborative Science Fund to accelerate the work over the next two years. Qiao said the goal is to commercialise a line of products in Australia and China within five years to replace traditional plastics and tap into a biodegradable market which is projected to exceed $9.5 billion by that time. Australian Institute of Marine Science microplastic researcher Dr Cherie Motti said her research involved trawling parts of the Australian ocean and she's always finding plastic. In some parts of the ocean, rubbish piles can be triple the size of France.

"I think any technology that reduces our reliance on the chemicals that we can't degrade is an important step forward. Australia is good at minimising waste in the ocean, but we could do better."

Infinity - The Next Step for Recycling

Enviro - tech startup Samsara Eco is creating what it believes is Australia's first infinite recycling R&D facility, as the company moves towards its goal of recycling 1.5 million tonnes of plastic per annum by 2030.

In Poplars Innovation Precinct at Queanbeyan, NSW, the new R&D facility will be devoted to accelerating Samsara Eco's research to scale its patented enzymatic capabilities and be operational by late 2024.

The news comes after Samsara Eco's $56 million Series A fundraising round, hiring its first CTO and partnerships with Lululemon and Kanematsu Corporation.

Since launching in 2021, Samsara Eco's R&D has been based at the research laboratories at the Australian National University (ANU) and the partnership with ANU will continue as it gears up for commercialisation.

"You can't solve the climate crisis unless you solve the plastics crisis," says Paul Riley, CEO and founder of Samsara Eco.

"Plastic is one of the greatest inventions of the 20th century and provides enormous utility because of its durability, flexibility and strength. Yet it's also an environmental disaster with almost every piece of the 9 billion tonnes ever made still on the planet," says Riley.

"We've had fantastic growth out of our ANU lab so far, but the plastic problem is growing fast. As we gear up towards commercialisation, access to our first R&D facility will enable us to accelerate the capabilities of infinite recycling and scale our solution which breaks down plastics in minutes, not centuries," adds Riley.

Instead of creating new plastic or relying on current recycling methods — which result in less than 10% of plastic waste actually being recycled — Samsara Eco takes plastic that already exists and infinitely recycles it.

Samsara Eco's infinite recycling technology returns plastic to its core molecules, which can then be used to recreate brand - new plastic, again and again. Its patented process is carbon - neutral, environmentally friendly and requires nothing more from the planet or everyday consumers in time, energy, resources or money.

Currently, Samsara Eco ' s enzymatic library can tackle challenging plastics including coloured, multi - layered, mixed plastics and textiles like polyester and nylon 6,6. The R&D facility will be pivotal to expanding its enzymatic library.

Queanbeyan - Palerang Regional Council Mayor, Cr Kenrick Winchester said that securing Samsara Eco as an anchor tenant of the Poplars Innovation Precinct was a great step toward achieving the vision for the precinct.

"Samsara Eco's innovative technology has the potential to put Queanbeyan and Jerrabomberra on the international stage as countries all over the world look for ways to reduce waste and work toward net - zero carbon emissions. We hope that securing Samsara Eco is the first of many new and exciting initiatives for the precinct and we look forward to the employment opportunities the precinct will provide," the Mayor concluded.

Council shares Poplars Developments' vision that focuses on attracting defence, space, cyber - security, information technology and scientific research sectors to the new precinct.

Samsara Eco is now backed by expertise at Main Sequence, Woolworths Group, W23, CEFC, Wildcard Ventures. Samsara Eco's list of supporters expanded further following its $56 million Series A last year, with new investors such as Temasek, Breakthrough VIC and DCVC.

Samsara Eco's community is united by the shared mission to divert plastic from our landfills and oceans, and remove the need for humanity to create plastic from fossil fuels ever again, (whether it's for the bottles we drink from or the clothes we wear) for a cleaner and more sustainable future.

Poplars Innovation Precinct is located at Jerrabomberra in Queanbeyan adjacent to the ACT/NSW border. The 30 - hectare business park is focused on the nation's leading companies and will deliver a bespoke facility for Samsara including offices, laboratories and R&D workshop.

Wingram Unveils Biobased and Biodegradable Eyewear Applications

Wingram is a leading sustainable materials producer most commonly known for its material of BioAcetate S70. BioAcetate S70 has an excellent eco-profile as it's a material derived from plants and is biodegradable as well. Furthermore, it is made with no harsh chemcials and is tested

to be non - skin - irritant and non - skin sensitizing. BioAcetate S70 has its primary applications within the eyewear industry (alternative applications include: house hold appliances, e-cigarette parts, and smart phone accessories) and is typically produced into 3 types of frames:

1. Traditional Injection Frames

- BioAcetate S70 injection frames are made from BioAcetate S70 injection pellets / granules. These frames are made traditionally, like with CP or Nylon frames where a frame's color / design are color sprayed and varnishing is required. These frames have much flexibility in colors / designs and offer great scalability due to the frames being injected.

2. Injection Acetate Frames

- BioAcetate S70 injection acetate frames are made from BioAcetate S70 pellets / granules. Injection acetate frames are unique to BioAcetate S70 injection frames which feel and look like handmade frames. Since no varnishing or color spraying for colors / designs are required, these frames offer the superior quality and touch of handmade frames but at the scalability of injection frames.

3. Handmade Acetate Frames

BioAcetate S70 Handmade Frames are made from BioAcetate S70 sheets / slabs. Handmade frames have a superior quality and touch when compared to injection frames. BioAcetate S70 handmade frames have extra durability, longetivity, and flexibility in designs due to its Hardness Enhanced CA (HECA) characteristics.

Since the launch of BioAcetate S70, many companies and brands have been using the sustainable material BioAcetate S70 and have found that the material is a perfect balance of high performance and sustainably friendliness.

Plastics Industry Association Submits Comments, Disappointed with EPA Draft Strategy on Plastic Pollution

The Plastics Industry Association (PLASTICS) has submitted comments in response to the Environmental Protection Agency's (EPA) request for public input on its Draft National Strategy to Prevent Plastic Pollution.

“The plastic industry appreciates the opportunity to submit comments to the EPA, however, we are disappointed with the agency's draft strategy,” said PLASTICS' President and CEO Matt Seaholm. “The EPA was directed by Congress in an overwhelmingly bi-partisan way to focus on post-consumer materials management and infrastructure, and instead the agency's first stated objective in this strategy is to reduce the production of essential materials rather than address plastic waste.”

“The strategy is not focused on improving infrastructure, meanwhile, the plastics industry continues to invest billions of

dollars in innovations to expand recycling capacity. Understanding and addressing the essential nature of plastics and tackling environmental challenges should not be mutually exclusive."

"We don't recycle enough, and we need to improve recycling rates in the U.S., period. PLASTICS remains eager to collaborate with the EPA, stakeholders and anyone who is willing to work towards our common goal of effective solutions to keep plastic waste out of the environment," concluded Seaholm.

PLASTICS' comments state that the EPA's draft strategy should:

- Recognize plastics serve a critical and sustainable role in modern life and have more than "some potential benefits."
- Acknowledge that innovations in product and material design have outpaced our infrastructure, negatively impacting our country's ability to recycle at acceptable levels.
- Revise a draft consistent with the bipartisan legislation that directed the EPA to develop a strategy to improve post - consumer materials management and infrastructure, not pre - production and product restrictions.
- Foster circularity, not advocate production limits.
- Hold all materials to the same standard and recognize that plastics often outperform other materials environmentally.
- Revise the draft strategy following appropriate, thorough stakeholder engagement in a transparent process to develop practicable and achievable goals, gain and leverage greater collaboration necessary to achieve those goals.
- The Plastics Industry Association (PLASTICS) is the only organization that supports the entire plastics supply chain, including Equipment Suppliers, Material Suppliers, Processors, and Recyclers, representing over one million workers in our $468 billion U.S. industry.

EIF Backs Circularity in the Plastics Industry

Rotterdam - based Infinity Recycling's Circular Plastics Fund, a European impact fund that invests in companies developing new processes for the advanced recycling of plastics has announced the new closing of its Circular Plastics Fund I, achieving €105.3 million in committed capital.

New investors in the fund include the European Investment Fund (EIF) and GC Ventures, the corporate venture capital arm of Thailand - based PTT Global Chemical Public Company (PTTGC). "Applying the circular economy principle to closed - loop plastic waste management, recycling, and upcycling is mandatory. This includes developing new solutions through innovation and their market impact to better meet people's needs," said Kamel Ramdani, senior vice president of PTTGC and managing director of GC Ventures, explaining his company's decision to invest.
The fund, in which the EIF has signed a €50 million participation, has a target size of €150 million, a third of which is now covered by the EIF's commitment. The transaction is supported by the InvestEU programme.

"For most Europeans recycling is already an integral part of their daily lives. Establishing a true circular economy also requires industrial solutions that allow plastics to be recycled fully, efficiently and many times over," said EU Commissioner for Environment, Oceans and Fisheries Virginijus Sinkevičius. "Today's funding through InvestEU will help innovative European companies advance a circular plastics industry, acting as a booster for the EU's green transition."

Jeroen Kelder, managing partner at Infinity Recycling pointed to the fact that while demand for the use of recycled commodities in plastics production is on the rise, only a few advanced plastics recycling technologies have been able to achieve commercial scale.

"While these technologies are often viable, many companies lack the specialised financial structuring and business development skills required to scale up production, source high - quality inputs and establish supply agreements with offtake counterparties," he said

To date the fund, launched in February 2022, has invested in four portfolio companies, with three follow - on investments.

Building on the momentum in investor interest and deployment, the fund is well on its way to final closing, projected for Q4 2023. "We are pleased to have .. the support from new limited partners such as EIF and GC Ventures, who have recognised Infinity Recycling's differentiated investment focus," said Jan - Willem Muller, managing partner at Infinity Recycling.

Toray Develops Fibre - to - Fibre Recycling for Used Nylon Fishing Nets

Together with Nitto Seimo and Taiyo, the Japanese company will trial purse seine nets made of chemically recycled nylon fishing nets. Materials manufacturer Toray Industries and fishing net manufacturer Nitto Seimo announced their recycled purse seine nets will be trialled in the Northern Pacific Ocean . Together with fishing company Taiyo A&F, in November 2022 the Japanese companies entered a partnership to recycle fishing nets from nylon scraps and process waste from net production. Now, the programme will additionally recover materials from used nylon fishing nets, in what the companies describe as a world first fibre - to - fibre recycling scheme. There have been various initiatives to reclaim nylon fishing nets - called ghost nets when discarded at sea – but the material is often upcycled into other types of product, like swimwear, rPET, or rPA. However, so far it has been difficult to recycle nylon fish nets into fishing net yarn because the strength and durability of the fibbers deteriorates during the recycling process, due to debris and algae contamination from immersion in the sea. Toray has now leveraged its depolymerisation chemical recycling technology using nylon from ghost nets to develop a recycled fibber that is reportedly comparable with virgin material. Nitto Seimo is manufacturing the purse seine nets with this fibber and Taiyo A&F's offshore fishing vessel Taiyo Maru No.21 will deploy them on a trial basis starting November. The three companies hope to confirm the commercial feasibility of the new fishing nets. Depending on the trial results, they aim to introduce the recycled fishing nets to the market in December 2023. "This drive to develop nylon fibre - to - fibre recycling technology for fishing nets paves the way for the entire textiles industry to help materialise a circular economy by conserving and recycling resources and reducing wastes across the supply chain," said Mitsuo Ohya, president of Toray.

Chemical Recycling of Polycarbonates Reaches a Major Milestone

Covestro has developed an innovative process for recycling polycarbonate, i.e. polychain plastics. In this process, plastics are converted back into their monomers, a precursor of plastics,

so that they can be fed back into the production process as alternative raw materials. At Covestro in Leverkusen, the technical implementation of chemical recycling is now beginning on a pilot scale. On the way to industrial scale, the process is still being optimized and is undergoing further development stages.

"As a manufacturer of plastics such as polycarbonate, we naturally have a responsibility in dealing with these important materials, including at the end of their product life. Our advantage is : we know how our products are designed and can therefore conduct targeted research into recycling solutions," says Dr. Thorsten Dreier, Covestro's Chief Technology Officer. "The chemical recycling of polycarbonate is another example with which our colleagues in development show that closed cycles are possible in the future. We need to use end - of - life plastics as a resource and reuse them as alternative raw materials to close the loop."

The return of plastics through recycling replaces primary fossil raw materials in production. Comprehensive recycling thus contributes to climate neutrality and the protection of natural resources and the environment. Mechanical recycling of polycarbonate is already an important component of Covestro's recycling strategy. The mechanical recycling process is

used whenever waste streams are sufficiently pure and the recycled polycarbonate meets the requirements profile of the future application.

Chemical recycling works in a complementary way to mechanical recycling - it converts plastic building blocks back into monomers, i.e. their individual building blocks. These can be separated and serve as raw materials for future plastic. Chemical recycling can therefore make larger waste streams that are unsuitable for mechanical processes in particular accessible for recycling; it allows the production of plastics that meet the highest quality requirements. Covestro is therefore actively developing chemical recycling.

The newly developed process makes it possible to recycle polycarbonates and reuse the recyclate for high - performance applications such as car headlights. © Covestro

Chemolysis Can Directly Close The Polycarbonate Cycle

The newly developed process, which was driven by an international team, is a specific chemolysis process adapted to polycarbonate. "Pre-sorted waste streams containing a product content of more than 50 percent polycarbonate can be recycled this way. This has been successfully demonstrated with various polycarbonate - containing plastic waste streams," explains Markus Dugal, Head of Process Technology at Covestro. "With the help of this chemolysis, the cycle can be closed to a direct precursor of polycarbonate. This makes the recycling process very sustainable."

Direct use of Recycled Product as Raw Material Possible

The recycled product, a precursor of polycarbonate, can be mass-balanced and reused as a raw material for the production of polycarbonate without further processing. "Such high - quality recycled raw materials are needed for applications that require top quality. These include, for example, applications in the automotive sector with special requirements in terms of safety, optical transparency or aesthetics, and products in our everyday lives such as consumer electronics," says Lily Wang, Head of the Engineering Plastics Business Entity.

Millions of Euros will be Invested

Following successful development in the laboratory, the next stage of development, the technical implementation of a continuous process, has already started. A pilot plant, which is currently in the planning stage, will be used to gather the experience needed for further expansion to industrial scale. Millions of euros will be invested in this over the next few years. The pilot plant will be built in Leverkusen, Germany.

At the same time, Covestro is driving forward further processes for innovative recycling of polycarbonate in its research laboratories. These include chemolytic alternatives, recycling with enzymes that break down the plastic, and smart pyrolysis. Promising alternatives can also be tested with the pilot plant.

Plastics are key to sustainable growth and a green future. To ensure that plastic products do not become waste at the end of their life, they must be reused as alternative raw materials. Innovative recycling is one of the four fields Covestro is actively driving forward on the road to a circular economy. Covestro is therefore stepping up its research into recycling methods, with an open approach to technology, and promoting innovative approaches such as chemical recycling.

Toray Expands Chemical-recycled PBT Resin Products Employing Depolymerization and Repolymerization Technology

Toray Industries, Inc., announced that it has further expanded its lineup of high - performance - grade chemical - recycled polybutylene terephthalate (PBT) resin products. The company depolymerizes waste PBT from manufacturing processes and repolymerizes the material. The new offerings include glass-fiber-reinforced low warpage and hydrolysis-resistant grades. Toray will start providing samples. The properties of these recycled materials are equivalent to those of PBT resin from virgin raw materials. This breakthrough should contribute to efforts to reduce carbon footprints. Toray obtained verification for its new products based on ISO 14021:2016 from SGS Japan Inc.

Recycling resins generally poses several challenges. They include contamination from foreign substances and materials and deteriorating materials quality. Toray can provide recycled PBT resin whose quality is as good as that of virgin material by

undertaking chemical recycling, which entails by integrating quality control for chemicals recycling, from depolymerization through compounding. Toray is additionally developing chemical- and material-recycled grades using post-consumer recycled material derived from recovered products. It will commercialize such recycled PBT products as Ecouse TORAYCON™, an eco-friendly resin material.

One goal of the Toray Group Sustainability Vision for 2050 is to contribute to world where resources are sustainably managed. The company will cater to customer demand for environmentally friendly resins as part of ongoing efforts to realize its corporate philosophy of contributing to society through the creation of new value.

Note: ISO 14021 is the international standard for Environmental labels and declarations – Self - declared environmental claims (Type II environmental labeling). SGS Japan Inc., the local subsidiary of SGS SA., the world's leading testing, inspection, and Certification Company, verified Toray's chemical - recycled PBT resin product.

Banyan Nation – Driving Circular Economy for Human-Contact Applications

Banyan Nation is an award-winning, vertically integrated plastics recycling company that helps global brands use more recycled plastic instead of virgin plastic. leverage mobile technology to map, integrate and train thousands of informal recyclers to produce premium quality plastics. Through their fully digitized and traceable informal supply chain, they collect discarded HDPE and PP and utilize their proprietary plastics cleaning technology to remove product and packaging contaminants at their state-of-the-art recycling plant. Their recycled granules are comparable to virgin HDPE plastics in quality and performance.

Banyan Nation is the only Indian startup to receive the Circulars People's Choice Award (2018) and also be recognized as a Technology Pioneer (2021) by the World Economic Forum.

Banyan Nation is also the proud recipient of the Social Enterprise Award at the Economic Times Startup Awards (2022).

Compounder 'Walks the Walk' on Sustainability

Sustainability is one of Techmer PM's four pillars and guiding principles. And the company has recently earned third - party certification that ensures at least 99% of its waste is diverted from landfills.

As retailers, brand owners and OEMs continue to push for more sustainable products, processors and compounders are making changes in their operations to make sure their products are up to snuff.

One such company is Techmer PM, a compounder that earlier this year received a Zero Waste to Landfill Certificate for its compounding operation in Dalton, Georgia. At that 45,000 ft2 facility, Techmer PM formulates PP, polyester, nylon, PLA and other materials primarily for the synthetic fibers market.

In reality, the Georgia plant is one of three of the company's facilities that has been zero waste to landfill for more than two years. But the certificate, issued by Intertek, a leading Total Quality Assurance provider to industries worldwide, "demonstrates our leadership and proactive approach to environmental stewardship," says Kaan Serpersu, Techmer PM's product development and sustainability manager.

He adds: “This achievement aligns with Techmer PM's broader sustainability goals, which include reducing energy consumption, reducing water consumption, and establishing waste - to - energy programs.” Techmer PM plants in Wichita, Kansas, and Batavia, Illinois, also operate zero waste to landfill.

Comprehensive Waste Management System

The certification confirms that Techmer PM has successfully implemented and maintained a comprehensive waste management system — ensuring at least 99% of waste generated within the organization is efficiently diverted from landfills and redirected toward sustainable alternatives such as recycling, reusing and energy recovery.

The company's sustainability efforts encompass all aspects of its operations, from manufacturing processes to administrative functions. With a focus on minimizing waste generation, Techmer PM has implemented innovative recycling initiatives, resource optimization strategies and employee engagement programs to foster a culture of sustainability.

Notes Serpersu, "Among the many things we've done to earn this certificate was getting agreements from our waste vendors that if they were picking scrap materials for us for recycling that they were truly going either to recyclers or for waste to energy. When we have our pallets picked up, we issue bills of lading so that we know how much waste is being picked up and how much of each waste stream is going where."

"Our Zero Waste to Landfill Certificate shows we're walking the walk while at the same time implementing policies that are part of our strategic pillar and our values."

States Steve Loney, Techmer PM's director of marketing, "We've worked with Intertek on other certifications, like for our ISO 9001 certification, but we specifically sought the Zero Waste to Landfill as a way to demonstrate that Techmer is all about 'we do what we say we do, and we can prove it.'" Because Techmer PM runs a lot of color concentrates, any off-spec product isn't particularly appealing to recyclers because of the presence of pigment. These products are either reintroduced into the process or diverted to a waste-to-energy provider.

But, adds Serpersu, "there are a lot of other practices that we've implemented beyond the scope of producing polymers that earned us this certification, little things that you might otherwise not think about. For example, any rags we use for cleaning our facility are sent to our cleaning service and returned, not discarded in the trash. We go through a lot of rags. Plus, a lot of the additives we used come in bags, and those bags can't be necessarily recycled, so finding an alternative solution for this, like waste to energy, is part of this process. Even the organic waste we generate gets collected by our site manager and repurposed as compost for his chickens."

Techmer PM's employees at its plant in Georgia helped it earn a Zero Waste to Landfill Certificate.

The company plans on earning Zero Waste to Landfill Certification at its other plants as well. Notes Serpersu, "Sustainability is one of our four pillars, and one of our guiding principles is being an environmental steward in industry, and we're working at expanding this certification to our other five sites.

Adds Loney, "One thing that we pride ourselves on is that we are the liaison between the brand owners, the processors and the designers. And part of that is helping them achieve their sustainability goals. Our Zero Waste to Landfill Certificate shows we're walking the walk, while at the same time implementing policies that are part of our strategic pillar and our values."

Shortly after earning the Intertek certificate, Techmer PM received a silver medal on the EcoVadis Sustainability Assessment. This recognition reaffirms Techmer PM's sustainability, corporate social responsibility and ethical business practices.

EcoVadis is an independent rating agency that assesses companies' environmental, social and ethical performance across various industries worldwide. The assessment covers a range of criteria, including environmental impact, labor and human rights, fair business practices and sustainable procurement. Techmer PM's silver medal places the company among the top 25% of organizations evaluated by EcoVadis.

Amcor's AmSky™ and AmPrima™ Earn Walmart's 'Circular Connector' Seal of Approval

Amcor , a global leader in developing and producing responsible packaging solutions, has been recognized for its AmSky™ and AmPrima™ more sustainable packaging solutions, earning a place on Walmart's 'Circular Connector' platform. Circular Connector, established by retail giant Walmart, is a platform that makes it easier for sourcing teams and brands to quickly find more sustainable packaging solutions for the products they put on Walmart shelves. Being able to easily source more sustainable packaging

solutions will enable the brands, and Walmart, to achieve their sustainability goals while driving a circular packaging economy. Endorsed by Walmart's sustainability leadership team in collaboration with the U.S. Plastics Pact, Amcor's recycle-ready AmSky and AmPrima packaging solutions are now available to all Walmart suppliers and the public via the Circular Connector.

AmSky offers a world's-first, recycle-ready blister pack for pharmaceuticals. Disrupting the decades-long, over-the-counter standard drug pack, AmSky is polyvinyl chloride - (PVC) and aluminum - free – a more responsible choice for the most in-demand healthcare packaging type. Its carbon footprint is up to 70% less (compared to PVC/ Alu solutions). Based on high-density polyethylene (HDPE), it is designed for recycling in rigid and flexible recycling streams. AmPrima is a portfolio of recycle-ready packaging solutions with a low carbon footprint, applicable in different packaging formats from bags to packs and pouches, for both solid and liquid content. It provides options for brands who need packaging that still offers the barrier, material stiffness, seal strength, graphics performance and the fast run speeds of traditional unrecyclable packaging. AmPrima, when recycled, delivers as much as a 60% reduction in non-renewable energy use over equivalent non-recyclable options, offers as much as a 46% reduction in carbon footprint and an 18% reduction in water consumption. It is designed to be recycled if clean and dry, through existing store drop-offs or curbside, where available. AmSky and AmPrima were both designed with a circular economy in mind, by combining core design requirements with end - of - life packaging considerations and innovation. Suppliers of Walmart's private-label products, particularly in the categories of food, consumables, health and wellness, can be assured that packaging products in the Circular Connector meet the strictest sustainability and innovation standards. Amcor's customers can also be confident in viable, commercially available packaging options that are supported by Walmart should they wish to pursue the retailer.

Roawin Luo, Director of Global Product Management at Amcor, expressed her enthusiasm about AmSky and AmPrima becoming part of the Circular Connector, "The inclusion of AmSky and AmPrima not only puts more sustainable packaging options within reach of suppliers and brands aiming for positive change, but also streamlines the process of adopting alternative choices. Our readily available solutions help guide brands looking to embrace sustainability, while also fostering a community of stakeholders along the circular value chain journey." Cheryl Lam, Private Brands Director for Sustainable Initiatives at Walmart said, "We leverage Walmart's Circular Connector to help our suppliers connect with solutions they are looking for. And, Amcor was an early participant with approved solutions like AmPrima and Amsky." She added, "As a judge for the U.S. Plastic Pact first Sustainable Packaging Innovation Award, I was excited to see the AmSky blister package from Amcor included in Walmart's Circular Connector. I'm looking forward to seeing AmSky blisters and AmPrima bags and pouches at my local Walmart in the near future."AmSky and AmPrima are the latest Amcor innovations to have been included in the platform, with more to follow as the company progresses along its innovation and sustainability journey.

View Amcor's product portfolio for information on all of the company's more sustainable packaging solutions.

Indorama Ventures Achieves Milestone of Recycling 100 Billion PET Bottles

Indorama Ventures Public Company Limited, a global sustainable chemical company, announced that it has recycled 100 billion post - consumer Polyethylene Terephthalate (PET) bottles since February 2011.

This has diverted 2.1 million tons of waste from the environment and saved 2.9 million tons of carbon footprint from the product lifecycles. Demonstrating its commitment to support the establishment of a circular economy for PET, in the last ten years Indorama Ventures has spent more than $1 billion towards waste collection of used PET bottles.

Committed a Further $1.5 billion to Expand its Recycling Business

Mr. Aloke Lohia, founder and Group CEO of Indorama Ventures said, "As we mark the recycling of 100 billion PET bottles, we want to thank consumers for recycling, and global brand owners for using recyclable and recycled packaging while also increasing collection rates. The scale of the waste challenge requires us all to do more, faster. In March 2020, we announced achieving the milestone of 50 billion PET bottles recycled in nine years. Today we hit the 100 billion mark in three and a half years."

"By recycling post-consumer PET bottles into new bottles, we give waste an economic value. This drives improvements in waste collection systems, meaning less waste and a cleaner environment. In the last 10 years we have spent more than $1 billion towards waste collection systems for used PET bottles. We pledge to continue our long-term focus on circularity."

The company has also committed a further $1.5 billion to expand its recycling business. To support increased recycling rates globally, Indorama Ventures has expanded its recycling facilities, infrastructure, and public education programs. The unique PET plastic used in soft drinks and water bottles is fully recyclable and is collected in practice and at scale. As a result, PET is the most recycled plastic in the world, and the company's recycling achievements support that. Building on its position as the world's largest producer of recycled resin used in plastic beverage bottles, Indorama Ventures is also seeking advanced technologies to deliver more recycling infrastructure globally and reduce lifecycle carbon emissions.

The company now has 20 recycling sites in Asia, the Americas, and Europe. Recent developments include doubling the capacity of a recycling site in Brazil; and the opening of PETValue, the largest bottle-to-bottle recycling facility in the Philippines, in partnership with Coca-Cola. Both part of a $300 million 'Blue Loan' Indorama Ventures received in 2020 from the International Finance Corporation (IFC), part of the World Bank, and Asian Development Bank. The loan has the objective of increasing recycling capacity and diverting plastic waste from landfills and oceans in Thailand, Indonesia, Philippines, India, and Brazil - countries seeking support in managing environmental waste. Indorama Ventures has also partnered with the Yunus Foundation, a leading non-profit organization promoting sustainable development with a global network, with the goal of educating one million consumers globally about recycling by 2030, with 200,000 reached so far.

Mr. Lohia added, "Sustainability is at the core of our company. These achievements reflect our commitment to environmental sustainability and our determination to establish a truly circular economy for PET packaging. Reaching this milestone is a testament to our planet's growing commitment to sustainability. Each of these bottles represents a reduction in waste, and a step towards a world where no packaging ends up as litter or waste. This milestone achievement shows the positive change that can occur when we work together to support PET recycling and strive for a more circular world."

Pyrowave's Technology Helps Remove Contaminants from Polymers for Easy Recycling

On the sideline of the Chemical Recycling Europe Forum 2023, Pyrowave is proud to introduce its revolutionary Nanopurification Technology. Applied to plastic waste, this technology operates at the molecular level to remove contaminants from polymers with perfect control on purified resins. It specifically addresses a challenge faced by most plastic waste recyclers including advanced recycling: the presence of contaminants in plastic waste and in pyrolysis oil.

In a world grappling with the growing concern of plastic pollution, one of the limiting factors caping the scaling of plastic recycling is the inability to secure feedstock compatible with level of purity required in end applications. Notably, a recent United Nations report has highlighted the challenges of handling hazardous chemicals present in plastics – additives and contaminants that represent major concerns to human health and the environment. Pyrowave's solution offers a plastic waste pre-treatment to purify the resins that can be used in advanced recycling methods sensitive to contaminants, or directly into final applications. This breakthrough approach has the potential to expand the range of recyclable plastics, including plastics with various contaminants and additives such as heavy metals, inorganic pigments, halogens, and flame retardants.

"We cannot sit and do nothing as the plastic pollution crisis escalates and the recycling rates are barely improving", says Jocelyn Doucet, CEO of Pyrowave. "As a pioneer of this industry, we are addressing the key challenge limiting the scaling of advanced recycling techniques by providing a groundbreaking nanopurification technology that will be driving real change for a cleaner, healthier planet." says Jocelyn Doucet, Co-founder and CEO, Pyrowave.

Revolutionizing recycling: How Nanopurification Works

Pyrowave's nanopurification methodology draws inspiration from pharmaceutical purification technologies, capitalizing on the significant size disparity between polymers and most additives found in the compounds. The technology tables on the large difference in size and solubility to separate additives from polymers using the most advanced nanofiltration membranes. Unlike conventional dissolution methods reliant solely on solubility, Pyrowave's patent - pending technology enables simultaneous removal of various contaminants, all while maintaining meticulous control over the endpoint. It results in a process that is simpler, tailored to our clients' specifications, more energy efficient and economical.

Pionneering a Greener Future

To debottleneck the access to plastic feedstock, Pyrowave standardizes the material upstream to be compliant with most advanced recycling process. In addition, the purified product can also be used directly in end-applications. Pyrowave has successfully demonstrated this technology by decontaminating polymers and supplying high-quality recycled plastics to industries requiring strict compliance, including food - contact applications. The innovation can be used as a stand - alone to purify various plastic waste feedstocks or as a pre-treatment upstream of its microwave depolymerization process, for example.

Powered by electricity, Pyrowave's new technology is low-carbon with approximatively 95% GHG emissions reduction compared to the virgin production of resins, and produces 100% traceable resins. Pyrowave's solution enables higher recycling rates, less harmful substances in the environment and less GHG emissions than needed to produce virgin plastics. Pyrowave's innovation holds the promise of reshaping the plastic recycling landscape by addressing head - on the pressing environmental issue of toxic contaminants in plastics.

Backed by over 10 years of experience, Pyrowave is eager to collaborate with like - minded partners to build a sustainable and circular economy that maximizes the value of plastic waste. Reach out today to learn more about Pyrowave's nanopurification technology.

Kia Aims to Create "Circular" Electric Vehicle Battery Industry

Kia has signed an agreement with the South Korean government and several fellow Korean companies to develop a sustainable supply chain and production cycle for electric vehicle (EV) batteries.

The memorandum of understanding, Kia officials said, represented a groundbreaking collaboration between the public and private sectors that aims to cover "all aspects" of the EV battery value chain. Other participating companies — who were not named in the announcement — include businesses that specialize in raw materials and battery disassembly.

The transition from gasoline-powered cars to EVs, officials noted, will result in a dramatic increase in the production of EV batteries. The new agreement aims to establish a viable process for recycling EV batteries and, in turn, bolster their residual value.

Kia officials suggested that the initiative could help create a new "battery-as-a-service" market that includes new re-manufacturing operations and subscription programs.

The partners will collaborate on a Kia-led pilot project to collect data at every stage of the EV value chain, from raw material extraction to the recycling of used batteries. They hope to develop a global, industry-wide culture of cooperation that includes regulators, automakers, and battery firms alike.