

Denka Launches Japan's Largest Polystyrene Chemical Recycling Plant in Cooperation with Governments

– Converting Used Polystyrene into a “Resource” –



Polystyrene chemical recycling plant

Denka Company Limited (headquartered in Chuo-ku, Tokyo; president: Toshio Imai; hereinafter “Denka”) and an equity-method affiliate of Denka, Toyo Styrene Co., Ltd. (headquartered in Minato-ku, Tokyo; president: Kenjiro Ishizuka; hereinafter “Toyo Styrene”), completed the construction of a chemical recycling plant for used polystyrene (hereinafter, the “Plant”) on the premises of Denka’s Chiba Plant (Ichihara-shi, Chiba) on March 19 (Tue).

While plastic is an indispensable material in human everyday lives, the impact on the environment caused by plastic leakage into the ocean or by greenhouse gas emissions from incineration of plastic waste, among other things, has been a serious global challenge. We Denka Group believe that the conversion of plastic waste into a resource is a project that we should devote ourselves to with a sense of mission to add unique value to society from the viewpoint of conservation of the global environment as a chemical manufacturer.

The Denka Group’s chemical recycle method produces material that is equivalent to new material in quality and physical properties, and that can be used without any restrictions, by depolymerizing polystyrene into styrene monomers, which can be re-polymerized. This method does not involve incineration, as compared to thermal recycling. CO₂ emissions are therefore inhibited, providing a more environmentally friendly recycling method.

Toyo Styrene started construction of the Plant in February 2022, after signing a technical license agreement with Agilyx, a U.S. company with a technological edge and a track record in chemical recycling of polystyrene resin. The Plant was recently completed in March 2024. We are considering to use the mass balance approach (*1) to produce and supply recycled polystyrene at the Plant. The Denka Group’s production sites are currently preparing to obtain ISCC PLUS certification.

With the recent completion of the Plant, Denka participates in the “Creation of a Circular Economy Starting with Ichihara-shi project,” which is led by the government of Ichihara City, an SDGs Future City in Chiba. With this project, Denka and the government of Ichihara City will proceed to create a system of collecting used polystyrene generated in Ichihara City. Starting with this effort, Denka aims to build a system for collecting post-consumer materials (*2) from consumers.

To see the video on the Denka Group’s efforts for chemical recycling, please visit Denka’s official YouTube channel:

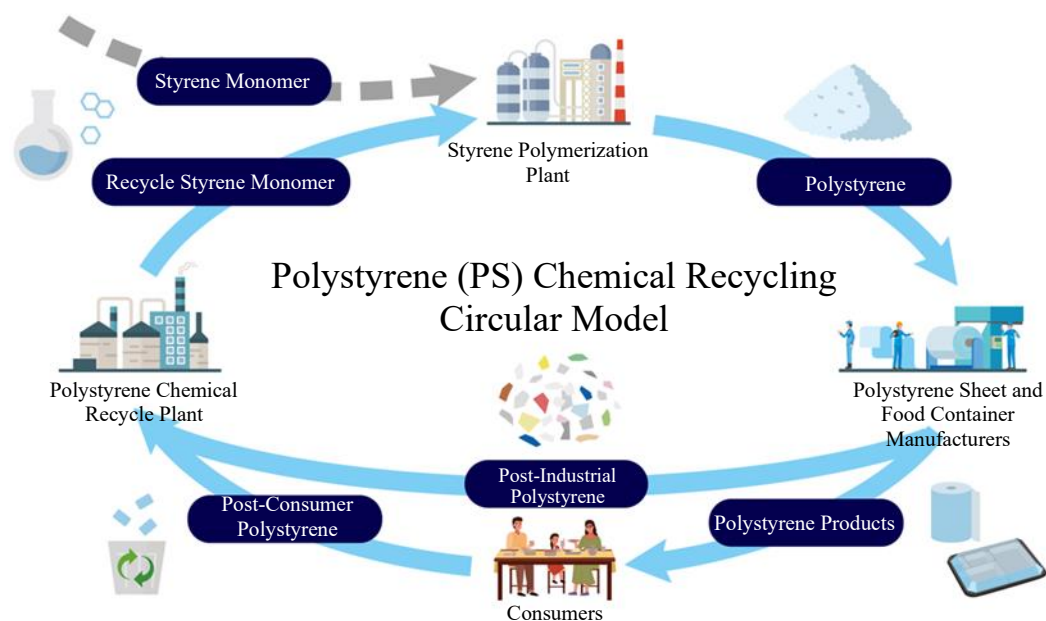
https://youtu.be/0UttA_3AXYg

Denka will continue to contribute to people’s lives and society through its world-renowned chemistry for the purpose of “making the world a better place as specialists in chemistry.”

(*1) The mass balance approach is a distribution management method whereby different materials (e.g., petroleum-derived materials and plastic waste-derived recycled materials) are mixed together, their respective properties are assigned to parts of the product according to the respective volumes of the materials loaded.

(*2) A post-consumer materials are the substance derived from plastic that has been used by consumers, which can reuse as a “Resource.”

1. A Circulation Model of Denka Group’s Polystyrene Chemical Recycling



2. Overview of the facility

- Location: The premises of the Chiba Plant of Denka Company Limited (6 Goi Minamikaigan, Ichihara-shi, Chiba)
- Description: A chemical recycling plant for used polystyrene
- Investment: Approx. 4 billion yen
- Processing capacity: Approx. 3,000 tons/year

[Reference: Previous press releases related to this press release (Denka's official website)]

- “Denka Decides on the Construction of Chemical Recycling Plant for Used Polystyrene Resins”
January 11, 2022
https://www.denka.co.jp/eng/storage/news/pdf/389/20220111_denka_ps_chemical_recycle_en.pdf
- “Denka Affiliate Toyo Styrene to Start a Business for Chemical Recycling of Polystyrene Resins”
April 13, 2020
https://www.denka.co.jp/eng/storage/news/pdf/278/20200413_denka_ps_chemical_recycle_en.pdf

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