

Environmental Performance Data

Environmental Accounting

To quantify the costs and benefits of environmental conservation and evaluate environment investment and its benefits, "Environmental Accounting" was introduced in fiscal 1999. In fiscal 2021, this accounting method was applied to seven of our business sites in Japan (Headquarters, Yokohama Headquarters, ProDeS Center, Kansai Office, Tokai Office, Shinbashi Office, and PFU Quality Service).

Breakdown of environmental accounting results for fiscal 2021

(April 1, 2021 to March 31, 2022)

(Unit: One million yen)

Item		Main Scope	Capital Investments	Costs	Benefits
Business area	Pollution prevention costs/benefits	Air pollution prevention, water pollution prevention, etc.	0 (±0)	6 (±0)	0 (±0)
	Global environmental conservation costs/benefits	Global warming prevention, energy-saving, etc.	0 (-209)	71 (-208)	10 (+1)
	Resource recycling costs/benefits	Disposal of waste and effective use of resources, etc.	0 (±0)	20 (±0)	7 (+2)
Upstream/downstream costs/benefits		Collection/recycling/re-merchandising of products, etc.	0 (±0)	0 (±0)	2 (±0)
Management costs/benefits		Maintenance/operation of the Environmental Management System, environmental education for employees, etc.	0 (±0)	57 (-10)	53 (-28)
R&D costs/benefits		R&D for products/solutions that contribute to environmental conservation, etc.	0 (±0)	221 (-16)	1,283 (-5)
Social activities costs/benefits		Contributions/support for organizations involved in environmental conservation, etc.	0 (±0)	0 (±0)	0 (±0)
Costs/benefits to repair environmental damage		Repairs involved in soil/ground water pollution, etc.	0 (±0)	0 (±0)	0 (±0)
Total			0 (-209)	377 (-234)	1,355 (-30)

Numbers in parentheses () are comparisons with the previous fiscal year.

Costs and Benefits of Fiscal 2021

After tallying fiscal 2021, we see that costs decreased to 377 million yen (-62% compared to the previous fiscal year), and benefits decreased to 1.355 billion yen (-2% compared to the previous fiscal year).

Environmental Conservation

In order to conserve the environment surrounding our sites and comply with the regulations, we perform ongoing management of our facilities, as well as properly manage chemical substances to prevent pollution.

Also, we regularly monitor the burden on the environment from our sites by assessing the actual amount of greenhouse gases, waste material, and water resources emitted/used in business.

Proper Handling of Chemical Substances

We tally the amount of chemical substances that are used for purposes such as designing, developing, evaluating, manufacturing, maintaining, or cleaning up the premises no matter how much there is.

Chemical Substances Subject to PRTR Law

The amount of chemical substances subject to the PRTR law that were handled in fiscal 2021 is shown below. None of the chemical substances were in excess of the annual values which require the relevant prefectural authorities to be notified (*4).

Furthermore, no Special Class I Specified Chemical Substances were handled.

We set a goal to limit the amount we handle to less than the average of fiscal years 2012 to 2014, which was 0.132 tons. Our actual results from fiscal 2021 were 0.107 tons (-19%).

Annual Handled Amount of Chemical Substances Subject to the PRTR Law (Class I Specified Chemical Substances)

(Tons)

Chemical Substance Name	Fiscal 2017	Fiscal 2018	Fiscal 2019	Fiscal 2020	Fiscal 2021
sodium linear alkylbenzenesulfonate	0.007	0.034	0.031	0.044	0.031
2-aminoethanol	0.004	0.021	0.026	0.027	0.025
Silver and its water-soluble compounds	0.027	0.028	0.039	0.031	0.022
Poly (oxyethylene) alkyl ether	0.015	0.021	0.022	0.022	0.019
Methyl methacrylate	0.000	0.000	0.000	0.006	0.006
Polyoxyethylene alkyl ether	0.000	0.000	0.000	0.003	0.001
Sodium dodecyl ether sulfate	0.012	0.002	0.001	0.001	0.001
2,6-Di-tert-butyl-4-cresol	0.000	0.000	0.000	0.000	0.001
Methacrylic acid	0.000	0.000	0.000	0.000	0.000
Lead and its compounds	0.003	0.008	0.000	0.000	0.000
Other	0.056	0.016	0.002	0.001	0.001
Total	0.137	0.135	0.123	0.136	0.107

(*4) 1 ton or more per year for Class I Specified Chemical Substances, 0.5 tons or more per year for Special Class I Specified Chemical Substances.

VOC (Volatile Organic Compound)

Although there are no specific facilities that are subject to VOC emission control, we make an independent effort to maintain and manage the amount of VOCs handled.

We set a goal to limit the amount we handle to less than the average of fiscal years 2012 to 2014, which was 1.266 tons. Our actual results from fiscal 2021 were 0.938 tons (-26%).

Annual Amount of VOC Handled

(Tons)

Chemical Substance Name	Fiscal 2017	Fiscal 2018	Fiscal 2019	Fiscal 2020	Fiscal 2021
Isopropyl alcohol	0.789	0.746	0.770	0.790	0.809
Butyl acetate	0.056	0.056	0.066	0.046	0.058
Ethanol	0.336	0.150	0.134	0.097	0.053
Other	0.108	0.030	0.043	0.017	0.018
Total	1.289	0.982	1.013	0.950	0.938

Greenhouse Gases

The amount of greenhouse gases other than CO₂ that were handled in fiscal 2021 is shown below. The annual amount handled in fiscal 2021 is converted to a CO₂ equivalent weight of approximately 7 tons, and is equivalent to approximately 0.1% of emissions from all our sites (5,233 tons).

Our reduction target for the amount (tons) of greenhouse gas emissions handled applies to reduction at all our sites.

Annual amount of greenhouse gases handled (Converted to CO₂)

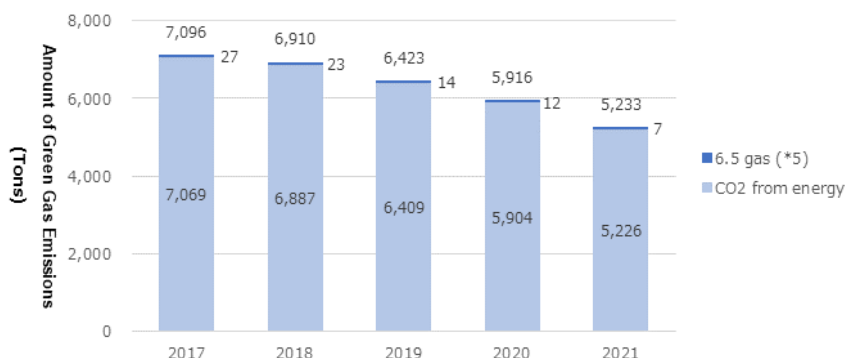
(Tons)

Chemical Substance Name	Fiscal 2017	Fiscal 2018	Fiscal 2019	Fiscal 2020	Fiscal 2021
1,1,1,2-tetrafluoroethane (HFC-134a)	26.980	23.271	13.974	11.517	7.061
1,1-Difluoroethane (HFC-152a)	0.336	0.023	0.000	0.054	0.059
CO ₂ not from energy	0.000	0.001	0.000	0.001	0.000
Total	27.316	23.295	13.974	11.572	7.120

Environmental Burden

Total Amount of Greenhouse Gas (GHG) Emissions (Scope 1, Scope 2)

The amount of greenhouse gas emissions from all our sites in Japan is converted to a CO₂ equivalent weight as shown below.



(*5) The amount (tons) of greenhouse gas emissions above is calculated by taking the total of Scope 1 and Scope 2 of the WRI/WBCSD GHG Protocol.

Total of CO₂ from energy (CO₂ emissions due to use of purchased electricity, liquefied petroleum gas (LPG), and heat (district cooling and heating at the Yokohama headquarters)) and the amount of use of greenhouse gases such as chlorofluorocarbon alternatives (6.5 gas), converted into carbon dioxide.

[Conversion factor]

Purchased electricity: Uses each electric company's conversion factor for the Act on the Rational Use of Energy report

Liquefied petroleum gas (LPG): 5.98 tons of CO₂/1,000 m³ (fixed)

Amount of heat: 0.057 tons of CO₂/GJ (fixed)

Total Amount of Greenhouse Gas (GHG) Emissions (Scope 3)

The amount of greenhouse gas emissions is converted to a CO₂ equivalent weight as shown below.

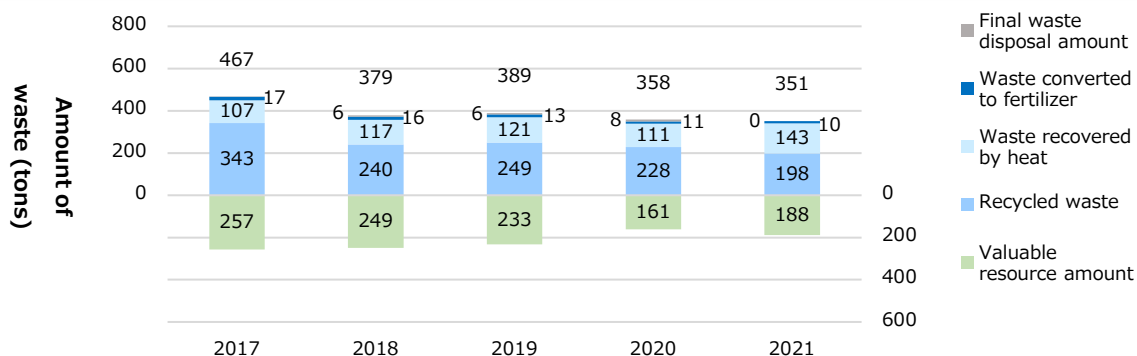
Category	Category Name	Amount of Emission (CO ₂ -t)		Ratio of amount for each category to entire amount for Scope 3 in fiscal 2021 (%)
		Fiscal 2020	Fiscal 2021	
Category 1	Purchased products/services	213,959.1	220,518.8	91.2
Category 2	Capital goods	7,554.4	1,924.8	0.8
Category 3	Fuel and energy-related activities not included in Scope 1 or 2	4,193.5	4,135.0	1.7
Category 4	Transportation, shipping (upstream)	678.3	1,152.9	0.5
Category 5	Waste from business operations	2.3	20.1	0.0
Category 6	Business trips	161.5	421.1	0.2
Category 7	Transportation for employees	4,289.3	2,451.9	1.0
Category 8	Leased assets (upstream)	Included in other categories	Included in other categories	0.0
Category 9	Transportation, shipping (downstream)	Not applicable	Not applicable	0.0
Category 10	Manufacturing of products sold	Not applicable	Not applicable	0.0
Category 11	Use of products sold	10,138.8	11,102.9	4.6
Category 12	Disposal of products sold	Not applicable	Not applicable	0.0
Category 13	Leased assets (downstream)	Not applicable	Not applicable	0.0
Category 14	Franchises	Not applicable	Not applicable	0.0
Category 15	Investments	Not applicable	Not applicable	0.0
	Total	240,977.2	241,727.4	100.0

Amount of Waste

The amount of waste for all our sites in Japan is shown below. We achieved zero waste emissions (*6) in all our offices and factories.

We check that after thermal recycling by means such as the conversion of general combustible matter to RDF (Refuse Derived Fuel), the residue is put to effective use as base material for cement and paving materials.

We set a goal for 5% or more reduction in the amount of waste, down to 527 tons or less from the 555 ton average of fiscal years 2012 to 2014. Our actual results from fiscal 2021 were 351 tons (-33%).



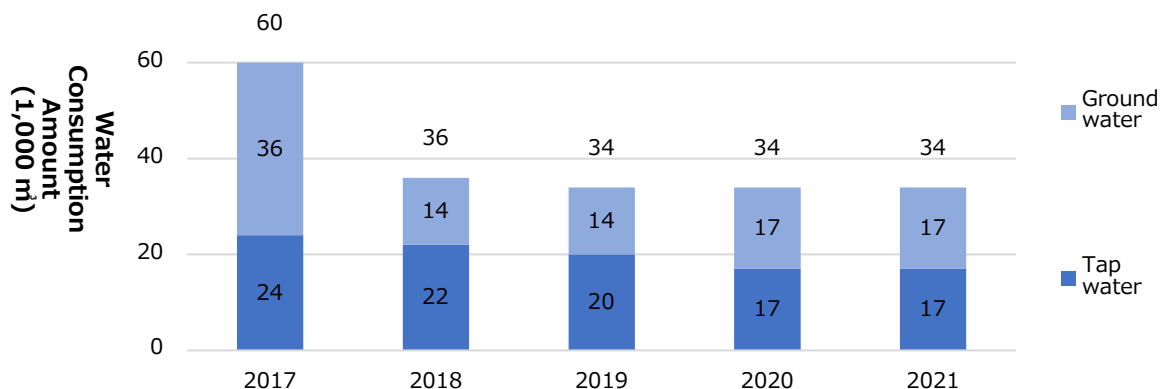
(*6) Zero waste emission means that waste produced by our sites is all used effectively, such as through recycling, and disposal by simple incineration or landfills is less than 0.5%. The term "Waste", as used above, specifically includes 11 sub-types, such as sludge waste, oil waste, acid waste, alkali waste, plastic waste, paper waste, metal waste, timber waste, textile waste, glass and ceramic waste, and meat and vegetable waste (cafeteria kitchen waste). Medical waste is not included in this definition.

(Note) The valuable resource amount means the amount of waste resources sold off for monetary compensation. The final waste disposal amount means the remaining waste (landfill) other than recycled waste, waste recovered by heat, and simple incinerated waste.

Water Consumption/Water Drainage

The amount of water consumption and water drainage for our main sites in Japan is shown below.

Water Consumption Amount

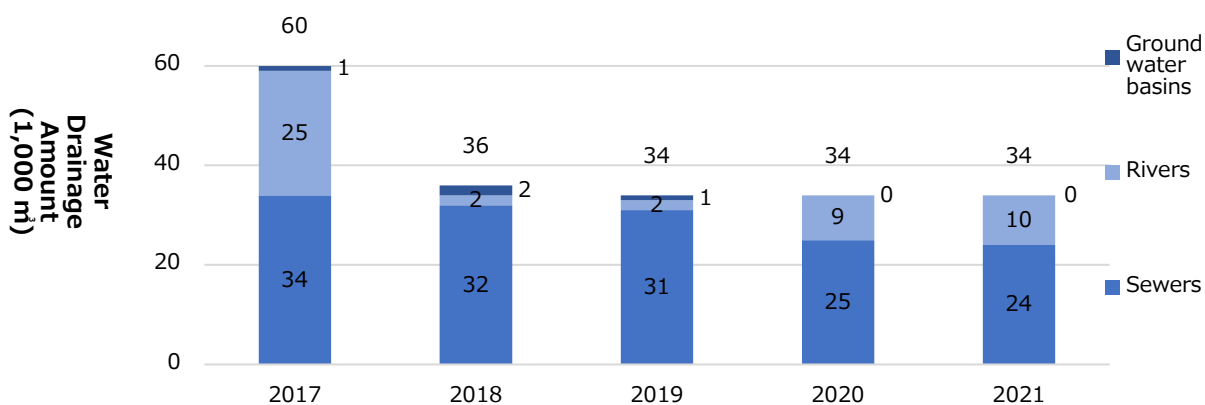


At each site, we use tap water for domestic use and to humidify the office in winter. At our Headquarters, we use ground water to water our plants in summer, and at our Headquarters and the ProDeS Center, we use ground water to melt snow. We use water for our every day needs at our company sites, not for industrial purposes.

For our total water consumption amount, we set a target to reduce it by 1% or more in fiscal 2021 to an amount of 35,600 m³ or less compared to the reference year of 2018. We achieved our target, with the actual results for fiscal 2021 at 34,000 m³ (-4%).

Our water is used for every day purposes. We do not have any water that can be reused or recycled.

Water Drainage Amount



Tap water used for domestic uses drains into the sewer. Ground water used to melt snow drains into the rivers, and water used to water plants and vegetable drains underground. We have been continuously monitoring and measuring water quality by using our own self management values in order to ensure the quality of water that drains from our main sites.

We will comply with all environmental laws and regulations.

In order to conserve the environment surrounding our sites and comply with laws and regulations, we will regularly measure water quality, noise output, and vibration output.

Water Quality Measurement Results

We make efforts to maintain the water quality of drainage from Headquarters, the ProDeS Center, and the PFU Techno Wise Takamatsu Plant. The results of the measurement did not exceed the legal regulations, and there was no problem with water quality.

	Regulated substances	Unit	Regulation value	Fiscal 2021 measured value	Evaluation
Headquarters (Bld. A & B)	Hydrogen ion concentration (pH)	-	Between 5 & 9	8.1	✓
	Biochemical oxygen demand (BOD)	mg/L	Less than 600	160	
	Suspended substances (SS)	mg/L	Less than 600	200	
	Mineral oil	mg/L	5 or less	Less than 0.5	
	Animal and plant oils	mg/L	30 or less	3	
	Ammonium-nitrogen, nitrite-nitrogen and nitrate-nitrogen content	mg/L	Less than 380	11	
Headquarters (Bld. E)	Hydrogen ion concentration (pH)	-	Between 5 & 9	7.9	✓
	Biochemical oxygen demand (BOD)	mg/L	Less than 600	1.8	
	Suspended substances (SS)	mg/L	Less than 600	5	
	Mineral oil	mg/L	5 or less	Less than 0.5	
	Animal and plant oils	mg/L	30 or less	Less than 0.5	
	Ammonium-nitrogen, nitrite-nitrogen and nitrate-nitrogen content	mg/L	Less than 380	Less than 1	
Headquarters (Anechoic Chamber)	Hydrogen ion concentration (pH)	-	Between 5 & 9	7.6	✓
	Biochemical oxygen demand (BOD)	mg/L	Less than 600	22	
	Suspended substances (SS)	mg/L	Less than 600	10	
	Mineral oil	mg/L	5 or less	Less than 0.5	
	Animal and plant oils	mg/L	30 or less	Less than 0.5	
	Ammonium-nitrogen, nitrite-nitrogen and nitrate-nitrogen content	mg/L	Less than 380	5	
ProDeS Center	Hydrogen ion concentration (pH)	-	Between 5 & 9	8.8	✓
	Biochemical oxygen demand (BOD)	mg/L	Less than 600	150	
	Suspended substances (SS)	mg/L	Less than 600	200	
	Mineral oil	mg/L	5 or less	Less than 0.5	
	Animal and plant oils	mg/L	30 or less	2.8	
	Ammonium-nitrogen, nitrite-nitrogen and nitrate-nitrogen content	mg/L	Less than 380	28	
PFU Techno Wise Takamatsu Plant (Bld. 1)	Hydrogen ion concentration (pH)	-	Between 5 & 9	7.3	✓
	Biochemical oxygen demand (BOD)	mg/L	Less than 600	2	
	Suspended substances (SS)	mg/L	Less than 600	2	
	Mineral oil	mg/L	5 or less	Less than 1	
	Animal and plant oils	mg/L	30 or less	Less than 1	
	Ammonium-nitrogen, nitrite-nitrogen and nitrate-nitrogen content	mg/L	Less than 380	0.9	
PFU Techno Wise Takamatsu Plant (Bld. 2 & 3)	Hydrogen ion concentration (pH)	-	Between 5 & 9	7.3	✓
	Biochemical oxygen demand (BOD)	mg/L	Less than 600	2	
	Suspended substances (SS)	mg/L	Less than 600	Less than 1	
	Mineral oil	mg/L	5 or less	Less than 1	
	Animal and plant oils	mg/L	30 or less	Less than 1	
	Ammonium-nitrogen, nitrite-nitrogen and nitrate-nitrogen content	mg/L	Less than 380	0.9	

■ Noise/Vibration Measurement

At our headquarters, we regularly measure the noise and vibration generated by our business activities (once every five years).

We performed measurements on June 10, 2020, and confirmed that all values did not exceed the legal regulations (next measurement planned for fiscal 2025).

Noise Measurement Results

	Noise	Unit	Regulation value	Fiscal 2020 measured value				Evaluation
				Bld. E north side	Bld. A southwest side	Anechoic chamber north side	South side parking lot	
Headquarters	Daytime	dB	65 or less	34	47	46	-	✓
	Morning	dB	60 or less	34	47	46	-	
	Evening	dB	60 or less	34	47	46	-	
	Nighttime	dB	50 or less	34	47	46	-	
	Daytime	dB	60 or less (*7)	-	-	-	40	
	Morning	dB	55 or less (*7)	-	-	-	40	
	Evening	dB	55 or less (*7)	-	-	-	40	
	Nighttime	dB	45 or less (*7)	-	-	-	40	

(*7) Because the parking lot is in an area within 50m of the borders of school grounds, the legal regulations are five decibels lower.

Vibration Measurement Results

	Vibration	Unit	Regulation value	Fiscal 2020 measured value				Evaluation
				Bld. E north side	Bld. A southwest side	Anechoic chamber north side	South side parking lot	
Headquarters	Daytime	dB	65 or less	27	30	31	-	✓
	Nighttime	dB	50 or less	27	30	31	-	
	Daytime	dB	60 or less (*8)	-	-	-	29	
	Nighttime	dB	45 or less (*8)	-	-	-	29	

(*8) Because the parking lot is in an area within 50m of the borders of school grounds, the legal regulations are five decibels lower.