

# Environment

## Environmental management

### ■ Environmental policy promotion system

Toward achievement of YKK Sustainability Vision 2050, we established the YKK Sustainability Committee under the Management Strategy Committee. With the company president as its chair, the Committee is addressing environmental issues, such as climate change. The Committee is doing so by determining policies and strategies as well as by building a global sustainability promotion structure.

### ■ Environmental management system

YKK builds an environmental management system in each company that follows the ISO 14001 international standard and promotes continuous environmental activities.

Furthermore, YKK has formulated the YKK Global Criteria of Compliance (YGCC), which is based on internal rules related to working conditions, health and safety, the environment, and fair business practices. Self-checks are carried out once a year in addition to periodic external audits.

### ■ Environmental objectives and targets

YKK has established a Mid-term Environmental Management Policy and measures are analyzed every four years to fit the Mid-term Environmental Management Policy. In the 6<sup>th</sup> Mid-term Environmental Management Policy, starting from FY2021, we are carrying out activities to achieve a sustainable society focusing on the concept of "Technology-oriented value creation" and with the aim of becoming a company for the social good that is in harmony with the environment. Activities are being carried out after formulating environmental objectives each year toward achievement of the environmental management policy.

#### YKK 6<sup>th</sup> Mid-term Environmental Policy (FY2021-FY2024)

Under the 6<sup>th</sup> Mid-term Management Vision, "Technology Oriented Value Creation," YKK will promote sustainability through its business activities and products, harmonize with the environment, continue to be a company for the social good, and contribute to society.

##### Guidelines for Action

- In accordance with YKK Sustainability Vision, we will strengthen our environmental management system and carry out continuous improvement to ensure environmental compliance and reduce environmental impacts.
- In order to achieve climate neutrality by 2050, we will reduce CO<sub>2</sub> and other greenhouse gas emissions over the long-term.
- We will reduce environmental impacts throughout the product life cycle and promote the transition to sustainable energy and materials.
- We will reduce our impacts and loads on the environment by reducing the use of water and chemical substances for the preservation of ecosystems and enrichment of life.

April 1, 2021

**Hiroaki Otani**  
President, YKK Corporation

#### FY2023 YKK Environmental Objectives

##### Contribute to the society in harmony with environment

##### 1 Response to climate change

- Scope 1 and 2 CO<sub>2</sub> emissions 21% reduction from FY2018 (50% reduction by FY2030)
- Scope 3 CO<sub>2</sub> emissions 12.5% reduction from FY2018 (30% reduction by FY2030)

##### 2 Reduce environmental impact

- Waste
  - Waste recycling rate 88% or more (90% by FY2025)
  - Waste intensity reduction 4% year-on-year reduction (FY2030 waste emissions = FY2018 waste emissions)
- Water (intake) intensity reduction 2% year-on-year reduction (FY2030 water intake = FY2018 water intake)
- Evaluate water risks taking into account the global environment
- Promote appropriate management and reduction of chemical substances

##### 3 Provide and propose environmentally friendly products

- Ensure the implementation of environmentally friendly themes in the development of products and equipment

##### 4 Ensure compliance

- Achieve zero environmental compliance violations and zero environmental accidents
  - Foster environmental human resources through environmental education
  - Strengthen environmental management system via YGCC

# Climate Change

## Fundamental Approach

In March 2020, YKK signed the Fashion Industry Charter for Climate Action aimed at achieving the objectives of the Paris Agreement, to enable the company to achieve climate neutrality by 2050. In March 2021, we also set a CO<sub>2</sub> reduction target of limiting the average worldwide temperature increase to 1.5°C (objective approved by the SBT), and we are working to implement energy conservation and renewable energy, in an aim to reduce CO<sub>2</sub> emissions at each of our business sites around the world.

## FY2022 Initiatives

YKK Group achieved the GHG emissions target of a 16.8% reduction for FY2021 compared to FY2018. (Estimated actual: 46.9% reduction from FY2018)

The entire Group is moving forward with renewable energy procurement, and 31 of our plants around the world have achieved procurement of 100% of their used power as renewable energy.

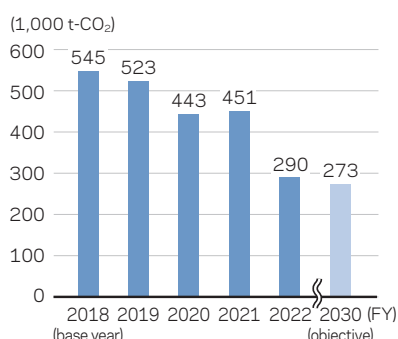
In addition, we are also creating renewable energy, including the operation of solar power generation systems, at 21 locations (total generation capacity: 8,278 kW).

## Changes in CO<sub>2</sub> emissions

In March 2021, YKK obtained certification under the SBT Initiative's 1.5°C Target. We will aim for a 50% reduction (compared to FY2018) of greenhouse gases in Scope 1 and 2, and a 30% reduction (compared to FY2018) in Scope 3 by 2030.

### Scope 1 and 2

\* Calculated using the YKK Group GHG calculation rules (CO<sub>2</sub> conversion factor fluctuation of electricity)

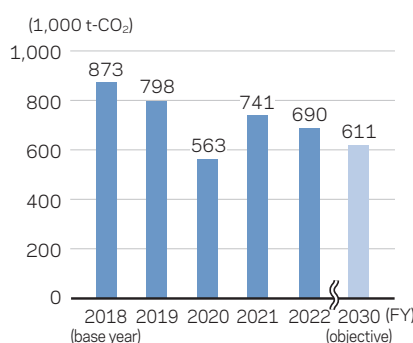


CO<sub>2</sub> emissions in FY2022 were reduced by 46.9% compared to FY2018

	2018	2019	2020	2021	2022
Japan	77	69	57	66	37
Americas	41	43	33	34	31
Europe	27	27	25	21	19
ISAMEA	45	46	34	47	26
ASEAN	225	214	178	171	159
China	129	123	116	113	17

### Scope 3

\* Calculated using the Scope 3 calculation method noted on page15.



CO<sub>2</sub> emissions in FY2022 was reduced by 20.9% compared to FY2018

	2018	2019	2020	2021	2022
Japan	232	198	116	153	163
Americas	107	92	63	88	81
Europe	41	41	32	42	40
ISAMEA	57	59	43	47	49
ASEAN	239	224	157	213	191
China	198	183	152	198	167

Breakdown of CO<sub>2</sub> emissions from the entire supply chain\* (FY2022 results by region)(1,000 t-CO<sub>2</sub>)

		Region Total	Japan	Americas	Europe	ISAMEA	ASEAN	China	
Scope1	Direct emissions from fuels burned on-site, etc.	83	11	10	17	10	24	12	
Scope2	Indirect emissions from purchased power and the use of heat	206	27	20	2	17	136	5	
Scope3	Category 1	Purchased Goods and Services	421	110	44	13	16	124	113
	Category 2	Capital Goods	80	32	7	9	7	14	10
	Category 3	Fuel- and Energy-Related Activities Not Included in Scope 1 or Scope 2	54	9	5	4	5	19	12
	Category 4	Upstream Transportation and Distribution	54	3	17	7	9	8	10
	Category 5	Waste Generated in Operations	1	0	0	0	0	0	0
	Category 6	Business Travel	1	0	0	0	0	0	0
	Category 7	Employee Commuting	10	5	1	1	1	2	1
	Category 8	Upstream Leased Assets	-	-	-	-	-	-	-
	Category 9	Downstream Transportation and Distribution	-	-	-	-	-	-	-
	Category 10	Processing of Sold Products	0	0	0	0	0	0	0
	Category 11	Use of Sold Products	-	-	-	-	-	-	-
	Category 12	End-of-Life Treatment of Sold Products	70	3	7	5	11	23	20
	Category 13	Downstream Leased Assets	-	-	-	-	-	-	-
	Category 14	Franchises	-	-	-	-	-	-	-
	Category 15	Investments	-	-	-	-	-	-	-
	Other	-	-	-	-	-	-	-	
	Scope 3 Total	690	163	81	40	49	191	167	
	Scope 1, 2, and 3 Total	980	200	112	59	75	350	183	

\* Calculated using the YKK Group GHG calculation rules (CO<sub>2</sub> conversion factor fluctuation of electricity) and the Scope 3 calculation method noted later

## Scope 3 calculation method (amount of activity x emission intensity)

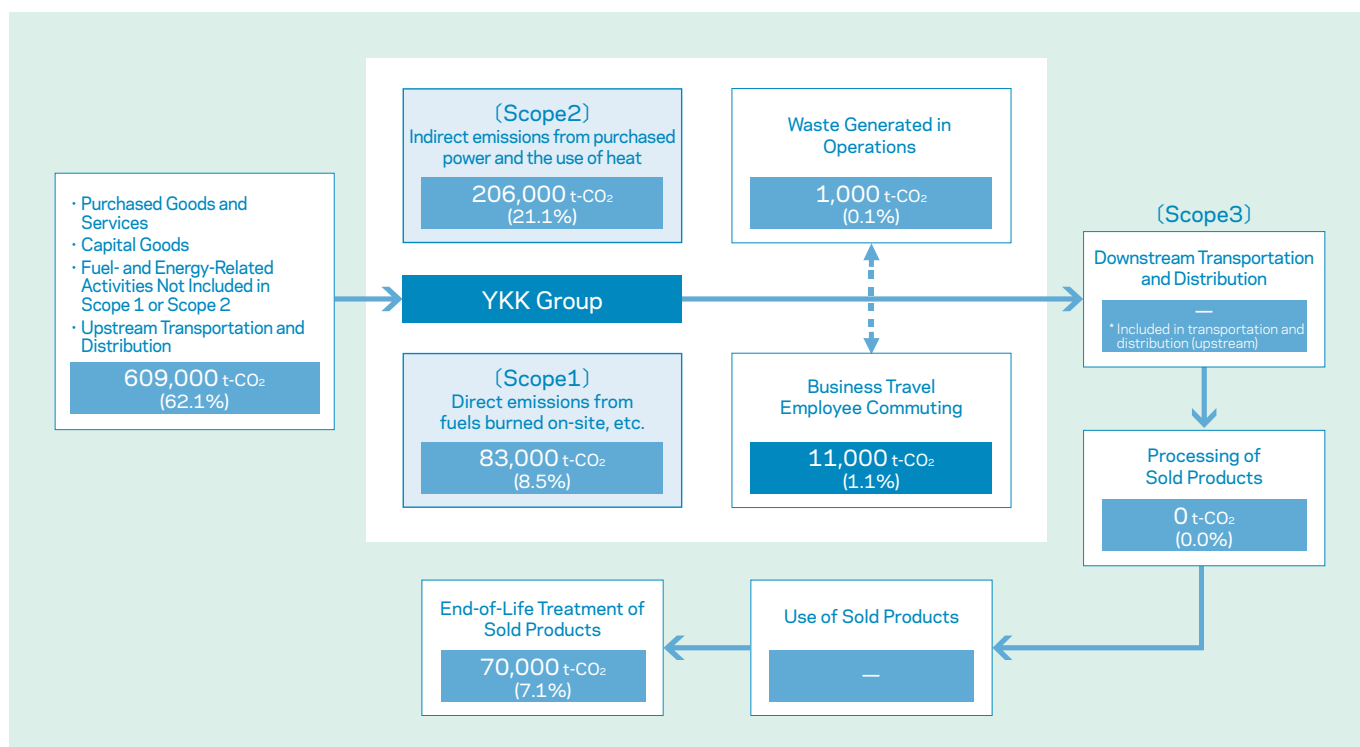
Categories		Calculation method	
		Amount of activity	Emission intensity
Category 1	Purchased Goods and Services	Weight of purchased raw materials	Intensity database <sup>(1, 3)</sup>
Category 2	Capital Goods	Equipment investment value of capital goods	Intensity database <sup>(1)</sup>
Category 3	Fuel- and Energy-Related Activities Not Included in Scope 1 or Scope 2	Amount of energy (electricity and fuel) consumption	Intensity database <sup>(1, 2)</sup>
Category 4	Upstream Transportation and Distribution	Cargo owner's procurement ton-kilometers	Intensity database <sup>(1, 2)</sup>
Category 5	Waste Generated in Operations	Amount of processed waste materials per type	Intensity database <sup>(1, 2)</sup>
Category 6	Business Travel	Transportation allowance per transportation means	Intensity database <sup>(1)</sup>
Category 7	Employee Commuting	Transportation allowance per transportation means	Intensity database <sup>(1, 2)</sup>
Category 8	Upstream Leased Assets	We excluded emissions associated with the operation of the leased assets because they were included in Scope 1 and 2.	
Category 9	Downstream Transportation and Distribution	We excluded it because we included it in category 4 because the product is shipped directly to the customer.	
Category 10	Processing of Sold Products	Amount of production (duration and number of pieces)	Intensity per amount of production in YKK processing process
Category 11	Use of Sold Products	We excluded this because there are no use-stage emissions from the products we sold.	
Category 12	End-of-Life Treatment of Sold Products	Amount of production (weight)	Intensity database <sup>(1, 3)</sup>
Category 13	Downstream Leased Assets	We excluded this because we do not lease to others.	
Category 14	Franchises	We excluded this because we are not franchise presidents.	
Category 15	Investments	We excluded it because we are not an investment business and not a financial services provider.	
	Other	We excluded this category because it is optional.	

<sup>1</sup> "Emission Intensity Database for Calculating Greenhouse Gas Emissions for Organizations through Supply Chains (Ver. 3.1)"

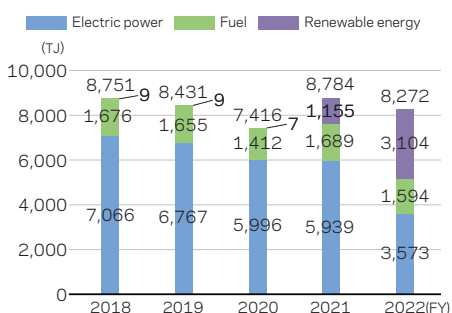
<sup>2</sup> "LCI Database IDEAv2 (for Calculating Greenhouse Gas Emissions for Supply Chains)"

<sup>3</sup> "GaBi Database"

### CO<sub>2</sub> emissions in supply chains (FY2022 results)



### Changes in energy consumption



(TJ)

		2018	2019	2020	2021	2022
Electric power	Japan	1,216	1,082	880	1,081	556
	Americas	759	815	659	604	600
	Europe	398	316	291	218	61
	ISAMEA	478	517	445	609	355
	ASEAN	2,615	2,463	2,294	2,094	1,953
	China	1,599	1,574	1,427	1,334	48
Fuel	Japan	196	182	145	158	164
	Americas	229	212	153	216	199
	Europe	258	303	281	327	331
	ISAMEA	227	206	115	173	164
	ASEAN	459	461	423	469	451
	China	307	291	294	347	286
Renewable energy	Japan	3	3	2	8	485
	Americas	0	0	0	82	95
	Europe	0	0	0	109	217
	ISAMEA	4	3	2	54	322
	ASEAN	1	2	2	490	602
	China	1	1	1	413	1,383

\*The graphs and tables have been created based on the combination of electricity, fuel and renewable energy. Fuel is the sum of A heavy fuel, kerosene, LPG, LNG, town gas, natural gas, diesel oil, gasoline, C heavy fuel, coal, and steam.

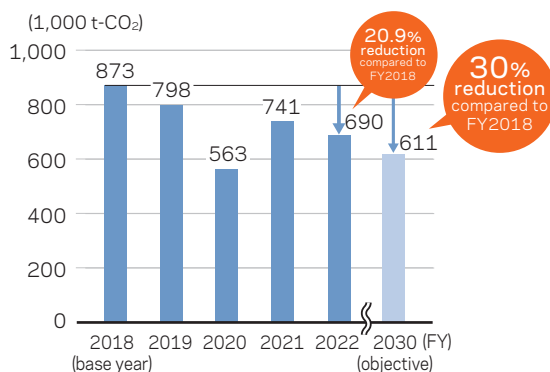


## Initiatives to Reduce Scope 3 GHG Emissions

We are aiming for a 30% reduction in Scope 3 greenhouse gas emissions (compared to FY2018) by 2030. Scope 3 emissions in FY2022 were 690,418 t (20.9% reduction compared to FY2018). In FY2021, we established a Scope 3 reduction team under the Sustainability Committee, which has been strengthening the promotion system across departments toward further Scope 3 emission reductions.

In FY2022, we set a target to shift to the use of recycled materials for the main materials (copper, zinc, and PET) used by YKK to further reduce Category 1 emissions from purchased goods and services, which makes up over 60% of YKK's Scope 3 emissions. YKK has also begun building cooperative relationships through the supply chain in an effort to achieve this target. These efforts range from adding additional questions to the CSR questionnaire for all main suppliers to sharing our GHG emissions targets, requesting the submission of data for emissions from purchased goods and services, and inquiring about renewable energy.

Going forward, we will consider specific initiatives worldwide to achieve the recycled material target and expand the CSR questionnaire to overseas operating companies to promote Scope 3 emission reduction activities.



## [Reference] Information Disclosure Based on TCFD Recommendations

Since the adoption of the Paris Agreement in December 2015, there has been more and more momentum to evaluate the impact climate change has on business activities worldwide. Within this business climate, the TCFD announced its recommendations in June 2017, which YKK signed onto as a supporter in 2019.

YKK evaluates and strives to incorporate the impact climate change may have on its business activities into its business strategies according to TCFD recommendations.

### ■ Governance

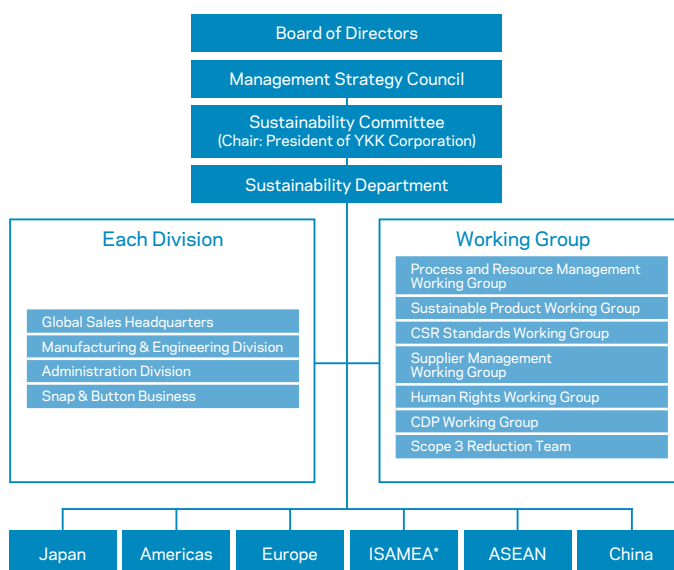
The YKK corporate governance system essentially consists of the Board of Directors, which carries out decision-making and supervisory functions related to management policies and other important matters, and the Audit & Supervisory Board, which carries out auditing functions. We have also introduced an officer system to promote business execution. In addition to regular meetings held once a month, the Board of Directors holds extraordinary meetings as necessary to discuss and make decisions on business plans as well as organizational and other important management matters. It receives reports and supervises the progress of the business execution of each Group company as well.

The Sustainability Committee launched as an advisory body for the Board of Directors discusses and promotes management policies and strategies related to sustainability, such as climate change. The President serves as chair of the Committee.

Through the Sustainability Committee, the President serving as chair decides on sustainability policies and strategies for its YKK Fastening Business and works to build global sustainability promotion systems. These policies, strategy, and global sustainability promotion systems designate the final decision about how to respond to climate change and other sustainability issues. We have established seven working groups under the Sustainability Committee to take the lead on formulating and promoting specific action plans for each of these challenges. For example, the Process and Resource Management Working Group evaluates and executes the development and adoption of manufacturing equipment that will help reduce GHG emissions. The Sustainable Product Working Group deliberates on and approves policies on the development of products using sustainable materials.

To promote these sustainability policies and specific action plans globally, YKK has set up sustainability committees in each of the six regions where it does business around the world. These local sustainability committees provide reports on the penetration of policies in their regions as well as the progress of the action plans to the Sustainability Committee in Japan. The President who serves as chair of the Sustainability Committee monitors and evaluates the progress of action plans from these regional reports in addition to deliberating and approving revisions of strategy and improvement measures toward achieving the action plans.

### Sustainability promotion structure



\*India/South Asia/Middle East/Africa

## Strategy

YKK identifies and evaluates major risks and opportunities for the Fastening Business related to climate change according to the TCFD recommendations.

Type		Financial impact on YKK	YKK response
Transition risk	Current regulation	The YKK Headquarters is already complying with the carbon tax in Japan. Although the carbon tax in Japan is low and has a relatively small impact, there are risks of higher operation costs of YKK plants and the YKK buildings if the carbon tax rises in the future.	In 2021, we have approved the introduction of the internal carbon pricing system and are promoting capital investments that include energy-saving as well as solar power generation equipment, to reduce GHG emissions.
	New regulation	The EU Plastics Strategy may raise production costs due to its new rules that require the use of recycled plastics. We may also see cost go up in order to support the shift to renewable energy happening in each nation around the world, such as the purchase of equipment and green power. These are some risks that may reduce revenue.	Therefore, we will strive to broaden sales of products using recycled plastics to improve profitability as well as develop technologies to reduce manufacturing costs.
	Technology	A delay in our response to advanced technologies to combat climate change could make YKK businesses less competitive, while inaccurate forecasts of demand could make capital investments fail. These are some risks that could impact revenue.	Therefore, we will respond through action that includes verifying the progress of main development themes on a monthly basis and clarifying rules in writing about processes such as methods to calculate the effectiveness of capital investment plans as well as discretionary and approval processes.
	Market	There is also the risk of losing sales opportunities if YKK products and manufacturing processes cannot satisfy the environmental requirements of customers or the environmental regulations of each government. Specifically, the garment industry is said to be just behind the oil industry in CO <sub>2</sub> emissions, which could impact sales if YKK products do not comply with customer requirements and environmental regulations.	YKK will develop and manufacture products based on the climate-related action of each nation and organization as well as the product preferences of consumers. We will also develop products by anticipating the medium to long-term outlook of environmental action while further supporting evaluations of our impact on the environment and compliance with the regulations in each country.
		A rise in the average temperature has the potential to decrease demand for winter clothing, which in turn would impact the sales of YKK fastening products.	We will respond through market analyses, accurate prior supplementation of consumer demand, and various other measures.
Reputation	A delay in climate-related initiatives comes with the risk of harming the reputation of YKK with its main sustainability-oriented customers worldwide.	We formulated and announced the YKK Sustainability Vision 2050 to lay out and engage in specific initiatives to reduce GHG emissions and increase the use of renewable energy.	
Physical risk	Acute	There is also the risk of harmful effects on health and the environment around our factories in the event hazardous chemical substances leak from YKK manufacturing bases damaged by more frequent and severe flooding due to the rising global temperature.	We see flood damage as one major risk that would have a severe impact on corporate management. Guidelines were formulated in 2020 to clarify policies to minimize this damage. These guidelines primarily pertain to Japan. With reference to local hazard maps, the policies define flooding, evacuation, and other soft measures to carry out in order to reduce and prevent damage to any facilities in flood zones as much as possible.
	Chronic	There are also risks of declining profits due to higher air-conditioning costs at YKK plants and skyrocketing raw material prices driven by the rising average temperature worldwide.	Therefore, YKK is developing technology to reduce manufacturing costs as well as running costs through the introduction of energy-saving air-conditioning systems. We will also strive to build systems that can always secure raw materials and resources at the right price in the right amount while keeping an eye on trends in the global economy.
Opportunity	Resource efficiency	By improving the energy efficiency of YKK equipment, we can avoid paying the carbon taxes anticipated in many nations in the future.	In 2021, we have approved the introduction of the internal carbon pricing system and are promoting capital investments that include energy-saving as well as solar power generation equipment, to reduce GHG emissions.
	Energy source	By using power derived from renewable energies, we can avoid paying the carbon taxes anticipated in many nations in the future.	YKK researches the state of power infrastructure in each country to plan and execute PV, PPA, and green options suitable for the location of each plant on an annual basis.
			Over the long-term, we will examine the use of hydrogen and other new energies as an alternative to existing energy options.
Products and services	By expanding products that use recycled materials and help contribute to the reduction of GHG emissions in other ways, we will contribute to solutions to the climate-related issues of our customers and can expect higher sales.	In its YKK Sustainability Vision 2050, YKK has set the goal of switching 100% of the fiber materials used in its fastening products to sustainable materials (recycled materials, naturally occurring materials, etc.) by 2030. To achieve this target, YKK is steadily expanding sales of products in the NATULON® series that uses recycled polyester as a tape material, while formulating plans for a changeover to these materials annually by item and consumer demographic, and transitioning products from virgin materials to recycled materials.  We also engage in various dialogues to solve various issues by disclosing information to customers using CDP and industry standards in addition to sharing our activities. Trials for switching products to recycled materials as well as preparations for product LCA disclosure are underway.	

## Risk Management

In accordance with the Risk Management Policy, the YKK Fastening Business identifies risks once each year for each organization, confirms the worst-case scenarios and the status of response, and assesses sixteen levels of risks according to the scale of loss and damage (four-level evaluation: ¥100 million or less, ¥100 million to ¥1 billion, ¥1 billion to ¥5 billion, and ¥5 billion or more) and the frequency of occurrence over (four-level evaluation: 5 years or less, 5 to 20 years, 20 to 50 years, and 50 years or more). In addition, risks that are anticipated to have an impact of ¥100 million or more per year are deemed to be key risks that should be managed at the corporate management level.

We classify risk items into one of four quadrants (financial risks, risks in specialized fields, risks addressed by the committee, and business execution risks) and identify risk trends and visualize the progress of the response. Moreover, founded in its Mid-term Management Plan (four-year plan), YKK fully considers the impact of changes in the market and with its reputation while evaluating the importance of relevant risks. Management receives regular reports about all these risks.

We also incorporate climate-related risks into the Group-wide risk assessment and management process to anticipate not only the short and medium-term but also the long-term impact (up to about 2030). The impact of torrential rains due to physical risks and the rising temperature in particular could flood YKK plant facilities and stop supplier operations. We have formulated a Business Continuity Plan (BCP) in an effort to reduce and prevent these risks.

\*See page 46 for the Risk Assessment Process and the Flow of Identifying Key Risks (conceptual diagram).

## Metrics and Targets

Our businesses aim to become climate neutral (net-zero emissions) by 2050. Therefore, we have set targets to reduce CO<sub>2</sub> and other greenhouse gas emissions from our company and supply chain. In addition, these targets have been certified by the Science Based Targets initiative (SBTi).

Metric		Target
Scope 1, 2	Reduction of direct CO <sub>2</sub> emissions	50% reduction by FY2030 (compared to FY2018)
Scope 3	Reduction of indirect CO <sub>2</sub> emissions from the supply chain	30% reduction by FY2030 (compared to FY2018)

\*See page 14 for the actual Scope 1, 2, and 3 CO<sub>2</sub> emissions.



# Material Resources

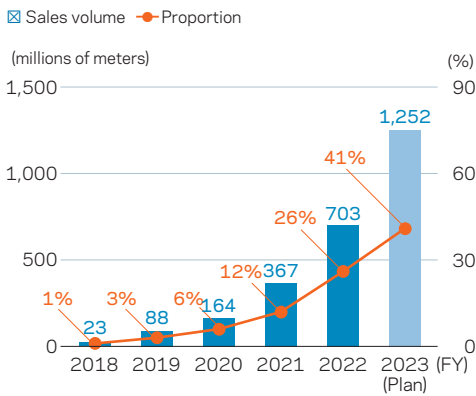
## Fundamental Approach

Resources are crucial for monozukuri (manufacturing) companies, but the amount available is limited. In order to conduct sustainable business management, YKK is promoting efforts to achieve a circular economy. For example, we proactively research the use of recycled materials and plant-based materials and adopt and provide them in an aim to reduce waste throughout the lifecycle of our products. Meanwhile, we strive to recycle any generated waste materials as much as possible and to reduce the amount of waste that ends up in landfills.

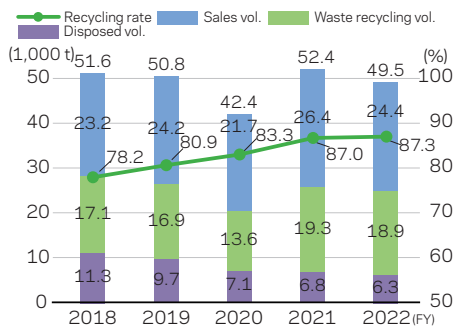
## FY2022 Initiatives

In “YKK Sustainability Vision 2050,” YKK has set the target of increasing the recycling rate to 90% by 2030. In FY2022, we conducted activities aimed at achieving a waste recycling rate of 87% or more. Thoroughly separating waste materials and strengthening reuse at each of our operating companies and improved waste processing technology in the Asia Region, and other factors, combined to result in a recycling rate of 87.3%, maintaining the previous year’s rate, which was significantly higher than the target. The amount of waste was also reduced 96% compared to FY2018. As the world shows increasing interest in a circular economy, YKK is moving forward with efforts to recycle and reuse resources and reduce waste.

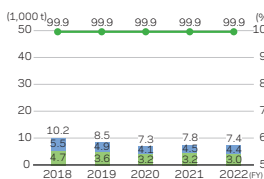
### Volume and Proportion of Sustainable Materials Sales



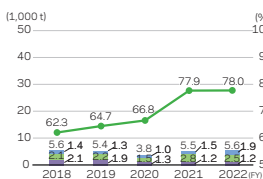
### Changes in Waste Emissions, Waste Recycling Rates



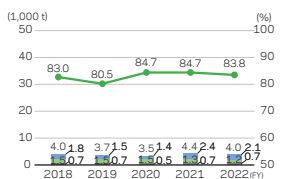
#### Japan



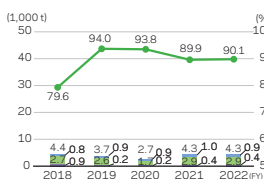
#### Americas



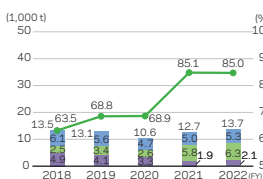
#### Europe



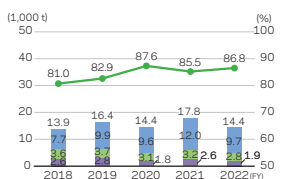
#### ISAMEA



#### ASEAN



#### China



## COLUMN

## Switching to Sustainable Packaging Materials



30% biomass polyethylene inner packaging materials

One of the five themes of the YKK Sustainability Vision 2050 is material resources. We are promoting efforts aimed at transitioning to a sustainable model by replacing all vinyl/plastic packaging materials used for our fastening products with sustainable packaging, including recyclable/reusable forms by 2030.

In FY2022, we strove to transition from plastic inner packaging materials for fastening products to recycled and biomass materials at many locations around the world. We are promoting a switch to polyethylene containing 100% recycled materials at YKK Vietnam Co., Ltd. (Nhon Trach Plant), YKK do Brasil LTDA., and YKK Poland Sp. zo. o., and 30% biomass material at the JAPAN Company (Kurobe Manufacturing Center), YKK (U.K.) Ltd., and other Group companies. As a result, 17 global locations have switched to sustainable inner packaging as of the end of FY2022, which equates to a switchover ratio of 27.6% (based on the volume of inner packaging purchases).

Since the beginning of FY2023, YKK has also been moving forward with the transition from vinyl/plastic packing materials to sustainable materials at each of our fastening business sites around the world. The company will be unified in aiming to reach our targets by 2030.

# Water Resources

## Fundamental Approach

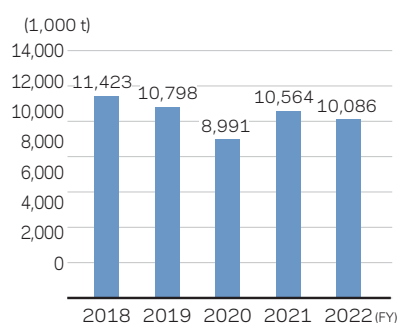
Water is an essential resource for people and all other life on Earth. At the same time, the volume and quality of water available for use differs between each region. As members of these local communities, each YKK location works to use water in a sustainable way in each region by reducing the water intake and ensuring thorough wastewater management.

## FY2022 Initiatives

Our work to achieve our environmental targets in FY2022 reduced the water intake 14% compared to FY2018. We furthered the introduction of production and water recycling equipment that uses water more efficiently, which resulted in a water intake of 10,086,000 tons worldwide in FY2022 (down 11.7% compared to FY2018). Since FY2019, each year we have been using our proprietary risk check lists to ascertain water risks at every manufacturing location. The results of the FY2022 survey verified that many locations had made progress with measures to tackle water risks.

To further improve wastewater processing technology at each site, YKK continually implemented wastewater processing diagnostics and technology guidance through specialists. YKK revised its rules on wastewater management methods with reference to the ZDHC Wastewater Guideline and Higg Index as the wastewater management standards of the garment industry.

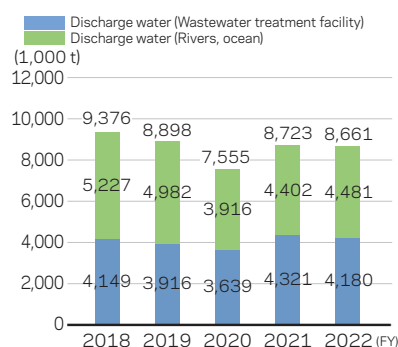
### Changes in Intake Water (Total Amount)



Unit: 1,000 t

	2018	2019	2020	2021	2022
Japan	3,656	3,260	2,565	3,096	3,402
Americas	785	768	574	732	679
Europe	762	763	655	779	728
ISAMEA	778	856	638	927	1,058
ASEAN	3,399	3,325	2,957	3,126	2,693
China	2,043	1,826	1,602	1,904	1,525

### Changes in Discharge Water (Total Amount)



\*Revised data between 2018 to 2021 including that aggregated for office locations

#### Discharge water (Wastewater treatment facility)

Unit: 1,000 t

	2018	2019	2020	2021	2022
Japan	29	27	20	25	38
Americas	590	645	490	580	499
Europe	400	381	366	446	446
ISAMEA	326	317	222	492	678
ASEAN	1,012	997	1,112	1,197	1,276
China	1,792	1,549	1,429	1,581	1,243

#### Discharge water (Rivers, ocean)

Unit: 1,000 t

	2018	2019	2020	2021	2022
Japan	3,422	3,223	2,944	2,901	3,377
Americas	85	115	47	90	92
Europe	212	191	139	150	130
ISAMEA	59	59	47	205	74
ASEAN	1,449	1,394	739	1,056	808
China	0	0	0	0	0

## COLUMN

## Wastewater Processing Diagnostics and Technology Guidance at Overseas Operating Companies



Wastewater processing and diagnosis setup at YKK (Thailand) Co., Ltd.

Headquarters specialists provide wastewater processing diagnosis and technical guidance on operations and safety to overseas operating companies for the purpose of standardizing wastewater processing. We completed the initial round launched in 2014 in 2019, and are currently undertaking the second round of wastewater processing diagnosis and technical guidance.

In FY2022, wastewater processing diagnoses were carried out at a total of five locations either on site or through video conferences. These wastewater processing diagnoses mainly confirmed the state of equipment and whether the processed water quality satisfied both government as well as company standards, in addition to strengthening compliance and optimizing processes based on improvement plans if any were identified. Because the standards and wastewater quality differ in each country, we make sure to understand the equipment and processing methods used at each plant and review the proper wastewater processing methods and amount of chemical use to propose ways to reduce water use and CO<sub>2</sub>. The YKK specialists provide technical guidance to local staff based on the wastewater processing diagnosis in an effort to improve maintenance skills and raise awareness about compliance.

In FY2023, we plan to conduct wastewater processing diagnoses at eight locations, aiming for no environmental compliance incidents related to wastewater processing through these diagnoses.

# Chemical Management

## Fundamental Approach

YKK works to maintain manufacturing and product safety through proper understanding and management of chemical substances related to fastening products and minimize human exposure and environmental impacts by reducing the usage of chemical substances.

We comply with laws, regulations, and agreements and also take action to mitigate environmental risks, such as by preserving the local environment including land, ground water, air, and water, and are taking steps to prevent environmental accidents before they occur.

## FY2022 Initiatives

We formulated the YKK Restricted Substance List (YKK RSL) to provide safer fastening products in order to better the health of everyone from employees to consumers as well as reduce the hazardous substances with the potential to do harm to the natural environment.

In FY2022, YKK published the FY2023 version of the YKK RSL and added the AFIRM Restricted Substances List and per- and polyfluoroalkyl substances (PFAS) as statutory compliance to the annual revisions of YKK RSL based on customer requests as well as launched surveys of suppliers.

To ensure every person can work with health and safety, we also have been building and strengthening chemical management systems, that include assessing the chemical substance hazards and dangers as well as developing specialists. YKK will promote these management systems in Japan first before rolling them out globally in the future.

### COLUMN

## ZDHC Roadmap to Zero Program for Eliminating the Use of Hazardous Chemical Substances

YKK believes it is important not only to eliminate the use of hazardous chemical substances that have the potential to be used in the final fastening products but also the hazardous chemical substances with the potential to be used in production activities or emitted into the environment.

We have introduced the Roadmap to Zero Program that advocates Zero Discharge of Hazardous Chemicals (ZDHC) as an industrial federation with participants ranging from brands to participants throughout the fashion industry. YKK is using this program to promote the development of new manufacturing technologies that do not use hazardous chemical substances and the transition to safer chemical substances in production activities.

In FY2022, we disclosed the level of compliance with the Manufacturing Restricted Substances List (MRSL) for the chemical substances used in our production processes using the ZDHC Gateway, which is a common chemical usage platform for the fashion industry.

These activities promote a switch to safer chemical substances and work to engage in manufacturing that minimizes the impacts on the natural environment and people.

# Biodiversity

## Fundamental Approach

Ecosystems of many different organisms support the life of people. YKK believes that our most precious stakeholder is nature and strives to become a company that can coexist and prosper together with nature. We promote planting, cleaning, and other initiatives that work to enrich these ecosystems, in addition to other efforts that include thoroughly manage chemical substances to ensure no environmental contamination and to reduce the impacts on the environment.

## FY2022 Initiatives

As an international organization joining the 15<sup>th</sup> meeting of the Conference of the Parties to the UN Convention on Biological Diversity (COP 15), Business for Nature evaluates the impacts and dependency companies have on biodiversity. YKK has signed a corporate statement committing to mandatory disclosure through 2030.

We have continued to conduct tree planting and clean-up activities worldwide. Twelve locations conducted tree planting efforts, and four locations took part in clean-up activities. Inside the Kurobe Manufacturing Center in particular, we are creating a forest and a waterside with the aim of achieving YKK founder Tadao Yoshida's ideal of a "factory in a forest." As a policy to achieve the 30 by 30 international biodiversity target, we participated in the "For Coexistence of People and Nature" website proof-of-concept program certified by the Ministry of the Environment. As a result, YKK Center Park's Furusato-no-Mori (Hometown Forest) reached the same level of standards as the certification.

### Main Ecosystem Conservation Activities (FY2022)

Activity details	Activity location	Number of locations where implemented	Objective
Tree-planting activities	Around the factory	11	Absorption of GHGs by plants and maintenance of the ecosystem
	Community (parks, etc.)	1	
Clean-up activities	Around the factory	3	Maintenance of the ecosystem through removal of waste
	Neighboring waterside	1	Maintenance of the aquatic ecosystem through removal of waste

COLUMN

## Promoting Environmental Education and Conservation Activities at the P.T. YKK Zipper Indonesia Cibitung Plant



Trash clean-up activity

The P.T. YKK Zipper Indonesia Cibitung Plant holds an environmental conservation event for local elementary school children once each year. This event explains the harm trash does to the health of the local people and the rare Indonesian ecosystem. Next, all the participants work together in a local clean-up effort to protect this ecosystem, which creates an opportunity for the children to experience and think about what they can do to protect their own health.

Indonesia is a country with a diverse ecosystem that includes Komodo dragons and Rafflesia. YKK recognizes the value of this precious Indonesian ecosystem. We hope this clean-up activity will ingrain a habit in these children that prevents littering in rivers and along roadsides to protect their own health and the health of their families.

# Environmental Contribution Activities

## Fundamental Approach

Under founder Tadao Yoshida's philosophy of "becoming part of the local community," YKK keeps in mind achieving prosperity together with the community, and places value on the connection with the local community as a member of society. Each business site conducts cleaning activities and other environmental contribution activities based on that thinking. In addition, we believe that teaching the children who are the next generation is crucial to solving environmental issues, so we host environmental learning at many business sites.

## FY2022 Initiatives

As an environmental contribution activity aiming to coexist with the community, YKK takes part in a wide range of activities. This includes clean-up activities around our plants at locations around the world, environmental education for the local children, and participation in other local events.

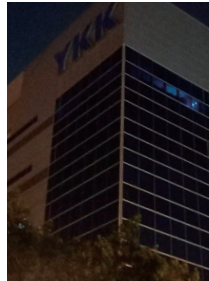
As one example in Japan, because we believe that it is important to consider the environment not only at work but also at home, we hosted an event to implement efforts to reduce CO<sub>2</sub> emissions at home in an aim to cultivate an awareness of the environment in each employee. YKK Romania S.R.L provided environmental education to students about reducing use of plastics and the importance of recycling.

### COLUMN

## Participation in Earth Hour



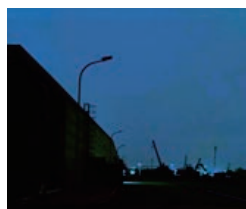
Before switching off the lights  
YKK logo sign and indoor lights turned off



After switching off the lights



Before switching off the lights



After switching off the lights

Lights on the premise turned off

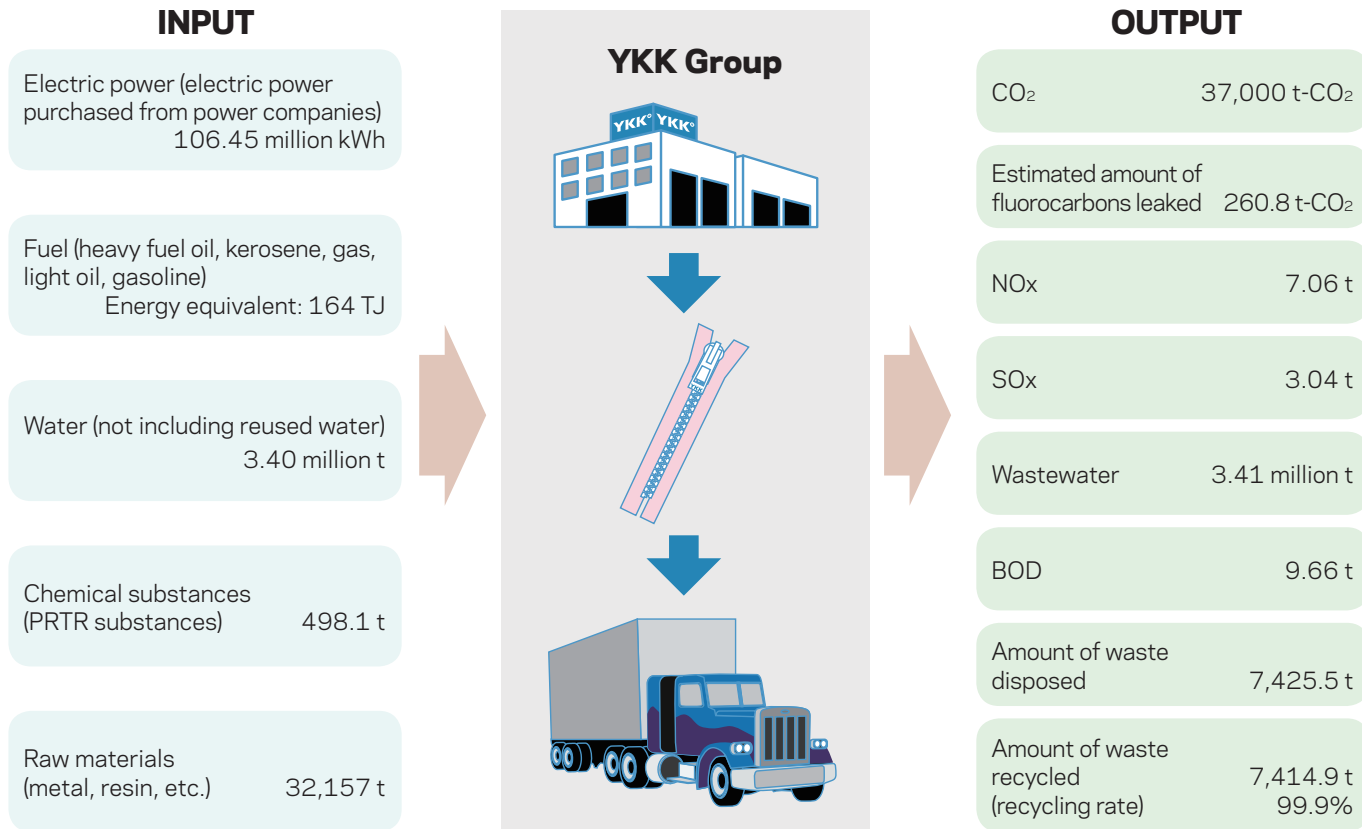
On March 25, 2023, YKK locations around the world participated in Earth Hour 2023. Earth Hour is an activity for everyone to switch off the lights on the same day and time for an hour around the world. As the world's largest initiative of this kind, the environmental action held by the World Wildlife Fund demonstrates the will of the people to prevent global warming and conserve biodiversity.

This is the fifth time YKK has participated in Earth Hour since 2019. Every year, the number of YKK locations participating grows. 50 locations participated this year, turning off logo signs, indoor lighting, and outdoor lights. At many of these locations, the employees join the company in this activity by turning off their lights at home, which provided a good time for everyone to help prevent climate change and think about environmental issues.

We will aim to improve the environmental awareness of each and every employee with the hope of contributing to a sustainable society.

## [Reference] Fastening Business and Other Businesses Related to Business Operations (Japan)

### Environmental impact mass-balance (FY2022 results)





## Violations of environmental laws and regulations

We have not had any administrative actions or fines imposed related to environmental laws and regulations in the past five years.

### YKK Corporation and YKK Snap Fasteners (YSF) Co., Ltd. status of compliance (results)

#### Air Pollution Control Act: Exhaust gas (Production sites in Japan, FY2022 results)

Equipment	Plant	Soot and dust (g/Nm <sup>3</sup> )					Nitrogen oxide (ppm)				
		National emissions standard	Municipal agreed value	Highest value measured in FY2022	Assessment	(Reference) Voluntary emission standard	National emissions standard	Municipal agreed value	Highest value measured in FY2022	Assessment	(Reference) Voluntary emissions standard
Boilers	YKK Corporation	0.30	–	Below 0.01	Acceptable	0.05	180	–	83	Acceptable	80
	YSF	–	–	–		–		–			–

#### Water Pollution Prevention Act: Wastewater (Production sites in Japan, FY2022 results)

Unit: mg/l (except pH)

Item	Plant	National emissions standard	Prefectural water emissions standard	Municipal agreed value	Highest value measured in FY2022	Assessment	(Reference) Voluntary management standard
pH	YKK Corporation	5.8~8.6*1	5.8~8.6*1	5.8~8.6	Min.: 6.6 Max.: 7.5	Acceptable	6.0~8.4
	YSF	–*2	–	5.0~9.0*2	Min.: 6.2 Max.: 7.0	Acceptable	5.8~8.8
BOD	YKK Corporation	120*1	15	15	4.9	Acceptable	5
	YSF	–	–	600	112.0	Acceptable	200
COD	YKK Corporation	–	–	–	6.7	Acceptable	12
	YSF	–	–	–	–	Acceptable	–
Suspended solids	YKK Corporation	150	90	50	2.0	Acceptable	10
	YSF	–	–	600	59.0	Acceptable	120
Oil	YKK Corporation	5	–	3	Below 0.5	Acceptable	1
	YSF	–	–	35	22.4	Acceptable	18
Cyanide	YKK Corporation	1	–	0.1	0.02	Acceptable	0.02
Hexavalent chromium compound	YKK Corporation	2	–	0.1	Below 0.02	Acceptable	0.03

\*1 Standards for discharge into rivers

\*2 Discharge into sewers

#### Water Pollution Prevention Act: Ground water (Production sites in Japan, FY2022 results)

	Substance	Unit	Environmental standard*	Measurement results for FY2022	Assessment
Volatile organic compounds	Dichloromethane	mg/l	0.02 or less	Below 0.002	Acceptable
	Carbon tetrachloride	mg/l	0.002 or less	Below 0.0002	Acceptable
	1,1-Dichloroethylene	mg/l	0.1 or less	Below 0.002	Acceptable
	Cis-1,2-Dichloroethylene	mg/l	0.04 or less	Below 0.004	Acceptable
	1,1,1-Trichloroethane	mg/l	1 or less	Below 0.0005	Acceptable
	Trichloroethylene	mg/l	0.01 or less	Below 0.002	Acceptable
	Tetrachloroethylene	mg/l	0.01 or less	Below 0.0005	Acceptable
Heavy metals	Cadmium	mg/l	0.003 or less	Below 0.001	Acceptable
	Cyanide	mg/l	Not detected	Below 0.1	Acceptable
	Lead	mg/l	0.01 or less	Below 0.005	Acceptable
	Hexavalent chromium	mg/l	0.05 or less	Below 0.005	Acceptable
	Selenium	mg/l	0.01 or less	Below 0.002	Acceptable
	Fluorine	mg/l	0.8 or less	0.2	Acceptable
	Boron	mg/l	1 or less	Below 0.1	Acceptable

\*Environmental standard: Keeping the amount below this standard is desirable for protection of human health and preservation of the living environment.

## Noise Regulation Act: Noise (Production sites in Japan, FY2022 results)

Unit: db

Plant	Type	Prefectural standard	Municipal agreement on pollution control	Highest value measured in FY2022	Assessment	(Reference) Voluntary standards
YKK Corporation	Daytime (8:00 A.M. to 7:00 P.M.)	70	–	64	Acceptable	60
YKK Corporation	Morning (6:00 A.M. to 8:00 A.M.) Evening (7:00 P.M. to 10:00 P.M.)	65	65	57	Acceptable	55
YKK Corporation	Late night (10:00 P.M. to 6:00 A.M.)	63	63	56	Acceptable	50
YSF	Daytime (8:00 A.M. to 7:00 P.M.)	70	70	67	Acceptable	70
YSF	Morning (6:00 A.M. to 8:00 A.M.) Evening (7:00 P.M. to 10:00 P.M.)	65	65	62	Acceptable	65
YSF	Late night (10:00 P.M. to 6:00 A.M.)	60	60	–	Acceptable	60

## PRTR method: PRTR calculations (Production sites in Japan, FY2022 results)

Unit: t

Substance number	Substance	Volume handled	Emissions				Transfer amount to sewer system	Transfer amount		Consumption
			Atmospheric emissions	Public water emissions	Soil emissions	Landfill volume		Waste materials	Sewage	
1	Zinc compounds (water-soluble)	1.81	Below 0.01	0.00	–	–	0.00	0.00	–	1.80
53	Ethylbenzene	2.69	2.60	0.00	–	–	0.00	0.04	–	0.00
71	Ferric chloride	10.00	0.00	0.00	–	–	10.00	0.00	–	0.00
80	Xylene	31.92	5.30	0.00	–	–	2.19	0.36	–	2.54
144	Inorganic cyanide compounds	17.34	0.03	0.02	–	–	3.44	13.70	–	0.14
232	N,N-dimethylformamide	158.97	148.80	0.00	–	–	10.18	0.00	–	0.00
296	1,2,4-Trimethylbenzene	10.05	3.47	0.00	–	–	2.99	0.00	–	3.57
300	Toluene	82.60	73.34	0.00	–	–	5.15	1.79	–	0.00
308	Nickel	48.93	0.01	0.00	–	–	0.00	4.57	–	44.35
395	Water-soluble salts of peroxydisulfuric acid	3.37	0.00	0.00	–	–	3.37	0.00	–	0.00
412	Manganese and manganese compounds	105.36	0.11	0.00	–	–	0.00	0.00	–	97.45
438	Methylnaphthalene	25.06	0.00	0.00	–	–	0.00	0.00	–	25.06

\*Aggregated substances of which we handle 1 t or more (0.5 t or more per year for Class1 Designated Chemical Substances) per year at our domestic production locations

\*Consumption: The amount consumed as raw materials, the amount contained in products, or the amount recycled by being sold

\*Transformed amount: The amount that has been transformed into other substances by incineration, reactive processing, etc.

## Changes in Emissions of PRTR Substances (Production sites in Japan)

