

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 friendly materials
- Damaged corporate value due to delays in waste reduction or recycling efforts

Key initiatives by the Ajinomoto Group

- Supplying highly biodegradable amino acid-based detergent
- Promoting the 3Rs of containers and packaging (reduction of plastic waste, etc.)
- Eco-friendly packaging (mono-materials, biodegradable plastics, plant-derived materials) and certified paper
- Promoting use of environmentally friendly product labels
- Appeals on packaging labels to reduce plastic waste

Related SDGs



Plastic waste

FY2030 target: **Achieve “Zero”**

Contribution to a Circular Economy

Reduction of waste across product lifecycles

Performance

GRI306-1
GRI306-2

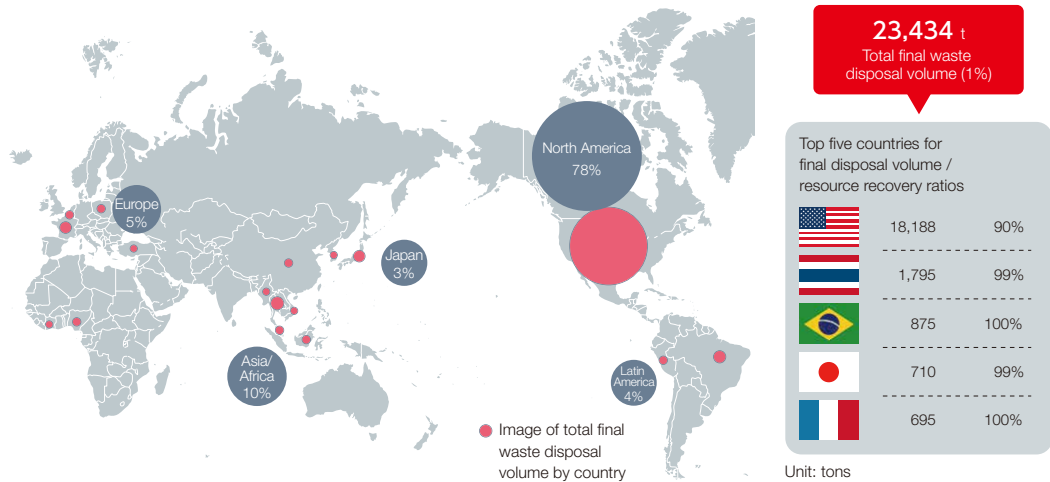
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The Ajinomoto Group strives to minimize the waste of limited resources, implementing initiatives to reduce waste. We are committed to the effective use of any waste that is produced, aiming to recover 99% or more of any waste arising from our business 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 2020 was as shown below. As a whole, generation of waste decreased to approximately 1,870 kilo tons (81.8%) compared to the previous year, partially due to reduced production (96.4% of previous year) as a result of the spread of COVID-19. Through our resource conservation efforts, we maintained final waste disposal of around 1% (23,434 tons) of waste generated. The United States, Thailand, Brazil, Japan, and France accounted for about 95% of total final waste.

Total final waste disposal volumes by area^[1] (Fiscal 2020)



[1] Turkey is included in Asia/Africa.

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GRI301-3
GRI306-3
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Approach

GRI301-DMA

GRI307-DMA

Volume of waste and by-products and resource recovery ratio

(tons)

	FY2016	FY2017	FY2018	FY2019	FY2020
Hazardous waste (waste acid, waste alkali, waste oil, cinder):					
Generated	59,217	59,162	69,991	83,834	81,216
Recycled	58,890	58,862	68,422	83,429	80,892
Incinerated	54	24	40	60	38
Landfills	274	276	1,529	345	286
Non-hazardous waste:					
By-products					
Generated	2,337,284	2,395,249	2,194,566	2,021,002	1,615,808
Composted	2,335,451	2,394,976	2,194,470	2,020,885	1,615,713
Incinerated	0	0	0	0	0
Landfills	1,832	273	96	117	95
Other					
Generated	178,861	178,989	174,651	181,246	173,310
Recycled	163,414	161,455	153,388	156,432	150,295
Incinerated	3,021	2,066	2,821	2,121	1,784
Landfills	12,426	15,467	18,442	22,693	21,231
Total generated	2,575,361	2,633,400	2,439,208	2,286,082	1,870,334
Total recycled	2,557,755	2,615,293	2,416,280	2,260,745	1,846,900
Total waste	17,606	18,107	22,928	25,337	23,434
Resource recovery ratio	99.3%	99.3%	99.1%	98.9%	98.7%

Container and packaging design for the environment

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 on the next page). In addition, Ajinomoto Co., Inc. assesses the details of product revisions using a points-based Eco-Index for Containers and Packaging (Table 2 on the next page).

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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 potentially hazardous materials
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	Improved loading efficiency in transport
	Foster consumer awareness of green living	Display of environmental labels

Table 2: Eco-Index for containers and packaging

Objective	Assessment item (example)	Assessment standard (example)	Points
Waste 3Rs	Plastic container/packaging weight reduction	At least 450 kg reduced per year	2
	Space per packaging volume	<15%	1
	Compatibility with recycling systems	Easily recyclable materials used in all areas	1
GHG emissions reduction	LC-CO ₂ emissions reduction	Reduction compared to previous product version	1
	Transport efficiency	Loading efficiency ≥80%	1
Sustainable procurement	Use of eco-friendly materials	Use of forest-certified paper	1
Consumer awareness of green living	Environmental labeling	Display of the <i>Aji-na Eco</i> mark	1
Food loss and waste reduction	Food loss and waste reduction	Extension of shelf life	1
		Adoption of single-serve packaging	1

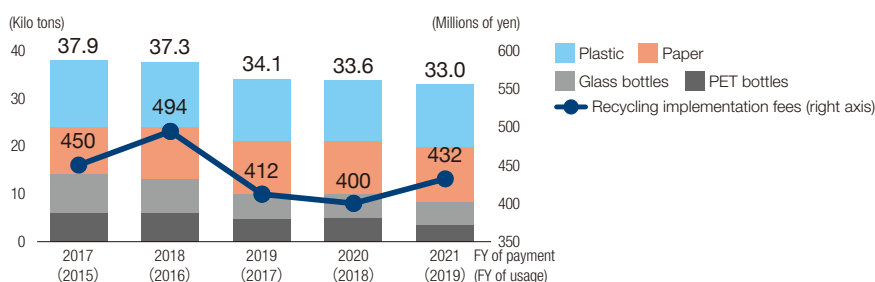
Performance

GRI301-3

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 2019, Ajinomoto Co., Inc., Ajinomoto Frozen Foods Co., Inc., and Ajinomoto AGF, Inc. used a combined 33.0 kilo tons of containers and packaging subject recycling requirements, down to 98% compared with the previous fiscal year. Based on this usage, recycling implementation fee payments for fiscal 2021 amounted to 432.3 million yen, 108% compared with the previous fiscal year. Although the usage volume of paper and plastics usages increased, at 102% and 104% of previous fiscal year levels, respectively, usage of PET bottle decreased, and overall usage decreased. However, per-unit recycling contract costs increased, leading to higher payment amounts in fiscal 2021.

Amount of used household product containers and packaging and recycling implementation fees



Contribution to a Circular Economy

Approach

GRI306-1
GRI306-2

> Integrated Report
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Reducing plastic waste

In recent years, the problem of marine plastics have 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, we intend to complete reductions by fiscal 2025 through progress in technology development for conversion to mono-material packaging. We intend to complete our conversion to recyclable materials 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

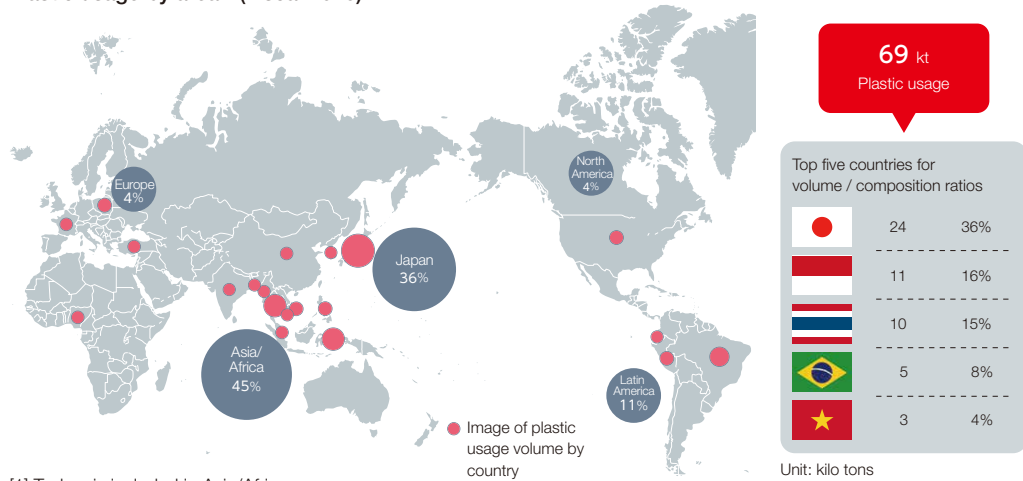
Lateral deployment

Contribution to a Circular Economy

Performance

The distribution of plastic usage volumes for the Group in fiscal 2020 was as follows.

Plastic usage by area^[1] (Fiscal 2020)



[1] Turkey is included in Asia/Africa.

The total amount of plastic used by the Group was 69 kilo tons, down one ton year on year (estimated), with the five top countries Japan, Indonesia, Thailand, Brazil and Vietnam making up 79% of the total. Of these 69 kilo tons, more than 90% were used in product packaging materials. In addition, we are already making progress toward converting approximately 30 kilotons of this volume to mono-materials or paper. In fiscal 2020, we began developing technology for conversion to mono-material packaging and reuse efforts for the remaining approximately 40 kilotons. Further, we are pursuing the goal of contributing to recycling systems in various nations. Here, we conducted surveys for the top 17 countries comprising approximately 90% of Group-wide plastic use regarding the state of recycling efforts, among other topics.

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 adjustments 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).

Performance

Contribution to a Circular Economy

Performance

GRI102-12

> Participation in Initiatives

> Press release (Japanese only)

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. In addition, we became a corporate partner for Loop, a container collection and reuse enterprise developed by TerraCycle, a U.S.-based startup operating globally in the recycling industry. In August 2021, we started selling seasonings and coffee in exclusive package through Loop for 5,000 households in the Kanto area.

[1] The Japan Clean Ocean Material Alliance



Seasonings and coffee for Loop

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.

The Group is constructing a new plant for glutamic acid-derived *Amisoft*® (liquid) in Brazil with aim to launch during fiscal 2021. With the completion of the new plant, we will transfer a portion of production equipment for *Amisoft*® (liquid), which is produced in Japan, to production of the glycine-derived *Amillite*® (liquid). We plan to increase the production capacity of *Amisoft*® (liquid) by approximately 60%, and approximately 30% for *Amillite*® as a whole.

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. 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. The trend now is to replace these materials with alternatives. However, due in part to the technical difficulty of developing alternatives to plastic microbeads used in skin care and make-up products that retain their feel and user experience, regulations on their use have not yet been enacted in a number of major countries including Japan.

Under these circumstances, Ajinomoto Co., Inc. succeeded to develop alternative to plastic microbeads that have the same feel and functionality by applying functions of *Amihope*® LL, an amino acid-based personal care ingredient with excellent lubrication properties. The alternative we developed uses only naturally derived raw materials, and is therefore highly biodegradable and offers less impact on the environment. We plan to launch this product in the first half of fiscal 2022.

Performance

GRI303-1

> Press release

Contribution to a Circular Economy

Performance

GRI417-1

> *Aji-na Eco* mark
(Japanese only)

Ajinomoto Group eco-labels

Since 2010, the Ajinomoto Group has labeled products with our original *Aji-na Eco* and *Hotto-suru Eco* marks. We have adopted these marks to respond to consumer needs for environmentally friendly products, as well as to let consumers know accurately which products are environmentally friendly. We also strive to effectively communicate changes made to product packages that are difficult for consumers to notice. These changes include package weight, thickness, size, and materials used.



Number of *Aji-na Eco* mark products

223

As of March 2021

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

310

As of February 2021

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

8

As of March 2021

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.