



4. Environmental Policy and Management Structures

4-1 Policy and Principles

Nissha Group has established an "Environmental Policy". And together with a "Environment Principles" that outlines specific conduct and regulations, we disseminate them within organizations and among each individual employee. We have also issued the "Nissha Group Environmental Objectives". Each business location and organization sets their own goals in an effort to achieve those objectives, and acts in accordance with those activity plans. These goals are linked with the Key Performance Indicators (KPI) and action items for each business unit and are directly connected with our business activities.

Environment Policy

Nissha Group, as a member of the global society, aim for business development and the realization of a sustainable society through environmentally conscious corporate activities.

Junya Suzuki
Chairman of the Board, President and CEO
Nissha Co., Ltd.

The Environment Principles

1. We shall honor environmental laws, agreements with local communities, and demands from our customers.
2. We shall promote the reduction of greenhouse gas emissions through working to improve energy efficiency, etc. in order to deal with climate change risks.
3. We shall aim to construct a recycling society through our business activities, from product development and production to sale, etc., reducing the environmental impact of our supply chain overall.
4. We shall construct a management system and promote continuous improvements to suit changes in the business environment.
5. We shall value biodiversity and prevent pollution while co-existing with nature.

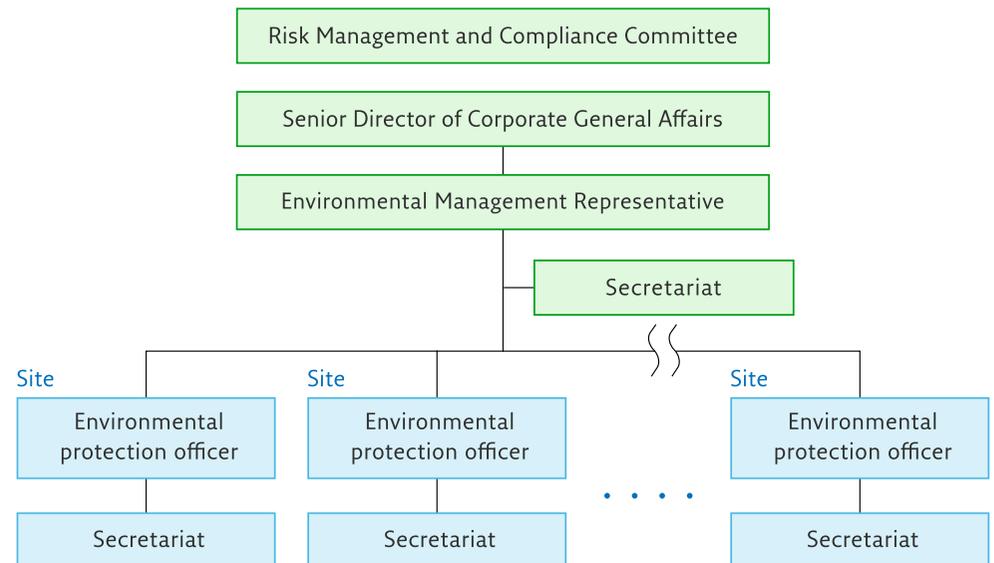
Daisuke Inoue
Director of the Board, Senior Executive Vice President, General Affairs
Nissha Co., Ltd.

Established on April 1, 2012 / Revised on May 1, 2022

4-2 Management Structures

The Nissha Group deploys our environmental management system in all aspects of our business activities. Under the Risk Management and Compliance Committee, in domestic Nissha Group companies Environmental Management Representative take the core role in creating environmental management systems through the leadership of a senior director of Corporate General Affairs , and Corporate General Affairs of the Head Office serves as the central office for this endeavor. Furthermore, we also create, maintain, and constantly improve systems for compliance with environmental laws and regulations and the RBA (Responsible Business Alliance), which serves as a global code of conduct mainly for the electronics and automobile industries.

Environmental Management Structure





4-3 Environmental Management System (EMS)

The Nissha Group operates its own environmental, health and safety management system based on the ISO14001 environmental management system and the ISO45001 occupational health and safety management system. This system includes compliance with relevant laws and regulations as well as items requested by customers, and strives for continuous improvement.

Core business locations that have acquired ISO14001 certification implement environmental hazard evaluations (risk assessments). We evaluate the environmental risks that have been identified, set priorities, and reflect the assessment in concrete actions. In addition to setting KPIs and action items directly related to business activity, we also strive for environmental performance improvement that interlocks with quality targets, etc. Through these activities, we assess negative risks that impose an undesirable impact on the environment and business and engage in improvement, maintenance, and management aiming to reduce those risks.

In our currently active 7th Medium-term Business Plan (FY2021.12 – FY2023.12), we set medical devices, mobility, sustainable materials, etc. as the priority markets, and aim for growth via product lineups and services that contribute to resolving social issues. As positive environment contributions, our development and product technology divisions set development themes at the product design and development stage from the societal issue resolution perspective of SDGs and lifecycles. Additionally, these efforts are set as one environmental objective and reflected in concrete action.

Moreover, the EMS for the Nissha Group covers all our bases, not

only major production bases, but also small production bases and sales bases with little impact on the environment. They are classified into ISO14001-certified bases and noncertified bases and set their priority management items as appropriate. The effectiveness of our EMS has ensured a high level of performance by engaging in confirmation, correction, and improvement through initiatives including once-a-year periodic internal auditing and support for responding to law and regulation revisions. The management review conducted at the end of the fiscal year includes confirmation on the response to points stipulated by Directors (responsible for corporate general affairs) and Environment Management Representatives and the sharing of major environmental risks and action examples that may be useful as reference. As such, it links to continued improvement.

In the fiscal year ended December 2021, we established a system to regularly and accurately collect information on the environmental impact of our key overseas bases, employed the information gathered from locations, and promoted actions designed to reduce risk.



5. Impact on the Environment out of Our Business Operations

In order to manage the impact on the environment out of our business operations, we grasp the input of major materials, the amount of waste, the amount of energy and water used, and the amount of exhaust and emissions.

The amount of major raw materials used at the Nissha Group in the fiscal year ended December 2021 was approximately 127,430t, an increase of approximately 11% from the previous fiscal year. Of the total amount of major raw materials used, approximately 82% was used at our overseas production bases. Of this amount, Nissha Metallizing Solutions' metallized paper products accounted for approximately 84%. At domestic production bases, the amount used by the Industrial Materials business, the Devices business, and others increased. Starting in this fiscal year, we added input data from the domestic Japanese Medical Technologies business.

The amount of energy used by the Nissha Group was 264,973MWh of electricity, an increase of approximately 3% from the previous fiscal year, and 10,558,000m³ of gas, an increase of approximately 16% from the previous year. From the fiscal year ended December 2020, CO₂ emissions are calculated using the market-based method for bases in Japan and the location-based method for overseas bases.

The overall Nissha Group waste material gross emissions were 30,587t, an approximate 2% increase from the previous fiscal year. The domestic Japanese Nissha Group company waste material gross emissions were 17,465t, an approximate 6% reduction compared to the previous fiscal year. The overseas Nissha Group company waste material gross emissions were 13,122t, an approximate 15% increase.



INPUT



OUTPUT

Production bases in Japan			
Industrial Materials	PET/acryl film	1,165t	
	Solvents	843t	
	Gravure ink	742t	
	Resin	117t	
	Others	103t	
Devices	Materials used in product manufacturing processes	13,729t	
	Metallic materials	2t	
	Resin materials	2t	
	Half-finished goods	57t	
	Others	1,589t	
	Medical Technologies	Product materials	55t
		Resin materials	33t
PET film		3t	
Aluminum		4t	
Packing materials		29t	
Others*1	Paper	4,424t	
	Ink	47t	
	Others	37t	
Total for production bases in Japan		22,981t	

Overseas production bases			
	Resin/plastic	4,506t	
	Film	1,491t	
	Molds and molding materials	120t	
	Touch sensors	0t	
	Packing materials	161t	
	Paper	88,131t	
	Cardboards	1,073t	
	Aluminum	2,218t	
	Metal	74t	
	Chemical substances	6,105t	
	Others	568t	
	Total for overseas production bases		104,449t

Total for Nissha Group	127,430t
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Including production bases in Japan and overseas		
Energy	Electricity	264,973MWh
	Gas	10,558,000m ³
Water	Tap water	1,249,000m ³
	Underground water	46,000m ³
	Industrial water	1,670,000m ³

Production bases in Japan		
Recyclable resources (items sold for recycling)	Waste containing noble metals Metal waste Resin waste Paper waste	5,743t
	Recyclable resources (industrial waste)	11,697t
	Waste plastic Iron scrap, waste cans Waste solvents, waste ink, waste cloth Waste acid, alkali Sludge, others	
Waste for simple incineration/landfill	General business waste Others (industrial waste)	25t
Total for production bases in Japan		17,465t

Overseas production bases		
Recyclable resources (items sold for recycling)	Waste containing noble metals Metal waste Resin waste Paper waste Others	9,838t
	Recyclable resources (industrial waste)	1,335t
	Waste plastic Waste solvents, waste ink, waste cloth Others	
	Non-recyclable waste	Incineration/ landfill
Total for overseas production bases		13,122t

Total for Nissha Group	30,587t
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Including production bases in Japan and overseas		
Emissions	CO ₂	125,244t
	VOC*2	826t
Wastewater		2,594,000m ³

*2. Detoxified by activated carbon adsorption, catalyst deodorization, etc.

*1. Posted as "Information and Communication" until Nissha Sustainability Report 2021

6. Responding to Climate Change (Addressing the TCFD Recommendations)

Nissha Group publicly endorsed the recommendations made by the Task Force on Climate-related Financial Disclosures (TCFD) in January 2022.

The Task Force on Climate-related Financial Disclosures (TCFD) was established by the Financial Stability Board (FSB) at the request of the G20 to examine climate-related disclosures and financial institutions' responses. The TCFD's final report, published in June 2017, recommends that companies take measures to understand and address climate change-related risks and opportunities as a management issue. The need for disclosure in line with the framework of the TCFD recommendations is clearly stated in the June 2021 revision of Japan's Corporate Governance Code, and analysis of the financial impact of risks and opportunities related to climate change on business is becoming an essential part of ESG disclosure.

Using the framework of the TCFD recommendations, we have analyzed the financial impact of risks and opportunities related to climate change on our business. The details of our analysis are outlined below.



6-1 Governance

The Nissha Group views climate change issues from both a long-term perspective (backcasting from 2030) and a short- to medium-term perspective, and manages them using the following system.

■ Management from a long-term perspective

The Nissha Group has defined Sustainability Vision (long-term vision) that shows where we want to be by the year 2030. We aim to create social value by providing products and services that contribute to solving social issues and to achieve a 30% reduction in total CO₂ emissions by 2030 (compared to 2020) with a view of becoming carbon-neutral by 2050.

To accelerate this initiative, the Group has established a Sustainability Committee, chaired by the President and CEO and vice-chaired by the Director of the Board, Executive Vice President in charge

of Sustainability. The Sustainability Committee manages the material issues (materialities) resolved by the Board of Directors. The Committee monitors progress by receiving quarterly reports on material issues from business organizations and divisions and the ESG Task Force, and reports annually to the Board of Directors. The Board of Directors discusses the content of the report and makes observations as necessary.

In addition to reporting progress to the Sustainability Committee, the ESG Task Force, which handles particularly important material issues, discusses the company's response to climate change with the President and CEO and the Director of the Board, Executive Vice President in charge of sustainability on a quarterly basis.

Important strategic and financial decisions concerning our response to climate change are made by the President and CEO within the scope of his authority.

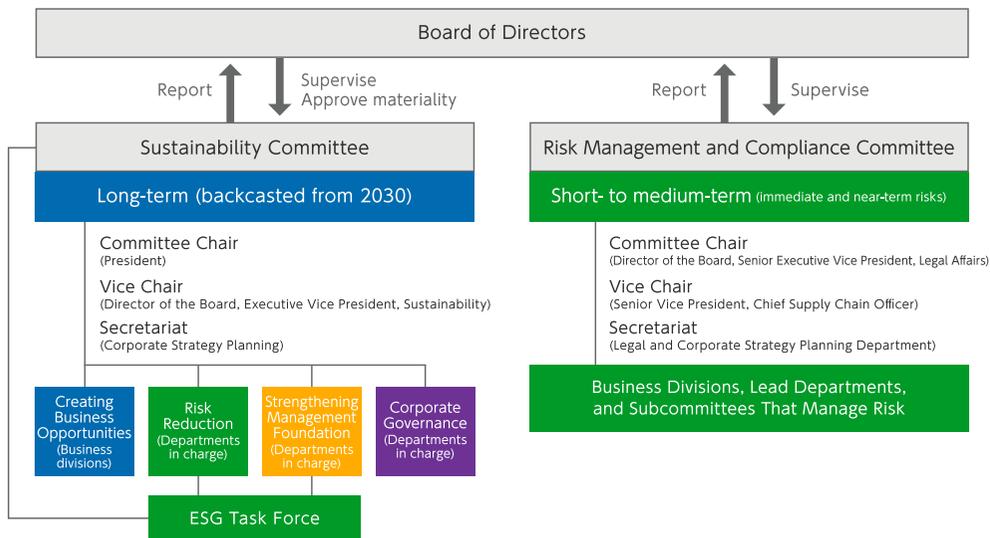
■ Management from a short- to medium-term perspective

The Group has established a Risk Management and Compliance Committee, chaired by the Director of the Board, Senior Executive Vice President in charge of legal affairs and vice-chaired by the Senior Vice President, Chief Supply Chain Officer, in order to centrally manage risks that may jeopardize business operations from a short- to medium-term perspective. The Risk Management and Compliance Committee manages important risks that are identified, evaluated, and selected from a company-wide perspective. The Committee monitors progress on a quarterly basis based on reports from the subcommittees and divisions that manage such risks, and reports on its activities to the Board of Directors once a year. The Board of Directors discusses the content of the reports and makes observations as necessary.

We have selected "Continuity of Business Activities" as one of the significant climate change risks. The Business Continuity Management Subcommittee, which manages such risks, formulates and updates emergency preparedness based on the most recent potential natural disasters and response plans for when a disaster occurs, and reports its activities to the Risk Management and Compliance Committee. The President and CEO and the Senior Executive Vice President in charge of legal affairs monitor the content of such reports and give instructions as necessary.



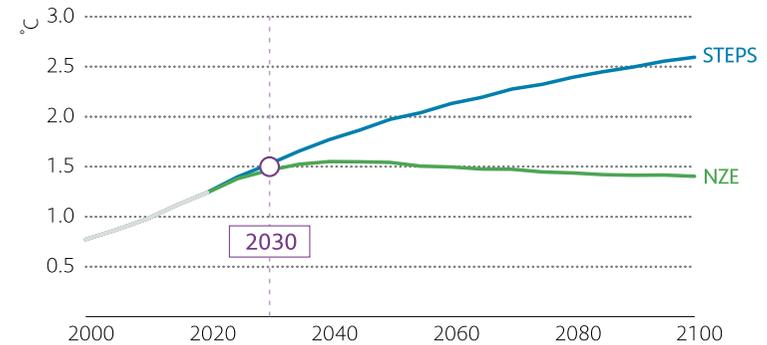
Management structure



*1 NZE: a scenario in which the world decarbonizes and achieves virtually zero CO₂ emissions in 2050. It is called the "1.5 °C scenario" because the average temperature increase as of 2100, compared to pre-industrial times, will be between 1.3 and 1.5 °C.

*2 STEPS: a scenario in which countries implement their stated current specific policies on decarbonization and no additional decarbonization-related policies are introduced. It is called the "3 °C scenario" because the average temperature increase as of 2100, compared to pre-industrial times, will be between 2.4 and 2.8 °C.

Temperature rise in 2100 under each scenario



Source: created internally based on the IEA World Energy Outlook, 2021

6-2 Strategy

We have conducted a scenario analysis of the impact of future climate change on our business operations, based on the framework recommended by the TCFD.

This year's analysis targets the Devices business, which accounts for about half of the Group's net sales.

(1) Scenario analysis assumptions

- Scenario analysis time horizon: consider transition and physical risks and opportunities as of 2030
- Scenario analysis target business: Devices business
- Assumed scenario: referred to two scenarios from the International Energy Agency (IEA), the "Net Zero Emissions by 2050 (NZE)"^{*1} scenario (1.5° C scenario) and the "Stated Policies scenario (STEPS)"^{*2} (3° C scenario)

We believe that we can visualize many climate change-related risks and opportunities by using the 1.5°C scenario in which regulations are tightened and zero CO₂ emissions are achieved by 2050, and the 3°C scenario in which no additional policies are introduced and climate change measures do not progress.

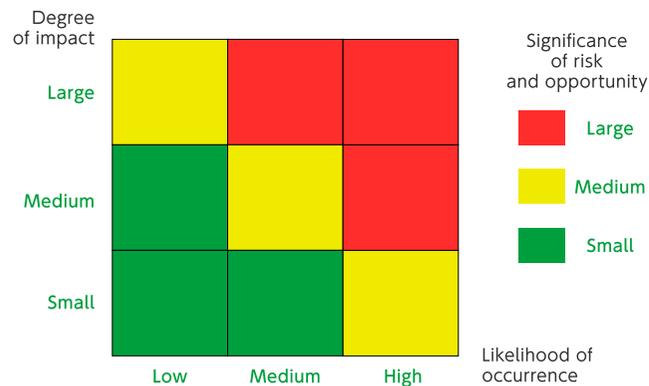
Under the two scenarios referenced from the IEA, the physical risks in 2030 are assumed to be the same for both the 1.5°C and 3°C scenarios, since the temperature increase in 2030 is about 1.5°C in both scenarios and there is no significant difference between the two. Therefore the size of the risk between the two scenarios is not distinguished.



(2) Scenario analysis process

Scenario analysis was conducted using the following process:

- (i) Consider significant climate-related risks and opportunities for the Devices business
- (ii) Consider and create scenarios
- (iii) Assess risks and opportunities based on the scenarios (Risks and opportunities are assessed on the two axes of "likelihood of occurrence" and "degree of financial impact," and the results are described below as "magnitude of risk" and "magnitude of the opportunity.")
- (iv) Consider countermeasures



(3) Results of risk analysis

Major risks related to climate change, our response to those risks, and the magnitude of the risks in each scenario are analyzed in the table on the right.

Based on the above analysis, we have concluded that the following three climate change risks will have a large impact on our business.

Results of risk analysis

Type	Changes in the external environment	Risks to Nissha	Risk magnitude		Countermeasures	
			3°C	1.5°C		
Transition risks	Policies and regulations	Introduction or strengthening of carbon taxes	Small	Large	- Reduce CO ₂ emissions by conserve energy through improved productivity and introduction of renewable energy - Investigate and study alternatives to raw materials that contribute to reducing our environmental impact	
		Establishment of carbon emission quotas	Electricity costs increase due to the introduction of renewable energy	Small	Medium	- Reduce electricity consumption through energy conservation by productivity improvement
			Cost of reducing CO ₂ emissions in logistics (procurement and shipping) increases	Small	Small	- Study trends in the logistics industry and consider shifting to transportation methods that emit less CO ₂
	Tightening restrictions on the use of specific substances and technologies	Restrictions on use of specified CFCs and their substitutes used at production bases increase capital investment costs	Medium	Medium	- Research technology trends to enable compliance with regulations	
	Technologies	Transition to materials and technologies with lower environmental impact	Costs increase in order to replace product packaging materials	Small	Small	- Investigate alternative materials that can reduce costs while maintaining the quality of packaging materials
			Net sales decrease due to replacement of our products for competitor low-carbon products	Medium	Medium	- Develop low-carbon products with lower environmental impact
	Markets	Increase in requests from customers to reduce CO ₂ emissions	Net sales decline due to lost business opportunities resulting from delays in development of low-carbon technologies	Medium	Medium	- Promote the development of low-carbon technologies
			Net sales decline due to lost business opportunities caused by insufficient responses to customer requests	Medium	Large	- Conserve energy through improved productivity and reduce CO ₂ emissions through the introduction of renewable energy
	Reputation	Growing importance of ESG evaluation in customers' supplier selection	ESG evaluation declines due to delays in addressing climate-related issues, etc. and we are not chosen as a supplier resulting in a decline in net sales	Small	Medium	- Enhance climate change initiatives
	Physical risks	Acute	Intensifying weather disaster	Suspension of factory operations caused by the flooding affects shipments resulting in a decrease in net sales	Medium	- Improve and strengthen BCP - Establish a system to support affected sites
Costs increase as a result of damage to own assets such as buildings, equipment, and inventories due to flooding				Large		
Suspension of supply of raw materials and parts due to disasters at suppliers impact our factory operations and shipments, resulting in a decrease in our net sales			Medium	- Improve and strengthen BCP - Rebuild supply chain		



[Transition risks]

- (i) Increase in energy use at production bases and raw material procurement costs due to the introduction or strengthening of carbon taxes (1.5° C scenario)
- (ii) Loss of business opportunities caused by insufficient responses to customer requests to reduce CO₂ emissions (1.5° C scenario)

[Physical risks]

- (iii) Costs increase as a result of damage to own assets such as buildings, equipment, and inventories due to flooding (both 3° C scenario and 1.5° C scenario)

As measures to address (i) and (ii), we are reducing power consumption by streamlining production at our production bases and improving the energy efficiency of our production and infrastructure facilities, and we are gradually switching to renewable energy for electricity supplied by power companies. We will continue to promote reductions in emissions while verifying the cost and effectiveness of such reductions.

As a countermeasure for (iii), the Group has established a Business Continuity Plan (BCP) to prepare for emergencies such as natural disasters and pandemics, and to respond should such emergencies occur. We regularly conduct BCP drills in which management participates, to verify the effectiveness and prepare for disaster risks, including weather disasters, so that we are able to put the safety of human life first and foremost, minimize damage, and promptly restart our businesses.

Based on our analysis using the above scenarios, our Devices business has taken measures to address risks we believe will have a significant impact with respect to climate change and we believe that the business is resilient to climate change.

Results of opportunity analysis

Type	Changes into the external environment	Opportunities to Nissha	Opportunity magnitude		Countermeasures
			3°C	1.5°C	
Market	New markets and growing needs due to climate change Arrival of a hydrogen-based society	Demand for Fuel Cell Vehicles (FCVs) expands	Medium	Medium	- Develop and expand sales of products for the mobility market (such as hydrogen detectors ^{*1}) that contribute to reducing the environmental impact
	Changes in the automobile market Increase in Electric Vehicles (EV) sales	Growing demand for EVs equipped with touch sensors ^{*2}	Small	Large	- Develop and expand sales of touch sensors for vehicles
Products and services	Increased demand for products that contribute to reducing GHG emissions	Increase in sales opportunities for gas sensor modules for refrigerant detection ^{*3} that contribute to reducing GHG emissions	Large	Large	- Develop and expand sales of gas sensor modules for refrigerant detection

*1 Hydrogen Detector

A device produced by Nissha FIS, a member of our group, to detect hydrogen gas leaks. In addition to the installation in fuel cell vehicles, demand is expected to grow in areas such as household fuel cell systems and infrastructures such as hydrogen pipelines and hydrogen stations.

*2. Touch sensor for automobiles

Our touch sensors are used in industrial devices and automobiles as well as mobile phones and game consoles. Film-based material provides high visibility and a narrow frame while being thin, light, unbreakable, and bendable. These features enable us to provide touch sensors for curved surfaces and large displays that meet next-generation automotive design demands.

*3. Gas sensor modules for refrigerant detection

A gas sensor produced by Nissha FIS. Refrigerants widely used in household air conditioning units today have low ozone depletion potential and global warming potential, but leak detection is necessary as they are slightly flammable. We believe that our Group's gas sensors can contribute to both safety and the prevention of global warming.

(4) Results of opportunity analysis

Based on our awareness that responding appropriately to the impact of climate change will create business opportunities, we have analyzed the magnitude of the opportunities in each scenario as shown in the table on the above.

Based on the above analysis, we have concluded that the following two items will have a large impact on our climate change opportunities.

- (i) Increase in net sales of automotive products due to expansion of EV market (1.5° C scenario)
- (ii) Increase in sales opportunities for gas sensor modules for

refrigerant detection due to the increase in demand for products that contribute to reductions in GHG emissions (both 3° C scenario and 1.5° C scenario)

We have identified the expansion of our business targeting the mobility market as one of the priority markets for achieving our Sustainability Vision, and we are working to enhance products that contribute to reducing our environmental impact as a strategy to expand our business.

We intend to reflect the growing demand for products that contribute to reducing our environmental impact in our business strategy obtained from our scenario analysis results, such as EV market expansion and reduction of GHG emissions.

6-3 Risk Management

The Group’s Sustainability Committee and Risk Management and Compliance Committee each assess and manage risks related to climate change from a long-term perspective and a short- to medium-term perspective, through the following process.

Risk Management by the Sustainability Committee

To realize our Sustainability Vision (long-term vision), we have identified items of particular importance as materialities, which we are working on by setting specific strategy items, key performance indicators, and action items backcasting from 2030 as a starting point.

Materialities are evaluated from the 4 perspectives of, Creating Business Opportunities, Risk Reduction, Strengthening Management Foundation, and Corporate Governance, using the two axes of “importance to society and stakeholders”, and “importance to Nissha”. The identified issues and their positioning within the Group are discussed by the Sustainability Committee, and materialities are identified through deliberations and resolutions by the Board of Directors.

We have identified the following material issues relating to climate change from the perspectives of risk reduction and creating business opportunities.

	Materiality	Related SDGs
Risk reduction	Responding to climate change	
Creating business opportunities	Contribute to the safety and comfort of transportation and logistics, and the reduction of environmental impact	 
	Promotion of circular economy	  

The ESG Task Force is responsible for activities related to risk reduction. The ESG Task Force works based on key performance indicators and action items approved by the Sustainability Committee and reports the state of its activities to the Sustainability Committee on a quarterly basis.

Activities related to creating business opportunities are handled by the business organization. The business organization reports to the President and CEO at monthly meetings (business reviews), at which the President and CEO confirms the progress of business strategies based on key performance indicators and gives instructions on necessary action.

The Sustainability Committee discusses the formulation of the Medium-term Business Plan and the Rolling Plan and reports its activities annually to the Board of Directors, and utilizes these in the formulation of these plans as necessary.

Refer to 3-4 Promotion Framework for Sustainability / 3-5 Materialities (Key Issues) and KPIs

Risk Management by the Risk Management and Compliance Committee

The Risk Management and Compliance Committee selects risks by carrying out risk assessments over the entire Group and selecting from both a business activity perspective and a company-wide perspective. From the business activity perspective, hearings are held with related departments and subcommittees, and, after assessing them based on the frequency of these risks occurring and the severity of their impact, an assessment is made that also takes into account control activities to suppress them happening. Then, assessing them from a company-wide perspective in order to work to integrate the risks selected from a business activities perspective with management strategies, the significant risks are selected.

In principle, the Committee holds a general meeting once a year to select significant risks.

The Committee has selected “business continuity plans” as a key climate change risk. The Business Continuity Management Subcommittee, which manages such risks, works to mitigate risks based on key performance indicators and action items approved by the Risk Management and Compliance Committee, and reports the state of its activities to the Risk Management and Compliance Committee.



6-4 Indicators and Targets

We have defined total CO₂ emissions as an indicator for assessing and managing risks related to climate change. Our Sustainability Vision aims for a 30% reduction in CO₂ emissions in 2030 (compared to 2020), with a view to achieving carbon neutrality by 2050.

In the next fiscal year and beyond, we will consider establishing and publishing indicators and targets to assess and manage climate change-related business opportunities.

Nissha Group CO₂ Emissions Volumes (Scope 1, 2)

(Unit: t-CO₂)

	FY2019 ^{*1}	FY2020	FY2021
Scope 1	26,603	20,853	24,206
Scope 2	152,399	103,351	101,048
Scope 1 + 2	179,002	124,204	125,244

* We are currently in the process of calculating Scope 3 and we will continue to monitor and disclose major emissions.

*1. CO₂ emissions calculations up until the fiscal year ended December 2019 are calculated using a fixed emission coefficient. We have adopted the GHG Protocol "Scope 2 Guidance" in the fiscal year ended December 2020 and we calculate emissions using market criteria for domestic bases and location criteria for overseas bases.

6-5 Finally

The Nissha Group views sustainability as an initiative toward the achievement of sustainable growth and development for both the company and society. To achieve sustainability, we consider social issues to be business opportunities. It is important not only that we leverage our strengths to provide products and services that help resolve social issues on an ongoing basis, but also that we strengthen the management foundation underpinning our business activities, reduce risks that could hamper business continuance, and promote governance to ensure these are all carried out appropriately.

Addressing climate change is positioned as one of the most important of the many social issues, and we believe that contributing to resolving this issue through our business activities will provide enormous business opportunities for the Group. Meanwhile, although the transition and physical risks associated with climate change are significant, we believe that their impact on our finances will be limited if sufficient measures are taken to address the risks we have identified through our analysis.

Our analysis based on the TCFD recommendations was conducted on the Devices business, which currently accounts for half of the Group's net sales. Going forward we will expand the scope of our analysis to include more businesses.



7. CO₂ Emissions and Reduction Efforts

The move around the world towards a decarbonized society in an effort to reduce global warming gases is progressing in response to the Paris Agreement. At the 26th Conference of the Parties (COP26) to the United Nations Framework Convention on Climate Change (UNFCCC) which was held in Glasgow, UK, from October to November 2021, the parties agreed on a target to limit the average global temperature rise to below 1.5 °C compared to pre-industrial levels (1.5 °C target). In response, companies are required to set medium- to long-term GHG emission reduction targets consistent with the level required by the 1.5 °C target to work towards the 2050 net-zero target, and to disclose information appropriately.

7-1 CO₂ Emissions Reduction Target

Nissha Group regards addressing climate change as one of its most important management issues. Our Sustainability Vision (long-term vision) aims for a 30%* reduction in CO₂ emissions in 2030 (compared to 2020) to achieve carbon neutrality by 2050.

As a specific activity to realize our Sustainability Vision, we have established and are promoting a task force under the Sustainability Committee on the theme of addressing climate change, which is chaired by the President. The task force is working to reduce our Scope 1 and Scope 2 CO₂ emissions by 3% per year, and to identify Scope 3 categories and calculate CO₂ emissions in our supply chain.

The Group will promote these initiatives on a global basis, while monitoring global trends relating to the reduction of CO₂ emissions, with an eye to introducing even more ambitious targets.

*Upwardly revised in July 2021 from the previous 20% reduction (compared to 2020)

7-2 Summary of Emission

	Energy type	Reference year (FY2020)	Results of FY2021	
		CO ₂ emission (t-CO ₂)	CO ₂ emission (t-CO ₂)	year-to-year comparison
Scope 1	Mains gas	20,853	24,196	0.16
Scope 2	Electricity	103,351	101,048	-0.02
Total		124,204	125,244	0.8

The Group's CO₂ emissions are characterized by the ratio of Scope 2 emissions being significantly higher than the ratio of Scope 1 emissions.

In the fiscal year ended December 2021, CO₂ emissions remained almost flat compared to the fiscal year ended December 2020. Furthermore, in the fiscal year ended December 2021, the Scope 1 ratio increased by 2.5%. This was due to increased consumption at the Nitec Industries, Inc. (NII) Koka Factory and Nissha Metallizing Solutions, which use mains gas.

Refer to 27. Third Party Verification

7-3 Trends in CO₂ Emissions and Energy Consumption, etc.

The Nissha Group's CO₂ emissions and energy consumption are shown below. The totals obtained by multiplying the individual consumption of fuels such as electricity, gas, gasoline, diesel, and heavy oil with the specified factors are Nissha's energy consumption levels. The figures obtained by multiplying energy consumption by the CO₂ emission factors are the CO₂ emissions of the Group.

Nissha Group emits almost no energy-related greenhouse gases other than CO₂, and its impact is minimal.

About the following tables

- CO₂ emission factors for electricity are calculated based on data calculated using the market-based method for Japan and the location-based method for overseas.
- The company names listed in the tables are as follows.
Nissha and others: Nissha Co., Ltd. and affiliated companies
NII: Nitec Industries, Inc.
NPT: Nitec Precision and Technologies, Inc.
NCI (NPC): Nissha Printing Communications, Inc. (In January 2019, NCI merged with NPC (Nitec Printing Co., Ltd.) and they are shown together here.)

CO₂ Emissions Volumes and Basic Unit

(unit: t-CO₂, excluding basic unit)

Company	FY2019	FY2020	FY2021
Nissha and others	4,662	3,721	3,925
NII	13,959	11,507	13,253
NPT	87,177	69,572	65,604
NCI (NPC)	990	770	870
Overseas production bases	40,478	38,634	41,592
Total	147,266	124,204	125,244
Basic Unit*	0.85	0.69	0.66

*CO₂ emissions / Net sales (Millions of JPY)

Energy Consumption and Basic Unit

(unit: 1,000GJ, excluding basic unit)

Company	FY2019	FY2020	FY2021
Nissha and others	108	102	104
NII	309	271	322
NPT	1,768	1,603	1,590
NCI (NPC)	24	23	25
Overseas production bases	1,058	967	1,084
Total	3,266	2,966	3,124
Basic Unit*	0.0189	0.0165	0.0165

*Energy consumption (1,000GJ) / Net sales (Millions of JPY)

Electricity Consumption

(unit: MWh)

Company	FY2019	FY2020	FY2021
Nissha and others	9,561	9,002	9,090
NII	18,214	17,633	19,300
NPT	166,887	154,259	151,635
NCI (NPC)	2,368	2,306	2,463
Overseas production bases	77,563	74,264	82,485
Total	274,593	257,464	264,973

Gas Consumption

(unit: 1,000m³)

Company	FY2019	FY2020	FY2021
Nissha and others	208	220	244
NII	2,833	2,506	2,891
NPT	2,317	1,441	1,729
NCI (NPC)	0	0	0
Overseas production bases	6,226	4,919	5,694
Total	11,585	9,085	10,558

Gasoline, Diesel, and Heavy Oil Consumption

(unit: kl)

Company	FY2019	FY2020	FY2021
Nissha and others	77	54	48
NII	7	6	8
NPT	13	12	11
NCI (NPC)	0	0	2
Overseas production bases	150	133	151
Total	246	205	220

7-4 Emissions Reduction Efforts

As a measure to reduce CO₂ emissions from electricity use, the Nissha Group in Japan has switched all of the electricity used at the NII Koka Factory, a production base for the Industrial Materials business, to renewable energy sources in January 2022, and will switch part of the electricity used at the NPT Kaga Factory, a production base for the Devices business, to renewable energy sources in September 2022.

At overseas bases, since 2018, Nissha (Kunshan) Precision IMD Mold Co., Ltd. (China), an Industrial Materials business unit production base, has continued to generate solar power, and Nissha Metallizing Solutions (Europe) is planning to install a system to replace part of its electricity with solar and wind power at its production bases.

Other energy-saving measures include switching to LED lighting and upgrading aging facilities with energy-efficient equipment to contain electricity consumption.

7-5 Basic Unit Management of Energy Consumed in Production

In addition to monitoring and managing energy consumption per corporate unit as required by the Act on the Rational Use of Energy, the Group's domestic production bases have been conducting basic unit management of energy consumed in production since the fiscal year ended March 2014, aiming to improve the efficiency of energy use.

The actual basic unit for each production base in the fiscal year ended December 2020 was set at 1.00, and the target for 2021 was set at 0.99 or less, based on this. The results were as follows. We promoted efforts to improve production efficiency and energy conservation, and we achieved 0.99 or less compared to the previous fiscal year.

Company	Basic unit (based on production volume etc.)			FY2021 evaluation
	FY2020 results	FY2021 target	FY2021 results	
Nissha (Headquarters)	1.00	0.99 or less	1.09	×
NII Koka Factory	1.00	0.99 or less	1.00	×
NPT Himeji Factory	1.00	0.99 or less	1.28	×
NPT Kaga Factory	1.00	0.99 or less	0.99	○
NCI (NPC)	1.00	0.99 or less	0.95	○

7-6 Initiative in Scope^{*1} 3 Management

Companies are increasingly disclosing their own Scope 3 and promoting efforts to reduce greenhouse gases over the entire value chain. At Nissha, the ESG Task Force (on climate change), under the umbrella of the ESG Task Force established by the Sustainability Committee, is taking the lead in identifying categories and calculating CO₂ emissions in the supply chain with respect to Scope 3.

Investigation object	CO ₂ emissions in FY2021 (t-CO ₂)
Employee (excluding some non-regular employees) commuting	2,204
Business travel	281
Transport and shipping (downstream) ^{*2} in Japan	17,766
Purchased products and services	18,603

We will continue to work on the disclosure of Scope 3.

Refer to 27. Third Party Verification

*1. Scope: Scope of greenhouse gas (GHG) calculation. The following three are shown.
 Scope 1: Direct GHG emissions from sources owned or controlled by the company.
 Scope 2: Indirect GHG emissions through consumption of electricity, steam, or heat.
 Scope 3: Indirect emissions other than those in Scope 2.

*2. Distribution of products sold by Nissha to the point of delivery to the customer.



7-7 Coverage and Calculation Method of CO₂ Emission Calculation

Scope 1, 2

Coverage	<ul style="list-style-type: none"> Nissha Co., Ltd. Nitec Industries, Inc. Nitec Precision and Technologies, Inc. Nissha Printing Communications, Inc. Nissha FIS, Inc. Nissha Business Service, Inc. Zonnebodo Pharmaceutical Co., Ltd. Nissha Eimo Technologies Nissha PMX Technologies, S.A. de C.V. Nissha Medical Technologies Lead-Lok, Inc. CEA Global Dominicana, S.R.L. CEA Medical Manufacturing, Inc. Nissha Medical Technologies Ltd. Nissha Medical Technologies SAS 	<ul style="list-style-type: none"> Tyrolmed GmbH Nissha Schuster Kunststofftechnik Nissha Back Stickers Nissha Back Stickers International Nissha Metallizing Solutions N.V. Nissha Metallizing Solutions S.r.l. Nissha Metallizing Solutions Ltd. Nissha Metallizing Solutions Produtos Metalizados Ltda Nissha Metallizing Solutions GmbH Nissha (Kunshan) Precision IMD Mold Co., Ltd. Guangzhou Nissha High Precision Plastics Co., Ltd. Nissha Precision Technologies Malaysia Sdn. Bhd.
Calculation method	<p>Calculated based on Ministry of the Environment "Greenhouse Gas Emissions Calculation Report Manual (Ver.4.7)" (CO₂ emission factors)</p> <p>CO₂ emissions associated with the fuel use: Emission factor based on the Act on Promotion of Global Warming Countermeasures</p> <p>CO₂ emissions associated with power purchase: Emission factor based on the market-based method for domestic bases and the location-based method for overseas bases</p>	

Scope 3

CO₂ emissions associated with employee commuting and business trips

Coverage	<ul style="list-style-type: none"> Nissha Co., Ltd. Nitec Industries, Inc. Nitec Precision and Technologies, Inc. Nissha Printing Communications, Inc. 	<ul style="list-style-type: none"> Nissha F8, Inc. M crossing Co., Ltd. Nissha FIS, Inc. Nissha Business Service, Inc. Zonnebodo Pharmaceutical Co., Ltd.
Calculation method	<p>Calculated based on;</p> <p>Ministry of the Environment/Ministry of Economy, Trade and Industry "Basic Guidelines for Calculating Greenhouse Gas Emissions Through the Supply Chain (Ver.2.3)"</p> <p>Ministry of the Environment "Calculation intensity database for calculating greenhouse gas emissions of organizations through the supply chain (Ver.3.0)"</p>	

CO₂ emissions from logistics suppliers

Coverage	Logistics suppliers (32 companies)
Calculation method	Domestic transportation: based on the Fuel Economy Law Overseas transportation: sum up CO ₂ emissions from conventional Ton-kilometer method

CO₂ emissions from major domestic material suppliers

Coverage	Major domestic material suppliers (9 companies)
Calculation method	Fuel consumption x sales ratio, sum up CO ₂ emissions per product

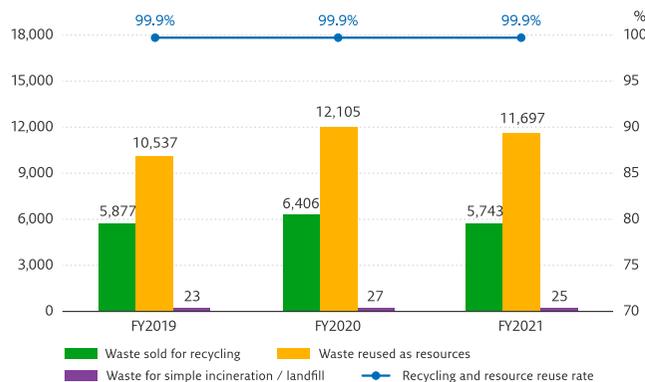
*Calculations of CO₂ emissions are subject to inherent uncertainty due to, for example, incomplete scientific knowledge used to determine emission factors and numerical data.

8. Waste Management

8-1 Total Amount of Waste Generated by Nissha Group

In the fiscal year ended December 2021, the Nissha Group generated a total of 30,587t of waste, including waste sold for recycling, waste reused as resources, and waste for simple incineration/landfill. Of this, waste generated by production bases in Japan accounted for 17,465t, a reduction of approximately 6% from the 18,538t generated in the fiscal year ended December 2020. Emissions from incineration and landfill waste accounted for 25t, a reduction of approximately 7% from the 27t generated in the fiscal year ended December 2020. The source of these reductions is a decrease in waste material output by Nitec Precision and Technologies, Inc. (NPT), a production base for the Devices business, a business arena which makes up approximately 86% of the waste material gross emissions within Japan.

Total amount of waste generated and recycling and resource reuse rate (Nissha Group in Japan)



Our recycling and resource reuse rate for the Nissha Group in Japan in the fiscal year ended December 2021 was the same 99.9% as last year, allowing us to meet our target of zero emissions (a recycling and resource reuse rates of 99.5% or above).

Total amount of waste generated and recycling and resource reuse rate (Nissha Group overseas)

Nissha Group overseas waste material gross emissions were 13,122t for the fiscal year ended December 2021, an approximate 15% increase from the performance of 11,397t for fiscal year ended December 2020. This is due to an increase in waste material output caused by Decoration (Mobility) and Sustainable Materials (Metalized paper) that drove the increase in net sales for the Industrial Materials business.

The recycling and resource recovery rate for major overseas Nissha Group bases was 85.2%. We will continue to monitor the amount of waste generated by our overseas production bases.

8-2 Risk Management Related to Waste and Waste Converted in Valuable Resources

At Nissha Group in Japan, we recognize that waste and waste converted into valuable resources have the following three main risks.

- Accidents and disasters caused by waste and waste converted into valuable resources (including at treatment contractors)
- Environmental pollution and violation of laws caused by inappropriate waste treatment

priate waste treatment

- Leakage of confidential information from waste and waste converted into valuable resources

To alleviate these risks, we are working on safety management of waste in accordance with the Nissha Group Waste Management Regulations. In line with these regulations, each base has drawn up its own Waste Management Manual and makes efforts toward thorough waste separation and management. At the Nissha Group in Japan, from the perspective of preventing accidents and disasters, whether a small amount of substance or a spray can, the properties of waste are checked meticulously and monitored so as to prevent spillage during transportation and accidents at treatment facilities.

Furthermore, at the Kyoto Global Headquarters, research and development by the business development division advanced, and changes are being seen in the content of waste material being discharged. To handle risks that come with these kinds of changes, we have been in even closer communications with industrial waste material processing contractors to ensure safe waste material processing.

The Nissha Group Waste Management Regulations, which serve as rules to prevent waste material related accidents and environmental contamination, employ standards for selecting outside contractors to process waste material. The regulations also proscribe and implement standards for periodic processing site inspections that make use of checklists. In addition, we have in place standards for managing waste and waste converted into valuable resources that contain confidential information, and promote management in association with our information security management system (ISMS).



9. Management of Chemical Substances and Environmental Risks

9-1 Establishment and Operation of the Nissha Control Criteria for Chemical Substances in Purchased Products

Many of the parts and materials used in Nissha Group products are requested or specified by customers, and so the materials and the suppliers differ for each product.

Management of the chemical substances used in our products and their production processes is governed by the Nissha Control Criteria for Chemical Substances in Purchased Products, which reflect the laws and regulations of relevant countries or regions and the standards of each of our customers, to serve as a set of voluntary standards.

*9-1 and 9-2 describe the state of management of chemical substances used in products manufactured by our Industrial Materials business (excluding Metallized paper) and Devices business mainly in Japan which are then shipped overseas, including to Europe.

9-2 Management of Chemical Substances Used in Products

9-2-1 Operation of the Nissha Control Criteria for Chemical Substances in Purchased Products

We use our Nissha Control Criteria for Chemical Substances in Purchased Products as our standards for purchased goods such as raw materials and sub-materials used for the products of our group. These standards reflect the laws and regulations of relevant countries and regions, including the RoHS Directive and the REACH Reg-

ulation, as well as the substance-related criteria of our customers. Whenever the relevant laws or regulations are amended, or our customers' criteria change, we identify the differences from our criteria in order to adapt to these changes.

The Nissha Control Criteria for Chemical Substances in Purchased Products are revised on an annual basis, taking these differences into account. If there is a major revision, we organize briefing sessions for related divisions and our suppliers to inform them of the changes. When selecting new materials or changing materials in the design and development stages, we conduct design reviews (DR) and assess compliance with the Nissha Control Criteria for Chemical Substances in Purchased Products while considering the impact on human health and the environment. When used in our factories, we select raw materials that have passed the DR and which meet the criteria, ensuring traceability for each process.

We are also building a mechanism for identifying and separating noncompliant substances to prevent misuse or contamination, and for responding swiftly including reporting to customers.

To promote management of the chemical substances used in our products, the environmental and safety management division at head office functions as the secretariat and works with the product design and development, quality assurance, and procurement and sourcing divisions at each business unit to inspect the state of management of chemical substances, including differences between laws, regulations and rules, and customer requirements. This system ensures strict control of chemical substances, from the design stage to the final product, responding to changes in the needs of society and the demands of our customers.

In the fiscal year ended December 2021, there were no cases in which chemical substances used in our products were recalled from the market or reshipped with changing in materials.

Content of the Nissha Control Criteria for Chemical Substances in Purchased Products and List of Target Substances (partial excerpt)

Contests of standards	List of target substances
Usage-prohibited substance ^{*1}	<ul style="list-style-type: none"> • Asbestos fibres • Dioxins • Ozone depleting substances • Fluorinated greenhouse gases • Bisphenol-A (with usage conditions) • Substances prohibited from being manufactured (Manufacture-prohibited substance) • Specific amine (with regulations on impurity content) • Azo-dyes which do not form specific amine (with regulations on impurity content concentration) • Arsenic and its compounds (with usage conditions)
Deliberate usage-prohibited substance ^{*2}	<ul style="list-style-type: none"> • Substances subject to RoHS directive • REACH SVHC (Substances of Very High Concern) • Nickel and its compounds (with usage conditions) • Polychlorinated biphenyls (PCBs) • Specific phthalates • Specific benzotriazole • Dimethylfumarate (DMF) • Perfluorooctane sulfonates (PFOS) • Perfluorooctanoate (PFOA) • Natural rubber • Class 1 Specific Chemical Substances of Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances • TSCA preferred substances • POPs Convention residual organic pollutants
Regulated substance ^{*3}	<ul style="list-style-type: none"> • Global Automotive Declarable Substance List • Conflict minerals • The Proposition 65 • Children's Safe Product Act (RCW 70.240.030) The Reporting List of Chemicals of High Concern to Children (CHCC)

*The above list shows examples of regulated substances that apply to purchased products (Nissha product raw materials, chemicals used in the production process for materials, etc.)

*1. Use, either deliberately or not deliberately, is prohibited. Inclusion of impurities is also prohibited.

*2. Deliberate use is prohibited. There are regulations on the inclusion of impurities.

*3. Substance which requires a content report from suppliers to Nissha.



9-2-2 Compliance with the RoHS Directive

■ Efforts to comply with the RoHS Directive

Nissha complies with environmental regulations in Europe mainly through the Nissha Control Criteria for Chemical Substances in Purchased Products, our voluntary regulations on chemical substances. Our products comply with the RoHS Directive*, which regulates the use of certain substances in electrical and electronic equipment.

*This refers to the European "Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (2011/65/EU)" and its amendments. The Directive prohibits the inclusion in products of lead, mercury, cadmium, hexavalent chromium, PBB, PBDE, bis(2-ethylhexyl) phthalate, butyl benzyl phthalate, dibutyl phthalate, and diisobutyl phthalate in excess of the maximum permissible amount, except for exempted applications.

Original Text of the Directive

■ System for promoting compliance with the RoHS Directive

Nissha has been working on either not using or using fewer hazardous chemical substances used in our products since the first edition of the Nissha Control Criteria for Environmentally Controlled Substances was established in 2007, leading up to the current Nissha Control Criteria for Chemical Substances in Purchased Products.

Substances regulated by the RoHS Directive (formerly Directive 2002/95/EC) have been subject to control as environmentally controlled substances since the first edition by complying with customer requests in accordance with the directive.

- Conformity with the previous directive (2002/95/EC)
There is no intentional use of mercury, cadmium, specific bromine flame retardants, or hexavalent chromium in our products. Although we used to use lead in solder for quality reasons and with the approval of our customers, we have been working towards total abolition with the establishment of the Nissha Control Criteria for Environmentally Controlled Substances, and currently prohibit the use of lead in new products.
- Conformity with the new directive (2011/65/EU)
Although Annex III (exemption list) was amended by European Commission Decision 2010/571/EU (effective January 2013), none of the relevant chemical substances were used in our products.
- Addition of specific phthalate esters to restricted substances
The European Commission Delegated Directive (EU) 2015/863 (effective July 2019) amended Annex II (List of Restricted Substances), designating specific phthalate esters* as a new restricted substance. As a result, the marketing of electrical and electronic equipment (EEE) containing specified phthalate esters in the European Economic Area (EEA) has been banned. To date, we have not used any of the relevant chemical substances in our products.
- Example of a warranty system based on cooperation with material suppliers
 - Management system for RoHS Directive based on cooperation with material suppliers
 - Annual submission of certificates of conformity, reports on the inclusion of prohibited substances, reports on the inclusion of chemical substances in products, content information, ICP data, and written pledges from suppliers of materials for mass production
- Example of countermeasures in the production process
 - Enforcement of rules when accepting materials
 - Distinguishing between storage locations and labeling of input materials
 - Ensuring and maintaining traceability
 - Identifying and separating noncompliant substances
- Example of information provided to customers in connection with sales
 - Provision of information on chemical substances used in products
 - Registration in International Material Data System (IMDS) and the customer's management system, and issuance of SDS

*Bis (2-ethylhexyl) phthalate [DEHP], Benzyl butyl phthalate [BBP], Dibutyl phthalate [DBP], Diisobutyl phthalate [DIBP]

■ Warranty system for RoHS specifications

The points required for RoHS compliance are listed below. We are putting measures into place at each stage of the process, building a comprehensive countermeasures system.

Our main products do not use any chemical substances that fall under the RoHS Directive or other directives, so we do not currently have a plan to reduce them.



9-2-3 Compliance with REACH Regulation

The REACH Regulation (EC 1907/2006) are a European law on the registration, evaluation, authorization and restriction of chemical substances. REACH came into force in 2007 with the aim of protecting human health and the environment.

We have a system in place to comply with the REACH Regulation through the management of chemical substances used in our products.

Many of the products listed on our website fall under the category of "articles" as defined by the REACH Regulation. The REACH Regulation requires the communication of information within Europe when "articles" contain a Substance of Very High Concern (SVHC) as specified by the supervisory authority (European Chemicals Agency: ECHA). The Nissha Control Criteria for Chemical Substances in Purchased Products defines SVHCs as substances prohibited for intentional use, and based on information and data obtained from our material suppliers as well as our own knowledge, we have confirmed that we do not currently use SVHCs in our core products (molded products). This is also stated in the SDS and other documents that we provide in response to customer requests.

Reference Materials:

- Latest SVHC list from the ECHA
- Supervisory Authority: European Chemicals Agency (ECHA)
- Text of the REACH Regulation

9-2-4 Response to California Proposition 65

Proposition 65, known as the Safe Drinking Water and Toxic Enforcement Act of 1986, is a California law enacted by referendum in November 1986 to protect the state's citizens and drinking water resources from chemicals that can cause cancer and birth defects.

The state's Environmental Protection Agency Office of Environmental Health Hazard Assessment (OEHHA) requires employers to display a warning statement for products containing chemicals specified in Proposition 65. Also, a product is required to display a warning statement designated by the state if it is sold or distributed in the state, even if it is not produced there.

Our voluntary standards, Nissha Control Criteria for Chemical Substances in Purchased Products, also include information on California Proposition 65. We are working to comply with this law by, for example, having our material suppliers submit a certificate of compliance on a regular basis every year. Note that this applies to none of the Company's products.

9-3 Chemical Substances Used in Production Processes

9-3-1 Operation of the Nissha Control Criteria for Chemical Substances in Purchased Products

In addition to the chemical substances used in our products, we also regulate the chemical substances used in our production

processes in accordance with the Nissha Control Criteria for Chemical Substances in Purchased Products.

These include the substances prohibited for manufacturing under the Enforcement Order of the Industrial Safety and Health Law and the substances regulated by the Poisonous and Deleterious Substances Control Act, and the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof (PRTR Act).

9-3-2 Reduction of Chemical Substances in Use

Our Environmental Objectives include reducing the usage rate of chemical substances at ISO14001-certified business sites. In the fiscal year ended December 2021, the Nitec Industries, Inc. (NII) Koka Factory achieved its target of a 1% reduction year-over-year of PRTR substances and organic solvents other than PRTR substances.

Nitec Precision and Technologies, Inc. (NPT) achieved results in its efforts to reduce the use of chemicals by improving yield rates and through efforts to reduce the use of chemicals in wastewater treatment and facility infrastructure.

Fiscal year	FY2019	FY2020	FY2021
Assessment	○	○	○



9-4 Management of Environmental Pollutants

The Nissha Group in Japan constructed a system to understand and manage how environmental pollutants are used at each business site. We use this system even for the calculation of emission and transfer amounts which the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof (PRTR Act) requires reporting on.

In the fiscal year ended December 2021, substances which were transferred or emitted in excess of one tonne were ethylbenzene, xylene, toluene, water-soluble copper salts (excluding complex salts).

We also take great care with management when handling chemical substances, such as establishing our own voluntary standards. In addition to displaying GHS* labels on containers to warn people, we carry out measures to prevent environmental pollution such as installing spillover containers to ensure safety if the main container develops a leak, and ensure that all related personnel are familiar with these measures. Through an internal audit, we check the status of chemical substance management.

*GHS (Globally Harmonized System of Classification and Labelling of Chemicals): Provides internationally-standardized rules to harmonize the contents of safety data sheets and standards of classification per hazard for chemical products.

9-5 Response to Environmental Risks (preventing environmental accidents or pollution)

The Nissha Group in Japan realizes that pollution from chemical substances is a serious environmental risk, and works to manage it. To prevent environmental accidents from happening during storage or transportation of chemical substances within a work site, we lay out management procedures that consider the scale and frequency of accidents. In addition, we have set emergency response procedures and carry out training on an ongoing basis to minimize the influences in event of a leak, and revise and improve our methods as required.

- **Examples of initiatives for preventing pollution**

- Equipment of emergency cutoff devices

- Sites for deliveries of liquid chemicals via tanker truck or waste liquid collection are equipped with emergency cutoff devices to prevent any substances from leaking outside the site if an accident occurs.

- **Leak response training**

- We have established response procedures to prevent pollution from spreading in the event of a leak at a site for receiving chemicals, unloading chemicals, or collecting waste liquid. We also carry out regular training, and review the response procedures as necessary.

In FY2021, there was one chemical leak accident at the NII Koka Factory, but it did not have a significant environmental impact. Other than that, there were no serious environmental accidents or violations of environmental regulations, and there were no penalties or fines.

9-6 Prevention of Water Pollution

We have set our own strict standards and regularly conduct voluntary surveys of waste water quality to prevent water pollution.

The figures for core production bases are as follows.

*1. Water Pollution Control Act

*2. Law Concerning Special Measures for Conservation of the Environment of the Seto Inland Sea

Nitec Precision and Technologies, Inc. (NPT) Himeji Factory Measurements of Wastewater Quality

Items measured	Regulatory value*1	Agreement value*2	Voluntary standard	Unit	FY2019		FY2020		FY2021	
					Analysis value	Evaluation	Analysis value	Evaluation	Analysis value	Evaluation
Discharged water	5,200	5,000	5,000	m ³	4,655	○	4,156	○	4,150	○
pH	5.8	5.8	6.5		6.9	○	6.8	○	6.9	○
	~ 8.6	~ 8.6	~ 8		7.6	○	7.5	○	7.5	○
BOD	120	10	9	mg/l	2.8	○	4.0	○	3.7	○
COD	120	10	9	mg/l	7.3	○	5.2	○	4.4	○
SS	150	5	4.5	mg/l	1.6	○	1.9	○	2.6	○
n-hexane derived substances	Mineral oil 5 Vegetable oil 30	1	0.9	mg/l	<0.5	○	<0.5	○	<0.5	○
Phenol	5	0.1	0.08	mg/l	<0.005	○	<0.005	○	<0.005	○
Copper	3	0.5	0.4	mg/l	0.04	○	0.05	○	0.02	○
Zinc	2	1.5	1.2	mg/l	<0.01	○	<0.01	○	<0.01	○
Soluble iron	10	0.15	0.08	mg/l	0.02	○	0.03	○	0.03	○
Soluble manganese	10	0.05	0.045	mg/l	0.04	○	0.04	○	0.04	○
Chromium	2	0.02	0.02	mg/l	<0.02	○	<0.02	○	<0.02	○
Nitrogen	60	10	9	mg/l	5.7	○	4.2	○	4.5	○
Phosphorus	8	1	0.45	mg/l	0.11	○	0.02	○	0.03	○

Nitec Precision and Technologies, Inc. (NPT) Kaga Factory Measurements of Wastewater Quality

Items measured	Regulatory value (Prefecture)	Voluntary standard	Unit	FY2019				FY2020				FY2021			
				Final effluent (Average)		Final effluent (Maximum)		Final effluent (Average)		Final effluent (Maximum)		Final effluent (Average)		Final effluent (Maximum)	
pH	5.8 ~ 8.6	6.2 ~ 8.2		7.5	○	7.5	○	7.5	○	7.7	○	7.4	○	7.7	○
BOD	160 or less	40 or less	mg/l	21.9	○	34.0	○	23.4	○	40.0	○	23.3	○	35.0	○
COD	160 or less	80 or less	mg/l	34.0	○	47.0	○	33.5	○	47.0	○	37.7	○	44.0	○
SS	200 or less	20 or less	mg/l	9.1	○	18.0	○	6.3	○	23.0	○	6.0	○	10.0	○
n-hexane derived substances	30	15 or less	mg/l	0.6	○	0.8	○	0.6	○	0.9	○	0.5	○	0.5	○

9-7 List of PRTR-designated Chemical Substances

In FY2021, the number of substances subject to PRTR Law notification was eight at three factories.

Nitec Industries, Inc. (NII) Koka Factory

Unit: kg

PRTR No.	Name of chemical substance	FY2019			FY2020			FY2021		
		Discharge volume into the atmosphere	Volume transferred to industrial waste processing companies	Reporting required / not required	Discharge volume into the atmosphere	Volume transferred to industrial waste processing companies	Reporting required / not required	Discharge volume into the atmosphere	Volume transferred to industrial waste processing companies	Reporting required / not required
53	Ethylbenzene	1,211	463	○	710	286	○	2,273	928	○
80	Xylene	9,937	4,075	○	15,745	6,431	○	10,524	4,298	○
88	Hexavalent chromium compounds	0.1	0	○	0.1	0	○	0.1	850*	○
296	1,2,4-Trimethylbenzid	265	95	—	25	10	—	59	24	—
300	Toluene	100,846	5,520	○	61,535	25,134	○	106,873	43,652	○
392	N-hexane	4,518	2,741	○	601	245	○	258	105	○

*The increase in the transfer amount of Hexavalent chromium compounds in FY2021 is due to the disposal of unnecessary materials at the renewal of factory equipment.

Nitec Precision and Technologies, Inc. (NPT) Himeji Factory

Unit: kg

PRTR No.	Name of chemical substance	FY2019			FY2020			FY2021		
		Discharge volume into the atmosphere	Volume transferred to industrial waste processing companies	Reporting required / not required	Discharge volume into the atmosphere	Volume transferred to industrial waste processing companies	Reporting required / not required	Discharge volume into the atmosphere	Volume transferred to industrial waste processing companies	Reporting required / not required
71	Ferric chloride	0.0	0.0	—	0.0	0.0	—	0.0	0.0	—
272	Water-soluble copper salts (excluding complex salt)	0.0	1,352.8	○	0.0	1,820.2	○	0.0	2,677.4	○
453	Molybdenum and its compounds	0.0	0.0	○	0.0	0.0	○	0.0	0.0	○

Nitec Precision and Technologies, Inc. (NPT) Kaga Factory

Unit: kg

PRTR No.	Name of chemical substance	FY2019			FY2020			FY2021		
		Discharge volume into the atmosphere	Volume transferred to industrial waste processing companies	Reporting required / not required	Discharge volume into the atmosphere	Volume transferred to industrial waste processing companies	Reporting required / not required	Discharge volume into the atmosphere	Volume transferred to industrial waste processing companies	Reporting required / not required
64	Silver and its compounds (water soluble)	—	—	—	—	—	—	—	—	—
71	Ferric chloride	0.0	0.0	○	0.0	0.0	○	0.0	0.0	○
272	Water-soluble copper salts (excluding complex salt)	0.0	0.0	○	0.0	0.0	○	0.0	0.0	○
453	Molybdenum and its compounds	—	—	—	—	—	—	—	—	—



9-8 Prevention of Air Pollution

9-8-1 Soot and dust and NOx emissions

Several production bases of the NISSHA Group in Japan own and use gas boilers, which are subject to the Air Pollution Control Act, and emit soot and dust and NOx. The measured values and compliance status for FY2021 are as follows.

Boiler operating base	Soot and smoke concentration measurements (maximum value)		Compliance
	Soot and dust (g/m ³ N)	NOX (ppm)	
Kyoto Headquarters	0.002	25	○
Nitec Industries, Inc. Koka Factory	Less than 0.01	32	○
Nitec Precision and Technologies, Inc. Himeji Factory	Less than 0.001	34	○
Nitec Precision and Technologies, Inc. Tsu (production base)	Less than 0.005	40	○

*The Air Pollution Control Act requires that soot and dust and NOx be measured and monitored in terms of soot concentration rather than the total amount.

*We use gas-fired boilers that do not emit SOx (sulfur oxides).

9-8-2 VOC emissions

The Nitec Industries, Inc. Koka Factory, a member of our group, uses organic solvents such as toluene and xylene in its production process. Volatile Organic Compounds (VOCs) generated by the use of organic solvents are detoxified and discharged through direct combustion deodorization, catalytic deodorization, and other measures.



10. Environmental Objectives and Status of Achievement (Nissha Group in Japan)

The Nissha Group in Japan has set the Nissha Group Environmental Objectives for a period of six years from the fiscal year ended December 2018 for those bases that have obtained ISO14001 certification. In accordance with these Objectives, each base and division establish environmental targets, and we aggregate and assess the results each fiscal year in order to manage progress.

10-1 Initiatives and Achievements in FY2021

1. Prevention of pollution

Target	FY2019	FY2020	FY2021
(1) Maintain zero environmental accident (accidents that affect areas outside the factory)	○	○	×
(2) For environmental risks classified as significant environmental aspects on the hazard assessment list, implement measures and reduce the possibility of occurrence by one level by December 31, 2023	○	○	○

- (1) There was one leak accident in FY2021. There was a chemical leak at the NII Koka Factory, but it did not have a significant environmental impact. In addition to appropriately reporting to relevant parties and responding to corrective guidance by the government, we thoroughly conducted training and strengthened measures to prevent leaks.
- (2) As risk reduction measures, in addition to implementing chemical leakage response training, we are also actualizing improvements by physically raising chemical storage locations. And along with a continuation of rainwater control, we are implementing training for nighttime and rainy conditions. Through these efforts, we are enhancing initiatives for environmental risk reduction. As a result, the factory's environmental risk "potential" (the value in the environmental risk assessment) has been reduced by more than one level.

Environmental Objectives

Period: FY2018 - FY2023

Scope: Nissha Group in Japan ISO14001 certification sites ("certification sites")

Assessment Definitions

○ Satisfactory: Objective achieved

△ Unsatisfactory: Objective not achieved but good progress made

× Poor: Objective not achieved and poor progress made

*Company names and abbreviations

NII: Nitec Industries, Inc.

NPT: Nitec Precision and Technologies, Inc.

NCI: Nissha Printing Communications, Inc.



2. Mitigation of climate change

Target	FY2019	FY2020	FY2021
(1) Reduce CO ₂ emissions rate (basic unit) by 6% or more* by the fiscal year ending December 2023	×	○	○
(2) Reduce CO ₂ emissions rate (basic unit) by 1% or more compared to the previous year	△	○	×

*Reference value: Results in fiscal year ended December 2017

- (1) By the fiscal year ended December 2021, we have managed a drop of more than 4% of the target to be achieved by the fiscal year ending December 2023. This means we are still on the planned track.
- (2) In order to reduce the CO₂ emission rate (basic unit) by at least 1% over the previous fiscal year, we set targets for each factory and reduced energy input in conjunction with quality improvements. Three out of the six locations (Head Office, NII Koka Factory, and NPT Kaga Factory) achieved at least a 1% reduction compared to the previous fiscal year. However, three locations (NPT Himeji Factory, NPT Kyoto, and NCI) did not achieve the target.

3. Reduction of waste

Target	FY2019	FY2020	FY2021
(1) Reduce waste generation rate (basic unit) by 6% or more by the fiscal year ending December 2023	×	△	×
(2) Reduce waste generation rate (basic unit) by 1% or more compared to the previous year	△	△	×
(3) Maintain zero emissions (recycling and resource reuse rate of 99.5% or more)	○	○	○
(4) Reduce cost of waste treatment	○	○	△

*Reference value: Results in fiscal year ended December 2017

- (1) Each factory is working to improve its yield rate and efficiency through quality improvement activities and reducing the amount of wasted materials by improving production efficiency. For the fiscal year ended December 2021, because the NII Koka Factory and NPT Himeji Factory did not achieve their targets among the applicable factories, the company-wide evaluation was set to "Poor".
- (2) Targets are set according to the characteristics of each factory. For the fiscal year ended December 2021, three out of the six locations (Head Office, NPT Kaga Factory, and NCI) achieved at least a 1% reduction compared to the previous fiscal year. However, three locations (NII Koka Factory, NPT Himeji Factory, and NPT Kyoto) did not achieve the target.
- (3) The Nissha Group in Japan as a whole achieved a recycling rate of 99.9%, and has maintained zero emission of waste (a recycling and resource reuse rate of 99.5% or more) as in the previous fiscal year.
- (4) Although it did not lead to significant cost reduction, we achieved to reuse waste as valuable resources due to enhanced separating of packaging material at the NII Koka Factory.

4. Reduction of water usage

Target	FY2019	FY2020	FY2021
Reduce use of water by improving production efficiency and saving water	○	○	○

We improved production facilities at the NPT Kaga Factory and achieved over 1% of water usage reduction. Additionally, we were able to decrease the water usage quantity at the NPT Himeji Factory through water conservation efforts there. We continue to reduce water consumption and save water for miscellaneous use by improving production efficiency at our factories.



5. Reduction of chemical substances usage

Target	FY2019	FY2020	FY2021
Certification sites reduce usage rate of chemical substances (Certification sites set individual targets)	○	○	○

In addition to PRTR-designated substances used in the printing process, the NII Koka Factory also reduced the use of organic solvents, which do not contain designated substances, to achieve its target of a 1% reduction from the previous year.

At the NPT Himeji Factory, we achieved the chemical usage reduction target through facility and infrastructure improvements. Furthermore, at the NPT Kaga Factory, we strove to reduce the amount of drainage water treatment agent for drainage water processing and reduced the quantity by over 5%.

6. Environment-conscious design

Target	FY2019	FY2020	FY2021
(1) Introduce the viewpoint of energy saving, resource saving, durability, recycling, and so on in product design and development.	○	○	○
(2) Design environment-conscious processes and reduce the environmental impact of production.	○	○	○

(1) As a positive risk assessment (a positive environmental aspect), the design and development divisions of the Industrial Materials and the Devices businesses set development themes from the perspective of solving social issues such as SDGs and life cycle, and incorporate the reduction of environmental impact at the product design stage. In addition, we are moving ahead with the development and mass production of products that contribute to reducing environmental impact, such as the use of sustainable materials. Furthermore, we are developing a system for reused table ware utilizing IoT and striving to contribute to society through resource recycling. Nissha FIS, Inc. also designs and develops parts that contribute to environmentally-friendly customer products, such as hydrogen detectors and coolant sensors used in fuel cell vehicles.

(2) NII and NPT are complying with established company standards regarding the management of chemical products, and also designing production processes that promote reduced environmental impact.

7. Enhancement of environmental performance in supply chain

Target	FY2019	FY2020	FY2021
Enhance environmental performance based on customer requirements and the RBA code of conduct	○	○	○

In consideration of feedback we received in customer-driven supplier auditing, we are continuing our environmental improvement efforts. With the help of our suppliers, we respond to questionnaires and conduct on-site inspections which reflected our customers' demands in relation to the environment. In addition, we examine CO₂ emissions during production processes and check chemical materials used in products. Through these activities, we are grasping the environmental impacts in our supply chain in order to contribute to environmental improvement.