

RC Report 2021



Nippon Shokubai Group Mission

TechnoAmenity

Providing affluence and comfort to people and society,
with our unique technology.

Management Commitment

We conduct all of our corporate activities based upon a deep respect for humanity.

We aim at coexisting with society, and working in harmony with the environment.

We pursue technologies that will create the future.

We act on the global stage.

Contents

- 3 RC Initiatives
- 7 Environmental Protection Initiatives
- 15 Process Safety and Disaster Prevention Initiatives
- 17 Logistics Safety Initiatives
- 18 Occupational Safety and Health Initiatives
- 19 Chemical Safety Initiatives
- 20 Quality Initiatives
- 21 Communication with Society
- 23 Production/R&D Site Reports
- 27 Providing Support for Group Companies
- 28 Initiatives of Group Companies
- 32 About this RC Report 2021

On publishing the RC Report 2021

Through our commitment to RC activities, we aim to earn greater confidence from the public as a responsible chemical company.

Nippon Shokubai's reports on Responsible Care (RC) initiatives began with the issuance in fiscal 2002 of the "Environmental Report." Along with the improvement of the initiatives, it was renamed the "Environmental and Social Report" and later the "CSR Report," to expand the report contents to include initiatives related to our involvement in society and corporate social responsibility.

Starting from fiscal 2019, in line with the publication of the **TechnoAmenity** Report to cover management strategies and financial data, in view of the importance of RC activities, we have issued a separate RC Report, which compiles information exclusively on our RC activities.

Under the principle of sustainable development, the Nippon Shokubai Group has designated environmental protection; process safety and disaster prevention; occupational safety and health; chemical safety; quality; and communication with society as the priority areas of its RC activities, in which we are endeavoring to

Corporate Credo

Safety takes priority over production.

Nippon Shokubai Code of Conduct

In the belief that it is our social responsibility to conduct business based upon the principles of compliance and self-responsibility for the sake of proper social development, we have set forth the following basic corporate behavior guidelines as the “Nippon Shokubai Code of Conduct.”

- 1 Guided by our Group Mission of **TechnoAmenity**, we will conduct all of our actions as a good corporate citizen.
- 2 We will comply with relevant laws both inside and outside of Japan, and act in accordance with in-house regulations.
- 3 We will create and nurture a sound, vibrant workplace, where each individual can hone their professional competence and find fulfillment in their career.
- 4 We will develop and market products and services that are both safe and useful, based upon an accurate understanding of social demands.
- 5 We will commit ourselves to eliminating labor hazards and accidents, and constantly strive to protect the global environment.
- 6 We will conduct business based on fair and open competition.
- 7 We will take a firm stance when dealing with unlawful or antisocial groups.
- 8 We will ensure frequent communications with our shareholders and members of society in general, and guarantee the appropriate disclosure of corporate information.
- 9 With respect for the culture and customs of every nation/region we serve, we will contribute to their development and wellbeing through community-based business undertakings.
- 10 We will ensure the solid and sustainable development of the company through business undertakings based soundly upon the above action guidelines.

ensure the implementation of the activities. While enhancing our activities based on our Corporate Credo “Safety takes priority over production” and RC Policy, as well as the needs of society, we make continuous efforts to earn greater confidence from the public as a responsible chemical company.

Furthermore, Nippon Shokubai formulated the Group’s long-term vision “**TechnoAmenity** for the future” in April 2021. Under this Vision, toward achieving carbon neutrality in 2050, we have decided to promote more strongly initiatives to fulfill the roles our Group should play, including making efforts to further reduce emissions of CO₂, a greenhouse gas.

As for the RC Basic Plan, we have formulated a single-year plan for fiscal 2021, and we will start formulating the 11th Medium-term RC Basic Plan in line with the Medium-term Business Plan, which is scheduled to be fully implemented from April 2022.

I hope this Report will help deepen your understanding of the RC initiatives of the Nippon Shokubai Group. We appreciate your support and candid opinions.

Gun Saito

Executive Officer, Director of RC Division



RC Initiatives

We actively promote our RC initiatives in the priority areas of environmental protection, process safety and disaster prevention, occupational safety and health, chemical safety, quality and communication with society.

RC Initiatives

All companies in the chemical industry responsible for handling chemical substances voluntarily agree to protect the environment, safety and health in all processes ranging from the development of chemical substances to their manufacture, transportation, use, end consumption, disposal and recycling. By disclosing the results of these activities to the public, the companies hold dialogue and communicate with society. These efforts are known as Responsible Care (RC). The RC Global Charter was released in 2006 and revised in 2014 by the International Council of Chemical Associations (ICCA), which promotes Responsible Care worldwide.

Nippon Shokubai has participated in the Japan Responsible Care Council (currently known as the Japan Chemical Industry Association [JCIA]'s Responsible Care Committee) since it was established in 1995, and has been advancing various initiatives by introducing relevant systems, such as the environmental management system under ISO 14001, the quality management system under ISO 9001, and the occupational safety and health management system (OSHMS).

We are determined to continue contributing to society while fulfilling our corporate social responsibility through our group-wide commitment to Responsible Care.



President's signature on the RC Global Charter (Revised 2014 version)

RC Policy

In conformity with the Nippon Shokubai Group Mission, Management Commitment, Corporate Credo, and the Nippon Shokubai Code of Conduct, we rank it as an important management measure to provide products and technologies that contribute to society and environmental protection.

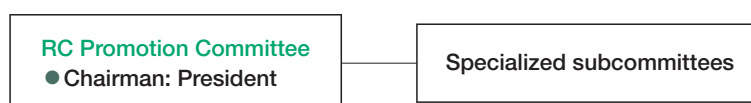
In addition, while paying due respect to the principle of Sustainable Development, we are determined to conduct all activities in accordance with the following policy related to environmental protection, safety, and quality that will bring our business operations into harmony with the global environment.

We will implement this RC Policy in all our business operations by ensuring all employees have a thorough understanding and awareness of its importance. The president shall be the person with the ultimate responsibility for implementing this policy.

- 1** Aim at environmental protection and reduction of negative environmental impact throughout the entire life cycle of a product, from development to disposal.
- 2** Ensure the safety of our employees and our communities by targeting zero accidents and zero injuries with a commitment to the Corporate Credo, "Safety takes priority over production."
- 3** Confirm the safety of chemical materials, intermediates and products, and consider the health of our customers, employees of our logistics subcontractors, our employees, and others.
- 4** Stably supply products and associated services that meet customer satisfaction and inspire their trust.
- 5** Publicly announce the results of these activities and make an effort to communicate for proper understanding.

RC Promotion Organization

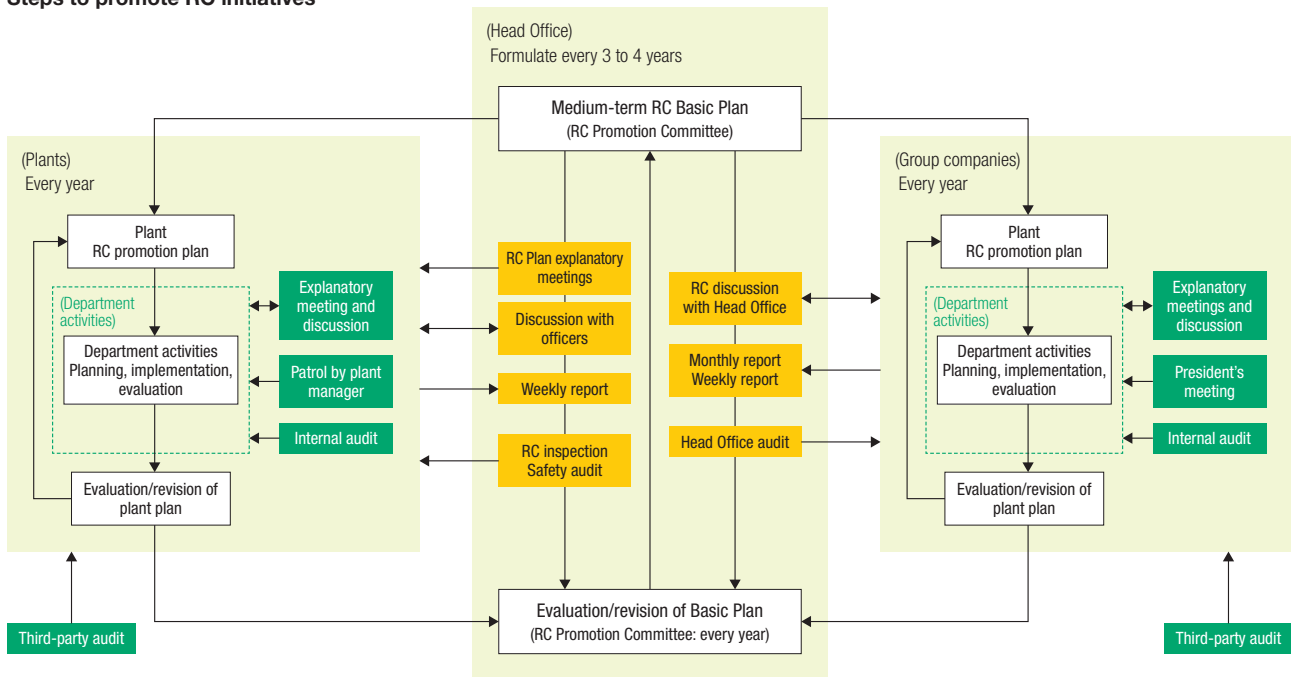
The president is chairman of the RC Promotion Committee, under which specialized subcommittees are established, to promote companywide RC activities.



Cycle of RC Initiatives Promotion

To implement the RC Policy, the Nippon Shokubai Group promotes RC initiatives by following the PDCA cycle below each year, thereby contributing to society and fulfilling its corporate social responsibility.

Steps to promote RC initiatives



Note: FY2021 RC Basic Plan is a single-year plan which is basically another one-year extension of the 10th (FY2017 – FY2020) Medium-term RC Basic Plan.

Steps in RC Initiatives Promotion

[Head Office]

The RC Promotion Committee, chaired by the President, formulates the Medium-term RC Basic Plan every three to four years in line with the period of the medium-term management plan. RC inspections and safety audits are conducted every year based on the themes for inspections determined each year in order to check and evaluate the status of implementation of activities at each plant, and revise the plan if necessary.

[Plants]

Each year, the RC committee of each plant chaired by the plant manager formulates its new plant RC promotion plan based on the company-wide Medium-term RC Basic Plan and the evaluation results of its plant RC promotion plan of the previous year. Based on this plan and in view of the issues specific to the department, each department formulates the department activities plan as its specific action plan.

The progress of the activities is checked through patrol by the plant manager, department discussion, and internal audits under ISO and

various other management systems, as well as through discussion with the Head Office officers, RC inspections, and third-party audits. Based on the results of these checks, the department activities plan is revised as necessary. Thus, following this PDCA cycle, the plant works to continuously improve its initiatives.

[Group companies]

Similar to the case of plants, Group companies plan their activities each year based on the Medium-term RC Basic Plan. Each company formulates its own plant RC promotion plan taking into account its activities and local laws and regulations.

The progress of the activities is shared with the Head Office by means of a weekly report, and other periodic reporting and online meetings, and checked through regular discussion and audits by the Head Office. Based on the results of these checks, Group companies revise their activities as necessary. By following this PDCA cycle, Group companies work to continuously improve their initiatives.

Moreover, the Head Office encourages exchanges among Group companies, thereby mutually improving the level of their RC activities.

Definitions

PDCA cycle: Plan-do-check-act cycle

An approach for continuous process improvement in the quality management in production. It is designed to continuously improve business processes by iteratively repeating four steps: Plan, Do, Check, and Act.

RC Initiatives

RC Inspection

Nippon Shokubai conducts RC inspections every year to ensure continuous improvement of RC initiatives at Himeji and Kawasaki Plants by organizing the RC Inspection Committee chaired by the Member of the Board in charge of production and technology, which consists mainly of officers.

RC Inspection

Nippon Shokubai has conducted RC inspections for 46 years since they started in February 1974 (initially named “safety inspections”) to implement our Corporate Credo “Safety takes priority over production,” which was established in 1973.

The RC inspection, which was renamed in fiscal 2003 (previously known as a safety inspection), is currently conducted on the progress of each RC initiative at the plants and their priority theme set for each fiscal year. The priority themes of recent years are as shown below.

Medium-term Plan	Fiscal year	Priority theme
9th FY 2014 to FY 2016	FY 2014 (42nd)	Progress in measures to prevent recurrence
	FY 2015 (43rd)	Measures to prevent recurrence and development of a safety culture
	FY 2016 (44th)	Summary of measures to prevent recurrence
10th FY 2017 to FY 2020	FY 2017 (45th)	Initiatives for environmental protection
	FY 2018 (46th)	Prevention of quality issues and ensuring quality governance
	FY 2019 (47th)	Prevention of recurrence of similar industrial injuries
	FY 2020 (48th)	Prevention of process safety accidents

Fiscal 2020 RC inspection

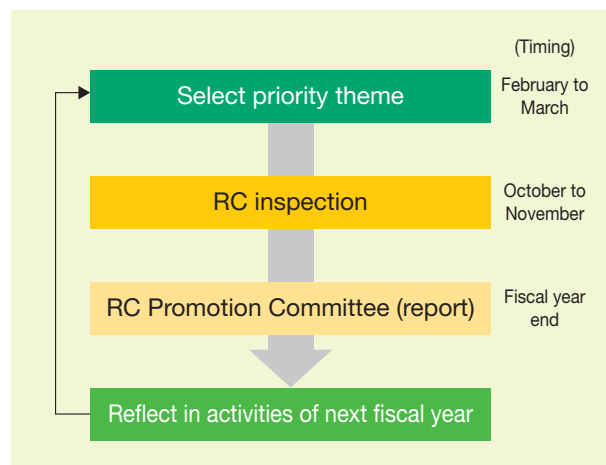
The RC inspection for fiscal 2020 was conducted online, in consideration of the spread of COVID-19, on October 30 at the Kawasaki Plant and on November 4 at the Himeji Plant to check the progress on each of their RC initiative and under the priority theme of “prevention of process safety accidents.”

RC Inspection flow

The priority theme of the RC inspection for a fiscal year is determined between February and March of the previous fiscal year based on information on issues inside and outside the Company and the results of internal RC initiatives. Then the RC Inspection Committee conducts the inspection between October and November. The inspection results of both plants are reported to the RC Promotion Committee, which is chaired by the President, and reflected in activities of the next fiscal year.

The flow of an RC inspection is as shown below.

RC Inspection flow



A written report indicating the problems found, proposals for improvement and other matters is issued for the both Plants, with the aim of ensuring continuous improvement of their RC initiatives.



Online RC inspection

10th Medium-term RC Basic Plan (Fiscal 2017–2020) and Results, and the RC Basic Plan for Fiscal 2021

The 10th Medium-term RC Basic Plan was formulated in line with the period of the 2nd Medium-term Business Plan by reflecting, in items of the RC initiative, a continuation of initiatives adopted for the 9th such plan, actual outcomes of problems encountered, and requests from both inside and outside the company. Although we have promoted the initiatives in each RC field to gain greater public trust, many of the objectives set have not been achieved.

The next Medium-term Business Plan will be put into action from April 2022, and we have decided to formulate the 11th Medium-term RC Basic Plan in time with that. Therefore, the RC Basic Plan for fiscal 2021 has been formulated as a single-year plan as an extension of the 10th Medium-term RC Basic Plan. (The numerical objectives for the fiscal 2021 RC Basic Plan that are different from those set for the 10th Medium-term RC Basic Plan are presented in brackets.)

Evaluation  Achieved  Almost achieved  Not achieved

Environmental Protection

Objectives for Fiscal 2017–2020, objectives for Fiscal 2021

- To reduce energy consumption by an amount equivalent to 8,000 kL of crude oil (over 4 years) <FY2021 Himeji and Kawasaki Plants: 2,000 kL, Suita Research Center: 67.5 kL>
- To reduce energy intensity by 5% from fiscal 2015 levels (1% reduction annually to 103.2 L/t) <FY2021: To reduce by 6% from fiscal 2015 levels (1% reduction annually to 102.1 L/t)>
- To reduce CO₂ intensity by 5% from fiscal 2015 levels (energy source, 1% reduction annually to 0.208 t-CO₂/t-production) <FY2021: To reduce by 6% from fiscal 2015 levels (1% reduction annually to 0.206 t-CO₂/t-production)>
- To reduce fuel consumption intensity for road transport by 5% from fiscal 2015 levels (1% reduction annually to 33.4 L/1,000 t-km) <FY2021: To reduce by 6% from fiscal 2015 levels (1% reduction annually to 33.1 L/1,000 t-km)>
- To promote modal shift
- To maintain zero emissions¹ (Quantity of final off-site landfill) ≤ (Total amount of waste generated × 0.1%)
- To reduce emissions of substances subject to the PRTR Law by 25% from fiscal 2015 levels (81 t/y)

Results for Fiscal 2020

- Energy consumption reduced by 3,490 kL (11,604 kL/4 years)
- Energy intensity: 0.2% increase • CO₂ intensity: 6.5% reduction
- Fuel consumption intensity for road transport: 0.3% reduction
- Modal shift promotion continues • Zero emissions maintained
- Emissions of substances subject to the PRTR Law: 22.8% reduction

Priority Initiatives

- 1) Promoted energy conservation initiatives and advanced technical reviews to reduce waste and the release of PRTR-controlled chemical substances.
- 2) Continued examining the utilization of renewable energy.
- 3) Evaluated contributions to CO₂ emissions reduction related of our products through cLCA.²
- 4) Conducted inspections of equipment that uses fluorocarbons as planned.

Process Safety and Disaster Prevention

Objectives for Fiscal 2017–2020, objectives for Fiscal 2021

- To achieve zero accidents of Class A³ and Class B⁴ (zero severe process safety accidents)

Results for Fiscal 2020

- Class A process safety accidents: 0 • Class B process safety accidents: 1

Priority Initiatives

- 1) Implemented systematic risk assessments and other initiatives to prevent accidents and malfunctions.
- 2) Systematically implemented measures against deterioration and for earthquake response, for example.
- 3) Continuously improved our process safety management system.
- 4) Systematically implemented and sought to enhance external education and workplace education and training.
- 5) Sought to strengthen a safety first mindset through efforts that included Safe Operation Month activities and safe behavior checks.

Occupational Safety and Health

Objectives for Fiscal 2017–2020, objectives for Fiscal 2021

- Zero injuries with loss of workdays⁵ • Zero injuries without loss of workdays⁶ (including contractors)

Results for Fiscal 2020

- Four injuries with loss of workdays • 11 injuries without loss of workdays

Priority Initiatives

- 1) Advanced basic safety activities and undertook other efforts to prevent injuries.
- 2) Implemented systematic safety measures by, for example, steadily undertaking the organization-wide introduction of industrial injury examples.
- 3) Checked the status of every safety activity and sought to continuously improve them.
- 4) Systematically implemented workplace safety education and sought to enhance workplace education and training.
- 5) Sought to strengthen a safety first mindset through efforts that included safe behavior checks.
- 6) Supported the safety initiatives of our contractors through safety education and patrols, for example.

Definitions

¹ Zero emissions: Reducing the quantity of waste subject to final disposal at off-site landfills to less than 0.1% of the total amount of waste generated (In the calculation of total waste, the amount of sludge subject to activated sludge treatment is calculated before dehydration.)

² cLCA (carbon Life Cycle Analysis): A method of assessing greenhouse gas emissions throughout the life cycle of a finished product incorporating chemical products and a comparison product containing no such chemical products when used by consumers and in other industries. The evaluation method calculates a chemical product's net contribution to GHG emissions reduction by determining the increased emissions when no such chemical product is used

³ Class A: Level 9 or higher according to the Nippon Shokubai method on the Japan Petrochemical Industry Association chart

⁴ Class B: Level 3 to 8 according to the Nippon Shokubai method on the Japan Petrochemical Industry Association chart

Chemical Safety

Objectives for Fiscal 2017–2020, objectives for Fiscal 2021

- To achieve zero problems related to chemical safety (legal or social problems)

Results for Fiscal 2020

- Zero problems related to chemical safety

Priority Initiatives

- 1) Gathered information about the hazardous properties and the legal requirements for chemical substances. In addition to making this information known within the company, also appropriately provided information to customers, including through SDS.
- 2) Implemented functional improvements to our chemical substance management system and ensured information granularity based on our plans.
- 3) Properly provided various reports and submitted information within specified time periods in accordance with the legal obligations of Japanese and foreign laws and regulations as well as other requests from authorities.

Quality

Objectives for Fiscal 2017–2020, objectives for Fiscal 2021

- To improve customer satisfaction • To attain more trust from customers
- To achieve zero serious quality complaints

Results for Fiscal 2020

- Customer satisfaction improvement not achieved • Attained more trust from customers
- One serious customer complaint was filed. (Yet-to-be-determined as of July 31, 2021)

Priority Initiatives

- 1) Promoted efforts to prevent quality issues.
- 2) Implemented product safety assessment, product entrustment assessment and screening by the gate system for fine and specialty chemicals and new businesses.
- 3) Strengthened support for the quality assurance initiatives of Group companies.⁷
- 4) Implemented quality audits at both our plants and Group companies.
- 5) Continuously implemented quality education and quality awareness-raising activities.

Communication with Society

Objectives for Fiscal 2017–2020, objectives for Fiscal 2021

- To maintain dialogue with stakeholders and implement information disclosure

Results for Fiscal 2020

- Participated in dialogue with local communities
- Published **TechnoAmenity** Report and RC Report

Developing RC among Our Group Companies (Measures Common to Our Group Companies)

Objectives for Fiscal 2017–2020, objectives for Fiscal 2021

- 1) Environmental Protection:
 - To reduce energy intensity
 - To reduce final disposal at off-site landfills (Group companies in Japan)
 - To reduce the amount of waste (Group companies outside Japan)
 - To reduce emissions of substances subject to the PRTR Law
- 2) Process Safety and Disaster Prevention:
 - To achieve zero disasters and zero accidents (equivalent to Class A and Class B severe process safety accidents on the Nippon Shokubai scale)
- 3) Occupational Safety and Health:
 - To achieve zero injuries with loss of workdays
- 4) Chemical Safety:
 - To achieve zero problems related to chemical safety (legal or social problems)
- 5) Quality:
 - To receive zero serious quality complaints
- 6) Communication with Society:
 - To maintain a dialogue with stakeholders and implement reasonable information disclosure

Results for Fiscal 2020

- Four out of the 12 Group companies reduced their energy intensity year-on-year.
- Waste subject to final disposal at off-site landfills was increased by 11% compared with the level of the previous fiscal year.
- Amount of waste generated reduced by 10% compared with the level of the previous fiscal year.
- Emissions of substances subject to the PRTR Law were reduced by 1.1% compared with the level of the previous fiscal year
- Zero facility disasters • Two facility accidents • Two injuries with loss of workdays
- Zero problems related to chemical safety • No serious quality complaints were filed
- Published an Environmental Report and participated in community events

Priority Initiatives

- Conducted RC discussions and audits, and sought to improve the RC level of the entire Group.

⁵ Injury with loss of workdays: Injury requiring at least one lost workday for medical treatment

⁶ Injury without loss of workdays: Injury requiring no loss of workdays for medical treatment

⁷ Refers to Group companies inside and outside Japan, unless otherwise specified

Environmental Protection Initiatives

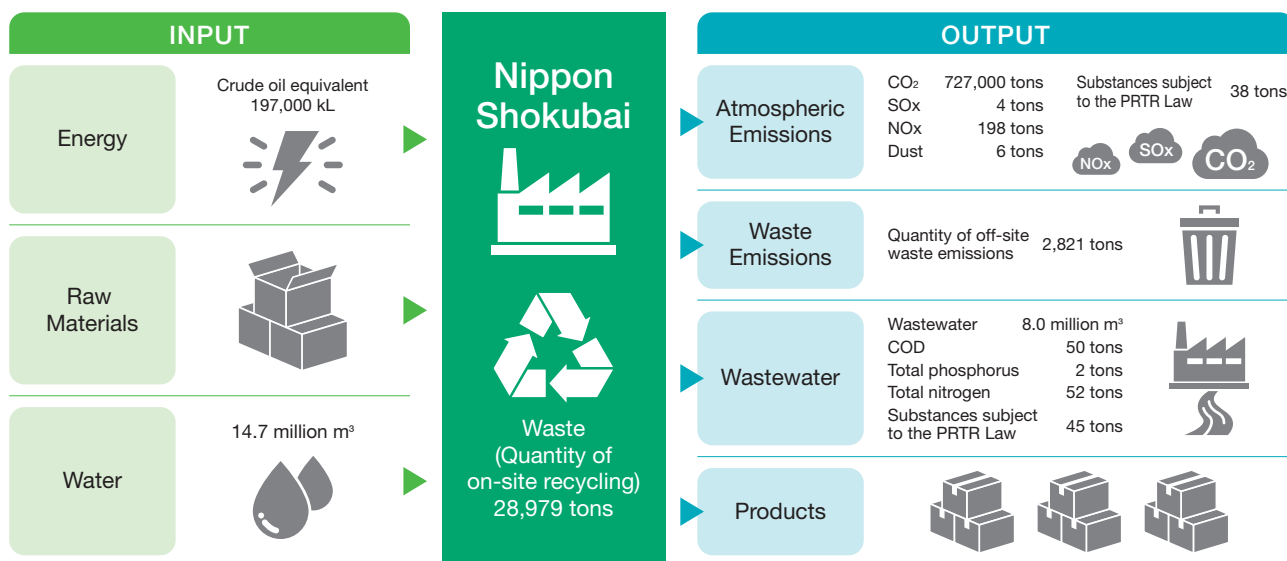
We promote initiatives to reduce the environmental impact of our business operations, including tackling climate change and reducing waste through our product supply chains.

Overview of Fiscal 2020

For energy consumption, although we achieved a reduction of 3,490 kL (crude oil equivalent) mainly by improving processes, energy intensity worsened due to a decrease in production volume of major products. For substances subject to the PRTR Law, we were not able to achieve the target due to an increase in the production volume of products associated with a large volume of boron emissions and a delay in efforts to reduce the amount of boron. However, as we have solved major issues, we can expect to see the effect of the reduction efforts from fiscal 2021.

Environmental Impacts of Our Business Operations

We are engaged in various efforts to not only provide better products and services, but also to reduce the environmental impacts of our business operations, including in our supply chains. We make efforts to conserve energy and tackle climate change of course. We are also managing the water used in our manufacturing sites in order to use water resources effectively, conducting advanced recycling and thoroughly treating water before it is released into the natural environment. Moreover, we also commission odor monitoring as well as conduct odor patrols and regular noise measurements so that neighboring residents can live in peace. In fiscal 2020, we received no reports of environmental pollution incidents or environmental complaints.



Note: This fiscal 2020 data is for only Nippon Shokubai (including our head offices, research centers and other sites).

Employee's Voice Established the energy-saving operational conditions for production increase

We are producing monoethanolamine (MEA), which is used as a raw material for some of our products. Since its demand is expected to grow, it was decided to enhance the production capacity.

Production of MEA was usually accompanied by generation of diethanolamine and triethanolamine at the same time because of the characteristics of its production method. But this time a production increase was needed only for MEA. So we had to consider new operational conditions.

I was in charge of testing using actual equipment, paying careful attention not to increase the impact on the environment. At last, we succeeded in setting up operational conditions that can reduce environmental impact and also achieve an energy consumption reduction with a crude oil equivalent of around 200 kL annually.

Also, the know-how obtained through this testing experience and the enhancement of production equipment have enabled more stable and flexible operation.



Hirokazu Nakashima

Production No. 1 Section, Kawasaki Plant

Initiatives for Tackling Climate Change

Promoting Greenhouse Gas (GHG) reduction

Reducing energy use/CO₂ emissions

At Nippon Shokubai, in line with the targets set in the commitment to a low carbon society by the JCIA, the RC Promotion Committee, chaired by the President, has formulated the Medium-term RC Basic Plan. Based on this Plan, each plant, under the initiative of the energy management committee, implements activities to help mitigate climate change, including reducing energy consumption and CO₂ emission intensity.

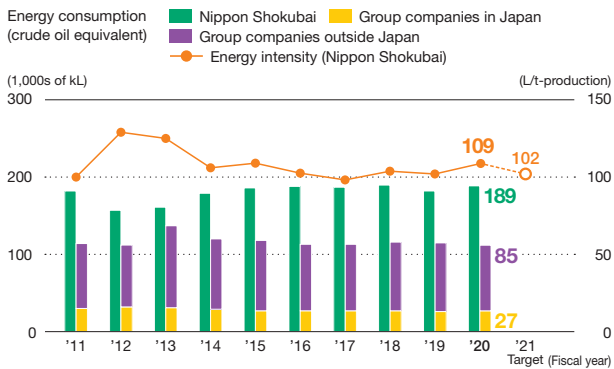
Furthermore, we set the GHG emissions reduction target for fiscal 2030 to be 10% or more compared to the level of fiscal 2014 by reference to the CO₂ emissions reduction target for fiscal 2030 set by JCIA in March 2019 (10.7% reduction compared to FY 2013), and we have been making efforts for the reduction.

In fiscal 2020, despite the efforts to conserve energy, the results were 109 L/t-production for energy intensity and 0.411 t-CO₂/t-production for CO₂ emission intensity, and 0.205 t-CO₂/t-production for energy source CO₂ emissions intensity, mainly due to a decrease in production volume.

From fiscal 2021, we started solar power generation (on-site power generation) at the Himeji Plant.

Furthermore, in April 2021, the Japanese government substantially raised the GHG emissions reduction target for fiscal 2030 to 46% compared to the fiscal 2013 level. Accordingly we are considering revision of our target for fiscal 2030.

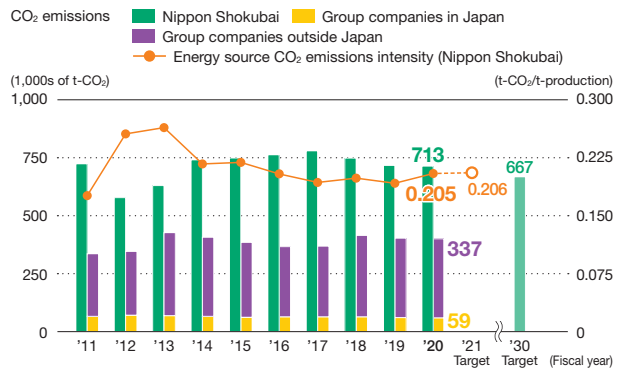
Trends in Energy Consumption and Intensity



* The amount of energy consumed and CO₂ emissions do not include our head offices, research centers, plant administration buildings or employee welfare facilities.

* The amount of energy consumed and CO₂ emissions in fiscal 2020 totaled 9,000 kL and 13,000 t-CO₂, respectively, for our head offices, research centers, plant administration buildings, and employee welfare facilities of Nippon Shokubai.

Trends in CO₂ Emissions and Intensity



* CO₂ emissions are totals of energy source and non-energy source CO₂ emissions.

Suppression of fluorocarbon emissions

The Act on Rational Use and Proper Management of Fluorocarbons was fully implemented in April 2015 and covers the entire lifecycle of fluorocarbons from production to disposal. In April 2020, regulations for the disposal of specified devices were tightened.

As a "user of specified products," we carry out scheduled simple inspections and periodic inspections as required by law. The amount of fluorocarbon leakage calculated in fiscal 2020 totaled 3,122 t-CO₂ for the entire company, with 879 t-CO₂ from the Himeji Plant and 2,094 t-CO₂ from the Kawasaki Plant.

We will continue to strive to reduce the amount of fluorocarbon leakage through initiatives such as strengthening inspections and maintenance, introducing devices that use coolants with a low global warming potential and ozone depletion potential, and implementing proper treatment at the time of disposal of devices, which will help alleviate global warming.

Calculated Leakage of Fluorocarbons in Fiscal 2020

	(t-CO ₂)
Himeji Plant	879
Kawasaki Plant	2,094
Others	148
Entire company	3,122

Environmental Protection Initiatives

Calculating the CO₂ emissions resulting from our entire supply chain

Calculation of Scope 3 emissions

In Scope 3, the amount of GHG emissions associated with corporate activities in the supply chain is calculated for each category, and the amounts of all categories are aggregated. The GHG protocol classifies GHG emissions into Scopes 1, 2 and 3 as shown below.

- Scope 1** Direct emissions:
GHG emissions resulting from the burning of fuel or other products as part of business operations
- Scope 2** Indirect emissions:
GHG emissions resulting from purchased energy, such as purchased electric power
- Scope 3** Other indirect emissions:
GHG emissions other than Scopes 1 and 2 resulting from operations across the entire supply chain (from raw material extraction to product disposal)

We will continue to calculate Scope 3 emissions in the future as we investigate the possibility of reducing CO₂ emissions resulting from all corporate activities.

Trend in Scope 3 Emissions Calculation extent: Nippon Shokubai only

No.	Category	Emissions (1,000 t-CO ₂)		
		FY2018	FY2019	FY2020
1	Purchased goods and services	1,556	1,510	1,445
2	Capital goods	31	37	55
3	Fuel- and energy-related activities (not included in Scope 1 or Scope 2)	61	63	85
4	Upstream transportation and distribution	14	14	14
5	Waste generated in operations	7	7	7
6	Business travel	0.3	0.3	0.3
7	Employee commuting	0.9	0.9	0.9
12	End-of-life treatment of sold products	2,142	2,068	1,961
15	Investments	75	73	70
Total		3,887	3,774	3,637

Initiatives for Eco-friendly Distribution

Promoting White Logistics, which will lead to reducing environmental impact

As a way of tackling climate change through our logistics operations, we are taking steps to reduce our CO₂ emission intensity and implement exhaust gas countermeasures to control air pollution.

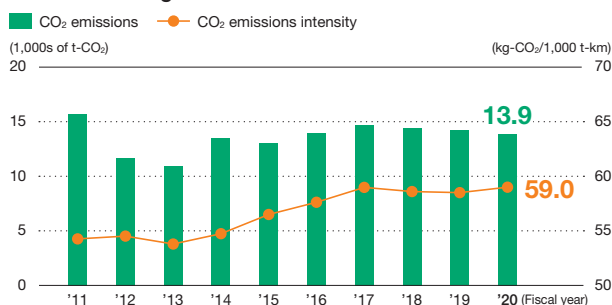
Although changing economic conditions can affect the amount of goods we transport and our CO₂ emissions, we are advancing initiatives to reduce our CO₂ emission intensity. These include modal shifts, improved transport efficiency, introduction of digital tachometers interlocked with GPS and drive recorders, and energy efficient vehicle operation such as minimal idling and the installation of energy-efficient tires.

We adopted the Kawasaki eco-transportation system as an air pollution control measure (effective April 1, 2010) and introduced three initiatives: eco-friendly driving and display of “eco-drive” stickers, elimination of vehicles that do not comply with laws regulating NOx and PM emissions, and widespread adoption of low-emission and energy-efficient vehicles.

In response to the increasingly severe shortage of truck drivers in the logistics industry, Nippon Shokubai supports the “White Logistics” promotion campaign, a movement aiming to realize sustainable logistics. For the purpose of improving productivity and efficiency of transportation and realizing a “whiter” working environment that is friendly to women and drivers in their 60s, we are advancing various initiatives, including improving efficiency of transportation by promoting a shift from long-distance transportation by trucks to transportation using roll-on/roll-off ships or railroad or by introducing joint transportation with other companies in the same business field, and improving loading and unloading operations.

We believe that these initiatives will contribute also to reducing the impact on the environment.

Trends in CO₂ Emissions and Intensity Attributable to Domestic Logistics



An example of modal shift (railway tank containers and loading and filling equipment)

Definitions

Modal shift

Changing the mode of transportation to a mass transportation method, such as using railways or ships, thereby improving the efficiency of transportation while also reducing energy consumption and environmental impact.

Kawasaki eco-transportation system

An environmentally friendly transportation system established by a partial amendment to the “Kawasaki City Ordinance for Conservation of Life Environment, including Pollution Prevention.”

Roll-on/roll-off ship

A ship designed to transport wheeled cargo on trucks or chassis cabs.

Ton-kilometer

Transport ton-kilometer is a unit of transportation measurement referring to the freight transport volume. As an index for precisely expressing transport as an economic activity, it is the product of the freight haul distance (in kilometers) and the transported freight weight (tons).

Environmental Protection through Our Products

Environmental Contribution Products

Chemical products have an impact on the environment because they are produced using the Earth's resources and involve the discharge of CO₂ and other waste. However, looking at the entire product life cycle from raw material extraction to product disposal, in some stages chemical products contribute to a reduction in the environmental impacts.

We evaluate how our products are used to reduce the

environmental impacts through the supply chain to produce the various products in our daily life and as equipment to produce our products and in the social infrastructure.

At Nippon Shokubai, an internal certification committee certifies the Environmental Contribution Products after examining the checklist items and numerical data. In fiscal 2020, three products were newly certified.

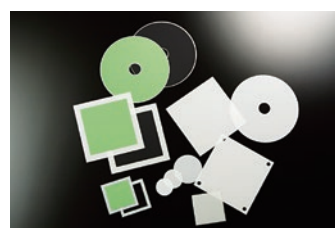
Applications in parentheses



IONEL™ (Lithium-ion battery materials)



AQUALOC™ (Concrete admixtures)



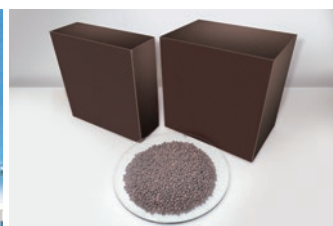
Electrolyte sheets for solid oxide fuel cells



VEEA™ (UV-curable reactive diluent)



Waste gas treatment catalyst



Environmental Contribution Products

Types of contribution		Product life stage	Applications	Accredited products
Global warming prevention Energy conservation	GHG reduction	Manufacturing	Aquaculture feed binders	AQUALIC™ H (for feed)
			Concrete admixtures	AQUALOC™
		Use	Lithium-ion battery materials	IONEL™
			Solid-state battery materials	ICPDAP™, ICPSEB™
	Disposal	Paint and adhesive raw materials, reactive diluents	Isobornyl acrylate	
		Paint and adhesive raw materials	Ethyl acrylate	
Energy conservation	Manufacturing	UV-curable reactive diluents	VEEA™	
		Solid oxide fuel cell materials	Electrolyte sheets for solid oxide fuel cells	
	Use	Automotive damping materials	ACRYSET™ (for damping materials)	
Optical and electronic materials		ZIRCOSTAR™		
Chemical emission reduction Air quality conservation	Chemical emission reduction	Use	Water-based paints	UWR™, ACRYSET™ (for water-based paints)
			Water-based adhesives	EPOCROS™
	Air pollution prevention	Use	Removal of HC (hydrocarbon), NOx, dioxin and other pollutants from exhaust gas	Automotive catalysts
			Waste gas treatment catalysts	Denitrification catalysts and equipment
Water resource conservation Water quality conservation Biodiversity conservation	Water contamination prevention	Use	Oxidation and decomposition of harmful substances in wastewater	Wastewater treatment catalysts for catalytic wet air oxidation
			Water treatment additives	EPOMIN™
Disposal	Biodegradability	Disposal	Detergent builders	AQUALIC™ L (for detergent)
			Detergent ingredients	SOFTANOL™
Resources use reduction	Resources use reduction	Use	Hollow fiber membranes	Polyvinylpyrrolidone
Waste reduction	Waste reduction	Disposal	Concrete admixtures	AQUAGUARD™

Environmental Protection Initiatives

Promoting CO₂ emissions reductions throughout the product lifecycle

We employ the cLCA method to assess the degree to which our products contribute to reducing CO₂ emissions.

The cLCA method assesses CO₂ emissions throughout the lifecycle of a finished product incorporating a specific chemical

product compared with a product when assuming that the chemical products are not available. The difference in the volume of emissions is calculated as the net volume of emissions that would be avoided as a result of using that chemical product.

Nippon Shokubai's products that are expected to contribute to the avoidance of CO ₂ emissions		Assessment prerequisites	
AQUAGUARD™	Calculation of CO ₂ emissions avoided in one year when all apartments are built as long-lasting structures 3.4 million tons	AQUAGUARD™ was developed to reduce cracking and spalling in concrete. The combination of AQUAGUARD™ with a high-range water reducer for concrete is expected to contribute to much longer-lasting concrete structures.	Service period: The lifecycle assessment assumes that a long-life apartment has a 100-year service life and a conventional apartment has a 50-year service life. CO ₂ emissions associated with the building, use and demolition of apartments are evaluated with reference to the "Guidelines for LCA for Buildings" published by the Architectural Institute of Japan.
ACRYSET™ (for damping materials)	Calculation of CO ₂ emissions avoided when an application-type vibration-damping material is installed in all automobiles manufactured in one year 310,000 tons	We developed an emulsion for application-type vibration-damping materials for mounting on the lower surface of a vehicle body to reduce the noise and vibration from the engine and road surface. Using such material, it is possible to make the vehicle light and energy-efficient.	The annual travel distance is assumed to be 10,000 km with a 10-year service life. Automobiles using asphalt sheeting as a vibration-damping material are compared and evaluated.
ZIRCOSTAR™	Calculation of CO ₂ emissions avoided when ZIRCOSTAR™ is incorporated in all smartphones manufactured in one year 220,000 tons	This product has outstanding optical properties, and using it for plastic lenses, displays, and other optical materials increases the energy efficiency of displays on mobile phones, smartphones, and other handheld devices, contributing to a longer battery life.	According to the usage time described in the Carbon Footprint Product Category Rules, the product was evaluated as being in use for two years. A smartphone incorporating ZIRCOSTAR in the optical material was evaluated as achieving a 3.6% reduction in power consumption as an energy-efficiency benefit.
VEEA™	Calculation of CO ₂ emissions avoided by reduction expected from all the UV curable inks produced in one year 330,000 tons	Use of VEEA™ as UV-curable reactive diluents for inks that are better for the environment makes volatile solvents, as well as related equipment, unnecessary, saves energy and increases productivity.	Printed materials were assumed to be printed in four colors on full A-sized sheets with 3.2 g/m ² of ink. Commercial offset and commercial UV printing presses were compared for evaluation.
AQUALIC™ H (for feed)	Calculation of CO ₂ emissions avoided when all aquaculture feed produced in one year is replaced with moist pellets (MP) 80,000 tons	MP uses AQUALIC™ H as the binder and thus contains a smaller amount of fish meal, which requires a large amount of energy in the procurement of ingredients and the drying process. Use of MP therefore results in a reduction of CO ₂ emitted in the course of growing fish.	All feed in the aquaculture industry produced in Japan in one year was evaluated. The comparison target was dry pellets with a high content of fish meal and with no binders used.
IONEL™ ICPDAP™ ICPSEB™ Electrolyte sheets for solid oxide fuel cells	(1) Calculation of CO ₂ emissions avoided when solid batteries are utilized as a regulated power supply for the use of renewable-energy-derived electricity supplied in one year (Use for electric vehicles is not included.) (2) Calculation of CO ₂ emissions avoided from the use of fuel cells 5.96 million tons	IONEL™, ICPDAP™ and ICPSEB™ are used for storage batteries. Storage batteries are expected to be utilized as a regulated power supply in order to enhance solar power and wind power, which are major sources of renewable energy subject to significant output fluctuations. Use of solid oxide fuel cells will also contribute to reducing CO ₂ emissions as they can generate electricity and hot water with high efficiency.	For calculation of CO ₂ emissions avoided from the use of storage batteries, fluctuations in electricity and regulated power supply were assumed so that the supply and demand of electricity are balanced at the most economically efficient point. For calculation of CO ₂ emissions avoided from the use of fuel cells, because the amount of hydrogen supply cannot be predicted, evaluation was conducted based on fuel cells for houses, which generate power by modifying "city gas." The comparison target was thermal power generation.

Note: The above assumed values are for comparative purposes only; the actual service life and performance are not guaranteed.

Chemical Substances Control Initiative

Reducing chemical emissions

In fiscal 1995, we participated in a voluntary PRTR survey undertaken by the JCIA and have set out to reduce our emissions of chemical substances into the environment.

In fiscal 2020, we released 83 tons of substances subject to

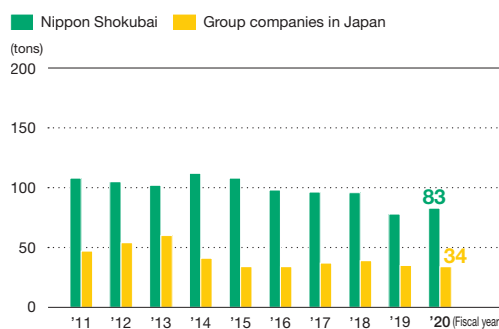
the PRTR Law, which represents a 22.8% decrease in emissions compared to fiscal 2015 levels. However, we were not able to achieve our target of 25% reduction from fiscal 2015 levels.

Top 10 Substances Subject to the PRTR Law Released in Fiscal 2020

Calculation extent: Nippon Shokubai only

No.	Government Designation No.	Substance Subject to the PRTR Law	Released into Atmosphere	Released into Water	Total Emissions	Amount Transferred
1	405	Boron compounds	0.0	30.3	30.3	0.2
2	321	Vanadium compounds	0.0	10.4	10.4	0.0
3	4	Acrylic acid and its water-soluble salts	9.6	0.0	9.6	0.0
4	80	Xylene	5.8	0.0	5.8	16.7
5	56	Ethylene oxide	2.9	0.0	2.9	0.0
6	300	Toluene	2.8	0.0	2.8	350.4
7	12	Acetaldehyde	2.4	0.0	2.4	0.0
8	58	Ethylene glycol monomethyl ether	2.3	0.0	2.3	0.0
9	7	Butyl acrylate	2.0	0.0	2.0	0.0
10	154	Cyclohexylamine	1.3	0.2	1.5	0.0

Trends in Emissions of Substances Subject to the PRTR Law



Definitions

PRTR (Pollutant Release and Transfer Register)

A regulatory system that requires the reporting of emissions of designated chemical substances into the air, water and soil as well as the volume of waste transferred. Data compiled and submitted to governmental agencies are disclosed to the public.

Waste Reduction Initiatives

Reducing the amount of waste subject to final disposal at off-site landfills

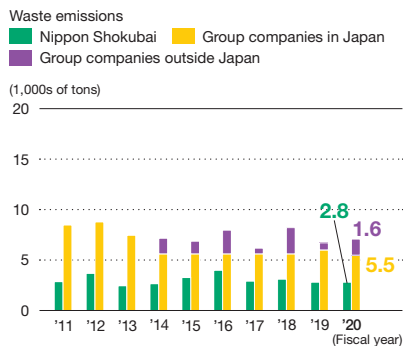
Reducing waste is a necessary initiative to support the creation of a society committed to recycling. Toward the goal of achieving and maintaining “zero emissions” (defined as “reducing the quantity of waste subject to final disposal at off-site landfills to less than 0.1% of the total amount of waste generated”), we are introducing sorting for the recovery and recycling of our waste.

In fiscal 2020, we are continuing to implement our zero emissions policy by reducing the amount of waste subject to final disposal at off-site landfills. In addition to implementing comprehensive sorting for recovery and recycling, we are achieving this by redesigning our processes to reduce waste, reusing byproducts and processing product leftovers on site.

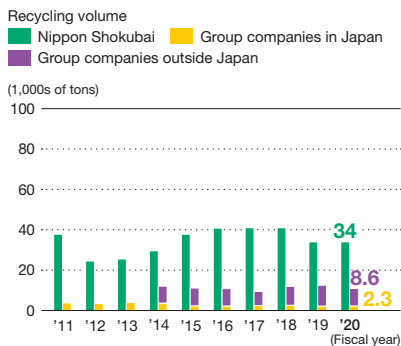
Waste Flowchart



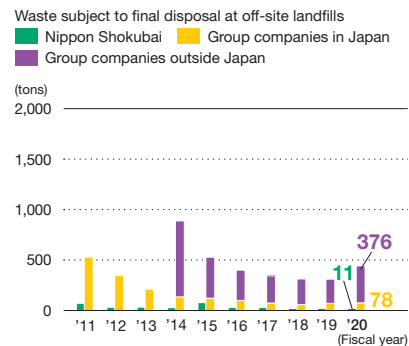
Trends in Waste Emissions



Trends in Recycling Volume



Trends in Amount of Waste Subject to Final Disposal at Off-site Landfills



Employee's Voice Reducing emissions of acrylic acid by 2.5 tons a year

In the series of activities related to reducing emissions of substances of concern into the air, my department is working on reducing emissions of acrylic acid, a major product of the Himeji Plant.

At present, in the large tank to store produced acrylic acid, the gas phase of the tank is sealed with an inert gas for safety. Due to this, a part of the acrylic acid in the gas phase is emitted from the vent, accompanying the inert gas. And our task was to reduce such emission.

We therefore examined measures to reduce the emissions and discovered that acrylic acid emitted from the vent could be reduced by 2.5 tons a year by modifying storage conditions in the tank. We will work to establish specific operational conditions, taking into consideration seasonal factors and other elements.



Noritaka Fukumoto

Chemicals Production Department, Himeji Plant

Environmental Protection Initiatives

Pollution Control Initiatives Targeting Air and Water

Working to reduce the environmental impact by introducing waste gas treatment catalysts and high-performance activated sludge treatment equipment

We are monitoring our SOx, NOx and dust emissions, and we have installed denitrification equipment, which we developed in-house, for NOx and scrubbers for dust to prevent air pollution. For SOx, we are reducing our heavy oil consumption and progressing with converting fuel to natural gas to reduce emissions. We use the waste gas treatment catalysts we developed in-house for purification of unreacted raw materials and by products generated in the production processes.

To prevent water pollution, we are working to reduce the environmental impact of wastewater from production processes by using waste liquid treatment equipment. In addition to reusing cooling water for more effective use of our water resources, we have adopted high-performance activated sludge treatment equipment that can stably process even high impact substances and are working on reducing sludge waste as well.

All emissions are at levels below municipal and prefectural agreements.

Nippon Shokubai

(tons)

	'15	'16	'17	'18	'19	'20
SOx emissions	3	3	3	4	4	4
NOx emissions	173	205	204	198	203	198
Dust emissions	5	6	6	6	7	6
COD of wastewater	46	51	54	55	50	50
Total phosphorus emissions	3	3	3	3	3	2
Total nitrogen emissions	51	54	47	58	55	52

Group Companies in Japan

(tons)

	'15	'16	'17	'18	'19	'20
SOx emissions	2	2	1	2	1	2
NOx emissions	54	44	48	45	43	48
Dust emissions	5	3	2	2	3	2
COD of wastewater	37	34	45	53	60	61

Topics Announcing support for the Recommendations of the Task Force on Climate-related Financial Disclosures (TCFD)

In October 2020, the Japanese Government declared that it would reduce its total GHG emissions to zero (carbon neutrality) by 2050. Nippon Shokubai, with understanding that the climate change issue will have a serious impact on its corporate management, announced support for the TCFD Recommendations in March 2021.

Aiming to contribute to realizing a sustainable society, we promote various sustainability promotion activities, such as continuously reducing GHG emissions from our business activities and also contributing to reducing GHG emissions from our customers' products and services.

In November 2020, we organized the TechnoAmenity Promotion Committee, chaired by the President, to implement sustainability initiatives. The TechnoAmenity Promotion Committee and the RC Promotion Committee discuss how we should tackle climate change on a periodic basis.

Furthermore, we formulated the Group's long-term vision "**TechnoAmenity** for the future" in April 2021. In the long-term vision, "strategic transformation for environmental initiatives" is determined as one of the transformations required to achieve the Goals in 2030. To realize carbon neutrality by 2050, we will strongly promote company-wide initiatives for sustainability, such as efforts to reduce CO₂ emissions and promote decarbonization.

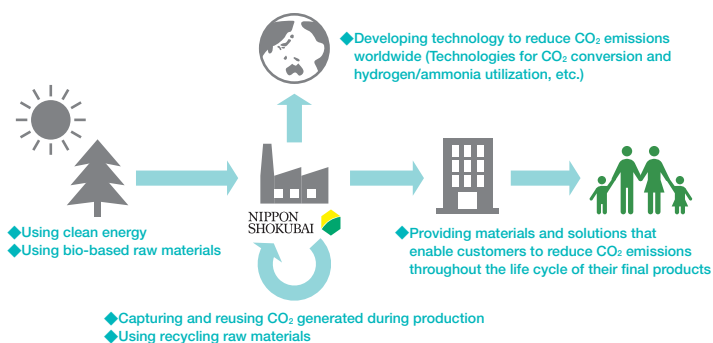
In line with the announcement of support for the TCFD Recommendations, we will examine the impact of risks and opportunities of climate change on our business and promote information disclosure based on the TCFD framework.



TCFD:

A task force formed by the Financial Stability Board (FSB), an international organization participated in by central banks and financial regulators of major countries and regions of the world

Contributing to the achievement of carbon neutrality by 2050



Strategic transformation for environmental initiatives in the long-term vision "**TechnoAmenity** for the future"

Environmental Accounting

The values determined in our environmental accounting were aggregated according to the *Environmental Accounting Guidelines for the Chemical Industry* published in 2003 by the JCIA and the Japan Responsible Care Council. We also made reference to the *Environmental Accounting Guidelines 2005* published by the Ministry of the Environment of Japan.

Environmental Protection Costs & Environmental Protection Benefits

Applicable period: April 1, 2020–March 31, 2021 Calculation extent: Nippon Shokubai only

(millions of yen)

Classification		Main Initiatives	Amount Invested	Expenses	Effects
Business area cost	1. Pollution Control Cost	Preventing air and water pollution, controlling hazardous substances	44	2,343	No pollution problems occurred.
	2. Global Environmental Protection Cost	Initiatives to reduce energy consumption and to tackle climate change	230	3,256	We conducted energy efficiency efforts equivalent to 3,490 kL (crude oil) annually.
	3. Resource Recycling Cost	Appropriate treatment and disposal of industrial waste	53	633	We maintained zero emissions by sorting and recycling our solid waste.
Upstream/downstream cost		Reuse of resources	0	54	Some of drum containers are reused.
Environmental management cost		Operation of environmental management structure; acquisition and maintenance of ISO 14001 registration	0	555	All our plants successfully acquired certifications, and we are seeking to enhance our environmental management systems.
R&D cost		Reduction of the environmental impact through development and manufacturing of green products	0	2,604	Conducting R&D of products that contribute to the environment.
Social activity cost		Environmental-related contributions	0	22	Implementing forest development initiatives.
Environmental damage cost		—	0	4	—
Total			327	9,471	

Economic Effects (Monetary Benefits) Resulting from Environmental Protection Initiatives

(millions of yen)

Effect		Amount
Income	Operating revenue from recycling used products and waste generated by principal business activities	34
Cost saving	Reduction in expenses associated with energy conservation	808
	Reduction in waste disposal cost accruing from resource conservation and recycling	1,642
Total		2,484

Reference Total investment for the period: 11,398 million yen
Total R&D expenses for the period: 12,640 million yen

Close Up

Rank-based RC Training

We provide ongoing employee training in RC for the purpose of improving their knowledge, skill, and understanding of overall RC initiatives.

In keeping with our training curriculum for fiscal 2020, we have been providing this training to new employees entering our company, to employees being promoted to the position of subsection chief and to employees being promoted to managerial positions. We will continue improving our RC training capabilities in the future.



Training for employees in subsection chief positions

Definitions

Environmental Accounting

This system collects and analyzes the costs and effectiveness of environmental protection in business activities, quantitatively and to the maximum extent, and makes the data available to the public. It is focused on sustainable development for companies with the goal of efficiently and effectively promoting environmental protection initiatives while maintaining a good relationship with society.

Process Safety and Disaster Prevention Initiatives

Under the Corporate Credo “Safety takes priority over production,” all our employees take part in various activities to ensure safety.

Overview of Fiscal 2020

We had zero class A process safety accidents but one class B process safety accident. In fiscal 2020, we continued to promote our voluntary safety initiatives according to the priority initiatives of the 10th RC Basic Plan, maintaining our basic approach to safety issues.

Basic Approach to Safety Issues

We have incorporated the lessons learned from the accident at the Himeji Plant in 2012 to reinforce our basic approach to safety issues. We have clarified our Corporate Credo, Safety Oath, and the safety management principles presented below, as well as the roles of the company at each organizational level, and are ensuring that all employees stay fully informed.

Safety management principles

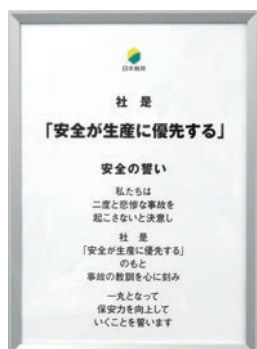
We are putting into practice the fundamental principles for safety management, behavior principles during production activities and other guidelines that are established in the Safety Management Regulations of our company.

<Fundamental principle of safety management (excerpt)>

- (1) Assure safety based on our Corporate Credo, “Safety takes priority over production.”

<Behavior principle during production activities>

- (1) Stop operation immediately if you discover something abnormal in the functioning of equipment. No one will ask who was responsible.



Safety Oath

Message from management regarding safety issues

On Safety Oath Day in fiscal 2020, our President said in his speech that each employee should keep in mind our Corporate Credo, “Safety takes priority over production,” in steadily implementing basic safety activities and measures to prevent recurrence of accidents and that accumulation of such step-by-step efforts would lead to “gaining greater public trust.” He also requested us to hold safety discussions in every company workplace during our Safe Operation Month (September 16 to October 15), at which everyone should discuss what “safety takes priority” means to their own workplace and reconfirm their individual roles.

In addition, the President visited the Himeji and Kawasaki Plants for safety inspections and talked to employees, reemphasizing the importance of the continuation of thorough measures against the COVID-19 infection and the implementation of “Safety takes priority over production.”



Corporate Credo, “Safety takes priority over production”



Inspection of Kawasaki Plant by President



Inspection of Himeji Plant by President

Promotion of Voluntary Safety Initiatives

Since its foundation, Nippon Shokubai has ensured safe production with the technologies we developed in-house, and the voluntary safety initiatives we have introduced are aimed at zero Class A and Class B severe process safety accidents.

Efforts to prevent accidents and malfunctions

We employ HAZOP to identify latent risks in a plant. We are working to prevent incidents by systematically implementing HAZOP for both routine and non-routine work, and also by conducting Management of Change and non-routine work management.

As small group initiatives, we are promoting HMI activities at the Himeji Plant and TPM activities at the Kawasaki Plant to identify problems and implement improvements.

We will continue with our multi-faceted approach to prevent accidents and malfunctions.

Systematic implementation of safety measures

When an accident happens, we investigate the cause in stages and introduce measures to prevent any recurrence. Long-term maintenance of facilities is incorporated in our maintenance plans and implemented according to the plans. We are also systematically dealing with the aging degradation of our facilities.

Earthquake preparedness

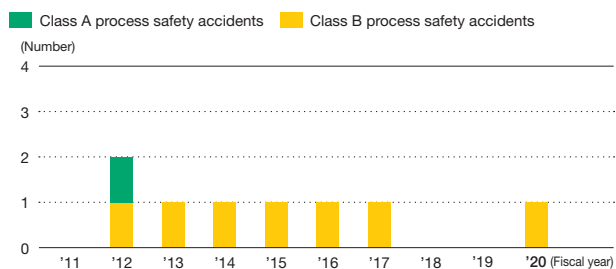
Following the Great East Japan Earthquake of 2011, we reviewed our earthquake preparedness in the event of a future major earthquake and tsunami from both the tangible and intangible aspects and are adopting the necessary measures, which are periodically reviewed and reinforced.

Regarding the existing measures that are in place to improve the seismic resistance of high-pressure gas facilities, we confirmed that all spherical reservoirs with steel tube bracing and those towers and tanks that are important high-pressure gas facilities have seismic designs that meet the seismic standards for reporting to the relevant authorities. We continue to implement seismic resistance measures for our piping facilities in fiscal 2021.

Results of process safety accidents

In fiscal 2020, we had zero class A process safety accidents but one class B process safety accident. We will continue our efforts to prevent process safety accidents while constantly improving safety activities.

Trends in the Number of Process Safety Accidents



Definitions

HAZOP (Hazard and Operability Study)

A safety evaluation method for systematically evaluating the adequacy of safeguards in plants and eliminating latent risks in plants through comprehensive detection

HMI (Himeji Monozukuri Isshin) activities

These activities advance improvement and innovation at the Himeji Plant.

TPM (Total Productive Maintenance) activities

These improvement activities seek to realize production methods that pursue the highest overall efficiency in production systems.

Enhancing education and training

To upgrade the skills and expertise required to maintain safe operations, we are fulfilling the requirements for training-related risk management at our chemical plants.

As in fiscal 2019, we invited instructors from Sanyo Association for the Advancement of Science & Technology and held courses on risk management and other related themes, paying sufficient attention to preventing the spread of COVID-19. A total of 53 people participated, including members of the research segment.

To increase the competency of the employees who implement HAZOP and to train the next generation, we invited outside lecturers to both plants and held HAZOP trainings again in fiscal 2019.

At both plants, we have collected “know-why” information so that people can understand the origins of our procedures and rules and to enable skills to be passed on. We are using this information for teaching.

The opinions voiced by our employees have encouraged us to continue conducting training both inside and outside the company to improve knowledge of safe operations and to increase safety awareness.



“Risk assessment based on lessons of accidents” class

Maintenance and improvement of safety management efforts

Each year, RC inspections are conducted by executive management at both Himeji and Kawasaki plants. In fiscal 2020, they verified the safety management activities at both plants.

The Executive Officer of the RC Division at our Head Office conducted safety audits as the head of the auditing committee, to ensure continuous improvements to our safety management.

High-pressure gas safety accredited plants

The Ministry of Economy, Trade and Industry accredited the Chidori Plant and the Ukishima Plant located at our Kawasaki Plant as Accredited Completion Inspection and Safety Inspection Executors for high-pressure gas in 1989 and 1991, respectively. Reaccreditation inspections are conducted every five years.

This accreditation permits continuous operation of high-pressure gas production facilities and autonomous safety inspections by plants with competent self-managed safety systems.

Process Safety and Disaster Prevention Initiatives

Improving emergency drills

We have established disaster prevention arrangements at every plant, and we systematically conduct a variety of emergency drills every year.

In fiscal 2020, we conducted emergency drills while paying special attention to COVID-19 infection.

By feeding back issues that were made apparent in the emergency drills in the future trainings, we will continue to review and strengthen our disaster prevention, including related arrangements, education and training.



Comprehensive Emergency drill at the Kawasaki Plant



Oil boom extension training at the Himeji Plant



Comprehensive Emergency drill at the Suita Research Center

Strengthening a culture of “safety prioritization”

Both of our plants are undertaking unique efforts to strengthen a culture of safety prioritization. For example, employees at our Himeji Plant conducted self checks of fundamental safety behavior, and employees at our Kawasaki Plant undertook safety behavior check activities.

In June 2020, the Himeji Plant underwent a third-party evaluation of safety competency (safety culture) by the Japan Industrial Safety Competency Center, an NPO.

The feedback from the evaluations will be reflected in the RC plans, thereby ensuring continuous improvement of our safety competency.

Preventing accidents caused by a loss of collective memory

To show our determination never to forget the accident in 2012 and our resolve never to let such an accident happen again, we held a Safety Oath Ceremony in front of the Safety Oath Monument at the Himeji Plant in fiscal 2020, renewing our commitment to continually improving our safety competency.



Safety Oath Ceremony

Commendations

At the Hyogo High-Pressure Gas Safety Managers' Convention of the Hyogo High-Pressure Gas Safety Organization, an employee of our Himeji Plant received the Chairman's commendation as an excellent high-pressure gas safety manager.



Receiving award at the Hyogo High-Pressure Gas Safety Managers' Convention

Logistics Safety Initiatives

We have commissioned Nisshoku Butsuryu Co., Ltd. to handle all our logistics operations. To ensure the safety and quality of our logistics tasks, they cooperate closely with the Environmental Safety and Quality divisions of both our Himeji and Kawasaki Plants, where we work diligently to prevent logistics accidents.

With the aim of minimizing damage should an accident occur during product shipment, we periodically conduct drills to respond to accidents on transportation routes.

Moreover, in support of the White Logistics movement promoted mainly by the Ministry of Land, Infrastructure, Transport and Tourism toward the realization of sustainable logistics, we made a White Logistics declaration in April 2020, and we have been implementing relevant activities.



Training for accidents during product transportation

Occupational Safety and Health Initiatives

Toward achieving the target of zero industrial injuries, we implement activities to ensure occupational safety and health, including improving the working environment, reducing risk factors, and creating pleasant workplaces.

Overview of Fiscal 2020

We experienced one injury with loss of workdays and nine injuries without loss of workdays. Our contractors experienced three injuries with loss of workdays and two injuries without loss of workdays. In fiscal 2020, we continued to promote our occupational safety and health initiatives according to the priority initiatives of the 10th RC Basic Plan, with the aim of preventing industrial injuries.

Ensuring Continuous Improvement of Occupational Safety and Health

We have been continuously improving our occupational safety and health based mainly on our Occupational Safety and Health Management System (OSHMS). In addition, we are striving to reduce industrial injuries by systematically implementing various basic safety initiatives, including “*kiken yochi* (KY)” risk prediction, “*hiyari hatto*” near miss and “5S” campaigns, as well as by conducting a variety of education and training courses.

Risk assessment

In accordance with the Occupational Safety and Health Management System, we have been undertaking task risk assessment to reduce or eliminate the sources of risks. Moreover, we are systematically implementing risk assessments for chemicals handled at each worksite and working to decrease risks.

Basic safety initiatives

In an effort to prevent industrial injuries, we are committed to daily safety initiatives targeting work-related risks. Specifically, we remain focused on our *kiken yochi* (KY) or “risk prediction” campaign before work, our *hiyarihatto* practice of collecting reports on “close-call” incidents, and our “5S” campaign in the workplace. To maintain and enhance sensitivity to danger, we conduct KY training and KY workshops on a periodic basis, with the aim of improving the level of our daily safety activities. We are also working to familiarize ourselves with basic safety behavior: (1) Think before you act; (2) Pointing and calling; and (3) Hold the handrail when stepping on stairs, by putting up posters and providing related education, thereby helping to prevent industrial injuries.



On-site training sessions

Aiming to improve sensitivity to risks hidden in plant operations, we offer hands-on training in skills such as flange disassembly and reassembly, and ascending and descending rope ladders, as well as experiencing hanging in a full harness safety belt.



Experiencing hanging in a full harness safety belt

Definitions

KY Campaign (risk prediction campaign)

This campaign is intended to prevent injuries by highlighting, at meetings before work, the risk factors (unsafe behaviors and unsafe conditions) that remain hidden in work practices and by implementing measures to address them.

Near miss (*hiyari hatto*, HH)

Even where no accidents and injuries have occurred in day-to-day operations, we monitor workers' experiences of “near misses” or “scares” in order to clarify why such events occur and how we can avoid them. From the results, we can adopt safety measures applicable to both facilities and actions.

5S Campaign

This campaign promotes the 5 “S” practices, which can be translated as sort, set in order, shine, standardize and sustain.

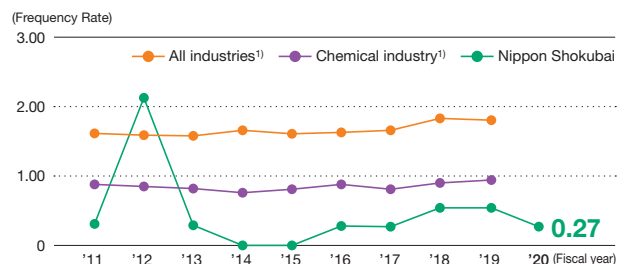
Occurrence of industrial injuries

In fiscal 2020, we experienced one injury with loss of workdays and nine injuries without loss of workdays. Our contractors experienced three injuries with loss of workdays and two injuries without loss of workdays.

In recent years, industrial injuries have occurred frequently among young workers at Nippon Shokubai, while they have occurred frequently among less-experienced workers at our contractors.

We are therefore enhancing safety education for young or less-experienced workers to raise their safety awareness.

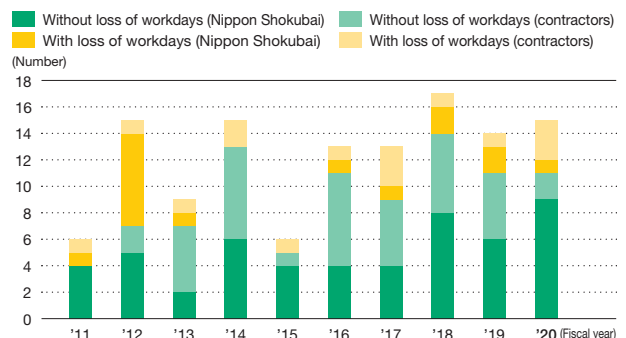
Trends in Frequency Rate of Injuries with Loss of Workdays



* Frequency rate: The number of casualties in industrial injuries per million working hours

¹⁾ Source: “Survey on Industrial Accidents” by the Ministry of Health, Labour and Welfare

Trends in Total Number of Industrial Injuries (with Loss of Workdays and without Loss of Workdays)



Addressing the health issues of company retirees

Since our company was established, we have never manufactured products containing asbestos; however, we have used insulation and sealing materials that contained asbestos.

For this reason, we support our retirees by offering consultations on health issues and providing health check-ups to those who request them. Information regarding these services is posted on our website.

Chemical Safety Initiatives

Toward achieving the goal of zero legal and social problems related to chemical substances throughout the lifecycle of products, we are committed to the proper management of chemicals through initiatives including complying with laws and regulations and providing related information.

Overview of Fiscal 2020

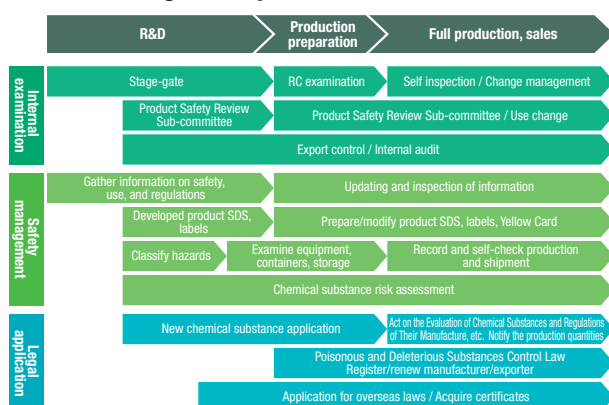
Faced by the tightening of laws and regulations, and industry standards for management of chemical substances, as a result of efforts to collect information related to product safety and applicable laws and regulations, and to disseminate the information throughout the company, we were able to achieve zero legal and social problems in fiscal 2020. We also advanced the development of a system for automatic production of warning labels and other measures for work improvement, thereby enhancing the chemical management system.

We will continue to develop a system for the management of chemical substances capable of adapting to diverse laws and regulations, as well as social situations.

Comprehensive management of chemical substances throughout the product lifecycle

Toward achieving the goal of zero legal and social problems related to chemical substances throughout the lifecycle of products, Nippon Shokubai is committed to the proper management of chemicals and implements a variety of initiatives, including upgrading our internal systems to comply with laws and regulations related to chemical products, and providing customers with information on relevant laws and regulations as well as product safety information.

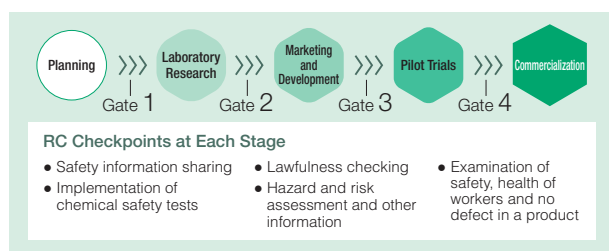
Chemical Management System



Ensuring the safety of new products

We have introduced a gate system at each stage from R&D to commercialization. We apply our technical expertise to examine the safety of chemical products throughout the product lifecycle and determine at each stage whether to proceed to the next stage.

Gate System



Definitions

Yellow Card

Carriers who transport hazardous products must carry a yellow card for reporting information about their cargo to fire squads in the event of an accident. The yellow card lists a product's hazards, first aid procedures in an accident, and emergency contact information. As part of its promotion of RC, the JCIA prepares and manages guidelines on the procedures for preparing a yellow card in order to strengthen first aid measures in the event of an accident.

Product safety initiatives

We prepare GHS-compliant SDSs, warning labels, and Yellow Cards and provide information to customers while providing training sessions for our employees. Regarding application-specific products used in pharmaceutical raw materials, pesticides, cosmetics and food additives, our Product Safety Review Sub-committee conducts strict checks while ensuring compliance with the Product Liability Act.

Establishment of a chemical substance management system

We have created a comprehensive chemical substance management system that provides centralized management of various types of information such as hazard and regulation for chemicals, raw materials, and products, and we are operating this system for broad applications, such as risk assessments, the issuance of SDS, and responding to customers' requests for the survey of chemical substances contained in our products. We are continuously committed to updating the information and improving the system functions. From fiscal 2020, we started automatic production of GHS labels using this system.

Accommodating chemical registration requirements within and outside Japan

In collaboration with specialized institutions and our Group companies outside Japan, we are responding appropriately to laws and regulations, including the Act on the Evaluation of Chemical Substances and Regulations of their Manufacture, etc. and the Industrial Safety and Health Act in Japan, as well as TSCA in the United States and REACH in Europe.

To enhance the employees' legal knowledge regarding chemical management regulations and awareness of compliance with laws, we hold regular education programs on laws and meetings to explain new systems.

Moreover, for acrylic acid, which is designated as a priority assessment substance under the Act on the Evaluation of Chemical Substances and Regulations of their Manufacture, etc., we are actively cooperating with the risk assessments by the government through actions such as conducting safety testing on aquatic life through an organization in which the Company is a member and submitting information to the government.

Addressing import/export controls

To ensure legal compliance regarding imports and exports, we have streamlined our process for strengthening company regulations, keeping our employees informed about whether a product has been subject to import/export restrictions and improving our shipping management system for coordination with our enterprise resource planning (ERP) backbone accounting system. We also conduct regular internal training. In the internal audit we conduct every year, it was confirmed that there were no problems with exports between January and December 2020.

Quality Initiatives

Nippon Shokubai's basic policy related to quality is to provide products and services that fully satisfy our customers while earning their trust. We also work to maintain or improve our quality levels.

Overview of Fiscal 2020

A serious quality complaint was reported (yet-to-be-determined as of July 31, 2021), and although we have completed the corrective actions, we ended up failing to achieve the target of improved customer satisfaction.

On the other hand, quality audits for plants and Group companies in Japan and abroad were conducted online due to the spread of COVID-19 to confirm that compliance is ensured for the entire Group.

Ensuring Continuous Improvement of Quality

Customer satisfaction initiatives

All our plants and all Group companies both inside and outside of Japan engaged in manufacturing and logistics have introduced quality management systems. We implement our quality assurance initiatives from the customer's perspective from the product development stage through manufacturing and delivery.

We are dedicated to the continuous improvement of our quality management system to ensure our customers are satisfied with the stable high quality of our products and services.



Quality control convention

Promoting initiatives to address quality issues

We respond quickly to any complaints or inquiries from customers concerning our products. At the same time, we prevent quality issues from occurring through company-wide distribution of case studies. Cases of complaints and issues that occurred in fiscal 2020 were shared at meetings of the department managers, where permanent measures were taken. The information on quality complaints and issues are also distributed to our Group companies in Japan, with the aim of preventing similar quality problems.

Initiatives toward gaining greater public trust

We have established quality management systems that ensure the safety and reliability of our products. The quality assurance department of our Head Office has conducted quality audits of our plants and Group companies to check the quality assurance systems and the status of quality management at all production sites.

In quality audits for fiscal 2020, as a part of the initiatives in response to the revised Food Sanitation Act enforced from June 1, 2020, the status of management of food additives manufactured at our plants was inspected online. These audits confirmed that the plants properly responded to the revised law and the analysis data was reliable.

Supply chain initiatives

Nippon Shokubai promotes initiatives to ensure supplies of safe and reliable products throughout the entire supply chain, from procurement of raw materials to manufacture and sales of products. In accordance with our regulations for green procurement management, we have independently assigned substances that are regulated or highly hazardous to two categories: "prohibited substances" and "restricted substances." We are promoting the development of green products and the procurement of raw materials with low environmental impact while controlling the inclusion of such substances in our products. For information transmission sheets, we have introduced chemSHERPA.

Introducing products with halal certification

Parts of Southeast Asia, most notably Malaysia and Indonesia, are home to many Muslims, and demand for halal-certified ingredients and production processes from food-related businesses has been increasing. In response to this situation, we have acquired halal certification for products for which acquisition of the certification is strongly urged by customers. Specifically, the Himeji Plant acquired halal certification for organic acids (maleic anhydride, succinic acid, disodium succinate) in 2014 and sodium polyacrylate (AQUALIC™ H series) in 2015. Furthermore, PT. Nippon Shokubai Indonesia (NSI) acquired halal certification for all products in 2019. With these certifications, we can expect further expansion of demand for these products in Southeast Asia. We will make continuous efforts to provide affluence and comfort to people and society by responding to the needs of society.

Note: The products for which the Nippon Shokubai Group has acquired halal certification (as of April 1, 2021)

Succinic acid, Disodium succinate, Maleic anhydride, AQUALIC™ FH (Food additive), AQUALIC™ MH (Feeding stuff additive) and AQUALIC™ IH (Industry), and All products produced at NSI (Acrylic acid (AA), Acrylates (AES), Superabsorbent polymers (SAP))



NSI Halal certification

Definitions

chemSHERPA

This shared system for transmitting information about chemicals contained in products to supply chains was developed under the leadership of the Ministry of Economy, Trade and Industry in Japan. Full-scale utilization began in April 2018.

Halal Certification

A certification with religious relevance, granted by the relevant organizations when certain standards are satisfied, for products and services targeted at Muslim customers.

Communication with Society

Guided by the Nippon Shokubai Group Mission of “**TechnoAmenity** – Providing affluence and comfort to people and society with our unique technology,” Nippon Shokubai has adopted a number of social initiatives. These include maintaining clear and open communication with the public as a good corporate citizen that protects the natural environment, works in harmony with local communities and trains the next generation.

Protecting the Natural Environment

With the awareness that all our business activities benefit from the natural environment and impact the natural environment, we are committed to mitigating climate change and protecting the natural environment to preserve biodiversity.

Forest development initiatives

Our employees have volunteered to participate in activities to protect and restore the natural environment. These activities are aimed at training individuals to think independently and take action on the environment.

Contributing to Our Forests and Water Resources

Location: Akasai Valley, Hara, Haga-cho, Shiso-shi, Hyogo prefecture
Start of activity: November 2008

We have been, for example, undertaking management of the headwater forest in the Akasai Valley where originates the Ibo River that passes by our Himeji Plant.



Research on creatures in Akasai River

Contributing to the “Yugawara Myriad Leaves Forest”

Location: Kajiya, Yugawara-machi, Ashigarashimo-gun, Kanagawa prefecture
Start of activity: November 2013

In the headwater forest of upper reaches of the Shinzaki River in Yugawara-machi, we conduct forest improvement and nature observation tours.



Yugawara Myriad Leaves Forest

Japan-Indonesia Friendship Forests of Banten Bay for Biodiversity Preservation

Location: Serang, Banten Province, Republic of Indonesia
Start of activity: September 2018

Nippon Shokubai has launched an initiative aimed at restoring mangrove forests in Banten Province in the Republic of Indonesia, where PT. NIPPON SHOKUBAI INDONESIA is located.



Planting saplings

Japan-China Friendship Forest Development and Global Warming Prevention

Location: Ejin Horo Banner, Inner Mongolia Autonomous Region, China
Start of activity: October 2008

In order to prevent desertification in inland China and regenerate the vast forests that were once there, we have been undertaking tree planting in this area, and observing the growth of the trees.



Trees firmly rooted and grown in the desert area

Note: The forest development initiatives in Japan and China are undertaken in cooperation with NPOs through the Green Fund of the National Land Afforestation Promotion Organization. The forest development initiative in Indonesia is undertaken in cooperation with local NPOs.

Conserving and popularizing the *Nojigiku* chrysanthemum

To protect, conserve, and popularize the endangered *nojigiku* chrysanthemum, the prefectural flower of Hyogo, our Himeji Plant has cultivated 160 varieties of this flower, including foundation stock, in a 2,000-square-meter green yard by the plant. Cultivation began in 1972 and by 1974 the Himeji Plant began distributing seedlings annually in cooperation with the Hyogo prefectural government.



Nojigiku in a conservation garden

Working in Harmony with Local Communities

Believing that establishing a relationship of trust with local community residents is crucial for stable business operation at each plant, we take various opportunities to communicate with them.

● Cleanup campaign

We conduct periodic cleanups of the environs around all our plants as a local beautification initiative.



Cleanup activity

● Sweet potato harvest party

We grow sweet potatoes in the potato fields we have created in the green yard of the Himeji Plant. Every year, we invite neighborhood kindergartners and nursery school children to enjoy harvesting our crop of sweet potatoes. We have been holding this activity since 1971, as it has helped us forge strong ties in the community. In fact, some of the children who harvested potatoes in the past are now employed with us.



Children harvest potatoes

● Dialogue with local communities

Nippon Shokubai participates in the community dialogue undertaken by the JCIA's Responsible Care Committee and introduces the corporate RC initiatives to the participants from neighborhood associations, local governments, NPOs, industry organizations and companies in areas in which our plants are located. Through such communication, we aim to enhance mutual understanding.

In fiscal 2020, to prevent the spread of COVID-19, the event was held in the Himeji area in writing.



Community Dialogue Proceedings

Training the Next Generation

We host and participate in various events to help people become familiar with chemical technologies. We also provide internship opportunities to have work experience through hands-on training. Through initiatives that take advantage of our unique business characteristics, we are contributing to developing the abilities of children who will form the next generation.

● Children's Chemistry Experiment Show

We have been presenting an Experiment Show titled "Superabsorbent Polymer, the Mysterious Powder." The children enjoy experimenting with chemistry and show great interest.



Kawasaki Science Challenge

● Hosting internship trainees

Our Himeji and Kawasaki plants and our Suita Research Center provide internship opportunities for students from technical colleges.



Internship

● Delivery class for junior high schools

We offer a "delivery class" to teach the attractions of our work to junior high school students. To interest students in chemistry and work, the lecturer talked about the pleasure of work and the sense of satisfaction from work.



Delivery class at a junior high school

Production/R&D Site Reports

Himeji Plant

Plant Outline

Plant Manager Yukihiro Matsumoto, Managing Executive Officer
 Location 992-1 Aza-Nishioki, Okinohama, Aboshi-ku, Himeji, Hyogo
 Number of employees 1,240 (including research center)
 Products Acrylic acid, acrylates, maleic anhydride, superabsorbent polymers, resin modifiers, electronic information materials, De-NOx catalysts, dioxins decomposition catalysts, and other products
 TEL +81-79-273-1131
 FAX +81-79-274-3723



Yukihiro Matsumoto, Plant Manager

Fiscal 2020 Results of RC Activities

- Occupational safety and health
- Process safety and disaster prevention
- Environmental protection

One injury with loss of workdays, five injuries without loss of workdays (including contractors)
 Zero Class A and Class B process safety accidents
 Emission of substances subject to the PRTR Law: reduced by 4 tons from the previous fiscal year
 CO₂ emissions intensity: reduced by 15% from the FY2015 level

To support occupational safety and health, as a measure to prevent industrial injuries attributed to human errors, we are working to familiarize ourselves with basic safety behavior: (1) Think before you act; (2) Pointing and calling; and (3) Hold the handrail when stepping on stairs.

For process safety and disaster prevention, we underwent evaluations of safety competency by the Japan Industrial Safety Competency Center, an NPO, from 2019 to 2020, and we received a certain level of evaluation as a petrochemical company. At the same time, some challenges were also identified. We continue to make efforts to improve our safety competency.

On environmental protection, we were able to reduce emissions of substances subject to the PRTR Law by improving our manufacturing processes and equipment management methods. Also, with the introduction of high-efficiency production facilities, we obtained significant achievements in the aspects of energy saving and CO₂ emissions reduction.

At present, under the slogan "Let us establish a robust, next-generation plant by enhancing the resilience of each member of the plant!" as the plant policy, we are conducting RC initiatives. We will continue to promote these initiatives to earn greater confidence from the public as a safe and secure plant.

Flange bolt tightening training

At the Himeji Plant, as a part of safety education for young plant members and contractor operators, a training program aimed at improving knowledge and skills for the flange tightening operation, which used to be performed based only on individual experience, is offered. The program provides lecture courses to teach technical knowledge on flanges and gaskets, and it provides hands-on training by actually using a flange bolt tightening simulator and torque equipment.

With the flange bolt tightening simulator, by measuring axial force with the strain gauge installed in eight bolts, trainees can see easily through the monitor the status of their flange tightening operations (setup, multi-stage tightening/even tightening, required surface pressure, uneven tightening).

Trainees who experienced the simulator gave very positive comments, such as "I have to be careful because I found insufficient setup and uneven tightening," "The adequate tightening torque was more than I expected," and "This experience will be useful for my future operations."

We will continue to conduct training like this for the improvement of skills, thereby working to develop human resources who will support our plant.



Hands-on training

Efforts to avoid human errors

At the Himeji Plant, we are committed to preventing troubles resulting from human errors. Starting from fiscal 2019, we have adopted the concept of "the study of failures" as a new approach to properly identify causes of troubles and to implement and disseminate countermeasures.

The study of failures is a tool for analysis of cause and formulation of countermeasures, based on the idea that there are motivational factors behind every human action and that by analyzing the reasons for such an action, in short, "by listening to excuses to clarify the real cause, let us formulate appropriate measures to prevent recurrence."

In fiscal 2020, under the instruction of a specialist, we held a lecture meeting and three training sessions. At present, using this approach of the study of failures, we are currently analyzing troubles that have actually occurred at our plant, examining effective measures to prevent recurrence, and advancing the measures.



"Study of failures" training session

Kawasaki Plant

Plant Outline

Plant Manager	Yoshihisa Oka, Executive Officer
Location	Chidori Plant 14-1 Chidori-cho, Kawasaki-ku, Kawasaki, Kanagawa Ukishima Plant 10-12 Ukishima-cho, Kawasaki-ku, Kawasaki, Kanagawa
Number of employees	368
Products	Ethylene oxide, ethylene glycol, ethanolamine, secondary alcohol ethoxylates, polymers for concrete admixture, acrylic acid special ester, and other products
TEL	+81-44-288-7366
FAX	+81-44-288-8492



Yoshihisa Oka, Plant Manager

Fiscal 2020 Results of RC Activities

- Occupational safety and health
- Process safety and disaster prevention
- Environmental protection

Two injuries with loss of workdays, four injuries without loss of workdays (including contractors)

Zero Class A process safety accidents, one Class B process safety accident
Implemented measures for energy conservation amounting to 970 kL/year (crude oil equivalent), 1% of total energy consumption at the plant

In terms of occupational safety and health, we had two injuries with loss of workdays (burn, fall) and four injuries without loss of workdays (fall, heatstroke, etc.). We reviewed the work environment and re-educated employees, with the aim of preventing similar problems.

Regarding process safety and disaster prevention, we experienced one Class B process safety accident (leakage). We reviewed the work procedures and improved equipment with the aim of preventing similar problems.

For environmental protection, we implemented measures for energy

conservation, including modifying processes to improve efficiency of energy use. For substances subject to the PRTR Law, we worked to improve the worksite to ensure stable operation for boron while we confirmed the steady emissions reduction effects from modification of equipment for ethylene oxide and dioxan.

We will continue to promote RC initiatives to ensure that our plant remains safe and reliable.

Audit on the status of training for production sections

At the Kawasaki Plant, in accordance with the plant's internal regulations, we audit the training status in each production section twice a year for the purpose of confirming the status of provision of training programs in the department.

In the audit, staff members of the Education & Improvement Activity Center serve as the auditors and check the status of activities of the committee that organizes training activities of each production section. The auditors also check the status of each training program, including process safety training targeting all members of the production sections and rank-based training targeting mainly young operators. Good points and points requiring improvement found are shared with relevant production sections.

Moreover, for young operators who are receiving rank-based training, auditors hold interviews with them and inspect the operation status at their worksites to check the levels of their knowledge and skills of operation.

Through these audits, problems and issues related to our current training activities can be identified, leading to spiraling up of our training system.



Audit



Checking the level of operation skills

Reduction of dioxan emissions

At the Kawasaki Plant, we are working to reduce emissions of chemical substances handled at the plant according to the priority order we have determined. Among such chemical substances, dioxan was designated a hazardous substance under the Water Pollution Prevention Act, and its emissions regulations have been tightened in recent years. For ethylene oxide manufacturers like us, the general effluent standard of 0.5 mg/L or below has been applied since May 2021.

Accordingly, at the Kawasaki Plant, we worked to improve our production equipment, which is the major source of emissions, so that a large portion of dioxan can be concentrated and separated to be incinerated. By improving equipment of other manufacturing facilities, we were able to reduce the emissions to a level below the general effluent standard. We have maintained a stable amount of emissions since then, and we will continue monitoring.



Modified concentration and separation equipment

Production/R&D Site Reports

Suita Research Center

Suita District Outline

Representative Yasutaka Sumida, Director of Innovation & Business Development Division, Member of the Board, Managing Executive Officer

Location 5-8 Nishi Otobi-cho, Suita, Osaka

Number of employees 390

R&D organizations Innovation & Business Development Division, Industrial & Household Chemicals Research Department, New Energy Materials Research Department, Electronics & Imaging Materials Research Department, Process Technology Center, Malonates Business Development Office, Health & Medical Business Development Office, Cosmetics Materials Research Group, DX Promotion Team, IONEL Construction Team, R&D Management Department, General Affairs Suita Department, Responsible Care Suita Department

TEL +81-6-6317-2202

FAX +81-6-6317-1578



Yasutaka Sumida,
Director of Innovation &
Business Development Division

Fiscal 2020 Results of RC Activities

- Occupational safety and health
- Process safety and disaster prevention
- Environmental protection

One injury with loss of workdays, two injuries without loss of workdays*
Zero Class A and Class B process safety accidents
Recycling 100% of waste

* Total number for Suita Research Center and Hirameji Research Center

Regarding occupational safety and health, we had one injury with loss of workdays and two injuries without loss of workdays. All these injuries seemed attributable to lack of risk prediction, and we therefore continued and enhanced our safety activities related to risk prediction to prevent any similar injuries from occurring.

For process safety and disaster prevention, we held training by an external organization for risk management in process development. We

conducted various emergency drills with programs paying attention to preventing the spread of COVID-19.

For environmental protection, we continued to achieve 100% recycling of waste in fiscal 2020. We have also set up a committee for promotion of energy conservation and are working to improve efficiency in energy management.

We will continue to promote RC activities while maintaining a balance with research, with the aim of ensuring safe research activities with no accidents.

Commitment to education

In fiscal 2020, our education/training program was conducted with sufficient measures implemented to prevent spread of COVID-19 infection. Specific measures to prevent infection taken for training sessions at the Suita Research Center include keeping sufficient space between seats of trainees, placing disinfectant at the entrance of each room for trainees to disinfect their hands and fingers, and setting a panel in front of the lecturer. For the workshop-style training, we set partition boards so that trainees can keep distance during discussions.

The research segment conducts systematic education and training on intellectual property and RC. We will continue to conduct such programs.



Panel for the lecturer



Partition boards for workshop

Initiatives to make safety actions a habit

To prevent accidents, it is important to make safety actions a habit. Under this belief, we are engaged in various awareness-raising initiatives. For example, to make it a habit to wear clothes and protective equipment appropriate for operations, we have placed large mirrors and checklist illustrations at places where research staff members frequently pass by so that they can self-check their appearance.

In order to warn of the risk of being unable to use your hands when your balance is lost or of the risk of contact, collision or fall, we have put up slogans such as "Don't put your hands in your pockets," "Don't run! Danger!" and "Be sure to pointing and calling here" with illustrations at entrances, gates and corners of buildings where people frequently pass by. We are thus promoting initiatives to help workers notice hidden risks and make the safety activities to avoid such risks a habit.



Mirror and illustration for appearance check

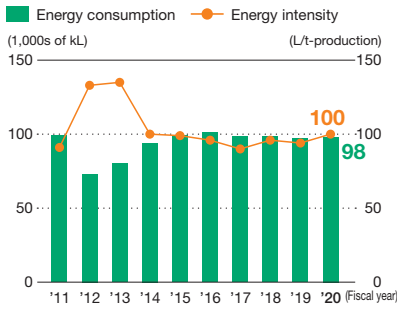


Illustration for prohibiting putting hands in pockets

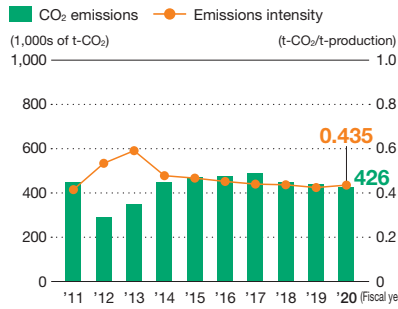
Plant Data

Himeji Plant

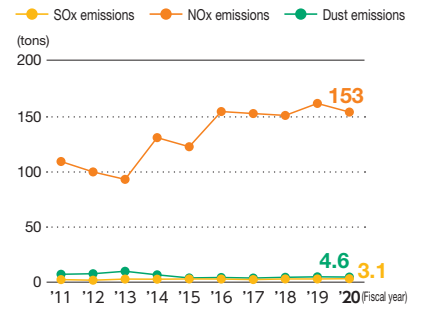
Trends in Energy Consumption and Intensity



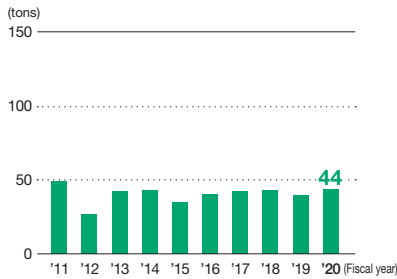
Trends in CO₂ Emissions and Intensity



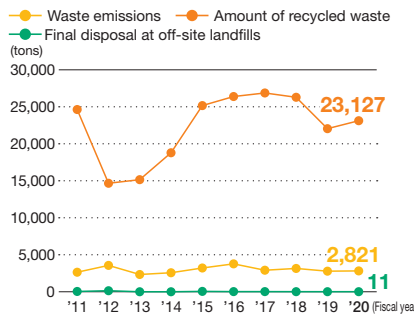
Trends in Emissions of SO_x, NO_x, and Dust



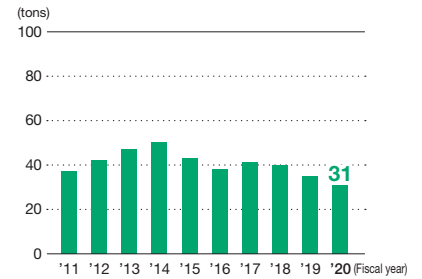
Trend in COD of Wastewater



Trends in Amount of Waste, Recycled Waste, and Waste for Final Off-site Landfill Disposal

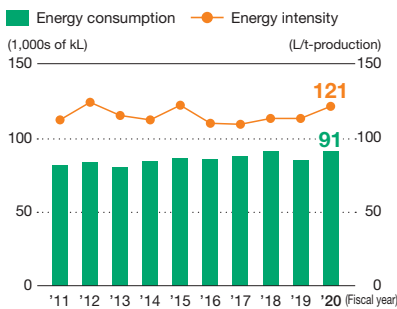


Trend in Emissions of Substances Subject to the PRTR Law

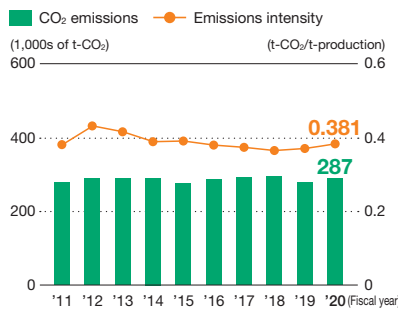


Kawasaki Plant

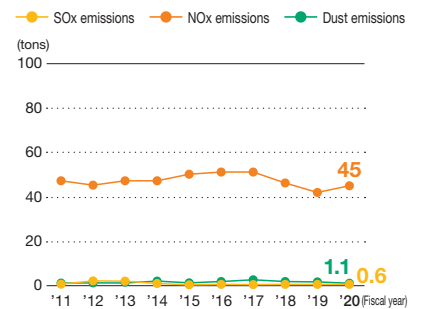
Trends in Energy Consumption and Intensity



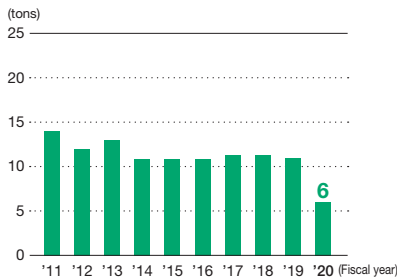
Trends in CO₂ Emissions and Intensity



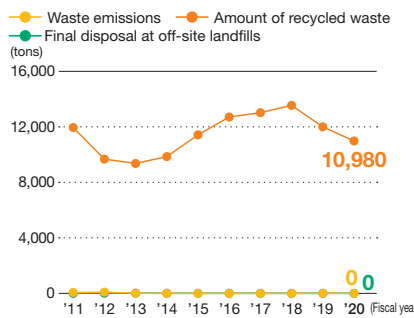
Trends in Emissions of SO_x, NO_x, and Dust



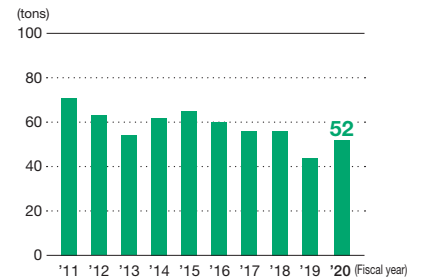
Trend in COD of Wastewater



Trends in Amount of Waste, Recycled Waste, and Waste for Final Off-site Landfill Disposal



Trend in Emissions of Substances Subject to the PRTR Law



Providing Support for Group Companies

In the interests of strengthening group management, we are providing active support for the RC initiatives of our Group companies.

Support for Environment and Safety Activities

RC discussions

The RC Division holds RC discussions to promote and improve RC initiatives for Group companies both inside and outside Japan. In fiscal 2020, because the RC Division could not visit the Group companies due to the COVID-19 pandemic, discussions were held online with six Group companies in Japan and one Group company outside Japan.

In these discussions, we received reports from companies in Japan on the planning and achievements of each company's RC initiatives and reports from the company outside Japan on the planning and achievements of its RC initiatives, as well as the status of operation of its management systems. We provided them with advice and support.



RC discussion with Nisshoku Chemical Industry (Zhangjiagang) Co., Ltd.

Environmental and safety audits

We conduct environmental and safety audits at our Group companies in Japan every year to strengthen our environmental safety management structure and promote continuous system improvements.

In fiscal 2020, the audits were conducted online. We were able to confirm compliance with legal requirements as well as the status of the establishment and operation of necessary standards related to safety and the environment. We also confirmed that their environment and safety management systems are properly implemented.



Environmental and safety audit of Nippon Chemicals Co., Ltd.

Environment and safety exchange meeting

Every year, persons in charge of environment and safety at our Group companies in Japan gather at a company in charge to hold an environment and safety exchange meeting. However, the meeting for fiscal 2020 was canceled due to the impact of COVID-19.

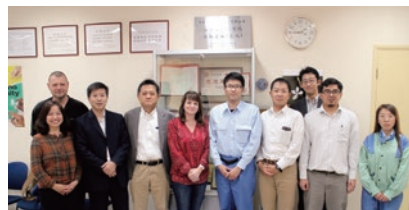
Support for Quality Activities

Support for quality assurance initiatives

For Group companies in Japan, in fiscal 2020, we continued to provide various advices and supports on their quality activities and quality issues through the quality roundtable meetings.

For SAP manufacturing sites of Group companies outside Japan, to ensure high quality at the same level at our all sites for our core businesses, we have a quality meeting every year with the members in charge of quality of each site.

In fiscal 2020, the meeting was held online and in two groups in consideration of the time difference. We have been holding a periodic meeting with each site and work to enhance the quality-related database for overseas sites, with the aim of closely supporting the Group companies.



Quality meeting at Nisshoku Chemical Industry (Zhangjiagang) Co., Ltd. (in 2018)

Quality audits

Quality audits for the Group companies in Japan for fiscal 2020 were conducted online, focusing on products that have caused troubles in the past, to check the reliability of inspection data and the effectiveness of preventive actions against recurrence. Opportunities for improvement found in the audits were shared within the Group companies and reflected in their initiatives for improvement.

For Group companies outside Japan, internal audits of SAP manufacturing sites were conducted online in fiscal 2020. We asked the person in charge of quality at each local site ("Genba") to take photos of the site in advance, and we used the photos for checking the site. For Sino-Japan Chemical Co., Ltd., we checked how they responded to quality troubles through online meetings and continued with providing close support.



Quality audit of Nisshoku Techno Fine Chemical Co., Ltd.

Quality exchange meeting

We have a quality exchange meeting with Group companies in Japan in turn every year. However, it was canceled fiscal 2020 due to COVID-19. Meanwhile, there was one company introduced some good examples that was presented at the quality exchange meeting as the "initiatives to activate internal audits" in fiscal 2019, when the quality roundtable was held by online meeting in fiscal 2020. We are planning to resume the quality exchange meetings at the right timing.

Initiatives of Group Companies

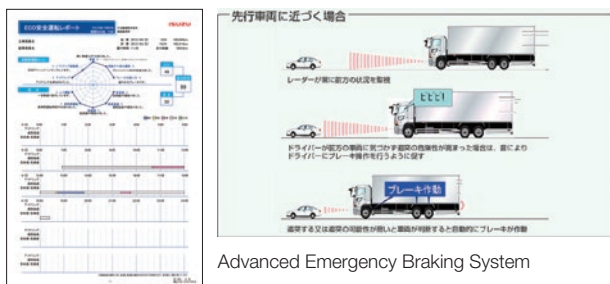
Group Companies in Japan

Nisshoku Butsuryu Co., Ltd.

Principal business | Logistics of chemicals

The Nisshoku Butsuryu Group positions “providing environment-friendly, safe, and high-quality logistics services for chemicals and contributing to society through its RC initiatives” as its key management policy. Under this policy, we have been working on the reduction of GHG emissions as an initiative to reduce environmental impacts and promoting risk prediction as an initiative to achieve zero accidents and injuries. We also promote proper operation of advanced operation information systems and the introduction of vehicles equipped with Advanced Emergency Braking System as priority tasks.

In fiscal 2020, we focused on prevention of environmental disasters and accidents, promotion of energy saving and resources conservation, prevention of accidents with vehicle equipment, prevention of troubles in transportation/handling of chemicals, and promotion of white logistics, as priority tasks.



Advanced Emergency Braking System

“Mimamori-kun” advanced operation information system

Interview

Reducing the risk of contact with harmful chemical solution after loading

Upon completion of loading of products on a tanker, the products inside the loading pipes and flexible hoses are pressed with an inert gas to the tanker side. But it is impossible to eliminate all the remaining pressure or liquid. So we release the pressure before detaching the flexible hose to remove the liquid.

Before improvement, we removed liquid by releasing pressure from the downward nozzle of the loading pipe. This way, however, liquid remaining in the area between the pipe and the nozzle cock may spout out when the cock is opened. The operation was therefore associated with the high risk of contact. So, we used the air removal nozzle set upward, which enabled us to operate with no liquid remaining. By extending the nozzle pipe to the ground, we were able to avoid the operation near our faces, reducing the risk of contact with chemical solution.

As we were able to nearly eliminate the remaining liquid, the work for disposal of remaining liquid was reduced.

This is just an example. We will continue to proactively promote improvement activities in a safer and more environment-friendly manner.



Daisuke Sasaki
Subsection Chief (Left)
Mikiya Morinaka
Cargo Handling Subsection
Bulk Handling Section
Yard Operation Department
Himeji
Nisshoku Butsuryu Co., Ltd.

NIPPON POLYMER INDUSTRIES CO., LTD.

Principal business | Manufacture and sale of acrylic resins

Nippon Polymer Industries updated its outdoor storage tank for styrene monomer in October 2020. In line with this update, taking into consideration the easily polymerizing characteristic of styrene, we reviewed the gas phase piping structure and various pressure set values and enhanced the inner pressure monitoring system so that the tank started operation in a safer manner than before. We also updated the foam extinguishing pumps and foam extinguishing chemicals as a major project related to disaster prevention.

In fiscal 2020, due to the impact of COVID-19, the joint emergency drill with a public fire department was canceled, and it was difficult to participate in external seminars. However, we focused on education and training available inside the company, such as a tabletop emergency drill, training on how to use fire extinguishers, and a program on how to avoid human errors.

For environmental protection, we issued the “Environment News” under the initiative of the environmental management committee four times in total, with the aim of raising the environmental awareness inside the company.

We will continue to work to increase operational safety and make company-wide efforts in promoting RC initiatives.



Updating styrene tank

Updating foam extinguishing pump

NIPPOH CHEMICALS CO., LTD.

Principal business | Manufacture and sale of iodine, iodine compounds, raw materials for pharmaceuticals and pesticides and natural gas

In fiscal 2020, despite the company-wide efforts to promote RC initiatives and foster safety culture, Nippon Chemicals had two injuries with loss of workdays. Taking seriously the fact that the risk hidden in the operations we have long conducted emerged, we had each department of the plant conduct comprehensive inspections and share the results. We are advancing countermeasures to prevent industrial injuries from occurring again.

In terms of process safety and disaster prevention, as a result of thoroughly implementing inspection and management of facilities and devices and enhancing patrols, we achieved zero facility accidents. We repeatedly hold exercises to respond to emergencies, including natural disasters.

For chemical safety, we organized a new chemical safety committee, with the aim of reinforcing the management system and enhancing education.

For quality, as a result of the efforts by each department to build quality in processes, we have achieved a record of zero serious quality complaints since 2003.

We will continue to promote RC initiatives, thereby sharing the “safety first” value and aiming to achieve no accidents and injuries.



Workshop on laws



On-site inspection of industrial injury (by RC Promotion Committee)

Initiatives of Group Companies

Group Companies in Japan

NISSHOKU TECHNO FINE CHEMICAL CO., LTD.

Principal business | Manufacture and sale of (meth)acrylic acid derivatives and photo/electro chemicals

Nisshoku Techno Fine Chemical has focused efforts on preventing industrial injuries. In 2020, however, we had one injury with loss of workdays. Since this injury is attributable to handling of organic solution in a laboratory, we will install local ventilation equipment besides the existing drafts, with the aim of improving the working environment.

As an initiative to raise safety awareness, we set priority issues for each department and conduct activities for them. In fiscal 2021, we will continue with the "Pointing and Calling" initiative launched in fiscal 2020 to ensure further habituation.

The company undertook environmental protection efforts with the objective of reducing intensities for amounts of waste generated, emissions of substances subject to the PRTR Law and energy use compared to fiscal 2019. Unfortunately, partly due to changes in production conditions in line with the spread of COVID-19, we were not able to make sufficient achievements.

For process safety and disaster prevention, in addition to the annual comprehensive emergency drills, the company conducted emergency drills at each of its workplaces. But along with the spread of COVID-19, we had to conduct the drills at a reduced scale.

In fiscal 2021, we will continue to conduct our safety activities and disaster prevention activities while working to prevent the spread of COVID-19.



Safety activities poster



Comprehensive emergency drill

CHUGOKU KAKO CO., LTD.

Principal business | Manufacture and sale of adhesive-processed products and fine sphere particles

In fiscal 2020, due to the impact of COVID-19, Chugoku Kako paid particular attention to sanitation. We held lectures by our industrial physicians, working to ensure wearing of masks and sanitizing of hands and fingers, with the aim of preventing the spread of infection.

Regarding occupational safety, we had one injury without loss of workdays. An operator had his finger caught while packing. We will re-educate employees on the importance of calling when working in a group and making sure to think before acting, thereby preventing similar accidents from occurring again.

To further promote the 5S Campaign, we increased the frequency of cleaning the manufacturing site and called for collecting trash even during patrolling so as to make collecting trash a habit. At the administrative building, we cleaned the building after the lunch break every day for the beautification of the entire plant.

As a new initiative, improvement and proposal activity "Chugoku Kako Improvement ACTION 2020" kicked off. Aiming for revitalization, human resources development, and improvement of profits of the workplace, we will make continuous efforts to improve the working environment and work processes.



Patrol by industrial physician

NIPPON NYUKAZAI CO., LTD.

Principal business | Manufacture and sale of surfactant and other chemicals

In fiscal 2020, Nippon Nyukazai proceeded with the RC activities of the 4th Medium-term RC Promotion Plan (fiscal 2017-2020) in its final year.

Regarding operational safety and health, the company implemented measures to prevent the spread of COVID-19, such as installing thermography cameras and infrared thermometers, thereby enhancing sanitary and health management.

For quality, in reference to information presented at the Nippon Shokubai Group quality exchange meeting, we newly conducted joint internal audits for ISO 9001 and ISO 14001. The synergy effect of seeing from the two perspectives of quality and environment has further enhanced the audit.

For environmental protection, we have been working on reducing emissions of ethylene oxide in the air. At the Kashima Plant, we achieved a reduction of approximately 5% compared to the fiscal 2019 levels. Also, we optimized operational conditions of a detoxifying facility, which led to reduction of the amount of waste water.

Regarding process safety and disaster prevention, to enhance preparedness for natural disasters, we set new standards for typhoons, heavy snow and other severe conditions. According to the new standards, we will thoroughly implement safety measures against natural disasters and thereby ensure safety of the plant.

The company will continue to work to make its operations safe and to enhance its RC efforts.



Joint internal audit for ISO 9001 and ISO 14001

TOKYO FINE CHEMICAL CO., LTD.

Principal business | Manufacture and sale of disinfectants for industrial use, brine, antifouling agents, stabilizers of vinyl chloride resins, etc.

In fiscal 2020, Tokyo Fine Chemical continued to implement safety and health initiatives under the Corporate Credo "Safety takes priority over production," and we were able to achieve zero industrial injuries. We will advance our efforts toward the objective of continuing to achieve zero injuries through implementing the "hiyari hatto" near miss and KY activities, as well as risk assessment of dangerous work.

Regarding environmental protection, we have continuously worked on reduction of waste and promotion of recycling through sorting of waste. As a specific initiative for these efforts, we began to sort PP bands, stretch films and foamed polystyrene, which are generated as waste from the plant. A part of the sorted waste can be recycled, and this initiative contributes to reduction of cost for disposal. At present, we are working on reduction and recycling of waste plastic pallets and plastic containers.

We will continue to make company-wide efforts in promoting RC initiatives and work to increase operational safety.



Place for waste storage

Group Companies outside Japan

PT. NIPPON SHOKUBAI INDONESIA

Principal business | Manufacture and sale of acrylic acid, acrylic esters, and superabsorbent polymers

Process Safety Management has recently been gaining attention in the petrochemical industry. PT. Nippon Shokubai Indonesia (NSI) established Process Safety Management Organization back in 2019, with entirely HAZOP trained members. Currently, a risk assessment is underway to conduct HAZOP at the Acrylates Plant.

Indonesia, just like other parts of the world, is also suffering from the COVID-19 pandemic. We established a Task Committee consisting of all directors and general managers and created a basic guideline and a BCP manual that reflected present situations. We also introduced a task force comprised of the representatives of each department to ensure the effective implementation of COVID-19 precautions.

Considering the circumstances, we donated personal protective equipment (PPE) and disinfectant to local residents and the city of Cilegon. We hope to continue helping the local communities to prevent the spread of COVID-19.



NSI Basic Guideline for COVID-19 Prevention



Donation of PPE to the local government

Interview

Adding a Handhole to the Process Piping

Accumulation of soot inside the process piping may cause fire accidents. For this reason, the pipes are periodically cleaned with high-pressure water to reduce the soot accumulation.

To further improve the process safety, we have installed an additional handhole in the section of the piping where we could not directly check from the existing manholes. This additional handhole enables periodical inspections and cleaning to better reduce the soot accumulation and ultimately make safe operations possible.



Pranky Condro Nugroho
Senior Operator
AA Production Department,
PT. NIPPON SHOKUBAI
INDONESIA

NIPPON SHOKUBAI EUROPE N.V. (Belgium)

Principal business | Manufacture and sale of acrylic acid and superabsorbent polymers

As a pioneer within the Group, Nippon Shokubai Europe is very proud to take the first steps towards producing BIO Superabsorbent Polymers that utilize renewable materials.

We are convinced that further expansion of our business portfolio with eco-friendly products will help achieve the Group's sustainable growth, as today's customers are increasingly interested in eco-friendly materials.

To offer own-produced BIO Superabsorbent Polymers made from sustainable materials, the Antwerp plant in Belgium needed to be certified. As a result of our intensive preparations, we successfully obtained the certification through an external audit organization.



Audit by an external organization

NISSHOKU CHEMICAL INDUSTRY (ZHANGJIAGANG) CO., LTD. (China)

Principal business | Development, manufacture and sale of superabsorbent polymers and polymers for concrete admixture

The entire workforce was divided into 13 teams to join "Near-Miss & Kaizen Activity 2020." A total of 181 suggestions – 44 of which were related to safety – were submitted. Nisshoku Chemical Industry (Zhangjiagang) semiannually honors a team with the most suggestions submitted per capita.

We also conduct emergency drills twice a year in collaboration with the local fire department and emergency response center to improve employees' emergency response capabilities.

In November, we conducted a first-aid training with an outside professional instructor to enhance employees' first aid skills.



First-aid training



Emergency drill

Initiatives of Group Companies

Group Companies outside Japan

Nippon Shokubai America Industries, Inc.

Principal business | Manufacture and sale of superabsorbent polymers, polymers for concrete admixture, water soluble polymers and acrylic emulsions

In 2020, Nippon Shokubai America Industries, Inc. (NAII) continued to make great strides towards assuring employee safety and environmental protection at both of its US-based facilities.

We have a tradition of holding slogan contests every year to strengthen employee awareness during shutdown maintenances. The winning slogan for 2020 was: "Safety Protects People and Quality Protects Jobs!" which was appreciated for effectively communicating the importance of safety and quality during day-to-day operations.

We also improved onsite safety for employees and contractors by conducting hazardous materials training and mock drills.

Additional safety improvements were achieved by installing "blue forklift safety lights" that give pedestrians and other forklift drivers advanced notice when a forklift is approaching.

Notable achievements for 2020 include the Chattanooga facility celebrating 10 years without a lost-time injury while also achieving 5 years without a recordable injury. The Houston facility reached its 4th consecutive year with no Air Permit deviations and was successful in further reducing landfill waste disposal.



Emergency Response Team members participate in Hazardous Materials Training



Forklift fitted with blue light to give advanced notice when a forklift is approaching



Winner of NAII's Safety and Quality Slogan Contest

SINGAPORE ACRYLIC PTE LTD

Principal business | Manufacture and sale of crude acrylic acid

Although Singapore has implemented COVID-19 circuit breaker control measures since April 2020, Singapore Acrylic was spared from shutdown due to the significance of its business.

We have implemented various safety measures to continue the operation, including keeping employee temperature logs, enforcing mask-wearing and social distancing, and encouraging good hygiene practices such as handwashing. In addition, contact tracing and recording of entry/exit logs via the government-initiated app is mandated. We strive to ensure the safe operation of our plants while adhering to the strict government COVID-19 control measures.

SMAG (a conglomerate of Japanese companies in the same complex) jointly launched activities to encourage the continued compliance of safety regulations and good safety practices even during the pandemic. Online safety message video, safety slogan competition, safety quizzes, and distribution of SMAG Safety Handbook were among their efforts to increase employee safety awareness.



SMAG Safety Handbook



The winner of the SMAG safety slogan competition

SINO-JAPAN CHEMICAL CO., LTD. (Taiwan)

Principal business | Manufacture and sale of surfactant and other chemicals

Fire accidents in Lingyuan Industrial Zone, where our plant is located, tend to occur at night. Sino-Japan Chemical assumed that the lack of lighting might hinder rescue activities and evacuation in the event of a fire at our plant during nighttime.

Thus, we conducted our first emergency response drill to improve preparedness against fires at night.

In addition, we beefed up both structural and non-structural measures: We added lighting equipment, including explosion-proof emergency lights in the process area in preparation for power outages and explosion-proof lights for rescue equipment, to prevent the spread of fire caused by low visibility and enhance rescue efficiency.

For the non-structural measures, we focused on evacuation and rescue operations. Employees in charge of instructing evacuation routes were strategically allocated to critical locations such as the entry/exit of each Safety Zone in an effort to shorten the evacuation time. The team responsible for notifying relevant parties strengthened communication with the neighboring factories, requesting them to provide emergency lights and rescue equipment, to improve rescue efficiency.



On the day of the training



Newly installed lighting equipment

About this RC Report 2021

This RC Report 2021 was prepared to explain in more detail our RC initiatives reported in the **TechnoAmenity** Report, which we began publishing in 2019.

In preparing this Report, we have focused on increasing both the readability and ease of understanding for the benefit of our stakeholders.

TechnoAmenity Report 2021 presents our initiatives toward achieving the Nippon Shokubai Group Mission “**TechnoAmenity** — Providing affluence and comfort to people and society, with our unique technology,” covering financial information such as our business performance, business plans and results, as well as our sustainability initiatives. We would recommend that you read the Report along with this RC Report 2021.

Scope of This Report

Organization (Unless otherwise stated, all provided data refers solely to Nippon Shokubai Co., Ltd.)

NIPPON SHOKUBAI CO., LTD.

Osaka Office
Tokyo Office
Himeji Plant
Kawasaki Plant
Suita Research Center
Himeji Research Center

Group Companies in Japan

NIPPOH CHEMICALS CO., LTD.
TOKYO FINE CHEMICAL CO., LTD.
CHUGOKU KAKO CO., LTD.
NIPPON POLYMER INDUSTRIES CO., LTD.
NISSHOKU TECHNO FINE CHEMICAL CO., LTD.
NIPPON NYUKAZAI CO., LTD.
Nisshoku Butsuryu Co., Ltd.

Group Companies outside Japan

Nippon Shokubai America Industries, Inc.
PT. NIPPON SHOKUBAI INDONESIA
NIPPON SHOKUBAI EUROPE N.V.
SINGAPORE ACRYLIC PTE LTD
NISSHOKU CHEMICAL INDUSTRY (ZHANGJIAGANG) CO., LTD.
SINO-JAPAN CHEMICAL CO., LTD.

Reporting period: April 1, 2020–March 31, 2021
Some topics in and after April 2021 are also contained in the report.

Publication date: November 2021

Contact Information

NIPPON SHOKUBAI CO., LTD.
Responsible Care Division
Kogin Bldg., 4-1-1 Koraihashi, Chuo-ku, Osaka 541-0043, Japan
TEL: +81-6-6223-9164 FAX: +81-6-6202-1766
Website: <https://www.shokubai.co.jp/en/>

TechnoAmenity

Providing affluence and comfort to people and society,
with our unique technology.

NIPPON SHOKUBAI CO., LTD.

Osaka Office

Kogin Bldg., 4-1-1 Koraibashi, Chuo-ku, Osaka
541-0043, Japan
TEL : +81-6-6223-9111 FAX : +81-6-6201-3716

Tokyo Office

Hibiya Dai Bldg., 1-2-2 Uchisaiwai-cho, Chiyoda-ku, Tokyo
100-0011, Japan
TEL : +81-3-3506-7475 FAX : +81-3-3506-7598

Website: <https://www.shokubai.co.jp/en/>



Our company logo
represents the spirit of
TechnoAmenity

- Hexagon ▶ One of the fundamental symbols used in chemistry
- Cosmo yellow ▶ Represents the hidden energy of the sun
- Earth green ▶ Represents the life-supporting nature of the earth
- Horizon between two colors ▶ Represents the future we always seek