



TOKUYAMA
Sustainability Data book 2022



CONTENT

Responsible Care

- 2 Responsible Care Initiatives
- 3 Quality Management System

Environmental Initiatives

- 3 Environmental Management
- 5 Helping to Fight Global Warming
- 5 Reducing Environmentally Substances
- 7 Reducing Waste and Recycling
- 8 Detailed Data

Accident Prevention and Occupational Health and Safety

- 9 Comprehensive Safety and Accident-Prevention Measures

In Harmony with Society

- 10 Communication with Stakeholders
Community Initiatives

Growing Together with Employees

- 11 Developing Talent and Promoting Diversity
- 13 Health Management Initiatives

Corporate Governance

- 15 Risk Management
- 16 Business Continuity Management (BCM)
Compliance

Site Reports

- 17 Tokuyama Factory
- 18 Kashima Factory
- 19 Sun Arrow Kasei Co., Ltd. /
Tokuyama Polypropylene Co., Ltd.

編集方針

■ *Sustainability Data Book 2022* reports key data on Tokuyama's CSR activities in fiscal 2021. Details of Tokuyama's basic philosophy and initiatives for CSR are introduced at the website below.



| WEB | Tokuyama's CSR
<https://www.tokuyama.co.jp/eng/>

■ *Sustainability Data Book 2022* has been produced based on the Environmental Reporting Guidelines (fiscal 2018 edition) published by the Ministry of the Environment of Japan and GRI standard published by Stichting Global Reporting Initiative.

Scope of the Report

Period covered: Performance data is from fiscal 2021 (April 1, 2021 to March 31, 2022); certain activities carried out in fiscal 2022 are also covered.
Companies covered: Tokuyama Group; environment-related data is for the Company's Tokuyama Factory, Tsukuba Research Laboratory and Kashima Factory; some performance data includes the sum of the data from 23 manufacturing subsidiaries of the Tokuyama Group in Japan.
Areas covered: Activities reported on were mainly carried out in Japan; however, some activities include group subsidiaries outside Japan.

Date of issue: September 30, 2022
Next issue (tentative): September 2023

Tokuyama Corporation

Corporate Social Responsibility Division
FRONT PLACE AKIHABARA, 7-5, Sotokanda 1-chome, Chiyoda-ku, Tokyo 101-8618, Japan
Tel: +81-3-5207-2508 Fax: +81-3-5207-2579
<https://www.tokuyama.co.jp/eng/>

- Responsible Care Initiatives
- Quality Management System

Responsible Care

Tokuyama has put in place a corporate framework for promoting Responsible Care,* and is incorporating this initiative in each of its management systems as it strives to continuously improve its environmental, safety, and quality systems.



Responsible Care* Initiatives

Tokuyama actively practices Responsible Care as one of the original members of the Japan Responsible Care Committee established in 1995 under the Japan Chemical Industry Association (JCIA).

* Responsible Care is a voluntary management initiative undertaken by chemical manufacturers to implement measures that conserve the environment and secure safety and health in all processes from the development of chemical substances to their manufacturing, distribution, use, final consumption, and disposal. Companies publish their outcomes and engage in public dialogue.

| WEB | Basic Philosophy of Responsible Care

https://www.tokuyama.co.jp/eng/csr/responsible_care.html



Priority Tasks and Results of Responsible Care Activities in Fiscal 2021

Degree of target achievement:
Achieved (A) Not achieved (B)

Category	Priority tasks	Results	Degree of target achievement
Environmental Conservation	<ul style="list-style-type: none"> ● Comply with legal requirements and other regulations ● Achieve zero environmental accidents ● Achieve targets for reducing environmental impact 	<ul style="list-style-type: none"> ● Strictly complied with legal requirements 	A
		<ul style="list-style-type: none"> ● No environmental accidents 	A
		<ul style="list-style-type: none"> ● Reduced or maintained levels of emissions of substances of concern ● Zero emissions of industrial waste to landfills: Maintain 99.9% reuse/recycling rate 	A A
Safety and Accident Prevention Occupational Health and Safety	<ul style="list-style-type: none"> ● Achieve zero legal violations ● No accidents or accidents requiring work absence ● Reduce rate of work absences 	<ul style="list-style-type: none"> ● 0 legal violations ● 4 accidents ● Industrial accidents: 0 cases for employees, 3 at contractors ● Improved safety management level ● Identified and reduced/eliminated hazards and reduced risks of accidents ● Promoted risk and hazard management ● Promoted physical and mental health 	A B B A A A A
Chemical Product Safety	<ul style="list-style-type: none"> ● Ensure product safety 	<ul style="list-style-type: none"> ● Conducted inspections of products and labeling ● Upgraded safety data sheet (SDS) management ● Addressed regulations on chemicals in and outside of Japan 	A A A
Build Relations of Trust with Local Communities and Society	<ul style="list-style-type: none"> ● Participate in community events ● Establish a good reputation in society 	<ul style="list-style-type: none"> ● Participated in community volunteer activities ● Held dialogues with the community on Responsible Care ● Factory tours* 	A A — *
Promote Responsible Care at Group Companies	<ul style="list-style-type: none"> ● Expand the scope of Responsible Care activities 	<ul style="list-style-type: none"> ● Conducted safety, environment, and quality audits ● Shared Responsible Care information via an online newsletter, etc. ● Appropriately addressed regulations on chemicals in countries outside Japan 	A A A

* Unable to evaluate because the tour was not held due to COVID-19.

- Responsible Care Initiatives
- Environmental Management
- Reducing Environmentally Substances
- Detailed Data
- Quality Management System
- Helping to Fight Global Warming
- Reducing Waste and Managing Waste Recycling

Responsible Care

Quality Management System

As an initiative designed to ensure that Tokuyama continues to earn customers' loyalty, the Company implements three-year quality management plans based on its Quality Policy in order to provide products and services that accurately meet the needs and expectations of customers.

It has been 20 years since a quality management system was introduced company-wide, including in sales and development departments, in fiscal 2002. The system is now well-established in all departments and is generating continuous improvement. An external audit by a third party in 2021 pointed out no major or minor nonconformances.

Internal audits check the progress of action plans and the status of the system based on the JISQ 9001:2015 standard, requiring corrective actions for any defects. In addition to compliance with the requirements of the standard, audits also verify the effectiveness of the quality management system and whether or not it is helping to improve customer satisfaction.

Tokuyama Quality Policy

The Tokuyama Group has set the following quality guidelines, based on its management principles.

- We comply with laws and regulations and provide environmentally responsible products and services tailored to needs and expectations.
- We refine our unique strengths to ensure customer satisfaction.
- We remain constantly aware that "Commitment to customer satisfaction is a profit source."
- We continuously improve the effectiveness of our quality management systems.

Environmental Initiatives

For Tokuyama, the pursuit of proactive initiatives to protect the earth's environment is an important part of its corporate social responsibilities. Accordingly, the Company practices environmental management that takes into account the natural environment in all business activities.

Environmental Initiatives

Environmental Management

Tokuyama works to accurately determine the input and output of materials in its operations and regularly sets new targets for reducing environmental impact.

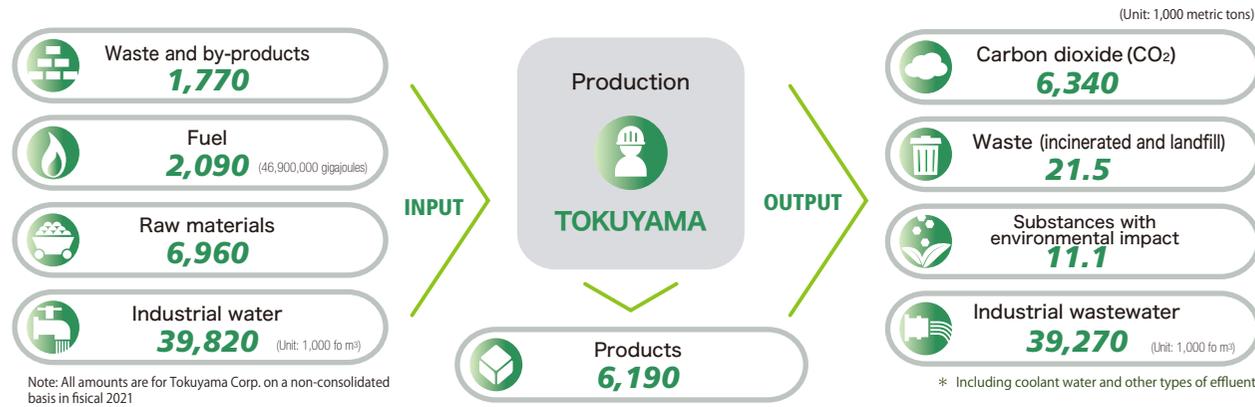
In fiscal 2021, Tokuyama achieved its targets for zero emissions to landfills and rate of waste effectively used. In order to continue having a low environmental impact, each division decides on management objectives for performance data and acts on them. In this way, Tokuyama maintains and facilitates low environmental impact.

Environmental Policy	Fiscal 2022 Priority Measures
<p>The Tokuyama Group actively works to protect the environment and has set the following environmental policy, in order to contribute to the development of a sustainable society.</p> <ul style="list-style-type: none"> · We strictly comply with laws and regulations. · We reduce environmental impact. · We combat climate change. · We build trusting relationships with stakeholders 	<p>Policy Objectives</p> <div style="border: 1px solid #4CAF50; padding: 5px; margin: 5px 0;"> <ul style="list-style-type: none"> ■ No legal violations ■ No environmental accidents ■ Reduce environmental impact </div> <p>Key Action Items</p> <ul style="list-style-type: none"> · Strictly comply with legal requirements, etc. · Continue zero environmental accidents · Reduce environmental impact <ul style="list-style-type: none"> Maintain or reduce emission levels of environmentally hazardous substances Promote zero waste emissions · Combat climate change <ul style="list-style-type: none"> Take action to achieve FY2030 greenhouse gas (GHG) target Promote energy-saving and conservation of electricity · Expand communication with stakeholders and improve information disclosure · Help conserve biodiversity · Preparations for Group Expansion

- Environmental Management
- Helping to Fight Global Warming
- Reducing Environmentally Substances
- Reducing Waste and Managing Waste Recycling
- Detailed Data

Environmental Initiatives

Flow of Materials in Business Activities



Environmental Accounting

Tokuyama has been carrying out environmental accounting since fiscal 2000 in order to accurately determine and analyze the

investment amounts and costs associated with its environmental conservation activities, thereby providing a sound basis for making environmental investments.

Economic Benefits of Environmental Management

Economic benefits are calculated only for real effects such as the gains on sales and gains on savings and reductions listed in the table entitled Economic Benefits of Environmental Management. In fiscal 2021, gains on reduction in energy consumption and gains on sale of valuable waste increased, with an economic benefit of approximately 1.79 billion yen, an increase of approximately 260 million yen over the previous year.

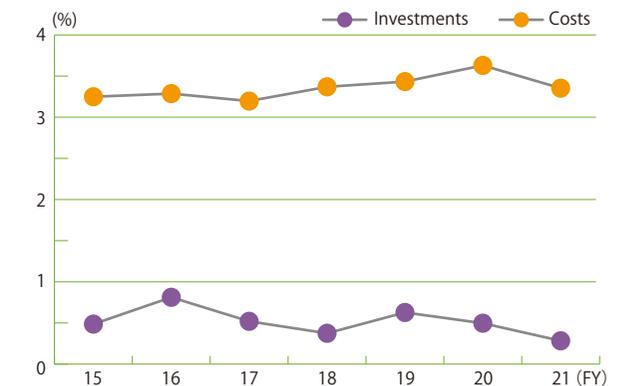
Economic Benefits in Fiscal 2021

Category	Material Benefit (1,000 metric ton)	Economic Benefit (million yen)
Gains on Reduction in Energy Consumption	—	187
Gains on Sale of Valuable Waste	82	460
Gains on Reduction in Waste Disposal Costs through Waste Recycling	259	671
Gains on Reduction in Raw Material and Fuel Costs through Waste Recycling	260	471
Total	—	1,789

Fiscal 2021 Environmental Conservation Costs

Category	Major Activities	Amount Invested (million yen)	Costs (million yen)
Costs in Business Areas	Pollution Control	Installation of electrostatic precipitators for reducing smoke and dust, upgrade of related equipment, etc.	317 4,777
	Global Environmental Conservation	Remodeling and upgrade of equipment for reducing CO ₂ , upgrade of freon removal equipment, etc.	106 530
	Resource Recycling	Installation of waste disposal facilities, upgrade of equipment in waste disposal facilities, PCB waste disposal costs, etc.	181 1,357
Upstream and Downstream Costs		0 2	
Management Activity Costs	Installation and upgrade of equipment for environmental monitoring and analysis	7 377	
Research and Development Costs		0 0	
Social Activity Costs	Greenification and beautification measures, Production of CSR report	0 78	
Costs for Environmental Damage	Imposition, management of a former mining site	0 100	
Total		610 7,221	

Change in Environmental Accounting (Ratio to Sales)



- Environmental Management
- Reducing Environmentally Substances
- Detailed Data
- Helping to Fight Global Warming
- Reducing Waste and Managing Waste Recycling

Environmental Initiatives

Biodiversity

Tokuyama endorses Nippon Keidanren's (Japan Business Federation) Declaration on Biodiversity and is a member of the Japan Business and Biodiversity Partnership. The Company studies the impact of its business activities on ecosystems, with the aim of conducting its business sustainably while conserving biodiversity.

[| WEB | Business Activities and Biodiversity](https://www.tokuyama.co.jp/eng/csr/pdf/2022_biodiversity_e.pdf)

https://www.tokuyama.co.jp/eng/csr/pdf/2022_biodiversity_e.pdf



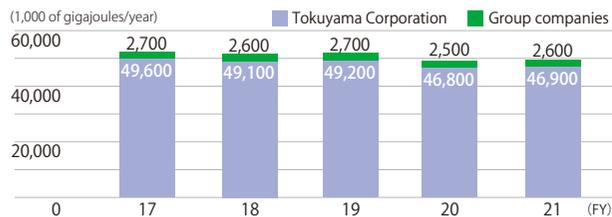
Helping to Fight Global Warming

Tokuyama is helping to mitigate global warming by conserving energy used in its business activities, developing and manufacturing products that help to reduce GHG emissions and managing Scope 3 emissions.

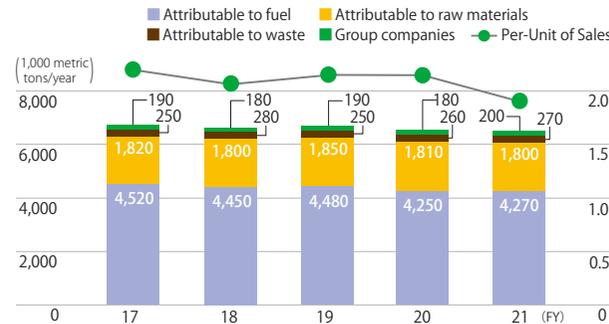
Promoting Energy Conservation

Beginning in fiscal 2021, Tokuyama began using the reduction in GHG emissions (30% reduction in fiscal 2030 and carbon neutral in fiscal 2050 compared to fiscal 2019) as its target for energy consumption and GHG emissions, instead of per-unit energy consumption. The Company plans to steadily implement energy conservation measures, promote biomass power generation and reduce fossil fuel use to cut GHG emissions.

Energy Consumption



GHG Emissions and Per-Unit of Sales



*Amounts have been revised to reflect the change from CO₂ emissions to GHG emissions.

Calculating and Managing Supply Chain Emissions

Based on the Scope 3 Standard of the GHG Protocol,* Tokuyama accounts for supply chain emissions for Category 1 through 7 and Category 9 emissions under Scope 3. The emissions from these categories were calculated at 1.78 million metric tons, an increase of 40,000 metric tons from fiscal 2020. The increase was mainly due to an increase of 30,000 metric tons in Category 1 emissions.

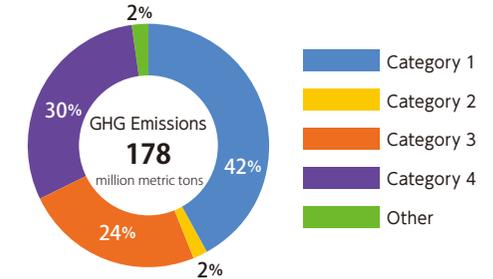
*The Greenhouse Gas Protocol (GHG Protocol) was jointly formulated by the World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD), and the Scope 3 Standard was issued in November 2011 as a standard for calculating GHG emissions throughout supply chains.

GHG Emissions by Scope

	(10,000 metric tons)	
	FY2020	FY2021
Scope 1 (Direct GHG emissions)	629	632
Scope 2 (Energy indirect GHG emissions)	4	2
Scope 3	174	178

Third-party verification of fiscal 2020 Scope 1, Scope 2 and Scope 3 (Category 1 to 7 and 9) data was conducted in fiscal 2021.

Scope 3 GHG Emissions by Category



Guidelines: *Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain* (Ver. 2.4), March 2022, Ministry of the Environment and Ministry of Economy, Trade and Industry, Government of Japan

GHG Emissions Unit Database: Emissions Unit Value Database for Calculating Greenhouse Gas Emissions, etc., by Organizations Throughout the Supply Chain (Ver. 3.2), March 2022; LCI Database IDEA v2.3 (for calculating supply chain GHG emissions; for general use), Sustainable Management Promotion Organization, December 2019

Note: Emissions were calculated for the top 10 raw materials by purchase amount.

Reducing Environmentally Substances

Tokuyama is continually working to reduce its emissions of air and water pollutants and implementing environmental conservation initiatives such as waste recycling.

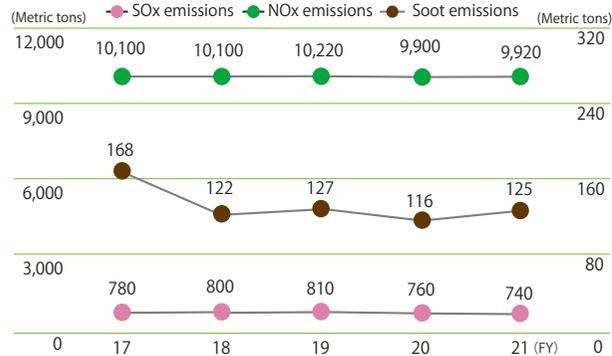
Amounts of Atmospheric Emissions

In order to reduce atmospheric pollution from sulfur oxides (SO_x) and nitrogen oxides (NO_x and Soot), Tokuyama equips boilers, cement kilns, and other pollutant-generating facilities with flue gas desulfurizers, denitration equipment, low-NO_x burners, and high-performance dust collectors.

- Environmental Management
- Reducing Environmentally Substances
- Detailed Data
- Helping to Fight Global Warming
- Reducing Waste and Managing Waste Recycling

Environmental Initiatives

Emissions of SOx, NOx, and Soot



Emissions of Pollutant Release and Transfer Register (PRTR)* Substances

The substances handled in fiscal 2021 included 20 substances that must be registered under Japan's PRTR law.

* The PRTR system collects and publishes data on the sources of designated harmful chemical substances and the amounts of these substances discharged in the environment or transported from production sites as part of waste matter.

Amounts of Hazardous Air Pollutant Emissions

Tokuyama generates chloroethylene and three other substances that are subject to voluntary controls under Japan's Air Pollution Control Act. The Company has formulated a voluntary action plan and is working to reduce emissions of these substances.

PCB Waste Disposal

The Company finished disposing of all high-concentration PCB waste from transformers and condensers. High-concentration PCB waste from ballasts was fully disposed of in fiscal 2021, but subsequently, additional ballasts were found when equipment in use was updated, and the Company is preparing to dispose of

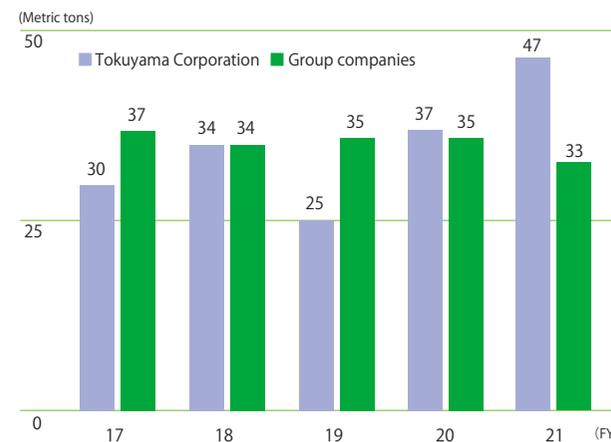
these. Tokuyama is systematically disposing of low-concentration PCB waste. Moreover, at the request of the Ministry of the Economy, Trade and Industry and the Ministry of the Environment (request made to industry group), Tokuyama is carrying out a more far-reaching survey.

Amounts of Industrial Effluent and Wastewater

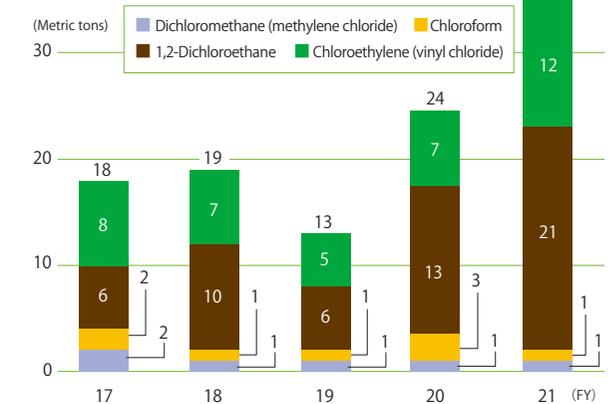
The Tokuyama Factory follows a stringent system for monitoring industrial effluent and purifying wastewater using treatment equipment in order to comply with regulatory standards and limits set by the local government, as well as the Company's own standards, which are even stricter. The factory also employs activated sludge treatment facilities for reducing the discharge of nitrogen and phosphorous and meeting chemical oxygen demand (COD)* regulations for overall water quality.

* Chemical oxygen demand is an indicator used to measure water quality, and refers to the amount of oxygen required to oxidize organic compounds in water.

Emissions of PRTR Substances



Emissions of Hazardous Air Pollutants



Water Intake

	FY2017	FY2018	FY2019	FY2020	FY2021
Industrial Water	45,500	44,710	43,530	41,430	39,820
Tap Water Supply	40	64	41	41	41
Groundwater	0	0	0	0	0
Ocean water	560,640	528,800	557,200	524,700	530,220

Effluent Discharged

	FY2017	FY2018	FY2019	FY2020	FY2021
Industrial wastewater	44,930	44,150	42,960	40,880	39,270
Engineering Drainage	23,970	24,420	22,180	22,160	25,600

Water Pollutant Emissions

	FY2017	FY2018	FY2019	FY2020	FY2021
COD	121	129	103	124	167
Nitrogen	173	159	170	177	159
Phosphorus	2.1	2.3	1.5	2.1	2.1

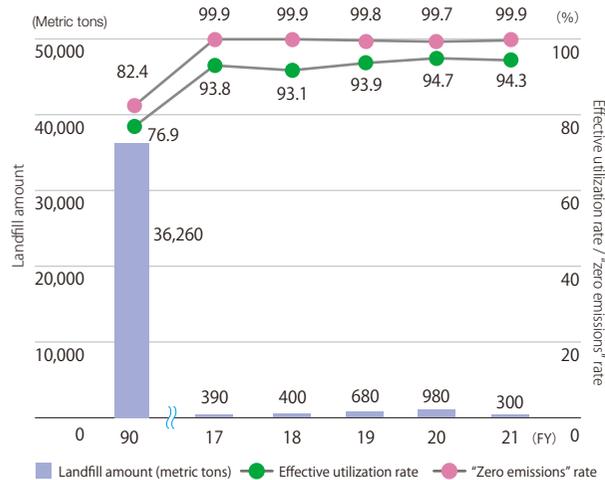
- Environmental Management
- Reducing Environmentally Substances
- Detailed Data
- Helping to Fight Global Warming
- Reducing Waste and Managing Waste Recycling

Environmental Initiatives

Reducing Waste and Managing Waste Recycling

The effective utilization rate for waste and the “zero emissions” rate remained high in fiscal 2021, due to efforts to reduce the volume of waste and comprehensive recycling efforts.

Landfilled and Recycled Waste

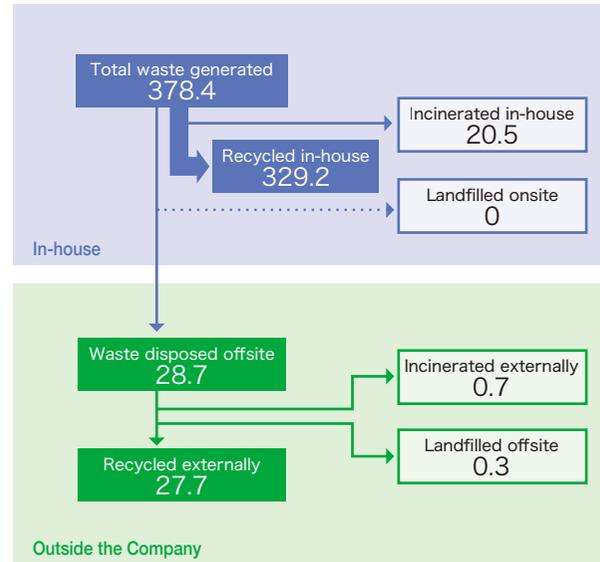


$$\text{Effective utilization rate (\%)} = \frac{\text{Amount of waste recycled (in-house and externally)}}{\text{Total waste generated}} \times 100$$

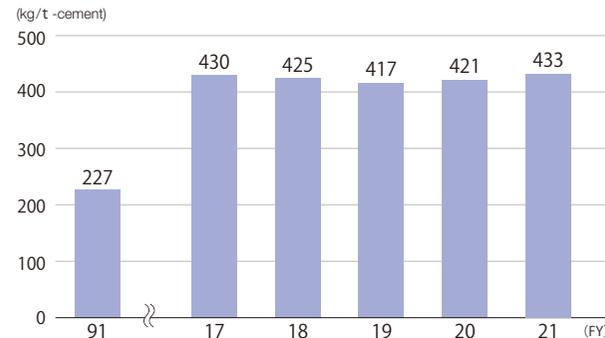
$$\text{“Zero emissions” rate (\%)} = \left[1 - \frac{\text{Amount of landfilled waste (onsite and offsite)}}{\text{Total waste generated}} \right] \times 100$$

Flow of Industrial Waste Treatment

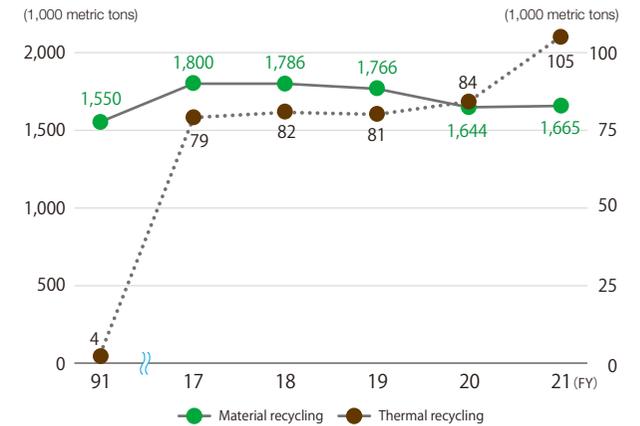
Unit: 1,000 metric tons



Shifts in Units of Waste Matter/ By-Products Used Per Metric Ton of Cement



Utilization of Waste Matter at Cement Plants (Material Recycling/Thermal Recycling)



The Nanyo Plant's Cement Production Recycling System

[WEB | The Nanyo Plant's Cement Production Recycling System](https://www.tokuyama.co.jp/eng/csr/pdf/2020csrpdf_6_e.pdf)

https://www.tokuyama.co.jp/eng/csr/pdf/2020csrpdf_6_e.pdf



- Environmental Management
- Reducing Environmentally Substances
- Detailed Data
- Helping to Fight Global Warming
- Reducing Waste and Managing Waste Recycling

Environmental Initiatives

Detailed Data

Flow of Materials in Business Activities

Input (Unit: 1,000 metric tons)	FY2017	FY2018	FY2019	FY2020	FY2021	Comparison with previous fiscal year (%)
Waste and by-products	1,880	1,870	1,850	1,730	1,770	2.3%
Fuel	2,250	2,150	2,150	2,100	2,090	-0.5%
Raw materials	6,760	6,670	6,720	6,370	6,960	9.3%
Industrial water (1,000 of m ³)	45,500	44,700	43,500	41,400	39,820	-3.9%
Output (Unit: 1,000 metric tons)	FY2017	FY2018	FY2019	FY2020	FY2021	Comparison with previous fiscal year (%)
Carbon dioxide	6,300	6,500	6,600	63,00	63,40	0.6%
Waste (incinerated and landfill)	21	23	20	21	22	4.4%
Substances with environmental impact	10.6	11.4	11.4	11.1	11.1	0.0%
Industrial wastewater (1,000 of m ³)	44,930	44,150	42,960	40,880	39,270	-3.9%

Energy Consumption

Unit: 1,000 gigajoules	FY2017	FY2018	FY2019	FY2020	FY2021	Comparison with previous fiscal year (%)
Tokuyama Corporation	49,600	49,100	49,200	46,800	46,900	0.2%
Group companies	2,700	2,600	2,700	2,500	2,600	4.0%

GHG Emissions

Unit: 1,000 metric tons	FY2017	FY2018	FY2019	FY2020	FY2021	Comparison with previous fiscal year (%)
Originating from fuel	4,520	4,450	4,480	4,250	4,270	0.5%
Originating from raw materials	1,820	1,800	1,850	1,810	1,800	-0.6%
Originating from waste matter	250	280	250	260	270	3.8%
Group companies	190	180	190	180	200	11.1%

Emissions of SO_x, NO_x, and Soot

Unit: Metric tons	FY2017	FY2018	FY2019	FY2020	FY2021	Comparison with previous fiscal year (%)
SO _x	780	800	810	760	740	-3.3%
NO _x	10,100	10,100	10,220	9,900	9,920	0.2%
Soot	168	122	127	116	125	7.8%

Emissions of PRTR Substances

Unit: Metric tons	FY2017	FY2018	FY2019	FY2020	FY2021	Comparison with previous fiscal year (%)
Tokuyama Corporation	30	34	25	37	47	25.7%
Group companies	37	34	35	35	33	-4.3%

Emissions of Hazardous Air Pollutants

Unit: Metric tons	FY2017	FY2018	FY2019	FY2020	FY2021	Comparison with previous fiscal year (%)
Dichloromethane (methylene chloride)	1.8	1.4	1.4	0.9	1.3	44.4%
Chloroform	1.6	1.2	1.2	2.5	1.1	-26.7%
1,2-Dichloroethane	6.3	10.0	6.2	13.0	21.1	62.3%
Chloroethylene (vinyl chloride)	7.6	6.8	5.2	6.9	12.2	76.8%

Water Intake

Unit: 1,000 of m ³	FY2017	FY2018	FY2019	FY2020	FY2021	Comparison with previous fiscal year (%)
Industrial Water	45,500	44,710	43,530	41,430	39,820	-3.9%
Tap Water Supply	40	64	41	41	41	0.0%
Groundwater	0	0	0	0	0	0.0%
Ocean water	560,640	528,800	557,200	524,700	530,220	1.1%

Effluent Discharged

Unit: 1,000 of m ³	FY2017	FY2018	FY2019	FY2020	FY2021	Comparison with previous fiscal year (%)
Industrial wastewater	44,930	44,150	42,960	40,880	39,270	-3.9%
Engineering Drainage	23,970	24,420	22,180	22,160	25,600	15.5%

Water Pollutant Emissions

Unit: Metric tons	FY2017	FY2018	FY2019	FY2020	FY2021	Comparison with previous fiscal year (%)
COD	121	129	103	124	164	34.7%
Nitrogen	173	159	170	177	159	-10.2%
Phosphorous	2.1	2.3	1.5	2.1	2.1	0.0%

Landfilled and Recycled Waste

	Base year (FY1990)	FY2017	FY2018	FY2019	FY2020	FY2021
Landfilled waste (metric tons)	36,260	390	400	680	980	300
Effective utilization rate (%)	76.9	93.8	93.1	93.9	94.7	94.3
Zero emissions rate (%)	82.4	99.9	99.9	99.8	99.7	99.9

Breakdown of Waste Treatment Methods

Unit: 1,000 metric tons	FY2017	FY2018	FY2019	FY2020	FY2021	Comparison with previous fiscal year (%)
Waste recycled in-house	317	286	288	341	329	-3.5%
Waste recycled externally	26.7	30.2	26.6	23.7	27.7	16.9%
Incinerated waste	22.5	23.0	19.7	19.6	21.2	8.2%
Waste sent to landfills	0.4	0.4	0.7	1.0	0.3	-70.0%
Total waste generated	367	339	335	386	378	-2.1%

Amount of Waste Matter and By-Products Used to Produce Cement

Unit: Kg per metric ton of cement	Base year (FY1991)	FY2017	FY2018	FY2019	FY2020	FY2021
Amount used	227	430	425	417	421	433

Material and Thermal Recycling Amounts in Cement Production

Unit: 1,000 metric tons	Base year (FY1991)	FY2017	FY2018	FY2019	FY2020	FY2021
Material recycling	1,550	1,800	1,786	1,766	1,644	1,665
Thermal recycling	4	79	82	81	84	105

Accident Prevention and Occupational Health and Safety

Accident Prevention and Occupational Health and Safety

Recognizing that safety is the basis for its business activities, Tokuyama practices safety as the first step to maintaining good relations with the communities in which it operates. Based on this approach, the Company carries out stringent accident prevention measures and occupational health and safety initiatives in its efforts to create a positive and safe work environment that is free of accidents.

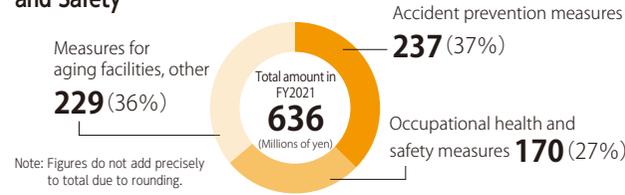
Comprehensive Safety and Accident-Prevention Measures

Tokuyama sets safety management policy, targets and priority measures, and conducts safety and accident-prevention initiatives. Based on the safety management system of the Tokuyama Factory, the Company works to identify and eliminate hazards by assessing risks in work, facilities and processes.

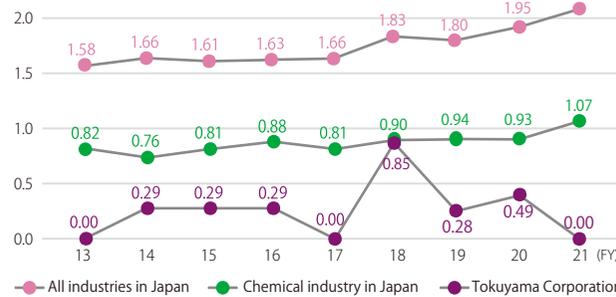
Establishment of Safety Reinforcement Unit

On January 1, 2022, the Safety Reinforcement Unit was set up at the Tokuyama Factory. As a cross-cutting project structure, this organization coordinates with manufacturing divisions and the facility management group as well as contractors to reinforce safety. Focusing on work that is dangerous or has a high physical load, the Unit will work to improve operations with a new perspective that starts with “eliminating, reducing, changing.”

Expenditures for Accident Prevention and Occupational Health and Safety

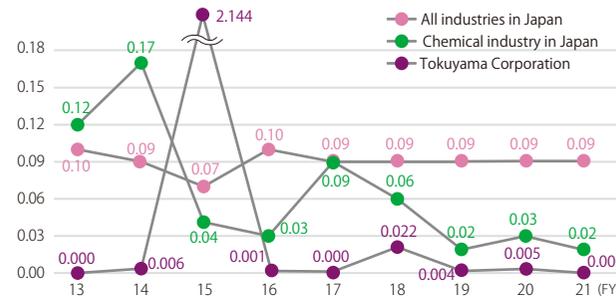


Comparison of Accident Frequency Rates*1



*1. As an indicator of the frequency of industrial accidents, the accident frequency rate is calculated as the number of workers forced to miss work due to an industrial accident per one million cumulative working hours.

Comparison of Accident Severity Rates*2



*2. As an indicator of the magnitude of industrial accidents that have occurred, the accident severity rate is calculated as the number of lost work days due to industrial accidents per 1,000 cumulative working hours.

Safety Management Policy

The Tokuyama Group operates a safety management policy, established the following safety policies, and actively implements safety initiatives as a good corporate citizen.

- Implement safety initiatives involving all employees, under the leadership of upper management.
- Comply with laws, regulations, and internal rules.
- Foster and enhance a culture of safety, for the safety of people, facilities, and the public.
- Create comfortable workplaces to ensure the mental and physical health of the people who work there.

Safety Targets and Fiscal 2022 Priority Measures

In order to achieve the policy objectives, each worksite will reflect the key action items listed below to its safety management activities and actively conduct them.

Policy Objectives

- No compliance violations
- No accidents or accidents requiring work absence
- Reduce the rate of work absences

Key Action Items

- | | |
|--|---|
| Improve process safety management | <ul style="list-style-type: none"> • Strengthen measures to prevent accidents • Improve hazard awareness • Adopt smart industrial safety systems |
| Identify sources of risks and resolve | <ul style="list-style-type: none"> • Improve risk assessment • Respond to risk assessments for chemical substances |
| Make progress in risk management and hazard management | <ul style="list-style-type: none"> • Conduct business activities while minimizing COVID-19 infection • Prepare and respond to natural disasters |
| Promote facilities management | <ul style="list-style-type: none"> • Enhance management of older facilities |
| Promote physical and mental health | |
| Expand to Group companies and awareness building | |

In Harmony with Society

To continue earning trust as an essential member of society, Tokuyama will work in harmony with society to build a better future.

Communication with Stakeholders

Tokuyama emphasizes communication with diverse stakeholders, working in harmony with society to build a sustainable future.

Community Initiatives

As a company with an essential social role, Tokuyama also carries out various activities to maintain good relations with its neighbors. Interaction with local communities is being promoted not just by the Company, but also by employees on their own initiative.

Despite the limitations imposed by the COVID-19 pandemic, Tokuyama conducted the following initiatives in fiscal 2021.

Dialogue with the Community	Continue dialogue with the community by adjusting format to prevent COVID-19 (such as dialogue on paper) Sponsor Tokuyama Summer Festival and Shunan Winter Tree Festival
Cooperate with local governments	Provide a stable supply of power to the Shunan City Office and Tokuyama Station Building (ongoing) Maintain agreement on emergency evacuation sites in case of disaster (Shunan City, ongoing)
Support education	Welcome local middle schools for work experience Donate bookstore gift cards to local elementary and middle schools (Mikage Bunko) Implement outreach projects and science education for local elementary school students Provide science education programs at local events (Setouchi Blue Project, Hydrogen Wakuwaku Mirai Haku exhibition, Workshop Collection in Yamaguchi 2021)

Stakeholders	Main Avenues for Communication
Customers	● ISO9001 ● TV commercials ● Factory tours
Global Environment	● Responsible Care ● Environmental management ● ISO14001 ● Reduction of CO ₂ emissions, energy conservation ● Waste disposal ● Biodiversity initiatives ● Development and provision of environmentally friendly products
Local Communities and Society	● Accident prevention ● Responsible Care Community Dialogue program ● Community volunteers ● Sponsorship of and participation in summer festivals ● Grants to promote science and technology ● Grants for raising the next generation, and safety and disaster prevention activities
Shareholders and Investors	● Briefing session for individual investors ● Briefing session on financial results ● Brief statement of accounts, Annual Securities Report ● General Meeting of Shareholders
Business Partners	● Purchasing management ● CSR purchasing ● Joint Occupational Health and Safety Conference
Employees	● Workplace patrols ● In-house newsletters ● Education and training ● Health and Safety Committee

The Tokuyama Science Foundation provided the following grant to promote science and technology for the next generation.

	FY2017	FY2018	FY2019	FY2020	FY2021
The Tokuyama Science Foundation Grant (thousand yen)	29,550	30,045	36,865	36,350	48,670

[| WEB | CSR Procurement Guidelines](https://www.tokuyama.co.jp/eng/company/purchase_policy.html)
https://www.tokuyama.co.jp/eng/company/purchase_policy.html



[| WEB | Society](https://www.tokuyama.co.jp/eng/csr/society.html)
https://www.tokuyama.co.jp/eng/csr/society.html



Growing Together with Employees

Tokuyama endeavors to help each employee reach their utmost potential and fully leverage these capabilities as an organization, in building a corporate culture that facilitates personal growth alongside corporate growth.

Developing Talent and Promoting Diversity

While pursuing the four values stated in the Tokuyama Vision, the Company is working hard to develop talent and promote diversity. Tokuyama wants all employees to make the most of their unique gifts and abilities.

■ Employee Education

In 2019, Tokuyama established the Human Resources Policy to lay out its expectations for employees and the pathways for their growth, among other things. The aim is to improve the quality of employees, develop their capacity and enhance their skills as independent people, as well as raise up employees who can take proactive, creative action. Under this policy, the Company operates human resource development systems such as global training and the next-generation business leader training (NBL training), among others.

■ Human Resources System

In order to raise employee motivation, Tokuyama ensures that its well-balanced evaluation system is administered fairly so that employees are treated fairly. The Company has also introduced a Role and Qualification Rating System with the aim of reforming the organization's culture by ensuring familiarity with Tokuyama's vision.

This system puts weight on actions such as roles and job behavior and encourages employees to take on challenges.

Moreover, the Company has adopted a multi-layered ranking system to address various job types and working styles, such as

sales, manufacturing and R&D. The system is designed so that employees can choose and change between two courses. With Course C, employees aspiring to future management and specialist positions can be advanced and promoted early depending on their own performance and actions. Employees on Course A support the business foundation as experts in specialized areas and business.

In this system, an assessment of Tokuyama's four values (commitment to customer satisfaction as a profit source; a broader, loftier perspective; employees who constantly surpass their predecessors; integrity, perseverance, a playful spirit and boldness) were added to the HR evaluation items. The HR system itself promotes the achievement of the Tokuyama Vision.

In fiscal 2021, the type of employee and the necessary skills needed for each job type and department were laid out and published within the Company. These will serve as guidelines for employees' skill upgrades and the development of the skills needed for their future careers.

■ Promoting Diversity

Tokuyama is promoting diversity to ensure that all employees can work with energy and succeed. Tokuyama values diversity of knowledge and intelligence and seeks to create workplaces that are pleasant and motivating, while aiming to improve productivity, by reforming the workplace culture.

In fiscal 2021, the Company achieved all of its targets in the Second Action Plan based on Japan's Female Participation and Career Advancement Act, updated in fiscal 2020, including the percentage of management positions held by women. The number of women in the workforce is steadily increasing, and the Company appointed the first woman as an outside director in June 2021.

The Company is also working to improve workplace environments in order to comply with the legal mandate for persons with disabilities to make up at least 2.2% of the entire workforce. The Company also launched new initiatives, including opening Yuyu Terrace in October 2021 as a facility for persons with disabilities

Tokuyama Employees

(Tokuyama Corporation)

		FY2019	FY2020	FY2021
Number of employees	Men	1,849	1,982	2,024
	Women	214	274	291
	Total	2,063	2,256	2,315
Number of new hires	Men	60	61	64
	Women	9	16	15
	Total	69	77	79
Number of mid-career hires	Men	60	57	49
	Women	7	8	3
	Total	67	65	52
Number of rehired individuals*1	Single year	24	35	65
	Total	142	132	186
Average age	Men	42.0	41.8	41.6
	Women	41.3	39.8	40.1
	Average	42.0	41.5	41.4
Average wage of 30 year-old employees in management track position*2 (yen)		328,656	327,471	339,829
Average years of service	Men	19.6	18.7	18.3
	Women	15.3	12.4	12.8
	Average	19.1	17.9	17.6
3-year retention rate (%)		97.6	90.9	92.7
Turnover rate*1(%)	Men	0.66	0.91	1.33
	Women	1.21	1.03	1.92
	Average	0.72	0.92	1.41
Employment rate of people with disabilities (%)		1.87	2.02	2.01
Number of non-Japanese employees		14	15	9
Average annual training cost per employee (yen)		22,000	9,000	20,000
Number of labor union members (Labor union membership rate, %)		1,512 (73.3)	1,734 (76.9)	1,746 (75.4)

*1. Includes workers assigned to group/affiliate companies.

*2. Monthly wage (including base salary, pay for job grade, and allowances)

● Developing Talent and Promoting Diversity

● Health Management Initiatives

Growing Together with Employees

and establishing Yuyu Farm, an agricultural corporation that supports the independence of persons with disabilities and contributes to the local community.

WEB | Developing Talent and Promoting Diversity
<https://www.tokuyama.co.jp/eng/csr/employee.html>



■ Promoting Work-Life Balance

At Tokuyama, employees in workplaces eligible for flextime can choose their workday schedules with no core work-period requirement. The Company is also striving to optimize working hours by tracking and presenting aggregate data based on the computer log details of employees, enabling actual working conditions to be managed.

Under a program to help employees balance work and childcare responsibilities, eligible employees can use shortened working hours from 10 weeks before childbirth until the child starts elementary school, and can also use flextime from the time that pregnancy is determined until the child reaches sixth grade. Paid parental leave is available from birth until the infant reaches age one. Tokuyama provides eligible employees and their managers with paid parental leave information to facilitate the use of leave. Childcare leave is also available until the infant reaches age two,* and 21 employees took this leave in fiscal 2021, including two men.

Employees can also take family care leave for up to two years (legal requirement: 93 days in total) for each family member requiring care. With family care time off (unpaid), regardless of the number of care recipients, it is possible to take off two days a week (legal requirement: five days a year).

To support those on childcare and family care leave and help them eventually make a smooth transition back to work, internal information is shared with them on the intranet. In addition, an employee reinstatement system has been established to allow employees who resigned for childcare or family care reasons to be rehired.

*Legal requirement is the age of one. In certain cases, leave can be taken until the child reaches age two.

Tokuyama Targets to Promote Opportunities for Women

Duration: April 1, 2020–March 31, 2022

Target	Target Value	Performance (April 2019)	Performance (April 2020)	Performance (April 2021)	Performance (April 2022)
Percentage of women among university graduates who are hired	No less than 20% (3-year moving average)	20%	19%	21%	21%
Percentage of women among all assistant managers	No less than 6%	6.1%	6.1%	6.8%	7.0%
Percentage of women among all managers*1	No less than 2%	1.6%	1.8%	2.0%	2.0%
Expand women's areas of responsibility	Sales positions:*2 10 employees All production divisions:*3 20 employees	Sales positions: 9 employees All production divisions:15 employees	Sales positions: 12 employees All production divisions:19 employees	Sales positions: 13 employees All production divisions:28 employees	Sales positions: 13 employees All production divisions:29 employees
Average usage rate of annual paid leave (since 2020)	No less than 75%	—	72.4%	75.2%	75.8%

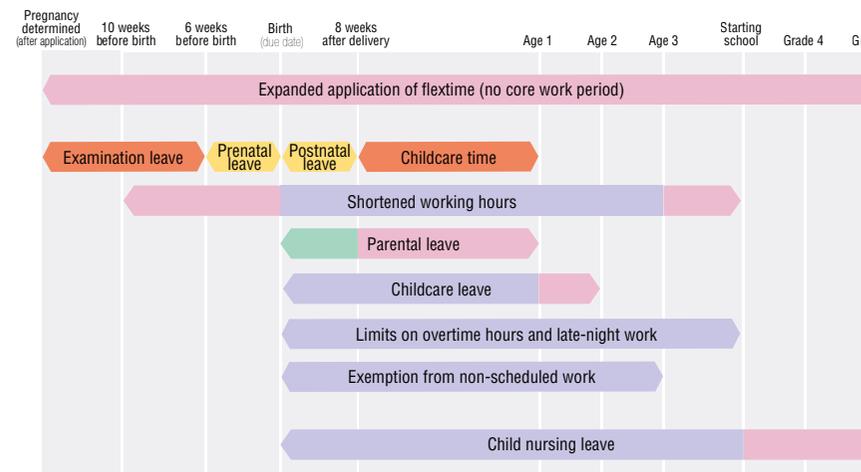
*1. Including positions equivalent to managerial positions

*2. Sales positions include persons externally engaged in direct client services, such as technical sales, quality assurance, etc.

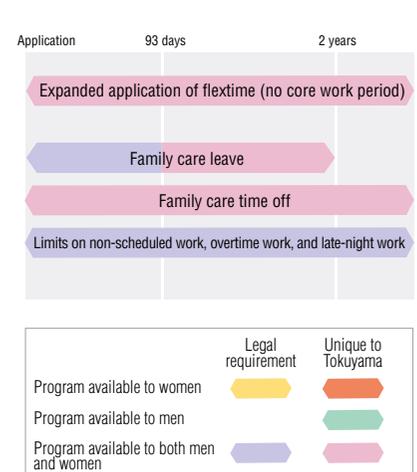
*3. Excluding supervisors

Support Programs for Childbirth, Childcare and Family Care

Childbirth and Childcare Programs



Family Care Programs



Annual Paid Leave Usage and Non-scheduled Working Hours

	FY2018	FY2019	FY2020	FY2021
Annual paid leave, average days used	15.7 days	15.0 days	15.3 days	15.5 days
Annual paid leave, average usage rate	75.6%	72.4%	75.2%	75.8%
Total working hours per year	1,884.4 hours	1,858.7 hours	1,879.0 hours	1,909.3 hours
Non-scheduled working hours, average per month	9.8 hours	10.3 hours	10.3 hours	11.03 hours

Usage of Childcare and Family Care Leave, Etc.

	FY2018	FY2019	FY2020	FY2020
Number of employees taking childcare leave	12	12	23	21
Return to work rate	100.0%	100.0%	100.0%	100.0%
Number of employees taking parental leave	33	65	100	94
Number of employees taking family care leave	2	1	1	1
Number of employees taking family care time off	1	1	1	3
Number of flextime users	50	52	48	65

WEB | Work-Life Balance Support Programs
<https://www.tokuyama.co.jp/eng/csr/employee.html>



Health Management Initiatives

Tokuyama is engaged in health management to build workplaces that help to enhance the physical and mental health of employees and their families and support worker performance.

In addition, under the two goals of promoting employees' mental and physical health and preventing lifestyle diseases, Tokuyama carries out a range of activities with an emphasis on improving individual health awareness, maintaining or reducing the rate of findings on health checkups, reducing the rate of leave taken due to health problems, promoting the Smart Life Program, health guidance and lifestyle disease countermeasures, and mental health care.

■ Implementing the Smart Life Program

The Company continues to take smoking prevention measures through the Smart Life Program, which aims to maintain and enhance employees' health. To prevent passive smoking, Tokuyama has closed all interior smoking areas for employees by the end of March 2021 (with the exception of shared smoking areas in the headquarters and branch buildings).

Prohibitions on smoking on site and inside buildings, including at contractors' business sites, have been imposed at the Tsukuba Research Institute and Kashima Factory, and are expected to be imposed at the Tokuyama Factory by the end of fiscal 2022.

In addition, Tokuyama promotes support for smoking cessation (such as outpatient treatment for smoking cessation, subsidies for smoking cessation treatment costs, and the provision of books on smoking cessation), health education by industrial doctors and industrial nurses, and the establishment of a no-smoking day at all Group companies.

■ Offering Health Guidance and Fighting Lifestyle Diseases

Working with the Health Insurance Association, the Company implemented specific health guidance, and in the health check-ups

Health Management Declaration

Tokuyama is committed to health management with the aim of improving the mental and physical health of employees and their families and creating a workplace where it is comfortable to work.

Hiroshi Yokota
 Representative Director,
 President and Executive Officer
 Tokuyama Corporation

Basic policy

1. We place the highest priority on the physical and mental health of our employees and their families, and we actively strive to ensure primary prevention (preventing the occurrence of illness or infirmity). Among our efforts, we are prioritizing initiatives to address the issue of smoking, which is known to have very severe health impacts.
2. In cooperation with the Tokuyama Health Insurance Association, we actively support and foster the mental and physical health of our employees and their families.
3. We are actively involved in educational initiatives to raise employees' awareness about their own health and in providing guidance for health maintenance and promotion.
4. Outcomes of various initiatives are verified and continuous improvements made.

in 2021, improvements were seen in the 42% of employees who received health guidance.

In addition to conducting follow-up interviews on health checkup results when needed, and ensuring that supervisors encourage employees to do follow-up checkups when needed, the Company also holds individual interviews with employees who are at high risk for lifestyle diseases and other illnesses, and provides ongoing support. Throughout the year, industrial health staff also provide outreach health education (mini workshops in the workplace).

■ Promoting Mental Health Care

Tokuyama aims for early detection and response to mental health issues by giving occupational stress tests to all employees, interviewing people with high levels of stress, and offering enhanced consultation services.

In fiscal 2021, mental health training was provided via e-learning, with a 94.4% participation rate among those eligible. The Company is working to reduce stress, provide self-care education and improve the workplace environment by using group analysis results.

■ Recognized as Certified Health & Productivity Management Outstanding Organization (White 500) for 2022 (Large Enterprise Category)

In March 2022, Tokuyama was recognized for the first time as a Certified Health & Productivity Management Outstanding Organization — in the elite “White 500” category — under the large enterprise category in the 2022 Certified Health and Productivity Management Organization Recognition Program, a program run jointly by Japan’s Ministry of Economy, Trade and Industry and Nippon Kenko Kaigi. This was the third consecutive year that the Company was recognized as a Certified Health & Productivity Management Outstanding Organization.



[WEB | Creating a Health-Conscious Workplace](https://www.tokuyama.co.jp/eng/csr/health_management.html)
https://www.tokuyama.co.jp/eng/csr/health_management.html



Category	FY2018	FY2019	FY2020	FY2021
Percentage of employees receiving regular health checkup	100	100	100	100
Percentage of abnormal medical exam results	44.1	47.9	45.3	46.2
Percentage of employees who were retested or received a detailed examination	85.3	88.1	69.0	81.0
Percentage of employees given specific health guidance *1	80.2	79.0	84.3	85.0
No. of employees given specific health guidance *1	253	252	210	251
Percentage of employees at ideal weight (%) Excluding workers assigned to group/affiliate companies * Employees with BMI of less than 18.5-25	73.8	72.5	72.6	72.6
Percentage of employees who regularly exercise (%)	28.3	29.4	30.5	29.0
Percentage of smokers	23.5	22.6	20.3	18.9
Percentage of employees receiving stress checkup	95.1	96.1	96.9	96.9
Of which, percentage with high stress (%)	7.1	7.7	7.6	8.1
Percentage of presenteeism losses (%) *2	—	—	—	9.3
Work engagement *3	—	—	—	3.0
Sickness/injury absence rate *4 (Absence rate due to mental health issue)	0.48 (0.27)	0.58 (0.34)	0.64 (0.35)	0.66 (0.41)
Investment per employee in mental and physical wellbeing initiatives (yen)	30,000	28,000	25,000	28,000
No. of Family Health Counseling sessions conducted	51	118	101	79
No. of mental health workshops conducted (No. of participants)	11 (239)	19 (508)	8 (733)	e-Learning (2,161)

* 1. Includes workers assigned to group/affiliate companies.

* 2. Presenteeism refers to a situation in which employees go to work while suffering from illness and other symptoms, which leads to a decline in operations and work productivity. The presenteeism loss rate is estimated using the QQmethod.

* 3. Estimated using the three levels of the Utrecht Work Engagement Scale (UWES).

* 4. Absence rate = No. of extended absence days / (Prescribed working days × No. of employees) × 100

Number of extended absence days refers to the total number of days an employee has been absent from work due to illness/injury for four or more consecutive days.

- Risk Management
- Compliance
- Business Continuity Management (BCM)

Corporate Governance

Tokuyama sees internal control as the basis for CSR and works to strengthen corporate governance in order to further increase the confidence of stakeholders and enhance corporate value. In addition, the Company is thoroughly implementing risk management and compliance group-wide, as the core elements of internal control.

Risk Management

In order to deliver on its social responsibilities and ensure its business is sound and sustainable, Tokuyama carries out various initiatives to strengthen risk management and ensure thorough compliance.

The Risk Management and Compliance Committee, which operates under the CSR Promotion Council, monitors social conditions and works with committees to consider trends and factors that have been newly identified or whose degree of impact has changed, to identify risks, and to make decisions on the committee of experts that will respond.

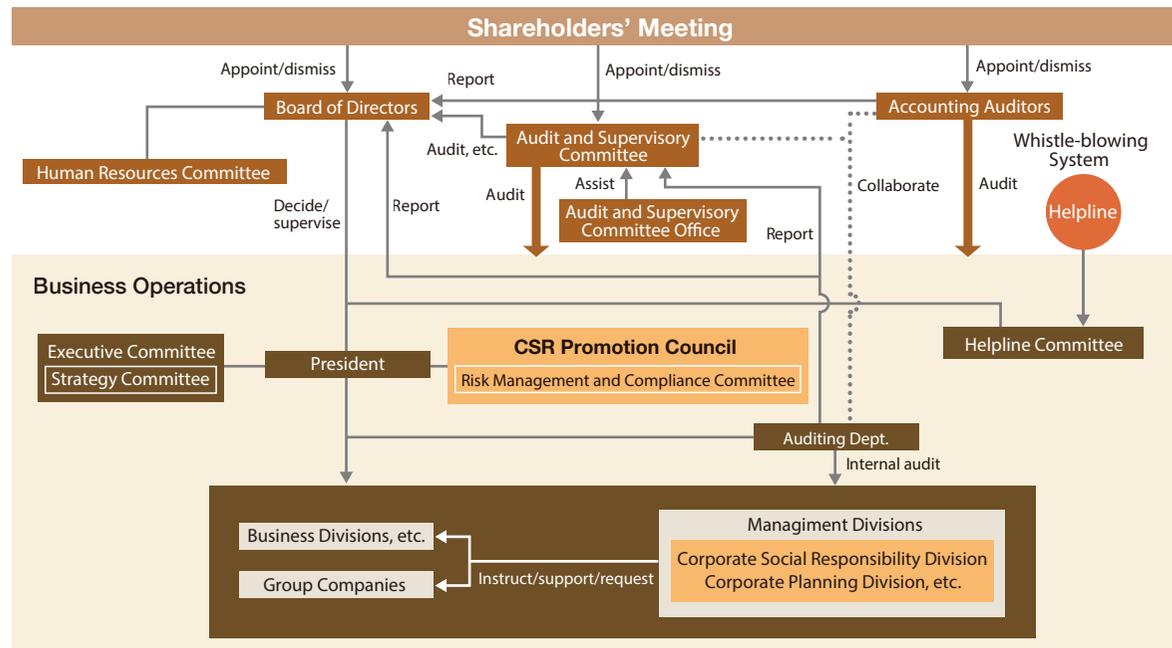
It also has expert committees focused on risk management and

compliance in critical and specialized areas to ensure management through the deliberation of key issues. The Company has designated a unit responsible for regulations concerning management of the risk of loss and conducts activities based on the management regulations.

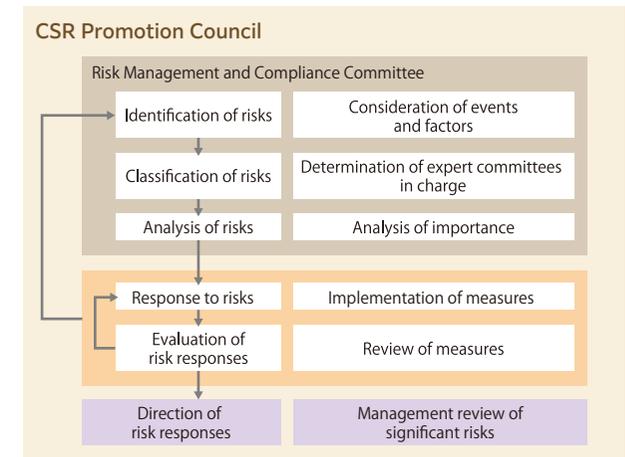
■ Sustainability Committee

The Risk Compliance Committee considered the risks facing Tokuyama and concluded that climate change risks and human rights risks, among others, could not be fully addressed within the scope of the existing committees. Accordingly, a new Sustainability Committee was established in fiscal 2022 to address these risks.

Corporate Governance Structure



Process for Identifying Company-Wide Risk Issues



| WEB | Corporate Governance

https://www.tokuyama.co.jp/eng/csr/risk_management.html

<https://www.tokuyama.co.jp/eng/company/governance/index.html>



- Risk Management ● Compliance
- Business Continuity Management (BCM)

Risk Management Framework



Expert Committees

Expert Committee	Principal Risks Overseen	No. of conducted
Financial Reporting Committee	Financial and accounting risks	Eight sessions
Fair Trade and Competition Committee	Risk of violation of antitrust legislation and risk of violation of unfair competition prevention legislation	One session
Security Trade Committee	Trade control risks (deficiencies in security trade control)	One session
Information Security Committee	Information security risks (cyberattacks, information leaks, system failures, etc.)	Two sessions
Environmental Committee	Environmental risks (outflow of hazardous pollutants, noise and odor, illegal disposal or illegal treatment of waste, etc.)	One session
Safety Committee	Risk of accidents (fires, explosions, leaks, etc.) and risk of workplace accidents	One session
Product Safety and Quality Assurance Committee	Quality risks (management of chemical substances contained in products, improper or false labeling, logistics accidents, etc.)	One session
Sustainability Committee	Climate change risks, human rights risks, etc.	newly organised

Business Continuity Management (BCM)

In order to keep important businesses and operations going even in unforeseen circumstances, Tokuyama practices business continuity management in normal times. This includes formulating and revising the BCP, securing budgets and resources for business continuity, and taking proactive steps to improve business continuity capabilities.

In February 2020, Tokuyama established a Crisis Response Headquarters to address the novel coronavirus and has taken measures to ensure the safety of employees worldwide and business continuity.

To prevent the further spread of COVID-19 in Japan, Tokuyama supported telecommuting by providing temporary work-from-home provisions in addition to the conventional telecommuting program, setting a goal of reducing workplace attendance by 70% or more.

Conditions of temporary work-from-home provisions	Region declared under state of emergency	Work from home if it is feasible in their position or workplace
	Region not declared under state of emergency	Recommend work from home if it is feasible in their position or workplace
No. of employees using temporary work-from-home provisions		958 (FY2021)

Compliance

Tokuyama Group understands “compliance” to have a broad meaning, including not only compliance with laws and internal rules but also behaving sensibly in a manner that conforms with corporate ethics and meets social expectations.

To communicate and spread awareness of compliance throughout the Group, Tokuyama provides training on legal obligations

for new directors and auditors of Group companies and a variety of compliance training programs for employees. In 2021, these training programs were held on 60 occasions. The Company also implemented a variety of e-learning programs focused on Mental Health Management, information security.

Whistle-Blowing System

An internal helpline has been established to enable safe, anonymous reporting and consultation regarding compliance violations involving the Tokuyama Group (including potential violations) without fear of unfavorable treatment. Reporting and consultation can be carried out by post, email, or phone.

The helpline is operated with due consideration for the protection of whistleblowers. Employees can use the helpline without disclosing their name or department to the Company, and a female attorney is also available for consultation. In fiscal 2021, the Company endeavored to expand the internal reporting system by setting the system up to be compatible with Japan’s revised Whistleblower Protection Act, familiarizing employees with the system, and ascertaining the number of reports and consultations in the Tokuyama Group overall.

	FY2018	FY2019	FY2020	FY2021
Number of reports*	36	29	24	34

* Includes reports on workplace harassment and reports from Group companies in Japan.

Program to Prevent Harassment

Harassment itself is a compliance violation, and there are also cases in which major problems are behind harassment, such as inappropriate operations. Given this, the Tokuyama Group started a Harassment Prevention Program to wipe out harassment from the Group. As one of these efforts, we have designated December as Harassment Prevention Enhancement Month and are conducting educational activities.

- Tokuyama Factory
- Kashima Factory
- Sun Arrow Kasei Co., Ltd. /
Tokuyama Polypropylene Co., Ltd.

Tokuyama Factory

Location: 1-1, Mikage-cho, Shunan-shi, Yamaguchi, Japan
 Number of employees: 1,846 (As of March 31, 2022)
 Total site area: 1.91 million m²
 Main products: Cement, inorganic chemical products, organic chemical products, High-purity polycrystalline silicon, fumed silica, High-purity Aluminum Nitride (AlN), polyvinyl chloride, and other products

Tokuyama Factory General Manager :
Yasushi Okuno



Performance Data

	Unit	FY2017	FY2018	FY2019	FY2020	FY2021
SOx emissions	Metric tons	780	800	810	760	740
NOx emissions	Metric tons	10,100	10,100	10,220	9,900	9,920
Soot emissions	Metric tons	168	122	127	116	125
Industrial water consumption	Million of m ³	44.5	44.7	43.5	41.4	39.8
Industrial wastewater	Million of m ³	44.9	44.1	42.9	40.9	39.3
COD level	Metric tons	119	127	101	122	165
Total nitrogen discharged	Metric tons	173	159	170	177	159
Total phosphorous discharged	Metric tons	2.1	2.3	1.5	2.1	2.1
PRTR-designated substance emissions	Metric tons	29	33	24	35	45
Waste generated	Thousand metric tons	366	339	335	385	378
Waste sent to landfills	Metric tons	382	397	631	922	258
Energy consumption	Thousand gigajoules	49,500	49,000	49,000	46,600	46,800
CO ₂ emissions (originating from fossil fuel)*	Thousand metric tons	4,500	4,430	4,460	4,230	4,250
Complaints	Cases	0	3	0	1	0

*Calorific values were recalculated for 1990 and forward, in accordance with the revision of Japan's Act on Rationalizing Energy Use.

Substances are listed in descending order of emission levels; substances with no emissions are listed in order of the regulatory number.

Water refers to public waters.

Amount transferred indicates the sum of the quantity transferred to sewage systems and the quantity subject to intermediate treatment

Total figures have been rounded to the first decimal place.

Emissions and Transfer of Specific PRTR-Designated Substances in Fiscal 2021

Unit: metric tons (mg-TEQ equivalency for dioxins)

Substance name	Regulatory number	Amount of emissions				Amount transferred
		Atmospheric	Water	Soil	Subtotal	
1,2-Dichloroethane	157	21.1	0.01	0.0	21.1	0.0
Chloroethylene (vinyl chloride)	94	12.2	0.0	0.0	12.2	0.0
Chloromethane (methyl chloride)	128	2.8	0.0	0.0	2.8	0.0
Chlorodifluoromethane	104	0.8	0.0	0.0	0.8	0.0
Cresol	86	0.0	1.8	0.0	1.8	0.0
Toluene	300	2.3	0.0	0.0	2.3	0.0
Dichloromethane (methylene chloride)	186	1.2	0.0	0.0	1.2	0.0
Chloroform	127	0.4	0.0	0.0	0.4	0.0
Water-soluble compounds of zinc	1	0.0	0.7	0.0	0.7	0.0
1,2-Epoxypropane (propylene oxide)	68	0.6	0.0	0.0	0.6	0.0
1,2-Dichloropropane	178	0.4	0.0	0.0	0.4	156.2
Hydrazine	333	0.0	0.0	0.0	0.0	0.0
1,2,4-trimethylbenzene	296	0.3	0.0	0.0	0.3	0.0
Xylene	80	0.3	0.0	0.0	0.3	0.0
Carbon tetrachloride	149	0.1	0.0	0.0	0.1	0.0
1-Bromopropane	384	0.0	0.0	0.0	0.0	0.7
2,2-Azobisisobutyronitrile	16	0.0	0.0	0.0	0.0	0.0
Water-soluble copper salt	272	0.0	0.0	0.0	0.0	0.0
Hydrogen fluoride and its water-soluble form	374	0.0	0.0	0.0	0.0	0.0
Benzene	400	0.001	0.0	0.0	0.001	0.0
Boron compounds	405	0.0	0.0	0.0	0.0	3.3
Methylnaphthalene	438	0.05	0.0	0.0	0.05	0.0
Dioxins	243	4.6	2.1	0.0	6.7	0.0
Total (excluding dioxins)		42.6	2.5	0.0	45.0	160.1

- Tokuyama Factory
- **Kashima Factory**
- Sun Arrow Kasei Co., Ltd. /
Tokuyama Polypropylene Co., Ltd.

Kashima Factory

Location: 26 Sunayama, Kamisu-shi, Ibaraki, Japan
 Number of employees: 123 (As of March 31, 2022)
 Total site area: 101,000m²
 Main products:

Produced by Tokuyama Corporation

Bulk pharmaceuticals for anti-dizziness drugs, anti-hypertensive agents, eye drops, allergy medicines, treatments to improve digestive functions, antipsychotics; optical materials (hard coating solutions for plastic lenses, photochromic dye materials)

Produced by Tokuyama Dental Corporation

Dental materials (composite resins, cement and adhesives, rebasing and relining materials, impression materials, and investment materials)

Kashima Factory General Manager:
Kazumasa Itonaga



Performance Data

	Unit	FY2017	FY2018	FY2019	FY2020	FY2021
Industrial water consumption	Thousand metric tons	39	25	27	26	24
Effluent discharged	Thousand metric tons	54	39	42	43	49
COD level	Metric tons	2	2	2	2	2
PRTR-designated substance emissions	Metric tons	2	1	1	2	2
Waste generated	Metric tons	761	831	896	1,101	1,304
Waste sent to landfills	Metric tons	9	8	11	6	10
Energy consumption*	Thousand gigajoules	39	36	36	34	38
CO ₂ emissions (originating from fossil fuel)*	Metric tons	2,271	2,196	2,221	2,330	2,611
Complaints	Cases	0	0	0	0	0

*Calorific values were recalculated for 1990 and forward, in accordance with the revision of Japan's Act on Rationalizing Energy Use.

Emissions and Transfer of Specific PRTR-Designated Substances in Fiscal 2021

Unit: metric tons

Substance name	Regulatory number	Amount of emissions				Amount transferred
		Atmospheric	Water	Soil	Subtotal	
Chloroform	127	0.6	0	0	0.6	51.1
Dichloromethane	186	0.6	0	0	0.6	2.7
Acetonitrile	13	0.4	0	0	0.4	14
Toluene	300	0.3	0	0	0.3	44.8
1,4-dioxane	150	0	0	0	0	0
N,N-Dimethylacetamide	213	0	0	0	0	0
N,N-Dimethylformamide	232	0	0	0	0	0.3
Water-soluble salts of bromic acid	235	0	0	0	0	0
2-Vinylpyridine	338	0	0	0	0	0.6
Boron compounds	405	0	0	0	0	0.1
Methyl methacrylate	420	0	0	0	0	0
Total		1.9	0	0	1.9	113.6

All figures are numerical sums for Tokuyama Corporation and Tokuyama Dental Corporation.

Substances are listed in descending order of emission levels; substances with no emissions are listed in order of the regulatory number.

Water refers to public waters.

Amount transferred indicates the sum of the quantity transferred to sewage systems and the quantity subject to intermediate treatment.

Total figures have been rounded to the first decimal place.

- Tokuyama Factory
- Kashima Factory
- Sun Arrow Kasei Co., Ltd. /
Tokuyama Polypropylene Co., Ltd.

Tokuyama recognizes that its group companies must be fully engaged with the issues addressed by its Responsible Care activities. The Company has concluded a CSR Management Agreement with its manufacturing subsidiaries in and outside of Japan and is providing them with assistance to carry out these activities. The Company collects data from group companies on their environmental impact, safety management, and other indicators, and conducts safety, environmental, and quality audits at several subsidiaries each year. In this way, Tokuyama is closely following the Responsible Care activities at each company and ensuring that they are complete. Tokuyama also shares news on regulatory trends and other relevant information with its group companies, and helps them acquire ISO 9001 and ISO 14001 certification.

8 Group Companies with ISO 9001 and/or ISO 14001 Certification

Group Company	ISO9001	ISO14001
Excel Shanon Corporation	●	—
Tohoku Shanon Corporation	●	—*1
A&T Corporation	—*2	●
Tokuyama Dental Corporation	—*2	●

Group Company	ISO9001	ISO14001
Sun Arrow Kasei Co., Ltd.	●	●
ASTOM Corporation	●	●
Shin Dai-ichi Vinyl Corporation	—	●
Tokuyama Polypropylene Co., Ltd.	●	●

●=Acquired certification

●=Certification acquired by a worksite of the group company

*1=Acquired EcoAction21 certification

*2=Acquired ISO 13485 certification

Sun Arrow Kasei Co., Ltd.

Established: February 1st, 1999
 Shareholders: Tokuyama Corporation 100%)
 Head office: 1-1 Harumi-cho, Shunan-shi, Yamaguchi, Japan
 Business activities: Manufacture and sale of polypropylene resin and flexible polypropylene resin



Plant Manager : Yasuto Yasuzawa
 Location: 1-2 Harumi-cho, Shunan-shi, Yamaguchi, Japan
 Number of employees: 28
 Total site area: 3,280m²

Performance Data

	Unit	FY2017	FY2018	FY2019	FY2020	FY2021
Power consumption	Thousand kilowatt hours	2,533	2,631	2,633	2,512	2,617
Waste plastic produced	Metric tons	128	171	152	142	155
Waste plastic effectively used	Metric tons	128	171	152	142	155
Waste sent to landfills offsite for disposal	Metric tons	0	0	0	0	0
Steam usage	Metric tons	240	240	240	240	240
Industrial water consumption	Thousand metric tons	65	65	65	65	65

Tokuyama Polypropylene Co., Ltd.

Established: April 2, 2001
 Shareholders: Tokuyama Corporation (50%), Prime Polymer Co., Ltd. (50%)
 Head office: 1-1 Harumi-cho, Shunan-shi, Yamaguchi, Japan
 Business activities: Manufacture and sale of polypropylene resin and flexible polypropylene resin



Plant Manager : Shuichi Masuda
 Location: 1-1 Harumi-cho, Shunan-shi, Yamaguchi, Japan
 Number of employees: 65
 Total site area: 70,997m²

Performance Data

	Unit	FY2017	FY2018	FY2019	FY2020	FY2021
Industrial water consumption	Thousand metric tons	378	343	352	302	375
Waste generated	Metric tons	35	66	40	43	42
Waste sent to landfills	Metric tons	0	1.6*	0	2.0*	0
Unit energy consumption index (fiscal 2002=100)	%	69	70	78	73	69

*Year with periodic maintenance