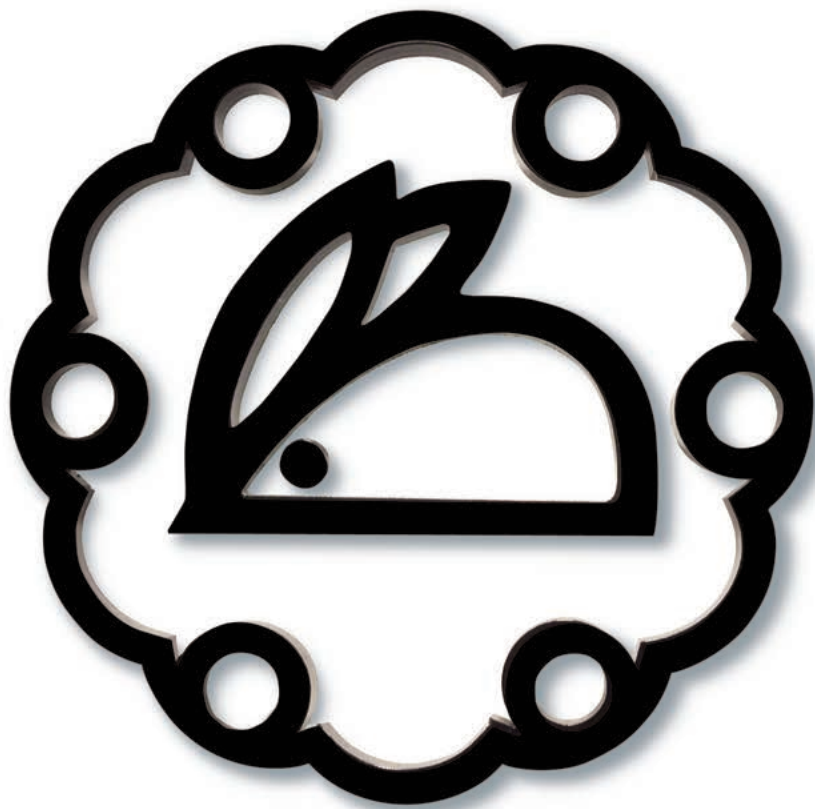


Nippon Soda Group

CSR Report 2018

Corporate Social Responsibility Report



NIPPON SODA CO.,LTD.

NISSO

To Create New Value through the Power of to Society through Products as a Chemical

Priority issues addressed by the Nippon Soda Group

- Agriculture** — Contribution to ensuring food safety and security and sustainable agriculture using agrochemicals
- Health care** — Contribution to ensuring health for all people through pharmaceuticals
- Environment** — Contribution to ensuring the environmentally sound recycling of resources using chemistry (technical competence)
- Contribution to sustainable plant protection
- Information** — Contribution to the development of information appliances friendly to the environment and people by supplying high-function materials

SUSTAINABLE DEVELOPMENT GOALS 17 GOALS TO TRANSFORM OUR WORLD



Chemistry and Contribute Group Company

Management philosophy

With its primary emphasis on sound and transparent business management in compliance with laws and regulations, Nippon Soda contributes to social development by providing superior products through “chemistry,” meets expectations from stakeholders, including shareholders, business partners, employees and local communities, and promotes environmentally conscious business practices and activities.

Basic principles of management

Under the philosophy above, Nippon Soda is committed to growing into a technology-oriented group that develops high value-added products by making best use of its proprietary technologies and expands its business internationally with a focus on chemistry. We also strive to enhance the Group’s revenue by developing our businesses with a focus on the chemicals industry in such areas as commercial distribution, logistics and engineering.

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Scope of the Report

This report summarizes CSR and RC activities of Nippon Soda Co., Ltd. and major Nippon Soda Group companies (three manufacturing group companies: Nisso Metallochemical Co., Ltd., Nisso Fine Co., Ltd. and Shinfuji Kaseiyaku Co., Ltd.; and five non-manufacturing group companies: Nisso Shoji Co., Ltd., Sanwa Soko Co., Ltd., Nisso Engineering Co., Ltd., Nisso Construction Co., Ltd. and Nisso Green Co., Ltd.).

This report provides the actual results for fiscal 2018 (April 1, 2017 to March 31, 2018). The data on occupational accidents presented in this report are based on the actual results from January 1, 2017 to December 31, 2017. The financial data covers 18 consolidated subsidiaries and five equity-method affiliates.

Guidelines Used as References

Global Reporting Initiative: Global Reporting Initiative (GRI) Standards
The Japanese Ministry of the Environment’s Environmental Reporting Guidelines 2012
Japanese Standards Association ISO 26000: 2010 Guidance on Social Responsibility

Publication Date

September 2018
(Next report scheduled to be issued in September 2019)

Responsible Care

Responsible Care (RC) was launched in 1985 in Canada. The International Council of Chemical Associations (ICCA) was established in 1989 and, as of January 2017, more than 44 countries and regions around the world participate in the Responsible Care initiative.

International Standards Certifications

- ISO 14001 is the international standard of the International Organization for Standardization (ISO) for environmental management systems (EMS). It specifies requirements for an environmental management system.
- ISO 9001 is the international standard of the International Organization for Standardization (ISO) for quality management systems (QMS). It specifies requirements to enhance customer satisfaction, including quality assurance.
- OHSAS 18001, the abbreviation of Occupational Health and Safety Assessment Series 18001, is the international standard for occupational safety and health management systems (OSHMS). The objective of OHSAS 18001 is to help companies reduce risks and the recurrence of problems by

identifying risks related to occupational safety and employee hygiene, developing preventive measures, and implementing such measures (achieving continuous improvement).

- ISO 26000 is an international standard on social responsibility for organizations released by the International Organization for Standardization on November 1, 2010.

[Disclaimer] Our company’s plans, prospects, strategies and other information contained in this report, excluding past performances and facts, have been prepared based on currently available information, hypotheses and judgments and are subject to various risks and uncertainties. Our predictions can be affected by various factors, such as future economic situations and industry trends, and may turn out to be incorrect.

Editorial Policy

This report is designed to provide information on the Nippon Soda Group’s basic concept of CSR and related activities in an easy-to-understand manner, mainly in connection with three core issues: “CSR activities to improve corporate value,” “CSR activities to protect corporate value” and “social activities.”

As of this fiscal year, we have started publishing detailed information that supplements this report on our website. The results of the Nippon Soda Group’s CSR activities are thus reported both in a booklet and via the website. With a focus on transparency and accountability, we designed this report to help readers more easily understand the Nippon Soda Group’s CSR activities.





Fulfilling the Dreams of the Next Generation

As a chemical company that helps realize the dreams of the next generation, Nippon Soda will continue to contribute to creating a sustainable society through collaborative efforts with stakeholders.

Nippon Soda's CSR management

We have entered the second year of the medium-term business plan that covers the period until 2020, the year that marks the 100th anniversary of the company's foundation. Under the themes of "speed and reform," our efforts have been steadily focused on expanding existing businesses, creating new businesses, promoting development, and enhancing the Group's business foundation.

Nippon Soda regards changes in society, the economy and the environment as business opportunities, and focuses on solving social issues and increasing corporate value through products and solutions in the domains of agriculture, health care, the environment and information. Activities to "further develop CSR management," one of the goals of the medium-term business plan, are essential for Nippon Soda to ensure its sustainable growth and to build a solid business foundation.

CSR is essential to the continued existence of our company. In our CSR management, a major emphasis is placed on the following three categories of activities (refer to page 7): "CSR activities to improve corporate value," which aim to contribute to society by providing products that maximize our positive impact as a chemical company; "CSR activities to protect corporate value," which aim to minimize negative impacts on safety, the environment and quality caused in relation to our business activities dealing with different chemical substances; and "social activities" to maintain harmonious relationships with stakeholders. We are promoting efforts to further improve these activities in line with our management strategy that aims to improve our sustainable corporate value.

As a materiality issue¹ of our CSR management, we aim to achieve the Sustainable Development Goals (SDGs), which were adopted by the United Nations in September 2016. We will continue our efforts to produce innovations that take advantage of features unique to Nippon Soda in a speedy manner. We will also continue our discussions on efforts to achieve certain SDGs so that we will be able to improve our presence in the global market as a chemical company that contributes to achieving a sustainable society.

To strengthen the business management foundation that supports the sustainable improvement of the corporate value and sustainable growth of the company, we will continue to promote highly sound and transparent corporate activities in compliance with laws, regulations and corporate ethics based on the Corporate Governance Code.

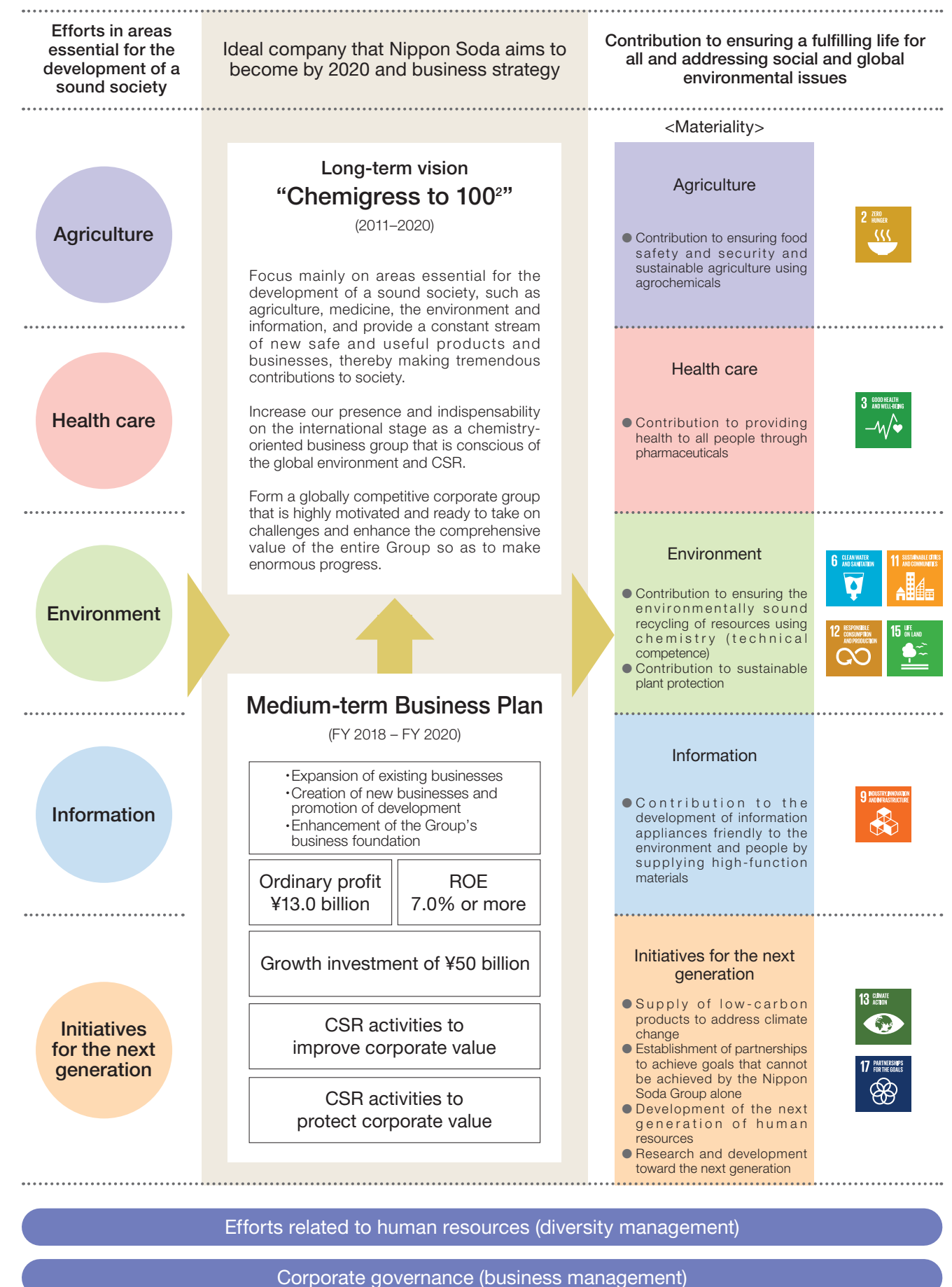
Promotion of diversity

A corporate group that values diversity does generate new innovations and increase its global competitiveness. Based on this idea, we consider the promotion of diversity to be an important management strategy. We will place an increased emphasis on a work style reform unique to Nippon Soda by helping employees play an active role passionately and willingly without fear of failure and creating an organizational climate where all employees can maximize their individual abilities.

Nippon Soda will continue to create innovations that fulfill the dreams of the next generation and contribute to achieving a sustainable society as a chemical company sought after by society.

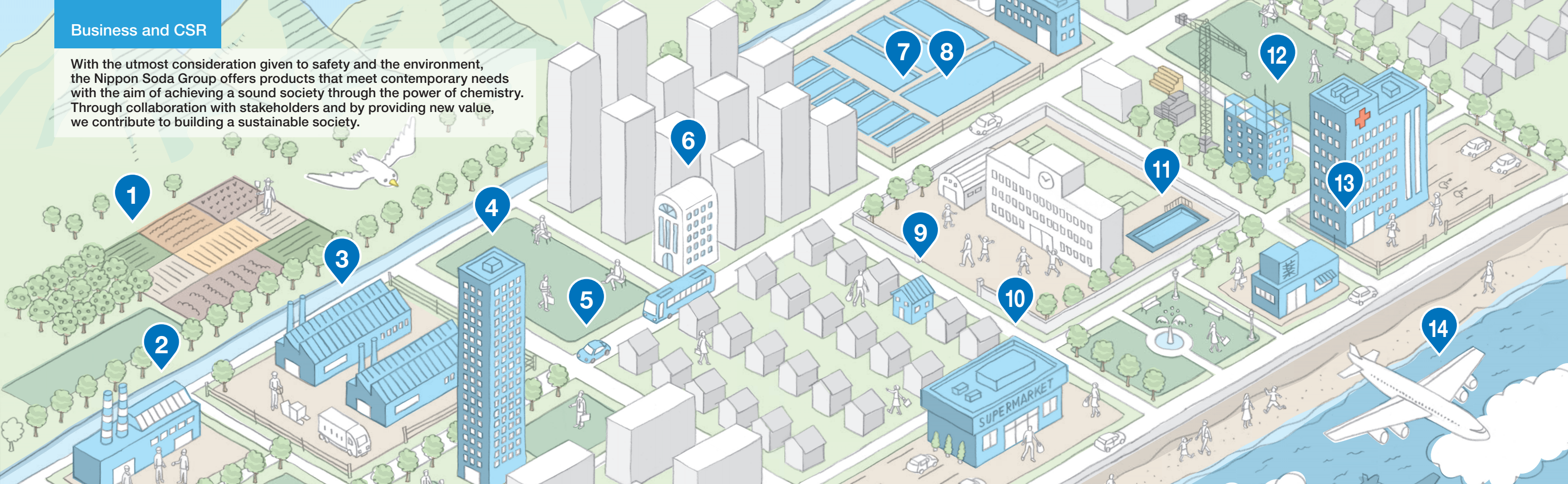
1. Priority issues that should be addressed

The Nippon Soda Group further develops CSR management and, as a chemical group, creates new value through the power of chemistry and contributes to achieving a sustainable society through products.

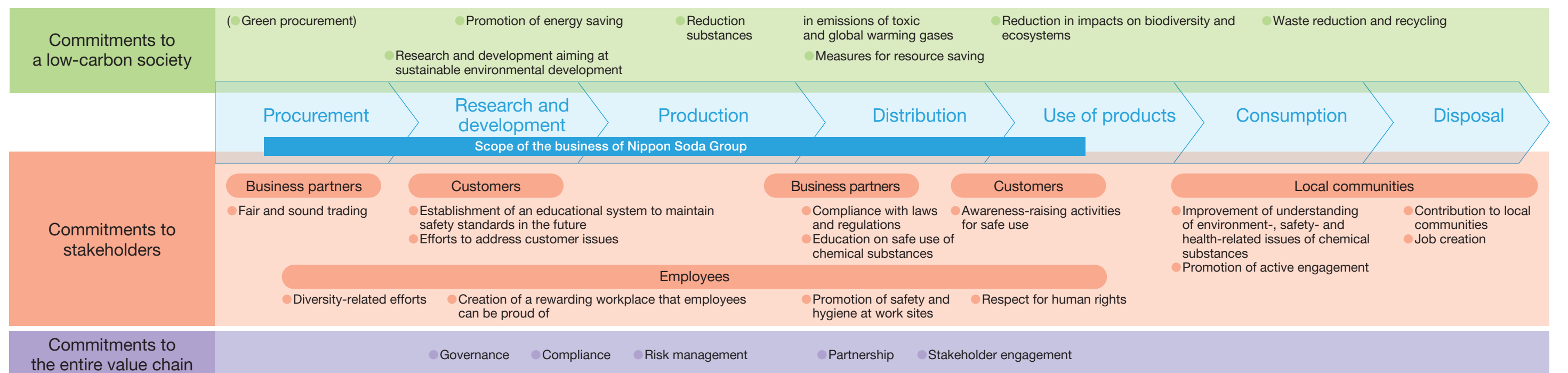


2. "Chemigress" in "Chemigress to 100" was coined by combining the words "chemical" and "progress." "Chemigress to 100" conveys our determination to contribute to creating a sound society through the chemistry-oriented business of our group toward the 100th anniversary.

With the utmost consideration given to safety and the environment, the Nippon Soda Group offers products that meet contemporary needs with the aim of achieving a sound society through the power of chemistry. Through collaboration with stakeholders and by providing new value, we contribute to building a sustainable society.



1 Farms Fungicides Tiophanle-methyl, Agrocare, Masterpiece, Cyflufenamid, Triflumizole Insecticides and acaricides Acetumiprid, Tebufenozide, Sethoxydim Herbicides	4 Offices Smartphones Semiconductors NISSO-PB VP-Polymer (Photo resist base resin) NISOCURE Caustic soda TAKE-ONE Paper Toilets	7 Water purification plants Tap water NISSO HI CHLON Sodium hypochlorite	11 Schools Swimming pools NISSO HI CHLON
2 Waste treatment facilities Fly ash from waste incineration PCB treatment HIDION Sodium dispersion (SD) agents	5 Automobiles Seats Oil seals Phosphorus oxychloride TODI (Specialized polyurethane raw materials)	8 Sewage treatment plants Sewage NISSO HI CHLON Nisso Merusan	12 Building materials Lumber Adhesive agents, paints, sealants Millicut Biocut NISSO-PB Organotitanium Potassium cyanide, Soda cyanide Plating
3 Plants Industrial chemicals Caustic soda, Hydrochloric acid, etc.	6 Exterior walls Coating BISTRATOR	9 Houses LCD television Laundry detergent Battery Kitchen NISSO-PB Potassium carbonate Caustic soda, Caustic potash Slime removing agents	13 Hospitals/drugstores Medicines NISSO-HPC (hydroxypropyl cellulose) NISSO DAMN (diaminomaleonitrile)
		10 Supermarkets Food packages Receipt/label TITA BOND D-8, D-90	14 Airplanes Engine parts Polysilane



The Nippon Soda Group recognizes its impact on society and the environment and its social responsibility as a chemical manufacturer. We ensure a steady commitment to materiality so as to contribute to creating a sustainable society and environment.

Nippon Soda's CSR and its basic concept

The Nippon Soda Group is working to improve its corporate value by creating new value through the power of chemistry and contributing to society through products as a chemical group. In this way, we strive to contribute to the enrichment of people's lives, and to resolve the problems affecting our society and our global environment. To achieve this, we are advancing the following initiatives.

1. CSR activities to protect corporate value¹

Pursuit of economic performance, and activities to ensure safety, environmental friendliness, quality assurance, etc.

2. CSR activities to improve corporate value²

Making contributions through our business toward resolving social issues so as to help achieve the development of a sustainable society

3. Social activities

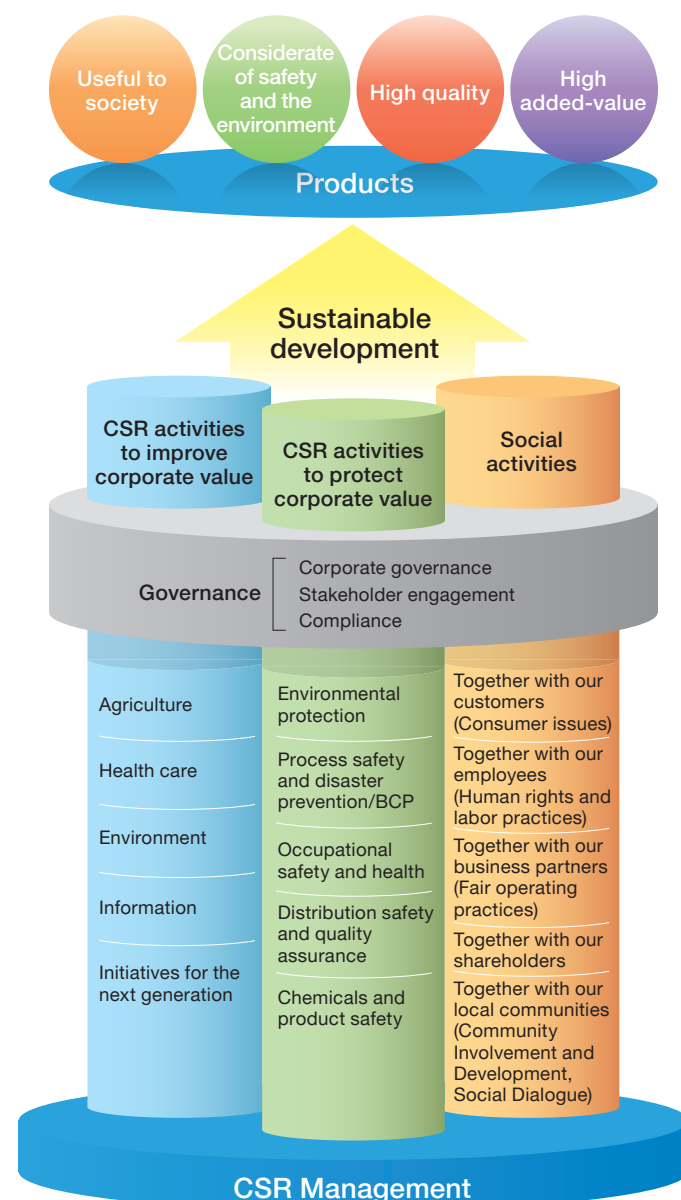
Social contributions

4. Governance

Corporate governance

We are advancing our CSR activities with consideration for the interests of all of our different stakeholders, including shareholders, employees, business partners and local communities. Through these efforts, the Group seeks to play a significant role in realizing sustainable development of our society. At the same time, the Nippon Soda Group is continuing its own development as sought-after chemical group that meets 21st-century social needs by consistently offering creative and unique technologies and products that will contribute to the creation of an enriching society that is able to realize the dreams of the next generation.

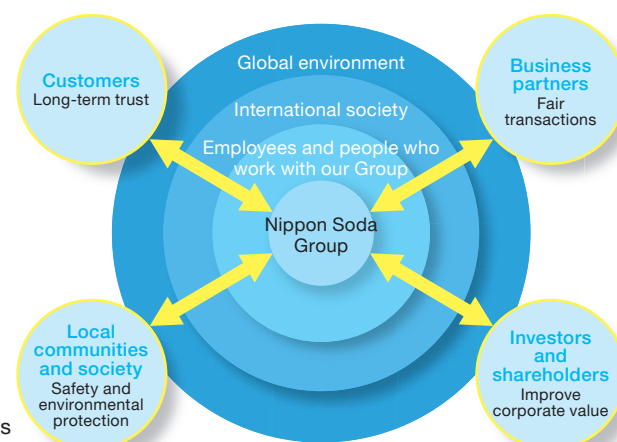
1. CSR activities to protect corporate value
Nippon Soda's "protective" CSR activities, aiming to minimize negative impacts on society, with the primary focus on responsible care (RC) activities as a chemical company
2. CSR activities to improve corporate value
Nippon Soda's "proactive" CSR activities, aiming to augment beneficial impacts on society, with the primary focus on materiality to address social issues



Stakeholders

The management philosophy of the Nippon Soda Group states that the Group shall meet expectations of stakeholders, including shareholders, business partners, employees and local communities, and promote environmentally conscious business practices and activities. The Group will continue in the future to fulfill its social responsibilities to stakeholders.

Represents continuous communication



Nippon Soda's CSR and the Sustainable Development Goals (SDGs)

The Sustainable Development Goals (SDGs) comprising 17 goals and 169 targets were adopted in 2015 at the United Nations Headquarters in New York.

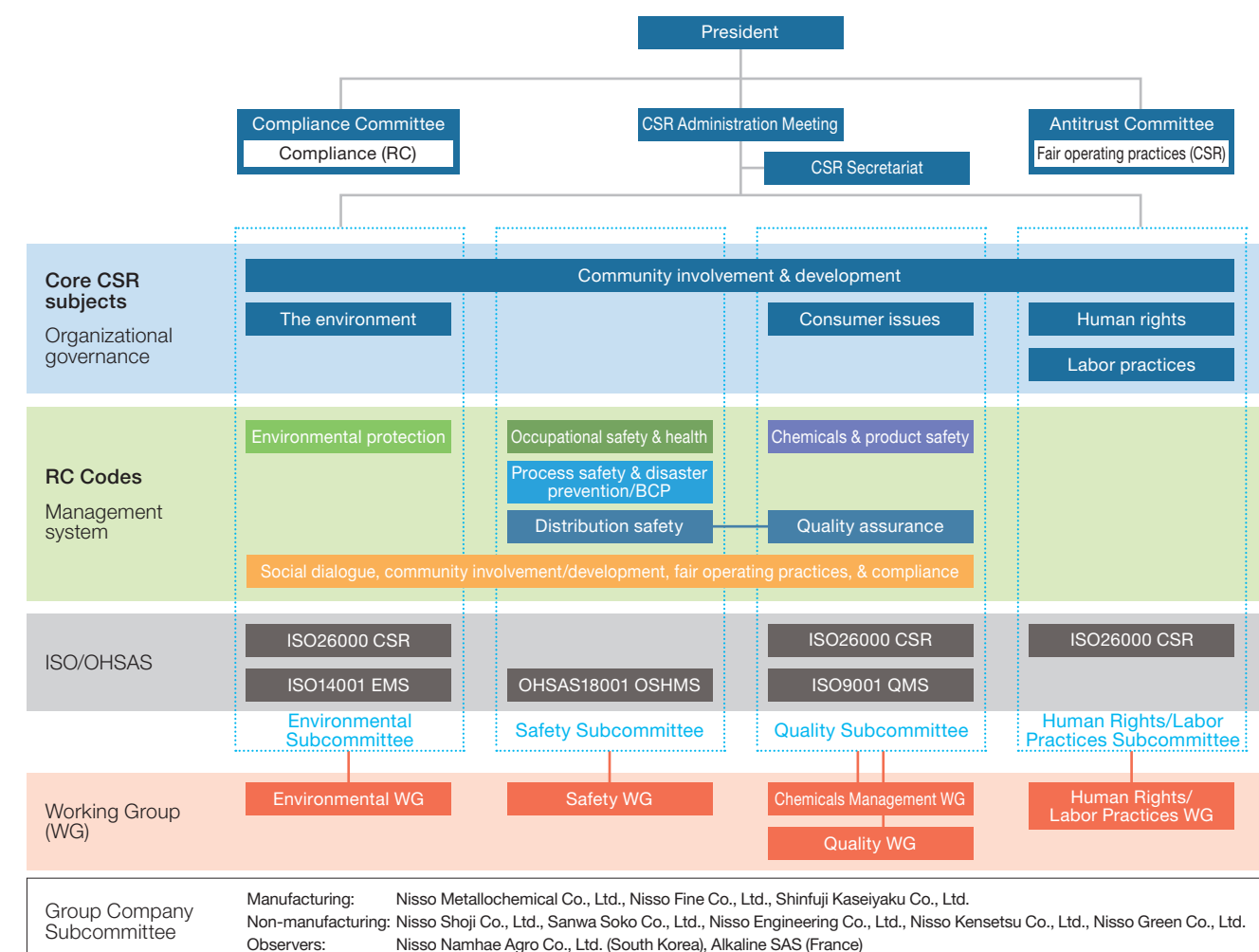
As part of its efforts to conduct CSR activities to improve corporate value, the Nippon Soda Group states in its basic policies for CSR that, through its business, the company will make contributions toward resolving social issues so as to help achieve the development of a sustainable society. As such, the Nippon Soda Group is striving to contribute to meeting nine of the goals included in the SDGs through the use of our products. These are: Goal 2 (Zero Hunger), Goal 3 (Good Health and Well-being), Goal 6 (Clean Water and Sanitation), Goal 9 (Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation), Goal 11 (Sustainable Cities and Communities), Goal 12 (Responsible Consumption and Production), Goal 13 (Take urgent action to combat climate change and its impacts), Goal 15 (Protect, restore and promote sustainable use of terrestrial ecosystems) and Goal 17 (Strengthen the

means of implementation and revitalize the global partnership for sustainable development). One company cannot tackle all of the SDGs alone, but if many different companies throughout the world do what they can toward resolving these issues, we believe that the combined efforts will result in the realization of a sustainable society.

SUSTAINABLE DEVELOPMENT GOALS 17 GOALS TO TRANSFORM OUR WORLD



CSR promotion system



Materiality and KPIs within the four domains of CSR defined in the CSR basic policies are shown below.

For the progress of efforts to address materiality issues, refer to the CSR Information page [web](#) on the Nippon Soda website.
(to be posted in September 2018)

	Domain	Materiality	KPI
CSR activities to improve corporate value	Agriculture	Contribution to ensuring food safety and security and sustainable agriculture using agrochemicals (1) Increase in food and feed production (2) Diversification of crop protection (3) Improvement of user safety (safety of chemicals and products) ¹	p.11 (1) Seminar hosting situation (2) Situation of initiatives (3) Situation of transition to granular formula
	Health care	Contribution to providing health to all people through pharmaceuticals (1) Easy-to-swallow, effective medicines through NISSO-HPC	p.12 (1) Situation of contributions
	Environment	Contribution to ensuring the environmentally sound recycling of resources using chemistry (technical competence) (1) Steady supply of water resources (2) Reduction of environmental impacts caused by waste Contribution to sustainable plant protection (1) Protection of precious trees such as pines from harmful insects	p.13 (1) The amount of supplied water (2) Situation of contribution (1) Situation of contribution
	Information	Contribution to the development of information appliances friendly to the environment and people by supplying high-function materials (1) Supply of high-function materials friendly to the environment and people	p.14 (1) Number of portable communication terminals using our products
	Initiatives for the next generation	Contribution to addressing climate change by supplying low-carbon products (1) Contribution to achieving a low-carbon society by supplying low-carbon products Achievement of goals that cannot be achieved by Nippon Soda Group alone through partnership (1) Sharing of the principle of goals and cooperation with other companies and organizations Development of the next generation of human resources (1) An educational system to maintain safety standards in the future Research and development toward the next generation (1) Research and development that enable the continuing development of human society and the global environment as well as lead to business	web (1) Change in the number of low-carbon products Situation of progress Situation of contribution (1) Situation of progress (1) Results of education (1) Situation of research
CSR activities to protect corporate value	Environmental protection	(1) Environmental abnormalities	(1) Number of legal violations
		(2) Energy i. Energy use per unit of production ii. Energy use per unit of transport	(2) Amount of consumption i. Per unit of production ii. Per unit of transport
		(3) Reduction in greenhouse gas emissions	(3) Amount of emissions
		(4) Waste i. Amount of final disposal as landfill ii. Zero emissions	i. Amount of waste to landfill ii. Zero emissions ratio
		(5) Emissions of harmful substances into the atmosphere	(5) Amount of emissions
		(6) Reduction of impact on biodiversity and ecosystems	(6) Situation of initiatives
	Process safety and disaster prevention/BCP	(1) Major accidents at facilities (2) Maintenance and improvement of a business continuity plan (BCP)	p.16 (1) Number of accidents (2) Situation of BCP improvement
Social activities	Occupational safety and health	(1) Occupational accidents An absence from work/no absence (2) Health promotion	p.17 (1) Number of occupational accidents (2) Number of incidence of personal injury and illness
	Distribution safety and quality assurance	(1) Distribution-related complaints (2) Product-related complaints	p.18 (1) Number of distribution-related complaints (2) Number of product-related complaints
	Chemicals and product safety	(1) Compliance with chemical-related laws and regulations	p.19 (1) Situation of management, situation of education
	Together with our customers (Consumer issues)	(1) Consumer issues	p.20 (1) Level of understanding of issues
	Together with our employees (Human rights and labor practices)	(1) Acceptance of diversity (2) Creation of a rewarding workplace that employees can be proud of	p.21 (1) Quantitative value on diversity (2) Results of survey on employee satisfaction with their workplace
Governance	Together with our business partners (Fair operating practices)	(1) Business partners	p.22 (1) Situation on compliance with code of conduct
	Together with our shareholders	(1) Shareholders	p.23 (1) Situation of dialogues
	Together with our local communities (Community involvement and development, social dialogue)	(1) Local gatherings, community involvement (2) Legal and other requirements (3) Creation of more opportunities for stakeholder engagement	p.24 (1) Number of dialogues and involvements and details (2) Situation of deviation (3) Number of engagements and details
	Corporate governance	(1) System	p.25 (1) Governance structure
Governance	Compliance	(1) Legal compliance	p.26 (1) Violations of laws and regulations

1. Including efforts related to chemicals and product safety among “CSR activities to protect corporate value”

* Below is a digest of the stakeholder dialogue.

A stakeholder dialogue was held with experts from outside the Nippon Soda Group on the theme of “CSR activities to improve corporate value,” which aim to increase the positive effect on society, for the purpose of discussing materiality for a chemical company that creates innovative products useful in achieving a sustainable society.

Materiality essential to sustainable development

Experts from outside the Nippon Soda Group

Nippon Soda

Nippon Soda has steadily implemented Responsible Care and corporate social responsibility (CSR) in its operations. In this dialogue, the environmental, social and governance (ESG) perspective was incorporated for the first time. As a result, the dialogue offered us a good opportunity to comprehensively assess the correlation between the ESG perspective, which aims to achieve both the sustainable economic, social and environmental development and corporate growth, and CSR.

With regard to “CSR activities to improve corporate value,” “CSR activities to protect corporate value” and “social activities,” I think you have identified issues of materiality by taking into account important issues that should be addressed by you as a chemical company. Considering the increasing expectations of society for sustainable development, I recommend that you assess materiality in terms of CSR activities that will help create business opportunities and support medium- and long-term growth to protect the company.



We will consider how to address human rights risks across the entire length of our value chains. At the same time, we would like to start new discussions on how to assess downside risks associated with sustainable economic, social and environmental development.

With regard to SDGs, it is said that the provision of business solutions for unmet needs around the world can result in huge business opportunities. In this context, it is important to tell a story about the strategy that the company will employ to exploit such an opportunity. You also should visualize the three core CSR activities in the form of a strategic CSR story that takes into account ES elements. I think this will help you develop a background story about how to create the Nippon Soda Group's value.

In the future, how a company can contribute to society and with what impact will be important. I recommend that you develop a story about how to create the value of the Nippon Soda Group with an eye toward 10 and 20 years into the future. In the process of seeking how to balance long-term risk and growth, I'm sure you will be able to identify issues that should be addressed in the future. It is also important how you involve individual employees.

One year has passed since the last dialogue. I appreciate your sincere efforts in the last 12 months. I think the concept and activities of strategic CSR have been improved. I hope that this dialogue will help further improve the Nippon Soda Group's efforts to address materiality issues in order to ensure sustainable economic, social and environmental development.

Details are scheduled to be posted in the web version of the CSR Report 2018 issued in August.

Note: The job titles given above are effective as of December 2017.



Agriculture

The Power of Chemistry Efforts to achieve sustainable agriculture

Society 5.0 for SDGs Agri Tech



The world population is estimated to increase by about 30% to exceed nine billion people by 2050. As a result of economic growth, the demand for meat production has increased and it has become necessary to secure not only food for humans but also crops used to feed livestock. Due to the limited area for cultivation around the world, agrochemicals are essential in terms of crop protection. They not only ensure yields but also help reduce the labor burden on farmers.

Nippon Soda considers it important to increase the production of food and livestock feed, diversify crop protection, and increase the safety of users of agrochemicals. Based on this idea, we aim to become a chemical group that contributes to addressing agricultural and food issues.

Promotion of smart agriculture using a drone, which is friendly to farmers and the environment

Since the 1950s, when we started our business in the agrochemical field, Nippon Soda has developed, produced and marketed various kinds of agrochemical products with unique features, which have been well received in the global market. We annually invest five billion yen into research and development in the agricultural field. With the sales of agrochemical products occupying one third of our consolidated net sales, we regard agrochemical products as a key driver of future growth. Nippon Soda also places emphasis on obtaining registration of agrochemicals in countries where we export agricultural products and setting residual standards in these countries so that we can export agrochemicals produced in Japan.

A recent technological development has enabled farmers to spray agrochemicals using aerial drones. This method requires fewer chemicals for pest control than before, contributing to labor saving and better safety for users. Associated issues that need to be addressed are the development of new agrochemical agents and the costs required for registering newly developed agents. Topsin-M® Sol has obtained approval for registration. Currently, we are developing highly concentrated formulations for low-volume spraying, such as Mospilan® flowable.

Seminars on use of agrochemicals in Japan

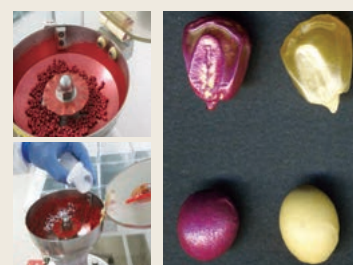
To ensure food yields through the use of agrochemicals, it is important to respond to ever-advancing methods of crop cultivation and technology for pest control and elimination, as well as to provide users with information that helps them use the agrochemicals correctly and effectively and in proper amounts. One of our educational activities involves organizing local seminars to help farmers and local residents correctly understand how to use agrochemicals and about the safety of agrochemicals. In Japan, we held 743 sessions in 2016 and 621 sessions in 2017. We are also making similar efforts outside Japan through our employees stationed abroad and partner companies.

We will continue to develop and provide new agrochemicals that are effective for controlling pests and weeds and have less impact on people and the environment, and to promote educational activities to spread information on proper use, with the aim of ensuring increased crop yields.



Zoom In Syngenta

Nippon Soda and Syngenta signed a licensing agreement to promote the development and registration of the products of the former combined with the latter's seed treatment technique for corn, soybean, rapeseed and wheat varieties. A combination of Syngenta's seed treatment technique to control pythium diseases and Nippon Soda's picarbutrazox enables effective prevention and control of crop diseases. Seed treatment has less environmental impact than agrochemical spraying and is also safe for users. In addition, the use of seed treatment is economically advantageous due to its low cost per unit area. Our first goal is to obtain approval for registration in North America. We are also considering expansion into Europe and Brazil to contribute to increasing global food and feed production using the seed treatment technique.



Health Care

The Power of Chemistry A healthy life supported by medicines

Society 5.0 for SDGs Health Tech



Japan is facing a population decline in addition to an accelerated declining birth rate and population aging. Nippon Soda focuses its efforts on ensuring healthy lives for people in all age groups and helping all people enjoy good health through medicines. The use of NISSO-HPC (hydroxypropyl cellulose) in formulating medicinal products allows us to produce medicines that are easier to swallow.

One of Nippon Soda's priority goals is to provide easy-to-swallow and effective medicines formulated by using NISSO- HPC. We will develop ingredients that improve the functions of medicinal products and reduce the burden on patients when swallowing medicines so as to improve the quality of life for all people.

Developing smaller tablets to make them easier to swallow

Due to the population increase in emerging economies as a result of economic growth and the increasingly aging population mainly in advanced countries, the need for medicinal products is increasing on a daily basis. Nippon Soda's NISSO-HPC has been well received for nearly 50 years as an excipient essential for the formulation of medicinal products. NISSO-HPC, which is listed in the Japanese Pharmacopoeia, was used in about 57% of ethical drug products in tablet form marketed in Japan in 2017. By using NISSO-HPC, it is possible to increase the content of the main ingredient, reducing the frequency of administration and the dosage that patients need to take. Small-size tablets are easier for children and elderly people to swallow. NISSO-HPC is used to coat bitter-tasting drugs and to develop drugs that can be taken without water, contributing to making medicines easier for patients to take.

Cellulose, one of the raw materials of NISSO-HPC, exists in nature and its safety has been established. NISSO-HPC is stable for several years at room temperature and therefore has excellent storage properties. We market NISSO-HPC to help all people enjoy good health through medications, promoting public welfare.

All-day lasting effects of once-daily administration

Nippon Soda also focuses on "controlled release" technology, which can be used to develop preparations with sustained-release action. This technology is used to control the release of an active ingredient so that it can be absorbed slowly, allowing the efficacy to be maintained for longer hours. For example, the efficacy of once-daily dosing of a controlled-release cold medicine lasts all day. We have made presentations on "controlled release" at academic conferences and exhibitions in Japan and abroad, with an eye on global expansion. While there are excipients that are commonly used in foreign countries, our technology has been increasingly recognized and widely accepted through our promotional efforts. We will continue to disseminate information on the advantages of the controlled release technology with the aim of establishing a selling system to further spread the technology in the next five to 10 years.



Zoom In Tablet formulation using a 3-D printer

Using a 3-D printer installed at a pharmacy, Nippon Soda is conducting research for the practical application of NISSO-HPC as a binder to prepare customized drugs tailored to the circumstances of each individual patient. With this method, it is possible to change drug sizes, combine more than one drug, and process a drug into a shape that is physically easy to swallow. When the method can be applied practically in the future, we can provide patients with medications that are easier to take. In addition, pharmacists will not have to dispense drugs, improving their efficiency. We have made presentations on this method at academic conferences in and outside of Japan and are considering various marketing approaches, including the establishment of partnerships.

Environment



The Power of Chemistry Achievement of the environmentally sound recycling of resources

Society 5.0 for SDGs Envi Tech



Point

As the world's population is increasing, there have been growing concerns over issues related to water resources, which are essential for comfortable living, and adverse effects caused by waste. At present, according to a UN survey, 660 million people are suffering from a shortage of safe water.

Nippon Soda places emphasis on the stable supply of water resources and reduction of environmental impacts of waste as its priority issues that should be addressed. As a chemical company, we ensure hygienic management of water and reduction of substances that have an adverse impact on the human body in order to fulfill our responsibility and contribute to society.

Solid chlorine agents, which help ensure the supply of water resources

Public demands for securing the availability of water to support comfortable everyday life have been increasing not only in Japan but also in various regions around the world. Nippon Soda's NISSO HI-CHLON is a solid chlorine agent that has been contributing to the management of water hygiene for more than 50 years since its launch in various regions around the world. In Japan, it has been mainly supplied to schools as a water disinfectant for swimming pools. In the Middle East, which is in the tropical dry climate zone, the demand for solid chlorine agents with high stability is increasing.

The amount of water that has been disinfected and sterilized using NISSO HI-CHLON is 22 million tons per year. Although this is a tiny amount compared with the annual amount of wastewater discharged from households in Japan, which is 13 billion tons, we at least contribute to helping local people live a comfortable life by supplying products useful in the management of water hygiene. This effort is related to Goal 11 (Sustainable Cities and Communities) and Goal 12 (Responsible Consumption and Production) of the Sustainable Development Goals (SDGs).

As a result of the recent trend toward healthy living, the demand for shrimp as a protein alternative to meat has been increasing. In Vietnam, shrimp farming is popular.

Cultured shrimp are grown in brackish water. For this reason, culture ponds are constructed along coastal areas. NISSO HI-CHLON is used to kill bacteria that are present in these culture ponds. It is an agent essential for purifying pond water. In response to an increasing global population, we supply NISSO HI-CHLON, which is safe for the growth of cultured shrimp, to secure food sources.

Reduction of environmental impact of waste

Nippon Soda's HIDION is a heavy metal stabilizer used to treat fly ash from waste incineration. By mixing the agent into fly ash, the ash is immobilized, preventing lead and other heavy metals from scattering and liquating. In Japan, insolubilization treatment of heavy metals, mainly lead, contained in fly ash is legally required. HIDION is highly regarded as an agent for insolubilization treatment. At present, it is sold mainly in Japan. The domestic market, however, is expected to shrink due to the population decline, declining birth rate and aging population. In response, we are considering expanding sales of HIDION globally. Because of the differences in laws and regulations for heavy metals in different countries, we have many obstacles to overcome. We will continue to conduct surveys on this matter so that we can contribute to reducing environmental impacts around the world.



Zoom In Sketoile and Toilet Gel for disaster use

When a large-scale earthquake or other disaster occurs, our daily life is affected and our activities are restricted. Among problems in disaster-affected areas, toilet-related problems due to the suspension of water supply can lead to infections. Sketoile, the defecation storage bag for emergencies, can be used anywhere and can prevent secondary disasters. It has been used by long-term care facilities in recent years as well as in ordinary daily settings. We also provide daily necessities that help maintain the social environment, such as TAKE-ONE, a urolith prevention agent for flush toilets. We are considering expanding the market for these products not only in Japan but also in emerging economy countries.



Information



The Power of Chemistry The potential of high- performance materials

Society 5.0 for SDGs Infra Tech



Point

Thanks to high-speed internet, anybody can now send and receive information. Tablet terminals are used in educational settings and senior citizens carry a smartphone. Products featuring universal design have become available so that a diverse range of people can use them comfortably. One of Nippon Soda's priority activities is to provide high-performance materials friendly to people and the environment in order to contribute to the spread of information terminals that can easily be used by anyone. We supply materials that support the development of information and electronic technology with the aim of achieving business success as well as contributing to the development of the information society.

Environmentally conscious high-performance materials unique to Nippon Soda

Nippon Soda's functional chemicals are used in various daily settings. As mobile phones and tablets are becoming increasingly popular, the demand for high-performance materials for terminals that are hard to break, even if dropped, is increasing. As a result of this shifting market trend, NISSO-PB, which was developed more than 40 years ago in the 1970s, has recently attracted attention in the information industry as a highly functional liquid polymer that is durable over time. Information processing devices, such as mobile phone terminals, need to process vast amounts of information. To meet this need, there has been increasing demand for higher-performance semiconductor-related products.

Touch screens are now commonly used for smartphones and tablet terminals. NISSO-PB, which is hydrogenated, is used as an optical adhesive material in the process of manufacturing liquid crystal displays of touch screens. NISSO-PB, which is not only compliant with relevant laws and regulations but also highly safe and functional, meets the recently increasingly stringent standards for the management of chemicals, both socially and environmentally.

Smartphones and tablets became widely available in 2010. In 2016, the number of shipped units reached 2.3

billion. The annual number of shipped units of terminals in which NISSO-PB is used is estimated to be more than 400 million. * Our estimate

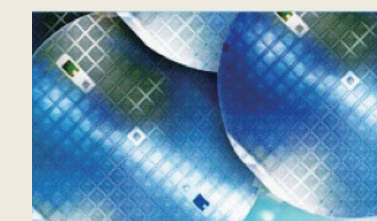
Copper clad laminates for next generation communications

Broadband has become widely available and communication speed and stability have been improved. As a result, web conferences have become popular. The widespread rollout of the next-generation "5G" mobile communication network will enable speedier web conferences and video transmission. Base stations that receive radio waves from satellites in space need to avoid high frequencies. For this purpose, copper clad laminates are used. NISSO-PB, which has a high dielectric constant and high insulation in a high-frequency region, is also used for these copper clad laminates. As these examples show, Nippon Soda's functional chemicals are used not only for mobile terminals but also at base stations. They are now indispensable for advanced information and telecommunications.



Zoom In Semiconductor photoresist material: VP-Polymer

Semiconductors are used in electronic devices familiar to us in our modern society, such as sensors in cars and personal computers. To draw an electric circuit diagram on a semiconductor substrate, an agent called a krypton-fluoride (KrF) photoresist is used. VP-Polymer, an ingredient in the photoresist, can contribute to the manufacturing of semiconductor structures, which needs advanced micro-fabrication techniques. As there has been increasing demand for larger-capacity and higher-speed semiconductors, the need for VP-Polymer is increasing day by day.



Environmental Protection

With the goal of minimizing the impact of our business activities on the environment, the Nippon Soda Group is engaged in environmental protection with a focus on saving energy and resources, reducing and recycling waste, and reducing emissions of harmful substances.



- Continuing efforts to prevent environmental pollution, complying with laws and regulations, and promoting other environmental activities
- Reduction of environmental impact associated with business operations (prevention of global warming, and reduction in waste generation and waste to landfill)
- Development of products and processes with less environmental impact
- Adoption of environmental management systems (EMSs); Reduction of energy consumption, while maintaining productivity

Major activities

Environmental protection

Responses to climate change issues

Efforts to prevent global warming are critical. Nippon Soda participates in the Commitment to a Low Carbon Society, a voluntary action plan promoted by the Japan Business Federation (Keidanren). Under the action plan, we are promoting energy saving to achieve the reduction targets for CO₂ emissions in FY 2021.

● **Reduction of energy consumption and greenhouse gas emissions**
Nippon Soda has been implementing measures to reduce greenhouse gas (GHG) emissions by improving energy use per unit of production, such as improvements in production processes, adoption of energy-saving equipment, and saving power.

● **Use of renewable energy**
Nihongi Plant performs small-scale hydraulic power generation. Generated electricity has been effectively used for production activities at the plant.



Hydraulic power generation at Nihongi Plant

● **Promotion of energy saving by the Logistics Department**
Nippon Soda has been making every effort to improve efficiency and reduce the environmental impact in terms of logistics through

modal shifts, reducing the number of trips by using larger-sized shipping containers, and adjusting logistics distribution routes.

Effective use of resources and reduction of waste

Nippon Soda participates in the Voluntary Action Plan on the Environment promoted by the Japan Business Federation (Keidanren). Under the action plan, we promote industrial waste reduction to achieve the target amount of reduction in the final disposal of industrial waste as landfill.

Atmosphere and water area protection

Nippon Soda implements various measures to protect the atmosphere and water quality, such as measures to reduce emissions of chemical substances specified by the PRTR Law and toxic substance emissions to water, in accordance with the Air Pollution Control Act, the Water Pollution Prevention Act, and the latest regulatory trends.

Preservation of biodiversity

Nippon Soda has taken measures to reduce environmental impacts mainly in areas where our production sites are located. In recent years, we have added biodiversity preservation to our priority issues and each worksite has been implementing its own preservation activities.

Process Safety & Disaster Prevention/BCP

The Nippon Soda Group places emphasis on ensuring process safety and preventing disasters in order to prevent major accidents at its facilities and continue safe and stable production. We are also constantly improving our business continuity plan (BCP) to make sure we can keep providing products and services.



- Periodic inspections, ongoing repairs and renovations, and training for operators at each manufacturing site
- Improvement of our risk management system through emergency drills and education to prepare employees for possible accidents and disasters
- Safety reviews by our internal experts to verify safety when facilities are newly constructed or renovated; Regular diagnoses of our disaster prevention capability conducted by external specialists
- Regular review and improvement of our business continuity plan (BCP), which is designed to help us be prepared for natural disasters such as large-scale earthquakes and other emergencies that could result in extensive damage

Major activities

Process safety and disaster prevention

Risk management

● **Risk assessment of process safety and disaster prevention**
We conduct risk assessments of facilities, machines and manufacturing processes. Identified risks are prioritized and, accordingly, measures to ensure the safety of facilities are implemented and inspections are conducted.

● **Establishment of an emergency risk management system**
We have established an emergency risk management system to prepare for accidents, disasters and other emergencies. To maintain the system in a sound condition, we conduct periodic drills and exercises.

● **Standards on Emergency Response**
The Standards on Emergency Response have been developed to ensure prompt and appropriate communication, response and instruction in the event of a disaster or accident. The Standards on Emergency Response are periodically reviewed and revised. Their effectiveness is confirmed in training drills.

Safety management

To ensure the safety of processes in the construction and renovation of facilities, the Nippon Soda Group undergoes safety reviews and audits by managers and internal experts for the inspection of facilities and operations in terms of safety, work environment, quality and other factors.

Education and drills for process safety and disaster prevention

Nippon Soda provides employees with various kinds of educational and training programs on process safety and disaster prevention for different work assignments to help them acquire knowledge and skills to ensure process safety.



Training to experience danger (On May 11, 2017 at Takaoka Plant)

Business Continuity Plan (BCP)

As the principles of the BCP, the Nippon Soda Group defines principles regarding the safety of its employees and residents in local communities, protection of the safety of affected offices, and other issues.

Nippon Soda's BCP aims to ensure the supply of products to customers as requested at all times. To achieve this objective, improvement is accelerated using the PDCA cycle.

Goals for FY 2018 and results (KPI)		Achievement levels		◎: ≥ 90%	○: 80–90%	△: 60–80%	×: ≤ 60%
1.	Environmental abnormalities: Zero events	Achievement level ×: Violation of the wastewater agreement, etc. (three events at Nippon Soda, one event at a group company)					
2-1.	Energy use per unit of production: Annual improvement of 1%	Achievement level ×: 1.8% increase					
2-2.	Energy use per unit of transport: Annual improvement of 1%	Achievement level ×: 10.6% increase					
3.	Reduction in greenhouse gas emissions: Annual reduction of 1%	Achievement level ×: 4.0% increase					
4-1.	Waste (Amount of final disposal as landfill): Annual reduction of 3%	Achievement level ◎: 68% reduction					
4-2.	Waste (Continuation of zero emissions): ≤ 5%	Achievement level ◎: 1.2%					
5.	Emissions of harmful substances into the atmosphere: Annual reductions of 25% from the previous fiscal year 2015	Achievement level ◎: 62% reduction					
6.	Reduction in impact on biodiversity and ecosystems	Achievement level ◎: Nurturing of endangered species at two sites					

Efforts for the future We will make continuous efforts to minimize the impact of our business activities on the environment. Our efforts to protect the environment will include energy saving, resource saving, reduction of greenhouse gas emissions, preservation of biodiversity, and reduction of impacts on ecosystems.

Goals for FY 2018 and results (KPI)		Achievement levels		◎: ≥ 90%	○: 80–90%	△: 60–80%	×: ≤ 60%
1.	Major accidents at facilities: Zero accidents	Achievement level ×: Zero events at Nippon Soda; two fire events and one occurrence of white smoke at group companies					
2.	Maintenance and improvement of the BCP	Achievement level ◎: The 7th version was distributed and the 8th version was prepared.					

Efforts for the future We will continue our efforts to achieve the target of “no major accidents at facilities” through the constant improvement of safety management, risk management, education, disaster prevention drills and other measures. We will also improve and review the BCP in a systematic manner.

Occupational Safety and Health

To provide employees with a workplace environment where they can enjoy working, the Nippon Soda Group is implementing various measures to achieve and maintain the goal of no workplace accidents and promote employees' health.



- Introduction of an occupational safety and health management system (OSHMS); Implementation of risk assessments
- Constant development, implementation, review and improvement of measures (PDCA) to ensure safe and healthy workplaces with the aim of achieving the goal of zero occupational accidents
- Provision of health guidance based on medical examination results and implementation of measures to reduce incidents of personal injury or illness to help employees maintain and improve their health
- As mental health care services, performance of stress tests and provision of consultation services by qualified mental health specialists; Establishment and operation of a system to provide appropriate care

Major activities

Occupational safety and health

Implementation of risk assessment

Under the occupational safety and health management system (OSHMS), we implement the PDCA cycle to achieve predetermined goals and improve performance systematically.

To integrate OSHMS and RC activities effectively, we also place an emphasis on OSHMS risk assessment. Each office (plant or research center) periodically identifies and assesses occupational accident risks and, if they are not permissible, takes measures to reduce them to permissible levels.

Efforts to prevent occupational accidents

● Activities to reduce occupational accident risks

With our main focus on activity plans under the OSHMS, we identify *hiyari-hat* (near miss) accidents to reduce risks. We also share information on accidents that have occurred at other business sites and companies to help reduce risks. When new plants are constructed and existing ones extended, a safety review and audit are required. Before starting test operation, we reduce accident risks to permissible levels.

● Efforts to prevent human error by workers

The 5Ss—*seiri* (sorting), *seiton* (setting-in-order), *seiso* (shining), *seiketsu* (standardizing) and *shitsuke* (sustaining the discipline)—and the 4 Safety Cycles (KY¹ before starting operation → Pointing and vocalizing during operation → Mutually directing attention during operation → Identifying *hiyari-hat* [near miss] accidents after

operation) are the fundamental concepts that form the basis of safety activities for the Nippon Soda Group. In addition, senior management at each business site takes the initiative in promoting safety awareness among employees so that safety activities are improved through the continuous application of the PDCA cycle.

Health management for workers

Health and productivity management

Nippon Soda recognizes the importance of health maintenance and improvement in business management. In February 2018, Nippon Soda was recognized as a "Health & Productivity Outstanding Entity 2018" in the large enterprise category (White 500) under the recognition program jointly undertaken by the Ministry of Economy, Trade and Industry and the Nippon Kenko Kaigi. This is a program to recognize large enterprises that promote outstanding "health and productivity management." For recognition, their engagement in addressing health-related issues in regional communities or their health promotion activities that are promoted by the Nippon Kenko Kaigi are assessed.

Nippon Soda, in cooperation with the Nisso Health Insurance Association and the labor union, promotes efforts toward promoting the physical and mental health of employees and their families.

As mental health care services, in addition to stress tests, we provide the following four programs: 1) self-care, 2) care services through Line, 3) care by occupational healthcare staff and other specialists at each workplace and 4) care by external parties.

Goals for FY 2018 and results (KPI) Achievement levels ◎: ≥ 90% ○: 80–90% △: 60–80% ×: ≤ 60%

- Occupational accidents resulting in an absence from work or no absence: No accidents
Achievement level ×: 8 cases involving absence from work (3 Nippon Soda employees, 4 affiliate company employees, zero group company employees), 1 group affiliate company employee)
6 cases involving no absence (1 Nippon Soda employee, zero affiliate company employees, 3 group company employees, 2 group affiliate company employees)
- Health promotion: 10% reduction in the total number of absentee days, including mental-health-related absence; 10% reduction in the incidence of personal injury and illness (average in the period from FY 2013 to FY 2015)
Achievement level ◎: 32% reduction in the total number of days of absence from the average of the period from FY 2013 to FY 2015; 7% reduction in the number of incidents

Efforts for the future

With the aim of achieving the goal of zero occupational accidents, we will continue our efforts to reduce risks through continuous risk assessment, strengthen measures to prevent human error, and enhance safety activities. To help employees maintain and improve their health, we provide them with medical examinations, conduct follow-ups of employees undergoing stress tests, and continue good health maintenance activities.

1. KY is a combination of the first letters of two Japanese words, *kiken* (risk) and *yochi* (prediction). The KY system is designed to identify latent risks associated with work and take preventive measures before they occur.

Distribution Safety and Quality Assurance

The Nippon Soda Group promotes efforts to reduce risks associated with the distribution of products to prevent distribution accidents. We also provide an environment where customers can use high-quality products safely, comfortably and in a stable manner in order to increase customer satisfaction.



- Reduction in risks of hazards, toxic harm and in-transit accidents associated with the transportation of products to protect the safety and environment not only of customers but also of workers engaged in distribution processes and/or local residents
- Provision of information that helps customers use high-quality products safely, comfortably and in a stable manner
- Provision of products that increase customer satisfaction, while ensuring safety and hygiene for customers

Major activities

Distribution safety

Measures to ensure safe transportation of hazardous materials

● Transportation risk assessment

Nippon Soda identifies risks from various viewpoints to prevent workers from being injured and products from being damaged in an accident during the loading, unloading and transshipment of products with a forklift, as well as in traffic accidents during transportation by truck to deliver products to customers. Based on identified risks, we take measures to reduce such accidents.

● Yellow Card¹ and Container Yellow Card² (product labels)

Nippon Soda promotes the use of Yellow Cards and Container Yellow Cards mainly for products that are classified in the hazardous category. Product labels are constantly revised to reflect the latest legal information, including revisions to relevant laws, in a timely manner. We use wording that complies with the GHS requirements and appropriate pictograms and take other measures so that we can be prepared in the event of a disaster to respond quickly to prevent damage from spreading.

Distribution safety in value chains

● Proposals for improvement of customers' facilities

If there are any safety problems with regard to transportation workers and workers at facilities where our products are received or any risks such as potential for the mixing of foreign substances or spills, Nippon Soda makes a proposal for improvement to the customer in order to prevent disasters and accidents.

- A Yellow Card is an emergency information card with information about procedures that drivers, fire and police personnel, and other concerned parties should take in the event of a spill, fire, explosion or other safety incident that may occur during transport. It also contains emergency contacts. The issuance and carrying of Yellow Cards is required by the Poisonous and Deleterious Substances Control Act and other laws.
- A Container Yellow Card is a label that is affixed to containers. It indicates the United Nations number and guide number defined by the Emergency Response Guidebook in addition to other information.



Example of a combined label — The guide number and the United Nations number are printed at the bottom of the Container Yellow Card.

Quality assurance

Efforts to ensure quality management

● Quality risk assessment

Nippon Soda assesses quality risks so as to prevent quality complaints from occurring and recurring. We identify quality-related risks at each manufacturing site. Our continuous efforts to reduce risks are particularly focused on reducing those ranked A to B, which have the highest risks. In addition, we also implement measures targeted at reducing complaints arising due to human error.

Goals for FY 2018 and results (KPI) Achievement levels ◎: ≥ 90% ○: 80–90% △: 60–80% ×: ≤ 60%

- Distribution-related complaints: 60% reduction from FY 2015 (≤ 1.2 cases) Achievement level ×: 3 distribution-related complaints
- Product-related complaints: 60% reduction from FY 2015 (≤ 7.2 cases) Achievement level ×: 23 product-related complaints

Efforts for the future

To reduce distribution- and product-related complaints, we constantly improve our activities to ensure distribution safety and quality assurance, including inspections and audits of distribution companies, risk assessment, and implementation of measures to prevent human error.

Chemicals and Product Safety

Giving due consideration to potential risks and toxicity of chemicals and products on the environment, safety and health, the Nippon Soda Group complies with laws, regulations and international standards as well as with social norms and expectations so that we can earn greater trust from the general public.



- Compliance with domestic laws and regulations, international standards, treaties and the like, giving due consideration to impacts caused by risks and toxicity of chemicals and products on the environment, safety and health
- Compliance with social restrictions that are not covered by law to maintain and ensure trust from customers and the general public
- Implementation of specific measures to ensure the safety management of chemicals, including activities and periodic educational programs regarding chemicals and product safety

Major activities

Safety of chemicals

Strengthened management of chemical substances using ExESS, a chemical substance control system

We are strengthening the management of chemical substances using the SDS¹ and Yellow Card preparation and management system (ExESS).

We revise SDSs and Yellow Cards whenever relevant laws are amended in Japan and overseas. We prepare SDSs and product labels that are used not only in Japan but also in other countries and regions around the world, such as Europe, the U.S., China, Taiwan, South Korea, Southeast Asia and Turkey, in such a way as to meet the GHS² requirements.

Regular training programs on chemical substance control

We provide employees who handle chemical substances with education on how to comply with Japanese and overseas laws and regulations regarding the management of chemicals.



Educational session for new/transferred employees on chemical substance laws and regulations (May 9, 2017 at the Head Office)

Product safety

Actions to comply with laws and regulations

We provide explanatory sessions on how to comply with the EU REACH³ regulation and other overseas laws and regulations. We also conduct audits of poisonous and deleterious substances at branches and offices of our company and group companies.

Communication of safety information on chemicals

The Nippon Soda Group participates in the GPS/JIPS⁴. We have prepared safety summary reports on five substances, including caustic soda and hydrochloric acid, which have been registered on the ICCA⁵ portal page and made publicly available.



Explanatory session on revision of laws and regulations (February 20, 2018 at the Head Office)

1. SDS: A Safety Data Sheet (SDS) is a document that contains information on chemical substances, product names, suppliers, hazardous and toxic properties, safety measures, emergency responses, etc.
2. GHS: The Globally Harmonized System of Classification and Labelling of Chemicals (GHS), which was developed and agreed upon by the United Nations Economic and Social Council, is a system for the international standardization of classification and labeling (product labels and SDSs) regarding risks and toxicity of chemicals.
3. REACH: The Registration, Evaluation, Authorization and Restriction of Chemicals is a European Union regulation that requires companies that manufacture or import into the EU chemical substances in the amount of one ton or more per year to register these substances and submit chemical safety reports. Chemicals for which data are not submitted (substances that are not registered) are not permitted to be put on the market.
4. GPS/JIPS: The Japan Initiative of Product Stewardship (JIPS) is a voluntary initiative of the chemical industry. Its basic concept is aligned with the Product Stewardship (PS)/Global Product Strategy (GPS) of the International Council of Chemical Associations (ICCA).
5. ICCA: International Council of Chemical Associations

Goals for FY 2018 and results (KPI) Achievement levels ◎: ≥ 90% ○: 80–90% △: 60–80% ×: ≤ 60%

1. Compliance with chemical-related laws and regulations (zero violations) Achievement level ◎: Zero violations

Efforts for the future

To ensure continued compliance with chemical-related laws and regulations (zero violations), we will strengthen the management of chemical substances using a new chemical substance control system and promote compliance with the GHS requirements in preparing and reviewing overseas SDSs and labels. We will continue to provide regular training programs on chemical substance control, including training for new/transferred employees and explanatory sessions on revisions of Japanese laws and regulations as well as relevant laws and regulations of foreign countries.

Together with Our Customers (Consumer Issues)

The Nippon Soda Group provides products with functions that satisfy our customers, and makes efforts toward ensuring safety during the use of our products.



- Provision of safe and reliable products and services that satisfy customers' needs
- Working together with our customers in continuing to create new value that is sought after by society, through development and provision of products

Major activities

Improve customer satisfaction

Services by the customer consultation office (Agro Products Division)

The regional salespersons and the section handling inquiries at our Head Office appropriately answer inquiries made on the usage of our products and agrochemicals.

We have placed persons in charge of answering customer inquiries within our Public Relations Section of our Product Promotion Department. Inquiries are answered under the motto of providing "swift, accurate and easy-to-understand answers."

Sales promotion activities with our customers in mind (Chemicals Business Division)

We exhibit actively at trade fairs and other venues, and seek opportunities to have discussions with our customers, so that our products will be considered by more buyers.

Promotion activities rooted in the local community (Agro Products Division)

We visit contracted wholesalers, agricultural co-ops and farmers in Japan to introduce our products and explain the appropriate methods of use. Outside of Japan, we host seminars for local stores and farmers and invite them to visit agricultural fields where our products are used.



Educational session on Monsieur Bordeaux (April 2017, Kagoshima)

Communication with our customers

Sending out information to our users (Agro Products Division)

In response to various kinds of inquiries from our customers, we provide information on registered agrochemicals and the expansion of their scope of usage in a timely manner, while complying with the Agricultural Chemicals Control Act and other related laws, rules and regulations.

Development of products that are useful to society

Responding to the requests of our customers (Chemicals Business Division)

For example, we are currently developing a new brand that is in line with our customers' needs using NISSO-HPC (hydroxypropyl cellulose), which is used widely throughout the world as an additive in medicines. We are also promoting research and development that aim to enhance the functionality of pharmaceuticals, both in and outside of Japan, to help develop advanced pharmaceutical preparations. In recent years, we began providing NISSO-HPC in the food market under the brand name CELNY.



Tablets made with HPC

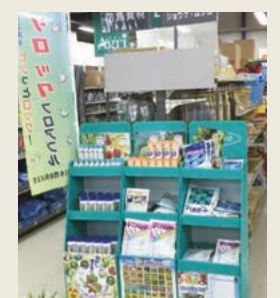
Close up

Pythilock Launch Campaign

On the occasion of the launch of a novel fungicide, Pythilock flowable, we have started a campaign, including in-store promotion at Japan Agricultural Cooperatives (JAs) and retailers throughout Japan. We plan to conduct our campaign at 120 sites in total.

The Agro Products Division, for the first time, is posting a listing advertisement linked to keyword searches on the Internet with the aim of increasing publicity for Pythilock and identifying the degree of interest among customers.

Materials Store of JA Itoshima in Fukuoka



Together with
Our Employees
(Human Rights/
Labor Practices)

Nippon Soda Group focuses its proactive efforts on creating a work environment where human rights are respected, and all employees can find their work meaningful and maximize their abilities.



- Respect for the dignity and human rights of all people
- Understanding the diversity of cultures, customs, and values and no tolerance for actions that result in discrimination
- Creation of a workplace environment where employees can feel comfortable and fulfilled through our proactive review of personnel and employment systems to ensure the constant improvement of working conditions
- Becoming a company where a diverse team of employees can play an active role with particular emphasis on promoting diversity and improving employee satisfaction

Major activities

Nippon Soda Group's human resources development

To ensure the sustainable growth of Nippon Soda, we commit ourselves to creating a company where competent people come together and grow together.

Believing that education and training are the foundation for the development of human resources, we offer various kinds of training programs, such as on-the-job training, rank-based training, training programs for managers, early- and intermediate-phase practical training, specialized training by job function, and training for self-development to acquire qualifications.

Training programs 1. Position G: Management Assistant, Position M II: Manager II, Position M: Manager, Position D: Assistant Manager

Rank	Rank-based training	Training for Line Manager	Core positions		Self-development support
			Administrative work	Specialized work	
Executives	Executives training				
Managers	Position G training ¹	Position M II training ¹	Introduced in FY 2018		
	Position M training ¹	Division Managers training Department Managers training		Career Training (Management) Aptitude assessment interview	
Assistant Managers	Position D training ¹	Section Managers training		Career Training (Advanced) Aptitude assessment interview	
Staff employees				Career Training (Basic) Discussion training	
New employees	Orientation training		Follow-up training		
			On-site practical training	Tutor instructions	

Promotion of diversity

Development of diversity policy

The aim of our Diversity Policy is to develop ourselves by providing diverse people, regardless of gender, age, nationality and presence or absence of disability, with opportunities to gather and exchange different ideas.

Promoting work-life balance

We are working to create a workplace environment where our employees can continue working despite various lifestyle changes in their lives, such in relation to giving birth to a child, raising a child, and providing nursing care for ailing family members. We are revising our work regulations and

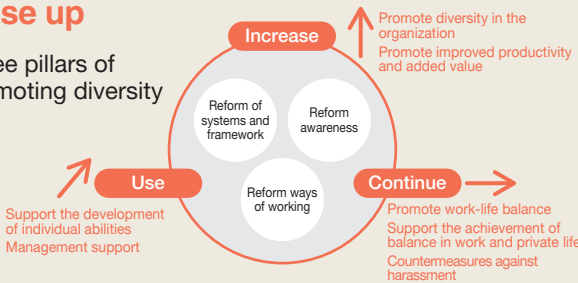
advancing working style reforms in order to create a workplace where our employees can pursue their work without compromising their health, and achieve a good balance between their work and private lives.

Efforts to protect human rights at workplaces

The Nippon Soda Group Code of Conduct, which sets out the requirements that all employees of the Nippon Soda Group must follow, clearly states the commitment to respect human rights and nondiscrimination and declares that we respect the individuality and personal characteristics of every employee and do not take any action that would result in discrimination. To maintain a healthy work environment free from harassment, we provide employees with rank-based training on relevant issues. A harassment complaint office is also available.

Close up

Three pillars of promoting diversity



Diversity policy

Nippon Soda considers it necessary for a corporate group to value diversity in order to generate new innovations and increase global competitiveness. In this context, we recognize the promotion of diversity as an important management strategy. Efforts to promote diversity include transformation of our personnel systems to make full use of our diverse human resources, improvement of the corporate culture and work environment, and implementation of other basic support systems. Through these efforts, we aim to become a company where global-minded, motivated, competent employees can enjoy working and continuously grow and develop regardless of gender, age, nationality, etc.

Together with
Our Business Partners
(Fair Operating Practices)

The Nippon Soda Group promotes sound business activities that are fair and just by conducting dialogue and awareness-building activities with our business partners in order to comply with legal requirements.



- Establishment of a purchasing policy that is predicated upon interacting with our business partners with dignity and integrity and handling affairs in a fair and just manner
- Promotion of business activities that meet stakeholders' expectations in purchasing activities, such as raw material procurement

Major activities

Efforts in procurement

Purchasing policy

- Conduct purchasing activities grounded in legal compliance
- Execute raw material procurement that contributes toward realizing stable production
- Consider purchase balance aimed at achieving cost reduction
- Develop a stable procurement system rooted in a BCP (business continuity plan), such as having multiple sources from which to procure raw materials
- Realize appropriate inventory management of raw materials
- Participate in in-house and external training programs with the aim of acquiring and maintaining knowledge on various laws related to purchasing (Antimonopoly Act, Act against Delay in Payment of Subcontract Proceeds, Etc. to Subcontractors, etc.)

● Compliance with the code of conduct

We comply with our internal code of conduct regarding trading with business partners from whom we make purchases, in terms of complying with laws and regulations and ensuring fairness and justice.

● Concept on procurement

We continue our purchasing activities while confirming the safety and soundness of business partners based on information gathered via trading companies from whom we purchase and results of audits conducted in cooperation with the quality management department of each of our plants.

● Nippon Soda's responsibilities and approaches

We are working with our business partners to develop relationships that lead to mutual growth by implementing direct and indirect means of gathering information. We are deepening the understanding that our business partners have toward the Nippon Soda Group's purchasing policy and purchasing activities. Through these measures, we continue our efforts to conduct fair, just and sound procurement activities.

Dialogue with our business partners

Safety education

● Improve awareness on safety and disaster prevention together with our affiliated companies

We provide education on the safe use of agricultural machinery to companies to whom daily operations are consigned at various agricultural fields under the jurisdiction of Odawara Research Center.

In cooperation with our affiliated companies, we are aiming at achieving zero accidents by involving all relevant people. We implement various measures to raise awareness on safety and disaster prevention among employees of affiliated companies who work within our facilities, such as the development of a list that clarifies who has qualifications for operating agricultural machinery and equipment and the management of performance levels.

● Educating transportation firms on distribution safety

The Nippon Soda Group regularly provides education targeting transportation firms. Our educational programs not only provide education to prevent accidents caused by our workers and during transport, but also provide information on past complaints received regarding distribution. We share such information to ensure the safe delivery of our products to our customers.



Training at Sanwa Soko Co., Ltd.'s Kawasaki Office

Close up

Proper procurement of ingredients from foreign countries

In recent years, environmental regulations have become more stringent in Asian nations. In China, from which we buy ingredients, plants with inadequate environmental management measures are forced to stop their operations. To avoid the discontinuation of supplies of ingredients on the global market and maintain the steady operation of our plants, we check the state of environmental measures taken by our business partners and build business partnerships with more than one supplier.

Inspection conducted at a material manufacturing plant in China (June 15, 2018)



Together with Our Shareholders

The Nippon Soda Group discloses information in a timely and appropriate manner in order to enhance our management transparency and to answer the expectations and trust that we receive from our stakeholders. We are striving to hold constructive dialogues with our shareholders toward realizing continuous growth and to improve our corporate value.



- To maintain constructive dialogues with our stakeholders and investors, which are essential to achieve continuous growth and improve our corporate value over a medium- to long-term period, our President and responsible directors and executive officers are available whenever necessary.
- Information is disclosed in a timely manner, with importance on fairness and accuracy, in accordance with the Timely Disclosure Rules established by the Tokyo Stock Exchange.
- Requests and comments received from our shareholders and investors through dialogues are communicated to our Board Meeting as necessary so that we can reflect them in our management.

Major activities

Communication

Dialogues with our shareholders

The Nippon Soda Group holds its ordinary general meeting of shareholders in June every year, viewing it as an important opportunity for us to engage in direct conversation with our shareholders.

As for the exercise of voting rights, this has been made possible not only in writing but also via the Internet.

We issue our business reports (annual report and interim report) twice a year in order to inform our shareholders about the current situation of our company. These business reports are posted on the Nippon Soda website to make them widely available to parties other than our shareholders.

Dialogues with investors and analysts

The Nippon Soda Group actively holds dialogues with investors and analysts in order to help them deepen their understanding about our business details and our business performance.

We hold financial results briefings twice a year for institutional investors and security analysts, and also answer their requests for individual interviews. Our President and responsible directors explain in person the performance of the Nippon Soda Group and its growth scenario.

We send our annual reports to institutional investors outside Japan on an annual basis. In addition, we participate in individual

interviews and conference calls to provide explanations.

The questions and comments received through dialogues with investors and security analysts are input into our in-house database and reflected in the management of our Group where appropriate.

Basic policy on shareholder returns

The Nippon Soda Group makes decisions on profit distribution based on revenue trends and by comprehensively considering such issues as maintenance of stable dividends, enhancement of shareholders' equity, and improving our financial standing. Our basic policy is to provide dividends twice a year, at the middle and end of the fiscal year.

Retained funds are used for improving corporate value, such as by advancing the development of new products and to achieve early market launch, and for allotment in growth investment such as M&A and business partnerships, as well as for the continuation and renewal of investments toward stable and continuous growth.

As for return of profits to our shareholders, we strive to provide a stable and continuous dividend distribution with the goal of realizing a total return ratio of 30% based on the shareholders' return policy stated in the new medium-term business plan for fiscal 2018 to fiscal 2020, while also maintaining financial resources for growth investments.

We will also adopt a flexible stance on repurchasing treasury shares as a shareholder return measure to supplement dividends.

Close up

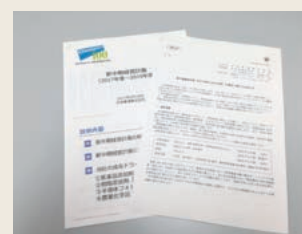
Meeting to provide an explanation of the medium-term business plan

The Nippon Soda Group is implementing its three-year medium-term business plan covering the period from FY 2018 to FY 2020. In October 2017, we held a meeting to provide an explanation of the plan.

At the meeting, we received many inquiries from participants and a lively discussion took place.

We will continue to ensure the disclosure of information on our business, as needed, in a timely manner so that the Nippon Soda Group's value and its share price are determined correctly.

Information material about the medium-term business plan distributed at the meeting



Together with Our Local Communities (Community Involvement and Development, Social Dialogue)

We will make efforts to improve the general public's confidence in us by participating in various environmental protection and safety activities and proactively engaging in dialogue with stakeholders regarding the effects of chemical substances on safety, health and the environment.



- Promotion of social contribution activities based on the concept of making contributions through our business toward the development of a sustainable society, from the following viewpoints: contributing to resolving problems pertaining to the global environment; maintaining harmonious relationships with local communities; and contributing to the development of those communities.
- Development of good relationships with local residents through various activities that meet the needs of local communities and that are designed and implemented by each business site and group company.

Major activities

Participation in community activities

Harmonious relationships with local communities

Nippon Soda contributes to creating local employment opportunities through its worksites throughout Japan.

To fulfill its roles and responsibilities as a corporate citizen, we regularly conduct cleanup activities for local communities in the neighborhoods of our worksites. We also participate in cleanup activities jointly conducted with local residents.

Dialogues with the local communities

● Communication activities at major worksites

Nippon Soda holds local gatherings and regularly offers tours of plants and research centers to residents in areas where its offices are located in order to provide information on CSR activities and receive feedback.

Major social activities of the Nippon Soda Group

Nippon Soda conducts social activities from the perspective of living in harmony with local communities, and for the development of local communities.



Goi Rinkai Festival (Chiba Plant)



"Thanking Local Residents" event (Takaoka Plant)

Each worksite undertakes diverse activities that match the needs of the area to develop good relationships with local residents.

Dialogue with the general public

Stakeholder engagement

We are involved in stakeholder engagement through dialogues with our stakeholders to better understand society's needs and values and to advance business activities that meet the expectations of the local communities.

● BCM rating from the Development Bank of Japan (DBJ)

Reviewed on: November 2, 2012

Rated on: January 15, 2013 Rank A (the best)

● Environmental Responsibility Rating from the DBJ

FY 2015: Rank B

In March 2015, Nippon Soda received a loan from the Development Bank of Japan as a result of receiving high marks under the bank's DBJ Environmental Ratings for our "particularly cutting-edge, environmentally conscious efforts."



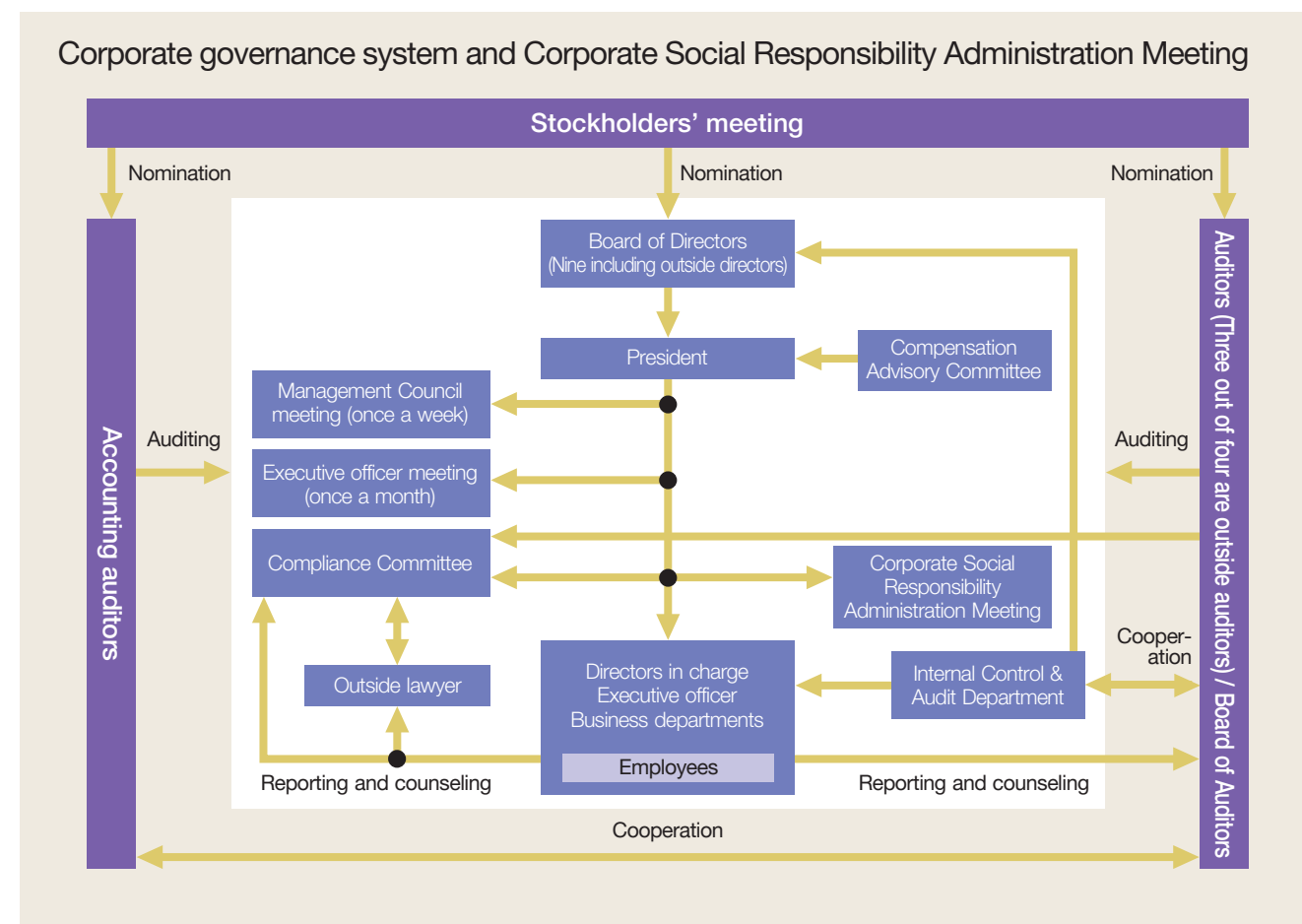
Close up

External communication

Takaoka Plant conducts environmental monitoring in cooperation with 12 residents representing six local residents' associations in the vicinity of the plant.

In fiscal 2018, we received five reports, including notices from parties other than these environmental monitors. After addressing all of them appropriately, we provided the reporters with information on how we addressed them, which they understood. Other offices also conduct a similar monitoring program.

Corporate Governance



Basic concept

Nippon Soda places primary importance on sound and transparent business management in compliance with the law. Its management philosophy is to contribute to social development by providing superior products through chemistry, to meet expectations from stakeholders, including shareholders, business partners, employees and local communities, and to promote environmentally conscious business practices and activities. Under this philosophy, Nippon Soda is committed to growing into a technology-oriented group that develops high-value-added products by making best use of its proprietary technologies and expands its business internationally with a focus on chemistry. Nippon Soda recognizes the importance of good corporate governance in order to achieve its philosophy and respond promptly and effectively to sudden changes in the business environment.

Corporate governance system

To meet social demands, Nippon Soda complies with the Corporate Governance Code, deepens its understanding of social contexts and respects their meaning in order to improve the corporate governance system.

The Board of Directors

The Board of Directors discusses issues governed by laws, regulations and articles of incorporation as well as important decisions related to business management defined by the Board's regulations, and supervises business execution.

The Board of Auditors

The Board of Auditors audits business execution performed by the Board of Directors, in cooperation with the Internal Control & Audit Department and accounting auditors.

Outside directors

Outside directors ensure objectivity and rationality in business decision making by the Board of Directors so as to improve medium- to long-term corporate value.

Effectiveness assessment of the Board of Directors

A self-assessment questionnaire is given to all directors and auditors to determine the effectiveness of business management and improve supervision. Based on questionnaire results, the company analyzes and evaluates the effectiveness of the Board of Directors.

Compliance

Basic concept

Nippon Soda ensures corporate activities are undertaken in compliance with laws, regulations and corporate ethics by ensuring all employees are fully informed of the Nippon Soda Group Code of Conduct. Our efforts to ensure business

management that emphasizes regulatory compliance include the establishment of the Compliance Committee and proper operation of the internal reporting system. Through these efforts, we enhance the internal control system and continue to be a company trusted by society.

The Nippon Soda Group Code of Conduct comprises the following sections:

1	Compliance with laws, rules, regulations and corporate ethics	(1) Fair behavior	(2) Compliance with corporate ethics	(3) Prompt corrective action and strict disciplinary action in response to the violation of a law, rule or regulation
2	Relationships with society	(1) Contribution to society	(2) Compliance with industry laws	(3) Restrictions on political and other donations
		(4) Severance of relationships with antisocial forces	(5) Environmental preservation and protection	(6) Compliance with laws and regulations related to security trade control and import and export
3	Relationships with customers, business partners and competitors	(1) Safety of products	(2) Compliance with the Antimonopoly Act	(3) Compliance with suppliers' guidelines for fair transactions and the Subcontract Act
		(4) Prevention of unfair competition	(5) Business entertainment and gifts	(6) Prevention of bribery of foreign public officials
		(7) Appropriate advertising		
4	Relationships with shareholders and investors	(1) Disclosure of management information	(2) Prohibition of insider trading	
5	Relationships with employees	(1) Respect for human rights and prohibition of discrimination	(2) Sexual harassment	(3) Protection of privacy
		(4) Safety and hygiene at worksites	(5) Compliance with labor laws	
		(1) Compliance with working regulations	(2) Proper accounting	(3) Conflicts of interest
6	Relationships with the company and its assets	(4) Prohibition of political and religious activities	(5) Management of corporate secrets	(6) Appropriate use of corporate assets
		(7) Appropriate use of information systems	(8) Protection of intellectual property	
7	Supplementary provisions	(1) Scope of application of this Code of Conduct	(2) Revision and abolition of this Code of Conduct	(3) Violation consultation hotline
		(4) Penalties		

Compliance education

The requirements that allow the Nisso Group to conduct sound business activities are specified in the Nippon Soda Group Code of Conduct, which is distributed to the management teams and all employees of Nippon Soda and its consolidated companies. Training based on the Code of Conduct is provided on a regular

basis to ensure compliance with laws and regulations.

A compliance survey is conducted among all employees once a year. Training on job-related laws and regulations is also provided at least once a year. In fiscal 2018, major compliance training sessions were held six times at Nippon Soda and major group companies, with the participation of 112 employees in total.

Risk Management

Internal audit

The company's Internal Control & Audit Department is independent from business departments. In cooperation with auditors, the Department, on a regular basis, assesses the appropriateness and efficiency of business activities and the reliability of financial reports.

Auditors are familiar with the entire Nippon Soda Group and inspect and monitor the proper execution of internal control. To ensure the reliability of financial reports, they work in close cooperation with accounting auditors. For example, auditors receive regular reports from accounting auditors and sometimes join some audits.

Information security management

Appropriate management and protection of our information assets is one of the priority issues in managing our business. Nippon Soda promotes information security management under the supervision of the director in charge of information systems.

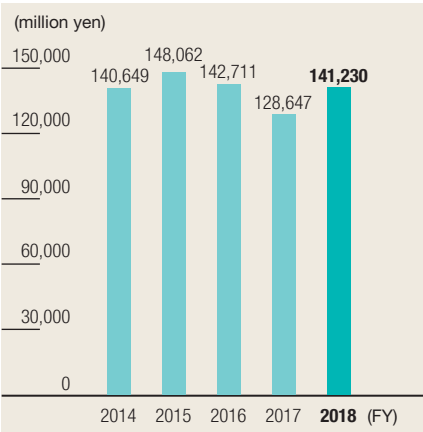
We have developed internal rules, including our policy on information security, and included issues related to the appropriate use of information systems in the Nippon Soda Group Code of Conduct. These efforts are aimed at raising awareness of the importance of information assets.

We strengthen the information security management system of the entire Nippon Soda Group. Efforts to help achieve this goal include drills on suspicious emails to prepare each group company in how to act to prevent viruses from external sources from infecting our computers.

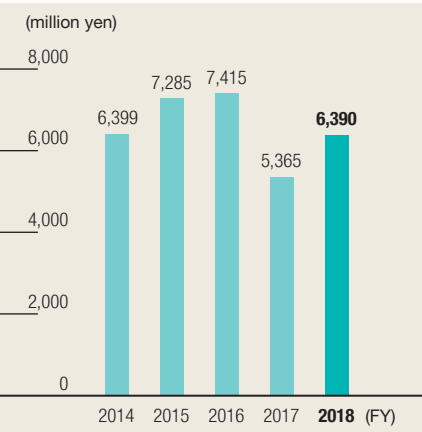
Major Management Indices and Environmental, Social and Governance (ESG) Data

Data with ★ are those of Nippon Soda Co., Ltd. alone. Data without ★ include those of group companies.

Consolidated net sales



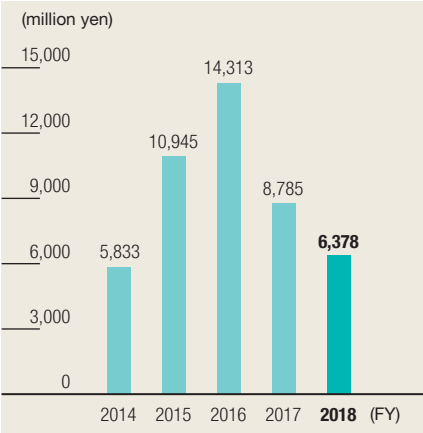
Operating profit (Profitability indices)



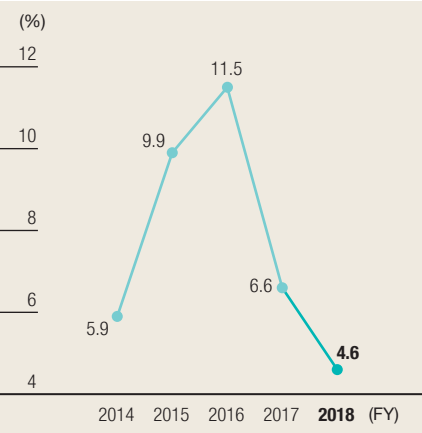
Ordinary profit (Profitability indices)



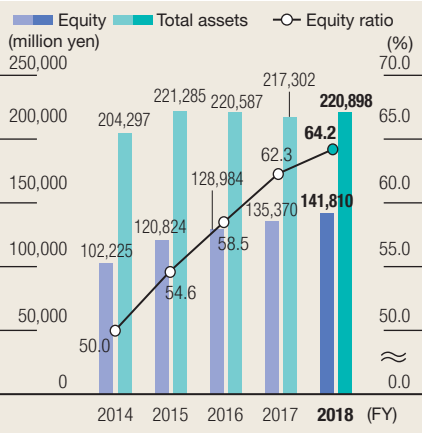
Profit attributable to owners of parent (Profitability indices)



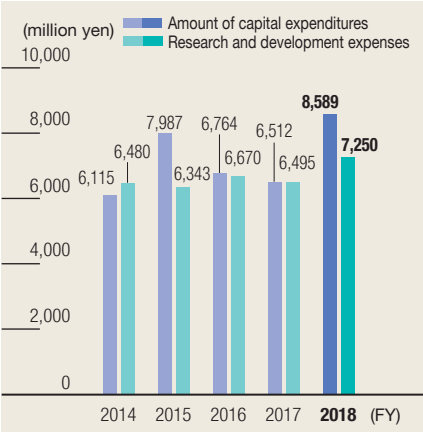
ROE (Profitability indices)



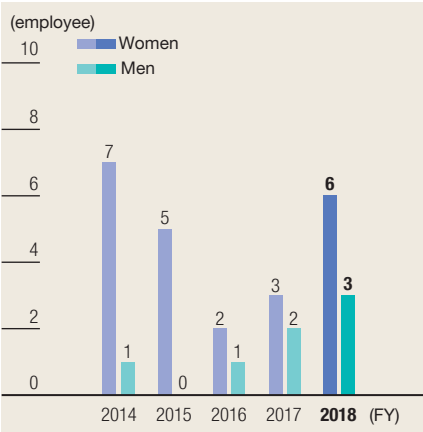
Soundness indices



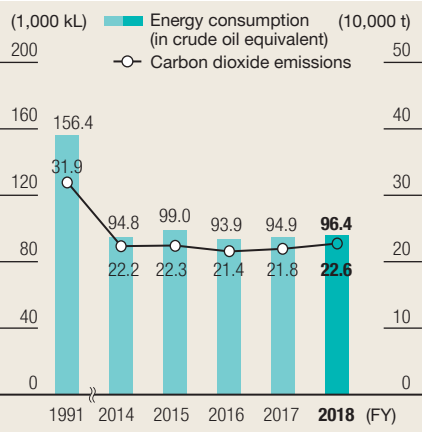
Growth indices



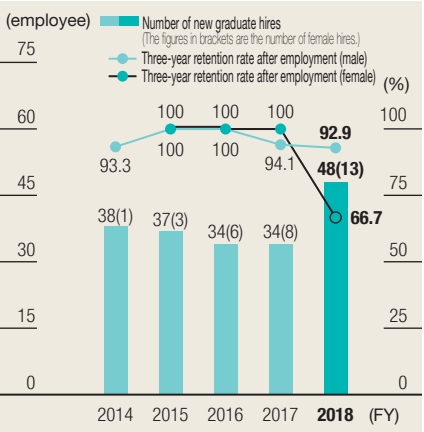
ESG data: Number of employees who took maternity/childcare leave ★



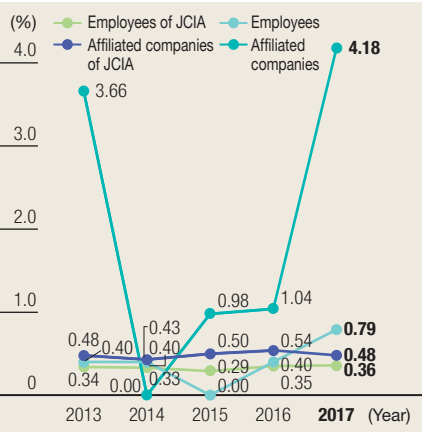
ESG data: Energy consumption and carbon dioxide emissions ★



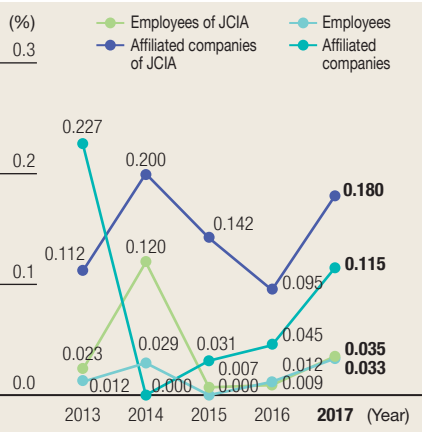
ESG data: Number of new hires, retention rates after employment ★



ESG data: Occupational accident frequency rates ★



ESG data: The severity rate of occupational accidents ★



Third-party Opinion/Response to the Third-party Opinion

We sought a third-party opinion from an expert to identify new issues related to CSR.

This year's CSR Report features a significantly reduced number of pages compared to the previous reports and an emphasis on "CSR activities to improve the corporate value." Data that should be disclosed are provided on the website, which meets the needs of the ESG era. The four special sections, each of which deals with one of the four priority issues of your company, convey very well the social implications of your company's business. Chemical manufacturers tend to create significant social value in the process of using their products. In this respect, I think that placing an emphasis on this matter is an appropriate way to communicate with stakeholders. The report also contains digital technology-related information, including the application of drones and 3-D printers, in which stakeholders may show an interest, and "Society 5.0," indicating the promising future of your company.

In terms of CSR, while it is important to focus on positive impacts on society, it is also important to convey how you regard negative impacts and how you address them. I think your company should also disclose information on negative impacts and concerns expressed by stakeholders. Through communicating these negative aspects, I'm sure that you can further promote CSR activities in a true sense and will gain higher levels of trust from stakeholders. With regard to SDGs, it is necessary to determine how you are contributing to addressing them on a target level.

In addition to the four priority issues, the CSR Report focuses on diversity promotion in the Top Commitment section and efforts to achieve a low-carbon society in the Business and CSR section. I think these two issues should also be included in the list of priority issues. In this regard, you should sort out priority issues in a more organized manner.

In conclusion, as summarized in the comment in the Stakeholder Dialogue section, you need to place importance on developing a long-term story and a long-term vision in order to fulfill the current standards of corporate social responsibility, which require achieving the Paris Agreement goals and Sustainable Development Goals (SDGs). In addition to my proposals stated above, I encourage you to design your CSR strategy from a long-term perspective to make CSR activities more sophisticated.

Response to the third-party opinion from an expert

In the expert dialogue held in August 2015, we identified material issues, based on which the current CSR activities have been implemented. For this year's CSR report, we sought third-party opinions from Mr. Mizukami, who participated in this expert dialogue.

I appreciate his understanding and assessment of our CSR activities and other aspects of our performance presented in the report. In recent years, we have been focusing our efforts on "CSR activities to improve the corporate value" and disseminating relevant information. As Mr. Mizukami noted in his comment, I also think it is important and meaningful in our CSR activities to identify and address negative impacts caused by our business and to widely provide information on our efforts in this matter. We will consider incorporating this perspective in our CSR efforts. We will also consider how to contribute to SDGs on a target level, including a review of KPIs. We will additionally sort out our priority issues in a more organized manner, as proposed by Mr. Mizukami, and promote our CSR activities based on a long-term story and vision so that our CSR activities will be made more sophisticated.



Takehiko Mizukami
Vice President
Japan CSV Business Development
Organization

Born in Himi City, Toyama Prefecture in 1966. After taking charge of aviation deregulation, aviation negotiations between Japan and the U.S., and other duties at the Ministry of Transport (the present Ministry of Land, Infrastructure, Transport and Tourism), he worked on business strategy planning projects, mainly in the manufacturing industry, at Arthur D. Little, an international management consulting firm. He completed his education at the Tokyo Institute of Technology, Graduate School of the Tokyo Institute of Technology and Harvard Kennedy School in the U.S. A leading person in CSV research in Japan.



Masahito Ikeda, Ph.D.
Executive Officer
General Manager
Corporate Social Responsibility
Department, Nippon Soda Co., Ltd.



For inquiries and opinions about this report, please visit the website below:

<http://www.nippon-soda.co.jp/contact/>

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About the Front Cover

A motif based on the company emblem, which consists of a hexagon-shaped snow crystal enclosing a hare made from snow. The snow crystal and the hare made from snow respectively represent high purity and virtue, which are essential to a chemical company.

