

**Joint Project Develops Pouch Made From Horizontally Recycled Flexible Packaging Film**

Companies to start providing samples of pouch made using BOPP flexible packaging film horizontally recycled by removing ink from printed film waste

A partnership of three companies has been working since August 2023 on a joint pilot test for the horizontal recycling of printed BOPP flexible packaging film. And now, the three companies – TOPPAN Holdings Inc. (Tokyo: 7911) group company TOPPAN Inc. (President & Representative Director: SAITO Masanori), RM Tohcello Co., Ltd. (Head Office: Chiyoda, Tokyo; President & CEO: MATSUZAKA Shigeharu) and Mitsui Chemicals, Inc. (Tokyo: 4183; President & CEO: HASHIMOTO Osamu) – have developed a recycled BOPP film suitable for mass production. The companies will begin providing samples of this film within October 2024.

The creation of this film sees printed film waste generated by TOPPAN get collected and taken to Mitsui Chemicals’ Nagoya Works, where the ink is removed and the waste is turned into pellets. These pellets are then turned into film by RM Tohcello. The recycled film has been tested for mass production purposes at TOPPAN packaging facilities, with the results finding it to be suited for mass production processes such as printing, laminating, and pouch forming. The companies have also evaluated the physical properties of the film in pouch form, confirming that it is fit for use as packaging.

The samples to be provided will also be displayed at TOPPAN’s booth (Booth Number 2U09, East Hall 2) and Mitsui Chemicals’ booth (Booth Number 1R07, East Hall 1) at TOKYO PACK 2024, an event set to be held at Tokyo Big Sight over October 23–25, 2024.



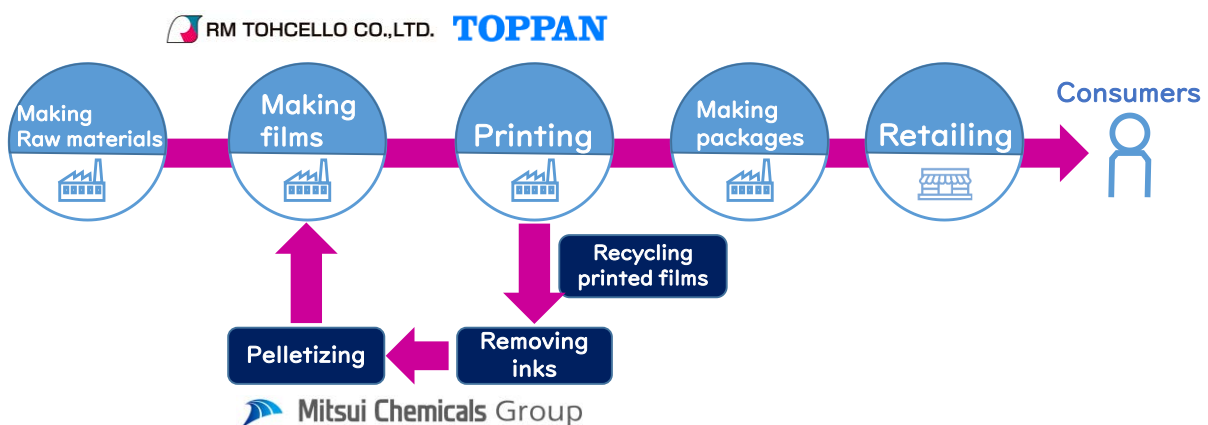
## ■ Background behind the product development

The Japanese Government’s Resource Circulation Strategy for Plastics includes a target of transitioning to reusable or recyclable plastic designs by 2025. Milestones under the strategy for 2030 include that 60 percent of plastic containers and packaging should be reused or recycled, and that the recycling of plastic resources should be doubled. With 2025 as an important starting point toward those milestones, it will be essential for companies engaged in the industry to expand efforts for reuse and recycling on the way to 2030.

In May 2022, Mitsui Chemicals launched RePLAYER™ Renewable Plastics Layer System, an initiative that aims to recover film waste from flexible packaging converters, remove any ink from it, pelletize the remaining material and turn those pellets into new flexible packaging film. Then in December 2022, TOPPAN, RM Tohcello and Mitsui Chemicals began discussing the basis of a joint pilot testing project. Fiscal 2023 marked the beginning of full-fledged joint pilot testing – and now, with the companies having confirmed mass production suitability with regard to printing, laminating and pouch forming, as well as physical properties including seal strength and tear resistance when in pouch form, the companies are ready to start providing sample pouches.

## ■ Role of each company

	Mitsui Chemicals Group	RM Tohcello	TOPPAN
Strength	Knowledge about polypropylene resins (e.g. resin composition; modification; measuring & analysis technology)	BOPP film manufacturing technology	Converting technology (including for recycled film) Application in packaging
Role	Collect film waste generated by TOPPAN, remove printing, repelletize and carry out quality control	Produce and carry out quality control on recycled film	Supply BOPP film waste, convert recycled film, and carry out sales and marketing



## ■ Goals for the future

With this pilot testing project, TOPPAN, RM Tohcello and Mitsui Chemicals have established a technological and operational framework for the horizontal recycling of flexible packaging film. The companies hope to see their new material enter into society within fiscal 2025 with an eye toward further developing and popularizing the horizontal recycling of flexible packaging film.

## ■ Overview of the TOPPAN Group's SMARTS™ sustainable brand

### • Making smart choices for a sustainable future

SMARTS™ is a sustainable brand under the TOPPAN Group that begins with packaging. By combining the technologies and expertise the group has cultivated in the packaging realm with resources such as marketing, digital transformation and business process outsourcing, the brand looks to offer optimal choices tailored to the entire value chain. TOPPAN intends to work with its stakeholders to help build a sustainable society using the wide-ranging solutions under the SMARTS™ banner.



URL: <https://www.toppan.com/en/living-industry/packaging/sustainability/>

## ■ Overview of the Mitsui Chemicals Group's RePLAYER™ recycling initiative



Seeing climate change and the problems posed by plastic as part of the same challenge, Mitsui Chemicals aims to achieve carbon neutrality and create a circular economy to ensure that it can continue contributing to society as a chemical company. The company is enhancing its range of biomass-based products and developing recycling technologies and systems with this goal in mind.

Under RePLAYER™, Mitsui Chemicals will rethink the way it handles plastic waste and other waste products and reuse them as resources. By developing new materials, recycling systems and value chains, Mitsui Chemicals will create a robust circular economy loop that encompasses a broader part of society.

URL: <https://jp.mitsuichemicals.com/en/sustainability/beplayer-replayer/replayer/>

## ■ About TOKYO PACK 2024

Event name: TOKYO PACK 2024

Date: October 23, 2024 (Wednesday) – October 25, 2024 (Friday)

Opening hours: 10:00–17:00

Venue: Tokyo Big Sight

Theme: "TOKYO PACK Inspires the Packaging World - A Gateway to Innovation -"

Sponsor: Japan Packaging Institute

Official website: <https://www.tokyo-pack.jp/en/>

TOPPAN booth: Booth Number 2U09, East Hall 2

Mitsui Chemicals booth: Booth Number 1R07, East Hall 1

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\*The contents of this news release are accurate as of the day of publication. Changes may be made at a later date without explicit notice.

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