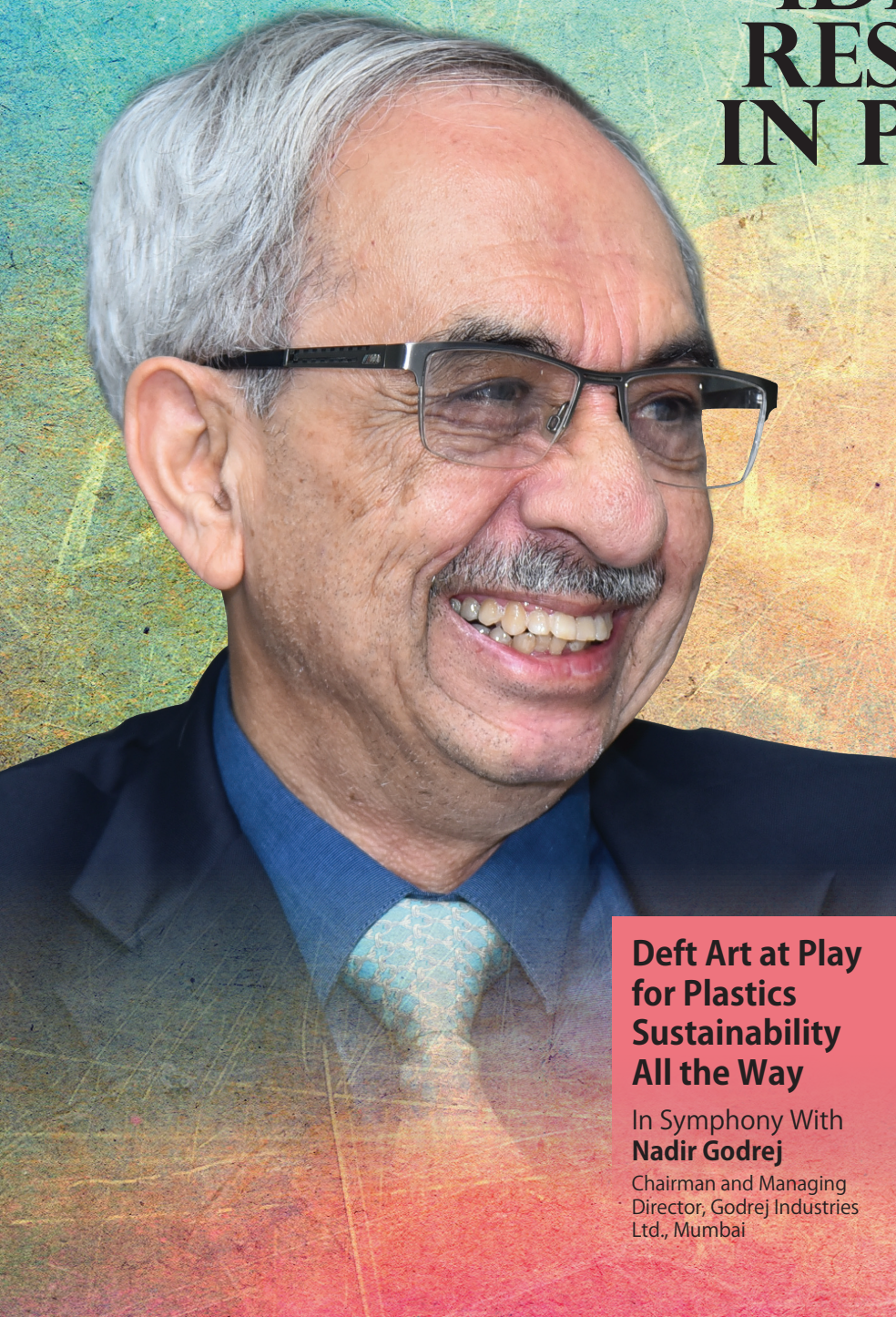


Sep - Oct 2024

RECYCLING

Compendium

INDIA IDENTIFIES RESOURCES IN PLASTICS WASTE



Deft Art at Play for Plastics Sustainability All the Way

**In Symphony With
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UFlex's MLP recycling plant in Delhi NCR, India.

Managing the Plastic Waste Crisis

UFlex Presents a Strategic Plan for Effective Waste Management and MLP Recycling in India

Originally published in
POLYMERS Communiqué
Sep - Oct 2024



Amid the growing plastic waste crisis, India is embarking on a path toward more sustainable waste management through the introduction of new regulations for plastic packaging. Beginning 2024-25, a mandate requires that 50% of all rigid plastic packaging, 30% of Category 2 flexible plastic packaging of single-layer or multi-layer (more than one layer with different types of plastic) and 30% of Category 3 multi-layered plastic packaging (at least one layer of plastic and at least one layer of material other than plastic) be recycled, with the figure set to rise to 80%, 60% and 60%, respectively, by 2028. This transition demands a fundamental reassessment of how plastic waste is managed and recycled nationwide.

Although plastic has relatively lower carbon emissions, it suffers from poor recyclability compared to materials like aluminium and paper, which have higher recycling rates. Plastic often ends up as litter, causing significant environmental damage. Enhancing waste segregation and recycling processes is the key to addressing this issue.

In India, minimal amounts of flexible plastic waste are collected, with the majority remaining in the environment. The main challenges to effective plastic waste management include inadequate source segregation and inefficient collection methods. These issues, compounded by technological limitations faced by many urban local bodies (ULBs), result in persistent landfill dumping. This results in widespread littered plastic waste that harms the environment by contaminating aquatic ecosystems, drinking water sources and soil quality.

India is still 15 - 20 years away from achieving optimal source segregation and efficient waste collection, unlike developed countries. Therefore, measures such as automated segregation of MSW (municipal solid waste) to segregate plastic, including the use of artificial intelligence and machine learning, are essential. Till such times that plastic waste is collected and segregated, using biodegradable packaging materials is crucial to

UFlex has addressed the challenge of recycling 'difficult to recycle' aseptic packaging waste by investing in an advanced 'Enzymatic Delamination Technology'.

Jeevaraj Gopal Pillai

Director - Sustainability and
President - Flexible Packaging and New Product Development,
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Mr. Ashok Chaturvedi at the Plastic Packaging Research and Development Centre (PPRDC) event in 2024 where he released a report on a 'Proposed National Standard for Scientific Estimation of Recycled Content' for EPR reporting.



L to R: Mr. Apoorvshree Chaturvedi, Director - Global Operations, UFlex Group; Mr. Anantshree Chaturvedi, Vice Chairman, Flex Films International and Mr. Jeevaraj Gopal Pillai, Director - Sustainability, UFlex Ltd. at the Alliance to End Plastic Waste (AEPW) Board Meeting in New York.

managing the challenge of uncollected waste.

The phased implementation of Extended Producer Responsibility (EPR) guidelines by the Indian Government is a positive step towards sustainable waste management. EPR requires brand owners and producers to take responsibility for collecting, recycling and reusing materials, promoting a circular economy, and all stakeholders need to collaborate to ensure successful implementation.

Recycling of Multi-Layer Plastic (MLP) Waste and PET Bottles

In 1994, UFlex was one of the pioneering companies worldwide to establish recycling plants for multi-layer plastic, which were previously considered challenging to recycle. Today, UFlex processes nearly 30,000 MT of plastic waste annually, setting a benchmark for the industry, the government and the public.

The company recycles post-consumer multi-layer plastic (MLP) waste into granules, upcycles recycled resins into PCR (post-consumer recycle) PET films and collaborates with brand owners to develop sustainable packaging solutions that reduce the reliance on virgin plastic. UFlex recycles MLP waste into granules that are used to manufacture an array of products such as decorative items, functional components, engineering parts, household goods and office supplies, at its recycling facilities in India, Mexico and Poland. The company aims to reach a recycling capacity of 1,00,000 tonnes by expanding its recycling facilities globally, including

its recent commissioning of a state-of-the-art post-consumer recycling (PCR) plant in Egypt. This new facility specialises in recycling post-consumer PET bottles using advanced mechanical recycling technology.

UFlex is the only company that is working within India and globally on innovative solutions in flexible MLP and PCR, and its applications.

Recycling of Multi-Layered Aseptic Packaging (MLAP)

Historically, multi-layer aseptic packaging has been deemed 'non-recyclable' due to its construction from a mix of materials, often leading it to end up in landfills or incinerated.

UFlex has addressed this challenge by investing in advanced 'Enzymatic Delamination Technology' to enable the recycling of aseptic packaging. This technology employs enzymes to break down the bonds between the different layers of packaging materials, facilitating the separation of individual components such as paper and polyethylene / foil laminates, which can then be repurposed to produce new products.

Addressing India's Plastic Waste Challenge

India's monthly consumption of around 2,00,000 MT of flexible packaging material demands a significant investment in recycling infrastructure. To handle these volumes, at least 2,000 to 2,500 mechanical recycling plants would be necessary. In addition to these plants, policies that encourage entrepreneurship in waste management are crucial.

Addressing this challenge requires a comprehensive strategy that includes source segregation, technological advancements and a strong recycling infrastructure. By aligning industry practices with environmental sustainability, India can work towards a sustainable future, reducing the impact of plastic waste pollution while promoting economic growth. ■■

UFlex's Global Recycling Facilities and Capacities (MTPA)

	Mexico	Poland	Egypt	Noida	Malanpur	Jammu	Total
PCR PET Chips	15,000		18,000	9,600			42,600
rMLP Granules	6,000	3,900		6,000		3,000	18,900
rMLAP					10,800		10,800