

Contribution to a circular economy

Products and services of the Ajinomoto Group are created using a variety of resources. We have a duty to use the Earth's limited resources efficiently, and contribute to the creation of a sustainable recycling-oriented society. We will continue to engage in the 3Rs (reduce, reuse, recycle) for waste as well as to actively working to find solutions to the problems of ocean plastic waste, a growing concern in recent years.

Specific examples

- Waste reduction and 3Rs (Reduce, Reuse, Recycle)
- Product packaging
- Waste and hazardous materials management
- Reduction of environmental impact from containers and packaging
- Lifecycle impact of products and services

Related opportunities and risks (○ Opportunity ● Risk)

- Gaining market share through the development of environmentally conscious materials
- Damaged corporate value due to delays in waste reduction or recycling efforts
- Loss of business opportunities due to delays in complying with plastic waste regulations, etc.

Key initiatives by the Ajinomoto Group

- Supplying highly biodegradable amino acid-based detergent
- Reduce plastic usage and convert to mono-material packaging materials
- Contribute to social implementation of recycling in countries and regions where we do business
- Appeals on packaging labels to reduce plastic waste

Related SDGs



Contribution to a Circular Economy

Reduction of waste across product lifecycles

Performance

GRI306-1

GRI306-2

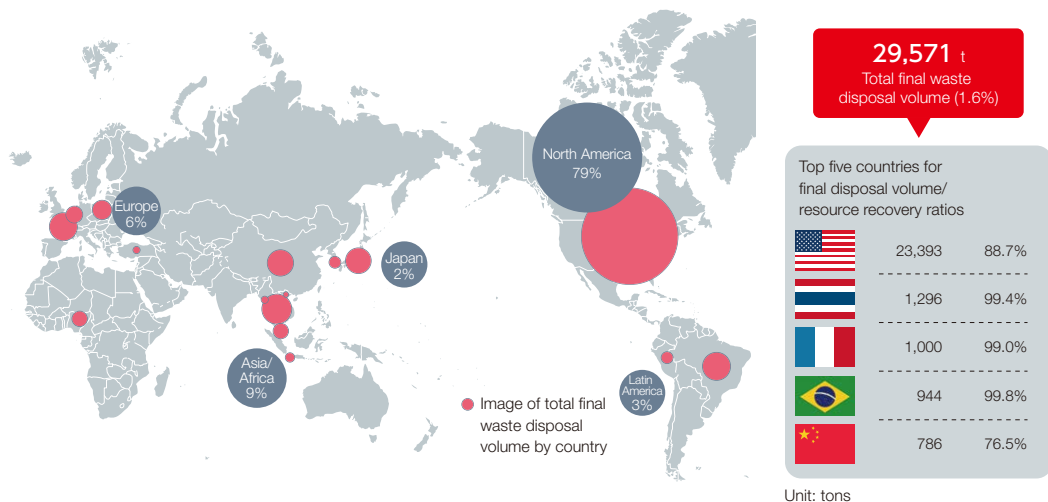
> P66

The Ajinomoto Group strives to minimize the waste of limited resources, implementing initiatives to reduce waste. We are committed to the effective use of any waste that is produced, aiming to recover 99% or more of any waste arising from our business activities.

We seek to improve amino acid production efficiency by recovering by-products as resources and introducing new technologies. We are also engaged in a range of efforts in food production, including improving the precision of sales forecasts and conducting fine-tuned procurement. In this way, we minimize wasted raw materials and the amount of packaging materials used.

Our final waste disposal (emissions) distribution volume for the Group in fiscal 2021 was as shown below. As a whole, generation of waste decreased to approximately 1,826 kilo tons (97.6% compared to the previous year), partially due to reduced production (97.4% of previous year) as a result of the spread of COVID-19. Through our resource conservation efforts, our final waste disposal was around 1.6% (approximately 29,600 tons) of waste generated. Disposal in United States, Thailand, France, Brazil, and China accounted for about 93% of total final waste.

Total final waste disposal volume by area^[1] (FY2021)



[1] Turkey is included in Asia and Africa.

GRI306-3

GRI306-4

GRI306-5

For resource recovery, though our target was to recover 99% or more of waste, in fiscal 2021 we recovered 98.4%. In fiscal 2021, our resource recovery ratio decreased due to individual circumstances at certain sites (increased landfill disposal of waste due to service outages at contracted composting companies and cleanups).

Since the resource recovery ratio fluctuates depending on the impact of the performance of corporations newly added to or excluded from the Ajinomoto Group, we will consider revising targets and evaluation methods in the future.

Contribution to a Circular Economy

Volume of waste and by-products and resource recovery ratio

(tons)

	FY2017	FY2018	FY2019	FY2020	FY2021
Hazardous waste (waste acids, waste alkali, waste oil, cinder)					
Generated	59,162	69,991	83,834	81,216	83,770
Recycled	58,862	68,422	83,429	80,892	83,399
Incinerated	24	40	60	38	24
Landfills	276	1,529	345	286	347
Non-hazardous waste: By-products (sludge, bacteria, waste filter aids, etc.)^[1]					
Generated	2,395,249	2,194,566	2,021,002	1,615,808	1,546,599
Composted	2,394,976	2,194,470	2,020,885	1,615,713	1,543,988
Incinerated	0	0	0	0	0
Landfills	273	96	117	95	2,611
Non-hazardous waste: Other (sludge, animal and plant residue, plastic waste, etc.)^[2]					
Generated	178,989	174,651	181,246	173,310	195,832
Recycled	161,455	153,388	156,432	150,295	169,243
Incinerated	2,066	2,821	2,121	1,784	2,318
Landfills	15,467	18,442	22,693	21,231	24,271
Total generated	2,633,400	2,439,208	2,286,082	1,870,334	1,826,201
Total recycled	2,615,293	2,416,280	2,260,745	1,846,900	1,796,630
Total waste	18,107	22,928	25,337	23,434	29,571
Resource recovery ratio	99.3%	99.1%	98.9%	98.7%	98.4%

[1] Sludge, bacteria, humus carbon, waste activated carbon, gypsum sludge, salts, fermentation final concentrate, waste filter aids, etc.

[2] Sludge, animal and plant residues, plastic wastes, glass and ceramic wastes, metal scraps, paper wastes, wood wastes, rubber scraps, waste construction materials, office wastes, etc.

Container and packaging design for the environment

Approach

The Ajinomoto Group engages in environmentally friendly container and packaging design in accordance with ISO 18600 series and JIS Z 0130. We pursue the 3Rs by minimizing the amount of packaging material to the extent such does not interfere with original function considering how to easily separate and sort our packaging by material for recycling. We select and develop optimal containers and packaging, engaging in environmentally friendly design tailored to the different characteristics and shapes of our products. Containers and packaging include everything from plastic, pouches to trays, bottles, glass bottles, PET bottles, paper boxes, and exterior packaging (cardboard boxes). The Group also strives to reduce the amount of food loss and waste generated by extending “best-before” dates through the use of containers and packaging that better maintain product freshness. Our efforts here include adopting single-serve packaging that leaves no food waste.

Environmental assessments of containers and packaging

Before releasing new or revised products, the Ajinomoto Group conducts an environmental assessment based on a checklist. We use this assessment to confirm compliance with product-specific regulations and compatibility with Group environmental targets (Table 1). In addition, Ajinomoto Co., Inc. assesses the details of product revisions using a points-based Eco-Index for Containers and Packaging (Table 2).

GRI307-DMA

Contribution to a Circular Economy

Table 1: Environmental assessment checklist

	Objective	Checklist Item
Compliance	Waste 3Rs	Compliance with environmental laws and regulations
	Food loss and waste reduction	Prevention of product degradation and damage
	Risk	Prevention of usage of packaging materials with environmental issues
Compatibility with Group environmental targets	Waste 3Rs	Use of packaging materials compatible with the 3Rs
	Sustainable procurement	Use of sustainable packaging material(s)
	Food loss and waste reduction	Use of packaging materials that reduce food loss and waste
	GHG emissions reduction	Reduction of environmental impact in the supply chain
	Foster consumer awareness of green living	Display of environmental labels

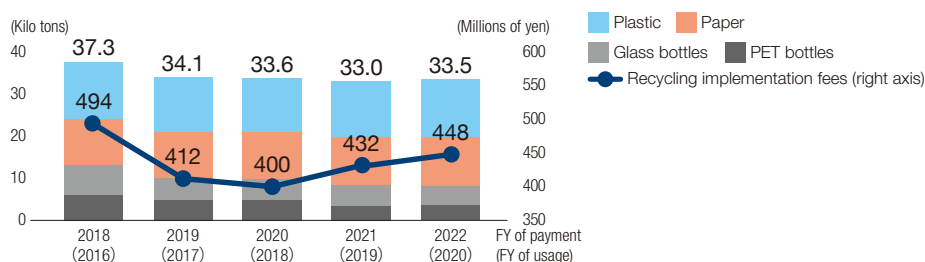
Table 2: Eco-Index for containers and packaging

Environmental plan item	Assessment item (example)	Assessment standard (example)
Transition to zero plastic waste	Plastic container/packaging weight reduction	At least 450 kg reduced per year
	Space per packaging volume	No more than 15%
	Compatibility with recycling systems	Easily recyclable materials used in all areas
GHG emissions reduction	LC-CO ₂ emissions reduction	Reduction compared to previous product version
	Transport efficiency	At least 80% loading efficiency
Sustainable procurement	Use of eco-friendly materials	Use of forest-certified paper
Realization of a recycling-oriented society	Environmental labeling	Display of the <i>Aji-na Eco mark</i>
Food loss and waste reduction	Food loss and waste reduction	Extension of shelf life
		Adoption of single-serve packaging

The recycling of containers and packaging waste in Japan

Under the Containers and Packaging Recycling Act in Japan, the recycling of containers and packaging waste from households is consigned to the Japan Containers and Packaging Recycling Association. In fiscal 2020, Ajinomoto Co., Inc., Ajinomoto Frozen Foods Co., Inc., and Ajinomoto AGF, Inc. used a combined 33.5 kilo tons of containers and packaging subject recycling requirements, 102% compared with the previous fiscal year. Based on this usage, recycling implementation fee payments for fiscal 2022 amounted to 448 million yen, 104% compared with the previous fiscal year. Although the usage volume of paper and plastics usages increased, at 101% and 104% of previous fiscal year levels, respectively, usage of glass and PET bottles somewhat decreased, and overall usage slightly increased. Per-unit recycling contract costs also increased, leading to higher payment amounts in fiscal 2022.

Use of containers and packaging and recycling implementation fee payments for household products for Ajinomoto Co., Inc., Ajinomoto Frozen Foods Co., Inc., and Ajinomoto AGF, Inc.



Performance

Contribution to a Circular Economy

Approach

GRI306-1

GRI306-2

> ASV Report 2022
(Integrated Report)
P49

Reducing plastic waste

In recent years, the problem of marine plastics has become a pressing global issue. The Ajinomoto Group set a goal to reduce plastic waste to zero by fiscal 2030. This means that we intend to eliminate all plastics released to the environment that are not used effectively. Through our Group-wide project launched in March 2020, we are working strategically toward the following goals.

Goals for fiscal 2030

- Choose to use plastics in the minimum quantity and purpose required for safety and quality (reduce)
- Switch to using only plastic packaging made of mono-material or recyclable products (recycle)
- Support and contribute to measures for social implementation of collection, sorting, and recycling in countries and regions where our products are manufactured and sold

Under our plan to achieve zero plastic waste, while promoting the technological development of mono-materialization, we will also promote reduction. This reduction will be completed by fiscal 2025, and our conversion to recyclable materials will also be completed by fiscal 2030. After confirming barrier property requirements for each product, we will implement new technologies for packaging materials that use aluminum foil currently, starting from those with a relatively low required barrier.

Roadmap to achieving zero plastic waste

Stage 1: Reduce (e.g., thinner packaging, switching to paper)

★: Established technology

Area	Details	FY2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Japan	Elimination/reduction of secondary packaging			From adoption to completion								
Japan	Thinner packaging	★	From adoption to completion									
Overseas	Switching to paper		★	From adoption to completion								

Stage 2: Recycle (mono-materials)

Area	Details	FY2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Japan	Non-barrier items	★	From adoption to completion									
Japan	Barrier items (moderate properties)			★	From adoption to completion							
Japan	Barrier items (high properties)						★	From adoption to completion				
Overseas	Barrier items (high properties)						★	From adoption to completion				

Confirm necessary barrier properties

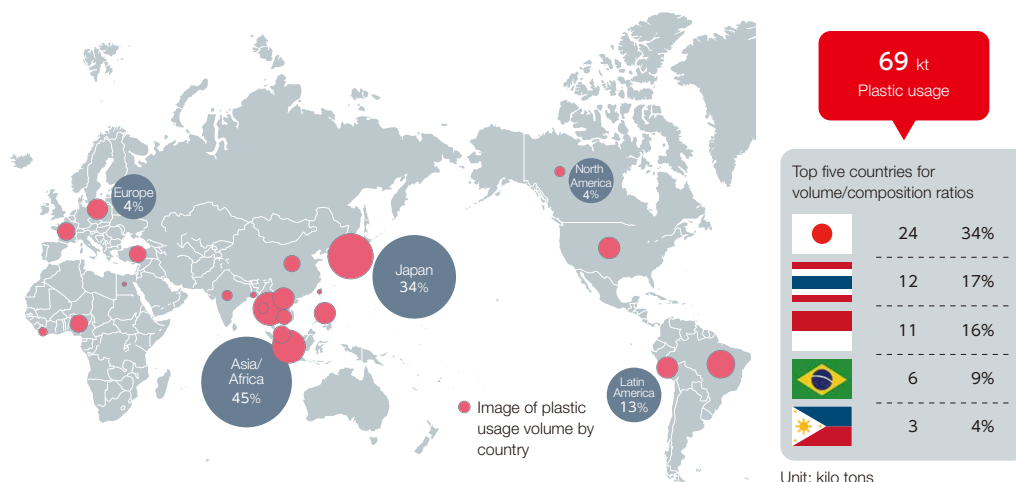
Lateral deployment

Contribution to a Circular Economy

Performance

The distribution of plastic usage volumes for the Group in fiscal 2021 was as follows.

Plastic usage by area^[1] (FY2021)



[1] Turkey is included in Asia and Africa.

Ajinomoto Group total plastic usage volumes

	FY2019 ^[2]	FY2020 ^[2]	FY2021
Plastic usage (of which, product packaging materials)	72 kilo tons (90%)	70 kilo tons (90%)	69 kilo tons (90%)

[2] Correction has been made as a result of a review of totals.

The total amount of plastic used by the entire Group was 69 kilo tons, nearly flat year on year. Japan, Thailand, Indonesia, Brazil, and the Philippines accounted for 81% of total use. Of these 69 kilo tons, more than 90% were used in product packaging materials. In addition, of this volume, approximately 26 kilo tons are already made from mono-materials or paper. In fiscal 2020, we began developing technology for conversion to mono-material packaging and reduce and reuse efforts for the remaining approximately 43 kilo tons. In fiscal 2021, we made progress in the practical application of packaging materials that reduce the amount of plastic used and the introduction of packaging materials considered paper containers and packaging under the Containers and Packaging Recycling Act. Going forward, we will explore possible topics further for technology development and possible contributions to building mechanisms in various countries.

Cases of environmentally friendly container and packaging design

Ajinomoto Co., Inc.

- As of January 2021, we reduced packaging thickness for the Japanese flavor seasoning *HON-DASHI*® 8 g packet, simultaneously switching to paper labels. As a result, the amount of plastic used has been reduced by 40 tons per year.

Ajinomoto AGF, Inc.

- In August 2020, we made modifications to all of the mainstay *Blendy*® brand beverage products. In addition to reformulating the content of our small packs (7-stick and 10-stick packs), we changed the stick packaging material specifications. These efforts reduced the amount of plastic used by approximately 25 tons per year (equivalent to reducing approximately 350 tons of CO₂ emission derived from packaging materials).

PT AJINOMOTO INDONESIA

- We eliminated the packaging header area and the inner bag for the *Masako*® flavor seasoning's 9g packet product. As a result, the amount of plastic used has been reduced by approximately 630 tons per year.

Performance

Contribution to a Circular Economy

■ Ajinomoto Co., Inc.

- The Ajinomoto Group is also working to change plastic to paper packaging for pouch products as a part of its transition to zero plastic waste. In fiscal 2021, we switched to paper packaging for the umami seasonings *AJI-NO-MOTO*[®] and *Umami Dashi Hi-Me*[®].

Unlike flour and similar products that have been traditionally sold in paper packages, umami seasonings are fine granules that can break through paper, so we faced many challenges in switching to paper packaging. However, after about two years of trial and error, we achieved the same strength and shelf life as plastic packaging materials. This upgrade is expected to reduce plastic waste by approximately 12 tons per year (versus fiscal 2020).



Performance

GRI102-12

> Participation in
Initiatives

■ Cooperation with outside organizations

The Ajinomoto Group conducts activities to encourage consumer awareness of the 3Rs through collaboration with packaging recycling organizations and government-related groups in Japan.

As part of our efforts to reduce plastic waste, we participate as a founding member in CLOMA^[1], a platform for accelerating innovation by strengthening cross-industry cooperation across a wide range of stakeholders. We are active in secretary and sub-committee chair (promotion subcommittee) positions.

[1] Japan Clean Ocean Material Alliance

Reducing environmental impact through the supply of highly biodegradable amino acid-based materials

■ Expanding the supply of amino acid-based surfactants

Ajinomoto Co., Inc. has provided amino acid-based personal care ingredients to more than 5,000 companies in 55 countries since the company launched the world's first amino acid-based surfactant, made from glutamic acid, in 1972.

Amino acid-based surfactants reduce environmental impact due to high biodegradability. These surfactants are also mild on the skin. Growing concern about the global environment in recent years has resulted in a rapidly expanding market for amino acid-based surfactants. We have been expanding our supply system to meet the global demand.

For example, in fiscal 2021 the Group constructed a new plant for glutamic acid-derived *Amisoft*[®] (liquid) in Brazil, and we are making progress in plans to increase production capacity.

Performance

Contribution to a Circular Economy

> Press release
(Japanese only)

Performance

GRI417-1

> Aji-na Eco Mark
(Japanese only)

Developing alternative to plastic microbead for cosmetic products

In recent years, various countries and regions have introduced regulations to ban or reduce the use of polymer plastics that have a substantial adverse impact on the environment, such as marine pollution. These regulations either prohibit use or requiring usage reductions. For example, tighter regulations have been imposed on rinse-off personal care products using plastic microbeads, and consequently there is a shift underway from microplastic beads to environmentally friendly alternatives. However, developing alternatives to plastic microbeads used in skin care and make-up products has been considered difficult in the areas of retaining their feel and user experience.

Amid this, Ajinomoto Co., Inc. has succeeded in using its unique technologies harnessing amino acid-based personal care ingredients to develop a product replacing conventional microplastic beads. This new product launched in 2022. The alternative we developed uses only naturally derived raw materials, and is therefore highly biodegradable and helps to reduce environmental impact, showing promise for future popularity.

Ajinomoto Group eco-labels

In response to feedback from consumers such as wanting to choose products that are as good for the environment as possible and wanting to know the eco-friendliness of a product at a glance, the Ajinomoto Group has labeled products with our original *Aji-na Eco* and *Hotto-suru Eco* marks since 2010. We strive to provide easy-to-understand explanations of improvements in packaging and details of our environmental initiatives, considering the environment in which customers use our products and throughout the value chain.



Number of *Aji-na Eco* mark products

207

As of March 2022

What is *Aji-na Eco*?

Aji-na Eco is a term describing smart and ecological products. The logo mark expresses the image of the green of the earth, the pleasure of eating, and a global environment made even better through food.



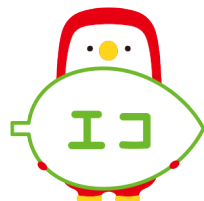
Number of *Hotto-suru Eco* mark products

312

As of March 2022

What is *Hotto-suru Eco*?

Hotto-suru Eco identifies Ajinomoto AGF, Inc. products that have special environmental features. The logo mark expresses the comfort felt when drinking one's favorite beverage, colored in the green of the earth. The *Hotto-suru Eco* label was introduced in 2015.



Number of *Aji-pen Eco* mark products

23

As of March 2022

What is *Aji-pen Eco*?

This mark indicates the eco-friendliness of Ajinomoto Frozen Foods Co., Inc. products. The *Aji-pen Eco* logo mark using the company's penguin mascot in 2020, taking the place of the *Aji-na Eco* logo mark.