Contribute to Recycling Resources

For sustainable use of resources, we need to reduce the consumption of natural resources while at the same time efficiently circulating the resources we have. In addition to waste management and effective use of resources at our offices and Works, Sumitomo Chemical is working on the development and social implementation of carbon recycling technologies for plastics and other resources.

Circular System for Carbon Resource

Basic Stance

To realize a circular system for carbon resources including plastics, we are working to reduce, reuse, and recycle (mechanical recycling, chemical recycling) products at each stage of the plastic value chain. These efforts also extend beyond the plastic value chain. We are working to develop technology that utilizes the carbon contained in organic matter as a renewable resource, as well as to develop plastic products that use that carbon as a raw material.

In addition, the Group formulated the Sumitomo Chemical Group Basic Policy Towards a Circular System for Plastics in 2020 to work towards building a circular system for plastics and resolving plastic waste problems.

Sumitomo Chemical Group Basic Policy Towards a Circular System for Plastics



https://www.sumitomo-chem.co.jp/english/news/files/ docs/20200601e_policy.pdf 🗗

Management System

We are actively promoting research and development on chemical recycling technologies within research groups dedicated to reducing environmental impact at the Essential & Green Materials Research Laboratory. In addition to chemical recycling of plastics, we have also been developing technologies and products that contribute to the circulation of various carbon resources, such as the appropriate utilization of biomass feedstocks.

In pursuit of practical, socially beneficial applications, we are working to commercialize chemical and plastic products that utilize this revolutionary technology, especially through the Business Development Office for Circular Carbon Economy.

Targets and Results

Sumitomo Chemical has identified "contribution to recycling resources" as one of our material issues to be addressed as management priorities, and we have set the amount of recycled plastic resources used in the manufacturing process as a KPI for this purpose. We are working to replace 200k tons/year of plastic used in our manufacturing process with recycled resources by 2030.

| KPI: The amount of recycled plastics utilized in manufacturing processes | | | |
|--|---|--|--|
| Target | 200k tons/year by 2030 | | |
| Result | FY2024 Approximately 11,440 tons | | |

Examples of Initiatives

Development of the Meguri™ brand

Meguri™ is a brand of plastic products and chemicals that can be obtained through recycling technology and contribute to reducing environmental impact.

Meguri™ products are the crystallization of the latest recycling technologies and the environmentally friendly technologies that we have cultivated in various fields as a diversified chemical company. We will expand the Meguri™ product lineup and increase production and sales of these products, thereby playing a role in realizing a circular economy.



The brand name Meguri™ means "circularity" in Japanese. The design of the icon is a deformed version of the kanji character "廻", which means "circularity" in Japanese

Sumitomo Chemical Circular System for Plastics Website

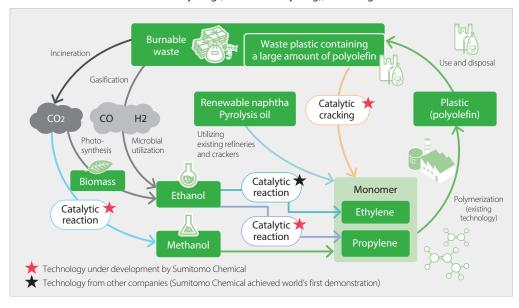




Chemical Recycling

We promote development of chemical recycling technologies through multiple circular carbon routes in parallel by combining our catalyst design and chemical process design technologies, in collaboration with external parties. Utilization of these technologies will reduce fossil resource use and plastic waste emissions, as well as GHG emissions from plastic waste incineration.

Overview of Carbon Resource Recycling (Chemical Recycling), Including Plastics



Examples of chemical recycling through collaboration with other parties

| | Technology | Cooperating Partners | Reference |
|---|--|--|--|
| 1 | Polyolefin production from waste-derived ethanol | SEKISUI CHEMICAL CO., LTD. | Completion of test production facility in April 2022 |
| 2 | Direct olefination of waste plastics | Maruzen Petrochemical Co., Ltd. Muroran Institute of Technology | NEDO *1 Gl Fund Projects *2 (Project scale: approx. 25.30 billion yen) |
| 3 | Highly efficient methanol production from CO2 | AIST Shimane University | NEDO GI Fund Projects |
| 4 | Olefin production from alcohols | AIST | (Project scale: approx. 24.08 billion yen) |

^{*1} National Research and Development Agency, New Energy and Industrial Technology Development Organization (NEDO)

Explanation of items 3 and 4 continues below.

3 CCU Technology for Highly Efficient Production of Methanol from CO2 NEDO GI Fund Projects



We have completed the construction of a pilot facility to establish a highly efficient process for producing methanol from CO₂ at our Ehime Works and have commenced operations at the facility. In pilot testing, we achieved 80% methanol yield under certain conditions (conventional method: about 20%). Carbon capture and utilization (CCU) technology is expected to serve as a game-changing solution to fight global warming and achieve a circular economy for carbon by recovering CO2 and utilizing it in products, and we are accelerating the development and spread of various new CCU processes.

We will establish the technology and work toward its commercial production and licensing to other companies in the 2030s.

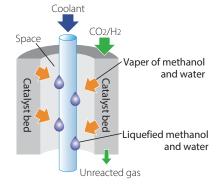
Features of this Technology

- Separating generated methanol within the reactor, which leads to improved yield, smaller equipment, and higher energy efficiency
- Separating by-product water, mitigating catalyst degradation



Pilot Facility for Methanol Production from CO₂

Principle of the ICR (Conceptual drawing)



^{*2} Green Innovation Fund Project

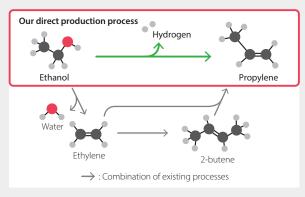
4 Technology for olefin production from alcohols

NEDO GI Fund Projects

We are developing technology to produce olefins directly from ethanol, which has been attracting attention as a sustainable chemical raw material. Since we achieved 80% yield of targeted olefin yield in bench trials, we began designing of pilot facilities for demonstration.

Features of this Technology

- Producing olefin directly from ethanol
- A newly-developed compact and low-cost process
- Producing hydrogen as a by-product, in addition to propylene



Chemical Recycling System for Acrylic Resin

We have jointly developed with The Japan Steel Works, Ltd. a technology for efficiently breaking down acrylic resin using pyrolysis and recycling it back into MMA (methyl methacrylate) monomer, which is a raw material for acrylic resin (polymethyl methacrylate or PMMA). We have built the pilot facility at our Ehime Works and commenced sales of a chemically recycled PMMA material (SUMIPEX™ Meguri™)*1 in March 2025.

In addition, we have also received third-party certifications, such as ISCC PLUS,*2 and are globally promoting the practical application of recycling techniques that utilize the mass balance approach.

- *1 PMMA made from recycled monomers reduces GHG emissions throughout the product lifecycle compared to products derived from fossil resources.
- *2 An international certification system guaranteeing proper management of recycled, biomass, and other sustainable raw materials in supply chains, including product manufacturing.

Overview of PMMA Chemical Recycling





PMMA Chemical Recycling Pilot Facility

Examples of the Practical Applications of PMMA Chemical Recycling

SUMIPEX™ Meguri™ is a sustainable PMMA material produced using our chemical recycling technology at mass production scale. It is supplied for demanding applications, such as electronics and automobiles.

We supply the product to South Korea-based LG Display Co., Ltd. as a raw material for light guide plates used in backlight units of LCDs and to Nissan Motor Co., Ltd. as a material for lenses used in headlights.



LCD applications
Note: This is an illustration.



Automotive applications
Photograph provided by Nissan Motor
Co., Ltd.

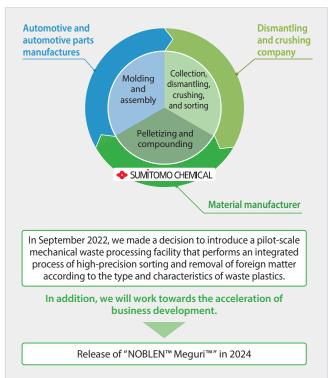
Mechanical Recycling

We are promoting the development of various technologies to achieve mechanical recycling for plastic products.

PP (Polypropylene) Mechanical Recycling

Our mechanical recycling initiatives include collaboration with REVER CORPORATION. In this partnership, we are developing technology to produce high-quality recycled plastics for use in automobile parts, made from waste plastics recovered from end-of-life vehicles. This initiative also seeks to strengthen cooperation between the waste management industry and the manufacturing industry as well as steadily maintain the amount and quality of recycled plastics, beginning with those used in automobile parts.

Overview of PP Mechanical Recycling



Examples of the Practical Applications of PP Mechanical Recycling

Since 2024, we have been providing NOBLEN™ Meguri™, produced through our mechanical recycling technology, for use in the front grille of the electric vehicle N-VAN e:, marketed by Honda Motor Co., Ltd.

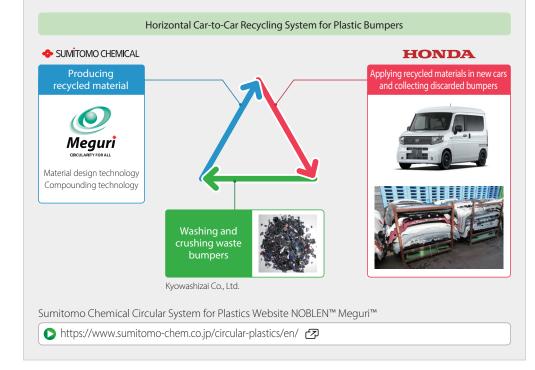
Scrap bumpers collected from Honda's vehicles will be crushed by Kyowashizai Co., Ltd. an automotive parts recycling contractor, and then provided to Sumitomo Chemical. Sumitomo Chemical recycles these materials into NOBLEN™ Meguri™ using its unique advanced material design and compounding technologies, and supplies the polypropylene material to Honda.



Honda N-VAN e:



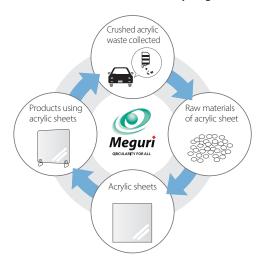
Front grille
Photograph provided by Honda Motor
Co., I td.



PMMA (Polymethyl Methacrylate) Mechanical Recycling

"SUMIKA ACRYL SHEET™ Meguri™" is an acrylic sheet commercialized by SUMIKA ACRYL Co., Ltd., made from mechanically recycled raw materials by collecting, sorting, and crushing waste materials generated in the acrylic resin manufacturing process. Despite being recycled material, this product has excellent optical properties.

Overview of PMMA Mechanical Recycling



Examples of the Practical Applications of PMMA Mechanical Recycling

We are supplying the acrylic sheet "SUMIKA ACRYL SHEET™ Meguri™," produced through mechanical recycling technology, to Koizumi Lighting Technology Corp., a specialized lighting manufacturer.



Lighting sample made using recycled MMA through mechanical recycling

Photograph provided by KOIZUMI LIGHTING TECHNOLOGY CORP.

Resource Saving and Waste Reduction

Basic Stance

Our company is working towards the realization of a circular society by collaborating with domestic and overseas group companies to promote resource conservation and waste reduction. In addition, based on the voluntary action plans for circular society management established by the Japan Business Federation (Keidanren) and the Japan Chemical Industry Association (JCIA), we set specific targets for the recycling of waste and waste plastics, as well as for the reduction of landfill volume, and we manage and disclose progress toward these goals.

Management System

The President serves as the chief coordinator and the executive officer in charge of Responsible Care serves as the coordinator of the Environment and Climate Change Action Group of the Responsible Care Department. This group is responsible for matters related to environmental protection for the Company as a whole and supports the environmental protection activities of Group companies.

Our worksites (head offices, Works, research laboratories, etc.) have established sections in charge of environmental protection operations, appointed coordinators and managers, and execute specific duties. Regarding the execution of duties, the corporate department (Responsible Care Department) formulates Company-wide annual policies and Company-wide medium-term (three-year) policies. Then each worksite, in light of these policies and in consideration of its own characteristics and regional situation, formulates an action policy and undertakes specific activities from the new fiscal year.

Regarding amendments to laws and regulations, the Responsible Care Department vigilantly pays attention to trends related to the enactment and amendment of environmental laws and, as appropriate, provides feedback through national specialized committees and other organizations. All people addressing the problems also establish targets (details of the amendments, possible impacts,

visualization of countermeasures, etc.) and commit the Company to addressing the issue being targeted.

Furthermore, with regard to amendments that have a large impact on business, we access the necessary information in advance and notify worksites to prepare for meeting compliance requirements.



Examples of Initiatives

Promoting Resource Saving

In addition to strengthening waste reduction and recycling, we are also working to improve the yield of non-renewable raw materials and the product yield. Through these resource-saving initiatives, we not only create economic value but also contribute to the prevention of resource depletion and the reduction of environmental impact.

Note: Economic effects are detailed in the supplementary data (page 4)

■ Exhaustible Raw Material Use (Sumitomo Chemical and Group Companies in Japan)

(Thousand tons)

| , | | | | | | , |
|---------------------------------|---|----------------------|---|----------------------|---|----------------------|
| | FY2022 | | FY2023 | | FY2024 | |
| | Sumitomo Chemical and Group Companies in Japan | Sumitomo Chemical | Sumitomo Chemical and Group Companies in Japan | Sumitomo Chemical | Sumitomo Chemical and Group Companies in Japan | Sumitomo Chemical |
| Hydrocarbon compounds | 1,684 | 1,421 | 1,451 | 1,196 | 1,406 | 1,178 |
| Metals (excluding minor metals) | 104 | 100 | 85 | 81 | 92.7 | 89.1 |
| Minor metals | 16.2 | 0.07 | 15.0 | 0.04 | 14.3 | 0.08 |

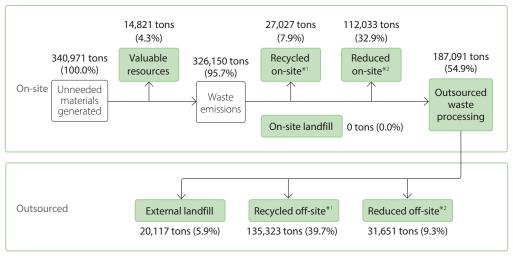
Promotion of Recycling of Waste and Waste Plastics, and Reduction of Landfill Volume

Various types of waste, such as sludge, waste plastics, waste oil, and paper waste, are generated through our production activities. At each site, we are implementing various initiatives to promote recycling and reduce the amount of waste sent to landfill. In addition, we are promoting the digitization of industrial waste management manifests, and except for a few special cases, digitization has been completed company-wide.

Examples of Initiatives at Worksites

| Worksites | Examples of Initiatives | | | |
|---|--|--|--|--|
| Chiba Works Installing incinerators to reduce waste volume and promoting recycling by using ask material for soil amendments and roadbeds | | | | |
| Ehime Works | Reducing the amount of waste that is currently difficult to recycle by incinerating it as well as promoting thermal recycling | | | |
| Oita Works | Striving to limit the amount of sludge produced from wastewater treatment methods and reduce the amount of waste sent to landfills by recycling the soot remaining after incineration into a raw material for cement | | | |
| Misawa Works | Works are held as fundamentally responsible for disposing of the waste they produce, and we continue to promote recycling by shifting to a system where waste generated from construction efforts, such as expansion or maintenance, is treated as waste generated by Misawa Works, which bears the responsibility for disposing of and thoroughly separating this waste | | | |

■ Waste Disposal Flow Chart and FY2024 Results (Sumitomo Chemical and Group Companies in Japan)



Note: The waste amount for Sumitomo Chemical and Group companies in Japan accounts for around 80% of the entire Group total, which includes overseas Group companies.

^{*1} Recycled waste: Total amount of waste that was reused, recycled, or thermally recycled

^{*2} Reduced waste: Total amount of waste reduced through incineration, etc.

■ Results of Recycling and Reusing Waste* (Sumitomo Chemical and Group Companies in Japan)

(Tons)

| | FY2020 | FY2021 | FY2022 | FY2023 | FY2024 |
|-------------------------------------|---------|---------|---------|---------|---------|
| Waste emissions | 377,062 | 446,397 | 405,298 | 297,476 | 326,150 |
| Amount internally reused | 33,711 | 49,003 | 16,922 | 8,989 | 11,866 |
| Amount of internally recovered heat | 0 | 0 | 27,032 | 21,457 | 15,161 |
| Outsourced waste processing | 247,908 | 276,071 | 232,013 | 156,995 | 187,091 |
| Amount externally reused | 195,737 | 213,309 | 173,416 | 101,867 | 131,566 |
| Amount of externally recovered heat | 0 | 0 | 9,903 | 6,423 | 3,758 |
| Recycling and reuse rate (%) | 60.9 | 58.8 | 56.1 | 46.6 | 49.8 |

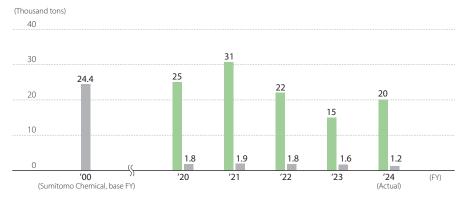
(Overseas Group Companies)

(Tons)

| | FY2023 | FY2024 |
|------------------------------|--------|--------|
| Waste emissions | 65,348 | 65,463 |
| Amount internally reused | 4,167 | 3,034 |
| Outsourced waste processing | 60,749 | 62,045 |
| Amount externally reused | 26,045 | 29,045 |
| Recycling and reuse rate (%) | 46.2 | 49.0 |

^{*} Amount of waste recycled and reused: Amount internally and externally reused + Amount of internally and externally recovered heat Waste recycling and reuse rate: (Amount internally and externally reused + Amount of internally and externally recovered heat) / Waste emissions

■ Landfill Disposal Amount (Sumitomo Chemical and Group Companies in Japan)



■ Sumitomo Chemical and Group Companies in Japan ■ Sumitomo Chemical

(Goal) Maintain waste volume at below fiscal 2020 levels