

Data Sheet 2023

Environment	1
Safety / Quality	24
Intellectual Property	32
Human Resources	33

【Third-Party Assurance】

For data of indicators related to climate change and environment protection from April 1, 2022 to March 31, 2023, and occupational safety from January 1, 2022 to December 31, 2022, we have received the third-party assurance by KPMG AZSA Sustainability Co., Ltd. to ensure the reliability and transparency of Data Sheet 2023. The indicators subject to assurance are marked with the “★” symbols.

【Data of Indicators Related to Environment】

For details, please refer to “Calculation Methods for Data of Indicators Related to Environment” starting on P39.

Environment

Basic Policy

In keeping with our corporate philosophy, we at the Kaneka Group will contribute to realizing sustainable development and the enrichment of society by conserving resources and reducing environmental impacts at each stage of the entire product lifecycle.

Environmental Management Systems

■ ISO 14001 Certification

Manufacturing Sites and Group Companies	Registration No.
Takasago Manufacturing Site	JCQA-E-0105
Osaka Manufacturing Site	JCQA-E-0053
Shiga Manufacturing Site	JCQA-E-0015
Kashima Manufacturing Site	JCQA-E-0054
Vienex Corporation	JSAE1511
Osaka Synthetic Chemical Laboratories, Inc.	JCQA-E-0343
Kaneka Solartech Corporation	JQA-EM6704
Kanto Styrene Co., Ltd.	JEN-2024.0
Sanvic Inc.	JMAQA-E841
Showa Kaseikogyo Co., Ltd. Hanyu Headquarters Factory	E0062
Cemedine Co., Ltd. Ibaraki Plant, Mie Plant	JCQA-E-0366
Cemedine Co., Ltd. Kinuura Plant	497791UM15
Tatsuta Chemical Co., Ltd. Koga Plant	E2271
Tochigi Kaneka Co., Ltd.	E2163
Kaneka Belgium N.V.	97 EMS 002g
Kaneka (Malaysia) Sdn. Bhd.	EMS00400
Kaneka Innovative Fibers Sdn. Bhd.	EMS00400
Kaneka Eperan Sdn. Bhd.	EMS00400
Kaneka Paste Polymers Sdn. Bhd.	EMS00400
Kaneka Apical Malaysia Sdn. Bhd.	EMS00400
Kaneka MS Malaysia Sdn. Bhd.	EMS00400
Kaneka (Thailand) Co., Ltd.	EMS727351

■ Eco-Action 21 Certification

Group Company		Certification and Registration No.
OLED Aomori Co., Ltd.		0010329
Kaneka Kanto Styrol Co., Ltd.		0004259
Kaneka Sun Spice Corporation		0003556
Kaneka Chubu Styrol Co., Ltd.		0006600
Kaneka Nishinippon Styrol Co., Ltd.	Headquarters, Saga Plant, Kagoshima Plant, Nagasaki Plant, and Hiroshima Plant	0003949
Kaneka Foods Manufacturing Corporation		0003491
Kaneka Foam Plastics Co., Ltd. Moka Plant		0003247
Kaneka Hokkaido Styrol Co., Ltd.		0001805
Kaneka Medix Corporation		0001893
Kyushu Kanelite Co., Ltd.		0001637
Kochi Styrol Co., Ltd.		0011039
Taiyo Yushi Corporation		0003575
Tokyo Kaneka Foods Manufacturing Corporation		0003473
Nagashima Shokuhin Co., Ltd.		0003093
Hokkaido Kanelite Co., Ltd.		0001905

Environmental Performance

Material Balance

Fiscal 2022 results

INPUTS Energy and Resources

Legend (from top)
 Kaneka and Group companies in Japan(*1)
 Overseas Group companies

Main raw materials
1,398.2 thousand 288.8 tons
Energy (GWh Conversions)
3,802 ★ 1,042 GWh
Water
27.3 ★ 6.8 million m ³

Kaneka
 Group companies in Japan
 47
 Overseas Group companies
 16

OUTPUTS Discharges, Recycling, and Products

■ Products
■ Into the atmosphere
■ Into water systems
■ As waste

Products	GHG (Scope1, 2)	SOx
1,749.8 thousand 282.0 tons	1,095 ★thousand 269 tons-CO ₂ e	81.6 ★ 4.4 tons
NOx	Soot and dust	PRTR Law designated substances
786.7 ★ 127.1 tons	21.9 ★ 3.6 tons	152.4 ★ - tons
Chemical oxygen demand	Suspended solids	PRTR Law designated substances
228.7 ★ 102.5 tons	188.4 ★ 43.5 tons	16.2 ★ - tons
Nitrogen	Phosphorous	
144.8 ★ 2.4 tons	3.5 ★ 0.5 tons	
Final landfill	External recycling	External reduction
279.9 ★ 4,233.8 tons	47,390.1 ★ 5,497.7 tons	5,304.3 ★ 5,586.9 tons

*1 Kaneka, 40 Kaneka consolidated subsidiaries in Japan, and seven non-consolidated subsidiaries. Consolidated subsidiaries in Japan do not include subsidiaries of Cemedine Co., Ltd.

Note: For details, please refer to "Calculation Methods for Data of Indicators related to Environment" starting on P39.

Environmental Accounting

■ Environmental Costs (Investments, Expenditures)

(Millions of yen)

Cost Classifications	Main Efforts	Fiscal 2020		Fiscal 2021		Fiscal 2022	
		Investments	Expenditures	Investments	Expenditures	Investments	Expenditures
Business Area		1,049	5,637	3,987	6,048	893	6,350
1. Pollution Prevention	Air and water pollution prevention	947	3,338	3,737	3,881	835	4,124
2. Environmental Conservation	Addressing climate change and energy saving	-	-	-	-	-	-
3. Resource Recycling	Waste processing, recycling, and reduction	102	2,299	250	2,167	59	2,227
Upstream and Downstream	Product recycling, collection, and processing	0	25	0	25	0	24
Management Activities	Environmental education for employees and environmental impact monitoring and measurement	0	397	1	419	0	423
Research and Development	Research and development of products contributing to environmental conservation	-	9,169	-	9,219	-	11,876
Social Activities	Greening, beautification, and disclosure of environmental information	1	114	0	107	0	84
Environmental Damage	Payment of sulfur oxide emission charges	0	8	0	2	0	9
Total		1,050	15,350	3,988	15,820	893	18,766

We calculate these costs and effects based on the 2005 edition of the Environmental Accounting Guidelines by Japan's Ministry of the Environment with Kaneka's own unique way of thinking, targeting all parent manufacturing sites and 30 Group companies in Japan (manufacturing companies).

Note: Figures do not include global environment conservation investments and expenditures and research and development investments.

Amounts reported here may not fully match, due to rounding.

■ Quantitative Impact of Environmental Conservation Efforts

Category	Initiatives	Items	Units	Fiscal 2020	Fiscal 2021	Fiscal 2022
Pollution Prevention	Atmospheric and water discharges of hazardous substances	SOx emissions	Tons	61.7	85.5	81.6
		NOx emissions	Tons	877.1	876.3	786.7
		Chemical oxygen demand	Tons	220.9	236.2	228.7
		PRTR Law-designated chemical emissions	Tons	188.3	166.0	168.6
Environment	Greenhouse gas emissions	GHG emissions	Thousand tons-CO ₂ e	1,177.1	1,219.6	1,095.3
	Energy consumption	GWh Conversions	GWh	4,092	4,247	3,802
Resource Recycling	Final landfill	Landfill	Tons	479.5	350.2	279.9
	External recycling	Amounts recycled	Tons	55,750.8	48,906.8	47,390.1

■ Economic Impacts of Environmental Measures

(Millions of yen)

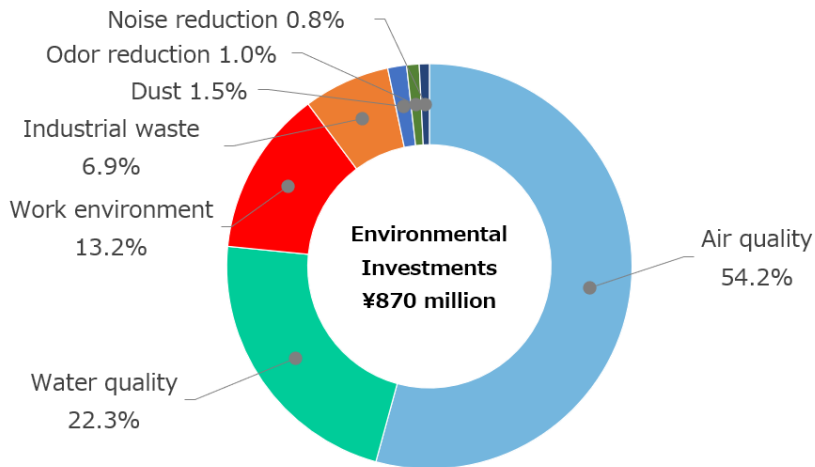
Measures	Fiscal 2020	Fiscal 2021	Fiscal 2022
Revenue from recycling	189	184	198
Cost reductions by better resource efficiency (output per unit of input) (*2)	1,335	-19	-134
Waste disposal cost reductions by recycling (*2)	110	448	306
Cost reductions by energy conservation	24	422	84
Total	1,657	1,035	453

Note: Amounts reported here may not fully match, due to rounding.

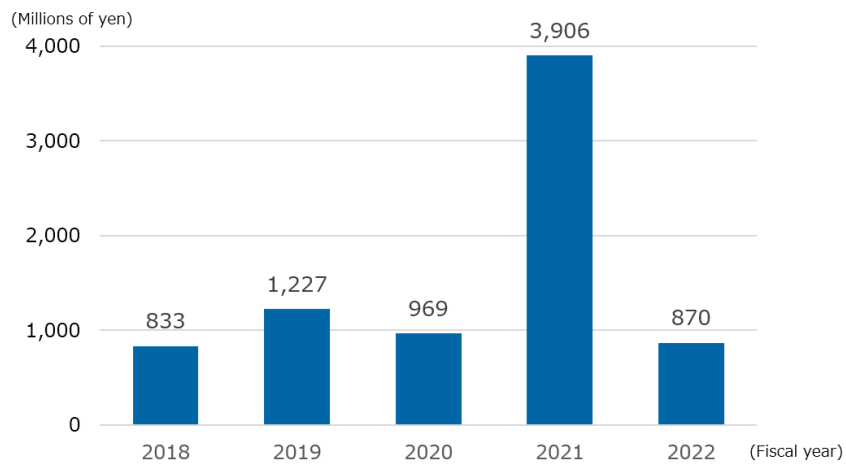
*2 When calculating fiscal 2022 results for certain business sites in Japan, it was found that positive and negative treatment was reversed for "Cost reductions by better resource efficiency (output per unit of input)" and "Waste disposal cost reductions by recycling." The actual values for fiscal 2020 and fiscal 2021 have therefore been revised.

Environmental Investments (Kaneka)

■ Environmental Investments in Fiscal 2022

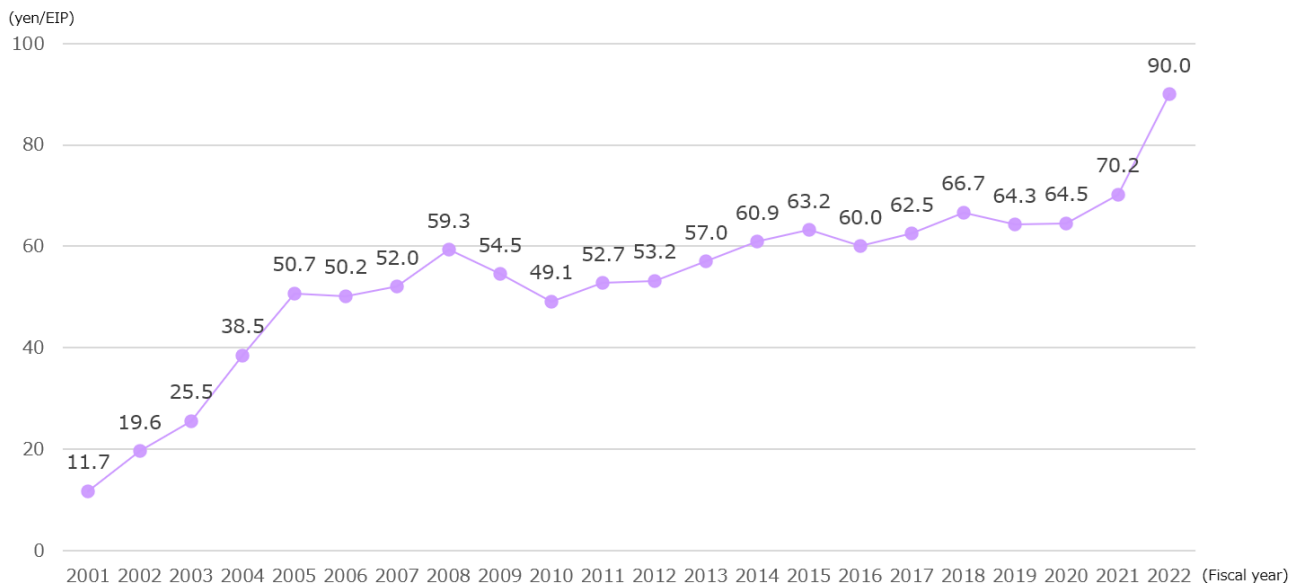


■ Cumulative Environmental Investments

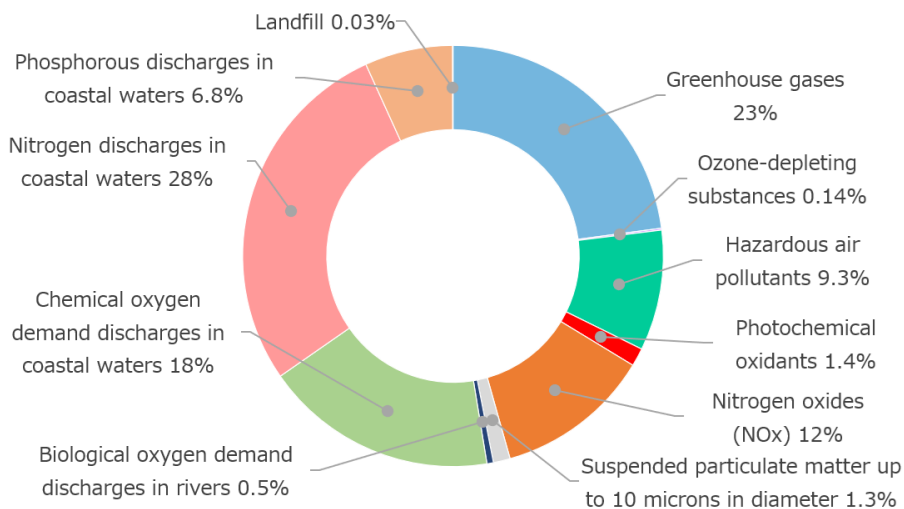


Environment Efficiency (Kaneka)

Environment Efficiency



Details of Total Environmental Impact



Fiscal Year	Net Sales (million yen)	Environmental Impact (100 million EIPs)	Environmental Efficiency (yen/EIP)
2020	279,774	43.3	64.5
2021	334,675	47.7	70.2
2022	369,172	41.0	90.0

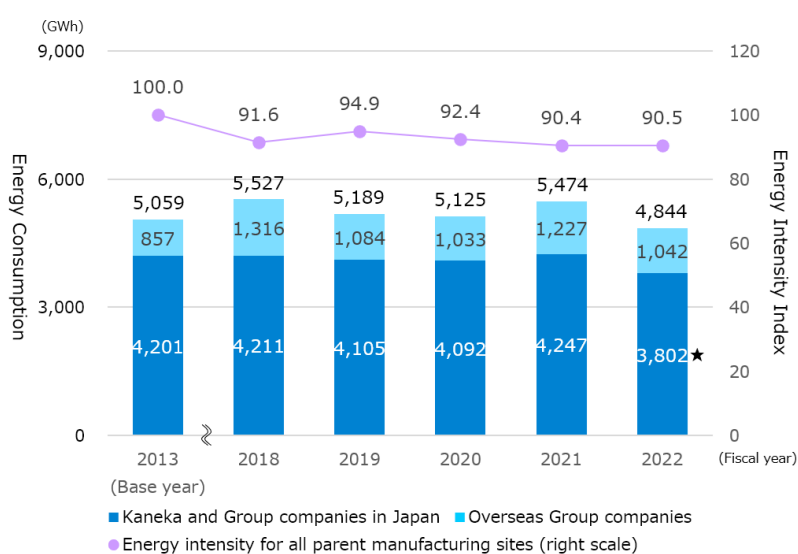
Climate Change Initiatives

Targets and Performance of Energy Conservation Efforts at All Kaneka Manufacturing Sites

Target		Fiscal 2022 performance	Evaluation
Energy intensity index	Average annual reduction of 1% or more	90.5 (all parent manufacturing sites) (0.1% year-on-year increase) Five-year average decrease of 0.3%	× ×
CO ₂ emission intensity index	Average annual reduction of 1% or more (fixed emissions factor) Estimated fiscal 2022 performance 91.4 (fiscal 2030 target 84.3)	85.0 (all parent manufacturing sites)	◎

Energy Conservation Efforts

Energy Consumption and Energy Intensity Index



Kaneka Group Energy Consumption (Fiscal 2022)

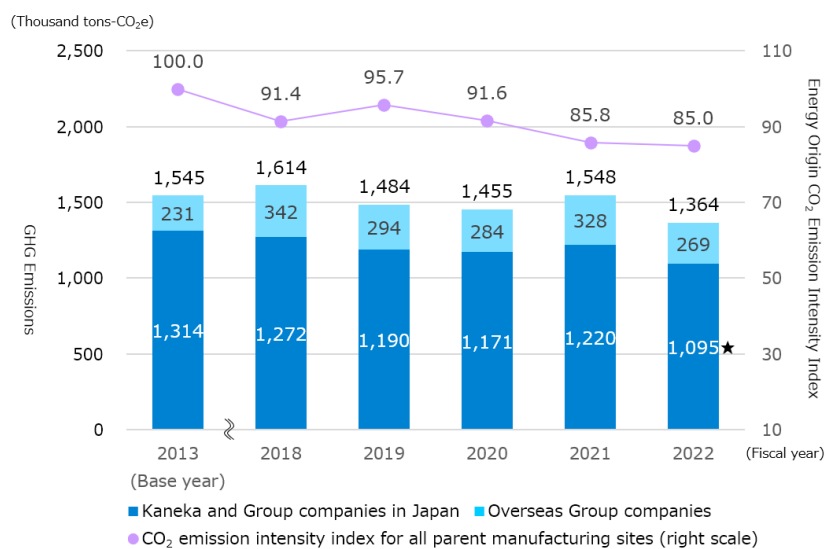
	Kaneka and Group companies in Japan	Overseas Group companies	Total
Energy Consumption (GWh Conversions) (GWh/year)	3,802 ★ (Of which Kaneka 3,328)	1,042	4,844
Energy Consumption (Crude Oil Equivalents) (Thousand kiloliters/year)	531 ★ (Of which Kaneka 461)	138	669

■ Kaneka Energy Consumption

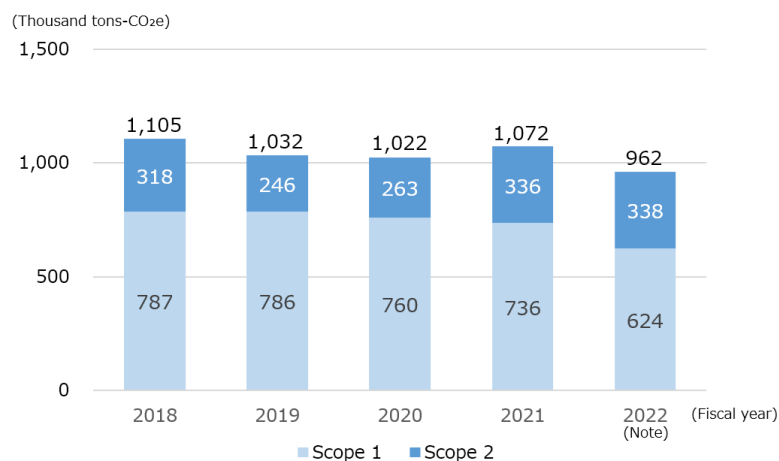
(Fiscal Year)	2019	2020	2021	2022
Energy Consumption (GWh Conversions) (GWh/year)	3,584	3,579	3,731	3,328
Energy Consumption (Crude Oil Equivalents) (thousand kiloliters/year)	432	446	484	461

Initiatives to Reduce CO₂ Emission Intensity

■ GHG Emissions and Energy Origin CO₂ Emission Intensity Index



■ Scope 1 and 2 Emissions (Kaneka)



Note: For energy supplier-owned co-generation systems installed on the Group's premises, emissions have been calculated based on fuel consumption at the facilities. However, from the fiscal 2022 results, we have changed the calculation method to one based on the consumption of heat and power generated at the facilities and purchased by the Group. This has lowered the ratio of Scope 1 to the total amount of Scope 1 and 2 emissions and increased the ratio of Scope 2 emissions.

■ Scope 1 and 2 Emissions (Fiscal 2022)

(Thousand tons-CO₂e/year)

	Kaneka and Group companies in Japan	Overseas Group companies	Total
Scope 1 direct emissions(*1)	689 ★ (Of which Kaneka 624)	102	791
Scope 2 indirect emissions from purchased or acquired electricity, steam, heat and cooling (*2)	407 ★ (Of which Kaneka 338)	166	573
Total	1,095 ★ (Of which Kaneka 962)	269	1,364

Note: Amounts reported here may not fully match, due to rounding.

*1 Non-energy CO₂ emissions and CO₂-equivalent of methane and N₂O emissions are included.

*2 Scope 2 emissions calculated using the location-based method for Kaneka and Group companies in Japan were 519 thousand tons CO₂e (including 449 thousand tons CO₂e for Kaneka). For overseas Group companies, Scope 2 emissions were the same calculated using location-based and market-based methods.

GHG Emissions from Business Activities throughout the Supply Chain

■ Kaneka Group Scope 3 Emissions Calculated by Category (Fiscal 2022)

(Thousand tons-CO₂e/year)

Category		Kaneka	Group companies in Japan	Overseas Group companies	Total
1	Purchased goods/services	1,707.6★(*3)	—	—	1,707.6
2	Capital goods	55.9	—	—	55.9
3	Fuel-and energy-related activities not included in Scope 1 or Scope 2	153.4★	—	—	153.4
4	Upstream transportation and distribution	21.4★	—	—	21.4
5	Waste generated in operations	3.4★	11.4	11.8	26.6
6	Business travel	4.0	0.5	0.4	4.9
7	Employee commuting	1.1	1.5	1.2	3.8
8	Upstream leased assets	0.0	—	—	0.0
9	Downstream transportation and distribution	(*4)	(*4)	(*4)	(*4)
10	Processing of sold products	(*4)	(*4)	(*4)	(*4)
11	Use of sold products	(*5)	(*5)	(*5)	(*5)
12	End-of-life treatment of sold products	539.8	106.8	235.0(*6)	881.6
13	Downstream leased assets	0.02	—	—	0.02
14	Franchises	—(*7)	—	—	—
15	Investments	397.4	—	—	397.4
Total of Scope 3 emissions		2,884.1	120.2	248.4	3,252.7

Note: A dash (“—”) in the table indicates that data that has not been calculated.

*3 Previously, the scope was raw materials (including intermediate products) used in each manufacturing process. From fiscal 2022, we changed the calculation to include those purchased as raw materials.

*4 GHG emissions for this category were not calculated because we were unable to determine a rational calculation method due to the high percentage of intermediate products.

*5 Some products generate emissions when used. However, since it was confirmed that this represented less than 0.1% of total Scope 3 emissions, such emissions were excluded from the calculation range.

*6 Kaneka Medical Vietnam Co., Ltd. is not included in the calculation because its products have not been converted to weight.

*7 GHG emissions for this category were not calculated because we have no franchise stores.

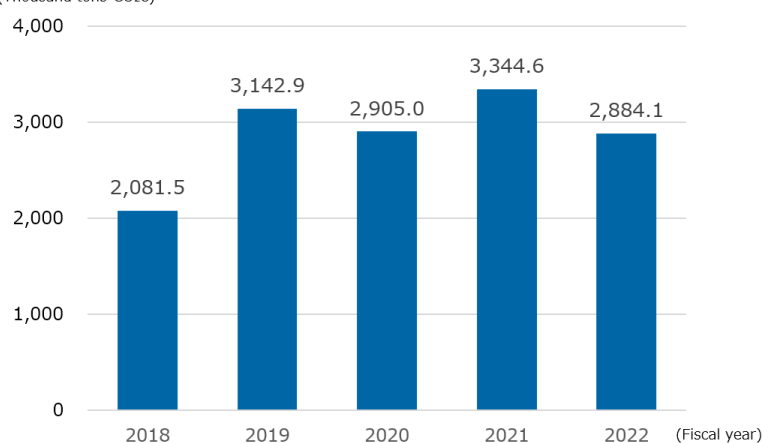
■ Scope 1, 2 and 3 Emissions (Kaneka)

(Thousand tons-CO₂e/year)

(Fiscal Year)	2019	2020	2021	2022
Scope 1 emissions	785.7	759.9	736.1	624.1
Scope 2 emissions	246.4	262.5	335.7	338.2
Total of Scope 1 and 2 emissions	1,032.1	1,022.4	1,071.8	962.3
Total of Scope 3 emissions	3,142.9	2,905.0	3,344.6	2,884.1

■ Scope 3 Emissions (Kaneka)

(Thousand tons-CO₂e)



Note: The reason for the large increase in Scope 3 emissions from fiscal 2018 to fiscal 2019 was the addition of a category to the scope of calculation. In addition, from fiscal 2022 we changed the method for obtaining raw material purchase data for Category 1.

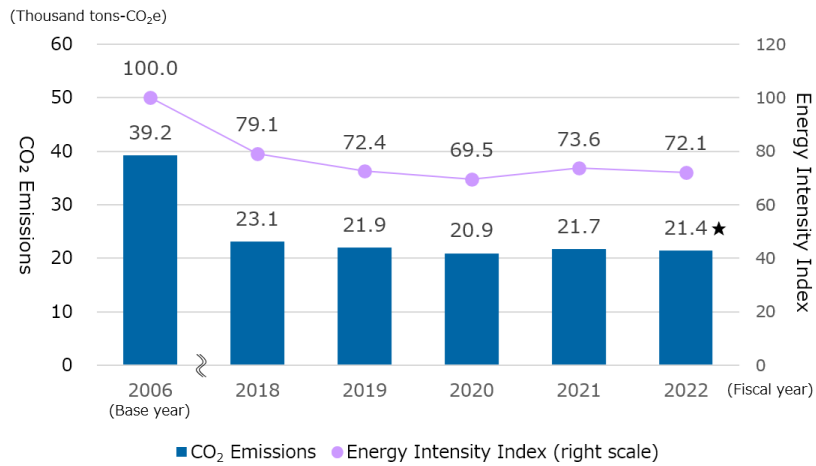
Investments in Energy-Efficient Facilities

■ Results of Our Own Environmental Capital Investment Program

Fiscal Year	Investments (million yen)	Number	Reduced CO ₂ Emission of the Year
2018	200	24	1,748 tons-CO ₂
2019	200	29	1,227 tons-CO ₂
2020	200	27	1,010 tons-CO ₂
2021	300	36	1,757 tons-CO ₂
2022	300	30	2,319 tons-CO ₂

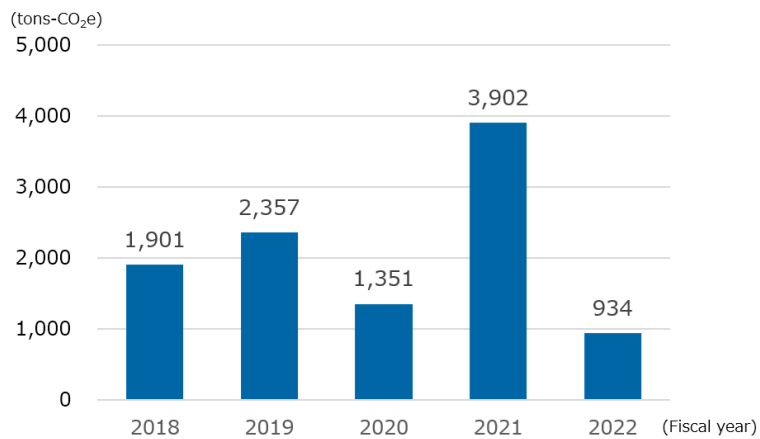
Energy-Efficiency Initiatives in Logistics

■ CO₂ Emissions and Energy Intensity Index from Logistics (Kaneka)



Response to the Act on Rational Use and Proper Management of Fluorocarbons of Japan

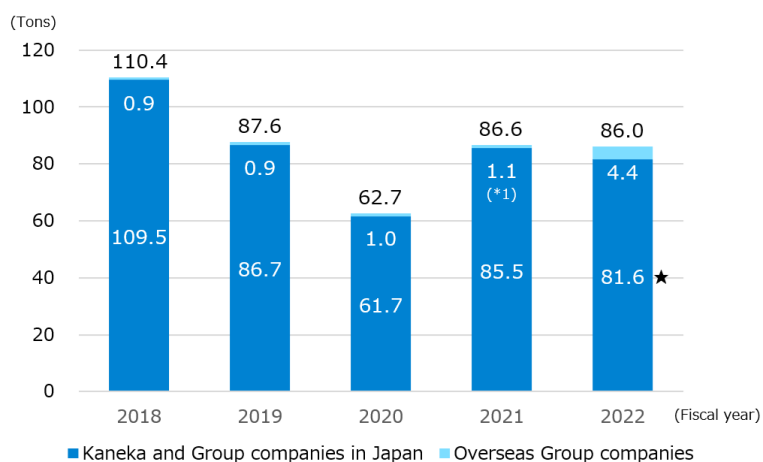
■ Estimated Leakage of Fluorocarbons (Kaneka)



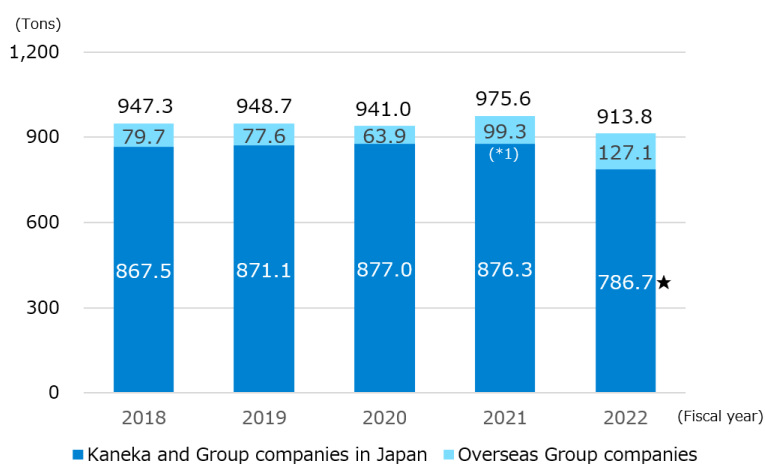
Preventing Pollution and Managing Chemical Substances

Preventing Air Pollution

SOx Emissions

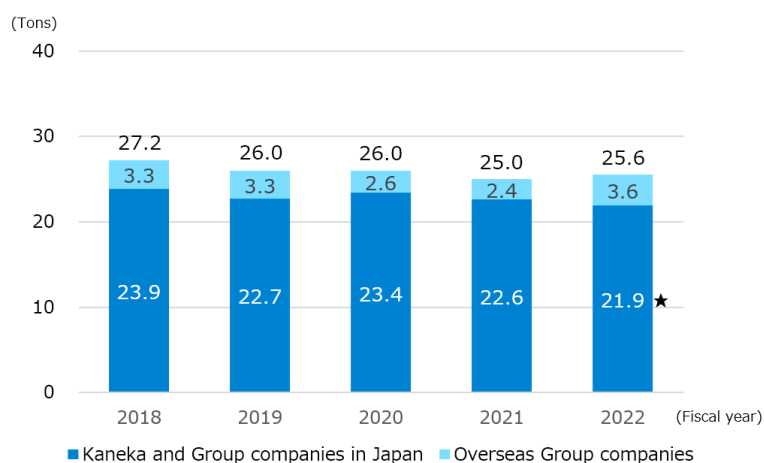


NOx Emissions



*1 The calculation of fiscal 2021 SOx and NOx emissions for certain business facilities of overseas Group companies contained omissions. The fiscal 2021 values have therefore been revised.

Soot and Dust Emissions

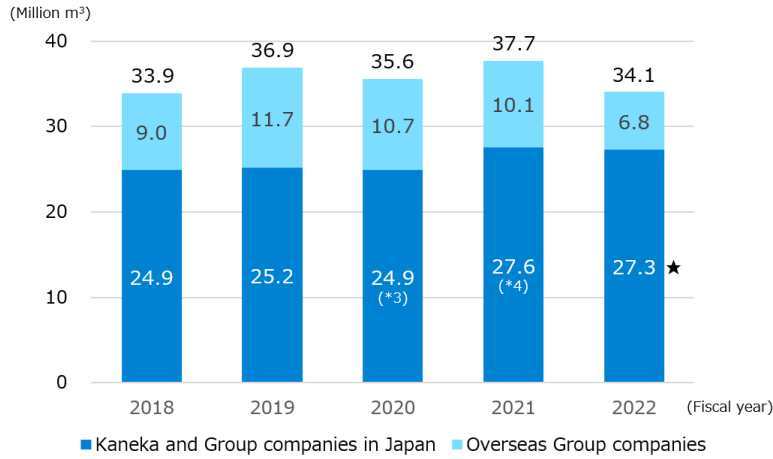


■ Kaneka's Atmospheric Emissions

(Fiscal Year)	2018	2019	2020	2021	2022
SOx Emissions (Tons)	74.5	70.1	48.9	71.6	68.8
NOx Emissions (Tons)	825.7	834.9	828.1	830.7	738.9
Soot and Dust Emissions (Tons)	22.8	21.7	22.3	21.7	20.5

Water Conservation

■ Water Consumption (*2)

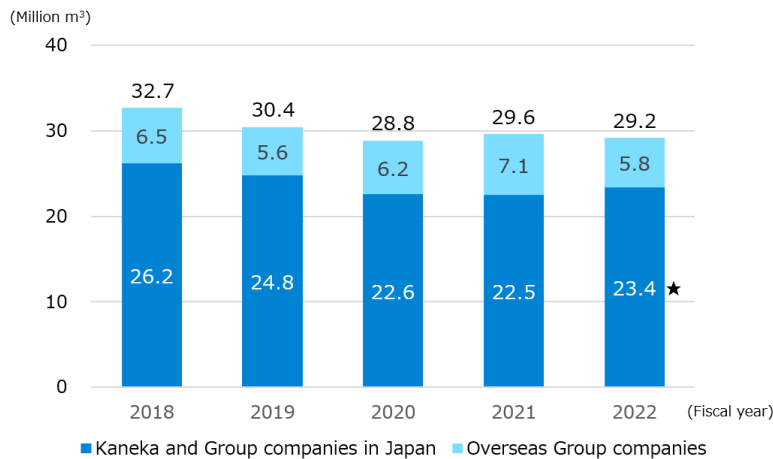


*2 Our water consumption and wastewater volume include those generated from non-manufacturing facilities other than the plant department.

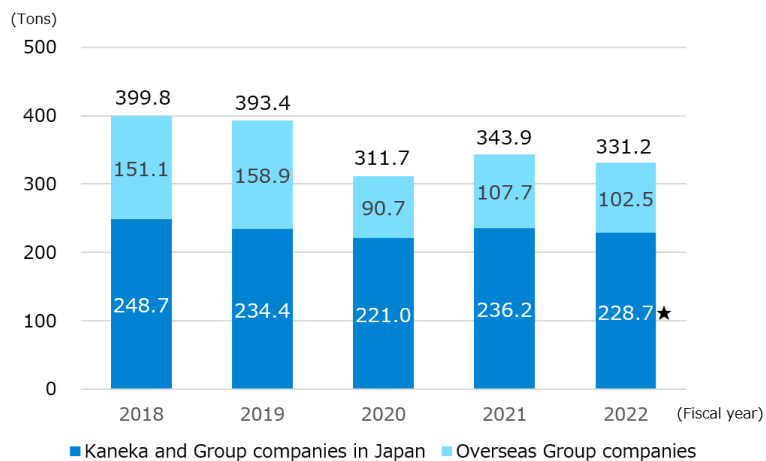
*3 Starting from the fiscal 2021 results, domestic group companies are subject to third-party assurance. A review of fiscal 2020 data revealed input errors, etc. The actual values for fiscal 2020 have therefore been revised.

*4 Seawater consumption at some manufacturing sites in Japan was included in totals starting in fiscal 2021. Such consumption was previously not included, as measuring instruments were not set. Note that this seawater had already been included in wastewater discharges since previous years.

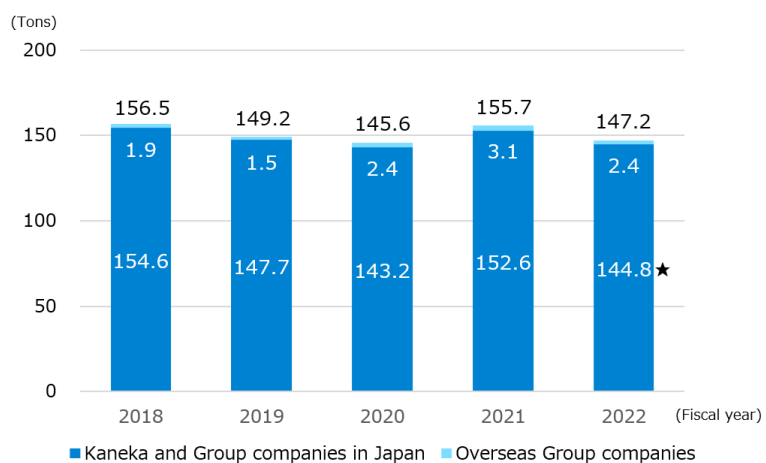
■ Wastewater Discharges (*2)



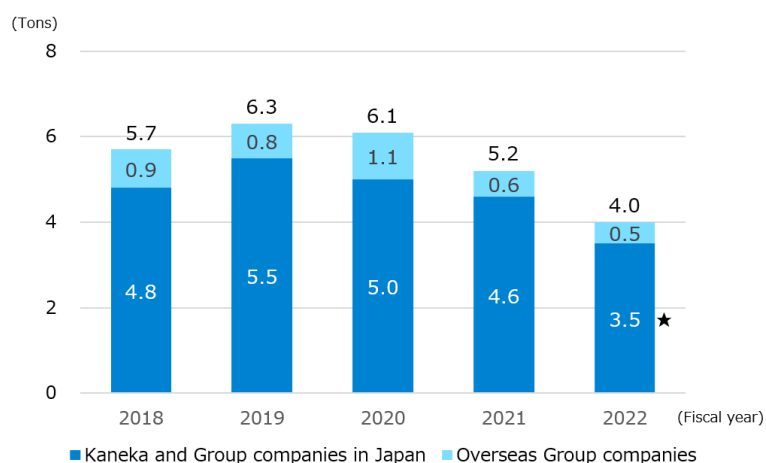
■ Chemical Oxygen Demand in Wastewater (*2)



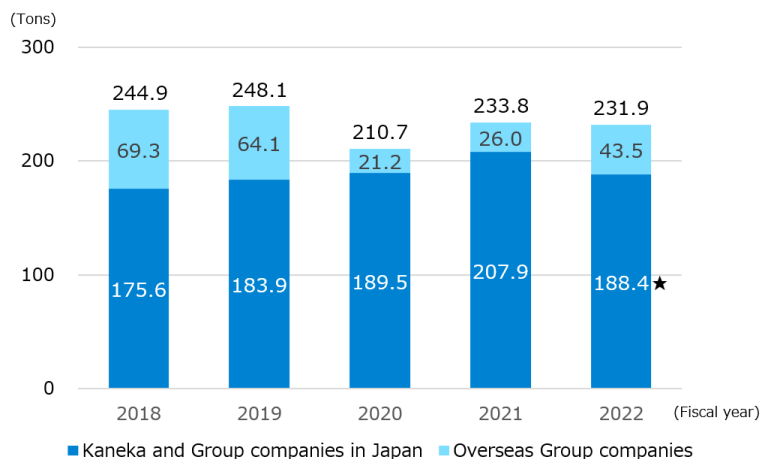
■ Nitrogen in Wastewater (*2)



■ Phosphorous in Wastewater (*2)



■ Suspended Solids in Wastewater (*2)

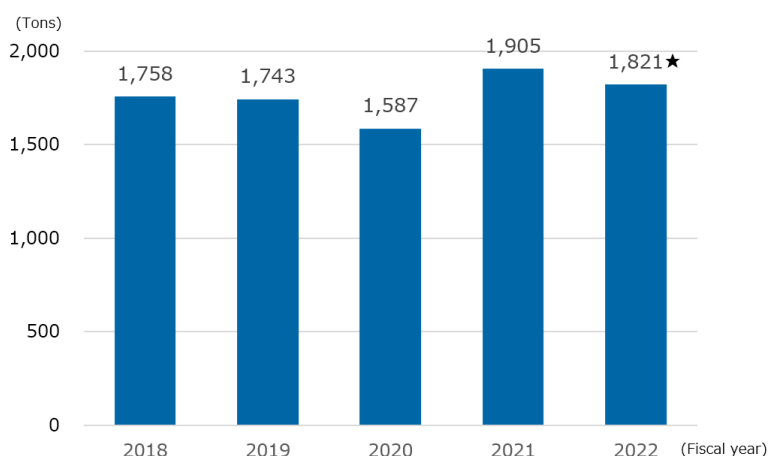


■ Kaneka Emissions into Bodies of Water

(Fiscal Year)	2018	2019	2020	2021	2022
Water Consumption (Million m ³)	21.6	21.8	21.5	24.3	24.2
Wastewater Discharges (Million m ³)	23.0	21.5	19.5	19.5	20.6
Chemical Oxygen Demand in Wastewater (Tons)	241.4	227.4	215.7	230.2	219.3
Nitrogen in Wastewater (Tons)	153.5	146.5	141.9	150.7	142.5
Phosphorous in Wastewater (Tons)	4.7	5.3	4.9	4.4	3.3
Suspended Solids in Wastewater (Tons)	170.1	178.2	183.4	199.7	176.5

Volatile Organic Compounds Emission Reductions

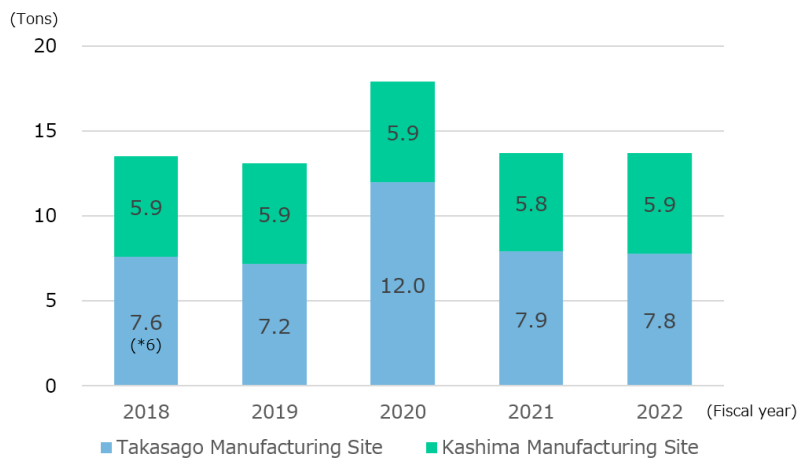
■ VOC (*5) Emissions (Kaneka)



*5 Volatile Organic Compounds (VOCs) are organic chemical substances that cause suspended particulate matter and photochemical oxidants.

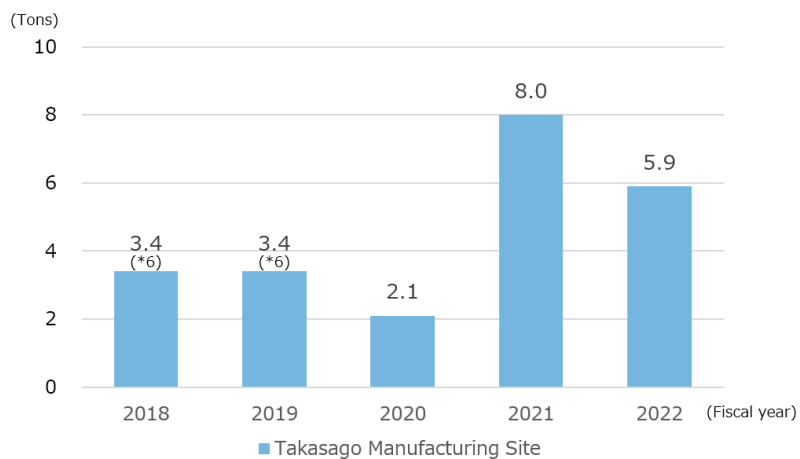
Hazardous Atmospheric Pollutants (Data of six substances for each manufacturing site of Kaneka)

■ Chloroethylene Emissions

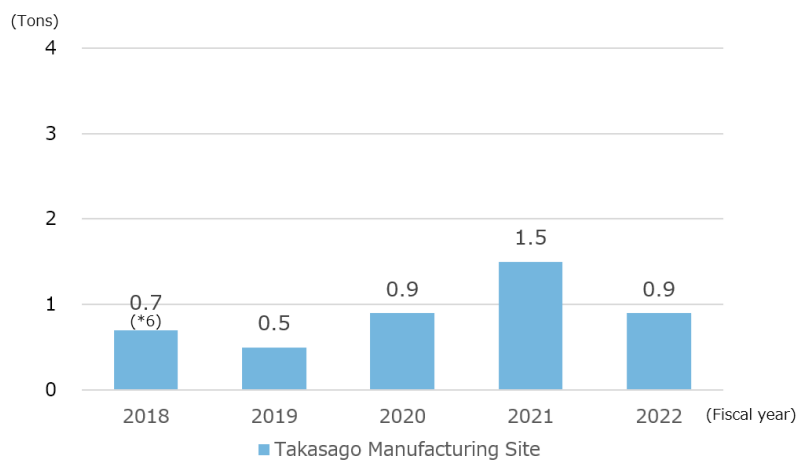


*6 A review of the data revealed input errors, etc. The values have therefore been revised.

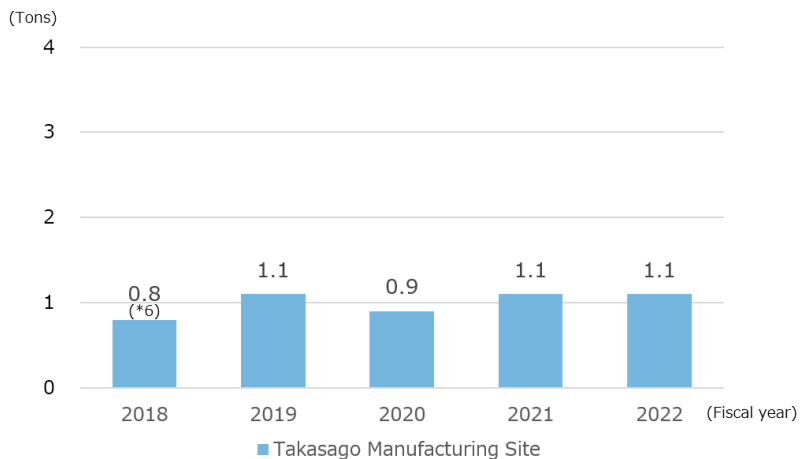
■ 1,2-Dichloroethane Emissions



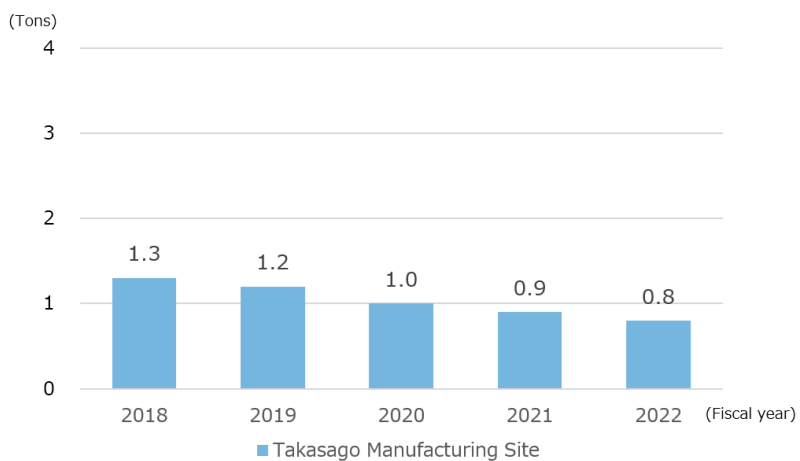
■ Chloroform Emissions



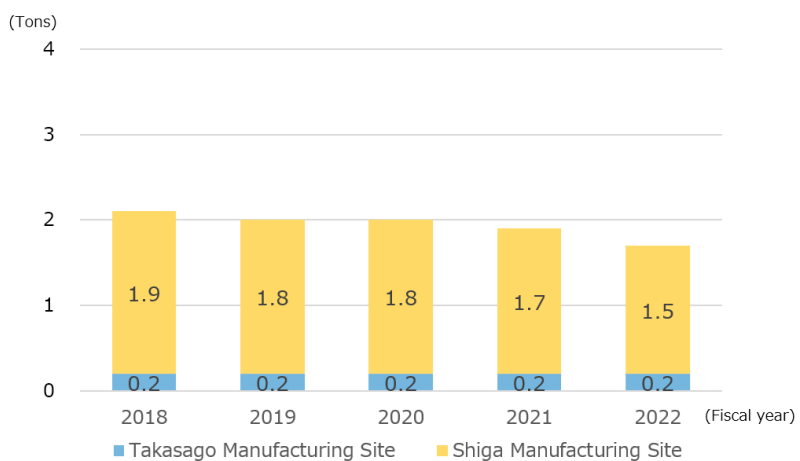
■ Acrylonitrile Emissions



■ 1,3-Butadiene Emissions



■ Dichloromethane Emissions



Substances Subject to the PRTR Law

■ Kaneka Emissions Subject to the PRTR Law

(Kilograms)

	Designated Number under Ordinance	Chemical Substances	Fiscal 2022					Fiscal 2021	
			Emissions				Transferred	Emissions	
			Atmospheric Emissions	Discharges into Public Waterways	Discharges into Soil	Internal Landfill	Total	Total	Total
Large Discharges of 10 Substances	392	n-hexane	24,336	0	0	0	24,336	107,985	19,476
	94	Chloroethylene (vinyl chloride)	13,722	470	0	0	14,192	942	14,044
	275	Sodium dodecyl sulfate	0	8,479	0	0	8,479	0	8,479
	134	Vinyl acetate	6,191	295	0	0	6,486	0	6,168
	157	1,2-dichloroethane	5,943	33	0	0	5,976	0	8,005
	420	Methyl methacrylate	5,255	3	0	0	5,258	11	5,470
	240	Styrene	4,312	38	0	0	4,350	12,067	5,425
	7	n-butyl acrylate	3,306	0	0	0	3,306	4,005	3,670
	232	N,N-dimethylformamide	2,244	941	0	0	3,185	181,835	5,607
	123	3-chloropropene (allyl chloride)	2,827	0	0	0	2,827	0	3,107
Total Other than the 10 Substances Above			8,774	5,879	0	0	14,653	73,541	16,685
Grand Total for All Substances			76,911	16,137	0	0	93,048	380,386	96,136

Note: Of the 462 substances subject to the PRTR Law, Kaneka reports about 60 items.

Amounts reported here may not fully match, due to rounding.

■ Group Companies in Japan Emissions Subject to the PRTR Law

(Kilograms)

	Designated Number under Ordinance	Chemical Substances	Fiscal 2022						Fiscal 2021	
			Emissions					Transferred	Emissions	
			Atmospheric Emissions	Discharges into Public Waterways	Discharges into Soil	Internal Landfill	Total	Total	Total	
Large Discharges of 10 Substances	232	N,N-dimethylformamide	41,111	0	0	0	41,111	24,596	26,035	
	300	Toluene	19,763	0	0	0	19,763	336,233	21,009	
	186	Dichloromethane (methylene dichloride)	7,336	0	0	0	7,336	133,576	14,273	
	80	Xylene	2,517	0	0	0	2,517	0	2,486	
	296	1,2,4-trimethylbenzene	2,696	0	0	0	2,696	0	2,662	
	56	Ethylene oxide	700	0	0	0	700	0	351	
	355	Bis (2-ethylhexyl) phthalate (DEHP)	489	33	0	0	522	251,257	759	
	242	N,N-dimethylacetoamide	516	0	0	0	516	25,000	1,690	
	392	n-hexane	240	0	0	0	240	4,130	470	
	438	Methylnaphthalene	74	0	0	0	74	0	41	
Total Other than the 10 Substances Above			50	2	0	0	52	18,944	103	
Grand Total for All Substances			75,492	35	0	0	75,527	793,736	69,879	

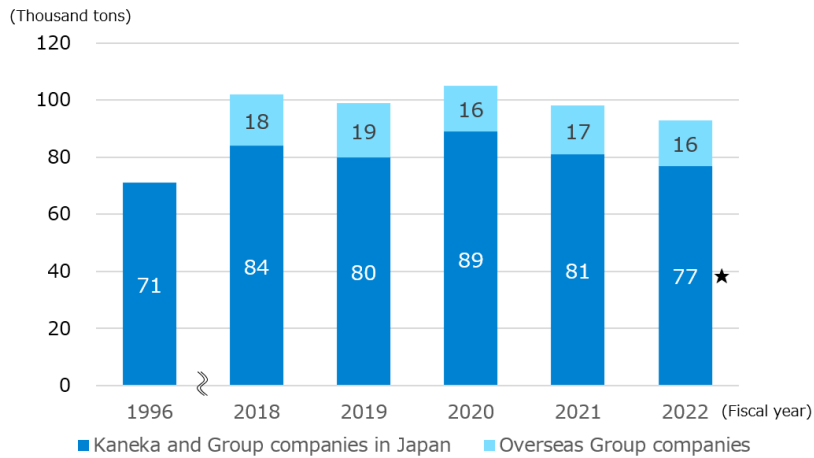
Note: Of the 462 substances subject to the PRTR Law, Group companies in Japan reports about 28 items.

Amounts reported here may not fully match, due to rounding.

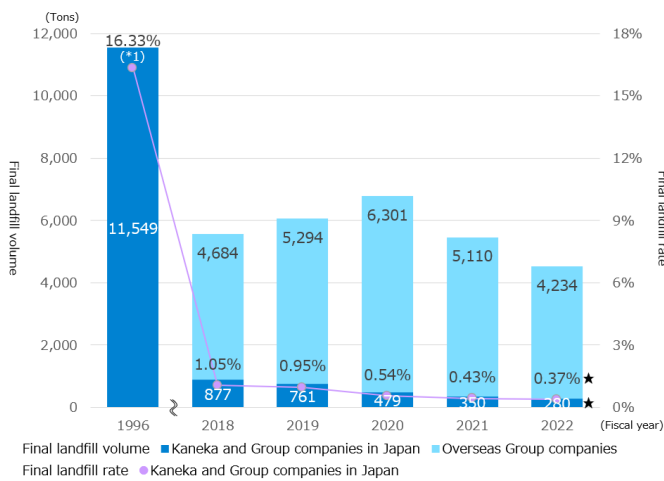
Reducing Waste and Recycling Resources

Reducing Industrial Waste Sent to Final Landfill

Waste Generated

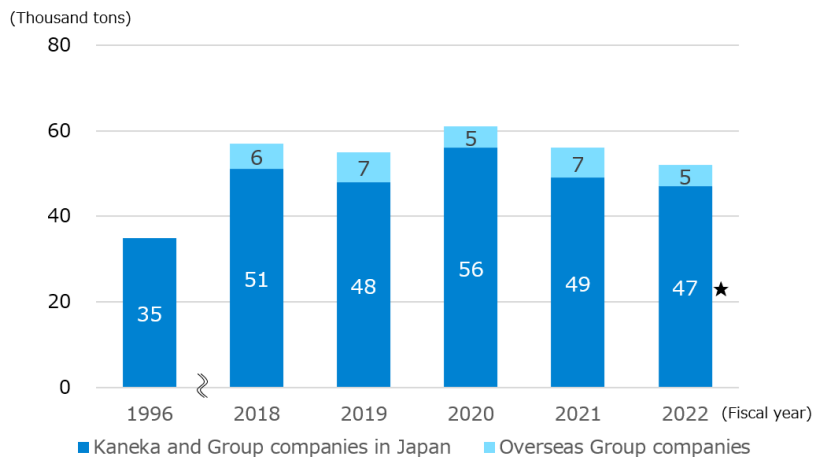


Volume and Rate of Waste Sent to Final Landfill

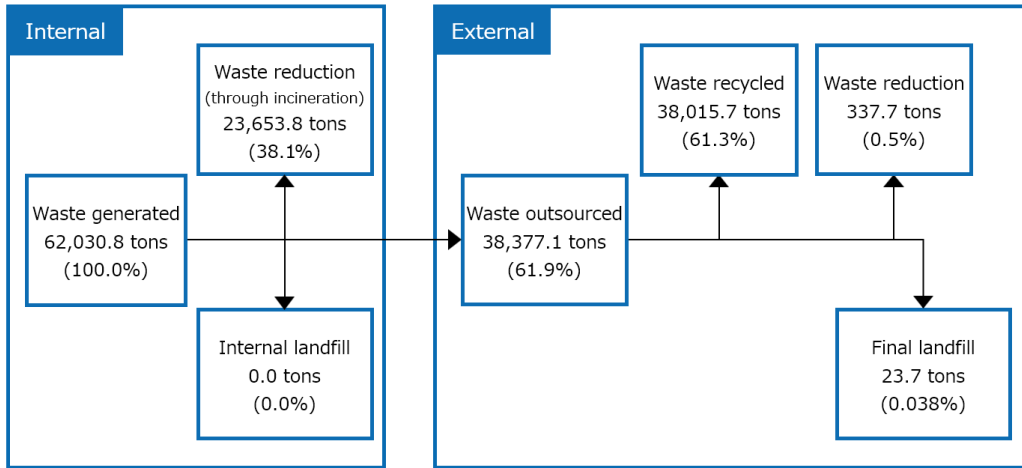


*1 The rate of waste sent to final landfill for fiscal 1996 was incorrect due to a rounding error. The second digit after the decimal point was incorrect and has therefore been revised.

Waste Recycled



■ Waste Flow: From Generation to Landfill (Fiscal 2022 results at Kaneka)



■ Waste at Kaneka

(Fiscal Year)	2018	2019	2020	2021	2022
Final landfilled (Tons)	2.2	23.1	29.4	34.5	23.7
Final landfilled (%)	0.003	0.035	0.041	0.053	0.038
Waste generated (Tons)	67,902	65,917	72,402	64,864	62,031
Waste Recycled (Tons)	42,711	40,060	47,421	39,719	38,016

Safety / Quality

Basic Policy

Placing the top priority for management on safety, we have established the Basic Policy on Safety, under which all employees as well as all persons working at the Kaneka Group and our partner companies work to create safe and healthy workplaces, pursuing the goal of no accidents and no disasters.

As for product quality, aiming to benefit society and satisfy customers through a stable supply of safe and reliable products, Kaneka Group has set Quality Management Regulations to ensure thorough day-to-day quality control and product safety at all stages, from product design and development to delivery to customers.

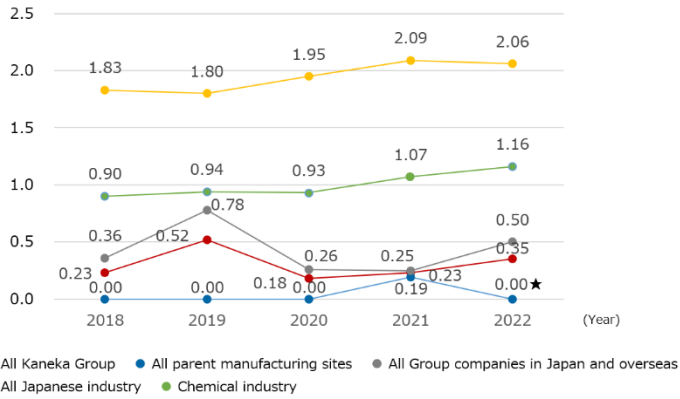
■ Comprehensive Disaster Drills

Manufacturing Site	Date	Participants	Details
Takasago Manufacturing Site	December 19, 2022	2,112	An earthquake resulting in a fire caused by hazardous material leakage
Osaka Manufacturing Site	November 17, 2022	1,044	An earthquake resulting in a fire
Shiga Manufacturing Site	November 22, 2022	363	An earthquake resulting in a fire
Kashima Manufacturing Site	December 14, 2022	59	An earthquake resulting in a fire caused by hazardous material leakage

■ OSHMS Certifications

Manufacturing Site	Location	Certification Date	Certification No.
Takasago Manufacturing Site	Hyogo	March 10, 2008	08-28-13
Osaka Manufacturing Site	Osaka	August 21, 2007	07-27-10
Shiga Manufacturing Site	Shiga	January 15, 2008	08-25-6
Kashima Manufacturing Site	Ibaraki	December 13, 2010	10-8-26

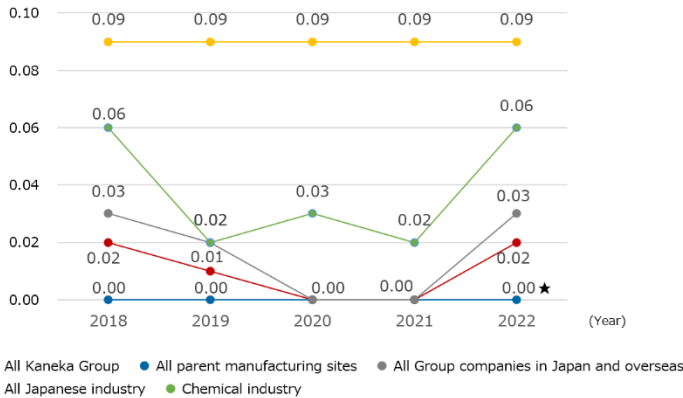
■ Accident Frequency Rate



Note: Accident Frequency Rate is an indicator that shows the frequency of occupational accidents that caused death and/or injury by indicating the number of casualties per total 1 million working hours.

Scope: Includes regular employees, contract employees, and temporary employees dispatched from other companies. Employees seconded to other companies and employees of partner companies are not included.

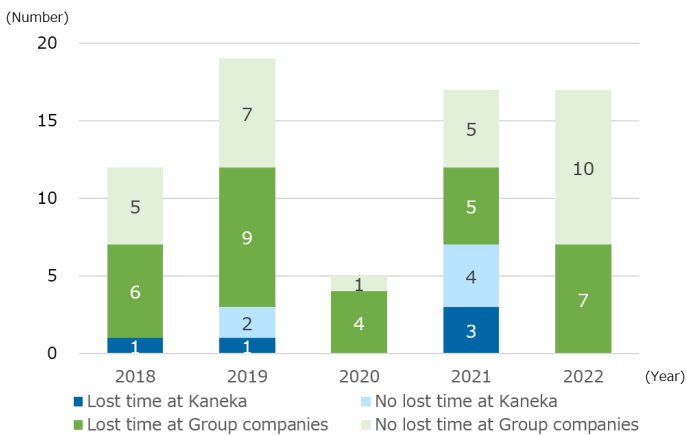
■ Accident Severity Rate



Note: Accident Severity Rate is an indicator that shows the level of severity of occupational accidents by indicating the number of lost work days per total 1,000 working hours.

Scope: Includes regular employees, contract employees, and temporary employees dispatched from other companies. Employees seconded to other companies and employees of partner companies are not included.

■ Accidents Resulting / Not Resulting in Lost Time



Note: The number of occupational accidents includes those among employees at Kaneka and partner companies working in the Kaneka Group.

Certification Acquisition Status

■ ISO 9001 Certification

Division or Group Company (SV : Solutions Vehicle)	Major Products	Registry Organization and Number
Vinyls and Chlor-Alkali SV	Caustic soda, hydrochloric acid, sodium hypochlorite, liquid chlorine, vinyl chloride monomers, polyvinyl chloride, polyvinyl chloride paste, heat-resistant polyvinyl chloride, and OXY chlorination catalyst	JCQA / JCQA-1263
Performance Polymers (MOD)SV	Impact modifiers (Kane Ace™ B etc.), processing aids and specialty additives (Kane Ace™ PA etc.), toughener for thermosetting resins (Kane Ace™ MX), engineering resin for injection molding (Kaneka Hyperite™), zero birefringence PMMA material (Kaneka Hyperite™), and Acrylic film (Sunduren™)	LRQA / ISO 9001-0066620
Performance Polymers (MS)SV	Silyl-terminated polyether (Kaneka MS Polymer™ etc.), acrylic silicon polymer (Kaneka Gemlac™), terminally reactive liquid acrylic polymer (KANEKA XMAP™ etc.), and isobutylene-based thermoplastic elastomer (SIBSTAR™)	
Green Planet Project	Biodegradable polymer (KANEKA Biodegradable Polymer Green Planet™)	
Foam & Residential Techs SV	Bead technique-based polyolefin resins and molded products (Eperan™, Eperan PP™), bead technique-based expandable polystyrene (Kaneparl™), and extruded polystyrene foam board (Kanelite™)	JCQA / JCQA-0673
E & I Technology SV	Ultra-heat-resistant polyimide films (Apical™, Pixeo™), optical film (Elmech™), Optical acrylic resin, polyimide varnish for flexible displays, bonded magnets (Kaneka Flux™), multi-layered insulation materials, PVC pipes for underground electric cables, high thermal-conductive graphite sheet (Graphinity™), thermal conductive elastomer, and flexible cover coat ink	LRQA / ISO 9001-0077397
	Thermo-resistant, light-resistant transparent resin and molded products	DNV / 01635-2006-AQ-KOB-RvA/JAB

PV & Energy Management SV	Design, development, manufacturing, sales, and services of photovoltaic modules	JQA / JQA-QMA13200
Kaneka Solartech Corporation	Sales and services of photovoltaic power generation system materials	
Kaneka Solar Marketing Corporation		
Foods & Agris SV		JQA / JQA-QMA10274
Takasago Manufacturing Site Foods Manufacturing Department	Margarine, shortening, edible oils and fats, edible refined oils and fats, whipped cream, concentrated milk products, modified milk, fermented milk products, flour paste, butter cream, chocolate, frozen dough, cheese, mayonnaise, cooking fillings, prepared foods, yeast, radish sprout extract, enoki mushroom extract formulations, and seasoning materials	
Kaneka Foods Manufacturing Corporation		
Tokyo Kaneka Foods Manufacturing Corporation		
Kaneka Foods Corporation	Purchase, design, sales, technological services, and quality assurance for processed foods and raw materials, and sales of food processing machinery	
NJF Co., Ltd.	Production instruction of processing contractors	
OLED Business Development Project	Organic electroluminescent lighting	JMAQA / JMAQA-2532
OLED Aomori Co., Ltd.		
Showa Kasei Kogyo Co., Ltd.	Plastic compounds	ASR / Q0556
Tatsuta Chemical Co., Ltd.	Plastic film, plastic sheet	BVJ / JP019571
Sanvic Inc.	Synthetic resin sheets and films	JMAQA / JMAQA-1824
Tobu Chemical Co., Ltd.	Plastic wallpaper, vinyl chloride resin wallpaper	LRQA / YKA0958154
Cemedine Co., Ltd.	Development and manufacture of general and industrial adhesives, sealants and special paints	JCQA / JCQA-0386
Kanto Styrene Co., Ltd.	Bead technique-based polystyrene foam molded products	IIC / JN-1050.0
Kaneka Foam Plastics Co., Ltd.	Bead technique-based polyolefin molded products	ASR / Q1919
Tamai Kasei Co., Ltd.	A series of operations related to order receipt, manufacturing, inspection, and shipping of Phase Change Material (PCM) (Patthermo)	ASR / Q4131
Vienex Corporation	Electronic products	JSA / JSAQ2593
Shinka Shokuhin Co., Ltd.	Modifiers for bread and confectionery, processed fruit products, outsourced products (margarine, cooking fillings, modified milk)	JQA / JQA-QMA15323
Taiyo Yushi Corporation	Margarine, shortening, edible refined oils and fats, edible vegetable oils and fats, refined lard, other edible oils and fats, processed fats, dairy products, and food additives	JQA / JQA-QMA14671
	Cosmetics for hair and skin care, dental care items, body soaps, and soaps for clothes, dish washing and house cleaning	BVJ / 4171923

Kaneka Sun Spice Corporation	(1) Product design and development of spices and secondary processed products incorporating spices (2) Purchase and sales of general processed foods and their ingredients	JQA / JQA-QMA11351
Nagashima Shokuhin Co., Ltd.	Frozen puff pastry dough and frozen cookie sheets	JQA / JQA-QMA15844
Tochigi Kaneka Corporation	Design and manufacture of multilayer insulating materials, graphite sheets, development of graphene oxide	ASR / ISO-9001-Q4710
Kaneka Belgium N.V.	Modifier resins (Kane Ace™), bead technique-based polyolefins (Eperan™, Eperan PP™), modified silicone polymer (Kaneka MS Polymer™), and acrylic sol	AIB-VINCOTTE / BE-91 QMS 028j
Kaneka North America LLC	Ultra-heat-resistant polyimide films (Apical™), modifier resins (Kane Ace™, Kaneka Telalloy™), heat-resistant vinyl chloride resins, and modified silicone polymers (Kaneka MS Polymer™)	BSI / FM72722
Kaneka (Malaysia) Sdn. Bhd.	Modifier resins (Kane Ace™)	SIRIM QAS / QMS 00900
Kaneka Paste Polymers Sdn. Bhd.	Vinyl chloride paste resin	SIRIM QAS / QMS 00900
Kaneka Apical Malaysia Sdn. Bhd.	Ultra-heat-resistant polyimide films (Apical™), High thermal-conductive graphite sheet (Graphinity™)	SIRIM QAS / QMS 00900
Kaneka MS Malaysia Sdn. Bhd.	Modified silicone polymer (Kaneka MS Polymer™)	SIRIM QAS / QMS 00900
Kaneka Innovative Fibers Sdn. Bhd.	Synthetic fibers (FPW)	SIRIM QAS / QMS 00900
Kaneka Eperan Sdn. Bhd.	Development, manufacture of polyethylene foam, polypropylene foam beads and planks	SIRIM QAS / QMS00996
Kaneka Eperan (Suzhou) Co., Ltd.	Bead technique-based polyolefins (Eperan™, Eperan PP™)	SGS / CN18/20031
Kaneka (Foshan) High Performance Materials Co., Ltd.	Bead technique-based polyolefins (Eperan™, Eperan PP™)	Beijing East Allreach certification Center Co., Ltd. / USA19Q44009R1S
Kaneka (Thailand) Co., Ltd.	Development, manufacture of mini pellets and polyolefin beads, including product application development	BSI / FM714676
KSS Vietnam Co., Ltd.	Processed spices, herbs, dried vegetables, and mixed spices	Intertek Certification Limited / CPRJ-2015-040996
Kaneka Eurogentec S.A.	Development, production and sales of products and services for research and development in life sciences	BSI / FS 638601
Anaspec Inc.	Peptides, antibodies, synthetic resins, amino acids, and reagents for research	SQA/09.357.1

■ ISO 13485 Certification(*1)

Division or Group Company (SV: Solutions Vehicle)	Main Products	Registry Organization and Number
Medical SV	Adsorbents, Lixelle™, liposorber™, catheters, silascon™, ED coil, and in-vitro diagnostics	TÜV SÜD / Q5 024736 0069
Kaneka Medix Corporation		
Kaneka Medical Vietnam Co., Ltd.	Catheters (parts)	
Kaneka Medical Tech Corporation	Endoscopic instruments, catheter electrodes	
Kaneka Eurogentec S.A.	Contract manufacturing of in vitro diagnostic oligonucleotides	BSI / MD 638600

*1 ISO 13485 is an international standard covering the comprehensive management system requirements for the design and manufacture of medical equipment.

■ ISO 22000 Certification(*2)

Production Unit or Group Company	Main Products	Registry Organization and Number
Takasago Manufacturing Site Pharmaceutical Department	Coenzyme Q10 (Kaneka Q10™, Kaneka QH™)	SGS / JP10 / 030379
Kaneka Sun Spice Corporation	Spices and secondary processed products incorporating spices	JQA / JQA-FS0123
KSS Vietnam Co., Ltd.	Processing of spices, herbs, dried vegetables, and mixed spices	Intertek Certification Limited / 38191405003
Shinka Shokuhin Co., Ltd.	Modifiers for bread and confectionery, processed fruit products, outsourced products (margarine, cooking fillings, modified milk)	JQA-FS0286

*2 ISO 22000 is an international standard for food safety management systems.

■ Food Safety System Certification 22000 (FSSC 22000)(*3)

Division or Group Company (SV: Solutions Vehicle)	Main Products	Registry Organization and Number
Takasago Manufacturing Site Foods Manufacturing Department	Margarine, shortening, edible oils and fats, edible refined oils and fats, whipped cream, concentrated milk products, modified milk, and yeast	JQA / JQA-FC0047-1
Kaneka Foods Manufacturing Corporation	Margarine, flour paste, buttercream, cheese, fermented milk products, antifreeze protein, antifreeze polysaccharide, and seasoning materials	JQA / JQA-FC0047-2
Tokyo Kaneka Foods Manufacturing Corporation	Margarine, shortening, flour paste, buttercream, and whipped cream	JQA / JQA-FC0047-3
Taiyo Yushi Corporation	Margarine, shortening, edible refined oils and fats, edible vegetable oils and fats, refined lard, other edible oils and fats, processed fats, and dairy products (butter)	JQA / JQA-FC0044
Nagashima Shokuhin Co., Ltd.	Frozen dough (pies and confectionery)	JQA / JQA-FC0109
PT. Kaneka Foods Indonesia	Manufacturing of bread fillings and whipping creams, manufacturing of bread improver, manufacturing of speciality fats and blended margarines	SGS / ID22/00000151
Kaneka Sun Spice Corporation Shiga Plant	Manufacture of spices, seasonings, curry powder and liquid spices (garlic, ginger, oil seasonings)	JQA / JQA-FC0281-1
Kaneka Sun Spice Corporation Ibaraki Plant	Manufacture of spices, seasonings, curry powder and liquid spices (garlic, ginger, oil seasonings)	JQA / JQA-FC0281-2

*3 The Food Safety System Certification 22000 (FSSC22000) offers a complete certification Scheme for Food Safety Management Systems based on ISO 22000, ISO/TS 22002-1, and additional FSSC 22000 requirements.

■ ISO 22716 Certification(*4)

Group Company	Main Products	Registry Organization and Number
Taiyo Yushi Corporation	Shampoos, conditioners, body soaps, and hand creams	BVJ / 4521945

*4 ISO 22716 is guidelines on the Good Manufacturing Practices (GMP) of cosmetic products.

■ ISO 17025 Certification(*5)

Group Company	Main Products	Registry Organization and Number
Tokyo Kaneka Foods Manufacturing Corporation	Microbial testing (viable bacteria count, coliform count)	JAB / RTL04360
Kaneka Foods Manufacturing Corporation	Microbial testing (viable bacteria count)	JAB / 113749

*5 ISO 17025: General requirements for the competence of testing and calibration laboratories; Criteria based on which an accreditation body assesses whether the relevant testing and calibration laboratory can produce accurate measurement and calibration results.

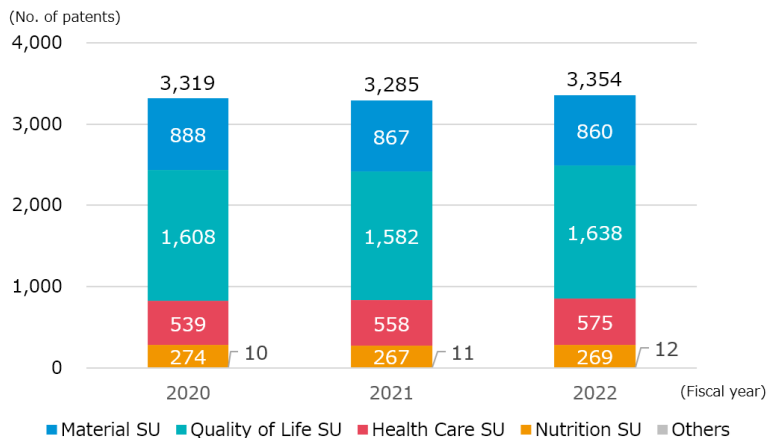
■ IATF 16949 Certification(*6)

Group Company	Main Products	Registry Organization and Number
Kaneka Eperan Sdn. Bhd.	Development, manufacture of polypropylene foam beads	SIRIM QAS / 0388920

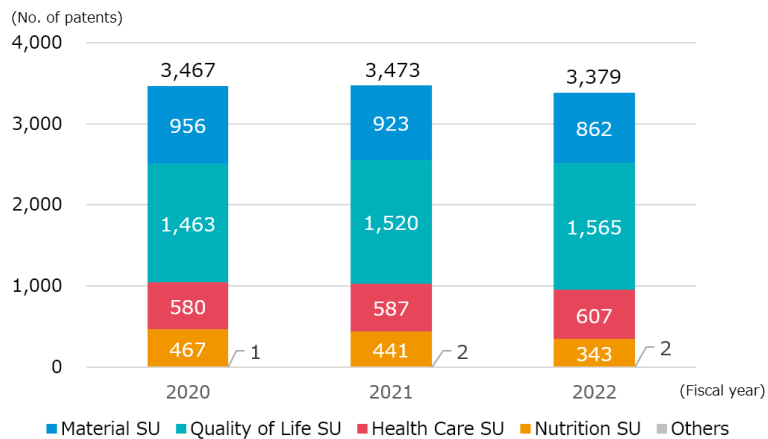
*6 IATF 16949 is a sector standard for quality management systems based on ISO 9001 with the addition of automobile industry-specific requirements.

Intellectual Property

Number of Japanese Patents Held



Number of Overseas Patents Held



Human Resources

The boundary of reporting is limited to Kaneka. If the aggregation range is different, a note is clearly provided.

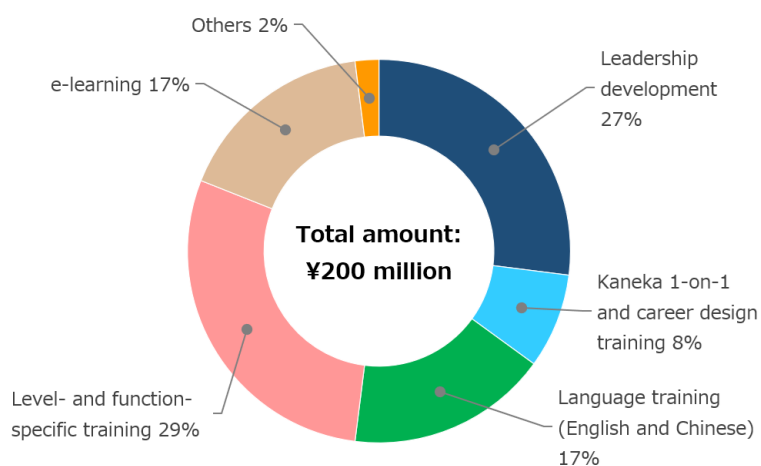
Basic Information

		Fiscal 2020	Fiscal 2021	Fiscal 2022
Number of employees	(Consolidated)	11,272	11,335	11,545
	(Kaneka)	3,551 male: 3,097 female: 454	3,472 male: 3,008 female: 464	3,447 male: 2,961 female: 486
Average age	(Kaneka)	41.0	41.4	41.6
Years of service	(Kaneka)	17.5	17.7	17.7
Average annual salary (yen)	(Kaneka)	7,342,708	7,551,838	7,731,882
Labor union members	(Kaneka)	3,094	3,004	2,941

Note: As of March 31 each year

Human Resource Development

Results of Company-wide Training (Kaneka:Fiscal 2022)



■ Kaneka 1-on-1

Program	Content	~Fiscal 2020 (participants)	Fiscal 2021 (participants)	Fiscal 2022 (participants)	Total from start of program (participants)
Kaneka 1-on-1 Workshop	Lectures and exercises for improving coaching ability (listening, recognizing and questioning) of bosses conducted by lecturers specialized in communication for executives	360	145	89	594
Team- meeting Workshop	Lectures and exercises by specialist instructors for executives to learn how to run meetings to encourage co-creation in the workplace	—	21	31	52

Note: Team-Meeting Workshops began in fiscal 2021.

■ Development of Leaders

Program	Content	Fiscal 2020 (participants)	Fiscal 2021 (participants)	Fiscal 2022 (participants)	Total from start of program (participants)
Hitotsubu-no Tane Momi Juku	Lectures and exercises by the top management and first-class instructing staff targeted at future leaders and management personnel	12 (of which, female 0)	12 (of which, female 3)	12 (of which, female 3)	97 (of which, female 7)
Leadership Training	Acquiring and practicing leadership skills and follow-up	157	114	56	1,465

Note: Aggregated data for Kaneka and Group companies in and outside Japan.

■ Language Education

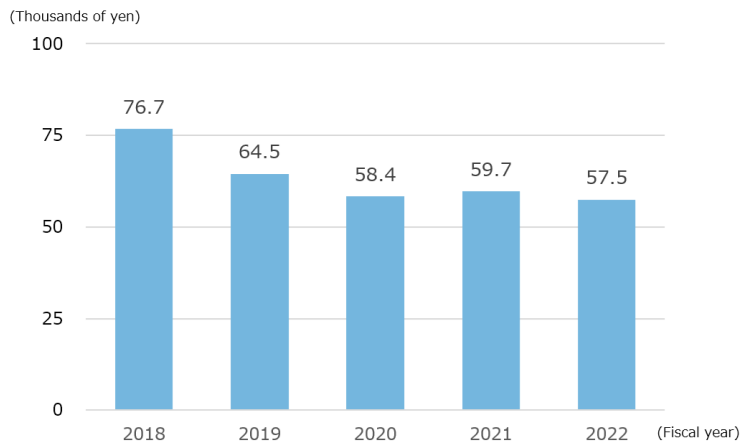
Purpose of training	Program	Fiscal 2020 (participants)	Fiscal 2021 (participants)	Fiscal 2022 (participants)
Acquisition of languages required for overseas businesses and assignments	English and Chinese language training (by selection)	70	68	70
	English and Chinese language training (by application)	348	286	274
	Language training before overseas transfer	7	10	7
Acquisition of advanced language proficiency and cross-cultural understanding	Work experience at group companies outside Japan (overseas training)	3	3	1
	Overseas language study program	(*1)	(*1)	(*1)

*1 Cancelled due to the COVID-19 pandemic, etc.

■ Human Rights/Compliance Education

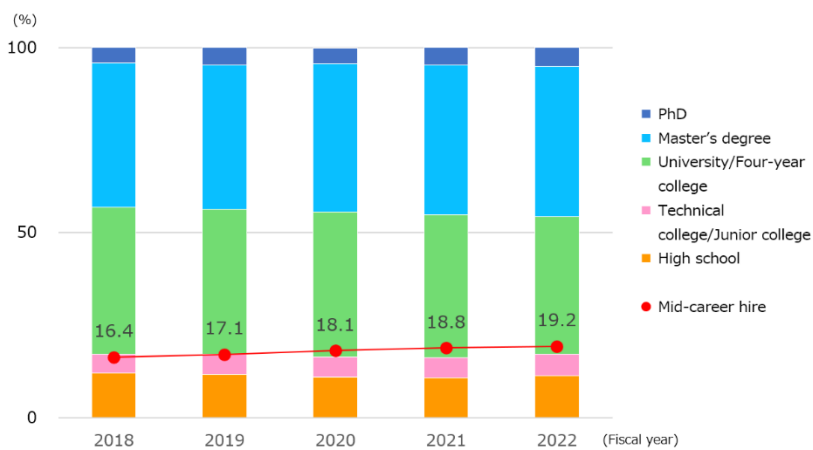
Purpose of training	Program	Fiscal 2020 (participants)	Fiscal 2021 (participants)	Fiscal 2022 (participants)
Human Rights/Compliance Education	Introductory training for new employees	129	83	74
	Training for newly appointed executives	59	57	65
Acquisition of workforce management knowledge required for executive positions	Compliance training for executives	784	840	862

■ Training Costs (per Person)



Promotion of Diversity

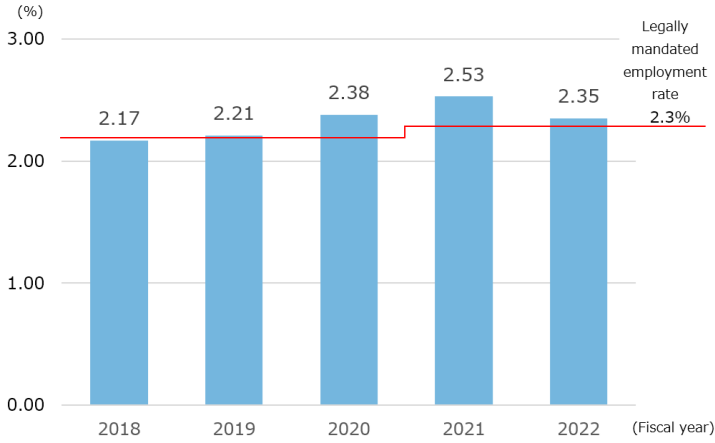
■ Composition of Executive Team



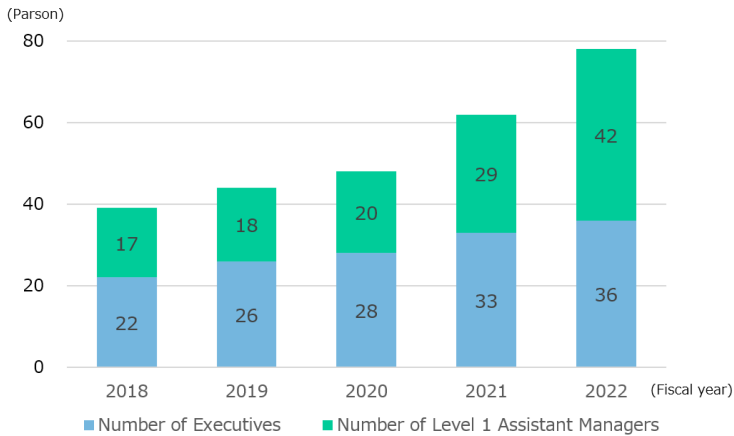
■ Implementation of Career Development and Life Design Support Activities

Program	Fiscal 2020 (participants)	Fiscal 2021 (participants)	Fiscal 2022 (participants)
Career-design Training	115	487	424

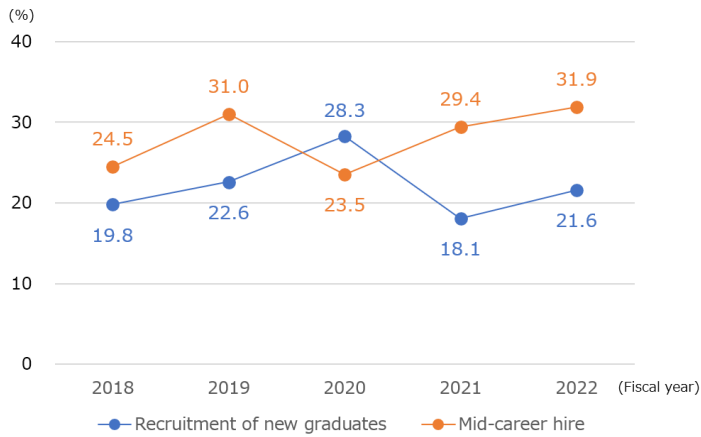
■ Employment Rate of Persons with Disabilities



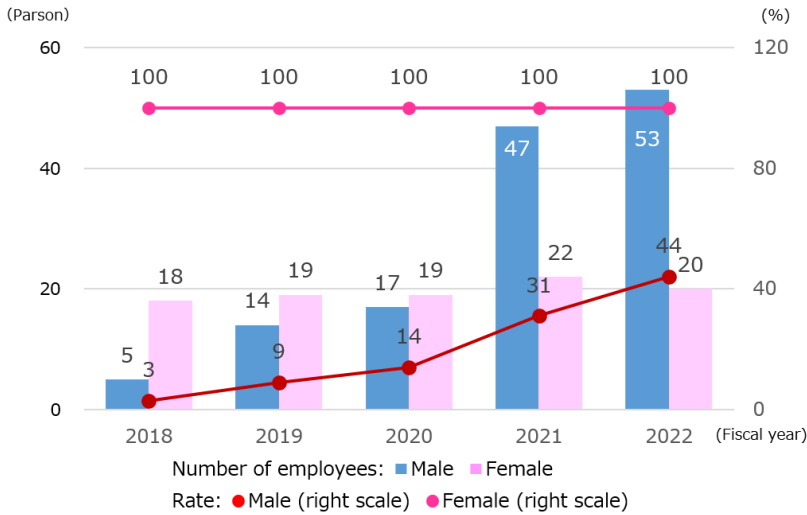
■ Female Executives and Candidates



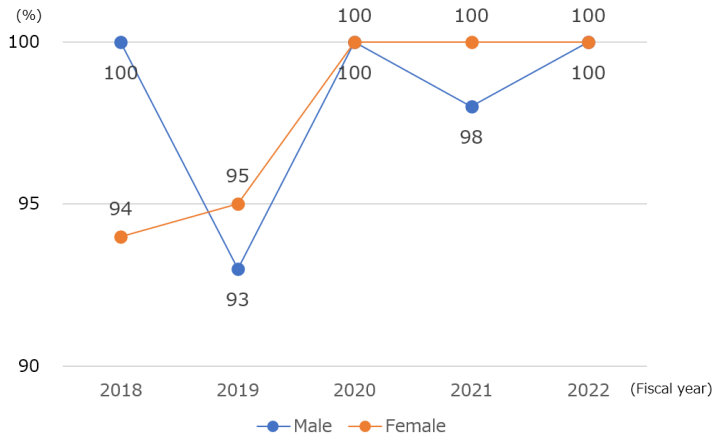
■ Percentage of Female in Recruitment



■ Number and Rate of Employees Taking Childcare Leave



■ Return Rate of Employees Taking Childcare Leave



■ Number of Users

Program	Term and period	Fiscal 2020	Fiscal 2021	Fiscal 2022
Child nursing care leave	By the beginning of a semester for a child in the 4th grade (5 days per year per person, maximum of 10 days per year for an employee with two or more children)	male: 80 female: 47	male: 94 female: 52	male: 129 female: 62
Shorter work-hours program	By the beginning of a semester for child in 7th grade (maximum of 2 hours per day per person)	male: 1 female: 60	male: 1 female: 58	male: 4 female: 61
Childcare subsidies	Company covers part of babysitting expenses for a child ages 0 to 2	29	29	37
Childcare and Nursing Care Support leave	For childcare (children under 3 years of age) and nursing care (for 48 months from the time when nursing care becomes necessary); up to 20 days of paid leave per person	151	204	254

Promotion of Wellness

■ Rate of Taking Medical Checkup and Interview/Stress Check

(Fiscal Year)	2020	2021	2022
Rate of taking medical checkup and interview	100.0%	100.0%	100.0%
Rate of taking stress check	96.8%	97.2%	99.6%
Rate of receiving specific health guidance	13.8%	29.2%	43.2%

■ Percentage of Employees Who Smoke

(Fiscal Year)	2020	2021	2022
Percentage of employees who smoke	23.8%	22.6%	21.9%

■ Work Performance Indicators

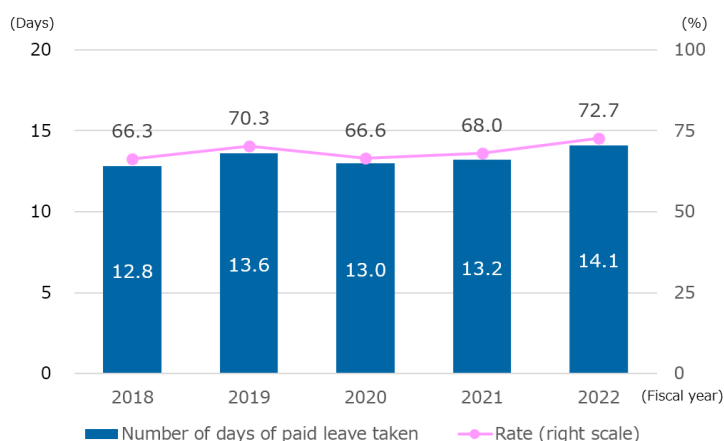
(Fiscal Year)	2020	2021	2022
Absenteeism (*1)	1.9%	1.8%	1.5%
Presenteeism (*2)	71%	71%	71%
Work Engagement (*3)	2.6	2.6	2.6

*1 Percentage of people absent from work for 30 days or more due to illness, injury, mental illness, etc.

*2 The average value of employees based on self-assessment of their performance as demonstrated over a period of time, where a score of 100% would indicate a mentally and physically optimal state of work performance. Performance is calculated from employee questionnaires based on a score of 0 to 100, using the SPQ Single Item Presenteeism Question (University of Tokyo single item version).

*3 Average score of employees on a 4-point scale for indicating their level of energy and pride in their work. The two items specified in the New Occupational Stress Simple Questionnaire (80-item condensed version) are calculated from employee questionnaires.

■ Number of Days and Rate of Paid Leave Taken



Calculation Methods for Data of Indicators Related to Environment

Calculation methods for data of indicators related to environment are as follows.

【Main Raw Materials, Energy, Products】

Main Raw Materials	Raw materials calculated in or converted to tons
Energy Consumption	Energy consumption is calculated based on the Energy Saving Law (Act on the Rationalization etc. of Energy Use of Japan). However, the amount of electricity or steam sold by Kaneka to outside parties is not deducted from Kaneka's energy consumption. The boundaries are consistent with the Energy Saving Law and the Act on Promotion of Global Warming Countermeasures of Japan and include all manufacturing sites and other facilities. The GWh conversion value, which is commonly used internationally, is used as a unit of energy. The unit calorific value coefficient of each fuel uses the latest value at the time of calculation based on the Laws of Thermocouples. Energy other than electricity is converted to GWh after converting to heat GJ. Crude oil equivalent energy consumption as stipulated by the Energy Conservation Act is also included. Converted at 1 GWh = 3,600 GJ.
Energy Intensity Index	Energy intensity is a numerical value calculated by dividing the energy used in manufacturing by the volume of activity (production volume at all parent manufacturing sites). The energy intensity index is calculated by indexing the energy intensity, with fiscal 2013 used as the base year of 100.
Products	Products calculated in or converted to tons

【Greenhouse Gas (GHG)】

GHG Emissions	GHG emissions are calculated referring the Greenhouse Gas Protocol, "A Corporate Accounting and Reporting Standard REVISED EDITION". Figures represent the total amount of energy origin CO ₂ emissions, non-energy origin CO ₂ emissions, and the CO ₂ equivalent of methane and N ₂ O emissions. CO ₂ emission factors for steam, units of heat for each fuel, and CO ₂ emission factors for each fuel both in Japan and outside Japan use values specified by the Act on Promotion of Global Warming Countermeasures of Japan. Outside Japan, however, if a value is specified in the country concerned, that value is used. As CO ₂ emission factors for electricity, the adjusted value for each power company was used for calculations in Japan and the value for each power company and IEA country emission factors were used for calculations outside Japan. IEA country emission factors are calculated using data from two years prior to the year calculated (e.g. 2020 emission factors are used for calculations of fiscal 2022 GHG emissions). The boundaries are the same as those for energy consumption.
Energy Origin CO ₂ Emission Intensity Index	CO ₂ emission intensity is a numerical value calculated by dividing energy origin CO ₂ emissions associated with production activities, which are calculated using a fixed emission factor unique to Kaneka, by the volume of activity, with fiscal 2013 indexed to 100. Using a fixed emission factor makes it easier to see the impact of our activities.

【Water】

Water Consumption	Total industrial water, water supply, seawater, river water, groundwater, and other water consumed at each site.
Wastewater Discharges	Total wastewater discharged to public waterways (sea, lakes, rivers, etc.) and wastewater discharged to sewers. At some sites that do not get accurate quantity of wastewater discharges, wastewater discharge is considered to be the same as water consumption.

【Water Quality in Water Areas】

Chemical Oxygen Demand	Total chemical oxygen demand emissions into public waterways (sea, lakes, rivers, etc.). Calculated as chemical oxygen demand concentration at the discharge outlet multiplied by amount of drainage from each drain to public waterways.
Suspended Solids	Total suspended solid emissions to public waterways (sea, lakes, rivers, etc.). Calculated as suspended solid concentration at the discharge outlet multiplied by amount of drainage from each drain to public waterways.
Nitrogen	Total nitrogen emissions to public waterways (sea, lakes, rivers, etc.). Calculated as nitrogen concentration at the discharge outlet multiplied by amount of drainage from each drain to public waterways.
Phosphorous	Total phosphorous emissions to public waterways (sea, lakes, rivers, etc.). Calculated as phosphorous concentration at the discharge outlet multiplied by amount of drainage from each drain to public waterways.

【Atmospheric Emissions】

SOx	Total sulfur oxides emitted from facilities as defined by the Air Pollution Control Act of Japan. Calculated as annual amount of dry exhaust gas at each facility multiplied by SOx (SO ₂) concentration. Sulfur oxide (SOx) emissions (tons) = SOx concentration (ppm) x 10 ⁻⁶ x dry exhaust gas (Nm ³ /h) x annual facility operation hours (h) x 64/22.4 x 10 ⁻³
NOx	Total nitrogen oxides emitted from facilities as defined by the Air Pollution Control Act of Japan. Calculated as annual amount of dry exhaust gas at each facility multiplied by NOx concentration. Nitrogen oxides (NOx) emissions (tons) = NOx concentration (ppm) x 10 ⁻⁶ x dry exhaust gas (Nm ³ /h) x annual facility operation hours (h) x 46/22.4 x 10 ⁻³
Soot and Dust	Total soot and dust emitted from facilities as defined by the Air Pollution Control Act of Japan. Calculated as annual amount of dry exhaust gas at each facility multiplied by soot and dust concentration. Soot and dust emissions (tons) = soot and dust concentration (g/Nm ³)x dry exhaust gas (Nm ³ /h) x annual facility operation hours (h) x 10 ⁻⁶

【Environmental Accounting (Investments, Expenditures)】

Pollution Prevention	Pollution prevention costs in order to control environmental impacts that occur in our business areas (air and water pollution prevention)
Environmental Conservation	Figures do not include investment and expense amounts related to environmental conservation.
Resource Recycling	Costs of processing industrial and general waste
Upstream and Downstream	Costs of recycling, collection, and appropriate processing of products, and costs of recycling, collection, and appropriate processing of containers and packaging. Includes supply chain management costs (green purchasing, guidance for vendors on reducing environmental impacts and building environmental management systems, etc.).
Management Activities	Costs required for environmental conservation activities at each manufacturing site (environmental education for employees and environmental impact monitoring and measurement).
Research and Development	Costs for research and development of products contributing to environmental conservation and of ways of reducing environmental impacts at the product manufacturing stage (figures do not include research and development investment amounts)
Social Activities	Costs of greening, beautification, landscape preservation, and disclosure of environmental information
Environmental Damage	Costs for addressing environmental damage (payment of sulfur oxide emission charges, etc.)

【Environmental Accounting (Economic Impacts)】

Revenue from Recycling	Total sales amount of off-grade materials and collected items obtained by recycling that resulted in paid transactions (valuable resources).
Cost Reductions by Better Resource Efficiency (Output per Unit of Input)	Total amount of reduction in purchase costs of raw materials, etc. through resource conservation activities and unit cost improvements.
Waste Disposal Cost Reductions by Recycling	Total amount of reduction in processing costs due to reduction of waste through recycling activities.
Cost Reductions by Energy Conservation	Total amount of reduction in energy costs through energy conservation activities.

【Environment Efficiency】

Total Environmental Impact	Kaneka assesses the environmental impacts of our production activities using Environmental Impact Points (EIP), which are compiled using the JEPIX methodology (*1). *1 The Japan Environmental Policy Priorities Index (JEPIX) methodology involves the calculation of an "eco-factor" coefficient for each emitted substance that has an environmental impact, using a ratio of the annual target for emissions under national environmental policies versus actual annual emissions ("Distance to Target"). The eco-factors are then multiplied by a quantity for each environmental impact to produce a single integrated indicator known as Environmental Impact Points (EIP). Calculations of eco-factors are done by the JEPIX Project (www.jepix.org , in Japanese).
Environmental Efficiency	Environmental efficiency is a yardstick to measure efforts to maximize value while minimizing environmental impacts, with the aim of achieving sustainable growth. Kaneka calculates this by dividing net sales (yen) by the EIP.

【Scope 3 GHG Emissions】

Category 1 Purchased Goods/Services	The calculation was made using emission factors listed in the LCI database "IDEA ver. 3.3" (National Institute of Advanced Industrial Science and Technology / Sustainable Management Promotion Organization) with the purchase results in this fiscal year considered as the volume of activity. The coverage rate was 100% on a raw material purchasing basis.
Category 2 Capital Goods	The calculation was made by multiplying investments in each capital formation area by emission factors listed in the Emissions Unit Database for Calculation of Greenhouse Gas Emissions, etc. by Organizations throughout the Supply Chain, (ver. 3.3) published by the Ministry of the Environment of Japan. The coverage rate was 100% on an investment amount basis.
Category 3 Fuel-and Energy-related Activities	The calculation was made by multiplying electric power, steam, and fuel consumption by emission factors listed in the Emissions Unit Database for Calculation of Greenhouse Gas Emissions, etc. by Organizations throughout the Supply Chain (ver. 3.3) published by the Ministry of the Environment of Japan and listed in the IDEA ver. 3.3 (for calculating GHG emissions in the supply chain) from the National Institute of Advanced Industrial Science and Technology and the Sustainable Management Promotion Organization. The coverage rate for organizations subject to the calculation was 100% on an energy consumption.
Category 4 Upstream Transportation and Distribution	The calculation was made using a calculation method stipulated in the Measures Pertaining to Consigners of the Energy Saving Law. Emission results have been calculated every year since fiscal 2006 according to the Energy Saving Law. The coverage rate was 100% on a transportation volume (ton-kilometer) basis.
Category 5 Waste Generated in Operations	The calculation was made by multiplying the volume of waste by type from all Kaneka Group facilities by emission factors listed in the Emissions Unit Database for Calculation of Greenhouse Gas Emissions, etc. by Organizations throughout the Supply Chain (ver. 3.3) published by the Ministry of the Environment of Japan and listed in IDEA Ver. 3.3 (for calculating GHG emissions in the supply chain) from the National Institute of Advanced Industrial Science and Technology and the Sustainable Management Promotion Organization. The coverage rate was 100% on an amount of industrial waste generated basis.

Category 6 Business Travel	The calculation was made by multiplying travel costs by transportation mode and the number of stays by emission factors listed in the Emissions Unit Database for Calculation of Greenhouse Gas Emissions, etc. by Organizations throughout the Supply Chain (ver. 3.3) published by the Ministry of the Environment of Japan. The coverage rate was 100% on a basis of applied business travel expenses. The calculations for Group companies in Japan and overseas Group companies were made by multiplying the number of employees by the emission factor per employee as described in the Policy on Emissions Unit Values for Accounting of Greenhouse Gas Emissions, etc., by Organizations Throughout the Supply Chain (ver. 3.3) published by the Ministry of the Environment, Japan. The coverage rate was 100% on a per-employee basis.
Category 7 Employee Commuting	The calculation was made by multiplying travel costs by transportation mode by emission factors listed in the Emissions Unit Database for Calculation of Greenhouse Gas Emissions, etc. by Organizations throughout the Supply Chain (ver. 3.3) published by the Ministry of the Environment of Japan. The coverage rate was 100% on a basis of applied commuting method. The calculations for Group companies in Japan and overseas Group companies were made by multiplying the number of employees and number of working days per year as described in the Policy on Emissions Unit Values for Accounting of Greenhouse Gas Emissions, etc., by Organizations Throughout the Supply Chain (ver. 3.3)" published by the Ministry of the Environment, Japan. The number of working days per year was 244 days. The emission factors were multiplied by the number of employees and the number of working days by city category for each business site. The coverage rate was 100% on a per-employee basis.
Category 8 Upstream Leased Assets	According to company policy, we do not use leased assets for upstream operations, in principle. However, if some assets are leased, out of necessity, the emissions from them are included in Scope 1 or 2. The coverage rate was 100%.
Category 9 Downstream Transportation and Distribution	This category was excluded from the scope of calculation because it is difficult to accurately grasp a wide range of downstream logistics operations due to the high percentage of intermediate products and to calculate the emissions using a rational calculation method.
Category 10 Processing of Sold Products	This category was excluded from the scope of calculation because it is difficult to accurately grasp a wide range of downstream product processing operations due to the high percentage of intermediate products and to calculate the emissions using a rational calculation method.
Category 11 Use of Sold Products	Most products sold by Kaneka are plastics, chemicals, foods, and pharmaceuticals which do not generate emissions when used. Although some medical devices and organic LED lightings generate emissions upon used, it is difficult to accurately grasp the gauging usage, we used assumptions to estimate emission volumes. Our results confirmed that such emissions represented less than 0.1% of Kaneka's total Scope 3 emissions, the category was thus excluded from the calculation range.
Category 12 End-of-Life Treatment of Sold Products	Assuming that all products manufactured by Kaneka are discarded within the reporting year, production quantities are classified according to type of waste outlined in the Emissions Unit Database for Calculation of Greenhouse Gas Emissions, etc. by Organizations throughout the Supply Chain (ver. 3.3) published by the Ministry of the Environment of Japan. Figures are calculated by multiplying by the emission factors listed in the database.
Category 13 Downstream Leased Assets	The calculation was made by multiplying the activity volume of leased assets by emission factors stipulated in the Act on Promotion of Global Warming Countermeasures according to the Basic Guidelines on the Calculation of Greenhouse Gas Emissions throughout the Supply Chain (ver. 2.5) published by the Ministry of the Environment of Japan. Since the emissions associated with assets leased to Group companies are included in the Scope 1 or 2 emissions of each company, they are included in Category 15.
Category 14 Franchises	This category was considered as an exception for calculation because Kaneka Corporation has no franchise stores.
Category 15 Investments	The emissions of Group companies were calculated using a calculation method stipulated in the Act on Promotion of Global Warming Countermeasures according to the Basic Guidelines on the Calculation of Greenhouse Gas Emissions throughout the Supply Chain (ver. 2.5) published by the Ministry of the Environment of Japan and then being multiplied by the relevant equity ratio. Investment in companies other than Group companies was excluded from the boundary of calculation because it has not been made to obtain profits.

【Energy Consumptions in Logistics, CO₂ Emissions】

Energy Consumption (Crude Oil Equivalents)	Calculated based on the Energy Conservation Law Guidebook for Consigners issued by the Agency for Natural Resources and Energy of Japan.
Energy Intensity Index	Energy intensity index is calculated by using a calculation method stipulated in the Measures Pertaining to Consigners of the Energy Saving Law, indexing the energy intensity, with fiscal 2006 used as the base year of 100.
CO ₂ Emissions	Calculated based on the Greenhouse Gas Emissions Calculation and Reporting Manual (ver. 4.9) published by the Ministry of the Environment of Japan.

【Chemical Substances】

Emissions of Substances Subject to the PRTR Law	Emissions to the atmosphere, water areas, soil at each site and landfills at each site, the amount transferred into sewers and into waste are calculated based on the revised Enforcement Order of the Act on the Assessment of Releases of Specified Chemical Substances in the Environment and the Promotion of Management Improvement of Japan (the revised Enforcement Order of PRTR Law) (Enforced on April 1, 2010).
VOC	Total emissions of VOCs into the atmosphere among substances subject to the PRTR Law and the substances that Japan Chemical Industry Association selected from the PRTR Law substances and added voluntarily.
Hazardous Atmospheric Pollutants	Of the 23 revised "substances requiring priority action" in the report of the Central Environment Council (9th report) in October 2010, emissions to the atmosphere of acrylonitrile, vinyl chloride monomers, chloroform, 1,2-dichloroethane, dichloromethane, and 1,3-butadiene are calculated based on the atmospheric emissions of substances subject to the PRTR Law.

【Industrial Waste】

Industrial Waste Generated	Total amount of the amount of reduction by incineration at each site (difference between incinerated amount and the residue), the amount of landfill at each site and the amount of waste outsourced for external treatment.
Internal Reductions	Amount of reduction by incineration at sites (difference between incinerated amount and the residue).
Internal Landfill	Amount of final landfilled at sites.
Waste Outsourced	Amount of waste treated by external contractors.
External Recycling	Of outsourced waste, the total amount of industrial waste recycled through reuse, recycling, and heat recovery.
External Reductions	Of outsourced waste, the amount obtained by subtracting total incineration residue from the total amount of industrial waste incinerated without heat recovery and reduced in weight.
Volume of Waste Sent to Final Landfill	The total amount of waste outsourced to be sent directly to final landfill and sent to final landfill after outsourced incineration.
Rate of Waste Sent to Final Landfill	Percentage of the total amount of waste outsourced to be sent directly to final landfill and sent to final landfill after outsourced incineration divided by the total amount of industrial waste generated (%).