

From the Biosphere to Outer Space



NOF CORPORATION

CSR Report

2019



From the Biosphere to Outer Space

Sustainable Chemistry for You

The NOF Group is a chemical manufacturer that provides products in a wide variety of fields, ranging from the biosphere to outer space.

We believe that, for a chemical manufacturer to engage in sustained business activities, its activities and products should be not only useful to society but also in harmony with social environment and natural environment so that they can be recognized, appreciated and accepted by society.

We intend to convey products that truly fit the needs of society and people's lives.

The NOF Group supports customers around the world through various businesses at anytime and anywhere.



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Editorial Policy

In an effort to provide our broad range of stakeholders with a better understanding of the CSR activities carried out by the NOF Group, this Report presents the activities of the NOF Group for fiscal 2018.

Reporting Period

Fiscal 2018 (From April 1, 2018 to March 31, 2019)

*Activities conducted prior to and after this period have also been included when deemed to be important for deepening the understanding of the reader.

Scope of the Report

The Report covers the entire NOF Group.

If it is necessary to specify the scope of coverage, the following terms are used.

The term "NOF Group" is used to refer to the whole Group.

The term "NOF" is used to refer to NOF CORPORATION alone.

Environmental data Main items of environmental performance data are separately aggregated and stated with respect to domestic and overseas sources. In this Report, NOF and its 13 domestic consolidated subsidiaries are referred to as the "Domestic Group."

Social data Social data primarily covers NOF and includes certain affiliates.

Financial data Financial data covers NOF and its 24 consolidated subsidiaries.

Guidelines Referenced

ISO26000: 2010 Guidance on Social Responsibility, Japanese Standards Association

Disclaimer

This Report contains forward-looking statements based on management plans and expectations at the time of publication, as well as past and present facts regarding the NOF Group. These forward-looking statements comprise assumptions and judgments based on currently available information, and thus the actual events and outcome of future business activities may differ from those predicted due to changes in various conditions.



Business Overview

Corporate Profile (As of March 31, 2019)

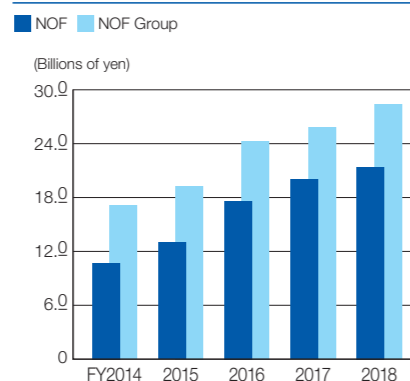
- **Name:** NOF CORPORATION
- **Established:** June 1, 1937
- **Incorporated:** July 1, 1949
- **Head Office:** 20-3, Ebisu 4-chome, Shibuya-ku, Tokyo, Japan
- **Capital:** ¥17,742 million
- **Net Sales:** ¥189.1 billion (NOF Group)
¥130.9 billion (NOF)
- **Employees:** 3,725 (NOF Group)
1,648 (NOF)
- **Group Companies:** 24 consolidated subsidiaries

Management status

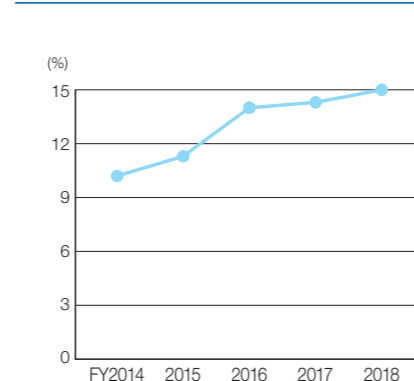
Net sales



Operating income



Operating income to net sales (NOF Group)



Main business locations of NOF CORPORATION

Business location	Address	Contact	ISO-14001	ISO-9000's
Head Office	20-3, Ebisu 4-chome, Shibuya-ku, Tokyo 150-6019, Japan	+81-3-5424-6670 (Responsible Care & Production Engineering Dept.)	—	—
Amagasaki Plant	56, Ohamacho 1-chome, Amagasaki, Hyogo 660-0095, Japan	+81-6-6419-7292 (Environmental Safety Administration Office)	BV 3672827-2A Renewed on Mar. 8, 2018	BV 3672449 Renewed on Sep. 7, 2017
Kawasaki Works (Chidori Plant) (Daishi Plant) (DDS Plant)	3-3, Chidori-cho, Kawasaki-ku, Kawasaki, Kanagawa 210-0865, Japan	+81-44-288-2153 (Environmental Safety Administration Office)	BV 4298129 Renewed on Mar. 7, 2019	(Chidori Plant) BV 3607007 Renewed on July 15, 2016 (Daishi Plant) FSSC22000 JMAQA-FC270 Certified on Jan. 21, 2019
Oita Plant	2, Oaza-Nakanosu, Oita, Oita 870-0111, Japan	+81-97-527-5201 (Environmental Safety Administration Office)	BV 4019501 Renewed on Feb. 7, 2018	BV 3931371: Renewed on Aug. 22, 2017
Aichi Works (Kinuura Plant) (Taketooyo Plant) (Display Materials Plant)	61-1, Aza-Kitakomatsudani, Taketooyo-cho, Chita-gun, Aichi 470-2379, Japan	+81-569-72-1955 (Environmental Safety Administration Office)	BV 3735704 Renewed on Dec. 12, 2018	(Kinuura Plant, Display Materials Plant) BV 3625487 Renewed on Aug. 21, 2017 (Taketooyo Plant) JQA-AS0183 Renewed on Feb. 21, 2019

Business segments of NOF and its consolidated subsidiaries

Founded on businesses using “oils and fats,” materials that offer unlimited possibilities, the NOF Group has ceaselessly and boldly diversified into a variety of state-of-the-art fields. True to our slogan of being active “From the Biosphere to Outer Space,” we have been expanding our business reach into areas far beyond our original sphere as a chemicals producer. NOF’s current businesses include oleo & specialty chemicals, functional chemicals & polymers, explosives & propulsion systems, functional foods, life science products, DDS development, display materials, anti-corrosion, logistics and real estate. Leveraging our unique technologies and expertise in each of these fields in a wide range of industrial and lifestyle products, we have earned the high regard and trust of our customers.

The businesses of the NOF Group are classified into four broad segments: Functional Chemicals, Life Science, Explosives & Propulsion, and Others. The following diagram represents the relationship between the main products of each segment and the consolidated subsidiaries.





10 Space rockets

The functional components of NiGK Corporation, which leverage the characteristics of explosives that generate immense energy with the use of a small amount, play a vital role in each stage of ignition of solid rocket boosters, satellite separation (See figure above*1), orbit launch and satellite retrieval.

NOF, as the sole manufacturer of solid fuels for space rockets in Japan, produced the solid propellants for solid rocket boosters (See figure above *2) for the H-IIA and H-IIB rockets (Explosives & Propulsion).

7 Antifreezing agents, automatic spraying device



The antifreezing agent KAMAGU®, developed by HOKKAIDO NOF CORPORATION, which is sprayed onto road surfaces using an automatic spraying device, is contributing to the safety of winter roads. Since it contains no chloride it poses no fear of salt damages (Explosives & Propulsion).

11 Oceanographic Surveys

The "AES-3," NiGK Corporation's automatic marine elevator unit, which is capable of simultaneously measuring various information including water temperatures by water depth in chronological order, is playing a major role in the world's oceanographic surveys (Explosives & Propulsion).

8 Hand antiseptic agents



Hand antiseptics are a must for preventing hospital-acquired infections. Hand antiseptic agents formulated with NOF's moisturizing ingredient, "LIPIDURE®," solve the problem of chapped hands (Life Science Products).

9 Car seats



NOF's polyether, UNISAFE™, is used as a foam stabilizer to improve the formability of urethane used in the interiors of automobiles, such as car seats (Oleo & Specialty Chemicals).

1 Roof (Solar cells)



NOF's organic peroxides are used to enhance the heat resistance and strength of the resins that attach the electricity generating components with the protector components of the solar cells (Functional Chemicals & Polymers).

2 Medical nutritional products



NOF provides foods formulated from medium-chain fatty acids for maximum digestion and absorption for patients with kidney diseases whose protein-intake has been restricted (Functional Foods).

3 Crime-prevention devices



The NET LAUNCHER®, which deploys a net towards intruders and the LIQUID LAUNCHER®, which sprays tear gas, both products of Nippon Koki Co., Ltd., are being used as groundbreaking crime-prevention devices by schools and other institutions (Explosives & Propulsion).

4 Headlamps



NOF's antifog agents are used to prevent fogging in the lenses of automotive headlamps (Functional Chemicals & Polymers).

5 Automotive components including bolts and nuts

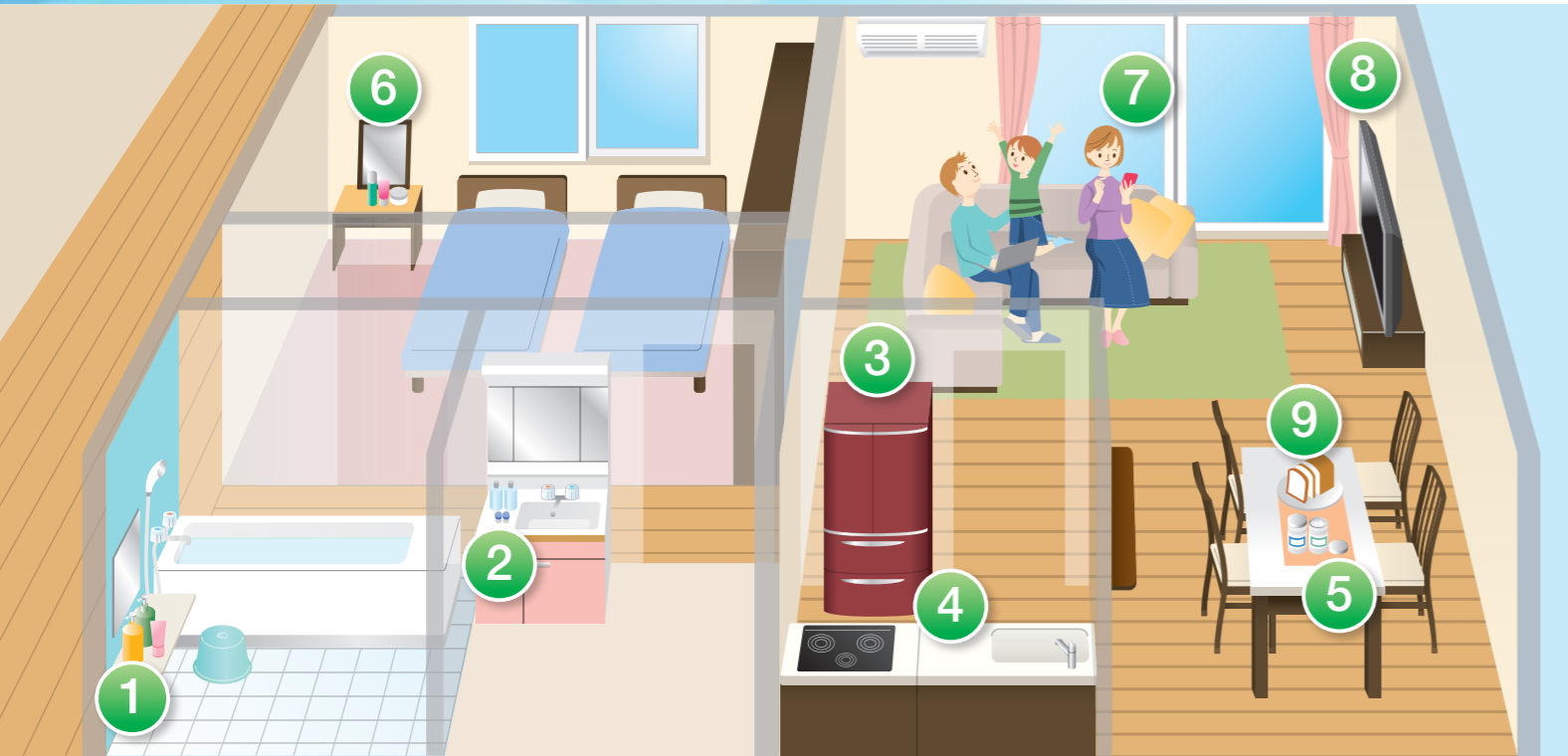


GEOMET®, a completely chrome-free rust prevention coating developed by the Anti-Corrosion Coatings Group of the NOF Group that is environmentally-friendly and demonstrates high anti-corrosion functions, is used in automotive parts of numerous car manufacturers (Anti-Corrosion).

6 Industrial explosives



NOF's emulsion explosives with an automatic charging system ensures operational safety and has contributed to the improvement of infrastructures including the construction of tunnels for expressways and the Linear Shinkansen, as well as subterranean rock storage tanks for crude oil (Explosives & Propulsion).



1 Shampoos and Body Soap



Anionic surfactants developed by NOF, which are known for their mildness and for their ability to form fine bubbles, are used in shampoos and body soaps (Oleo & Specialty Chemicals).

2 Contact lenses and contact lens care products



Contact lens materials and many contact lens care products contain NOF's multifunctional moisturizing ingredient, "LIPIDURE" (Life Science Products).

3 Refrigerators and air conditioners



Esters developed by NOF are used in refrigerators and air conditioning units as lubricants that are eco-friendly and compatible with the new HCF refrigerants (Oleo & Specialty Chemicals).

4 Frozen foods



Cream-flavored and butter-flavored margarine developed by NOF with functions that are suitable for frozen foods such as deep-fried croquettes and rice pilaf are used (Functional Foods).

5 Health foods



Various health foods contain NOF's functional materials (Functional Foods).

6 Cosmetics



NOF's various cosmetic ingredients, used in toning lotions, emulsion lotions, serums and beauty creams, have been highly regarded for their quality and functionality (Oleo & Specialty Chemical).

7 Smartphones



NOF's protection films and functional films are used in displays in order to enhance durability and image quality (Display Materials).

8 Television



NOF's functional films equipped with various functions including the anti-reflection function, the UV ray protective function, the anti-finger mark function and anti-static function are used in displays (Display Materials).

9 Bread



NOF's margarine with its soft and moist texture and aromatic butter flavor improve the quality of bread through enzyme action (Functional Foods).

* Business group in charge of the product shown is indicated in the parentheses.

NOF Group's Eco-friendly Products

Based on its technologies and experiences built up over the years, the NOF Group continues to develop eco-friendly products.

[What the NOF Group means by "eco-friendly products"]

- (1) Products that facilitate resource saving and recycling
- (2) Products reduced in environmental load
- (3) Products containing neither hazardous nor legally regulated substances

The products of the NOF Group are almost wholly supplied to corporate users. Some of the products of the NOF Group delivered to corporate users are exhausted as they are used as processed foods or explosives, but many of them are further processed into end products. In such cases, we deliver products that contribute to recycling and energy-saving of the end products and eco-friendly products that are biodegradable or that do not contain harmful substances in an effort to reduce environmental loads. Going forward we will strive to develop products and technologies that will contribute to reducing the environmental load from the standpoint of the entire life cycle from the procurement of materials to production, distribution, use, disposal and recycling.

Products that Facilitate Resource Saving and Recycling

Recycling of material resources is a vital key to the realization of a sustainable society. The NOF Group has proposed diverse resource saving and recycling techniques, which are now in practical use.

◆ Deposit control agent (YUKA SANGYO CO., LTD.)

Recycled paper resources contain numerous impurities including sticky substances such as adhesives. These impurities lower the efficiency of the paper recycling process and impact the quality of the product. The pitch control agent MILLSPRAY®, SPANOL® and DETAC® and the removing agent BIOREX® have solved these problems and promote the recycling of waste paper.



These products demonstrate their superior performance in reducing impurities that generate in the paper-making process.

◆ Copper paste for screen printing (NOF CORPORATION)

Etching is the standard method for forming copper wiring on electronic circuit boards. However, this method requires waste fluid processing because copper waste fluid is generated as most of copper foil is dissolved.

The copper paste developed by NOF makes it possible to directly draw copper wire on the necessary areas through the screen printing method. For this reason, it is possible to form copper wiring that is not wasteful without generating waste fluid, which in turn makes it possible to use resources efficiently and contribute to environmental preservation.



Example of use in printing of copper paste by screen printing

◆ Vulcanized rubber substitutes (Functional Chemicals & Polymers, NOF CORPORATION)

While large quantities of vulcanized rubber are used in auto parts and sealing materials, which have to be highly resistant to heat and oil, vulcanized rubber can never be molten once they are molded, and therefore refuse recycling. Unlike them, NOFALLOY® TZ series, which can be heated for re-melting as many times as wanted for recycling, are extensively utilized as substitutes for vulcanized rubber.



Products made recyclable by the use of NOFALLOY® TZ series

Products Reduced in Environmental Load

We in the NOF Group, always asking ourselves "To reduce our environmental loads to the possible minimum, how can we utilize our technology", are earnestly meeting many different requests from diverse fields.

◆ Low-VOC*1 curing agents (Functional Chemicals & Polymers, NOF CORPORATION)

Bath tubs are manufactured by thermally curing unsaturated polyester resin. PERHEXYL® A is a curing agent that can shorten the molding cycle and moreover significantly reduce the VOC, an environmental load that remains in the molded product.

◆ Antifog agents for automotive headlamps (Functional Chemicals & Polymers, NOF CORPORATION)

Today, LED lamps are in accelerated use for automotive headlamps by virtue of their reduced power consumption, extended service life, contributions to fuel efficiency of cars and less CO₂ emissions. However, as they do not make the lamp inside as hot as in conventional halogen lamps, LED headlamps involve the problem of susceptibility to fogging by dew drips. The MODIPER® H series are used for preventing such fogging within lamps and for keeping their front lenses clear.



Antifog agents used for automotive headlamps

◆ Eco-friendly refrigerating machine oil (Oleo & Specialty Chemicals, NOF CORPORATION)

HFC (Hydrofluorocarbon) refrigerants, which do not deplete the ozone layer, are increasingly used as refrigerants for air conditioners and refrigerators. Eco-friendly refrigerating machine oil enhance co-solubility with HFC (Hydrofluorocarbon) refrigerants and improve its thermal stability, electrical insulation performance and other factors. Moreover, its low viscosity contributes to saving energy consumption. In recent years, the refrigerants having a smaller global-warming potential compared with previous products are required, and NOF is now supplying refrigerating machine oil for refrigerants having a low global-warming potential.

◆ Anti-sticking agents (Oleo & Specialty Chemicals, NOF CORPORATION)

In road construction, asphalt mixtures often stick to the cargo beds and hoppers used within plant facilities, and to prevent this trouble, petroleum-derived adhesion preventers have been used. However, conventional adhesion preventers are not friendly to the environment; they contaminate soil and/or water. ASPHASOL® and ASPHARAB®, made from natural oil, contribute to environmental conservation as a highly biodegradable product.

*1 Volatile Organic Compounds

"How ASPHASOL® N-02" proves effective



Where ASPHASOL® is used

Where it is not used



Oil readily biodegradable in the environment (Biodegradability 60% or more in 28 days) (Under OECD 301C tests)

Eco Mark Certification Number 09110001
 Name of utilizing contractor: NOF CORPORATION
 Product: ASPHASOL® N-02, N-03
 Eco Mark Certification Number 12110001
 Name of utilizing contractor: NOF CORPORATION
 Product: ASPHARAB® CE-R, LF

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 © Received the fiscal 2011 Kinki Chemical Society Japan Environmental Technology Award (ASPHASOL®)

◆ Biodegradable hydraulic fluid (Oleo & Specialty Chemicals, NOF CORPORATION)

Leaking of hydraulic fluid (mineral oil) used in construction machinery for outdoor use or dam gates in accidental troubles or natural disasters and the resulting contamination of the environment is posing a problem. In view of this circumstance, NOF has developed hydraulic fluid MILLUBE® that is decomposed by natural bacteria (biodegradable) and is urging replacement of conventional hydraulic oils with this new product.



Oil readily biodegradable in the environment (Biodegradability 60% or more in 28 days) (Under OECD 301C tests)

Eco-friendly
 Eco Mark Certification Number 08110006
 Name of utilizing contractor: NOF CORPORATION
 Product: MILLUBE® E-22A, E-32A, E-46A, E-56A, G-320A

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 © Received the fiscal 2010 Kinki Chemical Society Japan Environmental Technology Award

◆ pCO₂ meters (NiGK Corporation)

pCO₂ meters are drifting observation buoys used to study the effects of global warming. They drift on the ocean's surface for a year, observing carbon dioxide partial pressure of ocean surface and relaying the data together with positioning data.



◆ Steam pressure cracking agent, "GANSIZER®" (Nippon Koki Co., Ltd.)

GANSIZER® uses high vapor pressure that is generated during the thermolysis of the agent to crush bedrock, stone, and concrete structures with low vibration and low noise. It has gained a strong reputation as a crushing agent not containing explosives and is friendly towards the surrounding environment. It has a strong track record in situations such as crushing concrete and excavation works near rivers and it was also used for underwater crushing of breakwaters that were destroyed in the Great East Japan Earthquake.



◆ Antifreezing agents (HOKKAIDO NOF CORPORATION)

Antifreezing agents such as sodium chloride conventionally used on road surfaces in cold areas have posed the problem of "salt damages." NOF's antifreezing agent KAMAGU®, an acetic acid-derived chemical containing no chloride, poses no fear of salt damages. AUTOKAMAGU® JET, an automatic antifreezing agent spraying device, is a sensor-based system that automatically sprays KAMAGU®, an environmentally-friendly acetic acid antifreezing agent, onto snowy or frozen roads. It is able to work 100% on natural energy using solar energy and it can also perform advanced road surface management via remote monitoring and control. AUTOKAMAGU® JET contributes to environmental conservation and road safety together.



KAMAGU®, together with AUTOKAMAGU® JET, is proving highly effective against the freezing of road surfaces.

Products Containing neither Hazardous nor Legally Regulated Substances

As a group of chemical companies manufacturing chemicals and supplying them to society, the NOF Group attaches foremost importance to the safety of products themselves.

◆ Chrome-free anti-corrosion coatings (NOF METAL COATINGS ASIA PACIFIC CO., LTD.)

GEOMET® is a water-based anti-corrosion coating which contains no chrome compound. Satisfying the requirements of Europe's ELV and RoHS directives, GEOMET® Treatment Parts are used by automakers across the world.



Parts treated with GEOMET®

◆ Cement capsule (NiGK Corporation)

Cement capsule is an (inorganic) adhesive-based capsule anchor for post-installed application intended for typical use in anti-earthquake reinforcement work. This product is more resistant to fire than resin products, and excels in safety as it contains no harmful chemicals, which might invite sick house syndrome, or endocrine disrupter.

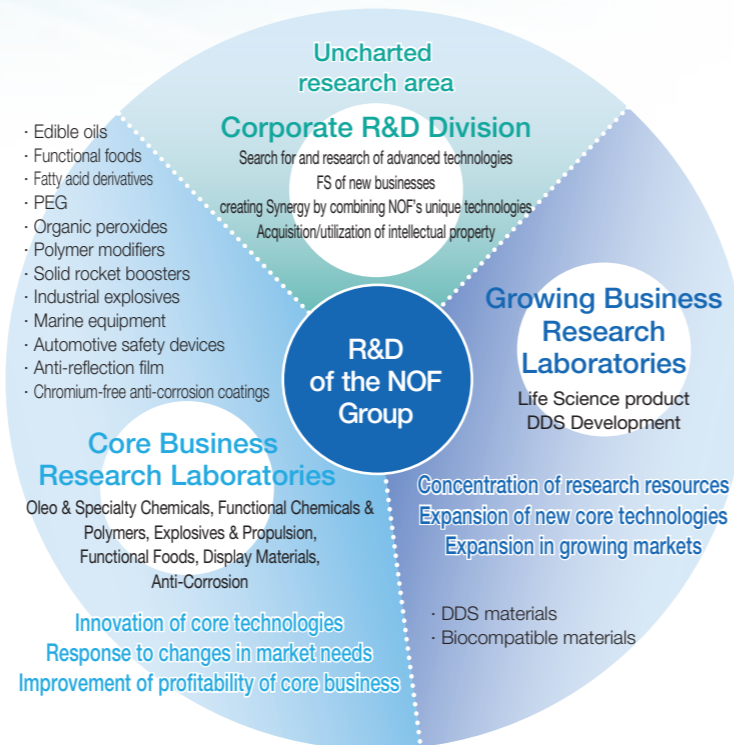


Example of use in an actual project (anti-earthquake reinforcement of Shinkansen bridge piers)

Innovative Materials, Advanced Technologies. Create cutting-edge technologies by developing new innovative materials.

Today, the developments of IT and Information appliance are going to change our life style, and the technological innovations in the life science are about to reach the essence of life. In this "Time of remarkable technological innovation", there is a need for Chemical Materials that can adapt to "Change of technology". Our R&D organization is comprised of the following nine Laboratories and the Corporate R&D Division. Five Laboratories are for supporting the core business units (Oleo & Speciality Chemicals, Functional Chemicals & Polymers, Explosives & Propulsion systems, Functional Foods, Display Materials). And, three Laboratories are for the priority business areas (Life science, DDS) to specialize, and the remaining one is for Corporate R&D Division that does not belong to any business units. In order to correspond to "Time of remarkable technological innovation", NOF is continuing challenging to develop new technologies and new products by taking the social needs of near future at the R&D laboratories of each business unit.

Corporate R&D division is responsible for planning the Corporate R&D strategies, and adjusting the cooperation between each business unit. In addition, this division is responsible for developing "fundamental technologies" of innovative materials and advanced technologies which have wide applicability and impact on performance and productivity in the future. Corporate R&D division is searching new materials and new technologies world-widely, and challenging to develop innovative materials and advanced technologies for the new era through cooperating within and outside.



Advanced Technology Research Laboratory

The Advanced Technology Research Laboratory is engaged in long-term research, primarily focused on biomaterials, functional materials and fine polymers. The laboratory exchanges information and technologies with internal and external academic institutions, while proactively conducting a wide range of joint researches, including those with companies in other industries.



Oleo & Specialty Chemicals Research Laboratory (Oleo & Specialty Chemicals Division):

Focusing on application researches mainly for oils and fats and their derivatives, surfactants, macromolecules, the Oleo & Specialty Chemicals Research Laboratory is approaching from various angles and developing high-function, high-value added products in the fields including resource, environment, energy, healthcare, information and electronics.



Functional Chemicals & Polymers Research Lab. (Functional Chemicals & Polymers Division):

In this laboratory, novel high performance polymers and advanced materials are being developed with the technologies from synthesis, analysis, polymerization and evaluation of organic peroxides.



Research and Development Department (Explosives & Propulsion Systems Division):

The laboratory is now promoting R&D activities to gun-powder, explosives, and solid propellants, exploring new areas, and setting up international cooperation focusing on the future globalization. The Kamioka Test Center has a test facility built in the tunnel to secure safety of the surroundings.



Functional Foods Research Laboratory (Functional Foods Division):

Based on technologies regarding oil and fat processing, emulsification, nano-emulsification and micro-encapsulation, functional utilization of emulsifiers and enzymes among others, and functional lipids including DHA, the laboratory is endeavoring to develop "safer and more trustworthy" products including edible oil and fats, functional food and enteral nutritional products.



Life Science Research Lab. (Life Science Products Division):

Based on MPC polymer which is a core biocompatible material, this laboratory engages in research and development to apply its polymer for medical products regarding eye-care, skin-care, oral-care, medical devices, and diagnostics.



DDS Research Laboratory (DDS Development Division):

This laboratory engages in research and development to apply advanced technologies, as well as PEG derivatives, phospholipids and novel DDS materials, in the field of DDS.



Display Materials Research Lab. (Display Materials Division):

This Lab is developing display materials-related products embodying the foremost of NOF's technology.



Nippon Koki Co., Ltd., R&D Department:

This company has developed many types of gun ammunitions for defense use. The company is now emphasizing development of products such as industrial explosives and automotive safety devices. Based on these high technologies accumulated through years of experience, the company is now concentrating on the development of products in the new security field to cope with the crime prevention, which is expected from various areas.



NiGK Corporation R&D Department:

This company has developed many new products using its own technology based on wide range of expertise such as chemistry, electrical and mechanical engineering, control technique and machinery.



NOF METAL COATINGS ASIA PACIFIC CO., LTD. Technical Section:

This company has been developing anti-corrosion agents for automotive parts, etc. and has led other companies in marketing high quality chrome-free anti-corrosion agents.



We will create innovative value that will contribute to mankind and society by tapping into synergy of the NOF Group in wide-ranging fields from the biosphere to outer space.

Thank you very much for your interest in the CSR Report 2019 of the NOF Group.

The NOF Group is engaged in multifaceted business developments with innovative products under the Corporate Philosophy of “Contributing to Mankind and Society through the Creation of New Value in Wide-ranging Fields from the Biosphere to Outer Space” in our three priority business fields of “life science,” “electronics/IT” and “environment/energy.”

In fiscal 2017, the NOF Group launched its three-year plan, the “2019 Mid-term Management Plan,” setting the “creation and expansion of innovative value” as its basic policy and has been working on the four challenges of “creating products and markets,” “improving productivity,” “enhancing Group management” and “promoting CSR activities,” with the aim of “Greater progress.”

In fiscal 2018, we continued aggressive investment of resources in our three priority business fields in order to achieve sustainable growth amid a significantly changing business environment, while creating innovative value through leveraging synergies within and without the NOF Group. As a result, consolidated net sales, consolidated operating income, consolidated ordinary income, and net income attributable to owners of parent for fiscal 2018 all exceeded the results of the previous fiscal year.

The NOF Group is promoting the creation of products and markets, as well as an improvement of productivity, as we flexibly respond to changes in market needs in our three priority business fields, under its management policy for fiscal 2019 of “Greater progress.” Through these initiatives, the NOF Group will further evolve as a functional materials manufacturer capable of supplying innovative products to Japan and overseas markets, continuing our efforts to be a trusted business group with a strong presence.

In fiscal 2019, the final year of the “2019 Mid-term Management Plan,” the NOF Group will begin formulating the “2022 Mid-term Management Plan,” the next mid-term management plan. Although the business outlook remains uncertain, we intend to formulate a plan to create innovative value that will contribute to mankind and society, and achieve sustainable corporate growth by focusing further on the development of technologies that help solve challenges facing society.

We, hereby, submit the CSR Report 2019. We hope that it provides you with a better understanding of the NOF Group’s activities aimed at contributing to the environment and society, and we shall be grateful if you would give us your further support and candid opinions regarding this report.

President and Chief
Executive Officer

Takeo Miyaji



President and Chief Executive Officer
Takeo Miyaji

Q1 Please tell us about the CSR activities of the NOF Group.

The NOF Group has been promoting CSR activities based on the four concepts of “governance,” “respect for individuals,” “responsible care* activities” and “living in harmony with society.” In particular, we have been engaged in responsible care activities optimized for chemical control since 1995, which are the core of our CSR activities.

*Responsible care refers to activities voluntarily carried out by chemical companies to ensure environmental sustainability, health and safety in all processes from development to manufacture, logistics, use, final consumption, and disposal of chemicals, and to disclose its achievements and communicate with society regarding such activities.

Q2 Why are responsible care activities positioned as core activities?

Responsible care is activities that the chemical industry is promoting on a worldwide basis. It is an optimal method for managing safety of chemicals through their entire life cycle and is compatible with the NOF Group's business.

The NOF Group is a chemical manufacturer engaged in the “intermediate materials business,” which means nearly all of the chemicals it manufactures are used as raw materials for products of client companies. Considering that it is a responsibility of chemical manufacturers to ensure environmental sustainability, health, and safety through the entire life cycle of chemicals, we consider responsible care activities are our core activities.

Q3 Please share your thoughts about initiatives for the SDGs.

Broadly speaking, the NOF Group takes two approaches to the Sustainable Development Goals (SDGs) adopted by the United Nations in September 2015.

One is to contribute to the SDGs by promoting responsible care activities. Nearly all of the items of the responsible care activities, core activities, are related to the SDGs. We will, therefore, play a part in achieving the SDGs by continuing responsible care activities.

The other approach is to supplying innovative products to domestic and overseas markets, which will possibly contribute to the SDGs. The NOF Group has been supplying high-function, high-value added products in our three priority business fields of “life science,” “electronics/IT” and “environment/energy.” As an extension of these efforts, we have now started considering the development and sales expansion of products that take sustainability into consideration, with the percentage of renewable raw materials used as an evaluation factor. Our aim is to make a contribution through proactive co-creation with companies in our industry or other industries.

Q4 How can responsible care activities contribute to the SDGs?

The NOF Group classifies its responsible care activities into “Five Core Components,” including “environmental safety,” “labor safety,” “plant safety,” “product safety,” and “transportation safety.” Adding “dialogue with society” to the Five Core Components, we are engaged in specific activities. As shown in the table below, the key items are connected with the SDGs in various ways. In “environmental safety” activities, the three themes, “(1) reduce greenhouse gas emissions, (2) reduce the percentage of waste sent to landfills (Zero Emissions), and (3) reduce chemical emission volumes” are assigned high priority, and we continue to remain focused on these themes.

Main measures for responsible care activities and SDGs

Category	Measures		
	(1) Reduce greenhouse gas emissions	(2) Reduce the percentage of waste sent to landfills (Zero Emissions)	(3) Reduce chemical emission volumes
Environmental safety			
Labor safety	Initiatives to eliminate labor accidents		
Plant safety	Ensure stable operation		
Product safety	Promote proper management of chemicals		
Transportation safety	Promote safe transportation		

Interview with the President

Q5 How do you respond to workstyle reform?

Under our policy of “developing a work environment in which the staff can work well motivated while attaching due importance to the work-life balance between work and non-work activities,” we have striven to enhance systems that support diverse working styles, mainly through the introduction of a flex-time system and yearly paid half work days.

In addition, following the enforcement of the workstyle reform related laws in April 2019, we are undertaking a variety of measures, such as introducing a restriction of work after the designated time and a work interval system, as well as days on which employees are encouraged to leave work on time, with a view to promoting fulfilling lifestyles outside of work, by further reducing work hours through improved operational efficiency and productivity. In implementing these measures, we held briefings for all of our managers to make our policy thoroughly understood, and had them take e-learning courses on time management to enable them to take the lead in improving operational efficiency and productivity in the workplace. In order to truly reform workstyles, we believe that it is necessary to change each employee's attitude as well as the workplace culture. Going forward, we will continue promoting workstyle reform with the aim of achieving work-life balance.

Q6 Please share your thoughts about diversity.

In order to fulfill our Corporate Philosophy to “Encourage employees to take on new challenges, working to create a rewarding place to work and fulfilling lifestyles,” we accept and respect diversity in the attributes of our human resources such as nationality, gender, race and whether they are disabled or not. We are creating a workplace culture that accepts diverse working styles, mainly through the introduction of flexible work systems, such as short hour work systems and flex-time, while also implementing various training programs, including training programs to promote the active participation of women.

In carrying out recruiting activities, we engage in activities that respect the individualism and values of our diverse human resources, for the purpose of supporting and further expanding our wide range of businesses, from the biosphere to outer space. “People” are what make up an entity, and it is important that diverse human resources of different specialties and expertise collaborate, inspire each other and lift each other up. For this reason, NOF proactively promotes the recruitment of experienced workers and returnees from abroad, regardless of whether they are straight out of college or mid-career recruits, as well as foreign nationals, including exchange students.



Q7 How does the NOF Group plan to maintain strong governance?

Since we established the Nomination Committee and the Compensation Committee in fiscal 2018, we have been enhancing the supervisory function of the Board of Directors and strengthening corporate governance. In response to quality frauds which have drawn public attention in recent years, we developed the structure of the Quality Control Committee to further strengthen quality control. In addition, the Risk Management Task Force has been established to further reinforce the risk management system. Please refer to the report on the risk management system contained in this report.

Q8 How will the NOF Group promote future CSR activities?

Playing a role in achieving the SDGs to help realize a sustainable society is one of the responsibilities we assume as a corporate citizen and is also a challenge that we must address. We believe that it is important to increase the wealth of society as a whole, rather than seek profit individually on a company basis. Based on this approach, we will implement the measures of our CSR activities and continue to contribute to society.

In addition, fostering human resources to practice these efforts and achieve the goals is an important task. We will focus on fostering “diverse human resources,” who are full of vitality and are able to act autonomously, while respecting other's personalities in good faith.

By continuing to earnestly engage in CSR activities and fulfilling our corporate social responsibility, the NOF Group will work to become “a trusted business group with a strong presence” for all of our stakeholders.

Vision

Corporate Philosophy

The NOF Group is dedicated to contributing to mankind and society through the creation of new value "from the biosphere to outer space."

1. Satisfy customer needs by providing the highest quality products and services on a global basis.
2. Leverage the Group's collective strengths to develop cutting-edge technologies and superior products that open up new possibilities.
3. Work in harmony with the environment and ensure the safety of products and business activities.
4. Maintain suitable levels of earnings and reward stakeholders with fair return.
5. Encourage employees to take on new challenges, working to create a rewarding place to work and fulfilling lifestyles.

Basic CSR Policy

We will fulfill our corporate social responsibility and conduct sustainable business activities.

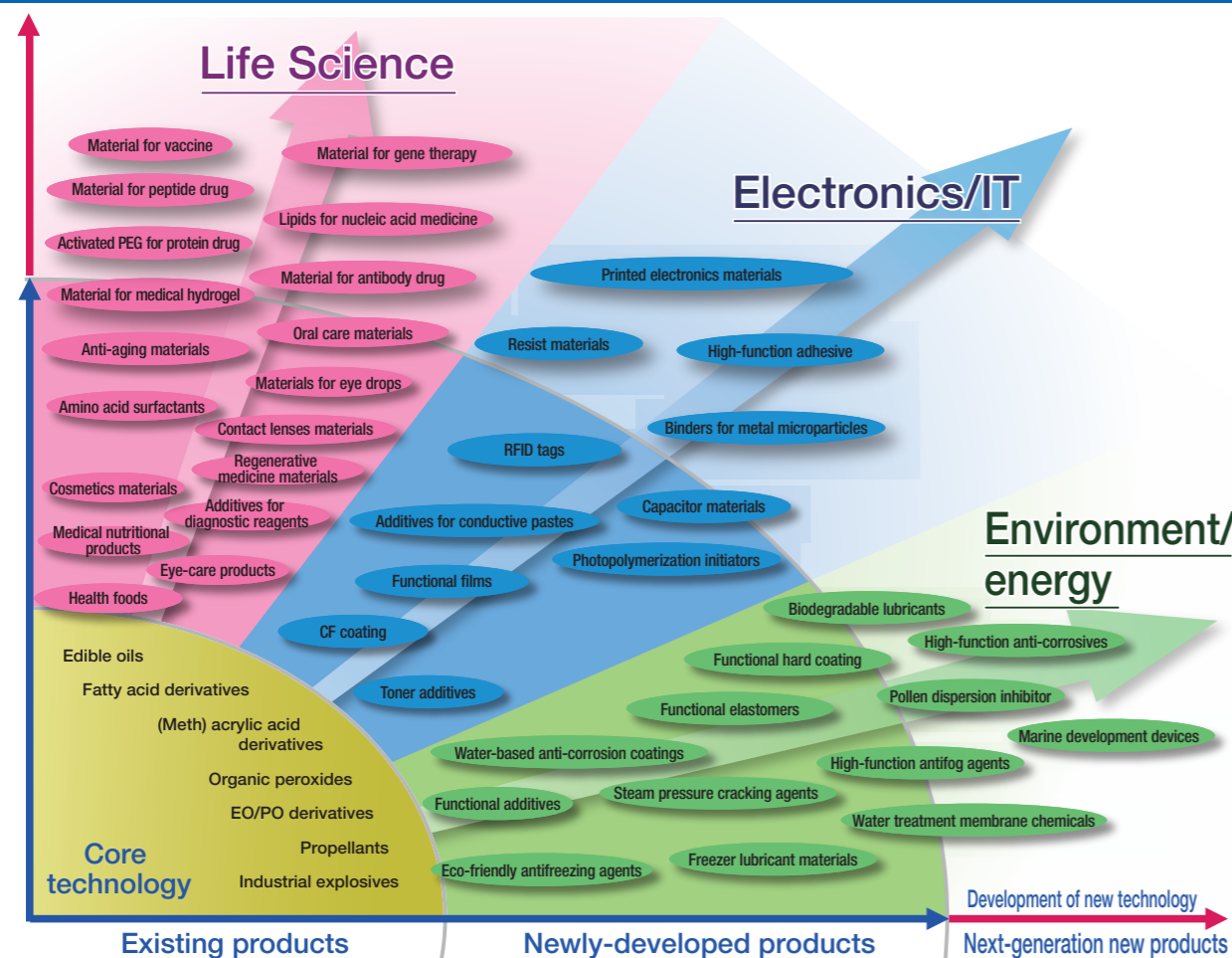
1. We will, each and all, act in accordance with the highest standards of corporate ethics.
2. We will respect human rights, and enable a diversity of personnel to demonstrate their abilities.
3. We will promote responsible care activities, based on the five kinds of safety.
4. We will consider the interests of all our stakeholders.
5. We will contribute to society in cooperation with local communities.

Code of Conduct and Code of Ethical Conduct are available on the Company's website. (<http://www.nof.co.jp/english/company/index.html>)

Corporate Vision

A corporate group that continuously supplies a vast array of products globally in the three business fields of "life science," "electronics/IT," and "environment/energy," in order to enrich people's lives.

Prioritized business fields of the NOF Group



Mid-term Management Plan

In order to realize our vision, the NOF Group formulates a three-year Mid-term Management Plan and conducts business operations accordingly.

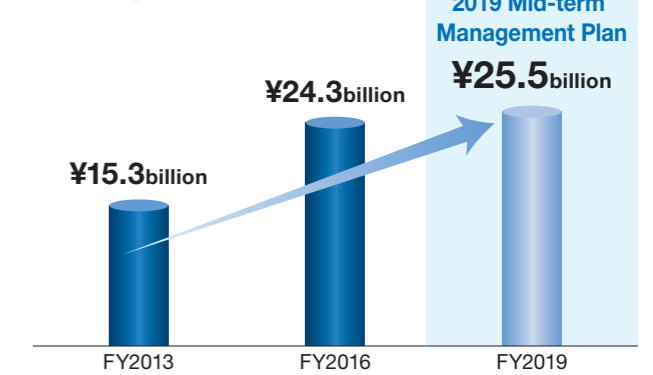
Basic policy of the 2019 Mid-term Management Plan

To strive for the "creation and expansion of innovative value," leveraging the "growth" achieved in the 2016 Mid-term Management Plan to "greater progress"

Key Challenge



Operating income



Management Policy

In order to achieve the basic policy of the 2019 Mid-term Management Plan, "creation and expansion of innovative value," the NOF Group will continue in fiscal 2019 to carry out the management policy set for fiscal 2018 of "Making greater progress," and implement measures to "create products and markets," "improve productivity," "enhance Group management," and "promote CSR activity."

Promotion of CSR

CSR of the NOF Group

The NOF Group believes that its corporate philosophy of "contributing to mankind and society through the creation of new value in wide-ranging fields from the biosphere to outer space" represents the CSR that the Group aims to fulfill through its business activities. We will strive to maximize the values that we share with every stakeholder and with society.



Promotion of CSR

We will increase frequency of activities of the CSR Committee, an umbrella organization chaired by the President, as well as the various specialty committees to strengthen risk management system.

CSR promotion framework



CSR Action Plan and Results

CSR activities are carried out by setting annual goals and by setting the PDCA cycle in motion. The CSR Action Plan and Results for fiscal 2018 and Action Plan for fiscal 2019 are as follows.

Category of CSR Activity	Plan for FY2018	Results for FY2018	Plan for FY2019	Listed page	
1. Governance	Compliance	Develop country-specific Compliance Manuals Promote compliance education Utilize the whistle-blowing system	Country-specific Compliance Manuals (Issued German Edition and Belgian Edition) Held legal seminars (Training on English contracts: 133 participants) Held accounting seminars (Profit standards, etc.: 502 participants) Held seminars on intellectual property (Intellectual property risks, etc.: 525 participants) Held briefings on new chemical substances (Act on the Regulation of Manufacture and Evaluation of Chemical Substances, etc.: 301 participants)	Develop country-specific Compliance Manuals Promote compliance education Utilize the whistle-blowing system	P.24
	Business continuity	Promote the business continuity plan	Conducted BCP audits: 9 locations Updated BCP on earthquakes (timeline) Built an IT-BCP disaster recovery system	Promote the business continuity plan	P.24
	RC management	Promote Group RC activities Audit the RC activities of consolidated subsidiaries	Conducted RC audits Total of 23 times at NOF Consolidated subsidiaries 8 domestic consolidated subsidiaries 2 overseas consolidated subsidiaries Held meetings of Explosive Safety Task Force: Total of 2 times Conducted chemical substance audits: 9 locations	Promote Group RC activities Audit the RC activities of consolidated subsidiaries	P.32
2. Respect for Individuals	Work-life balance	Encourage employees to take their annual paid leave Support employees with child care or nursing care responsibilities	Annual paid leave usage rate: 66.4% (increased by 1.2 points y/y) Childcare leave usage rate: 58.9% (increased by 28.1 points y/y)	Promote workstyle reform Promote health-conscious management	P.26
	Better performance of human resources	Utilize the reemployment system Employ people with disabilities	Retirees reemployed as of March 31, 2019 (estimate): 20 retirees Employment rate of people with disabilities: 2.60%	Utilize the reemployment system Employ people with disabilities	P.28
	Talent development	Support employees' self-enlightenment efforts Promote training at the organizational level, and regarding specific issues Encourage employees to obtain official qualifications	Correspondence courses and e-learning courses: Participated by a total of 307 employees Training held during fiscal 2018: 23 times, participated by a total of 583 employees New acquirers of public qualification: A total of 371 employees	Support employees' self-enlightenment efforts Promote training at the organizational level, and regarding specific issues Encourage employees to obtain official qualifications	P.30
	Safety education	Conduct RC education (labor safety, environmental safety, plant safety, product safety and transportation safety)	Number of participants: A total of 22,000 employees Training hours: A total of 34,000 hours	Conduct RC education (labor safety, environmental safety, plant safety, product safety and transportation safety)	P.31
3. RC Activities	Environmental safety	Promote activities aimed at achieving mid- to long-term environmental targets Reduce greenhouse gas emissions Maintain Zero Emissions Reduce chemical emission volumes Promote biodiversity-friendly activities	Conducted efforts aimed at mid- to long-term targets with fiscals 2020 and 2030 as the final years respectively Greenhouse gas emissions: Target achieved (9% reduction from fiscal 2013) Zero Emissions: Expected to be achieved (zero emission rate of 0.06%) Chemical emission volumes: Expected to be achieved (33% reduction from fiscal 2010) Ongoing participation in biodiversity private sector participation partnership	Promote activities aimed at achieving mid- to long-term environmental targets Reduce greenhouse gas emissions Maintain Zero Emissions Reduce chemical emission volumes Promote biodiversity-friendly activities	P.34
	Labor safety	Reinforce efforts toward zero accidents	Labor accidents: 10cases (increased by 2 cases y/y)	Reinforce efforts toward zero accidents	P.41
	Plant safety	Ensure stable operation	No major plant damage	Ensure stable operation	P.43
	Product safety	Promote proper management of chemicals	No major complaints	Ensure quality control Promote proper management of chemicals	P.44
	Transportation safety	Promote safe transportation	No major transportation accidents	Promote safe transportation	P.45
	Fair trade	Continue engaging in fair trade Promote CSR-based procurement	Continued to engage in fair trade Provided guidance to suppliers on CSR-based procurement policy Conducted supplier questionnaire	Continue engaging in fair trade Promote CSR-based procurement	P.46
	Information disclosure	Continue performing timely and appropriate disclosure of fair, unbiased information Hold performance briefings Publish CSR reports	Continued to perform timely and appropriate disclosure of fair, unbiased information Held twice in May and November Issued CSR Report on June 30 and posted on website	Continue performing timely and appropriate disclosure of fair, unbiased information Hold performance briefings Publish CSR reports	P.51
4. Living in Harmony with Society	Dialogue activities	Promote dialogue activities with the community	Plant tours, informal meetings with local residents, participation in RC local dialogue meetings	Promote dialogue activities with the community	P.47
	Socially beneficial activities	Promote social contribution activities	Local volunteer activities, cleaning activities, donation of ¥14,700 thousand	Promote social contribution activities	P.48

Outline of the organizational setup for corporate governance

With a view to architecting a management setup that can appropriately respond to changes in the business environment, NOF introduced the operating officer system in 2000; it was intended to strengthen the decision making function and the supervision function of the Board of Directors and at the same time to enhance the efficiency of the executive setup under authorization by the representative director by separating the decision making function and the business executing function of management. In addition, for the purpose of further strengthening the supervision function, two independently positioned outside directors are selected. The Board of Directors, consisting of eight members including outside directors, holds one regular meeting every month and extraordinary sessions are also convened as required; besides deciding on important matters set forth by the laws, regulations, the articles of incorporation and the rules of the Board of Directors, the Board supervises the state of business execution. Any important matter to be referred to the Board of Directors goes through preliminary deliberation, intended to ensure more appropriate decision making, by the Executive Committee from time to time attended by directors, standing corporate auditors and heads of the organizational unit or units concerned or the weekly Strategic Meeting as a rule attended by the directors authorized to execute business. To supplement these meetings, NOF from time to time receives advice from such experts as lawyers and certified public accountants regarding business management and daily execution of business for reference in making judgment on business affairs.

Development of internal control system

Each NOF Group company has developed an internal control system for ensuring adherence to laws and regulations, the articles of incorporation and various internal rules of the

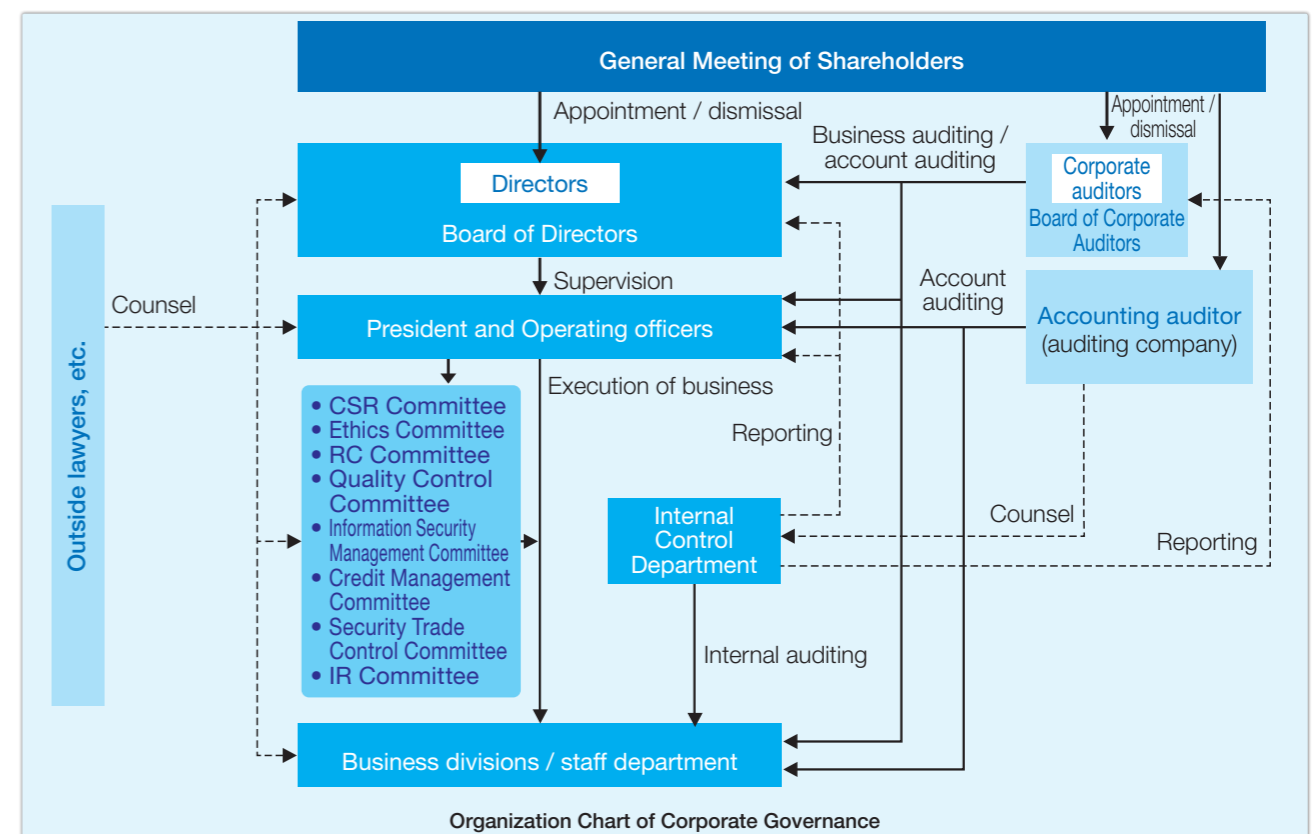
Company and appropriateness of business operations. Regarding observance of social norms and laws and regulations, the Company's code of conduct is formally spelled out as the NOF Code Ethical Conduct, based on the NOF Basic CSR Policy, and an Ethics Committee is established to ensure thorough adherence to the code. Further to secure safety in production sectors in the five aspects, including environment, product, plant, transportation and labor, the Responsible Care (RC) rules are instituted, with the RC Committee checking conduct in actual scenes of production and performing internal auditing.

Internal audits and corporate auditor's audits

Internal audits are performed by the Internal Control Department, which is an independent organization reporting directly to the President.

Corporate auditor's audits are primarily performed by the standing corporate auditors as part of the framework of oversight over the directors' execution of business by attending every meeting of the Board of Directors and the Executive Committee, as well as proactive participation in various other meetings. The corporate auditors coordinate closely with the accounting auditor by convening periodic meetings and other initiatives, and exchange various information on such matters as audit plans and audit reports.

Corporate auditors including outside corporate auditors receive periodic reports from the Internal Control Department regarding internal controls, while at the same time engage in exchanges of opinions, as necessary. Corporate auditors also engage in appropriate coordination with the relevant organs by attending the meetings of the competent committees on CSR and risk management, sitting in on internal audits conducted by the internal auditing organs of each committee and receiving and exchanging opinions on the audit result reports of the internal audit organs of each committee.



◆ Basic Concept towards Risk Management

1. The NOF Group comprehensively identifies various management risks surrounding its business, and conducts risk assessment based on the impact and frequency of each factor in order to identify risks that need to be addressed as a priority.
2. We work to minimize the impact on management by taking appropriate measures to reduce the impact of risks that have materialized, as well as measures to reduce the probability of occurrence.
3. We work to objectively verify the effectiveness of risk countermeasures by periodically conducting risk assessments, while working to recognize and evaluate new risks.
4. Under the leadership of the Risk Management Task Force established under the CSR Committee, we promote the risk management of the NOF Group by implementing the above risk management cycle.

◆ Risk Management System

Management risks are analyzed and countermeasures are discussed by the Ethics Committee, RC Committee, Quality Control Committee, Information Security Management Committee, Credit Management Committee and Security Trade Control Committee, and the results are reported to the CSR Committee, chaired by the President. In addition, the Risk Management Task Force established under the CSR Committee confirms and evaluates the comprehensiveness of risk, formulates

measures concerning risk management, and reports to the CSR Committee. The CSR Committee aggregates and evaluates various management risks such as compliance, information management, and environment and safety, and evaluates the activities of the Risk Management Task Force, and submit the results of those evaluations, as necessary, to the Board of Directors for deliberation.

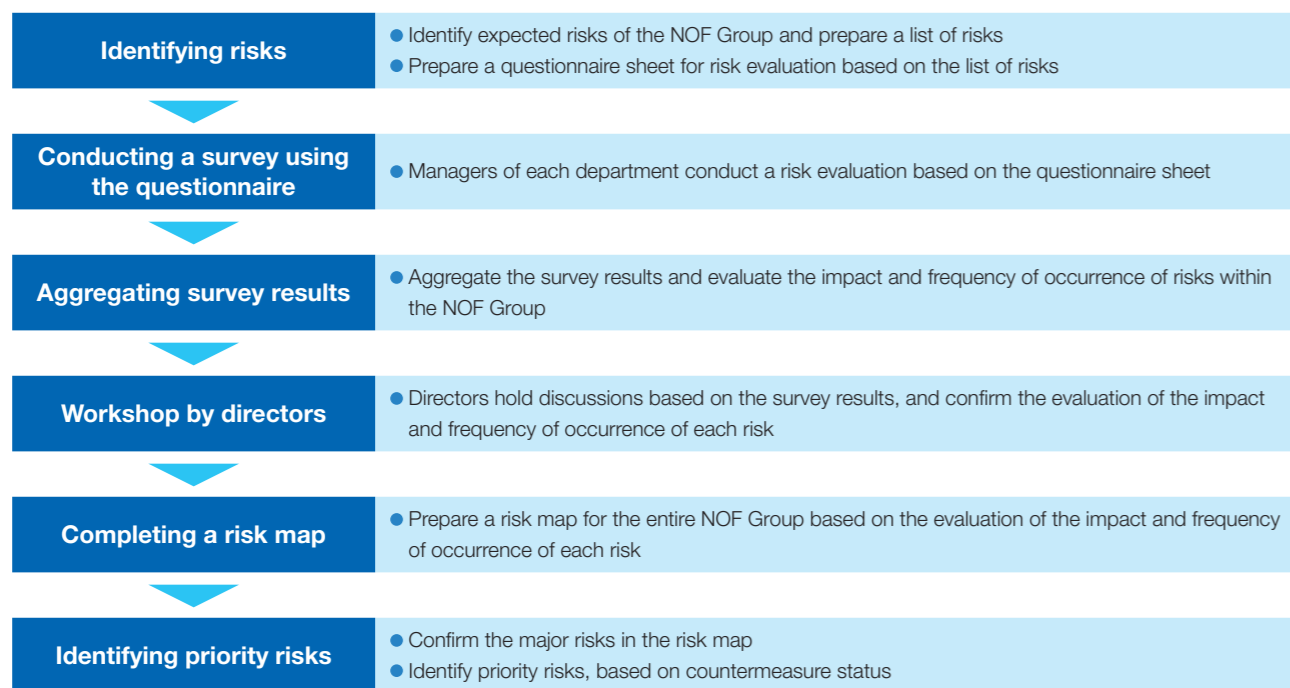
We manage and monitor Group companies in accordance with the rules on the management of group companies, and offer advice, as necessary; while any important matters that are deemed to materially impact the subsidiary's assets or profit and loss are approved by the NOF Board of Directors or the Executive Committee.

*In order to strengthen its conventional risk management framework, NOF established the Risk Management Task Force on January 1, 2019 to strengthen monitoring.

◆ Confirming “major risks” and identifying “priority risks”

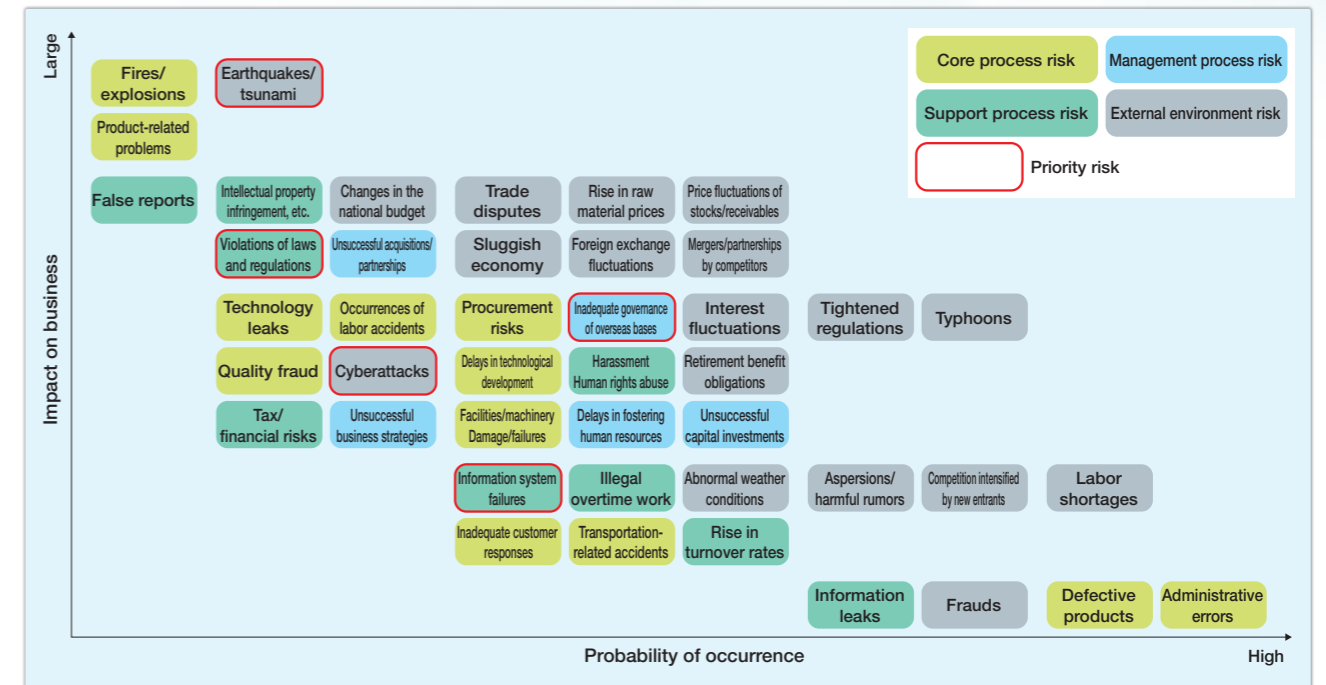
The NOF Group works to comprehensively identify management risks surrounding the Group, considering the characteristics of each business as well as external environments, including political, economic and social changes. In addition, we evaluate the impact and the frequency of occurrence of each identified risk on Group management, confirming major risks and taking appropriate measures against risks identified as “priority risks,” which necessitate enhanced resilience.

Flow of Risk Assessment



◆ Risk Map (excerpt)

The risk map is prepared based on the results of the risk evaluation at the directors' workshop. The risk map is revised and priority risks are identified on a yearly basis in order to implement activities aimed at enhancing the NOF Group's resilience.



Overview of major Risks and Status of Countermeasures (excerpt)

major risk	Risk description	Ongoing Countermeasures (excerpt)
Earthquakes/tsunami	Possible interruption of production activities or business activities, including sales and distribution, due to earthquakes, tsunami, or other natural disasters	<ul style="list-style-type: none"> · Formulate a business continuity plan (BCP) · Implement internal audits and training regarding the BCP
Violation of laws and regulations	Possible suspension of business activities and possible payments of surcharge, etc. following administrative dispositions taken in response to violations of laws and regulations	<ul style="list-style-type: none"> · Prepare a Global Compliance Manual and country-specific compliance manuals based on the legal systems of each country · Establish compliance training and contact points for whistle-blowing/consultation
Inadequate governance of overseas bases	Possible decline in trust in the Company due to fraud, such as violations of laws and regulations, as a result of inadequate governance at overseas bases	<ul style="list-style-type: none"> · Develop a system for ensuring the appropriateness of business operations · Request a regular report on the state of business execution and financial condition, etc.; conduct business audits
Cyberattacks Information system failures	Possible information leaks and interruption of business activities, due to illicit accesses from outside such as cyberattacks and information system failures	<ul style="list-style-type: none"> · Establish the information security management rules and appointed a person responsible for information security management, etc. · Implement safety measures at appropriate and rational levels, including development of a defense system against illicit accesses and data backup
Fires/explosions	Possible casualties among employees and neighborhood residents, possible suspension of business activities, and possible compensation for damages as a result of large-scale fires and explosion accidents at plants	<ul style="list-style-type: none"> · Reinforce the maintenance of facilities that manufacture hazardous materials, and promote measures for aging facilities · Formulate emergency response manuals and implement trainings · Implement joint disaster prevention drills and dialogue activities with local municipalities
Intellectual property infringement, etc.	Possible compensation for damages and possible orders to suspend manufacturing and shipment, due to infringements of intellectual property rights	<ul style="list-style-type: none"> · Develop a check system for intellectual property management and patent infringement · Educate employees on intellectual property including patents and trademarks
Technology leaks	Possible decline in the Group's competitiveness, due to leakages of technology and technical information, and similar products/technologies provided by competitors	<ul style="list-style-type: none"> · Establish rules for trade secrets · Develop a management system for trade secrets
Quality fraud	Possible decline in trust in the Company due to quality fraud, falsification of quality inspection results, and other situations	<ul style="list-style-type: none"> · Ensure strict management of data related to quality control · Enlighten and train employees
Harassment Human rights abuse	Possible decline in trust in the Company due to human rights abuse, such as abuse of authority and sexual harassment at workplace	<ul style="list-style-type: none"> · Establish the Code of Ethical Conduct and the Compliance Manual · Set up consultation desks each staffed with a male consultant and a female consultant
Delays in fostering human resources	Possible stall in development of human resources who will be responsible for the growth of the NOF Group, due to a delay in efforts to foster human resources or an unsuccessful human resource development plan	<ul style="list-style-type: none"> · Promote rank-specific trainings for next-generation human resources for specific issues · Promote/foster international human resources and human resource rotation

◆ Promotion of the Business Continuity Plan (BCP*)

NOF has formulated a BCP, to enable its core business to be continued or, if damaged, to be restored quickly while minimizing the loss of business assets in an emergency such as a natural disaster. The activities of the BCP Task Force to promote the BCP primarily focuses on the formulation of the BCP manual which sets forth the responses to be implemented in normal times and in emergencies, in addition to the preparation and yearly renewal of information on the estimated damages to the plant and various government-, infrastructure- and supply chain-related information, which will be required when resuming operations. Additionally, the BCP Task Force performs annual internal audits and training in an effort to firmly establish the BCP and to enhance its effectiveness.

*1: BCP (acronym for Business Continuity Plan) is a plan formulated by a company to set forth activities to be carried out in normal times and methods, means and so on for continuation of business in an emergency such as a natural disaster, conflagration or terrorist attack to enable the core business to be continued or, if damaged, to be restored quickly while minimizing the loss of business assets.

◆ Information security management

(1) Management of trade secrets and protection of personal information

Recognizing the importance of information as one of vital management resources to business activities and the indispensability of active strengthening of corporate competitiveness by active utilization of information and firm establishment of information security to steady business management, NOF has set forth the Information Security Policy as a basic principle for promoting effective utilization and protection of information. At the same time, recognizing protection of personal information as its obvious social responsibility, NOF has formulated and announced the Privacy Policy.

Under such policies, the Company has set forth specific measures for enhancing the levels of confidentiality, completeness and utility of information and specific ways of handling personal information in its internal rules including information security management rules, personal information protection rules and information system-related sets of provisions, a confidential information handling manual and an information equipment handling manual, and is ensuring their thorough understanding by the staff.

(2) Management setup

In the organizational aspect, the Information Security Management Committee is set up, and under its chairperson, who has overall supervising responsibility for information security management, persons responsible for document information security management, electronic information and information system security management, and addressing complaints regarding personal information, as well as a person responsible for management at each level of organizational unit, are appointed to administer the implementation of specific measures. Against illicit accesses from outside and other risk factors

including loss, destruction and alteration, safety measures are taken at appropriate and rational levels. In addition, NOF continually reviews through internal auditing setups and measures pertaining to information security management and protection of personal information to improve them wherever necessary.

◆ Compliance

The NOF Group instituted the Code of Ethical Conduct in April 2002 to ensure that each member-company and each employee always conform to social ethics and win society's trust. In this connection, the Group set up the Ethics Committee in an effort to strengthen its responsibility to society and ensure the transparency of its business activities. Further, a consultation desk for NOF's employees is open at the secretariat of the Ethics Committee.



◆ Compliance Manual

In order to instill a sense of compliance in its executives and employees, the NOF Group has prepared a Compliance Manual, which explains the Code of Ethical Conduct in detail and in easily understood terms. The universal Global Compliance Manual has been published in eleven different languages.



◆ Country-specific compliance manuals

The NOF Group is preparing country-specific compliance manuals based on the legal systems of each country. Following the publication of versions for the U.S.A., China, Indonesia and France where the Group has a large number of employees, in fiscal 2018, we published versions for Germany and Belgium and began utilizing them in Group companies.

◆ Compliance-related training

The NOF Group regularly holds legal seminars for employees. In fiscal 2018, a total of 5 legal seminars (seminars on English contracts) were held, attended by 133 participants. Training related to personal information management (1,648 participants) was also held.



◆ Raising awareness by internal magazine

NOF uses its quarterly internal magazine to help raise employees' awareness of compliance. NOF continues activities to raise awareness through relatable articles using cartoon characters.



◆ Whistle-blowing system

Consultation desks in Japanese / English / Chinese (Simplified Chinese) / Korean / Indonesian / Portuguese have been set up at external third-party institutions as contact points for whistle-blowing / consultation, in the event that an employee becomes aware of acts in violation of compliance or acts suspected of being in violation of compliance.

Code of Ethical Conduct

In order that we can maintain NOF CORPORATION's position as a good corporate citizen, earn and keep the trust of the community and continue to develop as a company, each and every one of us-employees and executives alike shall abide by this code faithfully.

1. Compliance

We shall act in an ethical manner becoming of members of a company and society, and we shall obey the law and other regulations, and respect others' human rights.

2. Community

We shall give priority in all processes of our business activities to human safety and health, as well as protection of the natural environment, and we shall work proactively to maintain a harmonious existence in all our local communities worldwide.

3. Respect for Individuals

We shall not engage in any act that goes beyond the Company's justifiable interests or that damages the Company's credit or honor, and we shall respect the personality and individuality of all people.

4. Business Partners, Government Officers

We shall always treat our trading partners and business partners fairly and equally and in good faith, and we shall not provide any civil servant with any benefits or favors.

5. Shareholders, Investors

We are an open company, and we shall disclose the details of our management and business status and other corporate information in a timely fashion as required by relevant laws.

6. Company Assets and Information

We shall not use the Company's assets for any purpose other than the Company's official business objectives. We shall record and report accurately our business performance, protect intellectual property rights and hold confidential information and other companies' business secrets in strict confidence.

7. Fair Trade

We shall comply with antimonopoly laws and international trade laws, and we shall observe the Financial Instruments and Exchange Law and not engage in insider trading.

8. Prohibition of Antisocial Behavior

We shall eliminate the influence of antisocial groups, and shall not provide undue benefits to specific shareholders.

Promotion of work-life balance

NOF is developing a work environment in which the staff can work well motivated while attaching due importance to the work-life balance between work and non-work activities including child care, nursing care, hobbies, studies, rest and community activities. In light of the

importance NOF attaches to the work-life balance of its employees, it has adopted the following systems to provide specific support. The “○” symbols in the table below indicate NOF’s own systems or systems that go above and beyond the scope of law.

Systems that support diverse working styles

Pregnancy and childbirth	Childcare	Nursing care	Other
○ Limitations on and exemptions from overtime*, limitations on night work*1			○ Yearly paid holidays (up to 23 days)
○ Later or earlier work start or finish times*1		○ Nursing care leave (can be taken 3 times, up to 365 days)	○ Yearly paid half work days
Limitations on work on holidays	Childcare leave (maximum of 2 years)	○ Nursing care leave (10 days per year)*3	○ Cumulative saved leave*2
Consideration to and reduction of workload	○ Career and childcare balance support program		○ Refresh leave
Commuting relaxation (route changes, etc.)	○ Child nursing leave*1 (10 days per year)*3		Flex-time system
○ Hospital visit leave (may be paid)	○ Childcare hours (paid)		○ Discretionary work system (R&D position employees)
Prenatal and postnatal leave			○ Self-enlightenment support
			○ Sports and culture activities

*1: In the case of childcare, the systems apply for employees raising a child up to the third grade of elementary school.
 *2: The cumulative saved leave is a system in which expired yearly paid holidays may be accumulated, and used for personal illness or injury, childcare, nursing of a family member, nursing care, self-enlightenment, or volunteer activities.
 *3: Can be taken in half-day increments.

Workstyle reform

NOF is working to ensure proper labor management with a view to reducing work hours by improving operational efficiency and productivity and promoting fulfilling lifestyles outside of work, while making efforts to reduce work hours mainly through restricting work after the designated time and introducing a work interval system.

Recommending employees to take yearly paid holidays

NOF is developing a work environment in which the staff can work well motivated while attaching due importance to work-life balance. NOF encourages all employees to take their yearly paid holidays. Additionally, one such initiative is to encourage them to take yearly paid holidays in their respective birth months, and in this way an atmosphere that makes them easier to take yearly paid holidays is developed in the work environment.

In fiscal 2019, we will establish operation rules to comply with the revised laws that will require employees to take at least five yearly paid holidays, while verifying

the status of yearly paid holidays taken by the employees and considering measures to further encourage employees to take their holidays.

Refresh leave system

NOF provides a system under which employees having worked with the Company for 10, 20 or 30 years are given seven consecutive paid holidays (which otherwise would be workdays) so that they can refresh themselves both mentally and physically away from everyday duties, and find opportunities to expand their fields of vision and to increase the flexibility of thinking.

Days on which employees are encouraged to leave work on time

NOF encourages employees to work efficiently and sets one day of the week as a day on which employees are encouraged to leave work on time on a company-wide basis.

Employee-related data (NOF non-consolidated)

	FY2016	FY2017	FY2018	
Number of employees utilizing childcare leave	Male	16	17	26
	Female	5	4	7
Utilization rate of yearly paid holidays	66.1%	65.2%	66.4%	
Monthly average overtime work hours	13.7 hours	13.6 hours	14.7 hours	

* Based on the data as of March 31 each year.
 * The utilization rate of yearly paid holidays is calculated for the period from September 21 of the previous year to September 20 of the current year (12-month period to take yearly paid holidays at NOF).
 * Monthly average overtime work hours for previous years are recalculated based on objective data.

Introduction of childcare support program

A “career and childcare balance support program” was introduced at NOF from April 2016. Various forms of childcare support is provided under this program during periods of childcare leave, including the regular distribution via the Internet of useful information on childcare and information on events to refresh one’s spirit during the struggles of childcare and a contact point for childcare consultation. In addition, as the latest internal company information is regularly distributed and a wide range of contents for brushing up business skills are provided, this program supports a balance between childcare and work by supporting skill improvements during childcare leave and a smooth return to work. The program has been used by many employees, including male employees, and has a favorable reputation among people who have used the system.



Support for raising the next generation (Support for childcare and nursing care)

NOF provides a system that makes child-rearing / nursing care and working compatible with each other, and has proactively adopted support measures including raising the age limit for children subject to short hour work system and extending the duration of the nursing care leave and childcare leave. The requirements for utilizing the cumulative saved leave were expanded for nursing and nursing care from April 2016.

In June 2010, as its initiatives and records in the implementation of the action plan based on the Act on Advancement of Measures to Support Raising Next-Generation Children were appreciated, the Tokyo Labor Bureau recognized NOF as an “enterprise active in supporting childrearing.” In our subsequent action plan, we have been promoting the utilization and implementation of childcare leave for our male employees as an initiative aimed at establishing an environment that facilitates a balance between work and childcare / nursing care.

In April 2017, NOF has prepared a handbook that summarized information such as basic knowledge of the Long-Term Care Insurance System, how to balance work and nursing care, and internal systems related to nursing care, to enable employees to continue working and take balance, when they face nursing care.



Promotion of health-conscious management

NOF strives to create a pleasant working environment and engage in mental health care based on the belief that “securing the safety and health of employees and creating a pleasant working environment are the foundation for sustainable growth of a corporation.”

With a view to developing a workplace where employees can enjoy fulfilling lifestyles and maintain motivation for work, NOF designates the following objectives as priority areas. Going forward, NOF will proceed with initiatives to maintain and promote employees’ health.

1. Creation of a pleasant working environment
2. Mental healthcare
3. Maintenance and promotion of health

Additionally, in proceeding with these initiatives, we will strive to enhance the contents mainly by reporting at the meeting of officers.



Example of initiatives

NOF is conducting stress tests in order to raise the employees’ awareness of self-care.

Fiscal 2017	Percentage of employees who took a stress test: 97.9%
Fiscal 2018	Percentage of employees who took a stress test: 99.3%

Promotion of diversity

NOF, which began as a chemicals producer using natural fats, has ceaselessly taken on the challenge of entering new fields to sincerely meet the ever-changing and diversifying needs of the market. Today, we are expanding our businesses into a wide range of fields from the biosphere to outer space.

In order to support and further expand its wide range of businesses, NOF engages in recruiting activities that respect the individualism and values of its diverse human resources.

“People” are what make up an entity, and it is important that diverse human resources of different specialties and expertise collaborate, inspire each other and lift each other up. For this reason, NOF will proactively promote the recruitment of experienced workers and returnees from abroad, regardless of whether they are straight out of college or mid-career recruits, as well as foreign nationals, including exchange students.

In terms of recruitment and selection of students graduating with bachelor’s and master’s degrees to start in and after 2019, NOF is engaged in proper recruiting activities that “enforce fair and impartial recruiting, contribute to ensuring a normal academic learning and academic environment and respect the academic schedule of the universities,” based on “Guidelines for Recruiting and Employing New Graduates” of the Japan Business Federation (*Keidanren*).

◆ Approach to diversity

In order to fulfill the Corporate Philosophy to “Encourage employees to take on new challenges, working to create a rewarding place to work and fulfilling lifestyles,” the NOF Group accepts and respects diversity in the forms of employment, working locations and working conditions including short hour work systems, as well as diversity in the attributes of its human resources such as nationality, gender, race and whether they are disabled or not. NOF aims to establish and is currently building an organization in which willing and capable employees are properly evaluated in every aspect including recruitment, treatment after recruitment and promotions, and are allowed to demonstrate their capabilities.

◆ Promotion of international human resources

Recognizing the importance of securing superior human resources regardless of nationality, the NOF Group

intends to secure appropriate human resources, including experienced workers, particularly for the expansion of its overseas businesses. Our overseas Group companies (overseas local subsidiaries) are continuing to step up their efforts to recruit local employees and promote them to management.

◆ Fostering international human resources

In light of further overseas expansion in the future, the NOF Group has introduced the “Global Mind Seminar” as part of new employee training, and is currently promoting the systematic fostering of global human resources.



Global training

In global training for mid-career employees, employees learn the basics of overseas operations while working to become more globally minded and to improve their language skills.

In addition, for staff scheduled for overseas assignments, seminars are conducted by dedicated outside and internal lecturers on the laws, culture and commercial practices, including associated risk management, of their host countries based on the staff’s duties and roles in order to facilitate overseas operations.

◆ Re-employment system (Re-employment of retirees)

NOF has introduced a reemployment system intended to provide age-limit retirees with opportunities to remain active in society and for self-realization to keep them well motivated to live on and work, and at the same time enable them to fully utilize the retirees’ high-level professionalism, skills and experience in their extended careers. (20 retirees were reemployed in fiscal 2018.)

◆ Employment of the disabled

In order for persons with disabilities to demonstrate their capabilities and work actively in their respective workplaces, NOF is promoting the employment of the disabled, upon developing a favorable working environment.

The proportion of the disabled employed in March 2019 was 2.60% (33 persons), surpassing the legally prescribed proportion (2.2%).

The NOF Group will continue its efforts to expand employment of people with disabilities and establish a workplace environment where they can work comfortably.

Employee-related data (NOF non-consolidated)

		FY2015	FY2016	FY2017	FY2018
Number of employees	Male	1,508	1,494	1,490	1,462
	Female	149	164	178	186
Number of new employees	Male	35	30	27	33
	Female	6	18	18	14
Re-employment of retirees		11	12	6	20

Action plans of general business operators based on the “Act on Advancement of Measures to Support Raising Next-Generation Children” and “Act on the Promotion of Women’s Active Participation in Their Occupational Lives”

1. Plan Period: April 1, 2018 to March 31, 2023 (5 years)

2. Details

(1) Developing an employment environment that supports a balance between work and family life for workers who are raising children

Target 1: Implement initiatives aimed at developing an environment that facilitates a balance between work and child-rearing/nursing care.

<Measures> (1) Study and implement new policies to support a balance between work and child-rearing/nursing care.

(2) Establishing various working conditions that contribute to revision of workstyles

Target 2: Implement measures to encourage taking of yearly paid holidays.

<Measures> (1) Continue to raise awareness of taking yearly paid holidays and encourage employees to take holidays in their birth month.

(2) Study new policies to enhance the yearly paid holiday system and encourage taking of yearly paid holidays.

Target 3: Promote efficient workstyles

<Measures> (1) Study and implement new policies to reduce overtime work hours.

(3) Establishing an employment environment that enables active participation by women

Target 4: Implement measures for continuous employment of women.

<Measures> (1) Achieve a percentage of women among career-track hires of 30% or higher, and study and implement policies aimed at diversifying workstyles.

◆ Promotion of the active participation of women

The active participation of women is promoted at NOF. Among the 47 employees who joined the Company in April 2018, 14 were women. In addition, NOF will continue to conduct training for new employees and new managers every year to promote the active participation of female employees. Going forward, NOF will actively promote the hiring of women while working to improve the workplace environment to allow the active participation of women.

◆ Internal recruiting system

NOF has introduced an internal recruiting system that aims to foster independent human resource development by providing employees with opportunities to select work, etc. and assign motivated human resources to appropriate posts in order to improve employee morale and revitalize the organization.

◆ Rewards for employee achievements

On July 1 of each year, NOF recognizes the accomplishments of employees who have contributed to the perpetual development of the Company’s businesses.

◆ Employee invention reward

In April each year, NOF examines employee inventions and awards invention rewards to inventors.

◆ Mental health initiatives

NOF is taking comprehensive initiatives for the prevention and alleviation of mental health troubles and supporting

those suffering from such troubles until they have sufficiently recovered to return to work.

More specifically, these initiatives are taken in teamwork with industrial physicians specializing in mental health to ensure early detection and proper solution of mental health problems by providing stress checks, setting up out-of-house counseling facilities and institutionalizing a “return-to-work support program” to support persons absent from work for a long time or on sick leave on account of mental health disorder in ensuring their smooth return to work after recuperation.

In fiscal 2018, mental health care (line care) education was conducted for 36 participants as part of training for career-track employees promoted to manager. Measures are also implemented to maintain and improve the mental health of employees through supervisors.

◆ Addressing sexual harassment / power harassment problems

The NOF Group has declared its position to prevent and prohibit sexual harassment and power harassment in its Guidebook on the Code of Ethical Conduct, the Compliance Manual and other internal notifications, and is taking steps to make the code and other relevant norms extensively known and understood. For consultation desks regarding sexual harassment and power harassment, one each of male and female consultants is appointed to make the workplaces transparent and pleasant.



Talent Development

NOF promotes a multifaceted talent development system including support for "correspondence courses," in which each employee is allowed to choose his/her own training menu, "training at the organizational level," which is made to suit employees with different issues in different hierarchy, as well as "training regarding specific issues," which is suited to enhance the employees' expertise and is made in accordance with specific issues that arise in execution of duties.

This system effectively promotes talent development suited to each individual and his/her work, while at the same time making work more rewarding, invigorating the organization, establishing a sustainable business foundation and enabling stable employment.

Support of self-enlightenment

NOF provides a wide range of self-enlightenment programs such as various correspondence courses and e-learning courses (e.g. business skills and languages) to support the spirit of challenge of the motivated employees and to encourage further skill development and the self-realization of each individual. In fiscal 2018, a total of 307 employees took advantage of the various correspondence courses and e-learning courses.



Pamphlet "Correspondence Course Guide"

(Training regarding specific issues)

Training for those performing personnel evaluations, business skill reinforcement training, training for new sales staff, sales practices training, business R&D training for R&D position employees, training for managerial candidates (strategic business leader training, participation in outside business schools, NOF Management School), short-term overseas language training, training prior to overseas assignments, etc.



Promoting training at the organizational level and regarding specific issues

In an effort to provide a more effective training program, NOF has set up an education system that combines training at the organizational level and training regarding specific issues. The relatively junior employees mainly undergo training at the organizational level, while management-level employees undergo training regarding specific issues. Each organizational unit and division also plan and carry out, as necessary, training suited to their respective business operations. In fiscal 2018, a total of 583 employees took part in the training programs.

(Training at the organizational level)

Initial training for new career-track employees, follow-up training for new career-track employees, preparatory training for the study report conference for career-track employees, study report conference for career-track employees, follow-up training for the study report conference for career-track employees, training for supervisors, training for core employees promoted to manager, training for career-track employees promoted to manager, training for employees promoted to executive positions, mandatory training for promotion candidates (correspondence course for candidates for senior instructional level positions, candidates for manager positions and candidates for executive positions), etc.



Promotion for acquiring official qualifications

The NOF Group supports employees' attempts to acquire official qualifications in many aspects. In fiscal 2018, a total of 371 persons newly acquired 42 types of such qualifications at the Domestic Group out of about 100 different qualifications whose acquisition is recommended by the Company.

Type of qualification	Total number of persons who acquired qualifications
Energy control	1
Pollution control	5
Sanitation control	2
Specified chemicals control	12
Organic solvents control	22
Flammable materials control	116
Pressured gas control	18
Explosive production control	3
Explosive handling control	44
Firefighting facility control	2
Pressured vessels handling	3
Breathing safety control	15
Forklift	15
Crane	15
Hooking	11
Boiler	10
Machine maintenance	7
Electric works	1
X-ray work	3
23 other types of qualifications	66
Total	371



Safety Education

Recognizing the importance of safety education, the NOF Group strives to enhance its occupational safety and health management system and reinforce its safety activities including safety education, in an effort to secure the safety and health of its employees.

RC Education of the NOF Group

To enable all the employees of the NOF Group to deepen their understanding of RC, emphatic efforts are put into RC education. In fiscal 2018, a total of 22,233 persons participated in and received RC-related education for a total of some 34,000 hours.

Field	Total number of participants	Total hours
RC and Environmental Safety	1,107	1,153
Labor and Plant Safety	19,324	30,991
Product Safety	1,459	1,825
Transportation Safety	343	331
Total	22,233	34,300



RC education, Amagasaki Plant



Safety education, Kawasaki Works



RC education for new employees, Head Office



Safety lecture, Aichi Works

RC Management

Management policy regarding RC

For a chemical company to live together with society as one of its vitally important members, it has to seek harmony with social environment and natural environment, and be recognized, appreciated and accepted by society. With this fundamental awareness in mind, NOF has set forth its Management Policy Regarding Responsible Care as a set of norms to be faithfully observed by every officer and employee of the Group companies with a view to winning even greater trust from society.

Management Policy Regarding Responsible Care

NOF is dedicated to protecting the safety and health of customers, the public and employees, as well as the environment, ecosystems and resources. For this purpose, based on the principles of Responsible Care, NOF, its group companies, and all executives and employees observe the following management policies on safety concerning the five areas of environment, products, plants, transportation, and labor.

- (1) Retain an awareness concerning safety issues involving the social and natural environments.
- (2) Conduct activities based on appropriate self-management along with close collaboration with other business units.
- (3) Conduct highly reliable safety checks and adhere to all laws and regulations.
- (4) Everyone must work to minimize the impact of products on the environment, safety and health. This covers every aspect of products, from their development and manufacture through retail, use and disposal.

(Amended September 2001)

Furthermore, NOF became a signatory of the Responsible Care Global Charter, proposed by the International Council of Chemical Associations in 2014, and declared its support of the Charter and its commitment to practice RC activities both in Japan and overseas.

The Five Components of Safety

The NOF Group classifies its RC activities into "Five Core Components" including 1) environmental safety, 2) labor safety, 3) plant safety, 4) product safety and 5) transportation safety, and according to this classification each works sets priority items, which are practiced in specific activities. Since 2003, "dialogue with society" has been added to the Five Core Components as a theme of activities.

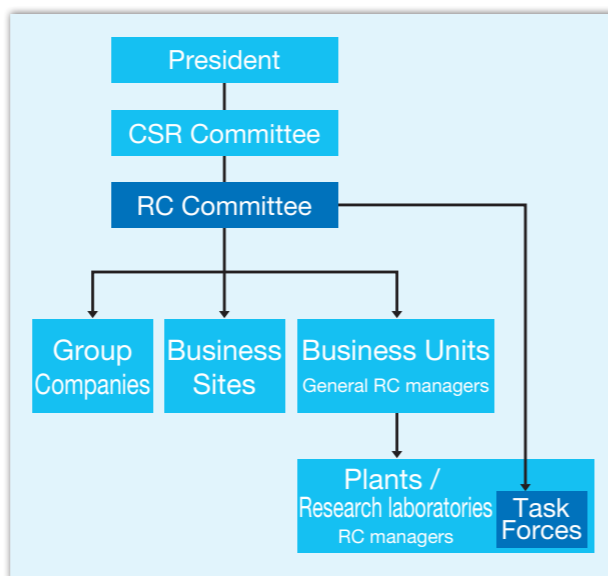


Responsible Care

RC promoting organization

The RC Committee has 26 members (certain operating officers, works or plant general managers, the Planning Department manager of each business division and the general managers of Research Laboratories), chaired by the general manager of the Responsible Care & Production Engineering Department (concurrently director and executive operating officer).

The RC Committee, whose decision is immediately made thoroughly known as a policy of the NOF Group, has an executive function as a body to which authority is delegated by the President. A general RC manager is appointed to each business division, and an RC manager to each plant or research laboratory, to ensure concrete representation of environmental targets.



Flowchart of RC activities

RC activities are unfolded by keeping the cycle of CAPDo (Check-Act-Plan-Do) turning without interruption.



If any item needs improvements, the progress is assessed at the time of the next auditing, a half year afterwards, and completion is checked.

Management Systems

The NOF Group is promoting the acquisition of certification by competent outside bodies as a means of improving transparency and objectivity of RC activities.

Development status of EMS*¹ (Environmental Management Systems)

Every works and plants of NOF with production sectors have acquired ISO14001 certification, and are implementing systematic environmental improvement activities, with the particulars of business and local characteristics taken into consideration. Seven of the companies affiliated with NOF have acquired ISO14001 certification, and



one more is seeking for new acquisition. Also, Nichiyu Logistics has obtained Green Management certification from the Foundation for Promoting Personal Mobility and Ecological Transportation.

Development status of OSHMS*² (Occupational Safety and Health Management System)

The NOF Group, under its labor safety and health policy, is undertaking buildup of the Occupational Safety and Health Management System. Referencing the guidelines of the International Labor Organization and the Ministry of Health, Labor and Welfare, we are building up our own system and promoting activities. The Risk Assessment program*³, which started in fiscal 2008 at every works of NOF, is now adopted by domestic member-companies of the NOF Group as well.

Development status of QMS*⁴ (Quality Management Systems)

NOF is building up the optimal QMS for each product line. The Daishi Plant has acquired certificates under FSSC22000*⁵ (Food Safety Management System) in January 2019, in addition to ISO9001. The DDS Plant exercises control conforming to the GMP for pharmaceuticals. ISO9001 certificates have been acquired by 14 of the Group companies.

Showa Kinzoku Kogyo Co., Ltd. and NOF MET-AL COATINGS KOREA CO., LTD., active in the anticorrosion business, have also obtained ISO/TS16949*⁶ certification.

*1: Acronym for Environmental Management System. A management system comprising a framework for an organization to formulate, implement, review and maintain its environment policy; and encompassing planning activities, responsibilities, practices, processes and resources.

*2: Acronym for Occupational Safety and Health Management System. A management system that determines the organization, responsibilities, practices, processes and management resources required for an operator to continuously mitigate potential occupational safety and health risks.

*3: Method of identifying, eliminating and reducing potential risks or hazards in the workplace.

*4: Acronym for Quality Management System. A system by which an organization formulates policies and sets targets in order to dictate and manage its quality, and achieve such targets.

*5: Acronym for Food Safety System Certification 22000. It comprises individual specifications established for each food industry as Prerequisite Programs (PRP) based on ISO22000 (Food Safety Management System) and original FSSC22000 standards as additional requirements. Through food defense and management including management of allergens, more reliable food safety management can be ensured. (A certification scheme recognized by non-profit organization GFSI)

*6: International standards on quality management systems for the automobile industry.

Implementation status of internal auditing

How much we can improve the effectiveness of internal auditing is an important point of RC activities.

Status of internal auditing

For the auditing of RC in fiscal 2018, regular audits (twice a year for the Company's own eight plants and once a year for domestic and overseas subsidiaries having manufacturing sectors) were held by field checking in the presence of the Company's auditors or paper screening with the RC Committee Chairman as auditing leader. Priority themes in recent years are listed on the right.

Internal auditing of overseas Group companies

For domestic subsidiaries having manufacturing sectors, an informal RC meeting (for exchange of views) started in fiscal 2001 as a preliminary step, and RC auditing as such has been implemented since fiscal 2005 so that the NOF Group could promote RC activities in a desirable way of group management by strengthening autonomous inspecting activities.

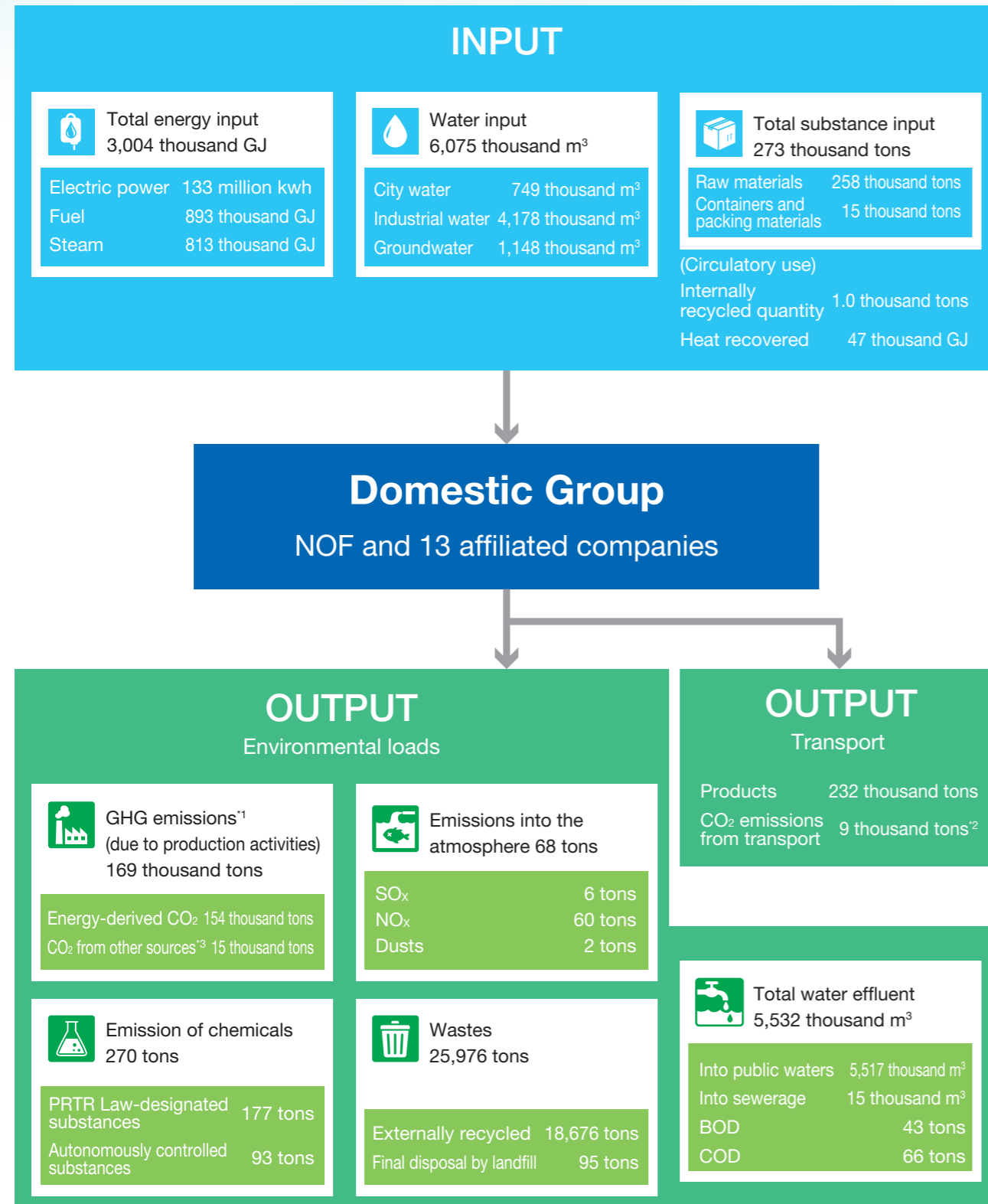
Since fiscal 2010, RC auditing of Changshu NOF Chemical Co., Ltd. in China and PT. NOF MAS CHEMICAL INDUSTRIES (NMC) in Indonesia has been conducted with an eye to further improvement of RC activities by the NOF Group.

Term	Priority theme in audit
1st half, FY2014	Confirmation of compliance status relating to environmental safety
2nd half, FY2014	Confirmation of the status of action to prevent labor accidents
1st half, FY2015	Confirmation of prevention measures for being caught and entangled
2nd half, FY2015	Confirmation of the status of revitalization measures aimed at achieving "completely zero accidents"
1st half, FY2016	Confirmation of high-place work safety measures
2nd half, FY2016	Confirmation of compliance with environmental laws (Revised Act on Rational Use and Proper Management of Fluorocarbons, Waste Management and Public Cleaning Law)
1st half, FY2017	Confirmation of implementation status of "pointing and calling" method and safety measures
2nd half, FY2017	Confirmation of Amended Waste Management and Public Cleansing Act (mercury waste), PCB waste management
1st half, FY2018	Details of measures for past labor accidents, reconfirmation of actions for prevention
2nd half, FY2018	Confirmation of measures to enhance understanding of rules and manuals

Environmental Safety: Environmental Loads Ensuing from Business Activities

The standing of environmental loads ensuing from business activities by the Domestic Group in fiscal 2018 is shown below.

Main environmental performance factors (Domestic Group)



*1: The calculation period of GHG emission volumes is the fiscal year for other gases than chlorofluorocarbons (PFC, etc.) and the calendar year for chlorofluorocarbons (PFC, etc.).

*2: CO₂ counts involved in transportation do not include part of the carried volume attributable to JAPEX Corp.

*3: The 5.5 gas refers to the 6 types of greenhouse gas less 0.5 (types) for energy-derived CO₂.

The environmental accounting^{*1} of the Domestic Group in fiscal 2018 is stated below. The period covered is from April 1, 2018 through March 31, 2019.

Environmental expenses

		(in million yen)	
Category	Major activities	Investment	Expenses
(1) Business area expenses	(1)-1 Pollution prevention	147	850
	(1)-2 Global environmental protection	377	141
	(1)-3 Resource recycling	62	968
(2) Upstream/downstream expenses	Reduction in containers and packaging materials	4	0
(3) Management activity expenses	Environmental audits/improvements/personnel	3	360
(4) R&D expenses	R&D to curb environmental impact	0	411
(5) Community activity expenses	Support for regional environmental activities	0	11
(6) Environmental damage response expenses		0	0
Total*2		593	2,741

Environmental benefits

Benefit item	Item	FY2018	vs FY2017
(1) Benefit from resources used in business activities	Total energy input (thousand GJ)	3,004	17
	Total substance input (thousand tons)	273	▲7
	Water resource input (thousand m ³)	6,075	▲299
	Gas emissions (thousand tons of CO ₂)	178	▲1
	Production activities: Energy-related	154	▲2
	Production activities: Others	15	1
	Transportation-related	9	0
(2) Benefit from environmental impact and waste materials of business sites	PRTR chemical releases (tons)	177	11
	Plant emission volumes (tons)	25,976	2,510
	Final disposal of waste by landfill (tons)	95	▲22
	Waste water volumes (thousand m ³)	5,532	▲498
	COD emission volumes (tons)	66	▲7
	NOx emission volumes (tons)	60	▲2
	SOx emission volumes (tons)	6	0

Real economic effects

		(in million yen)	
Particulars of effects		Sum	
1) Profits	Business income from recycling of wastes from main business or recycling of used products, etc.	193	
	Other business income	0	
2) Costs saved	Reduction in energy cost by energy saving	30	
	Reduction in waste disposal ensuing from materials saving or recycling	19	
	Other reductions	7	
Total*2		249	

Changes from the past

Category	Item	FY2015	FY2016	FY2017	FY2018
Environmental Expenses	Investment (million yen)	508	491	623	593
	Expenses (million yen)	2,375	2,605	2,739	2,741
Resource volumes used in business activities	Total energy input (thousand GJ)	3,016	3,018	2,987	3,004
	Total substance input (thousand tons)	263	267	280	273
	Water resource input (thousand m ³)	6,389	6,560	6,374	6,075
	Greenhouse gas emissions (thousand tons of CO ₂)	179	188	179	178
	Production activities: Energy-related	156	162	156	154
	Production activities: Others	14	17	14	15
	Transportation-related	9	9	9	9
Environmental loads ensuing from business activities	PRTR chemical releases (tons)	187	170	167	177
	Plant emission volumes (tons)	20,834	21,351	23,466	25,976
	Waste sent to landfills (tons)	147	157	117	95
	Waste water volumes (thousand m ³)	6,118	6,365	6,030	5,532
	COD emission volumes (tons)	78	69	73	66
	NOx emission volumes (tons)	60	90	62	60
	SOx emission volumes (tons)	7	9	6	6

*1: In business activities, Environmental Accounting is a procedure necessary for communicating quantitatively the results based on costs and effect for the environmental conservation activities by the monetary unit or material quantity, the purpose of which is to promote efficiently and effectively the environment conservation, keeping the good relationship with the society.

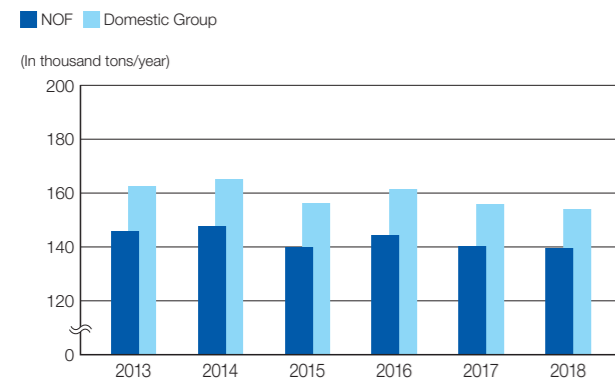
*2: Rounding of fractions may sometimes make the total inconsistent with individual figures.

Environmental Safety: Global Warming Prevention

◆ Energy consumption and CO₂ emissions

Energy consumption for fiscal 2018 increased 0.8% from the previous year for the Domestic Group, and increased 0.9% from the previous year for NOF. The total volume of energy-derived CO₂ emissions decreased 1.2% from the previous year to 154,000 tons for the Domestic Group, and decreased 0.7% from the previous year to 139,000 tons for NOF. Energy intensity per product was 13.0 GJ/t for the Domestic Group and NOF, remaining essentially flat compared with the previous year. NOF will continue to implement energy-saving measures to produce even greater results.

CO₂ emissions*¹ by energy consumption

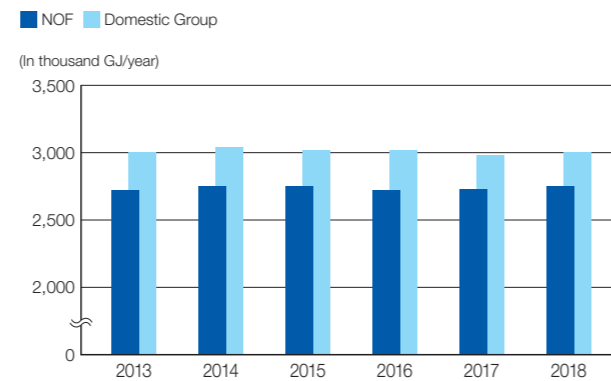


◆ CO₂ emissions other than from energy consumption

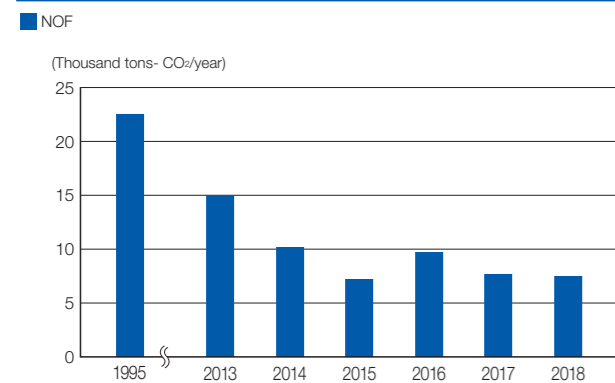
At the Aichi Works, NOF manufactures products for specific purposes using perfluorocarbon (PFC), which has a high global warming coefficient, as the diluent.

Efforts have been made to reduce PFC emission by improving the manufacturing equipment on numerous occasions. As a result, PFC emission has been reduced substantially compared with that in 1995 (the reference year for PFCs). In fiscal 2018, PFC emission decreased approximately 2% from fiscal 2017. The Company will continue making further efforts for emission cutback including maintaining steady operation of recovery equipment and promoting the use of alternative diluent.

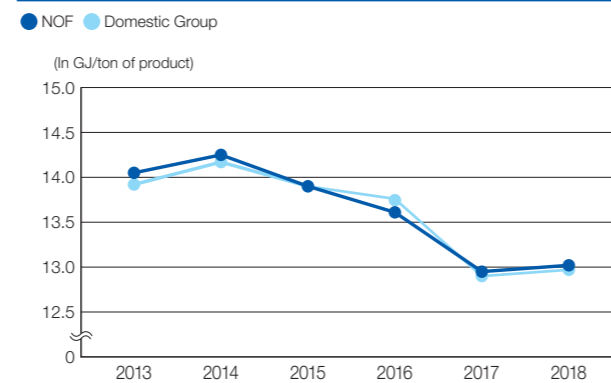
Energy consumption*²



PFC emissions



Energy intensity per product



◆ Future actions planned

NOF and the domestic consolidated subsidiaries set new mid- and long-term targets from fiscal 2016 in accordance with the Japanese government's policy under the Paris Agreement. We will continue to promote systematic measures to reduce CO₂ emissions.

◆ CO₂ emission per product by transportation

Starting the operation of an integrated delivery system in fiscal 2006, NOF has since been endeavoring for more efficient transportation. Additionally, NOF has also engaged in modal shifting*¹ and joint delivery.

With regard to modal shifting, the percentage of rail or marine transport in the total volume of our product transport had been around 20%. In 2018, the volume of truck transport increased, as a result of disruption of the rail network due to the Heavy Rain Event of July 2018 in western Japan.

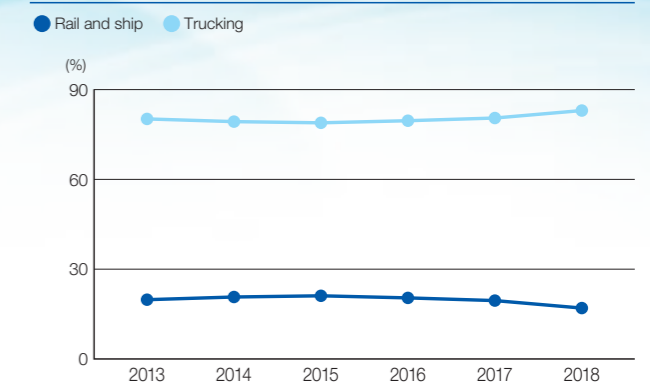
CO₂ emission per product by transportation was reduced from 100 in fiscal 2006 to 60 in fiscal 2018.

$$\text{CO}_2 \text{ emission per product by transportation} = \frac{\sum (\text{CO}_2 \text{ emitted by each means of transport})}{\text{Sales}}$$

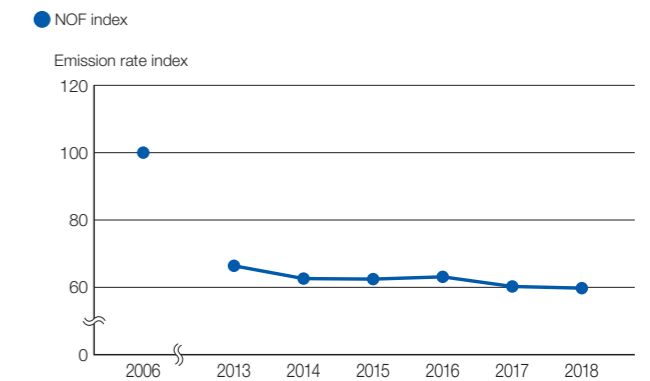


Modal shifting in Kawasaki

Transportation modal shifting (NOF)



CO₂ emission per product by transportation



◆ Electricity measures (Domestic)

Since the Great East Japan Earthquake, NOF and its domestic consolidated subsidiaries have continued to engage in measures to save electric power consumption. Going forward NOF will continue to promote electricity saving activities.

◆ Renewable energy measures (Domestic)

Kawasaki Works installed solar power generation facilities in 2018 to use renewable energy to provide part of the electricity used in production activities in an effort to realize a low carbon society.



Solar power generation panels



Power generation surveillance monitors

*1: The coefficient used in converting the electricity consumption into CO₂ emissions is the emission coefficient used by electric power supply companies in the fiscal year.

*2: The energy consumption is estimated using 9.76 kJ/kWh as the coefficient when converting electric power consumption into the calorific value.

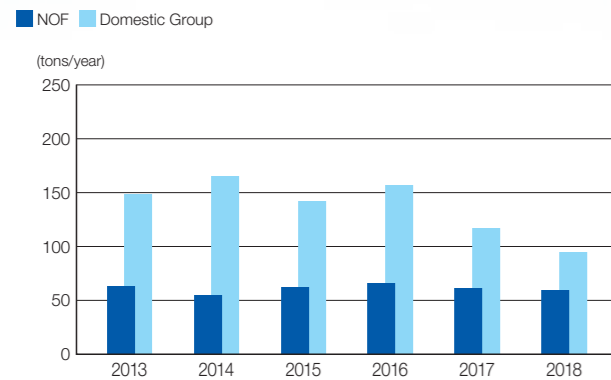
*1: Enhancing the efficiency of transport and at the same time reducing energy consumption and environmental loads by shifting the mode of transport to such large per-unit capacity means as cargo trains and ships.

Environmental Safety: Recycling of Resources

◆ Promotion of drive toward Zero Emissions*1

The volume of wastes discarded by the Domestic Group for final disposal by landfill was 95 tons in fiscal 2018, with the Zero Emissions rate standing at 0.06%. We will continue to make efforts to reduce the final landfill volume to maintain Zero Emissions.

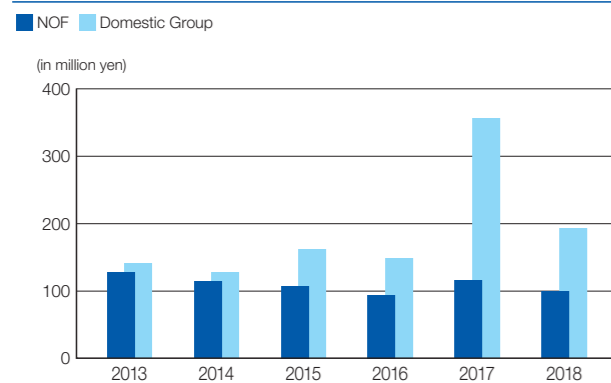
Final disposal volume by landfill



◆ Recycling of valuables from wastes

In fiscal 2018, the sales (sum of valuables sold) of recycled waste matters of the Domestic Group amounted to approximately ¥193 million. We will continue our efforts to recycle valuables from waste matters.

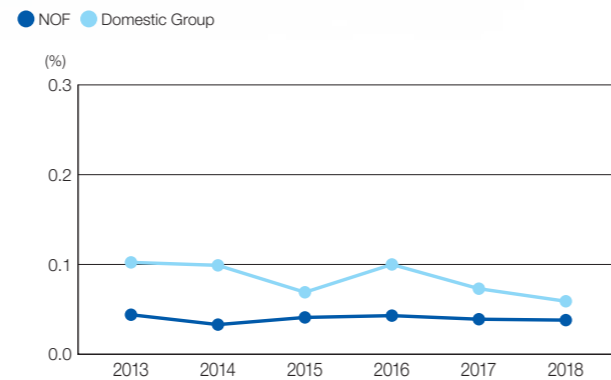
Sum of valuables sold



Meanwhile, NOF's final landfill volume was 60 tons, with the Zero Emissions rate standing at 0.04%.

NOF achieved Zero Emissions at all its works in fiscal 2018. We will continue to maintain these efforts.

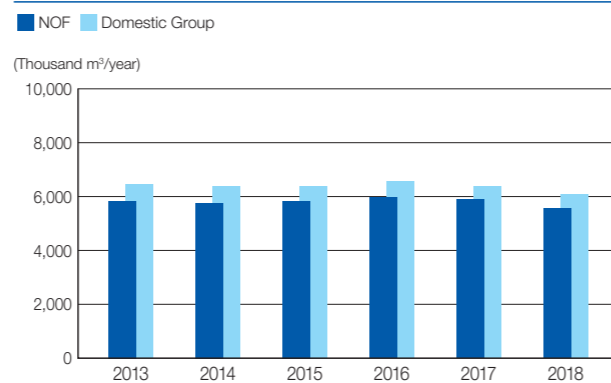
Zero Emissions rate



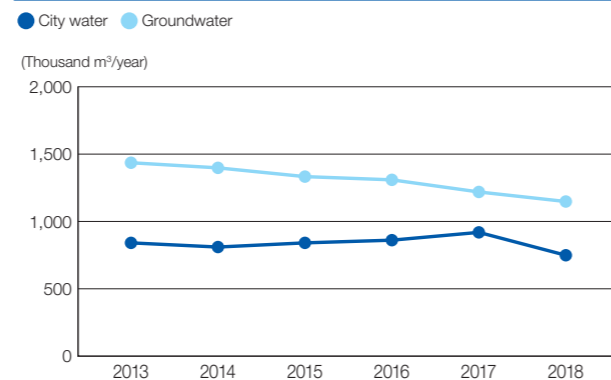
◆ Consumption of water resources

NOF has been carrying out the efficient use of water resources by estimating the amount of the water consumption. The volume of water used by the Domestic Group in fiscal 2018 amounted to 6,075 thousand m³, of which 1,148 thousand m³ was groundwater and 749 thousand m³ was city water.

Water consumption



Volumes of city water and groundwater used



*1: Here, this means an endeavor to make the disposal quantity of industrial waste close to zero.
NOF's definition of zero emission: Volume of final disposal by landfill/volume of wastes, etc. generated × 100 ≤ 0.10

Environmental Safety: PRTR

◆ Initiatives to reduce emissions of chemical substances

Each member-company of the Domestic Group is making efforts to reduce emissions of chemical substances by assessing and making notifications of PRTR Act*1-controlled substances.

◆ PRTR Act*2-controlled substances

The emission volume of PRTR Act-controlled substances by the Domestic Group in fiscal 2018 was 177 tons. This represented an increase of approximately 10 tons (6%) from the 167 tons in fiscal 2017, but a decrease of approximately 102 tons (34%) from the 269 tons in fiscal 2010, the reference year of the Mid-term Target. Going forward, reduction measures will be promoted mainly for substances with high emission volumes.

PRTR Act-controlled substances with an emission volume of 10 tons or more in fiscal 2018 are indicated in the table.

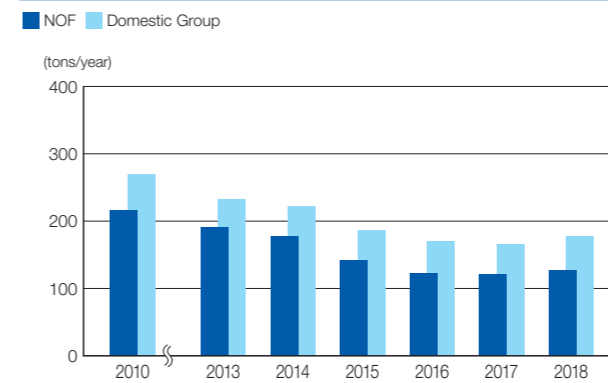
Substances high in volume (10t or more) discharged into the environment

Cabinet order No.	Name of substance	Emission volume (tons/year)
186	Dichloromethane	44.4
300	Toluene	38.0
83	Cumene	25.7
128	Chloromethane	17.4
123	3-chloropropene	12.4
392	Normal hexane	11.5
Total emission volume		177.4

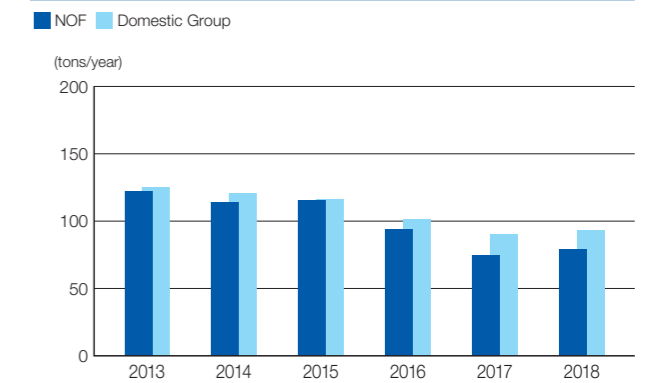
◆ Substances under JCIA-recommended autonomous control

The Domestic Group is also engaged in initiatives to assess and reduce emissions of substances recommended by the Japan Chemical Industry Association (JCIA). The total quantity of such substances emitted in fiscal 2018 was 93 tons, an increase of 3% from the previous year of 90 tons.

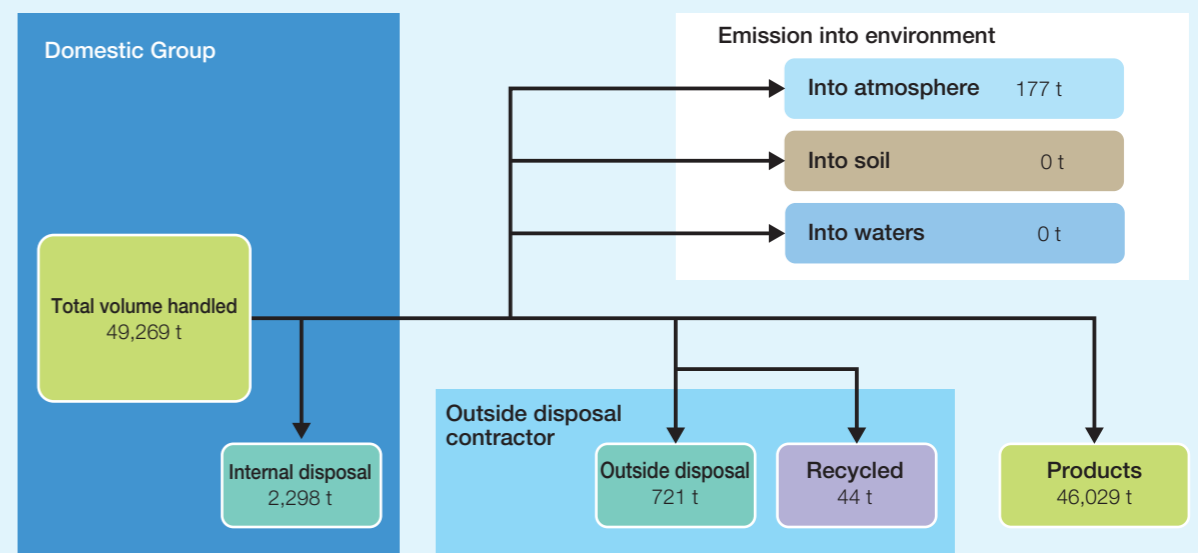
Emissions of PRTR Act-controlled substances



Emissions of substances under JCIA-recommended autonomous control



Balance of emissions of PRTR Act-controlled substances in fiscal 2018 (Domestic Group)



Note: In this report, the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management thereof is referred to as the PRTR Act.

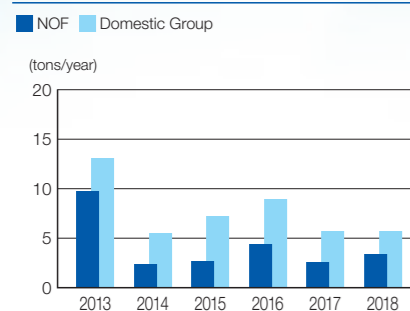
*1: Pollutant Release and Transfer Register Act (PRTR Act, or PRTR). The Act is intended to promote and improve chemical substance control and prevent the occurrence of problems in environmental conservation in Japan.

*2: PRTR Act: Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management thereof

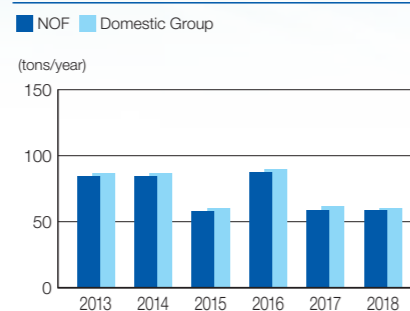
Eco-friendly action: Air

For exhaust gas from boilers and other combustion equipment, we regularly measure sulfur oxides (SOx), nitrogen oxides (NOx), soot and dust*1 among others to conform our operation and management to prescribed limits.

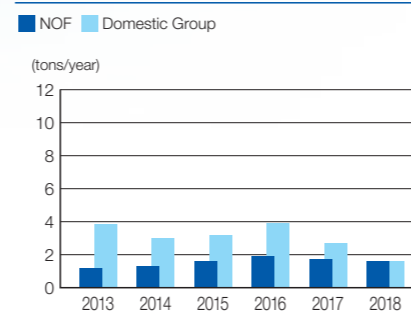
SOx emissions



NOx emissions



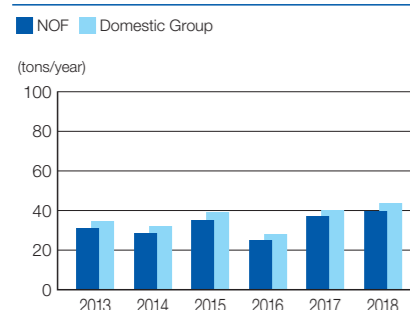
Soot-dust emissions



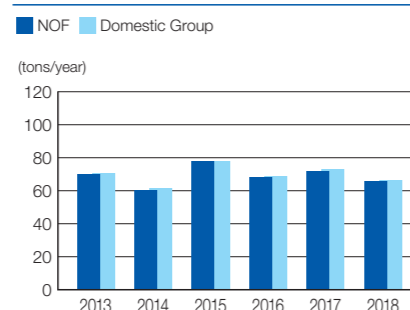
Eco-friendly action: Water

Regular measurement of biochemical oxygen demand (BOD), chemical oxygen demand (COD) and suspended solids*2 among others contained in drainage discharged in connection with production activities is another aspect of our dedication to operation and management conforming to prescribed limits.

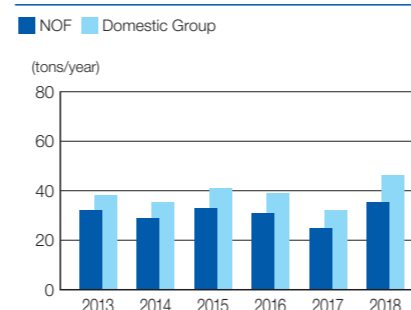
BOD emissions



COD emissions



Suspended solid emissions



Actions for biodiversity conservation

The NOF Group is committed to the conservation of the environment from preserving the immediate environment to addressing environmental problems on a global scale, as well as the conservation of ecosystem and natural resources.

From fiscal 2010, the NOF Group took up "Promoting conservation of biodiversity" as one of the targets of its RC activities, and from October 2012, NOF joined the Round-table on Sustainable Palm Oil (RSPO)*3 as "Palm Oil Processors and Traders" to contribute to the healthy development of the palm oil industry. In 2014, the NOF Group endorsed the Action Policy of and joined the Japan Business and Biodiversity Partnership, which promotes initiatives towards biodiversity by business operators. Furthermore, in April 2019, NOF became a founding member of the Japan Sustainable Palm Oil Network (JaSPON), which comprises of 18 companies and organizations including manufacturers, retailers and non-governmental organizations, and also engages in activities to encourage the entire industry to procure and use RSPO certified palm oil.

Additionally, NOF joined the Japan Initiative for Marine Environment (JaIME), which was launched in fiscal 2018, with strong recognition that the ocean plastic waste is one of the issues that the chemicals industry needs to take the lead in addressing.

Proper management of polychlorinated biphenyl (PCB)

The NOF Group properly stores and manages PCB waste in accordance with the Law Concerning Special Measures Against PCB Waste, and disposes of such waste by commissioning disposal operators as prescribed by laws and regulations.

Registered with Japan Environmental Storage & Safety Corporation, NOF disposes of its high-concentration polychlorinated biphenyl (PCB) wastes sequentially. NOF also disposes of its low-concentration PCB wastes systematically upon confirming the disposal operators.

Compliance status to Acts related to the environment

There was no violation of environmental protection law.

*1: Out of particulate substances arising from operations in plants and other business establishments, those generated in conjunction with the combustion of fuel or any other substance.

*2: Particulate substances of 2 mm or less in diameter floating or suspended in water; one of the indicators of water quality.

*3: RSPO is an acronym for the Roundtable on Sustainable Palm Oil, established in 2004 with an eye to promoting sustainable production and profitability of palm oil through the formulation of globally credible authentication standards and participation of stakeholders. RSPO is headquartered in Zurich, Switzerland.

Occupational Safety and Health Policy

The whole NOF Group, including the staffs of cooperating companies assigned to NOF's works, is making all-out efforts to eradicate occupational accidents. In order to clearly express the Group's determination to make its workplaces secure and safe for all the workers involved in its activities and to realize this ideal, NOF set forth its labor safety and health policy in April 2006.

Under this policy, an occupational safety and health management system is organized, under which required management and improvement are pursued.

Occupational Safety and Health Policy

<Fundamental idea>

We, as a group of chemical companies, shall endeavor to secure the "safety" and "health" of our employees and local communities in the belief that "no business can be viable without safety." All the officers and employees shall be committed to the buildup of "workplaces where we can work safely and securely" in close teamwork consistent with responsible care activities, and positively promote activities for occupational safety and health.

<Fundamental principles>

- (1) We shall organize an appropriate self-management system regarding occupational safety and health, and continue necessary management and improvement.
- (2) Our target shall be the eradication of labor accidents by improving the working environment, making the equipment intrinsically safe and carrying out risk reducing activities in anticipation of future changes in the working environment.
- (3) We shall faithfully observe relevant laws and regulations and our own rules and standards.
- (4) We shall endeavor for the creation of a pleasant working environment and support efforts for keeping and promoting health.
- (5) We shall make the Labor Safety and Health Policy thoroughly known to all the employees, and review it every year or as necessary. These principles shall be broadly disclosed to the public.

(Revised in March 2013)

Results of activities in fiscal 2018

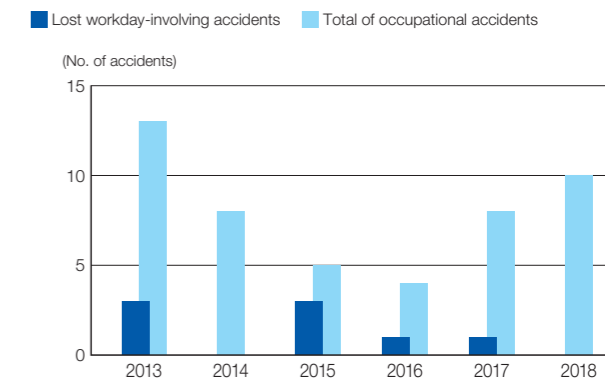
In fiscal 2018, the Group targeted "completely zero accidents,"*1 and under the slogan of "elimination of unsafe actions and unsafe conditions," worked towards reviewing past cases and reinforcing understanding of rules and manuals. However, we were unable to achieve the goal of "completely zero accidents."

Occurrence of labor accidents in fiscal 2018

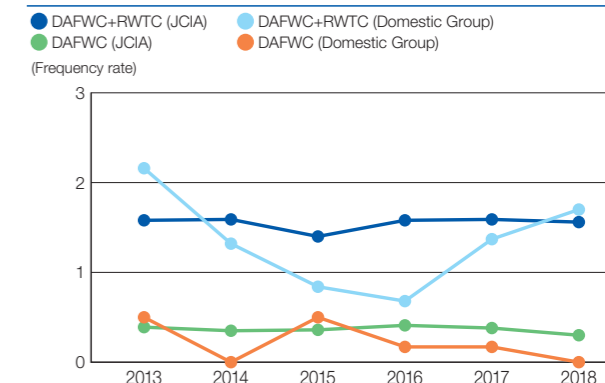
The Domestic Group in fiscal 2018 suffered no lost workday accidents. However, the number of labor accidents not involving lost workdays was 10, an increase of two from the previous year's eight.

The frequency rate of labor accidents*2 in the Domestic Group was 1.70, up from the previous year's 1.37. This rate was higher than that of the member companies of the Japan Chemical Industry Association (JCIA), an industry association.

Changes in frequency rate of labor accidents (Domestic Group)



Frequency rate of labor accidents (Domestic Group)



*1: The Group's own target to achieve zero lost workday accidents and zero accidents not involving lost workdays.

*2: This is an indicator of the frequency of occurrence of occupational accidents, whether involving absence from work or not. It is the rate of the number of workers suffering occupational accidents per million work-hours.

Labor Safety

◆ Safety education by try-and-sense method

The NOF Group has introduced safety education by a try-and-sense method, which aims at labor accident prevention by having the trainees gain a simulated experience of danger with a view to making the employees more sensitive to potential danger and more conscious of safety. Additionally, the staff is also actively attending external training sessions.



Safety experience training, Aichi Works



Security experiment, Aichi Works



Education by experience, Amagasaki Plant



Education by experience, Amagasaki Plant

◆ Each individual's "safe practice declaration" activities (Domestic Group)

The need for enhanced safety awareness to eliminate labor accidents was recognized in fiscal 2011, as a result of the frequent occurrence of such accidents attributable to human factors including the lack of a sense of danger and carelessness. Since fiscal 2012, we have been implementing "each individual's 'safe practice declaration' activities," namely the setting of action targets for labor safety by each individual person and taking action to achieve the targets. This system is implemented in a way considered suitable for each plant, such as safe practice declarations of individuals, including the personnel of cooperating companies at the site, being made open to everybody by posting on a bulletin board.

◆ Safety campaign activities report meeting (Kawasaki Works)

The Kawasaki Works has three plants producing chemicals, foods and pharmaceutical materials, each carrying out its own safety campaign activities suited to its own situation. Furthermore, with a view to helping activate safety approaches through mutual enlightenment, five workplaces reported on their unique safety campaign activities in fiscal 2018. Going forward, we will continue to promote mutual exchanges and strive to foster a safety culture in the entire Kawasaki Works.



◆ Elimination of traffic accidents

In order to reduce the number of accidents during commutes and work-related traffic accidents, which occurred frequently during fiscal 2017, we enhanced our traffic safety measures. Each business workplace and affiliate implements its own traffic safety activities according to its own circumstances. The activities implemented included bicycle simulator education, safe driving aptitude test and safety lecture by the police.



Bicycle simulator, Amagasaki Plant



Traffic safety slogan and banner, Aichi Works



Drive simulator, Tsukuba Research Center



Seat belt education by experience, Tsukuba Research Center

◆ Safety activities in fiscal 2019

We have been striving for "completely zero accidents" since fiscal 2015. In fiscal 2018, there were 10 accidents not involving lost workdays, and we did not achieve the target. Causes of accidents in fiscal 2018 consisted of workers' non-compliance with the rules, accidents resulting from a lack of risk awareness, and recurrence of labor accidents against which measures were implemented in the past. In order to prevent such accidents, we will promote measures to help workers fully understand the rules while reviewing the measures against the past accidents.

In fiscal 2019, we will continue to work on solving issues that materialized in fiscal 2018 in order to achieve "completely zero accidents."

- 1) Enhancing the sensitivity towards danger and thoroughly enforcing safety actions
- 2) Reduction of disaster risks
- 3) Elimination of traffic accidents



Commended for achieving zero lost workday accidents for 1478857 hours (Chairman Osamu Nishiyama of Amagasaki Labour Standards Association (left) and General Manager Komatsu of Amagasaki Works of NICHYU LOGISTICS CO., LTD. (right))

Plant Safety

◆ Investment in safety and physical prevention of accidents

In connection with measures for safety and accident prevention, NOF Group is carrying out a program of physical projects for prevention of accidents including explosion, fires and leaks, labor safety and working environment amelioration. Further to provide against anticipated heavy earthquakes, projects are under way to strengthen buildings.

◆ Disaster prevention drill



Amagasaki Plant



Oita Plant



Kawasaki Works



NiGK Corporation

◆ Self-defense fire-fighting demonstration



Aichi Works



Amagasaki Plant

◆ Tightened collaboration with the local community

In providing against accidents that might happen, close collaboration with local disaster-fighting organizations is indispensable. The NOF Group is actively trying to create opportunities to strengthen its disaster preparedness by engaging in joint drills with local organizations for damage prevention. Joint disaster-fighting drills and emergency support drills with neighboring companies are increasingly adapted to practical needs year after year. Large-scale drills have become frequent with the participation of local fire and police stations.

The Kawasaki Works entered into an agreement with the municipal government of Kawasaki to offer itself as a refuge facility against tsunami, and would open its general office building to general citizens seeking help. Besides these drills, individual works also participate in local disaster-fighting drills at the request of organizations they belong to.

◆ Commendation for safety drives

Member-companies of the NOF Group are taking active parts in fire-fighting skill demonstrations that are held locally. The training sessions our employees regularly participate in have proved effective, and they are often given higher awards, which further motivate them.

The NOF Group's safety drives have also been recognized, and have been awarded the following commendations.

In addition, ongoing zero accident operations in facilities using high pressure gas and boilers have also led to receiving several awards.



Excellent Automobile Driver Award, Aichi Works



YUKA SANGYO CO., LTD. received Excellent Hazardous Materials Handler Award from Kanagawa Prefectural Federation of Associations for Safety of Hazardous Materials

Works/Plants	Date awarded	Title of commendation
Amagasaki Plant	2018/6/13	47th Hyogo High Pressure Gas Control Officer Conference Award
	2018/11/6	Firefighting Skill Competition of Amagasaki City Fire Protection Association, Highest Excellence Award
	2018/11/9	56th All Japan Boiler Competition, Exceptional Boiler Management Workplace, Exceptional Boiler Engineer Award
Kawasaki Works	2018/10/29	54th Kawasaki City Labor Accident Prevention Slogan, Highest Excellence Award
Aichi Works	2018/9/20	Aichi Prefectural Police Headquarters Chief/ Aichi Prefectural Traffic Safety Association Chairman's Joint Award, Excellent Automobile Driver Award
	2018/10/5	Japan Traffic Safety Association Chairman's Traffic Medal of Honor
Nippon Koki Co., Ltd.	2018/9/21	Tohoku Regional Police Bureau/Tohoku Traffic Safety Association's joint letter of thanks for promotion of traffic safety measures
NiGK Corporation	2018/10/17	Kawagoe Regional Association for Safety of Hazardous Materials and Fire Prevention, award for participation in a 20th consecutive Fire Brigade Firefighting Skill Competition
Nippo Kogyo Co., Ltd.	2018/10/5	Shizuoka Labor Bureau Director-General's Encouragement Award (ensuring safety)
YUKA SANGYO CO., LTD.	2018/6/19	Kanagawa Prefectural Federation of Associations for Safety of Hazardous Materials, a general incorporated association, Excellent Hazardous Materials Handler Award
	2018/10/12	Winner of 14th Yamato City Firefighting Skills Competition
NICHYU LOGISTICS CO., LTD.	2018/4/26	Amagasaki Labor Standards Association, Award of Excellence for Zero Accidents

◆ Meeting international requirements for control of chemical substances

Chemical substances are being subject to stricter control on a global basis. At the World Summit on Sustainable Development (WSSD) held in 2002, a target was set as part of the international agenda to “use and produce chemicals in ways that minimize significant adverse effects on human health and the environment by 2020,” in an effort to realize sustainable development. Based on this agenda, countries around the world including the emerging countries are being encouraged to adopt and firmly establish risk-based management of chemicals and implement GHS. In terms of chemical substances, there is a rising trend requiring control of relevant risks from the standpoint of the entire supply chain, i.e. from manufacture to disposal, while also being required to disclose information on the risks caused by chemical substances and its control to the general public including our customers and consumers.

The NOF Group is implementing control of chemical substances in line with this trend to tighten controls over chemical substances by complying with the laws of each country and region.

◆ Meeting domestic requirements

In Japan, prior notification of new chemical substances is mandatory, pursuant to the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. and the Industrial Safety and Health Act.

In order to make proper notifications, when launching a new chemical substance on the market, the Responsible Care & Production Engineering Department confirms compliance with laws, and such substances remain under strict control as internal audits are conducted to ensure that there are no excesses beyond the



Education for new employees, Head Office

volume that has been authorized for manufacture or import. NOF also trains its responsible personnel regarding related regulatory matters in order to keep them up-to-date with the latest information.

In terms of reports on the actual quantity of general chemical substances manufactured, we practice appropriate control with the cooperation of our clients.

We also positively disclose information on the risks and other negative aspects of chemical substances through the Japan Initiative of Product Stewardship, which is the chemical industry’s institution for voluntary activities for the control of chemicals.

◆ Compliance with REACH

REACH*1 is a comprehensive system of registration, evaluation, authorization and restriction of chemical substances within the EU. REACH aims to protect human health and the environment, and to maintain and enhance competitiveness of the EU chemicals industry, among others, and includes almost all chemical substances exported to the EU within its jurisdiction.

The NOF Group engages in active exports to the EU region and complies with REACH in accordance with the export volume of the chemical substance involved. We practice appropriate compliance by obtaining the latest information from industrial associations and related authorities.

◆ Other countries and regions

There has been increasing legislation of late for stricter controls over chemical substances not only in the US but also in the Asian countries such as South Korea, China and Taiwan, and we are gathering the latest information regarding exports to such countries, and practicing appropriate compliance, when the situation arises.



Group education, Amagasaki Plant

◆ Joint Article Management Promotion-consortium (JAMP)

JAMP*2, which was formed in 2006 for the purpose of establishing and promoting specific structures for facilitating the disclosure and communication of information over the whole supply chain by appropriately managing and disclosing information on chemical substances. The NOF Group utilizes the chemSHERPA tool for sharing information recommended by JAMP to supply downstream users with information on chemical substances.

◆ SDS (Safety data sheets)

SDS is a document stating the necessary information on the nature of and the handling of chemical substances and is presented to the users, sales agents and other companies handling our products, including product transport businesses, in order to ensure safe handling of the chemical substances. In the product development process the NOF Group conducts safety assessment and related evaluation, classifies the planned product according to the Globally Harmonized System (GHS), and prepares the SDS.

◆ GHS

GHS*3 is a criteria for the classification of health, environmental, physical and chemical hazards of chemical substances and mixtures according to a given set of standards, which contributes to the communication of information for the prevention of accidents and the protection of people’s health and environment through the reflection of the results of such classifications in GHS labels and SDS.

The NOF Group attaches GHS labels stating the toxicity and hazardous properties on the substance containers. By doing so, the NOF Group is alerting its users, sales agents and other companies handling our products, including product transport businesses, in order to ensure safe handling.



◆ Transportation safety

The NOF Group is promoting the reduction of the environmental load in transportation, while at the same time engaging in activities to ensure the safety of products in transport. The Group has always treated transportation safety with desirable care, as it handles a wide range of hazardous materials.



Forklift safety training session, NICHYU LOGISTICS CO., LTD.



Forklift practical training session, NICHYU LOGISTICS CO., LTD.

◆ Yellow Card

Should an accident occur during the transportation of chemical substances, it could have dire consequences on human life, the neighboring area, the cargo and the road. The Yellow Card states the measures transport operators, the fire brigade and the police should take as well as contact and notification information, in the event of such an accident. The NOF Group strictly requires that such cards should be provided to transport operators involved, who are also required to carry the card with the corresponding product while in transportation.



*1: Acronym for Registration, Evaluation, Authorization & Restriction of Chemicals. REACH represents EU’s quality control regulations on chemicals and is applied to the registration, evaluation, authorization and restriction of chemicals.
*2: Acronym for Joint Article Management Promotion-consortium. JAMP was inaugurated in September 2006 by 17 companies subscribing to the underlying idea as promoters to serve as a cross-sectorial body to promote safety activities.
*3: Acronym for Globally Harmonized System of Classification and Labelling of Chemicals. An internationally harmonized system for the classification and representation of chemicals. The GHS is reflected in SDS and the label of the container. The SDS and labels of hazardous products carry characteristic graphic displays.

Promotion of CSR Procurement

◆ CSR Procurement Policy

In the procurement of its raw materials, NOF will fulfil its social responsibility by viewing the entire supply chain in order to respect human rights, comply with laws and regulations, and give due consideration to labor conditions, the environment, and safety. In order to realize its corporate philosophy, NOF is committed to deal sincerely with its suppliers based on the concept that all of them are important partners.

We will comply with laws inside and outside Japan and engage in fair transactions based on corporate ethics.

We will engage in procurement in a manner that is responsible toward the environment, safety, health, and quality and is friendly to the global environment.

We will provide fair business opportunities to entities both inside and outside Japan when selecting suppliers.

We will consider quality, cost, and delivery and select our suppliers by making a fair judgment.

We will respond quickly to emergencies and engage in the appropriate disclosure of information.

In the procurement unit, we provided our main suppliers with necessary explanations on NOF's CSR procurement policy and commenced questionnaires on the status of CSR activities at our main suppliers. We will continue these activities in fiscal 2019.

◆ Fair trade practices

The NOF Group is promoting fair trade practices by stipulating the compliance with laws such as the antimonopoly act and the subcontract act, as well as the prohibition of bribery, in the Global Compliance Manual and the Compliance Manual (Japan version) and carrying out ongoing employee education.

In addition, in order to avoid the risk of violation of "prohibitions against payment delays" and "prohibitions against reductions" under the subcontract act, the NOF Group is standardizing its payment conditions to those that comply with the act in comprehensive and uniform manner in all Group companies in Japan.

◆ Green Procurement

NOF has added "environmental friendliness" to its previous criteria for procurement of materials, which are "quality, cost and delivery time." In order to confirm the status of suppliers or products in terms of environmental measures, and to procure products with lower environmental load from suppliers that make greater environmental efforts, we have established a list of managed substances, based on which we conduct a survey of suppliers. The managed substances list is decided on the basis of

the POPs treaty, RoHS directives, REACH regulations, Japan's Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc., Industrial Safety and Health Act and Poisonous and Deleterious Substances Control Act, and is reviewed once a year.

◆ Dealing with conflict minerals

When using four minerals of tin, tantalum, tungsten and gold, we investigate their origins, as necessary, to avoid using conflict minerals, or the four minerals extracted in the Democratic Republic of Congo and neighboring countries, which may potentially impact human rights, among other things.

◆ Procuring sustainable palm oil

NOF joined the Round-table on Sustainable Palm Oil (RSPO) in 2012 and obtained supply chain certification from the organization in 2014. NOF, a founding member of the Japan Sustainable Palm Oil Network (JaSPON) which was launched in Japan in 2019, conducts activities to procure sustainable palm oil.

Dialogue Activities

To win the understanding of the members of the local community and in society at large regarding the corporate activities of the NOF Group, the Group is engaged in various dialogue activities.

In fiscal 2018, we welcomed a plant tour by local residents and held local dialogue meetings on RC, all with a view to smoother two-way communication.



Ward mayors visited Aichi Works



RC dialogue meeting, Oita Plant



RC dialogue meeting, Amagasaki Plant



Social gathering with neighboring residents' association at NiGK Corporation

Organizational unit	Date	Name of event	Activities
Amagasaki Plant	2019/2/2	RC dialogue meeting	We participated in the 8th Hyogo area regional dialogue meeting on responsible care. (13 participants)
Kawasaki Works	2018/8/10	Plant tour	We held a summer evening festival for employees and employees of cooperating companies and their families, and held a plant tour. (3 participants in the tour)
Aichi Works	2018/7/8	Works tour for representatives from neighboring wards	We invited 16 representatives from neighboring wards to a works tour and exchanged opinions.
	2018/11/2	Working Conference on Regional and Occupational Cooperation Project for Chita peninsula	We participated in a working group conference on cooperation between the government and companies regarding the health of people working and living in the Chita peninsula region.
Oita Plant	2019/1/25	Social gathering with new and former mayors from neighboring wards	We met and exchanged opinions with 13 new and former mayors from seven neighboring wards.
	2018/7/23	Accepted interns	We offered internships to two second-year students studying applied chemistry at Prefectural Tsurusaki Technical High School.
Nippon Koki Co., Ltd.	2019/2/16	RC dialogue meeting	We held the 8th small meeting where we exchanged opinions with residents of Tsurusaki and Misa areas.
	2018/7/11	Plant tour	We invited members of the Shirakawa District workplace leaders' joint workshop to a plant tour.
NiGK Corporation	2018/9/6	Plant tour	We invited 45 students from the National Institute of Technology, Fukushima College to a plant tour.
	2018/6/13	Cooperation with a traveling class	We invited students in the second grade of Kasumigaseki-kita Elementary School as part of extracurricular class to participate in a plant tour and briefing.
Showa Kinzoku Kogyo Co., Ltd.	2018/9/15	Social gathering with neighboring residents' association	We invited representatives from the residents' association of the neighboring area to participate in a briefing on the Company's overview and its environmental activities, a plant tour and a social gathering.
	2019/2/8	Exchange with local residents	We paid a courtesy call to 21 neighboring residents (landowners). (76th anniversary commemorative event)
HOKKAIDO NOF CORPORATION	2018/10/11	Plant tour	We invited members of SORACHISYOGAISYA SYUGYO-SEIKATSUSIENCENTER HIBIKI Inc. to a plant tour.
Nippo Kogyo Co., Ltd.	2018/10/20	FESTA SUSONO	We ran a booth at an event at Susono-City Society of Commerce & Industry.

Socially Beneficial Activities

◆ Volunteer Participation in “Amagasaki Forest Central Green Space Forest Planting”

On June 3, September 2 and December 2, 2018 and March 3, 2019, total of 33 employees from the Amagasaki Plant participated in the “Amagasaki Forest Central Green Space Forest Planting,” one of the initiatives of the “Amagasaki 21st Century Forest Project” promoted by Hyogo Prefecture.

Participants cooperated with other volunteers and organizers to carry out tasks ranging from delicate work to heavy lifting. Main activities consisted of cutting trees, chopping wood, planting seeds and planting trees, and participants engaged in tasks that they normally would not experience in their corporate life.

In addition to learning about the forest-planting process and the importance of biodiversity, these volunteer activities allowed our participants to directly feel the passion of members of the general public for volunteering.



◆ Cooperation with Extracurricular Class of Kasumigaseki-kita Elementary School

On June 13, 2018, second-grade students of Kawagoe City Kasumigaseki-kita Elementary School took a plant tour of NiGK Corporation and were briefed on the plant, as part of their extracurricular class. 27 second graders and teachers visited the plant, and it seemed that they were interested in the plant machinery and products, which they would not see in their everyday lives.



◆ Plant Tour

Nippon Koki Co., Ltd. offers a plant tour for local technical college students. In fiscal 2018, 45 students participated in the tour.



◆ Donating the Sacred Fire Torch®

On May 8, 2018, Nippon Koki Co., Ltd. donated the Sacred Fire Torch® for sports day to 18 elementary schools in five neighboring municipalities, including Shirakawa City. Nippon Koki Co., Ltd. has been engaged in this activity since 2016, after Tokyo was selected as the host city of the Olympic Games. This activity has been well received at events held to revitalize local communities.



◆ Participation in “Hayabusa Related Events”

On December 23, 2018, the Hayabusa related event “Makoto-no-hanashi” (Taketo Town) was held. Aichi Works cooperated with and participated in this event, at which rocket models and owned by Aichi Works and rocket-related panels were displayed and the Company’s employees explained the exhibitions. Aichi Works will continue disseminating information through participation in Hayabusa related events.



◆ Sponsoring of the “Japan Ground Self-Defense Force Middle Army Band Fureai Concert”

The “Japan Ground Self-Defense Force Middle Army Band Fureai Concert in Taketo,” which was sponsored by Aichi Works, was held on September 1, 2018, at the Kagayaki Hall of the Yumetarou Plaza (Taketo Community Arts Center). This marked the fifth year of the concert, which was again very successful.



◆ Cleaning volunteer activities

The NOF Group is actively engaged in volunteer activities to clean the areas surrounding its plants.



Cleaning volunteer activities at Port of Fuki (Aichi Works on June 16, 2018)



Cleaning volunteer activities within the industrial complex with neighboring companies (Oita Plant on June 21, 2018)



Participated in the village-wide concerted cleanup in Nishigomura, Fukushima Prefecture (Nippon Koki Co., Ltd. on July 1, 2018)



Cleaning volunteer activities in Sunagawa Park (Aichi Works on October 13, 2018)

Socially Beneficial Activities

◆ Sponsoring a model rocket-making class and the "Ozora Cup" rocket launch contest

NOF continued this year to co-sponsor the model rocket-making class and the rocket launch contest, "Ozora Cup," which was held on April 21, 2018, through the sponsorship of the Taketoyo Town Board of Education and NPO Taketoyo. Our employees of the Solid Rocket Development Department served as rocket doctors, and gave a lecture on rockets to explain the attractiveness of rockets to children.



◆ Supporting "Rocket Day" at Handa Sora No Kagaku-kan

Aichi Works supported "Rocket Day for the Whole Day," an event held by Handa Sora No Kagaku-kan, a science museum, on August 26, 2018. Aichi Works displayed its rocket models and rocket-related panels, and the Research and Development Department staff explained about the exhibits.



◆ Various donations

<Donations aimed at raising the next generation>

- JCIA, Science Human Resources Development Program
- Children's Future Support National Campaign, Children's Future Support Fund
- Hatachi Fund
- People's Hope Japan
- International Chemistry Olympiad Japan

<Donations aimed at protecting the global environment>

- Keidanren Nature Conservation Fund
- National Land Afforestation Promotion Organization, Green Fund
- World Wide Fund For Nature (WWF) Japan

<Disaster Relief Donation>

- Disaster relief donation for heavy rains in July 2018

◆ Other socially beneficial activities

<Aichi Works>

- Taketoyo Region Tree Planting Festival (35 participants, supported 60 shares) (May 3, 2018)
- Miyuki Street Summer Festival (Offered plant premises and donated sales at the festival) (July 28, 2018)
- New Year Feast at Tamafuku Inari Shrine (January 1, 2019)
- Supported Taketoyo Town's "Yumetaro Smile Marathon" (January 27, 2019)
- Supported Taketoyo Town's "Barrier-free Collaboration" (March 24, 2019)

<HOKKAIDO NOF CORPORATION>

- Supported Bibai Sakura "Fireworks Festival" (April 10, 2018)
- Participated in Bibai City "Challenge Day" (May 30, 2018)
- Donated the Sacred Fire Torch® to 20 public elementary schools in Bibai City and Iwamizawa City

<Nippon Koki Co., Ltd.>

- Lecture on Hayabusa 2 at Gifu-Kakamigahara Air and Space Museum (October 20, 2018)
- Exhibition of devices of Hayabusa 2 at Koriyama City Fureai Science Museum (November 4, 2018)

<Nippo Kogyo Co., Ltd.>

- Held a workshop for Shizuoka Prefectural Police Headquarters (September 21, 2018)

◆ Recognition from Outside the Company

- Ranked 249 in 13th Toyo Keizai CSR Ranking by TOYO KEIZAI INC.

- Ranked 248 in 22nd Environmental Management Survey Ranking by Nikkei Inc.

- Selected as a constituent of Japan Empowering Women Index (WIN) by MSCI

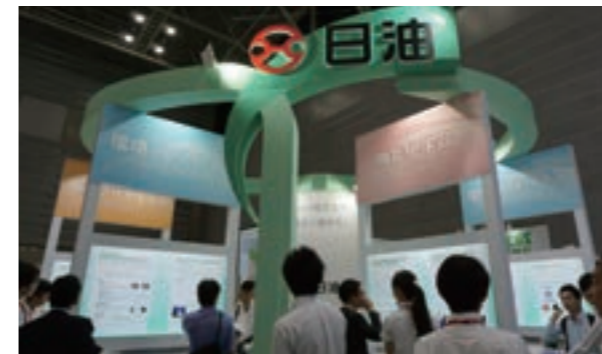
◆ Others

- Nichiyu Techno Co., Ltd. received a commendation for its contributions from Resource Circulation Kanagawa on June 13, 2018.
- NOF received a letter of thanks on July 25, 2018, from the Cabinet Office for its donation to the Fund to Support Children's Future.
- NOF received a letter of thanks for its contributions to the development of JAXA's Tanegashima Space Center at the ceremony to commemorate the 50th Anniversary of the center held on November 24, 2018.

Information Disclosure

◆ Information disclosure

In today's age of ceaseless globalization and advancement in information technology, disclosing of corporate information has become indispensable in order for an entity to fulfill its responsibility to society. Disclosure of corporate information is also becoming increasingly important for the NOF Group, as we strive to win the trust of society as an "open group" both inside and outside the Group. The NOF Group engages in timely disclosure of its corporate information including management information and business activities to its shareholders and the capital markets in accordance with relevant laws and regulations such as the Companies Act and the Financial Instruments and Exchange Act.



Chemical Material Japan 2018 (May 17-18, 2018)

◆ Business results briefings

The NOF Group conducts IR activities geared towards shareholders and investors that focus on the reliability and fairness of its investment information. NOF makes efforts to provide timely, appropriate and fair disclosures by holding business results briefings for institutional investors twice a year and posting the briefings materials on the Company's website for general investors. Additionally, in fiscal 2018, the NOF Group held 163 small meetings for institutional investors and analysts.



◆ Notice of General Meeting of Shareholders

NOF sends its Notice of Annual General Meeting of Shareholders three weeks prior to the meeting. In addition, we strive to provide information promptly by disclosing both Japanese and English versions as digital information four weeks in advance of the day of the meeting.

◆ Publishing of CSR Reports

The Environmental Reports (Report on Responsible Care Activities) that had been published since fiscal 1995 have been published as the CSR Report since fiscal 2015. We are striving to make the Report even easier to read so that people will understand the CSR activities of the NOF Group. In addition, we are making every effort to improve accessibility to information through an ISO26000 comparison table posted on our CSR information website.

◆ Information dissemination

The NOF Group proactively releases information on its new products and technology. In fiscal 2018, in addition to our 67 news releases, we responded actively to mass media coverage, which resulted in 88 mentions of the NOF Group businesses in the newspapers. We also present NOF Group products at various exhibitions and trade shows.

◆ Fair disclosure

Fair disclosure rules legally mandating fair disclosure of information by listed companies were introduced following the enforcement of the Amended Financial Instruments and Exchange Act on April 1, 2018. NOF discloses information in a timely and appropriate manner in accordance with various laws and regulations, including the Financial Instruments and Exchange Act and the Rules on Timely Disclosure set by the Tokyo Stock Exchange. In addition, among information that does not fall under the scope of the Rules on Timely Disclosure, we conduct fair and impartial disclosure of information which we consider to have significant impact on the investment decisions of shareholders and investors, and we have made the "Disclosure Policy" available on our website.



"Naruhodo NOF!" on the Company website introduces the businesses of the NOF Group.

We use easily understood, user-friendly terms to explain our business, in an effort to further the understanding of the general public towards our undertakings.



Top page of NOF CORPORATION
(<http://www.nof.co.jp/index.html>)



Top page of "Naruhodo NOF!"
(<http://www.nof.co.jp/about/index.html>)

Performance data by organizational unit (Fiscal 2018 Results)

Item	Unit	Amagasaki Plant	Kawasaki Works	Oita Plant	Aichi Works	NOF, etc.
Production volume	[thousand tons]	104	64.9	23.0	19.5	—
Gross-energy input	[thousand GJ]	1,220	595	307	605	26.4
Total material input	[thousand tons]	106	68.2	38.4	41.2	—
Water resource input	[thousand m³]	2,885	787	657	1,237	0.2
GHG emission	[thousand t-CO₂]	66.0	29.0	18.5	39.2	1.6
SOx emission	[tons]	0.08	0	1.0	2.4	—
NOx emission	[tons]	43.3	3.7	5.9	5.5	—
COD emissions	[tons]	24.9	1.4	4.8	34.2	—
Waste quantity emitted by plants	[tons]	10,770	7,459	621.3	6,192	18.3
Internal recycling quantity	[tons]	0	0	0	955	—
External recycling quantity	[tons]	7,651	7,219	92.3	2,999	4.0
Finally disposed waste quantity	[tons]	28.7	1.4	0	29.3	0.4
Emissions of substances regulated by PRTR law	[tons]	34.5	62.6	0.7	28.9	0.0

Item	Unit	Nippon Koki	NIGK	Showa Kinzoku	HOKKAIDO NOF	Nippo Kogyo	YUKA SANGYO
Production volume	[thousand tons]	3.2	3.2	0.3	2.3	0.1	2.4
Gross-energy input	[thousand GJ]	119	34.8	11.1	33.0	4.0	1.9
Total material input	[thousand tons]	4.3	3.7	0.3	5.3	0.1	1.4
Water resource input	[thousand m³]	388	22.9	22.1	22.0	3.0	5.8
GHG emission	[thousand t-CO₂]	7.2	1.8	0.6	2.2	0.2	0.1
SOx emission	[tons]	0.5	0.1	0	1.7	0	0
NOx emission	[tons]	1.0	0.1	0	0	0	0
COD emissions	[tons]	0	0	0.03	0.1	0	0
Waste quantity emitted by plants	[tons]	157	108	108	89	18.8	154
Internal recycling quantity	[tons]	0	0	0	0	0	0
External recycling quantity	[tons]	137	97	56.0	9.5	9.5	152
Finally disposed waste quantity	[tons]	3.5	0.71	4.9	21.1	2.4	2.2
Emissions of substances regulated by PRTR law	[tons]	5.7	1.9	0	0	0	0.5

Item	Unit	Nichiyu Kogyo	NOF METAL COATINGS	NIKKA COATING	NICHYU LOGISTICS	Other Domestic total	Overseas total
Production volume	[thousand tons]	2.6	2.8	3.2	—	—	35.0
Gross-energy input	[thousand GJ]	11.0	7.5	18.4	8.9	1.2	473
Total material input	[thousand tons]	2.5	2.2	—	—	—	—
Water resource input	[thousand m³]	35.7	8.2	1.2	—	—	1,709
GHG emission	[thousand t-CO₂]	0.6	0.4	1.1	0.5	0.1	27.8
SOx emission	[tons]	0	0	0	—	—	0.8
NOx emission	[tons]	0.6	0	0	—	—	3.9
COD emissions	[tons]	0.2	0	0	—	—	236
Waste quantity emitted by plants	[tons]	51.8	135	93.2	—	—	4,185
Internal recycling quantity	[tons]	0	0	0	—	—	0
External recycling quantity	[tons]	51.6	125	73.9	—	—	577
Finally disposed waste quantity	[tons]	0.2	0.05	0	—	—	951
Emissions of substances regulated by PRTR law	[tons]	0	0.5	42.2	—	—	—

Changes in performance data (NOF Group)

Item	Unit	2011	2012	2013	2014	2015	2016	2017	2018
Production volume	[thousand tons]	225	214	216	214	217	219	231	232
Gross-energy input	[thousand GJ]	3,083	2,975	3,033	3,039	3,016	3,018	2,987	3,004
Total material input	[thousand tons]	267	255	256	259	263	267	280	273
Water resource input	[thousand m³]	6,312	5,924	6,454	6,396	6,389	6,560	6,374	6,075
GHG emission	[thousand t-CO₂]	168	180	186	183	156	179	170	169
SOx emission	[tons]	12	13	13	6	7	9	6	6
NOx emission	[tons]	60	68	86	87	60	90	62	60
Soot and dust emissions	[tons]	2	3	4	3	3	4	3	2
BOD emissions	[tons]	34	38	35	32	39	28	40	43
COD emissions	[tons]	60	69	71	61	78	68	73	66
Suspended solid emissions	[tons]	36	30	38	35	41	39	32	50
Waste quantity emitted by plants	[tons]	20,127	19,038	19,395	19,966	20,508	21,351	23,466	25,976
Internal recycling quantity	[tons]	4,864	5,609	2,242	5,100	3,929	1,177	1,190	955
External recycling quantity	[tons]	11,612	11,876	13,025	14,011	14,576	16,696	17,267	18,676
Finally disposed waste quantity	[tons]	162	103	149	159	111	157	117	95
Emissions of substances regulated by PRTR law	[tons]	241	232	233	232	187	170	167	177

Changes in performance data (NOF)

Item	Unit	2011	2012	2013	2014	2015	2016	2017	2018
Production volume	[thousand tons]	204	192	194	193	198	200	211	211
Gross-energy input	[thousand GJ]	2,789	2,705	2,725	2,751	2,753	2,739	2,728	2,753
Total material input	[thousand tons]	248	232	234	236	243	248	259	253
Water resource input	[thousand m³]	5,668	5,368	5,832	5,760	5,838	5,967	5,879	5,566
GHG emission	[thousand t-CO₂]	153	165	169	164	154	162	155	154
SOx emission	[tons]	8	9	10	2	3	4	3	3
NOx emission	[tons]	58	66	84	85	58	88	59	58
Soot and dust emissions	[tons]	1	2	1	1	2	2	2	2
BOD emissions	[tons]	26	30	31	29	35	25	37	39
COD emissions	[tons]	60	69	70	60	78	68	72	65
Suspended solid emissions	[tons]	19	21	32	29	33	31	25	35
Waste quantity emitted by plants	[tons]	19,311	18,196	18,694	19,156	19,716	20,350	22,372	25,061
Internal recycling quantity	[tons]	4,864	5,609	2,242	5,100	3,929	1,177	1,190	955
External recycling quantity	[tons]	11,048	11,302	12,631	13,466	14,017	16,132	16,355	17,965
Finally disposed waste quantity	[tons]	81	52	63	55	60	66	61	60
Emissions of substances regulated by PRTR law	[tons]	187	183	192	188	143	123	121	127

Emissions/transfer quantity of substances regulated by PRTR Law in Fiscal 2018 (Domestic Group) (tons/year)

Cabinet order No.	Substance	Emission quantity				Transfer quantity	Recycling quantity
		Air	Water	Earth	Total		
13	Acetonitrile	0.1	0.0	0.0	0.1	133.9	41.9
68	1,2-epoxypropane	5.2	0.0	0.0	5.2	0.0	0.0
80	Xylene	1.5	0.0	0.0	1.5	1.7	0.0
83	Cumene/Isopropylbenzene	25.7	0.0	0.0	25.7	188.3	0.0
123	3-chloropropene	12.4	0.0	0.0	12.4	9.8	0.0
127	Chloroform	1.5	0.0	0.0	1.5	15.6	0.0
128	Chloromethane	17.4	0.0	0.0	17.4	0.0	0.0
131	3-chloro-2-methyl-1-propene	8.2	0.0	0.0	8.2	0.0	0.0
186	Dichloromethane	44.4	0.0	0.0	44.4	61.9	0.0
262	Tetrachloroethylene	3.1	0.0	0.0	3.1	0.0	0.0
281	Trichloroethylene	1.8	0.0	0.0	1.8	0.0	0.0
300	Toluene	38.0	0.0	0.0	38.0	123.6	1.8
308	Nickel	0.0	0.0	0.0	0.0	2.6	0.0
330	Bis (1-methyl-1-phenylethyl) peroxide	0.0	0.0	0.0	0.0	1.9	0.0
366	tert-Butyl hydroperoxide	0.4	0.0	0.0	0.4	41.7	0.0
392	n-hexane	11.5	0.0	0.0	11.5	34.8	0.0
400	Benzene	0.0	0.0	0.0	0.0	6.2	0.0
407	Poly (oxyethylene)-alkyl ether (limited to alkyl group with C numbers of 12 to 15 and mixtures thereof)	0.0	0.0	0.0	0.0	3.8	0.0
414	Maleic anhydride	0.0	0.0	0.0	0.0	3.8	0.0
420	Methyl methacrylate	1.1	0.0	0.0	1.1	0.0	0.0
436	alpha-Methylstyrene	0.3	0.0	0.0	0.3	84.7	0.0
440	1-Methyl-1-phenylethyl hydroperoxide	0.0	0.0	0.0	0.0	2.5	0.0
448	Methylenebis (4,1-phenylene) diisocyanate	0.0	0.0	0.0	0.0	1.1	0.0
—	Other substances (100 materials)	4.6	0.2	0.0	4.8	3.1	0.0
	Total**1	177.2	0.2	0.0	177.4	721.2	43.8

Emissions of substances regulated by PRTR Law in Fiscal 2018

(tons/year)

Cabinet order No.	Substance	Emission quantity				Transfer quantity	Recycling quantity
		Air	Water	Earth	Total		
13	Acetonitrile	0.1	0.0	0.0	0.1	133.9	41.9
68	1,2-epoxypropane	5.2	0.0	0.0	5.2	0.0	0.0
83	Cumene	25.7	0.0	0.0	25.7	188.3	0.0
123	3-chloropropene	12.4	0.0	0.0	12.4	9.8	0.0
127	Chloroform	1.5	0.0	0.0	1.5	15.6	0.0
128	Chloromethane	17.4	0.0	0.0	17.4	0.0	0.0
131	3-chloro-2-methyl-1-propene	8.2	0.0	0.0	8.2	0.0	0.0
186	Dichloromethane	1.6	0.0	0.0	1.6	61.8	0.0
300	Toluene	37.0	0.0	0.0	37.0	123.4	0.1
308	Nickel	0.0	0.0	0.0	0.0	2.6	0.0
330	Bis (1-methyl-1-phenylethyl) peroxide	0.0	0.0	0.0	0.0	1.9	0.0
366	tert-Butyl hydroperoxide	0.4	0.0	0.0	0.4	41.7	0.0
392	n-hexane	11.5	0.0	0.0	11.5	34.8	0.0
400	Benzene	0.0	0.0	0.0	0.0	6.2	0.0
407	Poly (oxyethylene)-alkyl ether (limited to alkyl group with C numbers of 12 to 15 and mixtures thereof)	0.0	0.0	0.0	0.0	3.8	0.0
414	Maleic anhydride	0.0	0.0	0.0	0.0	3.8	0.0
420	Methyl methacrylate	1.1	0.0	0.0	1.1	0.0	0.0
436	alpha-Methylstyrene	0.3	0.0	0.0	0.3	84.7	0.0
440	1-Methyl-1-phenylethyl hydroperoxide	0.0	0.0	0.0	0.0	2.5	0.0
—	Other substances (80 materials)	4.0	0.2	0.0	4.2	2.3	0.0
	Total**1	126.3	0.2	0.0	126.6	717.1	42.1

*1: The round-off will produce differences.

Group Companies (16 Manufacturing Companies)

Business location	Address	Contact	ISO-14001	ISO-9000's
Nippon Koki Co., Ltd. Shirakawa Plant	Aza Tsuchio 2-1, Oaza Nagasaka, Nishigomura, Shirakawa-gun, Fukushima 961-8686, Japan	+81-248-22-3691 (Environmental Safety Control Office)	JSAE741: Renewed on Oct. 29, 2018	JSAQ2282: Renewed on Oct. 29, 2018
NiGK Corporation	21-2, Matoba Shinmachi Kawagoe, Saitama 350-1107, Japan	+81-49-231-2103 (Environmental Security Control Office)	YKA 4005084/J: Renewed on Apr. 28, 2018	YKA4005531/J: Renewed on Mar. 13, 2018
Showa Kinzoku Kogyo Co., Ltd.	Iwase 2120, Sakuragawa, Ibaraki 309-1211, Japan	+81-296-76-1811 (Environmental Safety Planning Dept.)	—	02479-2011-AQ-KOB-JAB: Renewed on Mar. 7, 2019
HOKKAIDO NOF CORPORATION	549 Koshunai, Bibai, Hokkaido 079-0167, Japan	+81-126-67-2211 (Administration Dept.)	—	—
Nippo Kogyo Co., Ltd.	Chabatake 1838, Susono, Shizuoka 410-1121, Japan	+81-55-922-0476 (Operations Dept.)	—	—
YUKA SANGYO CO., LTD. Yamato Plant	13-13, Yanagibashi 5-chome, Yamato-shi, Kanagawa 242-0022, Japan	+81-46-267-2684 (Production Technology Dept.)	—	BV 4106832: Renewed on Apr. 30, 2018
Nichiyu Kogyo Co., Ltd.	22-1, Dou-cho 4-chome, Takatsuki, Osaka 569-0011, Japan	+81-72-669-5141 (Production Dept.)	—	—
NOF METAL COATINGS ASIA PACIFIC CO., LTD.	3-3, Chidori-cho, Kawasaki-ku, Kawasaki, Kanagawa 210-0865, Japan	+81-44-280-3024 (Operation Planning Dept.)	BV 4280820: Renewed on Nov. 22, 2018	3742574: Renewed on Dec. 19, 2017
NIKKA COATING CO., LTD.	Higashi-Saitama Technopolis, 3-6 Asahi, Yoshikawa, Saitama 342-0008, Japan	+81-48-991-9854	—	JICQA 3357: Renewed on Feb. 22, 2018
NICHIYU LOGISTICS CO., LTD.	3-2, Chidori-cho, Kawasaki-ku, Kawasaki, Kanagawa 210-0865, Japan	+81-44-280-0560 (General Affairs Dept.)	Green Management T140069: Renewed on Nov. 18, 2017	—
NOF METAL COATINGS NORTH AMERICA INC.	275 Industrial Parkway Chardon, Ohio 44024-1083, U.S.A.	+81-44-280-3024 (Operation Planning Dept. of NOF METAL COATINGS ASIA PACIFIC CO., LTD.)	—	66561-IS8: Renewed on Aug. 1, 2017
NOF METAL COATINGS EUROPE N.V.	Bouwvelven 1, Industriezone Klen-Gent, BE-2280 Grobbendonk, Belgium	Ditto	ANT10200: Renewed on Oct. 5, 2018	ANT10200: Renewed on Oct. 26, 2016
NOF METAL COATINGS SOUTH AMERICA IND. E COM.LTDA.	Rua Minas Gerais No85 Vila Oriental CEP 09941-760 Diadema Sao Paulo, Brazil	Ditto	320993UM15: Renewed on Dec. 4, 2017	320993QM15: Renewed on Dec. 4, 2017
NOF METAL COATINGS KOREA CO.,LTD.	9F Munhwailbo B/D, 68, Chung Jeongno1-ga, Jung-gu, Seoul 04516, Korea	Ditto	REM1342: Renewed on Feb. 28, 2019	IATF16949: Renewed on Nov. 16, 2017
PT.NOI MAS CHEMICAL INDUSTRIES	Kawasan Industri Bekasi Fajar, Block D-1 Mekar Wangi, MM2100 Industrial Town Phase III Cibitung-Bekasi 17520, Indonesia	+81-3-5424-6838 (Planning Office, Functional Chemicals & Polymers Div., NOF)	—	ID00/18019: Renewed on Dec. 10, 2017
Changshu NOF Chemical Co., Ltd.	Wan fu road, Riverside Industrial Park, Chang shu Economic Development Zone, Jiang Su Province 215537, China	Ditto	00117E33937R3M/3200: Renewed on Dec. 26, 2017	00117Q311499R3M/3200: Renewed on Dec. 22, 2017

Group Companies (8 Sales Companies)

Business location	Address
NICHIYU TRADING CO., LTD.	Ebisu Neonato, 1-18 Ebisu 4-chome, Shibuya-ku, Tokyo 150-0013, Japan
JAPEX Corp.	Shinbashi Chuo Bldg., 11-5 Nishi-Shinbashi 1-chome, Minato-ku, Tokyo 105-0003, Japan
CACTUS Co., Ltd.	Sengoku Coathouse Bldg., 37-4 Sengoku 4-chome, Bunkyo-ku, Tokyo 112-0011, Japan
NOF METAL COATINGS EUROPE S.A.	ZAET Creil Saint Maximin, 120 rue Galilee, CS 50093, 60106 CREIL CEDEX, France
NOF AMERICA CORPORATION	One North Broadway, Suite 912, White Plains, N.Y. 10601, U.S.A.
NOF EUROPE GmbH	Hamburger Allee 2-4, 60486, Frankfurt am Main, Germany
SIE s.r.l.	Via. Avogadro, 11 10121 TORINO(TO), ITALY
NOF (Shanghai) Co., Ltd.	Room 2402, 24F, Huanning Plaza North Building, No. 300 Xuanhua Road, Changning District, Shanghai 200050, China

NOF CORPORATION

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