

Mitsui Chemicals Collaborates on Technology Trial for Recovered Material Sorting to Improve ReVALUE+™ Horizontal Recycling Project for Blue Tarpaulin Sheets

Leveraging DX in pursuit of a circular economy

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Hagihara Industries Inc.

Mitsui Chemicals, Inc.

Hagihara Industries Inc. (Kurashiki, Okayama; President: ASANO Kazushi) and Mitsui Chemicals, Inc. (Tokyo: 4183; President & CEO: HASHIMOTO Osamu) today announced that, as of December 2024, they have launched a trial for technology that distinguishes Hagihara Industries' products from other companies' products in recovered lots of used blue tarpaulin sheets (tarps). This is aimed at improving the quality of Hagihara Industries' horizontal recycling^{*1} of used tarps.

■ Background to the technology trial

Japan's largest manufacturer of blue tarps, Hagihara Industries is aiming to help bring about a sustainable society. As part of this pursuit, 2021 saw the company launch a Japan-first project called ReVALUE+™, which uses discarded blue tarps as a raw material to produce new blue tarps through horizontal recycling. However, the fact that discarded tarps are mixed with contaminants and other companies' products upon recovery has caused issues with the quality of the recycled goods, requiring limits on the proportion of recycled material used in horizontally recycled products.

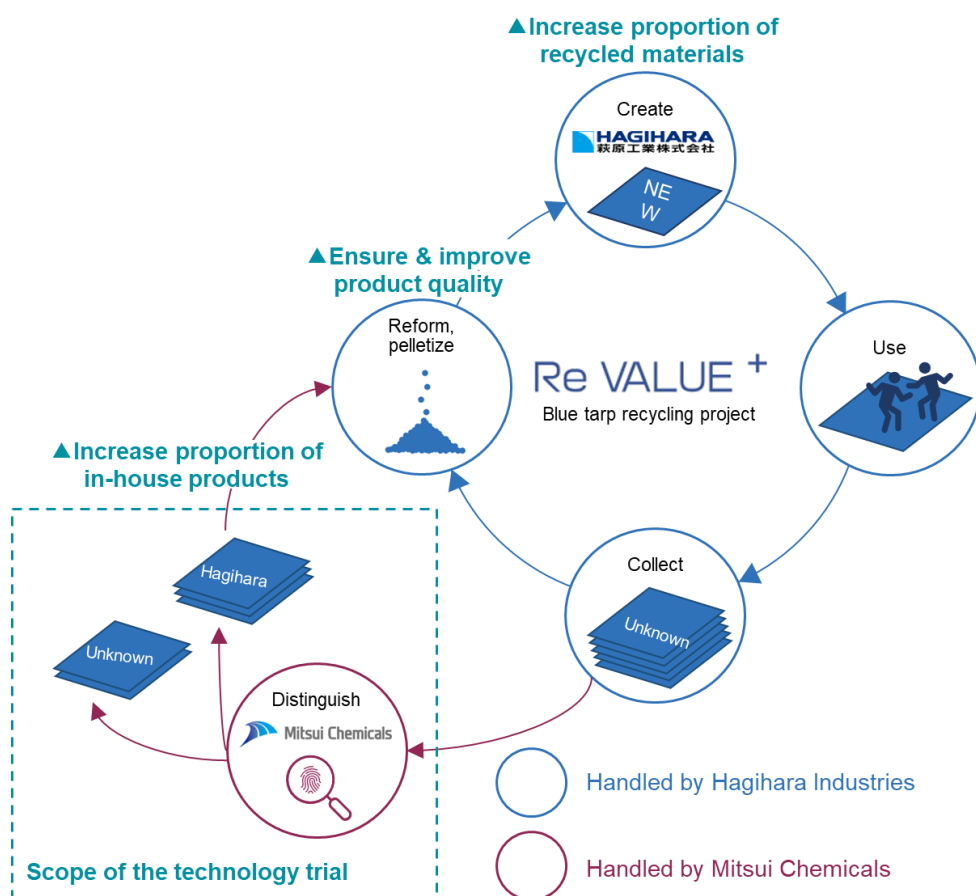
Hagihara Industries is therefore aiming to improve the quality of recycled materials, which would in turn allow it to further increase the proportion of these materials in its products. To achieve this, the company is leveraging its production technology for industrial machinery to develop advanced cleaning technology and equipment, as well as granulation equipment with highly effective contaminant removal (i.e. advanced filtration) and technology for refining and improving resin viscosity.

Meanwhile, Mitsui Chemicals is looking to advance the recycling of plastic materials, as well as the visualization of recycling-related information, by pursuing a circular economy in which materials and information are integrated. And as part of that effort, the company is aiming to manage and improve the quality of recycled materials by looking into the development of a technology – henceforth referred to as chemical tracing – that can identify the materials contained in plastic products or any intentionally added chemical additives.

■ Details of the technology trial

Mitsui Chemicals will use chemical tracing to construct a method for analyzing the used blue tarps collected by Hagihara Industries and distinguishing between Hagihara Industries products and products from other companies. Hagihara Industries will then conduct a trial to find whether using this method to distinguish Hagihara Industries products from others among lots of discarded blue tarps can help improve the quality of horizontally recycled goods.

Diagram: Introduction of chemical-tracing-based technology to improve the quality of ReVALUE+™



Through this trial, Hagihara Industries and Mitsui Chemicals aim to help bring about a circular economy. The companies intend to achieve this by advancing the ReVALUE+™ horizontal recycling project for blue tarps, as well as by leveraging a combination of Mitsui Chemicals' chemical tracing and the company's RePLAYER™ Blockchain Platform (a resource circulation platform based on blockchain technology^{*2}) to pursue traceability^{*3} management.

*1 Horizontal recycling refers to recycling systems that use discarded products as resources from which to create the same products again.

*2 The blockchain is an irreversible database that continuously records all relevant logs. It is accessible by all involved parties, and its data cannot be altered. All involved parties can track assorted data about raw materials, products and more – including who was in possession of them, when and where – which in turn enables traceability.

*3 Traceability refers to the ability to track resources throughout their life cycle, spanning initial raw materials such as monomers and polymers; the manufacture, sale and use of products; those products' eventual discarding, recovery, disassembly and crushing; and the process of turning that waste back into recycled raw materials that can be reused in the manufacture of new products.

ReVALUE+™ is a registered trademark of Hagihara Industries.

RePLAYER™ is a registered trademark of Mitsui Chemicals.

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