

Reduction of waste across product lifecycles

Performance

GRI301-3
GRI306-2

The Ajinomoto Group is working to minimize waste to ensure optimal use of all resources. The Group is also committed to effectively utilizing waste and by-products, with the aim of recovering 99% or higher of it as resources.

In amino acid production, the Group seeks to improve production efficiency by recovering by-products as resources and introducing new technologies. In food production, it is also making a range of efforts, such as improving the precision of sales forecasts and conducting fine-tuned procurement, to minimize wasted raw materials and the amount of packaging materials used.

In fiscal 2018, generation and landfilling of hazardous waste increased from the previous year due to increased production volume and a resulting increase in biomass boiler residue. Generation and disposal of non-hazardous waste other than by-products both declined slightly from the previous year.

Volume of waste and by-products and resource recovery ratio

tons

	FY2014	FY2015	FY2016	FY2017	FY2018
Hazardous waste (waste acid, waste alkali, waste oil, cinder)					
Generation	60,304	60,431	59,217	59,162	69,991
Recycling	59,719	59,457	58,890	58,862	68,422
Incineration	35	14	54	24	40
Landfill	550	959	274	276	1,529
Non-hazardous waste					
By-products					
Generation	2,295,432	2,435,544	2,337,284	2,395,249	2,194,566
Composting	2,293,952	2,434,281	2,335,451	2,394,976	2,194,470
Incineration	144	0	0	0	0
Landfill	1,336	1,263	1,832	273	96
Others					
Generation	132,462	140,464	178,861	178,989	174,651
Recycling	123,330	131,258	163,414	161,455	153,388
Incineration	1,116	1,293	3,021	2,066	2,821
Landfill	8,016	7,913	12,426	15,467	18,442
Total generation	2,488,199	2,636,439	2,575,361	2,633,400	2,439,208
Total recycling	2,477,001	2,624,997	2,557,755	2,615,293	2,416,280
Total waste	11,197	11,442	17,606	18,107	22,928
Resource recovery ratio	99.5%	99.6%	99.3%	99.3%	99.1%

Contribution to a Circular Economy

Approach

GRI301-3

▶ Integrated Report
 2019 P59

Framework

Performance

▶ Participation in
 Initiatives

Container and Packaging Design for Environment

The Ajinomoto Group is advancing the container and packaging design for environment in accordance with the ISO 18600 series and JIS Z 0130 and strives to advance the 3Rs by minimizing the amount of packaging material used without detracting from its original functions and implementing ways to easily separate and sort by material for recycling. The Group also works to reduce the amount of generated food loss and waste by extending best-before dates using containers and packaging that better maintain product freshness and adopting single-serve packaging that leaves no food waste.

Approach to plastic packaging materials and goals

In recent years, the problem of plastic waste and microplastics in the ocean have become a pressing global issue. In November 2018, the Ajinomoto Group expressed its aim of achieving zero plastic waste by fiscal 2030 (The roadmap to 2030 will be announced together with the next medium-term management plan). The Group used approximately 70,000 tons of plastic in fiscal 2018, 40% of which are used in Japan and 60% overseas. While reducing the amount of plastic use, the Group will also work on the development of new materials and technologies that will turn plastics from waste into resources.

- Continuing to reduce plastic usage

In addition to reducing the use of plastic in packaging, the Group considers the use of new alternative materials becoming available as technology develops.

- Creating recyclable materials & systems

- (1) Develop packaging materials geared to recycling

The Group develops mono-material plastic packaging and alternative recyclable packaging materials.

- (2) Help establish recycling-oriented social systems

The Group establishes recycling-oriented social systems, particularly in developing countries and regions where systems are still in the early stages.

Inter-Group Efforts Toward Container and Packaging Design for Environment

The products of the Ajinomoto Group require many different kinds of containers and packaging. To let each Group company in Japan share their efforts to create container and packaging design for environment and receive feedbacks, the Group holds events such as the Ajinomoto Group Food Conference and the Packaging Designers' Liaison Meeting.

Cooperation with Outside Organizations

The Ajinomoto Group cooperates with recycling councils of container and packaging and public organizations in Japan to encourage consumer awareness of the 3Rs.

- Examples

- Participation in Eco-Products Exhibition
- Containers and Packaging Reduction Declaration in the committee of the National Capital Region Nine Government Summit Council
- Presentation of 3Rs best practices to Plastic Packaging Recycling Council
- Presentation of 3Rs best practices to Paper Packaging Recycling Council
- Participation in innovation exhibition by CLOMA^[1]

[1] Clean Ocean Material Alliance

Contribution to a Circular Economy

Performance

GRI301-3

Environmental Assessment of Containers and Packaging

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

Table 1: Environmental assessment checklist

Objective		Check item
Compliance	Waste 3Rs	Compliance with environmental laws and regulations
	Food loss reduction	Prevention of product degradation and damage
	Risk	Prevention of usage of potentially hazardous materials
Compatibility with Group environmental targets	Waste 3Rs	Usage of material(s) compatible with 3Rs
	Sustainable procurement	Usage of sustainable material(s)
	Food loss reduction	Usage of material(s) that help reduce food loss
	Greenhouse gas emissions reduction	Improvement of loading efficiency in transport
	Consumer awareness of green living	Display of environmental labels

Table 2: Eco-Index for containers and packaging

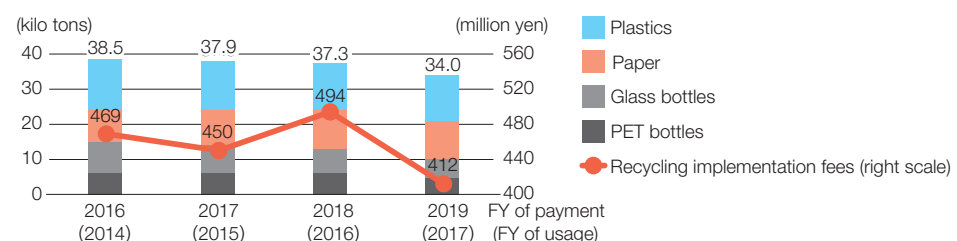
Objective	Assessment item (example)	Assessment standard (example)	Points
Waste 3Rs	Plastic container/packaging weight reduction	At least 450 kg reduced per year	+2
	Space per packaging volume	<15%	+1
	Compatibility with recycling systems	Easily recyclable materials used throughout	+1
Greenhouse gas emissions reduction	LC-CO ₂ emissions reduction	Reduced over conventional product	+1
	Transport efficiency	Loading efficiency ≥80%	+1
Sustainable procurement	Usage of eco-friendly materials	Usage of forest-certified paper	+1
Consumer awareness of green living	Environmental labeling	Display of the <i>Aji-na Eco</i> mark	+1
Food loss reduction	Food loss reduction	Extension of shelf life	+1
		Adoption of single-serve packaging	+1

To comply with 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 2017, the three Group companies in Japan^[1] used 34,000 tons of containers and packaging subject to recycling requirements, down to 91.4% of the previous year. Based on this usage, recycling fee payment for fiscal 2019 was 412 million yen, down to 83.4% of the previous year.

The use of plastic containers/packaging and PET bottles decreased to 94.8% and 89.2% over the previous year, respectively, due to the decrease in sales volume. The use of glass bottles was 72.4% over the previous year due to the end of sales of bottle products for gift. The decrease in recycling fee is due to decrease in the recycling contract unit cost of plastic containers/packaging and PET bottles that increased in the previous year (93.9% and 21.7% over the previous year, respectively) in addition to decrease in their usage.

[1] Total amount for three group companies in Japan (Ajinomoto Co., Inc., Ajinomoto Frozen Foods Co., Inc., Ajinomoto AGF, Inc.)

Amount of used household product containers and packaging and recycling fees



Contribution to a Circular Economy

Performance

GRI303-1

Performance

GRI301-3
 GRI417-1

▶ P48

▶ *Aji-na Eco* mark
 (Japanese)

Expanding the Supply of Highly Biodegradable 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 it launched the world's first amino acid-based surfactant, made from glutamic acid in 1972.

Amino acid-based surfactants are environmentally friendly because of their high biodegradability, and they are also mild to skin. Due to growing concern about the global environment in recent years, the market for amino acid-based surfactants has rapidly expanded, and the Ajinomoto Group has been strengthening its supply system to meet the global demand.

Namely, the Group will construct a new plant for glutamic acid-derived *Amisoft*[®] (liquid) in Brazil, which is slated to start operating in 2020. In conjunction with this investment, a portion of *Amisoft*[®] (liquid) production in Japan will be transferred to Brazil, and the production facilities in Japan will be redirected to production of glycine-derived *Amilite*[®] (liquid). This will increase the production capacity of *Amisoft*[®] (liquid) by approximately 60%, and for *Amilite*[®] by approximately 30% (total of all product forms), and help resolve the supply shortages in amino acid-based surfactants.

Ajinomoto Group Eco-labels: *Aji-na Eco* and *Hotto-suru Eco*

To respond to consumers' needs to purchase environmentally friendly products and to know whether a product is eco-friendly at a glance, the Ajinomoto Group has labeled products with its original *Aji-na Eco* and *Hotto-suru Eco* marks since 2010. The Group also strives to effectively communicate changes made to product packages that are difficult for consumers to notice, such as weight, thickness, size and materials used.



As of July 2019

What is *Aji-na Eco* ?

Aji-na Eco is a term describing the smart and ecological products or information provided by the Group, and the logo mark expresses the image of our Earth green, the pleasure of eating, and a global environment made even better through food.



As of July 2019

What is *Hotto-suru Eco* ?

Hotto-suru Eco indicates Ajinomoto AGF, Inc. products with environmental features. The logo mark expresses the comfort felt when drinking one's favorite beverage, colored in Earth green. The *Hotto-suru Eco* label was introduced in 2015.

■ Types of *Aji-na Eco* and *Hotto-suru Eco* marks

- Plant-based plastic
- Recycled plastic
- Sustainable timber
- Recycled paper
- Reduced packaging
- Refillable
- No tray
- Easy recycling and disposal
- No box
- Passive defrosting