

# TOKUYAMA Sustainability Data Book 2021

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*Sustainability Data Book 2021* reports key data on Tokuyama's CSR activities in fiscal 2020.

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/csr/>



- 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](https://www.tokuyama.co.jp/eng/csr/responsible_care.html)



### Priority Tasks and Results of Responsible Care Activities in Fiscal 2020

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"> <li>● Comply with legal requirements and other regulations</li> <li>● Achieve zero environmental accidents</li> <li>● Achieve targets for reducing environmental impact</li> </ul> | <ul style="list-style-type: none"> <li>● Strictly complied with legal requirements</li> <li>1 incident exceeding regulatory limits set by Air Pollution Control Act</li> </ul>   | B                            |
|  |   | <ul style="list-style-type: none"> <li>● No environmental accidents</li> </ul>   | A                            |
|  |   | <ul style="list-style-type: none"> <li>● Reduced or maintained levels of emissions of substances of concern</li> </ul>   | A                            |
|  |   | <ul style="list-style-type: none"> <li>● Reduced per-unit energy consumption (KPI: 3% improvement compared with FY2005 levels)</li> <li>8.9% improvement compared with FY2005 levels</li> <li>● Zero emissions to landfills (KPI: Maintain 99.9% reuse/recycling rate)</li> <li>Zero emissions of industrial waste to landfills: 99.7% reuse/recycling rate</li> </ul> | B                            |
| Safety and Accident Prevention<br>Occupational Health and Safety | <ul style="list-style-type: none"> <li>● Achieve zero legal violations</li> <li>● No accidents or accidents requiring work absence</li> <li>● Reduce rate of work absences</li> </ul>                                 | <ul style="list-style-type: none"> <li>● 1 recommendation for rectification measures under Japan's Industrial Safety and Health Act</li> </ul>   | B                            |
|  |   | <ul style="list-style-type: none"> <li>● 2 fire accidents</li> <li>● Employees: 2 accidents requiring work absence</li> <li>● Improved safety management level</li> <li>● Identified and reduced/eliminated hazards and reduced risks of accidents</li> <li>● Promoted risk and hazard management</li> <li>● Promoted physical and mental health</li> </ul>            | B<br>B<br>A<br>A<br>A<br>A   |
| Chemical Product Safety  | <ul style="list-style-type: none"> <li>● Ensure product safety</li> </ul>   | <ul style="list-style-type: none"> <li>● Conducted inspections of products and labeling</li> <li>● Upgraded safety data sheet (SDS) management</li> <li>● Addressed regulations on chemicals in and outside of Japan</li> </ul>  | A<br>A<br>A                  |
| Build Relations of Trust with Local Communities and Society      | <ul style="list-style-type: none"> <li>● Participate in community events</li> <li>● Establish a good reputation in society</li> </ul>   | <ul style="list-style-type: none"> <li>● Participated in community volunteer activities</li> <li>● Held dialogues with the community on Responsible Care</li> <li>● Factory tours*</li> </ul>  | A<br>A<br>— *                |
| Promote Responsible Care at Group Companies                      | <ul style="list-style-type: none"> <li>● Expand the scope of Responsible Care activities</li> </ul>   | <ul style="list-style-type: none"> <li>● Conducted safety, environment, and quality audits</li> <li>● Shared Responsible Care information via an online newsletter, etc.</li> <li>● Appropriately addressed regulations on chemicals in countries outside Japan</li> </ul>   | A<br>A<br>A                  |

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

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Responsible Care

## Quality Management System

As an internationally competitive company, Tokuyama 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 its customers.

It has been 19 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 fiscal 2020 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

As an internationally competitive company, Tokuyama Corporation always puts its customers first and to ensure their satisfaction, provides products and services that accurately meet their needs and expectations. To achieve these goals, the Company complies with laws and regulations and continuously improves the effectiveness of its quality management system.

Environmental Initiatives

## 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 Management

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

### Tokuyama Environmental Management Policy

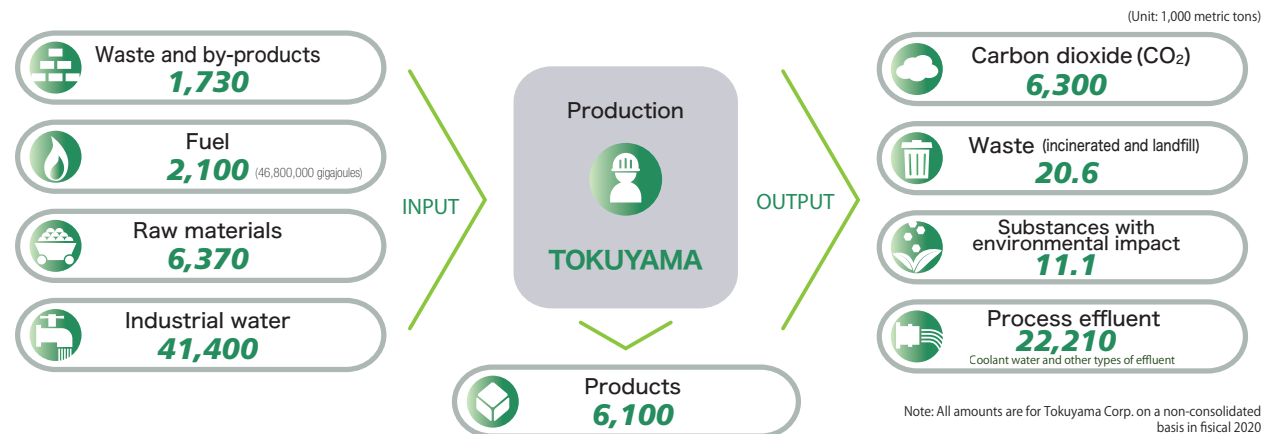
#### Three-Year Policy (FY2021–2023)

Tokuyama actively undertakes global environmental conservation and strives to help build a sustainable society based on its Basic Philosophy of Responsible Care and the following policies.

#### Focus Items in Fiscal 2021

- Strictly comply with legal requirements, etc.
- Continue zero environmental accidents
- Reduce environmental impact
  - Maintain or reduce emission levels of environmentally hazardous substances
  - Promote zero waste emissions
- Combat climate change
  - 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

### Flow of Materials in Business Activities



- Environmental Management
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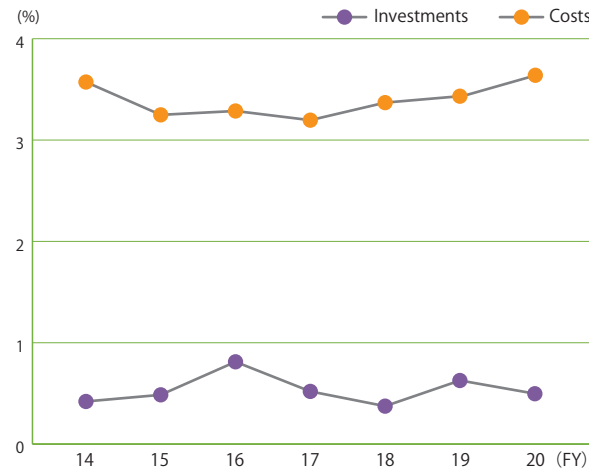
## ■ Environmental Accounting

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.

### Fiscal 2020 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.                  | 179                           | 4,321               |
|                                | Global Environmental Conservation | Remodeling and upgrade of equipment for reducing CO <sub>2</sub> , upgrade of freon removal equipment, etc.                  | 16                            | 474                 |
|                                | Resource Recycling                | Installation of waste disposal facilities, upgrade of equipment in waste disposal facilities, PCB waste disposal costs, etc. | 688                           | 1,335               |
| Upstream and Downstream Costs  |                                   |  | 0                             | 1                   |
| Management Activity Costs      |                                   | Installation and upgrade of equipment for environmental monitoring and analysis  | 17                            | 257                 |
| Research and Development Costs |                                   |  | 0                             | 0                   |
| Social Activity Costs          |                                   | Greenification and beautification measures<br>Production of CSR report   | 0                             | 82                  |
| Costs for Environmental Damage |                                   | Imposition, management of a former mining site   | 0                             | 100                 |
| Total                          |                                   |  | 899                           | 6,568               |

### Change in Environmental Accounting (Ratio to Sales)



## ■ 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/2020csrpdf_4_e.pdf)

[https://www.tokuyama.co.jp/eng/csr/pdf/2020csrpdf\\_4\\_e.pdf](https://www.tokuyama.co.jp/eng/csr/pdf/2020csrpdf_4_e.pdf)



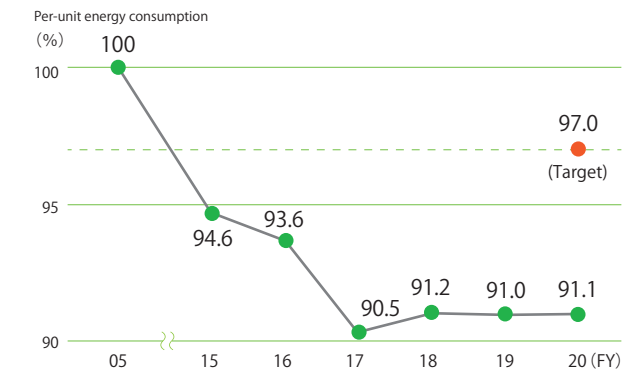
## Helping to Fight Global Warming

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

In fiscal 2020, per-unit energy consumption remained level with the previous fiscal year despite lower operating rates caused by the COVID-19 pandemic, thanks to the steady implementation of energy conservation measures and use of non-coal energy sources. As a result, the Company has achieved the annual target of reducing its per-unit energy consumption by 3% from fiscal 2005 levels.

### Unit Energy Consumption Index\*

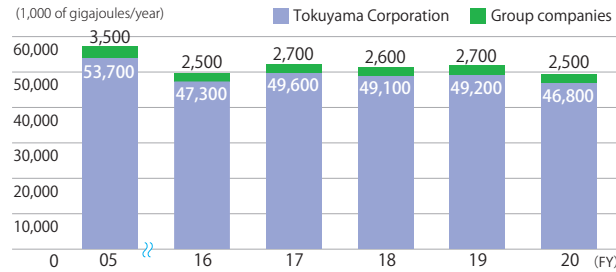


\* The unit energy consumption index is calculated using a method recommended by the Japan Chemical Industry Association (JCIA).

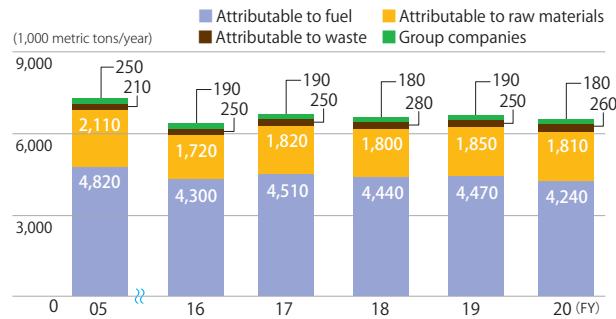
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Environmental Initiatives

Energy Consumption



CO<sub>2</sub> 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 1.72 million metric tons, a decrease of 70,000 metric tons from fiscal 2019. The decrease was mainly due to reducing 30,000 metric tons of Category 1 emissions and 10,000 metric tons each of Category 2 and Category 4 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 CO<sub>2</sub> emissions throughout supply chains.

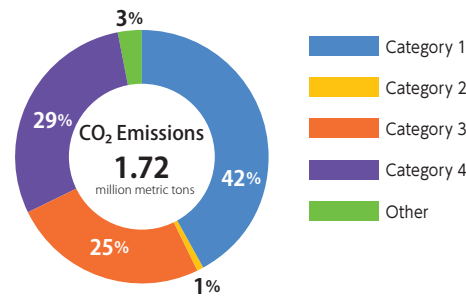
CO<sub>2</sub> Emissions by Scope

(10,000 metric tons)

|   | FY2019 | FY2020 |
|---|--------|--------|
| Scope 1 (Direct CO <sub>2</sub> emissions)          | 655    | 629    |
| Scope 2 (Energy indirect CO <sub>2</sub> emissions) | 3      | 4      |
| Scope 3   | 179    | 172    |

Third-party verification of fiscal 2019 Scope 1 and Scope 2 data was conducted in fiscal 2020.

Scope 3 CO<sub>2</sub> Emissions by Category



Guidelines: *Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain* (Ver. 2.3), December 2017, Ministry of the Environment and Ministry of Economy, Trade and Industry, Government of Japan

CO<sub>2</sub> Emissions Unit Database: Emissions Unit Value Database for Calculating Greenhouse Gas Emissions, etc., by Organizations Throughout the Supply Chain (Ver. 3.1), March 2021; 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.

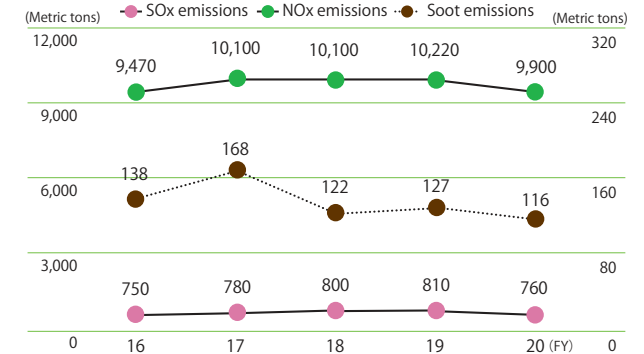
Reducing Substances with Environmental Impact and Waste

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<sub>x</sub>) and nitrogen oxides (NO<sub>x</sub>), Tokuyama equips boilers, cement kilns, and other pollutant-generating facilities with flue gas desulfurizers, denitration equipment, low-NO<sub>x</sub> burners, and high-performance dust collectors.

Emissions of SO<sub>x</sub>, NO<sub>x</sub>, and Soot



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## Environmental Initiatives

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

The substances handled in fiscal 2020 included 30 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

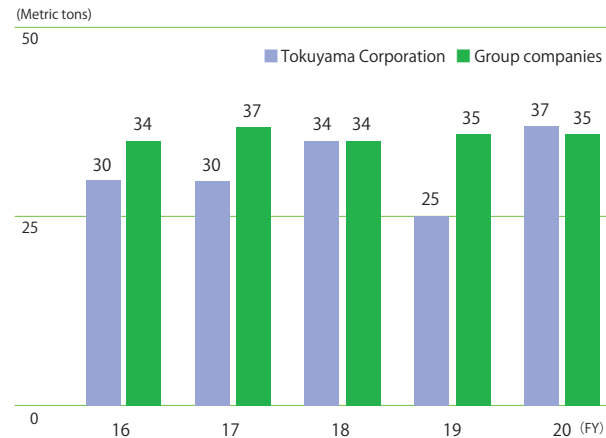
The Company finished disposing of all high-concentration PCB waste from transformers and condensers. High-concentration PCB waste from ballasts will be fully disposed of by the end of fiscal 2021. Tokuyama will systematically dispose of low-concentration PCB waste, while Group companies fully disposed of their low-concentration PCB waste.

### Amounts of Industrial Effluent and Wastewater

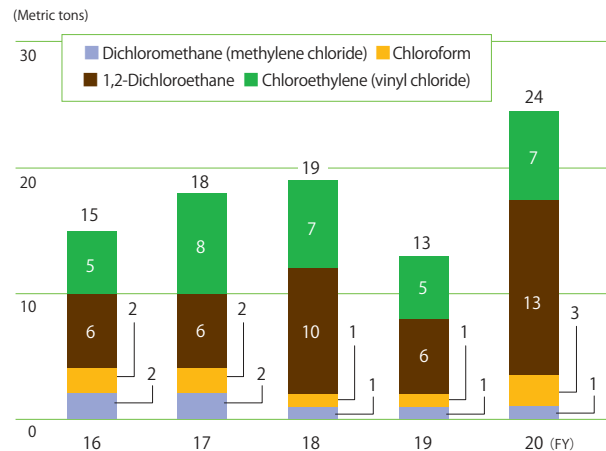
The Tokuyama Factory follows a stringent system for monitoring industrial effluent and purifying wastewater using treatment equipment in order to comply with regulatory standards and limits set by the local government, as well as the Company's own standards, which are even stricter. The factory also 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.

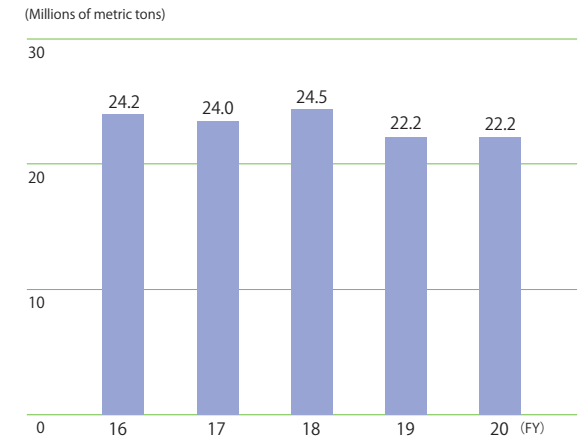
### Emissions of PRTR Substances



### Emissions of Hazardous Air Pollutants



### Discharge of Industrial Effluent



### Water Intake

(1,000 of m<sup>3</sup>)

|                  | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 |
|------------------|--------|--------|--------|--------|--------|
| Tap Water Supply | 37     | 40     | 64     | 41     | 41     |
| Groundwater      | 0      | 0      | 0      | 0      | 0      |
| Industrial Water | 44,110 | 45,500 | 44,710 | 43,530 | 41,430 |

### Water Pollutant Emissions

(Metric tons)

|            | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 |
|------------|--------|--------|--------|--------|--------|
| COD        | 116    | 121    | 129    | 103    | 124    |
| Nitrogen   | 145    | 173    | 159    | 170    | 177    |
| Phosphorus | 2.1    | 2.1    | 2.3    | 1.5    | 2.1    |

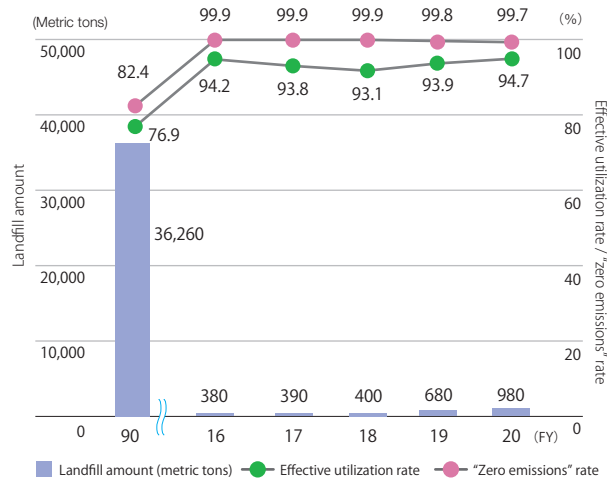
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Environmental Initiatives

## Reducing Waste and Managing Waste Recycling

The effective utilization rate for waste and the “zero emissions” rate remained high in fiscal 2020, due to efforts to reduce the volume of waste and comprehensive recycling efforts.

### Landfilled and Recycled Waste

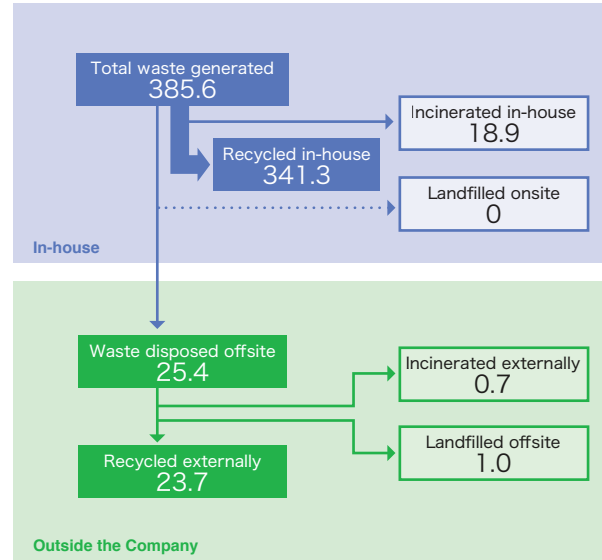


$$\text{Effective utilization rate (\%)} = \frac{\text{Amount of waste recycled (in-house and externally)}}{\text{Total waste generated}} \times 100$$

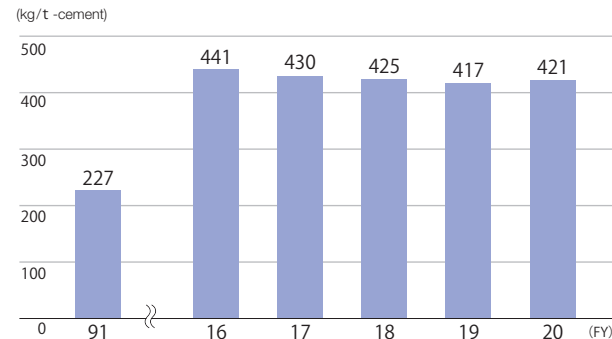
$$\text{“Zero emissions” rate (\%)} = \left[ 1 - \frac{\text{Amount of landfilled waste (onsite and offsite)}}{\text{Total waste generated}} \right] \times 100$$

### Flow of Industrial Waste Treatment

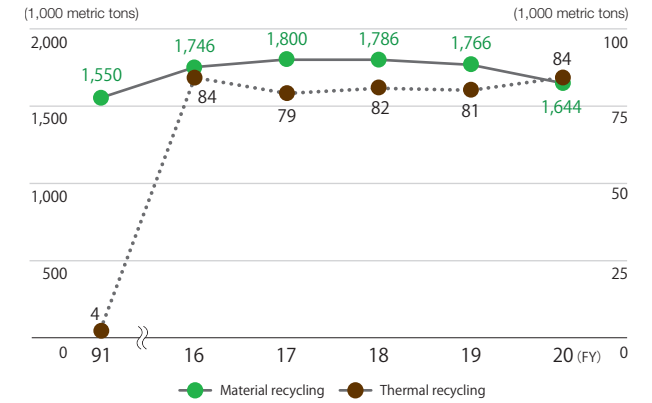
Unit: 1,000 metric tons



### 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](https://www.tokuyama.co.jp/eng/csr/pdf/2020csrpdf_6_e.pdf)





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## Environmental Initiatives

## Detailed Data

## Flow of Materials in Business Activities

| Input (Unit: 1,000 metric tons)      | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 | Comparison with previous fiscal year (%) |
|--------------------------------------|--------|--------|--------|--------|--------|--|
| Waste and by-products                | 1,830  | 1,880  | 1,870  | 1,850  | 1,730  | -6.5%                                    |
| Fuel                                 | 2,050  | 2,250  | 2,150  | 2,150  | 2,100  | -2.3%                                    |
| Raw materials                        | 6,020  | 6,760  | 6,670  | 6,720  | 6,370  | -5.2%                                    |
| Industrial water                     | 44,100 | 45,500 | 44,700 | 43,500 | 41,400 | -4.8%                                    |
| Output (Unit: 1,000 metric tons)     | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 | Comparison with previous fiscal year (%) |
| Carbon dioxide                       | 6,000  | 6,300  | 6,500  | 6,600  | 63,00  | -4.5%                                    |
| Waste (incinerated and landfill)     | 22     | 21     | 23     | 20     | 21     | 5.0%                                     |
| Substances with environmental impact | 9.9    | 10.6   | 11.4   | 11.4   | 11.1   | -2.6%                                    |
| Process effluent                     | 24,200 | 24,200 | 24,500 | 22,200 | 22,210 | 0.0%                                     |

## Energy Consumed on a Per-Unit Basis at the Tokuyama Factory

| Unit: %                     | Base year (FY2005) | FY2017 | FY2018 | FY2019 | FY2020 | Target (FY2020) |
|-----------------------------|--------------------|--------|--------|--------|--------|-----------------|
| Per-unit energy consumption | 100.0              | 90.5   | 91.2   | 91.0   | 91.1   | 97.0            |

## Energy Consumption

| Unit: 1,000 GJ/gajoules | Base year (FY2005) | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 |
|-------------------------|--------------------|--------|--------|--------|--------|--------|
| Tokuyama Corporation    | 53,700             | 47,300 | 49,600 | 49,100 | 49,200 | 46,800 |
| Group companies         | 3,500              | 2,500  | 2,700  | 2,600  | 2,700  | 2,500  |

Emissions of CO<sub>2</sub>

| Unit: 1,000 metric tons        | Base year (FY2005) | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 |
|--------------------------------|--------------------|--------|--------|--------|--------|--------|
| Originating from fuel          | 4,820              | 4,300  | 4,510  | 4,440  | 4,470  | 4,240  |
| Originating from raw materials | 2,110              | 1,720  | 1,820  | 1,800  | 1,850  | 1,810  |
| Originating from waste matter  | 210                | 250    | 250    | 280    | 250    | 260    |
| Group companies                | 250                | 190    | 190    | 180    | 190    | 180    |

Emissions of SO<sub>x</sub>, NO<sub>x</sub>, and Soot

| Unit: Metric tons | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 | Comparison with previous fiscal year |
|-------------------|--------|--------|--------|--------|--------|--------------------------------------|
| SO <sub>x</sub>   | 750    | 780    | 800    | 810    | 760    | -6.2%                                |
| NO <sub>x</sub>   | 9,470  | 10,100 | 10,100 | 10,220 | 9,900  | -3.1%                                |
| Soot              | 138    | 168    | 122    | 127    | 116    | -8.7%                                |

## Emissions of PRTR Substances

| Unit: Metric tons    | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 | Comparison with previous fiscal year |
|----------------------|--------|--------|--------|--------|--------|--------------------------------------|
| Tokuyama Corporation | 30     | 30     | 34     | 25     | 37     | 48%                                  |
| Group companies      | 34     | 37     | 34     | 35     | 35     | 0.0%                                 |

## Emissions of Hazardous Air Pollutants

| Unit: Metric tons                    | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 | Comparison with previous fiscal year (%) |
|--------------------------------------|--------|--------|--------|--------|--------|--|
| Dichloromethane (methylene chloride) | 2.3    | 1.8    | 1.4    | 1.4    | 0.9    | -35.7%                                   |
| Chloroform                           | 1.7    | 1.6    | 1.2    | 1.2    | 2.5    | 108.3%                                   |
| 1,2-Dichloroethane                   | 6.4    | 6.3    | 10.0   | 6.2    | 13.0   | 109.7%                                   |
| Chloroethylene (vinyl chloride)      | 5.4    | 7.6    | 6.8    | 5.2    | 6.9    | 32.7%                                    |

## Discharge of Industrial Effluent

| Unit: million metric tons | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 | Comparison with previous fiscal year (%) |
|---------------------------|--------|--------|--------|--------|--------|--|
| Industrial effluent       | 24.2   | 24.0   | 24.5   | 22.2   | 22.2   | 0.0                                      |

## Water Pollutant Emissions

| Unit: Metric tons | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 | Comparison with previous fiscal year (%) |
|-------------------|--------|--------|--------|--------|--------|--|
| COD               | 116    | 121    | 129    | 103    | 124    | 20.4                                     |
| Nitrogen          | 145    | 173    | 159    | 170    | 177    | 4.1                                      |
| Phosphorus        | 2.1    | 2.1    | 2.3    | 1.5    | 2.1    | 40.0                                     |

## Landfilled and Recycled Waste

|                                | Base year (FY1990) | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 |
|--------------------------------|--------------------|--------|--------|--------|--------|--------|
| Landfilled waste (metric tons) | 36,260             | 380    | 390    | 400    | 680    | 980    |
| Effective utilization rate (%) | 76.9               | 94.2   | 93.8   | 93.1   | 93.9   | 94.7   |
| *Zero emissions* rate (%)      | 82.4               | 99.9   | 99.9   | 99.9   | 99.8   | 99.7   |

## Breakdown of Waste Treatment Methods

| Unit: 1,000 metric tons   | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 | Comparison with previous fiscal year (%) |
|---------------------------|--------|--------|--------|--------|--------|--|
| Waste recycled in-house   | 332    | 317    | 286    | 288    | 341    | 18.4                                     |
| Waste recycled externally | 23.1   | 26.7   | 30.2   | 26.6   | 23.7   | -10.9                                    |
| Incinerated waste         | 21.5   | 22.5   | 23.0   | 19.7   | 19.6   | -0.5                                     |
| Waste sent to landfills   | 0.4    | 0.4    | 0.4    | 0.7    | 1.0    | 42.9                                     |
| Total waste generated     | 377    | 367    | 339    | 335    | 386    | 15.2                                     |

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

| Unit: Kg per metric ton of cement | Base year (FY1991) | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 |
|-----------------------------------|--------------------|--------|--------|--------|--------|--------|
| Amount used                       | 227                | 441    | 430    | 425    | 417    | 421    |

## Material and Thermal Recycling Amounts in Cement Production

| Unit: 1,000 metric tons | Base year (FY1991) | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 |
|-------------------------|--------------------|--------|--------|--------|--------|--------|
| Material recycling      | 1,550              | 1,746  | 1,800  | 1,786  | 1,766  | 1,644  |
| Thermal recycling       | 4                  | 84     | 79     | 82     | 81     | 84     |



Accident Prevention and Occupational Health and Safety

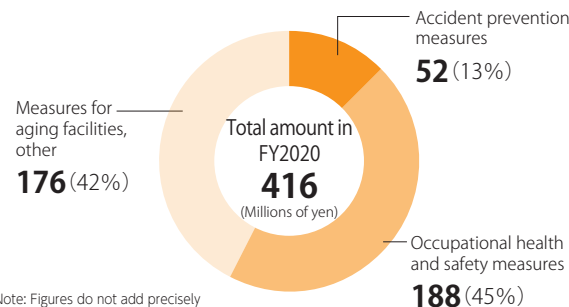
# Accident Prevention and Occupational Health and Safety

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 conducts safety and accident-prevention initiatives under its three principles for ensuring safety. 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.

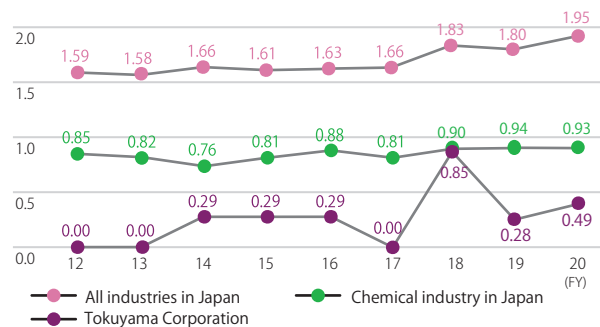
### Expenditures for Accident Prevention and Occupational Health and Safety



Note: Figures do not add precisely to total due to rounding.

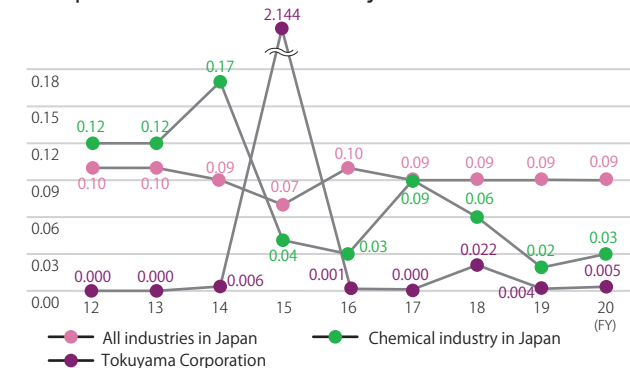
| Fiscal 2021 Tokuyama Safety Management Policy  | Fiscal 2021 Tokuyama Safety Management Objectives and Key Action Items  |                                   |   |                                       |  |  |   |                               |  |                                    |  |
|--|---|-----------------------------------|---|---------------------------------------|--|--|---|-------------------------------|--|------------------------------------|--|
| <p>Tokuyama operates a safety management policy and actively implements safety initiatives as a good corporate citizen.</p> <ul style="list-style-type: none"> <li>Implement safety initiatives involving all employees, under the leadership of upper management.</li> <li>Comply with laws, regulations, and internal rules.</li> <li>Foster and enhance a culture of safety, for the safety of people, facilities, and the public.</li> <li>Create comfortable workplaces to ensure the mental and physical health of the people who work there.</li> </ul> | <p>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.</p> <p><b>Policy Objectives</b></p> <ul style="list-style-type: none"> <li>No compliance violations</li> <li>No accidents or accidents requiring work absence</li> <li>Reduce the rate of work absences</li> </ul> <p><b>Key Action Items</b></p> <table border="1"> <tr> <td>Improve process safety management</td> <td> <ul style="list-style-type: none"> <li>Improve hazard awareness</li> <li>Adopt smart industrial safety systems</li> </ul> </td> </tr> <tr> <td>Identify sources of risks and resolve</td> <td> <ul style="list-style-type: none"> <li>Improve risk assessment</li> <li>Respond to risk assessments for chemical substances</li> </ul> </td> </tr> <tr> <td>Make progress in risk management and hazard management</td> <td> <ul style="list-style-type: none"> <li>Conduct business activities while minimizing COVID-19 infection</li> <li>Prepare and respond to natural disasters</li> </ul> </td> </tr> <tr> <td>Promote facilities management</td> <td> <ul style="list-style-type: none"> <li>Enhance management of older facilities</li> </ul> </td> </tr> <tr> <td>Promote physical and mental health</td> <td></td> </tr> </table> | Improve process safety management | <ul style="list-style-type: none"> <li>Improve hazard awareness</li> <li>Adopt smart industrial safety systems</li> </ul> | Identify sources of risks and resolve | <ul style="list-style-type: none"> <li>Improve risk assessment</li> <li>Respond to risk assessments for chemical substances</li> </ul> | Make progress in risk management and hazard management | <ul style="list-style-type: none"> <li>Conduct business activities while minimizing COVID-19 infection</li> <li>Prepare and respond to natural disasters</li> </ul> | Promote facilities management | <ul style="list-style-type: none"> <li>Enhance management of older facilities</li> </ul> | Promote physical and mental health |  |
| Improve process safety management  | <ul style="list-style-type: none"> <li>Improve hazard awareness</li> <li>Adopt smart industrial safety systems</li> </ul>   |                                   |   |                                       |  |  |   |                               |  |                                    |  |
| Identify sources of risks and resolve  | <ul style="list-style-type: none"> <li>Improve risk assessment</li> <li>Respond to risk assessments for chemical substances</li> </ul>  |                                   |   |                                       |  |  |   |                               |  |                                    |  |
| Make progress in risk management and hazard management   | <ul style="list-style-type: none"> <li>Conduct business activities while minimizing COVID-19 infection</li> <li>Prepare and respond to natural disasters</li> </ul>   |                                   |   |                                       |  |  |   |                               |  |                                    |  |
| Promote facilities management  | <ul style="list-style-type: none"> <li>Enhance management of older facilities</li> </ul>  |                                   |   |                                       |  |  |   |                               |  |                                    |  |
| Promote physical and mental health   |   |                                   |   |                                       |  |  |   |                               |  |                                    |  |

### 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.

## 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 2020.

- Conducted workshops at local elementary schools (two sessions)
- Held science class for local elementary school students (one session)
- Donated bookstore gift certificates under the Mikage Bunko book program to 40 elementary and junior high schools
- Received visitors as part of local industry promotion
- Signed agreement with Shunan City government on emergency shelters in case of disaster
- Exhibited at a chemistry fair (event was canceled due to COVID-19)
- Tokuyama Factory Responsible Care Community Dialogue Program (written exchange)

| Stakeholders                  | Main Avenues for Communication  |
|-------------------------------|---|
| Customers                     | ● ISO9001 ● TV commercials ● Factory tours  |
| Global Environment            | ● Responsible Care ● Environmental management ● ISO14001<br>● Reduction of CO <sub>2</sub> emissions, energy conservation<br>● Waste disposal ● Biodiversity initiatives<br>● Development and provision of environmentally friendly products  |
| Local Communities and Society | ● Accident prevention ● Responsible Care Community Dialogue program ● Community volunteers<br>● Sponsorship of and participation in summer festivals<br>● Grants to promote science and technology<br>● 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<br>● 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 |
|--|--------|--------|--------|--------|
| The Tokuyama Science Foundation Grant (thousand yen) | 29,550 | 30,045 | 36,865 | 36,350 |

| 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>



## ● Developing Talent and Promoting Diversity

## ● Health Management Initiatives

## Growing Together with Employees

## 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.

#### Tokuyama Employees

(Tokuyama Corporation)

|  |             | FY2018  | FY2019  | FY2020  |
|--|-------------|---------|---------|---------|
| Number of employees  | Men         | 1,750   | 1,849   | 1,982   |
|  | Women       | 174     | 214     | 274     |
|  | Total       | 1,924   | 2,063   | 2,256   |
| Number of new hires  | Men         | 48      | 60      | 61      |
|  | Women       | 7       | 9       | 16      |
|  | Total       | 55      | 69      | 77      |
| Number of mid-career hires   | Men         | 10      | 60      | 57      |
|  | Women       | 1       | 7       | 8       |
|  | Total       | 11      | 67      | 65      |
| Number of rehired individuals*1  | Single year | 26      | 24      | 35      |
|  | Total       | 172     | 142     | 132     |
| Average age  | Men         | 42.6    | 42.0    | 41.8    |
|  | Women       | 41.0    | 41.3    | 39.8    |
|  | Average     | 42.5    | 42.0    | 41.5    |
| Average wage of 30 year-old employees in management track position*2 (yen) |             | 325,495 | 328,656 | 327,471 |

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

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

|  |         | FY2018       | FY2019       | FY2020       |
|--|---------|--------------|--------------|--------------|
| Average years of service                                       | Men     | 20.9         | 19.6         | 18.7         |
|  | Women   | 17.6         | 15.3         | 12.4         |
|  | Average | 20.6         | 19.1         | 17.9         |
| 3-year retention rate (%)                                      |         | 82.1         | 97.6         | 90.9         |
| Turnover rate*1(%)   | Men     | 0.77         | 0.66         | 0.91         |
|  | Women   | 1.84         | 1.21         | 1.03         |
|  | Average | 0.87         | 0.72         | 0.92         |
| Employment rate of people with disabilities (%)                |         | 2.00         | 1.87         | 2.02         |
| Number of non-Japanese employees                               |         | 7            | 14           | 15           |
| Average annual training cost per employee (yen)                |         | 32,000       | 22,000       | 9,000        |
| Number of labor union members (Labor union membership rate, %) |         | 1,415 (73.5) | 1,512 (73.3) | 1,734 (76.9) |

#### ■ 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.

The Company creates action plans based on the Female Participation and Career Advancement Act, and works to achieve goals such as opening up more positions to women. The Company is also working to improve workplace environments in order to comply with the legal requirement for persons with disabilities to make up at least 2.2% of the entire workforce.

For end-of-career workers, the Company offers re-employment contracts up to the age of 65. Currently, 140 employees (approximately 6% of the workforce) are on these contracts.

[WEB | Developing Talent and Promoting Diversity](https://www.tokuyama.co.jp/eng/csr/employee.html)

<https://www.tokuyama.co.jp/eng/csr/employee.html>



#### Tokuyama Targets to Promote Opportunities for Women

Duration: April 1, 2020–March 31, 2022

| Target   | Target Value  | Performance (April 2018)   | Performance (April 2019)   | Performance (April 2020)  | Performance (April 2021)  |
|--|---|--|--|---|---|
| Percentage of women among university graduates who are hired | No less than 20% (3-year moving average)  | 23%  | 20%  | 19%   | 21%   |
| Percentage of women among all assistant managers             | No less than 6%   | 6.0%   | 6.1%   | 6.1%  | 6.8%  |
| Percentage of women among all managers*1                     | No less than 2%   | 1.5%   | 1.6%   | 1.8%  | 2.0%  |
| Expand women's areas of responsibility                       | Sales positions:*2<br>10 employees<br>All production divisions:*3<br>20 employees | Sales positions:<br>7 employees<br>All production divisions:14 employees | Sales positions:<br>9 employees<br>All production divisions:15 employees | Sales positions:<br>12 employees<br>All production divisions:19 employees | Sales positions:<br>13 employees<br>All production divisions:28 employees |
| Average usage rate of annual paid leave (since 2020)         | No less than 75%  | —  | —  | 72.4%   | 75.2%   |

\* 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

■ 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,\*1 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,\*2 and 23 employees took the leave in fiscal 2020, including one male employee.

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).

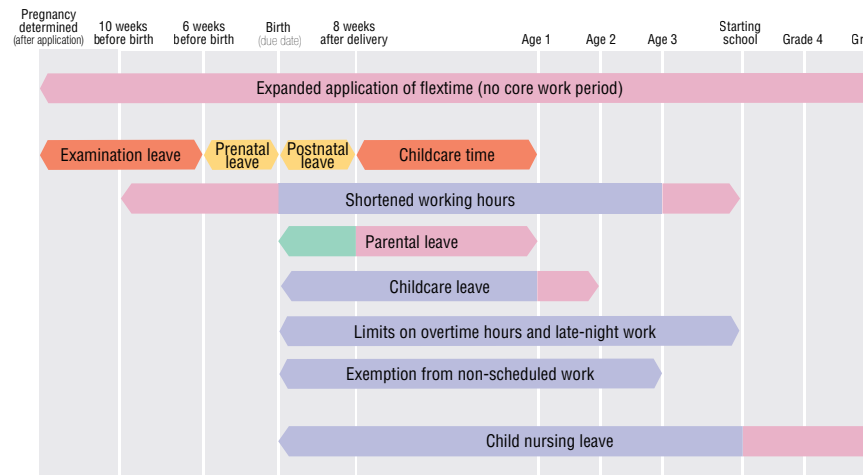
To support those on childcare and family care leave and help them eventually make a smooth transition back to work, internal information is shared with them on the intranet. In addition, an employee reinstatement system has been established to allow employees who resigned for childcare or family care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

\*1. Legal requirement is the age of three.

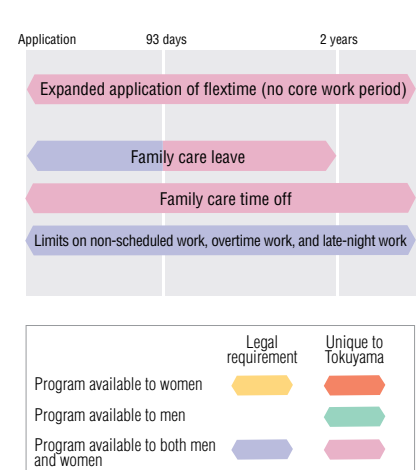
\*2. Legal requirement is the age of one. In certain cases, leave can be taken until the child reaches age two.

Support Programs for Childbirth, Childcare and Family Care

Childbirth and Childcare Programs



Family Care Programs



|   | Legal requirement | Unique to Tokuyama |
|---|-------------------|--------------------|
| Program available to women              | Yellow arrow      | Orange arrow       |
| Program available to men                | Green arrow       | Green arrow        |
| Program available to both men and women | Blue arrow        | Pink arrow         |

Annual Paid Leave Usage and Non-scheduled Working Hours

|  | FY2017        | FY2018        | FY2019        | FY2020        |
|--|---------------|---------------|---------------|---------------|
| Annual paid leave, average days used           | 15.2 days     | 15.7 days     | 15.0 days     | 15.3 days     |
| Annual paid leave, average usage rate          | 73.2%         | 75.6%         | 72.4%         | 75.2%         |
| Total working hours per year                   | 1,880.4 hours | 1,884.4 hours | 1,858.7 hours | 1,879.0 hours |
| Non-scheduled working hours, average per month | 8.3 hours     | 9.8 hours     | 10.3 hours    | 10.3 hours    |

Usage of Childcare and Family Care Leave, Etc.

|   | FY2017 | FY2018 | FY2019 | FY2020 |
|---|--------|--------|--------|--------|
| Number of employees taking childcare leave      | 11     | 12     | 12     | 23     |
| Return to work rate                             | 100.0% | 100.0% | 100.0% | 100.0% |
| Number of employees taking parental leave       | 25     | 33     | 65     | 100    |
| Number of employees taking family care leave    | 2      | 2      | 1      | 1      |
| Number of employees taking family care time off | 0      | 1      | 1      | 1      |
| Number of flextime users                        | 54     | 50     | 52     | 48     |

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



## Health Management Initiatives

On October 1, 2020, Tokuyama issued a Health Management Declaration which outlines the corporate commitment to create a workplace environment where employees find it comfortable to work and to endeavor to support and foster the mental and physical health of employees and their families. These are of utmost importance in realizing the Tokuyama's Mission and goals.

Accordingly, Tokuyama has a company-wide health management plan designed to develop employees' mental and physical health and promote measures against lifestyle diseases. The plan has the goals of raising individual health awareness, keeping the rate of findings on health checkups at 44% or less, and reducing the rate of leave taken due to health problems. The Company is taking various actions including those described below.

### ■ Implementing the Smart Life Program

The Smart Life Program is tackling lifestyle diseases by encouraging employees to keep records of their weight, number of steps walked, and blood pressure on the personal health portal site My Health Web. It also offers anti-smoking help such as raising awareness of the harmfulness of smoking, reducing indoor smoking areas, and encouraging "no smoking day" during working hours on the 22nd of every month.

### ■ Offering Health Guidance and Fighting Lifestyle Diseases

Working with the Health Insurance Association, Tokuyama conducts regular and specific health checkups and ensures that proper health guidance is provided by industrial health staff. The Company also holds workplace health education meetings.

### ■ 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.

| Category   | FY2017      | FY2018      | FY2019      | FY2020      |
|--|-------------|-------------|-------------|-------------|
| Percentage of employees receiving regular health checkup                     | 100         | 100         | 100         | 100         |
| Percentage of abnormal medical exam results                                  | 45.2        | 44.1        | 47.9        | 45.3        |
| Percentage of employees who were retested or received a detailed examination | 84.6        | 85.3        | 88.1        | 69.0        |
| Percentage of employees given specific health guidance                       | 78.4        | 80.2        | 79.0        | 84.3        |
| No. of employees given specific health guidance                              | 268         | 253         | 252         | 210         |
| Percentage of employees at ideal weight *1                                   | 74.0        | 73.8        | 72.5        | 72.6        |
| Percentage of smokers  | 24.9        | 23.5        | 22.6        | 20.3        |
| Percentage of employees receiving stress checkup                             | 94.1        | 95.1        | 96.1        | 96.9        |
| Percentage of employees receiving specific health checkup                    | 100         | 100         | 100         | 100         |
| Percentage of employees who regularly exercise                               | 28.8        | 28.3        | 29.4        | 30.5        |
| Sickness/injury absence rate *2<br>(Absence rate due to mental health issue) | 0.47 (0.25) | 0.48 (0.27) | 0.58 (0.34) | 0.64 (0.35) |
| No. of Family Health Counseling sessions conducted                           | 79          | 51          | 118         | 101         |
| No. of mental health workshops conducted (No. of participants)               | 11 (463)    | 12 (239)    | 19 (508)    | 8 (633)     |
| Investment per employee in mental and physical wellbeing initiatives (yen)   | 29,000      | 30,000      | 28,000      | 25,000      |

\* 1. Employees with BMI between 18.5 and 24.9.

\* 2. 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.

### ■ Recognized for Health and Productivity Management

In March 2021, Tokuyama was recognized under the large enterprise category in the 2021 Certified Health and Productivity Management Organization Recognition Program for the second consecutive year.

| 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)



- 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.

[| WEB | Corporate Governance](#)

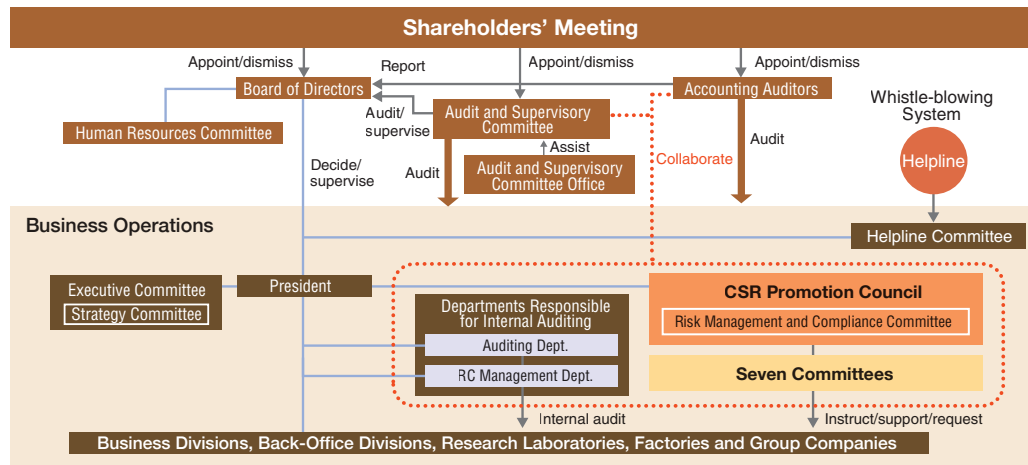
[https://www.tokuyama.co.jp/eng/csr/risk\\_management.html](https://www.tokuyama.co.jp/eng/csr/risk_management.html)



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



### Corporate Governance Structure



## 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.

Tokuyama manages risk through the Risk Management and Compliance Committee, which operates under the CSR Promotion Council. It also has expert committees focused on risk management and compliance in seven 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.

### Risk Management Framework



### Seven Committees

|  |  |                |
|--|--|----------------|
| Financial Reporting Committee                  | This committee controls the process of preparing financial reports through accounting to ensure the reliability of financial disclosures. Members are appointed from the business management group engaged in accounting as well as from relevant departments.   | Eight sessions |
| Fair Trade and Competition Committee           | This committee has established a company-wide system to reduce compliance risks related to fair trade, with a focus on compliance with the Antimonopoly Act. It is working to improve and raise the level of the system while monitoring its operational status. | One session    |
| Security Trade Committee                       | This committee properly implements security export controls to help maintain international peace and security. It also prevents violations of laws and regulations related to exports and other transactions.  | One session    |
| Information Security Committee                 | This committee decides basic policies on, and raises awareness about, information security in general in order to promote active use and safeguarding of the Group's information assets. It also promotes the protection of personal information.                | Two sessions   |
| Environmental Committee                        | This committee deliberates and decides on environmental policies as well as plans and measures for environmental management.   | One session    |
| Safety Committee                               | This committee deliberates and determines safety policies as well as safety management plans and their performance.  | One session    |
| Product Safety and Quality Assurance Committee | This committee deliberates and determines product safety and quality policies as well as product safety and quality management action plans and their performance.   | One session    |

## 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 |  | 1,026 (FY2020)  |

## 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 2020, these training programs were held on 45 occasions.

The Company also implemented a variety of e-learning programs focused on anti-harassment, information security, credit management, and prohibiting any relationship with anti-social forces.

### ■ 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.

|                    | FY2018 | FY2019 | FY2020 |
|--------------------|--------|--------|--------|
| Number of reports* | 36     | 29     | 24     |

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



- 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: 1,822 (As of March 31, 2021)  
 Total site area: 1.91 million m<sup>2</sup>  
 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 :  
Hiroshi Nomura



## Performance Data

|   | Unit                 | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 |
|---|----------------------|--------|--------|--------|--------|--------|
| SOx emissions   | Metric tons          | 750    | 780    | 800    | 810    | 760    |
| NOx emissions   | Metric tons          | 9,500  | 10,100 | 10,100 | 10,220 | 9,900  |
| Soot emissions  | Metric tons          | 138    | 168    | 122    | 127    | 116    |
| Industrial water consumption                              | Million metric tons  | 44.1   | 44.5   | 44.7   | 43.5   | 41.4   |
| Effluent discharged                                       | Million metric tons  | 24     | 24     | 24     | 22     | 22     |
| COD level   | Metric tons          | 114    | 119    | 127    | 101    | 122    |
| Total nitrogen discharged                                 | Metric tons          | 145    | 173    | 159    | 170    | 177    |
| Total phosphorous discharged                              | Metric tons          | 2.1    | 2.1    | 2.3    | 1.5    | 2.1    |
| PRTR-designated substance emissions                       | Metric tons          | 29     | 29     | 33     | 24     | 35     |
| Waste generated   | Thousand metric tons | 376    | 366    | 339    | 335    | 385    |
| Waste sent to landfills                                   | Metric tons          | 368    | 382    | 397    | 631    | 922    |
| Energy consumption  | Thousand gigajoules  | 47,100 | 49,500 | 49,000 | 49,000 | 46,600 |
| CO <sub>2</sub> emissions (originating from fossil fuel)* | Thousand metric tons | 4,290  | 4,500  | 4,430  | 4,460  | 4,230  |
| Complaints  | Cases                | 0      | 0      | 3      | 0      | 1      |

\*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 2020

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               | 13.0                | 0.0   | 0.0  | 13.0     | 0.7                |
| Chloroethylene (vinyl chloride)              | 94                | 6.9                 | 0.0   | 0.0  | 6.9      | 0.0                |
| Chloromethane (methyl chloride)              | 128               | 4.1                 | 0.0   | 0.0  | 4.1      | 0.0                |
| Chlorodifluoromethane                        | 104               | 2.7                 | 0.0   | 0.0  | 2.7      | 0.0                |
| Cresol                                       | 86                | 0.0                 | 2.3   | 0.0  | 2.3      | 0.0                |
| Toluene                                      | 300               | 1.7                 | 0.0   | 0.0  | 1.7      | 0.2                |
| Dichloromethane (methylene chloride)         | 186               | 0.9                 | 0.0   | 0.0  | 0.9      | 0.0                |
| Chloroform                                   | 127               | 0.9                 | 0.0   | 0.0  | 0.9      | 0.0                |
| Water-soluble compounds of zinc              | 1                 | 0.0                 | 0.8   | 0.0  | 0.8      | 0.0                |
| 1,2-Epoxypropane (propylene oxide)           | 68                | 0.6                 | 0.0   | 0.0  | 0.6      | 1.8                |
| 1,2-Dichloropropane                          | 178               | 0.4                 | 0.0   | 0.0  | 0.4      | 143.2              |
| Hydrazine                                    | 333               | 0.0                 | 0.0   | 0.0  | 0.0      | 0.0                |
| 1,2,4-trimethylbenzene                       | 296               | 0.2                 | 0.0   | 0.0  | 0.2      | 0.0                |
| Xylene                                       | 80                | 0.2                 | 0.0   | 0.0  | 0.2      | 0.0                |
| Carbon tetrachloride                         | 149               | 0.2                 | 0.0   | 0.0  | 0.2      | 0.0                |
| 1-Bromopropane                               | 384               | 0.2                 | 0.0   | 0.0  | 0.2      | 0.6                |
| 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               | 0.0                 | 0.0   | 0.0  | 0.0      | 0.0                |
| Boron compounds                              | 405               | 0.0                 | 0.0   | 0.0  | 0.0      | 0.9                |
| Methylnaphthalene                            | 438               | 0.0                 | 0.0   | 0.0  | 0.0      | 0.0                |
| Dioxins                                      | 243               | 2.5                 | 3.2   | 0.0  | 5.7      | 0.0                |
| Total (excluding dioxins)                    |                   | 31.9                | 3.1   | 0.0  | 35.0     | 147.3              |

- 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: 124 (As of March 31, 2021)  
 Total site area: 101,000m<sup>2</sup>  
 Main products:

### Produced by Tokuyama Corporation

Bulk pharmaceuticals for diabetes 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                 | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 |
|---|----------------------|--------|--------|--------|--------|--------|
| Industrial water consumption                              | Thousand metric tons | 36     | 39     | 25     | 27     | 26     |
| Effluent discharged                                       | Thousand metric tons | 50     | 54     | 39     | 42     | 43     |
| COD level   | Metric tons          | 2      | 2      | 2      | 2      | 2      |
| PRTR-designated substance emissions                       | Metric tons          | 2      | 2      | 1      | 1      | 2      |
| Waste generated   | Metric tons          | 775    | 761    | 831    | 896    | 1,101  |
| Waste sent to landfills                                   | Metric tons          | 9      | 9      | 8      | 11     | 6      |
| Energy consumption*                                       | Thousand gigajoules  | 37     | 39     | 36     | 36     | 34     |
| CO <sub>2</sub> emissions (originating from fossil fuel)* | Metric tons          | 2,670  | 2,697  | 2,594  | 2,659  | 2,767  |
| 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 2020

Unit: metric tons

| Substance name                     | Regulatory number | Amount of emissions |            |            |            | Subtotal     | Amount transferred |
|------------------------------------|-------------------|---------------------|------------|------------|------------|--------------|--------------------|
|                                    |                   | Atmospheric         | Water      | Soil       |            |              |                    |
| Chloroform                         | 127               | 1.5                 | 0.0        | 0.0        | 1.5        | 74.8         |                    |
| Dichloromethane                    | 186               | 0.5                 | 0.0        | 0.0        | 0.5        | 1.8          |                    |
| Acetonitrile                       | 13                | 0.2                 | 0.0        | 0.0        | 0.2        | 2.6          |                    |
| Toluene                            | 300               | 0.2                 | 0.0        | 0.0        | 0.2        | 24.8         |                    |
| 1,4-dioxane                        | 150               | 0.0                 | 0.0        | 0.0        | 0.0        | 0.0          |                    |
| N,N-Dimethylacetamide              | 213               | 0.0                 | 0.0        | 0.0        | 0.0        | 1.2          |                    |
| N,N-Dimethylformamide              | 232               | 0.0                 | 0.0        | 0.0        | 0.0        | 3.5          |                    |
| Water-soluble salts of bromic acid | 235               | 0.0                 | 0.0        | 0.0        | 0.0        | 0.0          |                    |
| 2-Vinylpyridine                    | 338               | 0.0                 | 0.0        | 0.0        | 0.0        | 0.8          |                    |
| Boron compounds                    | 405               | 0.0                 | 0.0        | 0.0        | 0.0        | 0.1          |                    |
| Methyl methacrylate                | 420               | 0.0                 | 0.0        | 0.0        | 0.0        | 0.0          |                    |
| <b>Total</b>                       |                   | <b>2.4</b>          | <b>0.0</b> | <b>0.0</b> | <b>2.4</b> | <b>109.6</b> |                    |

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: 3,280m<sup>2</sup>

### Performance Data

|  | Unit                    | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 |
|--|-------------------------|--------|--------|--------|--------|--------|
| Power consumption                            | Thousand kilowatt hours | 2,490  | 2,533  | 2,631  | 2,633  | 2,512  |
| Waste plastic produced                       | Metric tons             | 135    | 128    | 171    | 152    | 142    |
| Waste plastic effectively used               | Metric tons             | 135    | 128    | 171    | 152    | 142    |
| 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: 63  
 Total site area: 70,997m<sup>2</sup>

### Performance Data

|   | Unit                 | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 |
|---|----------------------|--------|--------|--------|--------|--------|
| Industrial water consumption                    | Thousand metric tons | 333    | 378    | 343    | 352    | 302    |
| Waste generated                                 | Metric tons          | 77     | 35     | 66     | 40     | 43     |
| Waste sent to landfills                         | Metric tons          | 1.8*   | 0      | 1.6*   | 0      | 2.0*   |
| Unit energy consumption index (fiscal 2002=100) | %                    | 73     | 69     | 70     | 78     | 73     |

\* Year with periodic maintenance