

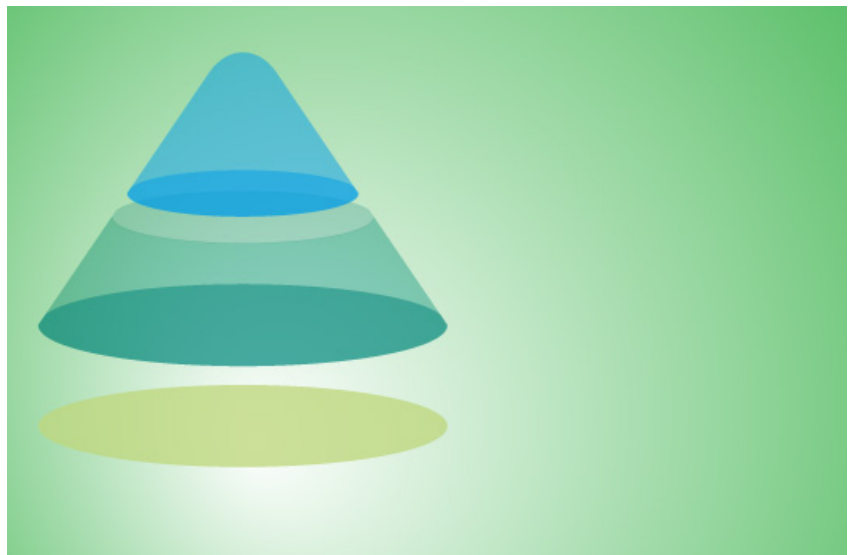


Message From the President

Read the Message from the President,
Atsuhiro Wakumoto.

CSR Management

- Our Corporate Vision and CSR Management
- Respect for human rights and the **KAYAKU spirit**
- Key Themes ("Materiality") and Our Action Plan
- Corporate Governance
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- Risk Management
- The Nippon Kayaku Group's Commitment to CSR





CSR Activities That Fulfill Our Environmental Responsibilities

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Please refer to the ecohotline



Message From the President

The “Combined Forces of our Consciences” is the part of the **KAYAKU spirit** I especially value.

President, Atsuhiro Wakumoto



“We will adhere to our corporate vision, the **KAYAKU spirit, and continue to make contributions to a sustainable society and environment through our corporate activities”**

The Nippon Kayaku Group’s corporate vision is to “continuously provide society with the best products, through ceaseless progress and the combined forces of our consciences” (the **KAYAKU spirit**). The **KAYAKU spirit** is the group-wide philosophy of the Nippon Kayaku Group; to bring together the good intentions of each and every person, “combining the forces of our consciences,” in order to enable each person and group to continuously grow and make “ceaseless progress,” so we may consistently provide the “best products” needed by the world and contribute to our society.

In order to realize the **KAYAKU spirit** and fulfill our oath to our stakeholders, the Nippon Kayaku Group has identified core CSR issues (materiality), and is operating in accordance with our Mid-term CSR Action Plan, which covers the mid-to-long term actions to resolve those issues. Some basic information regarding our key CSR materiality activities is listed in the CSR Report booklet, and more detailed information are available on our website. Please look through them both in order to understand our group’s CSR management.

Envisioning the **KAYAKU spirit**, I especially value the “combined forces of our consciences.” In order to realize the **KAYAKU spirit**, my goal is to make the Nippon Kayaku Group a company where all of our employees can feel well-being through their work. Along with maintaining financial stability and a safe work environment, it is also extremely important to feel fulfillment from one’s work, such as the feeling of self-growth, trust in others, and being able to make a contribution. I will work towards creating an environment where each of our employees, feeling well-being from their work, can care for each other and cooperate in order to achieve larger goals, and lead the way so that each and every employee of the Nippon Kayaku Group can take a sincere look at how they may contribute to a sustainable society, and work together towards those goals to make the Nippon Kayaku Group a company that is needed by our society.

Our world currently has many issues at hand, such as those brought up in the “Paris Agreement” on climate change and the “Sustainable Development Goals (SDGs)” of the UN. In our core business fields, the need for environmentally friendly chemical materials (better performance with lower energy and resource consumption) continues to grow as our world continues to develop as an “advanced IT society”, such as the growth of IoT. In the medical field, the increase in costs for medical care continues to be a problem for our society. And the need for safer cars is more important than ever, as our society continues to become even more reliant on automobiles around the world. The Nippon Kayaku Group consists of the Functional Chemicals Group, Pharmaceuticals Group, Safety Systems Group, and the Agrochemicals Group, and is working in all fields in effort to resolve these issues.

On the other hand, we in the chemicals industry must also operate while keeping long term risks to, and opportunities to make improvements for the environment as well. These are not easy tasks to realize. Following our corporate slogan, “Sukima ideas”, my aim is to maintain a flexible and diverse approach to find out how to achieve our goals, instead of focusing on why they cannot be done, in order to keep contributing necessary values to society through our business activities.

Starting towards the end of FY2019, the COVID-19 epidemic has impacted us on a global level. The Nippon Kayaku Group is working hard to stay on top of global trends in order to ensure safety of our employees and minimizing impact to our company. However, with this situation in mind, I would also like for us to take another look at what we need to work on most to contribute to the sustainable society and environment.

Currently, our management, business groups, and operating departments are all working together to identify our “ideal image.” With the global economy’s future being unclear right now, we must be able to keep up with major changes to our work and societal environments. In order to do so, I will also reassess the “ideal image” a sustainable society needs to us be, what values we can contribute through our business activities, and how to realize those contributions in a timely manner.

We will also continue to be thorough with corporate governance and compliance, and enhance our corporate value through the practice of CSR-centered management with a high degree of ethics in order to maintain a safe and secure work environment, and promote human resource development along with diversity in the work place.

To our stakeholders, I sincerely ask for your continued support as we continue on with our efforts.

President 

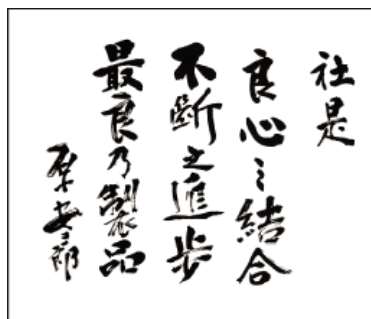
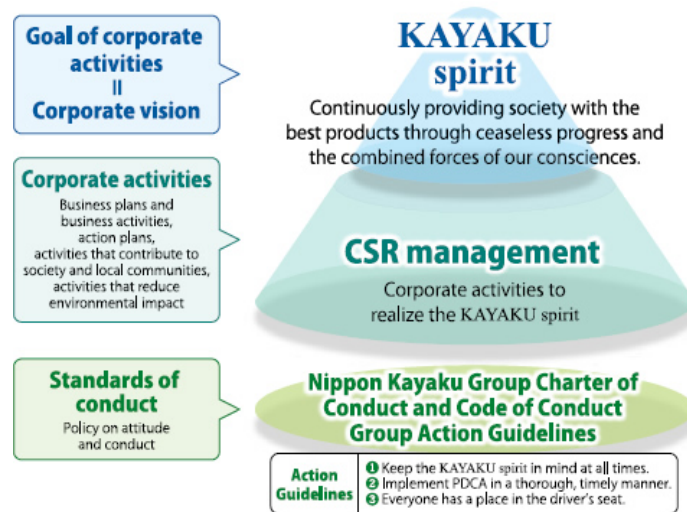


Our Corporate Vision and CSR Management

The Nippon Kayaku Group is implementing CSR management that fosters trust among all stakeholders through its focus on the **KAYAKU spirit**, which calls for "continuously providing society with the best products through ceaseless progress and the combined forces of our consciences."

The KAYAKU spirit and CSR Management

The **KAYAKU spirit**, or "continuously providing society with the best products through ceaseless progress and the combined forces of our consciences," stands as the Nippon Kayaku Group's corporate vision. The **KAYAKU spirit** is based on the corporate motto created more than half a century ago and it has stood at the root of our CSR management ever since. We will be able to achieve our vision for CSR management that earns the trust of all stakeholders by engaging in corporate activities that realize the **KAYAKU spirit**.



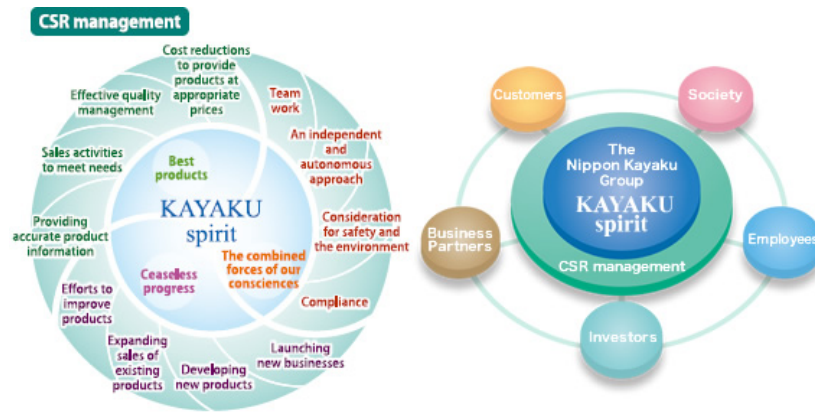
The image at the bottom left is an overhead view of the **KAYAKU Spirit**.

This image pictures the daily efforts of each of our employees, based on the concepts of "best products", "ceaseless progress" and "the combined forces of our consciences",

holding hands and supporting each other as they work towards achieving the corporate vision shown at the top.

This is our commitment to realize a CSR management that fulfills our social, economic and environmental responsibilities, and meets the

trust and expectations that our stakeholders have put into us as a corporate member of our society.
 CSR management is positioned as a key corporate activity for achieving the vision outlined in the **KAYAKU spirit**



Stakeholders	Overview of initiatives	relevant page
Customers	We conduct company-wide quality activities under our quality system in order to supply the best products to customers. We are mindful that product quality improvements, safety and reliability, as well as the provision of technical services and information are paramount to improving customer satisfaction.	With Our Customers
Business partners	We pursue mutual and sustainable growth with our suppliers, based on the understanding that they are important business partners who help us produce products of the best quality.	With Our Business Partners
Investors	We strive to disclose information to all of our shareholders, investors, and other stakeholders in a timely, impartial, and fair manner, so they may have a proper understanding of the Group's business status, and the various initiatives we are taking.	With Our Shareholders and Investors
Employees	A company is nothing without its people. We respect the human rights of each and every employee, and strive to offer a workplace environment that offers peace of mind to them. Our goal is to be a company where employees can grow personally and professionally through work and feel a sense of motivation in what they do.	With Our Employees
Society	We aim to be a company closely rooted in communities through our involvement at the local level, proactive engagement with all stakeholders and support for the educational needs of the next generation.	With Our Local Communities
Environment	We are committed to achieving a balance between the efficiency of production and reducing its impacts on the environment. For this reason, we consider environmentally friendly management to be an important task. We are now striving to achieve the various environmental targets we have set. We are working to improve facilities and treatment processes in order to use energy more efficiently, reduce exhaust gas including greenhouse gas emissions, and to lower the amount of substances released from effluent and waste that impact the environment.	Initiatives for Environmental Protection Environment/Health/Safety/Quality Management System

Participation in external initiatives

Nippon Kayaku's initiatives in the ESG (environment, social, and governance) go beyond mere compliance with international standards. We believe that collaboration with other institutions and corporations is critical, and we are proactively participating in such initiatives.

Membership qualifications of major external organizations

Group Name	
KEIDANREN (Japan Business Federation)	Japan Crop Protection association
The Japan Chemical Industry Association (JCIA)	Japan Initiative for Marine Environment (in the Japan Petrochemical Industry Association)

Group Name	
The Japan Chamber of Commerce and Industry (JCCI)	The Institute of Internal Auditors – Japan
The Japan Dyestuff and Industrial Chemicals Association (JDICA)	Association of Risk Management
The Japan Pharmaceutical Manufacturers Association (JPMA)	The Japan Association for Chemical Innovation(JACI)
The Biosimilar Association (JBSA)	Nanotechnology Business Creation Initiative (NBCI)
Pharmaceutical manufacturers' association of Tokyo	Nanotechnology Business Creation Initiative
Japan explosives industry association	Japan Open Innovation Council (JOIC)
Japan Auto Parts Industries Association	National Federation of UNESCO Associations in JAPAN

CSR Implementation System

We established the CSR Management Committee and set up the CSR Department within the Corporate Planning Division of our Strategic Corporate Planning Group. When reviewing the CSR Action Plan's goals and accomplishments, the CSR Management Committee takes a top-down approach in its deliberations and decision-making.

At the same time, the CSR Department administers cross-functional CSR projects, while the business sites and group companies take the lead in implementing these projects.



SDGs and the KAYAKU spirit

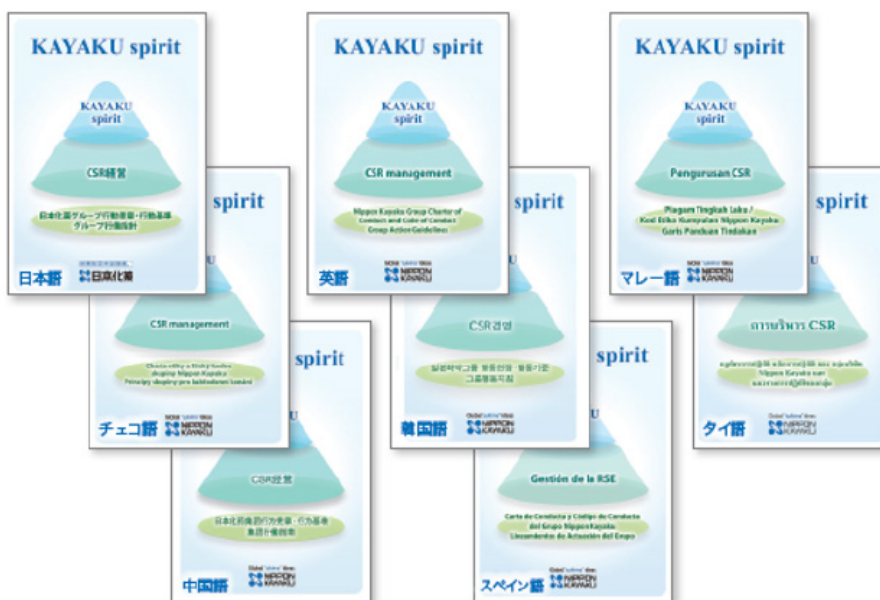
Sustainable Development Goals (SDGs) consist of the 17 economic, social, and environmental goals that were adopted by all United Nations Member States for the purpose of building a sustainable world and that are to be accomplished by various institutions, organizations, and other entities by fiscal 2030. The concept behind SDGs is synonymous with the Nippon Kayaku Group's corporate vision of "continuously providing society with the best products through ceaseless progress and the combined forces of our consciences." This is because we believe that our corporate initiatives to realize the **KAYAKU spirit** are consistent with the goals of the UN in realizing its SDGs, although they differ in terms of their scale and targets. The business initiatives being taken by our Functional Chemicals, Pharmaceuticals, Safety Systems, and Agrochemicals Businesses, whose business vision is "to continue to provide the best products, technologies and services that safeguard the life and health of consumers and support a comfortable life," also align with the goals of the SDGs.

Realizing the **KAYAKU spirit** will enable us to promote CSR management that gains the trust of all our stakeholders so that we will be able to communicate the initiatives that we have taken so far in the lingua franca of SDGs.



Instilling the Company with the KAYAKU spirit

To instill all of our domestic and overseas employees with the **KAYAKU spirit**, we have translated and distributed a booklet describing our corporate vision and Group Action Guidelines into the language of each country where we operate, for a total of eight languages. In fiscal 2019, we revised this booklet to make it easier to understand. We will also be revising and distributing the versions for each language. We are also creating opportunities to spread the **KAYAKU spirit** among our domestic and overseas employees at Management Strategy Meetings and joint forums on the Mid-term Business Plan and through such means as group training and e-learning. Our aim is to be a company where all employees throughout the world are united in sharing our vision, regardless of which area they work in, be it production, development, sales, management, or anywhere else.



The booklet describing our corporate vision and Group Action Guidelines. It comes in eight versions: Japanese, Czech, Chinese, English, Korean, Spanish, Malay, and Thai.

KAYAKU spirit Promotion Efforts using Kayakuma the Bear

We have created a mascot character called Kayakuma the Bear in order to make **KAYAKU spirit** a concept that is more familiar to all Nippon Kayaku Group employees around the world. This character appears in the CSR section of our company newsletter, where we introduce our CSR activities and initiatives for implementing our corporate vision, using visual depictions that are easy to understand for all audiences. The mascot has also been incorporated into our daily stationery, clear file folders and even the designs of conference rooms. This ensures our employees are always aware of Kayakuma the Bear, and in touch with our corporate vision in all aspects of their work. We are currently filing for a trademark for Kayakuma the Bear and plan on using it widely as a symbol of the Nippon Kayaku Group in newspaper ads, on novelty items, and at company events such as factory festivals.



Kayakuma the Bear mascot character representing **KAYAKU spirit**



Conference room and employee locker



Respect for human rights and the **KAYAKU spirit**

The words "combined forces of our consciences" can be found in the fundamental philosophy of our **KAYAKU spirit**. We believe that the fundamental principle of our corporate management is respect for the human rights of everyone, be they employees or business partners, in all aspects of our corporate activities, and the mutually combined forces of our consciences.

Respect for Human Rights

[The Nippon Kayaku Group Charter of Conduct](#), which constitutes the Group's principles of conduct, stipulates respect for the basic human rights, diversity, character, and individuality of individuals in all its business activities. Furthermore, Chapter 1-5. of the Nippon Kayaku Group Code of Conduct states that we respect internationally recognized human rights and recognize and respect diversity in regard to gender, age, nationality, race, religion, disability, ethnicity, skin coloring, culture, philosophy, beliefs, political views, and gender orientation, and this is considered to be a principle of conduct for all employees throughout the entire group.

Human Rights Initiatives for Employees

The Nippon Kayaku Group has established an Ethics Committee chaired by the head of the Administration Group, which deliberates on various issues related to the prevention of workplace harassment and human rights violations. The committee sponsors training sessions with guest speakers and other types of educational sessions, such as e-learning and work-level based training for managers and employees alike to educate them about human rights and how to prevent power, sexual, or maternity harassment and to further their understanding of LGBT people. Nippon Kayaku is committed to creating a vibrant workplace environment by continuously striving for employee diversity and inclusion.

Human Rights Considerations in CSR Procurement

As the Nippon Kayaku Group strives to achieve a sustainable society with everyone in its supply chain, its procurement activities take into consideration such aspects of CSR as respect for human rights, environmental protection, workplace health and safety, legal compliance, and fair business dealings.

[The Nippon Kayaku Group Basic Procurement Policy](#), which is the Company's basic stance regarding CSR procurement, has been formulated so that procurement practices align with CSR management, and CSR procurement decisions are made based on the Charter of Conduct and Code of Conduct. Moreover, "Chapter 2. Human Rights and Labor" of the CSR Procurement Guidelines, which prohibits all forms of discrimination, specifically stipulates that inhumane treatment, discrimination, forced labor, and child labor are all prohibited. Along with our business partners, we are striving to engage in procurement activities that take human rights into consideration.



Key Themes ("Materiality") and Our Action Plan

The Nippon Kayaku Group is implementing CSR management that fosters trust among all stakeholders through its focus on the **KAYAKU spirit**, which calls for "continuously providing society with the best products through ceaseless progress and the combined forces of our consciences."

Practicing CSR management involves properly ascertaining the Key Themes facing our Group from both an internal and external point of view and formulating a mid-term CSR Action Plan that links to our business activities.

CSR and Business Strategy

We believe that CSR is integral to managing our Company. To realize the **KAYAKU spirit** and increase the value of the Company, we believe it is necessary to take the dual approach of implementing both a mid-term business plan and initiatives toward a sustainable society and environment, and that we need to integrate these initiatives into our business strategy.

We have the basic management policy which is "The Nippon Kayaku Group engages in CSR management by outlining a mid-term CSR action plan that reflects the trust we receive from all our stakeholders. We continuously implement this mid-term CSR action plan to expand our management resources. This enables us to work towards maximizing our corporate value, achieving sustainable growth, and contributing to a sustainable society and environment."

Under this basic management policy, we ascertain our risks and opportunities by considering the business environment and listening to our stakeholders so that we can identify the Key Themes (CSR materiality) in our business over the medium-term, then we create our Mid-term Business Plan and Mid-term CSR Action Plan that syncs with Mid-term Business Plan. Our CSR activities, which are integral to our business strategy, are highly ethical and place priority on safe operations, strict compliance, and the environment in all of our businesses.

CSR Key Themes ("Materiality")

In creating our mid-term business plan, **KAYAKU Next Stage**, which began in fiscal 2019, Nippon Kayaku went through the themes that it needs address as it strives to contribute to a sustainable society and to achieve sustainable growth for the Company. This exercise yielded our CSR Key Themes.

CSR Key Themes ("Materiality") Identification Process

In formulating our mid-term business plan, **KAYAKU Next Stage**, which kicks off in fiscal 2019, we have organized the themes that we should address and identified the CSR Key Themes (CSR materiality).

CSR Key Themes (CSR Materiality) Identification Process

■ [Step 1 Recognition of the Themes]

Make a list of Themes, taking topics from the GRI standards on the items needed by a diversifying society and adding topics from the Nippon Kayaku Group's CSR Action Plan.

■ [Step 2 Assign Points from Internal and External Feedback]

A. Assignment of points from external assessments

Assign points from external assessments by linking the Themes on the list with assessment criteria for each of the Company's business segments from multiple international assessment organizations that promote responsible investing and SASB※ need criteria for each industry.

B. Assignment of points from internal assessments

Survey those responsible for Company's major departments, including its business divisions, to evaluate how much of an impact the Nippon Kayaku Group can have. Set up listening opportunities in the major departments to verify the Themes and rank them by priority. Assign points from the internal assessments by incorporating views on past key Themes addressed in CSR Action Plans.

※ An independent non-profit, SASB develops reporting standards that enable businesses around the world to identify, manage and communicate financially-material, sustainability information to investors.

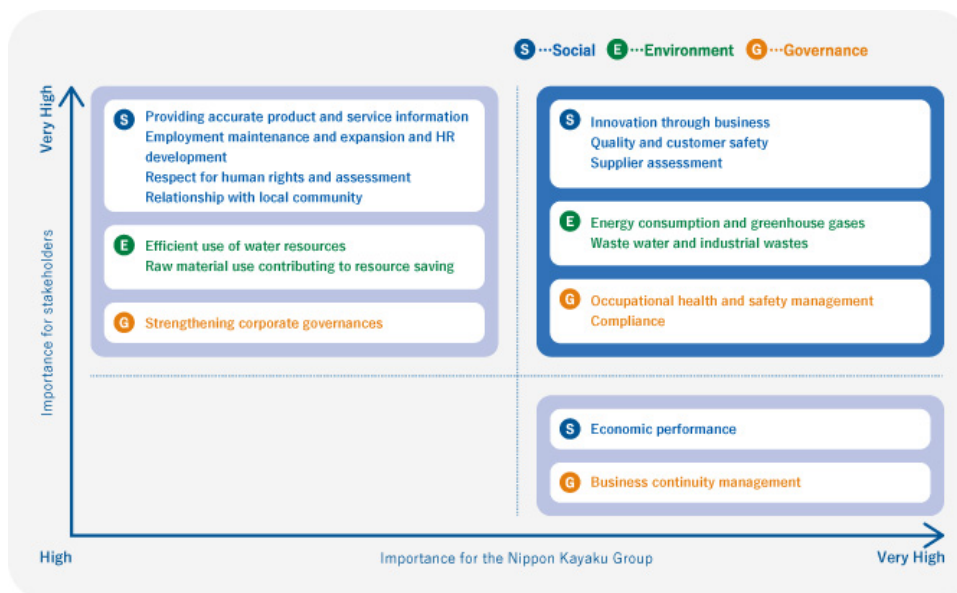
■ [Step 3 Materiality mapping]

Make a matrix of the Themes that have been assigned points from the external and internal assessments to create a materiality mapping. Include thresholds in the point-based map so that those Themes with points that meet or exceed the threshold are considered key.

■ [Step 4 Validity testing and approval]

Get feedback on the identification process and identification results from experts who specialize in CSR, review the process and results at the CSR Management Committee, which is the Company's decision-making body, and approve them after two sessions of deliberation.

Nippon Kayaku Group's CSR Key Themes ("Materiality")



Identification and Implementation of Key Themes

Below, we describe the Nippon Kayaku Group's recognition of its identified Key Themes and how we intend to accomplish them by focusing on the most important of these themes.

Innovation through business

■ Why Is This Key?

The world is moving in the direction of a better life for people. Technological progress is not the be-all and end-all. However, achievement of a sustainable society involves not only making the world more convenient, but also such major issues as enabling everyone to live safe and healthy lives, alleviating climate change, and protecting the global environment. Chemical companies need to take responsibility and tackle these issues seriously. At Nippon Kayaku, we believe that we need to acquire the new business opportunities and new technologies that will lead to innovation through continuous progress so that we can solve these wide-ranging, thorny problems and respond to the needs of society. We believe that tackling these Key Themes will enable us to contribute to a sustainable society by giving society the value that it is seeking.

■ Nippon Kayaku's Initiatives

The Nippon Kayaku Group's business vision is, "Continuing to provide the best products, technologies, and services that safeguard the life and health of consumers, and support a comfortable life." Since its founding, Nippon Kayaku has been striving to solve social issues as it has grown. In the future as well, we will continue making contributions toward a sustainable society and environment as we alter our three "genes" of explosives, dyes, and pharmaceuticals so that we can keep providing the best products, technologies, and services using the many elemental technologies that we have nurtured over our past century of history. Our endeavors involve honing our elemental technologies, taking advantage of open innovation, and carrying out corporate and other research that will support future growth for realizing a super-smart society and SDGs. This includes distinctive products based on resins, colorants, and catalysts, pharmaceuticals and ancillary products in our cancer-related specialty areas, products for advanced automobile safety components and future mobility technologies, high-quality environmentally friendly agrochemicals for supporting stable agricultural production, and the development of products and creation of businesses in new fields that merge these technologies. To this end, we are working to consolidate our entire corporate foundation in the utilization of advanced IT and the enhancement of our entire work force's skills. Tackling these themes also entails the key themes' [economic performance](#). In view of our initiatives with respect to key environmental issues, such as ["energy use and greenhouse gases," "wastewater and waste," "efficient use of water resources,"](#) and ["use of materials that contribute to resource conservation,"](#) we believe that new technologies and other innovations that will contribute to society are just around the corner.

[Click here to find out about other initiatives](#)

Quality and customer safety

[read more](#) ▼

Quality and customer safety

■ Why Is This Key?

Society is increasingly demanding quality and safety of products and services. Nippon Kayaku offers a wide range of products that includes functional chemicals, pharmaceuticals, automobile safety components, and agrochemicals, and it is incumbent upon us that all of our products be of appropriate quality. We are fully aware that any problems with quality defects will have an impact on our customers as well as on our entire supply chain. We believe that consistent product quality, improved safety and reliability, and technical services and information that facilitate proper use are linked to the enhancement of customer satisfaction.

■ Nippon Kayaku's Initiatives

Based on the spirit of Responsible Care,[※] the Nippon Kayaku Group has formulated The Declaration on Environment, Health and Safety, and Quality in order to maintain and enhance its environmental protection, health and safety, and quality assurance practices, and we are implementing this declaration through organized companywide activities. We have set up a Quality Management Division that is in charge of quality management across our businesses as well as quality management systems that address the specifics of each business, and we are implementing these initiatives on a global scale that incorporates all our group companies. We are working to improve quality by curbing quality process abnormalities using techniques ranging from education to actual practice. Examples of this include quality assurance initiatives for strengthening our technological prowess in quality assurance so as to ensure consistent product quality, quality risk assessments to prevent the occurrence of quality issues, the creation and usage of our "Why Why Analysis Manual" that beefing up our efforts to prevent the recurrence of customer complaints and to curb quality process abnormalities, and training to enhance our design and development capabilities by having our researchers start using statistical techniques and quality engineering. In that these topics are related to the key theme, ["provision of appropriate information on products and services,"](#) we are striving to provide technical data and the most recent academic information so that our customers will be able to use products that are safe. Providing our customers with the best products means that we will need to eliminate processing abnormalities and important customers' complaints by tackling this issue head on, and this will result in improving the Group's presence.

[※] Responsible Care: An initiative whereby companies that manufacture or handle chemical substances actively work on ensuring an operation that is aware of the environment, safety, and health throughout its entire value chain; from product development to production, sales, consumption, and disposal of the

chemical substances.

Supplier assessment

[read more](#) ▼

Supplier assessment

■ Why Is This Key?

Many crucial issues are involved in procuring the raw materials for our products, including consideration of workers' human rights and meticulous health and safety management, creation of a better work environment, and measures to conserve resources and prevent global warming. The company must practice these not only within its Group but also with respect to its entire supply chain. The Nippon Kayaku Group believes it is our social responsibility to implement this key theme conscientiously as we maintain sustainable procurement practices, and we strive to become a company that customers seek out.

■ Nippon Kayaku's Initiatives

In our quest to bring about a sustainable society, the Nippon Kayaku Group is aiming toward mutually sustainable development with its suppliers, for "they are important business partners who help us produce products of the best quality." We have produced a CSR Procurement Guidebook that is based on the Nippon Kayaku Group Charter of Conduct, Basic Procurement Principles, and Basic Procurement Policy, and we are working to get all of our suppliers on board with our procurement practices. In addition to educating our suppliers about our CSR Procurement Policy through briefings, daily contact, and business negotiations, we are also conducting ongoing field assessments of our business partners.

Implementation of this theme is closely related to another key theme, that of **maintaining business continuity**, and we as a Group need to tackle these two themes simultaneously. Procurement risk entails supply risk as well as the risk that social issues will not be dealt with appropriately. With the recognition that both of these constitute key themes, we are striving to strengthen our ties with all of our business partners in order to provide the best products so that we will comply with our CSR Procurement Policy when we purchase our raw materials.

Energy consumption and greenhouse gases / Waste water and industrial wastes / Efficient use of water resources / Raw material use contributing to resource saving [read more](#) ▼

Energy consumption and greenhouse gases / Waste water and industrial wastes / Efficient use of water resources / Raw material use contributing to resource saving

■ Why Are These Key?

All of these key themes are environmental in nature. Chemicals are manufactured from fossil fuels through various processes. During these manufacturing processes, the electricity and thermal energy consumed during the heating and cooling stages release greenhouse gases into the atmosphere, water is used during cleaning processes, and chemicals are emitted into the air, water, and soil. Thus, the Nippon Kayaku Group's business activities could have an impact on the global environment. In addition, as automobiles spread throughout the world and the automobile usage ramps up in the emerging countries, demand for automotive safety components that incorporate the explosives that we produce will be not just for safety considerations but also for reducing the burden on the global environment with their minimal size and weight. These initiatives to reduce the burden on the global environment have become more urgent in recent years. We believe that attaining a sustainable society requires us to make ceaseless progress toward minimizing the adverse impact of product life cycles on the global environment, reducing strain on the environment, and managing chemical substances appropriately.

■ Nippon Kayaku's Initiatives

To confront these key themes head on, we have delved deeply into their particulars to identify the key environmental themes (materiality). Specifically, based on the proposals of the TCFD^{※1}, we solicited the views of experts as well as input from our production divisions and R&D divisions to help us elicit the risks and opportunities involved in climate change, then conducted an impact analysis to identify the environmental key themes. (For information on environmental key themes (materiality), see the section on our environmental initiatives.)

Responsible Care is the starting point for our business activities as a chemical company. We are improving our management of chemical substances and providing appropriate information that will assist in keeping our employees and customers safe and protect the global environment. We are also attempting to simplify our production processes, use energy more appropriately, and take other steps to broaden our scope of assessment.

We are currently using the MFCA method※2 in our assessments so that we can contribute to a sustainable global environment and facilitate our corporate business continuity.

In addition, the water used in heating, cooling, and product purification, which is essential in manufacturing our products, can have an impact on our business if the volume or quality of usable water changes, so each of our domestic and overseas group production sites is assessing the risks in its geographical areas and taking countermeasures.

With respect to the reduction of greenhouse gas emissions, the environmental burden could be reduced by converting to low-carbon materials in the production process, installing energy-efficient equipment, reducing energy usage in the production process, and switching to renewable energy sources. We are now in the process of formulating our environmental goals for 2030 and considering the best ways to accomplish them.

※1 The TCFD (Task Force on Climate-related Financial Disclosures) was established in 2016 by the Financial Standards Board, an international organization for financial system stability.

※2 MFCA (Material Flow Cost Accounting) is a method for analyzing overall cost performance by looking at resource and energy losses during the production process and regarding the materials costs, processing costs, equipment depreciation costs that comprise these losses as “negative product costs.”

Occupational health and safety management / Compliance

[read more ▼](#)

Occupational health and safety management / Compliance

■ Why Is This Key?

Operational safety is basic to everything in the manufacturing industry. Every company in the Nippon Kayaku Group practices safety initiatives in a common recognition of “safety above everything else,” and we believe that we are responsible to all of our stakeholders for preventing accidents and disasters from happening. This is also the most important consideration for employees who work for the Nippon Kayaku Group. In addition, both our domestic operations and overseas affiliates are responsible for complying with local laws and regulations, so we believe that each employee must rigorously follow compliance procedures and that fair business dealings are indispensable to the company’s survival and the fulfillment of its social responsibilities. Other key themes that constitute the foundation of all our business activities include “strengthening corporate governance,” “maintaining and expanding employment and development of human resources,” “respect for human rights and assessment,” and “local communities,” and it is our belief that we will not be able to survive as a corporation unless we deal with these key themes in an appropriate manner. All of these themes are part of “building a strong corporate base capable of supporting growth,” which is one of the key themes of our mid-term business plan, *KAYAKU Next Stage*, indicating our recognition that sound initiatives are essential.

■ Nippon Kayaku’s Initiatives

In 2000, the Nippon Kayaku Group formulated the Nippon Kayaku Group Charter of Conduct and Code of Conduct as guideposts for our behavior, and these have been revised in response to the demands of the times, so that they are shared by all of our employees. The social responsibilities that corporations are expected to bear have become increasingly diverse and complex in recent years, now encompassing such areas as climate change and other environmental issues, relations with the supply chain regarding child labor and other labor issues, participation in society as a good corporate citizen, and respect for human rights. At Nippon Kayaku, it is essential for us to share a common awareness, as diverse employees of various nationalities, religions, native languages, and cultural backgrounds are helping us run many of our businesses. With this in mind, we amended the Nippon Kayaku Group Charter of Conduct and Code of Conduct in fiscal 2019 to add human rights, crisis management, local communities, and dialog, as new factors.

All the key themes that form the base of our corporate initiatives are synonymous with corporate initiatives that understand and respect the amended Nippon Kayaku Group Charter of Conduct and Code of Conduct. We are striving to take responsibility as the Nippon Kayaku Group and educate our employees so that everyone has a shared awareness in approaching these themes.

Mid-term CSR Action plan 2019-2021

Based on the materialities that we identified, we have formulated our Mid-term CSR Action Plan 2019-2021, which sets forth specific initiatives and goals. The themes and goals of the Mid-term CSR Action Plan have been integrated with the medium- and long-term key themes set by each corporate division in order to flesh out the major themes of our mid-term business plan, *KAYAKU Next Stage*. The medium- and long-term key themes are linked with the more specific organizational goals of the entire Nippon Kayaku Group, as well as with the performance goals of each individual employee. Therefore, the Mid-term CSR Action Plan is being put into practice by all of our employees as part of our business strategy.

KAYAKU Next Stage



KAYAKU Next Stage Mid-term CSR Action Plan 2019-2021					
ESG	Item	Important CSR issues	Mid-term CSR Action Plan 2019-2021	Key Indicators (KPI)	FY2021 Targets
Highest Priority Issues	1	Innovation through business	<ul style="list-style-type: none"> Business divisions will work as one team on pursuing R&D with an eye on exit to market, and create new products and businesses in core businesses and areas of synergy. Invest management resources in medium and long-term R&D themes while enhancing core technologies and meeting the future needs of society. 	Amount invested in R&D over three years	(Consolidated) 100 billion over 3 years
	2	Quality and customer safety	<ul style="list-style-type: none"> Make ongoing improvements to the quality management system and work to strengthen local management capabilities, and create a stronger quality management and quality assurance system. Pursue quality management, improve the level of production technology and expertise, and work to reduce flaws in the process. 	Number of serious complaints by customers ^① 1	(Consolidated) 0 complaints
	3	Business partner assessment	<ul style="list-style-type: none"> Implement supply chain management that takes environmental and social aspects into consideration, based on the CSR Procurement Guidelines. 	Number of serious flaws in processes ^② 1	(Consolidated) 0 incidents
	4	Energy use and greenhouse gases Wastewater and waste Efficient use of water resources Use of materials that contribute to resource conservation	<ul style="list-style-type: none"> Pursue activities to save energy and combat global warming. Achieve the environmental targets for FY2020 and formulate targets for FY2021. Work to integrate ISO 14001 company-wide and advance environmental management that addresses both the risks and opportunities of environmental problems. 	<ul style="list-style-type: none"> Mid-term environmental targets Amount of CO2 emitted from energy sources VOC emissions volume COD emissions volume Volume of waste generated Recycling rate Zero emissions rate 	<ul style="list-style-type: none"> FY2020 Target (Non-consolidated) 79,500 tons or less (Non-consolidated) 42 tons or less (Non-consolidated) 150 tons or less (Non-consolidated) 23,500 tons or less (Non-consolidated) 85% or higher (Non-consolidated) 3% or lower
Important Issues	5	Occupational health and safety in the workplace	<ul style="list-style-type: none"> Strictly follow basic rules on health and safety and improve equipment and work procedures to build a strong foundation for safe operations. Promote health management and provide a workplace environment that enables employees to work with enthusiasm and achieve work-life balance. 	<ul style="list-style-type: none"> Number of serious accidents^③ 2 White 500 certification Percentage of employees taking paid leave Percentage of employees who take mental health training Percentage of employees who undergo regular health check-ups 	<ul style="list-style-type: none"> (Consolidated) 0 incidents (Non-consolidated) Maintain certification (Non-consolidated) 70% (Non-consolidated) 100%^④ 3 (Non-consolidated) 100%
	6	Compliance	<ul style="list-style-type: none"> Exercise strict compliance, which is a basic principle upon which we conduct corporate activities, and operate the business in a fair manner. Establish a basic policy on preventing corruption, and maintain and strengthen an open and honest corporate culture with high ethical values. 	<ul style="list-style-type: none"> Number of serious compliance violations^⑤ 4 Formulation of a basic policy on preventing corruption Coverage ratio of companies implementing compliance training 	<ul style="list-style-type: none"> (Consolidated) 0 incidents Formulation (Domestic) 100%
	7	Provision of appropriate information on products and services	<ul style="list-style-type: none"> Increase the presence of the Nippon Kayaku Group by complying with regulations in each business and providing appropriate information and technical services to customers. 	Regularly conducting customer satisfaction surveys	(Non-consolidated) Implementation
	8	Maintaining and expanding employment and development of human resources	<ul style="list-style-type: none"> Promote diversity and inclusion by hiring diverse human resources and effective human resource allocation and exchanges. Pass down and strengthen technical capabilities in monokanuri (manufacturing) and achieve globalization in human resources through ongoing human resource development. 	<ul style="list-style-type: none"> Percentage of female managers Percentage of people with disabilities employed Amount invested in education and training per employee 	<ul style="list-style-type: none"> (Non-consolidated) 8%^⑥ 5 (Non-consolidated) 2.3% (Non-consolidated) Note results only
	9	Respect for human rights and assessment	<ul style="list-style-type: none"> Operate businesses in a manner that considers the human rights of employees and all people involved in the supply chain. 	Number of training sessions held on human rights	(Non-consolidated) Once a year or more
	10	Local communities	<ul style="list-style-type: none"> Actively communicate with local communities where our businesses are located and strive to co-exist and prosper together with them as a company rooted in the local community. 	<ul style="list-style-type: none"> Total number of informal community gatherings Expenditures on social contributions^⑦ 6 	<ul style="list-style-type: none"> (Consolidated) Note results only (Non-consolidated) Note results only
	11	Economic performance	<ul style="list-style-type: none"> Generate stable profits and return profits to society while reinvesting profits as management capital to achieve sustainable growth and enhance corporate value. 	<ul style="list-style-type: none"> ROE Amount of tax paid Capital investments over three years 	<ul style="list-style-type: none"> (Consolidated) 8% (Consolidated) 95.6 billion (Consolidated) 150.0 billion over three years
	12	Strengthening corporate governance	<ul style="list-style-type: none"> Strengthen corporate governance of the entire group and manage in a highly transparent and sound manner. 	Number of times that the effectiveness of Board of Directors meetings is evaluated	(Non-consolidated) Once a year
	13	Ensuring business continuity	<ul style="list-style-type: none"> Ensure business continuity by responding to the many different risks associated with our businesses, maintaining the production structure, securing the appropriate materials, and strengthening disaster response measures. 	<ul style="list-style-type: none"> Number of times internal business audits are performed by the Audit Division Implementation rate for the top five risk control activities Number of times BCP drills are conducted 	<ul style="list-style-type: none"> (Consolidated) 45 times over three years (Consolidated) 100% (Consolidated) Once a year or more

①Environment ②Social ③Governance
 ④ 1 Less than 10 million yen or higher
 ⑤ Accidents resulting in loss of work for three or more people simultaneously or accidents resulting in death
 ⑥ Cumulative amount over the three-year period from 2018 to 2020
 ⑦ Number of incidents deemed serious by the Ethics Committee in the Management Committee
 ⑧ Target for the end of FY2020
 ⑨ A business for activities: disaster house activity support, plant festivals, and other local events

KAYAKU Next Stage
Mid-term CSR Action Plan 2019-2021 for ISO26000 Core Subjects














ESG	Material CSR Issues	Mid-term CSR Action Plan (2019-2021)	ISO26000 Core Subjects and Related Issues																
			Organizational governance	Human rights	Consumer issues	Environment	Society	Human resources	Product quality	Customer satisfaction	Supplier relations	Community involvement	Stakeholder engagement	Transparency	Accountability	Leadership	Compliance	Reporting	
High-priority issues	1	Knowledge through business	Business activities off-site in our base operations (B2B) will be carried out to ensure compliance with applicable laws and regulations in each business and group of company. In addition, we will continue to improve our compliance system and strengthen our compliance culture through training for all employees.																
	2	Quality and customer value	Make ongoing improvements in the quality management system and work to strengthen our management system. In addition, we will continue to improve our quality management system and work to reduce risks in the process.																
	3	Business partner assessment	Implement supply chain management that takes environmental and social aspects into consideration, based on the CSR Management Guidelines.																
	4	Energy use and greenhouse gas emissions and waste	Further activities to save energy and control global warming. Reduce the environmental impact by FY2020 and increase energy by FY2025.																
	5	Occupational health and safety in the workplace	Strictly follow basic rules on health and safety and improve treatment and work conditions to build a strong foundation for safe operations.																
Important issues	6	Responsible procurement	Exercise joint responsibilities, which is to share knowledge and information and conduct corporate activities, and operate the business in a fair manner.																
	7	Product quality and customer satisfaction	Improve the process of the Japan Kaidan Group by connecting with customers in each business, and providing information and business support.																
	8	Human resources and development	Provide diversity and inclusion by helping diverse human resources and offering career development and training.																
	9	Support for human rights and environment	Operate businesses in a manner that considers the human rights of employees and all people involved in the supply chain.																
	10	Local communities	Actively communicate with local communities where our businesses are located and share and promote together with them as a business rooted in the local community.																

ESG	Material CSR Issues	Mid-term CSR Action Plan (2019-2021)	ISO26000 Core Subjects and Related Issues																
			Anti-corruption	Fair operating practices	Consumer issues	Environment	Society	Human resources	Product quality	Customer satisfaction	Supplier relations	Community involvement	Stakeholder engagement	Transparency	Accountability	Leadership	Compliance	Reporting	
High-priority issues	1	Knowledge through business	Business activities off-site in our base operations (B2B) will be carried out to ensure compliance with applicable laws and regulations in each business and group of company. In addition, we will continue to improve our compliance system and strengthen our compliance culture through training for all employees.																
	2	Quality and customer value	Make ongoing improvements in the quality management system and work to strengthen our management system. In addition, we will continue to improve our quality management system and work to reduce risks in the process.																
	3	Business partner assessment	Implement supply chain management that takes environmental and social aspects into consideration, based on the CSR Management Guidelines.																
	4	Energy use and greenhouse gas emissions and waste	Further activities to save energy and control global warming. Reduce the environmental impact by FY2020 and increase energy by FY2025.																
	5	Occupational health and safety in the workplace	Strictly follow basic rules on health and safety and improve treatment and work conditions to build a strong foundation for safe operations.																
Important issues	6	Responsible procurement	Exercise joint responsibilities, which is to share knowledge and information and conduct corporate activities, and operate the business in a fair manner.																
	7	Product quality and customer satisfaction	Improve the process of the Japan Kaidan Group by connecting with customers in each business, and providing information and business support.																
	8	Human resources and development	Provide diversity and inclusion by helping diverse human resources and offering career development and training.																
	9	Support for human rights and environment	Operate businesses in a manner that considers the human rights of employees and all people involved in the supply chain.																
	10	Local communities	Actively communicate with local communities where our businesses are located and share and promote together with them as a business rooted in the local community.																

> Mid-term CSR Action Plan 2019-2021 for ISO26000 Core Subjects

KAYAKU Next Stage Mid-term CSR Action Plan 2019-2021						
	ESG	No	Important CSR Issues	Mid-term CSR Action Plan 2019-2021	Key Indicators (KPI)	FY2021 Targets
Highest Priority Issues	S	1	Innovation through business	<ul style="list-style-type: none"> Business divisions will work as one team on pursuing R&D with an eye on exit to market, and create new products and businesses in core businesses and areas of synergy. Invest management resources in medium and long-term R&D themes while enhancing core technologies and meeting the future needs of society. 	Amount invested in R&D over three years	(Consolidated) ¥40 billion over 3 years
		2	Quality and customer safety	<ul style="list-style-type: none"> Make ongoing improvements to the quality management system and work to strengthen local management capabilities, and create a stronger quality management and quality assurance system. Pursue quality management, improve the level of production technology and expertise, and work to reduce flaws in the process. 	Number of serious complaints by customers※1	(Consolidated) 0 complaints
					Number of serious flaws in processes※1	(Consolidated) 0 incidents
	3	Business partner assessment	<ul style="list-style-type: none"> Implement supply chain management that takes environmental and social aspects into consideration, based on the CSR Procurement Guidelines. 	Number of times assessments of main business partners are performed	(Non-consolidated) 50 times/year	
	E	4	Energy use and greenhouse gases Wastewater and waste Efficient use of water resources Use of materials that contribute to resource conservation	<ul style="list-style-type: none"> Pursue activities to save energy and combat global warming. Achieve the environmental targets for FY2020 and formulate targets for FY2030. Work to integrate ISO 14001 company-wide and advance environmental management that addresses both the risks and opportunities of environmental problems. 	Mid-term environmental targets	FY2020 Target (Non-consolidated) 79,500 tons or less
					• Amount of CO2 emitted from energy sources	
					• VOC emissions volume	(Non-consolidated) 42 tons or less
					• COD emissions volume	(Non-consolidated) 150 tons or less
					• Volume of waste generated	(Non-consolidated) 23,500 tons or less
					• Recycling rate	(Non-consolidated) 80% or higher
					• Zero emissions rate	(Non-consolidated) 3% or lower
					Company-wide integration of ISO 14001	Integration
	Formulation of 2030 environmental targets	Formulation				
G	5	Occupational health and safety in the workplace	<ul style="list-style-type: none"> Strictly follow basic rules on health and safety and improve equipment and work procedures to build a strong foundation for safe operations. Promote health management and provide a workplace environment that enables employees to work with enthusiasm and achieve work-life balance. 	Number of serious accidents※2	(Consolidated) 0 incidents	
				White 500 certification	(Non-consolidated) Maintain certification	
				Percentage of employees taking paid leave	(Non-consolidated) 70%	
				Percentage of employees who take mental health training	(Non-consolidated) 100%※3	
	Percentage of employees who undergo regular health check-ups	(Non-consolidated) 100%				
	6	Compliance	<ul style="list-style-type: none"> Exercise strict compliance, which is a basic principle upon which we conduct corporate activities, and operate the business in a fair manner. Establish a basic policy on preventing corruption, and maintain and strengthen an open and honest corporate culture with high ethical values. 	Number of serious compliance violations※4	(Consolidated) 0 incidents	
Formulation of a basic policy on preventing corruption				Formulation		
				Coverage ratio of companies implementing compliance training	(Domestic) 100%	
Important Issues	S	7	Provision of appropriate information on products and services	<ul style="list-style-type: none"> Increase the presence of the Nippon Kayaku Group by complying with regulations in each business and providing appropriate information and technical services to customers. 	Regularly conducting customer satisfaction surveys	(Non-consolidated) Implementation
		8	Maintaining and expanding employment and development of human resources	<ul style="list-style-type: none"> Promote diversity and inclusion by hiring diverse human resources and effective human resource allocation and exchanges. Pass down and strengthen technical capabilities in monozukuri (manufacturing) and achieve globalization in human resources through ongoing human resource development. 	Percentage of female managers	(Non-consolidated) 8%※5
					Percentage of people with disabilities employed	(Non-consolidated) 2.3%
	Amount invested in education and training per employee				(Non-consolidated) Note results only	
	9	Respect for human rights and assessment	<ul style="list-style-type: none"> Operate businesses in a manner that considers the human rights of employees and all people involved in the supply chain. 	Number of training sessions held on human rights	(Non-consolidated) Once a year or more	
				10	Local communities	<ul style="list-style-type: none"> Actively communicate with local communities where our businesses are located and strive to co-exist and prosper together with them as a company rooted in the local community.
	Expenditures on social contributions※6	(Non-consolidated) Note results only				
	11	Economic performance	<ul style="list-style-type: none"> Generate stable profits and return profits to society while reinvesting profits as management capital to achieve sustainable growth and enhance corporate value. 	ROE	(Consolidated) 8%	
				Amount of tax paid	(Consolidated) ¥5.6 billion	
				Capital investments over three years	(Consolidated) ¥50.0 billion over three years	
	G	12	Strengthening corporate governance	<ul style="list-style-type: none"> Strengthen corporate governance of the entire group and manage in a highly transparent and sound manner. 	Number of times that the effectiveness of Board of Directors meetings is evaluated	(Non-consolidated) Once a year
Number of times internal business audits are performed by the Audit Division					(Consolidated) 45 times over three years	
13		Ensuring business continuity	<ul style="list-style-type: none"> Ensure business continuity by responding to the many different risks associated with our businesses, maintaining the production structure, securing the appropriate materials, and strengthening disaster response measures. 	Implementation rate for the top five risk control activities	(Consolidated) 100%	
				Number of times BCP drills are conducted	(Consolidated) Once a year or more	
					(E)Environment (S)Social (G)Governance ※1: Losses of 10 million yen or higher ※2: Accidents resulting in time off work for three or more people simultaneously or accidents resulting in death ※3: Cumulative amount over the three year period from 2018 to 2020 ※4: Number of incidents deemed serious by the Ethics Committee or the Risk Management Committee ※5: Target for the end of FY2020 ※6: Expenses for donations, Asunaro House activity expenses, plant festivals, and other local events	

Achievements of the Mid-term CSR Action Plan in 2019

	ESG	No	Important CSR Issues	Mid-term CSR Action Plan 2019-2021	Key Indicators (KPI)	FY2021 Targets	FY2019 Progress	Topics on FY2019 initiatives	target SDGs
Highest Priority Issues	S	1	Innovation through business	<ul style="list-style-type: none"> Business divisions will work as one team on pursuing R&D with an eye on exit to market, and create new products and businesses in core businesses and areas of synergy. Invest management resources in medium and long-term R&D themes while enhancing core technologies and meeting the future needs of society. 	Amount invested in R&D over three years	(Consolidated) 40 billion over 3 years	(Consolidated) ¥11.1 billion	<p>Worked on various initiatives involving new products and businesses in all the Company's divisions</p> <ul style="list-style-type: none"> Started mass production of the new maleamide resin for 5G telecommunications Acquired an LCD and chip cleaning business Contributed to the fields of digital and conventional printing by developing industrial-use digital printing colorants Obtained approval for an additional indication for breast cancer treatment regimen B for our anti-cancer drug Trastuzumab BS Launched the anti-cancer drug PORTRAZZA® Injection, which is a human anti-EGFR monoclonal antibody Expanded sales of our new inflators that went on the market in FY 2018 Made progress developing drone safety devices, with an eye to their commercialization Worked on disseminating our new insecticide FINESAVE®, expanding its applications, and registering it overseas Promoted research for next-generation development that combines in-house and external technologies Organized a company-wide research symposium and other events for our business groups and research laboratories to discuss technology Studied ways to use various types of IT in production, quality management, R&D, and intellectual property 	
		2	Quality and customer safety	<ul style="list-style-type: none"> Make ongoing improvements to the quality management system and work to strengthen local management capabilities, and create a stronger quality management and quality assurance system. Pursue quality management, improve the level of production technology and expertise, and work to reduce flaws in the process. 	Number of serious complaints by customers※1 Number of serious flaws in processes※1	(Consolidated) 0 complaints	(Non-consolidated) 0 complaints	<ul style="list-style-type: none"> Revised and distributed to our overseas Group companies our "Why Why Analysis Manual," which seeks to find the real causes of processing abnormalities and the like and fundamentally resolve them Beefed up our training program on the practical fundamentals of statistical analysis and quality management and e-learning offerings of product quality education 	
		3	Business partner assessment	<ul style="list-style-type: none"> Implement supply chain management that takes environmental and social aspects into consideration, based on the CSR Procurement Guidelines. 	Number of times assessments of main business partners are performed	(Non-consolidated) 50 times/year	(Non-consolidated) 74 companies	<ul style="list-style-type: none"> Implemented the scheduled audits Verified the following from 318 responses to a CSR questionnaire sent to 910 of our business partners Environmental protection initiatives: no negative environmental impact Social initiatives: No instances of harassment, discrimination, forced labor, inappropriate work hours or wages, or other anti-social or adverse behavior	
Important	E	4	Energy use and greenhouse gases Wastewater and waste Efficient use of water resources Use of materials that contribute to resource conservation	<ul style="list-style-type: none"> Pursue activities to save energy and combat global warming. Achieve the environmental targets for FY2020 and formulate targets for FY2030. Work to integrate ISO 14001 company-wide and advance environmental management that addresses both the risks and opportunities of environmental problems. 	Mid-term environmental targets - Amount of CO2 emitted from energy sources - VOC emissions volume - COD emissions volume - Volume of waste generated - Recycling rate - Zero emissions rate Company-wide integration of ISO 14001 Formulation of 2030 environmental targets	FY2020 Target 79,500 tons or less (Non-consolidated) 42 tons or less (Non-consolidated) 150 tons or less (Non-consolidated) 23,500 tons or less (Non-consolidated) 80% or higher (Non-consolidated) 3% or lower (Non-consolidated) Formulation	(Non-consolidated) 69,300 tons (Non-consolidated) 28.6 tons (Non-consolidated) 145.2 tons (Non-consolidated) 23,204 tons (Non-consolidated) 84.4% (Non-consolidated) 3.6% Under review	<ul style="list-style-type: none"> Expect to accomplish FY 2020 mid-term environmental goals, with the exception of zero emission levels Worked toward attaining zero emissions by continuing negotiations with industrial waste disposal contractors so that we can switch from disposing of our industrial waste in land fill to recycling it Worked on setting our environmental goals for 2030, which will focus on reducing CO2 emissions correlated with climate change; these will be announced in FY 2020 Considering companywide adoption of ISO14001; organized a setup whereby our business groups and plants collaborate in implementing the Responsible Care Policy and programs to stem climate change 	
		5	Occupational health and safety in the workplace	<ul style="list-style-type: none"> Strictly follow basic rules on health and safety and improve equipment and work procedures to build a strong foundation for safe operations. Promote health management and provide a workplace environment that enables employees to work with enthusiasm and achieve work-life balance. 	Number of serious accidents※2 White 500 certification Percentage of employees taking paid leave Percentage of employees who take mental health training Percentage of employees who undergo regular health check-ups	(Consolidated) 0 incidents (Non-consolidated) Maintain certification (Non-consolidated) 70% (Non-consolidated) 100%※3 (Non-consolidated) 100%	(Non-consolidated) 0 incidents Recognized as a Certified Health and Productivity Management Organization under the Large Enterprise Category (Non-consolidated) 60.1% (Non-consolidated) 100%	<ul style="list-style-type: none"> Gained recognition as an outstanding enterprise engaging in efforts to advance health and productivity management under the 2020 Certified Health & Productivity Management Outstanding Organizations Recognition Program's large enterprise category; although we did not receive White 500 recognition in FY 2019, we continue our efforts to promote health management Average monthly overtime at the Nippon Kayaku parent company was 12.7 hours 	
Important	S	6	Compliance	<ul style="list-style-type: none"> Exercise strict compliance, which is a basic principle upon which we conduct corporate activities, and operate the business in a fair manner. Establish a basic policy on preventing corruption, and maintain and strengthen an open and honest corporate culture with high ethical values. 	Number of serious compliance violations※4 Formulation of a basic policy on preventing corruption Coverage ratio of companies implementing compliance training	(Consolidated) 0 incidents Formulation (Domestic) 100%	(Consolidated) 0 incidents In preparation (Domestic) 100%	<ul style="list-style-type: none"> Gathered information for formulating a Basic Policy on Corruption Prevention and verified the state of implementation at other companies Amended the Nippon Kayaku Group Charter of Conduct and Code of Conduct 3,468 employees took e-learning training and other compliance training for domestic Group companies Held training sessions on anger management at all of our domestic Group companies 	
		7	Provision of appropriate information on products and services	<ul style="list-style-type: none"> Increase the presence of the Nippon Kayaku Group by complying with regulations in each business and providing appropriate information and technical services to customers. 	Regularly conducting customer satisfaction surveys	(Non-consolidated) Implementation	(Consolidated) Implementation	<ul style="list-style-type: none"> Administered a customer satisfaction survey for some Nippon Kayaku Group customers, including those of our overseas Group companies; the survey sample will be expanded in the future 	
		8	Maintaining and expanding employment and development of human resources	<ul style="list-style-type: none"> Promote diversity and inclusion by hiring diverse human resources and effective human resource allocation and exchanges. Pass down and strengthen technical capabilities in monozukuri (manufacturing) and achieve globalization in human resources through ongoing human resource development. 	Percentage of female managers Percentage of people with disabilities employed Amount invested in education and training per employee	(Non-consolidated) 8%※5 (Non-consolidated) 2.3% (Non-consolidated) Note results only	(Non-consolidated) 8.4% (Non-consolidated) 1.97% (Non-consolidated) ¥76,000 / person	<ul style="list-style-type: none"> Achieved our goal of having women in 8.4% of our management positions one year ahead of time Offered language learning assistance and foreign-language study abroad programs, accepted foreign contract employees and technical interns 22 men took men's childcare leave Convened an expert committee on work hours with the labor union, which is considering programs on performance management and problem-solving measures at each business site; convened an expert committee on work practices with the labor union 	
		9	Respect for human rights and assessment	<ul style="list-style-type: none"> Operate businesses in a manner that considers the human rights of employees and all people involved in the supply chain. 	Number of training sessions held on human rights	(Non-consolidated) Once a year or more	(Non-consolidated) 2 times	<ul style="list-style-type: none"> Held two training sessions on human rights in association with our amendment of the Nippon Kayaku Group Charter of Conduct and Code of Conduct 	
		10	Local communities	<ul style="list-style-type: none"> Actively communicate with local communities where our businesses are located and strive to co-exist and prosper together with them as a company rooted in the local community. 	Total number of informal community gatherings Expenditures on social contributions※6	(Consolidated) Note results only (Non-consolidated) Note results only	(Consolidated) 27 times (Non-consolidated) ¥269 million	<ul style="list-style-type: none"> Maintained constant communication between our place of business and local communities through such efforts as open houses at our facilities, clean-up campaigns, and social gatherings As part of our educational CSR, made school visits to local primary schools and took part in the classroom experiment event, Children's Summer Vacation Chemistry Experiment Show 2019 Supported ping pong's T League as an initiative for getting healthy through sports 	
		11	Economic performance	<ul style="list-style-type: none"> Generate stable profits and return profits to society while reinvesting profits as management capital to achieve sustainable growth and enhance corporate value. 	ROE Amount of tax paid Capital investments over three years	(Consolidated) 8% (Consolidated) ¥5.6 billion (Consolidated) ¥50.0 billion over three years	(Consolidated) 6.0% (Consolidated) ¥6.1 billion (Consolidated) ¥14.6 billion	<ul style="list-style-type: none"> Achieved sales of 175.1 billion yen and operating income of 17.5 billion yen; returned profit to shareholders as dividends Although share buybacks improved our capital efficiency, ROE declined due to lower profit Made 14.6 billion yen of capital investments for our future growth 	
Important	G	12	Strengthening corporate governance	<ul style="list-style-type: none"> Strengthen corporate governance of the entire group and manage in a highly transparent and sound manner. 	Number of times that the effectiveness of Board of Directors meetings is evaluated Number of times internal business audits are performed by the Audit Division	(Non-consolidated) Once a year (Consolidated) 45 times over three years	(Non-consolidated) Once (Consolidated) 13 times	<ul style="list-style-type: none"> Conducted an internal survey to assess the effectiveness of our Board of Directors, created an action plan incorporating the situations and issues that we identified, and are now implementing improvements Evaluated the internal control reporting systems (J-SOX) for nine Group companies that underwent reviews of their internal controls; no problem areas detected Disclosed our procedures for appointment and dismissal of officers and our guidelines for determining officers' compensation in our Securities Report Formulated our Basic Policy on Corporate Governance, which will be announced in FY 2020 Conducted group and e-learning training sessions on such topics as legal matters, information security, and security export control 	
		13	Ensuring business continuity	<ul style="list-style-type: none"> Ensure business continuity by responding to the many different risks associated with our businesses, maintaining the production structure, securing the appropriate materials, and strengthening disaster response measures. 	Implementation rate for the top five risk control activities Number of times BCP drills are conducted	(Consolidated) 100% (Consolidated) Once a year or more	(Consolidated) 100% (Consolidated) Once	<ul style="list-style-type: none"> Conducted Top 5 Risk Control initiatives at all of our business divisions, domestic affiliates, and overseas affiliates Conducted BCP training drills for our overseas Group companies at Central Headquarters for Disaster Countermeasures and at Kayaku Chemical (Wuxi) To deal with the novel coronavirus, established the Central Headquarters for Disaster Countermeasures headed by our president, which is putting priority on making sure our employees stay safe ahead of its business continuity initiatives 	

(E)Environment (S)Social (G)Governance

※1: Losses of 10 million yen or higher
 ※2: Accidents resulting in time off work for three or more people simultaneously or accidents resulting in death
 ※3: Cumulative amount over the three year period from 2018 to 2020
 ※4: Number of incidents deemed serious by the Ethics Committee or the Risk Management Committee
 ※5: Target for the end of FY2020
 ※6: Expenses for donations, Asunaro House activity expenses, plant festivals, and other local events



Compliance

The Nippon Kayaku Group widely recognizes compliance as not only adhering to laws and ordinances, but also upholding social norms and responding to the needs of society.

Nippon Kayaku Group Charter of Conduct and Code of Conduct

With the recognition that compliance holds a position of the utmost importance in its business activities, the Nippon Kayaku Group, established the [Nippon Kayaku Action Charter and Nippon Kayaku Action Standards](#) in 2000. Subsequently, in 2011, these documents were amended in accordance with ISO26000 (guidance standards for organizations' social responsibility), and in 2020, they were amended with the aim of being carried out voluntarily as progress is made toward realizing a sustainable society.

The Nippon Kayaku Group Charter of Conduct

Business activities

1. The Nippon Kayaku Group will provide products and services that satisfy customers through Communication with customers and the provision of appropriate information, giving due consideration to the safety and reliability of its products and services.
2. In all its business activities, the Nippon Kayaku Group will comply with all relevant laws and regulations, including competition law, the spirit of these laws, and internal regulations, and will engage in fair, transparent, and free competition. We will also maintain sound relationships with the governing authorities in all regions.
3. The Nippon Kayaku Group respects human rights in all its business activities, and will not discriminate or tolerate any inappropriately behavior for reasons based on gender, age, nationality, race, religion, or disability.
4. The Nippon Kayaku Group will appropriately manage and utilize the company's assets to improve the efficiency of its business activities and strive for continuous development.
5. The Nippon Kayaku Group implements systematic crisis management in preparation for the actions of anti-social forces that threaten the lives of citizens and corporate activities, as well as for terrorism, cyber attacks, natural disasters, and other events.

Relationship with society

6. The Nippon Kayaku Group respects the cultures, religions and traditions of each country and region, works in harmony with society, and contributes to the development of society as a good corporate citizen.
7. The Nippon Kayaku Group will disclose information on its business activities to stakeholders in a timely and appropriate manner based on objective facts. We will also strive to increase corporate value through constructive dialogue with stakeholders.
8. In order to contribute to a sustainable society and the environment, the Nippon Kayaku Group strives to conduct its business activities in harmony with the natural environment by constantly taking into account the impact on the global environment, not only complying with relevant laws and regulations, but also establishing its own voluntary standards.

Information handling

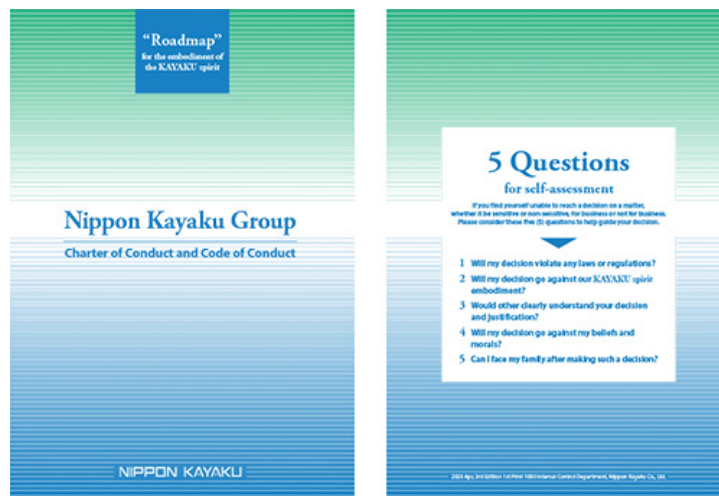
9. The Nippon Kayaku Group will appropriately protect the information it possesses through its business activities and take all possible measures for information management. In addition, we recognize the value of information assets and respect the intellectual property rights of others.

Relationships between the company and individuals

10. The Nippon Kayaku Group complies with labor-related laws and regulations, ensures a safe and comfortable working environment, and respects the basic human rights, diversity, character, and individuality of individuals.

Roles of top management and thorough adherence to this charter

11. Those involved in the management of the Nippon Kayaku Group recognize that realizing the spirit of this charter is their own role and responsibility, and will thoroughly disseminate it to all employees. In addition, we will listen to the opinions of people inside and outside the group, establish effective systems within the group, and ensure thorough implementation of corporate ethics. In the event of a situation that contravenes the spirit of this charter, we will clarify both inside and outside the company our stance of solving the problem, investigate the cause, and work to prevent any recurrence.



The Nippon Kayaku Group Charter of Conduct and Code of Conduct

Initiatives to prevent corruption and anti-competitive behavior

The Nippon Kayaku Group Charter of Conduct and Code of Conduct stipulate that fair, transparent, and free competition should be conducted in all business activities in compliance with relevant laws and regulations, including the Competition Law, the spirit thereof, and internal rules. In addition, we have set forth the prohibition of bribery and other illegal activities related to our business activities.

Relationship between the "Nippon Kayaku Group Charter of Conduct and Code of Conduct for business activities" and ISO 26000

Relationship between the "Nippon Kayaku Group Charter of Conduct and Code of Conduct for business activities" and ISO 26000

Nippon Kayaku Group Charter of Conduct	Nippon Kayaku Group Code of Conduct	ISO26000 Core Subjects and Related Issues					
		Organizational Governance	Human Resources	Labour Practices	The Environment	Product/Service	Information Management
Business activities	Code of Conduct for business activities						
1. The Nippon Kayaku Group will provide products and services that safety, customer benefit/compatibility with customers and the provision of appropriate information, giving due consideration to the safety and security of its products and services.	1 Safety and quality of products					●	●
2. In its business activities, the Nippon Kayaku Group will comply with all applicable laws and regulations, including compliance with the spirit of laws, rules, and business regulations, and will take full measures to ensure compliance. We will also establish sound relationships with the governing authorities in regions.	2 Provision of product information					●	●
3. The Nippon Kayaku Group respects human rights in all its business activities and will not discriminate in human resources based on ethnicity, gender, age, religion, race, nationality, race, religion or disability.	3 Fair, impartial transactions					●	●
4. The Nippon Kayaku Group will incorporate human and labor law compliance, a pursuit to enhance the efficiency of its business activities and efforts for continuous development.	4 Prohibition of exchanging excessive gifts or entertainment					●	●
5. The Nippon Kayaku Group will incorporate human rights in all its business activities and will not discriminate in human resources based on ethnicity, gender, age, religion, race, nationality, race, religion or disability.	5 Respect for human rights		●	●			●
6. The Nippon Kayaku Group will incorporate human and labor law compliance, a pursuit to enhance the efficiency of its business activities and efforts for continuous development.	6 Prohibition of conflicts of interest					●	●
7. The Nippon Kayaku Group will incorporate human and labor law compliance, a pursuit to enhance the efficiency of its business activities and efforts for continuous development.	7 Appropriate protection and effective utilization of corporate assets					●	●
8. The Nippon Kayaku Group will incorporate human and labor law compliance, a pursuit to enhance the efficiency of its business activities and efforts for continuous development.	8 Proactive efforts to improve operations			●	●		
9. The Nippon Kayaku Group will incorporate human and labor law compliance, a pursuit to enhance the efficiency of its business activities and efforts for continuous development.	9 Exclusion of anti-social forces					●	●
10. The Nippon Kayaku Group will incorporate human and labor law compliance, a pursuit to enhance the efficiency of its business activities and efforts for continuous development.	10 Through crisis response					●	●
Relationship with the society	Code of Conduct for relationship with society						
11. The Nippon Kayaku Group respects the cultures, religions and traditions of each country and region, works to harmonize with society, and contributes to the development of society as a global corporate citizen.	11 Respect for cultures, religions, traditions, etc. in each country and region	●	●	●	●	●	●
12. The Nippon Kayaku Group will disclose information on its business activities to stakeholders in a timely and appropriate manner based on objective facts. We will also disclose to stakeholders outside Japan through continuous dialogue with stakeholders in order to contribute to a sustainable society and the environment.	12 Good corporate citizenship					●	●
13. The Nippon Kayaku Group will disclose information on its business activities to stakeholders in a timely and appropriate manner based on objective facts. We will also disclose to stakeholders outside Japan through continuous dialogue with stakeholders in order to contribute to a sustainable society and the environment.	13 Interaction with local communities				●		●
14. The Nippon Kayaku Group will disclose information on its business activities to stakeholders in a timely and appropriate manner based on objective facts. We will also disclose to stakeholders outside Japan through continuous dialogue with stakeholders in order to contribute to a sustainable society and the environment.	14 Timely and appropriate information disclosure					●	●
15. The Nippon Kayaku Group will disclose information on its business activities to stakeholders in a timely and appropriate manner based on objective facts. We will also disclose to stakeholders outside Japan through continuous dialogue with stakeholders in order to contribute to a sustainable society and the environment.	15 Coexistence with the environment				●		●
16. The Nippon Kayaku Group will disclose information on its business activities to stakeholders in a timely and appropriate manner based on objective facts. We will also disclose to stakeholders outside Japan through continuous dialogue with stakeholders in order to contribute to a sustainable society and the environment.	16 Environmental protection initiatives				●		●
Information handling	Code of Conduct for information handling						
17. The Nippon Kayaku Group will appropriately protect the information it possesses through its business activities and take all possible measures to ensure information management, including the security of information assets and respect the information privacy rights of others.	17 Protection of corporate information					●	●
18. The Nippon Kayaku Group will appropriately protect the information it possesses through its business activities and take all possible measures to ensure information management, including the security of information assets and respect the information privacy rights of others.	18 Protecting personal information		●			●	●
19. The Nippon Kayaku Group will appropriately protect the information it possesses through its business activities and take all possible measures to ensure information management, including the security of information assets and respect the information privacy rights of others.	19 Appropriate use of information systems					●	●
20. The Nippon Kayaku Group will appropriately protect the information it possesses through its business activities and take all possible measures to ensure information management, including the security of information assets and respect the information privacy rights of others.	20 Prohibition of inside trading					●	●
21. The Nippon Kayaku Group will appropriately protect the information it possesses through its business activities and take all possible measures to ensure information management, including the security of information assets and respect the information privacy rights of others.	21 Respect for the rights of others					●	●
Relationship between the company and individuals	Code of Conduct for relationships between the company and individuals						
22. The Nippon Kayaku Group complies with labor laws and regulations, ensures a safe and comfortable working environment, and respects the labor market rights, ethnicity, ethnicity and individuals of individuals.	22 Maintenance of the working environment		●	●			
23. The Nippon Kayaku Group complies with labor laws and regulations, ensures a safe and comfortable working environment, and respects the labor market rights, ethnicity, ethnicity and individuals of individuals.	23 Prohibition of harassment		●	●			
Other							
24. These articles in the management of the Nippon Kayaku Group recognize that holding the spirit of the charter is that our role and responsibility, and will be fully disclosed to all stakeholders. In addition, we will strive for the highest level of compliance in all group activities across all the group, and ensure through implementation of corporate ethics, to the extent of the charter that contributes the goal of the charter, we will clearly take issue and outside the company for ethics of doing the activities, investigate the issue, and seek to prevent any recurrence.			●				

> Relationship between the "Nippon Kayaku Group Charter of Conduct and Code of Conduct for business activities" and ISO 26000 

Raising Awareness about Compliance

The Nippon Kayaku Group provides training on compliance for its employees, and calls on each workplace to establish an action plan and carry out activities to raise awareness of compliance among them. The results of these activities are evaluated and are utilized in continuous efforts to further educate employees about the importance of compliance.

Compliance Month and Compliance Survey

Every October, which is designated Compliance Month, we conduct a compliance survey. Issues concerning the promotion of compliance are identified for each business site, and feedback is provided in the form of a report that includes recommendations for improvements. Each business site incorporates this information into their action plans for the following fiscal year to continue raising awareness of compliance. In fiscal year 2015, we entered into a new contract with a survey analysis firm, and also shared objective feedback with each workplace, such as comparisons with other companies and improvement proposals, with recommendations for improvements to be made.

Compliance Training

The Nippon Kayaku Group holds domestic compliance education and training on different themes every year, and it also uses regular meetings at its business sites to conduct study groups and training based on case studies. The compliance training sessions held in fiscal 2019 addressed the topic, "Learning about Anger Management," so that employees could learn how to prevent harassment and improve their performance. Most training sessions at Nippon Kayaku take the form of e-learning so that every employee has the opportunity to take the programs being offered. For our affiliates, we offer training in the form of group training sessions and by watching the training sessions on pre-recorded DVDs.



Anger Management Training Session



Raising Awareness at Overseas Group Companies

Nippon Kayaku's overseas group companies now account for almost half of the Group's sales and more than half of its employees. In particular, our six Group companies in China have almost 1,000 employees, who all need to be trained on the **KAYAKU spirit** and compliance awareness. In June 2019, the general managers and ethics officers from our Chinese Group companies met for the third Ethics Officer Conference, which included reports on compliance initiatives and issues at each company, discussions about a whistle-blower system in China. Each company gave a report on its compliance initiatives and issues, and participants discussed the identification of issues and problem points and the steps to be taken.

Also, the second compliance survey was administered in October, and the managers of the relevant head office business groups and each Chinese group company were given feedback on the results. Furthermore, the Company's Internal Control Management Division and the person in charge of legal affairs from KSC* collaborated in holding compliance training for local employees at each company. Going forward, we will take into account each country's situation and strengthen ties among departments so that we can initiate a more effective and efficient global compliance activities.

* KSC : Kayaku (Shanghai) Co., Ltd

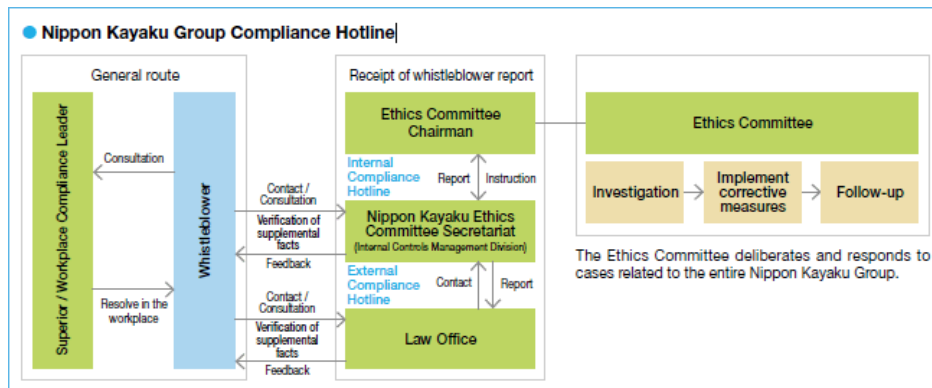


Training at Chinese Group companies



The Nippon Kayaku Group's whistle-blower system

We have set up whistle-blower hotlines for employees both inside and outside the company. Through these hotlines we strive to quickly remedy situations and also prevent violations of laws, company rules and our code of business conduct before they occur. In addition, the staff at the whistle-blower hotlines follow the Nippon Kayaku Group Guidelines for Handling Whistle-blower Complaints so that whistle-blowers will not receive adverse treatment because they contacted the hotline and filed a complaint.



Number and nature of reports over the previous three years

In fiscal 2019, the hotline received 11 reports, but none of these incidents were serious enough to affect our business operations. With regard to these reports, we ascertained the facts or conducted investigations and then took corrective action when it was deemed necessary.

Going forward, we will take steps toward preventive action, early detection, and prevention of escalation of violations or damages by informing everyone about the existence and importance of the whistle-blower system.

Nature of reports	2017	2018	2019
Acts that damage the work environment (power harassment/sexual harassment, etc.)	2	4	8
Violations of company rules or etiquette	1	3	2
Labor/Management Relations	0	2	1

Nature of reports	2017	2018	2019
Others	0	0	0



Risk Management

Identifying and controlling various risks is an important element of corporate governance. The Nippon Kayaku Group has a standing Risk Management Committee headed by an executive director who is appointed by the President. In normal times, this committee takes steps to prevent risks that could inflict serious damage on the management of the Company or its business activities or that could downgrade the Company's social reputation, while in times of crisis, it configures and manages our crisis management system, ranging from the first response to post-crisis damage repair efforts. The Risk Management Committee meets regularly (twice a year), as well as on an extraordinary basis when deemed necessary. In addition to its efforts to reduce risk in accordance with the Risk Management Action Plan, which was approved by the Risk Management Committee, it holds a Risk Information Liaison Meeting every other month to check on and monitor the status of each department's efforts to deal with risk events that have taken place.

Activities Promoting Risk Management

The Nippon Kayaku Group carries out TOP5 Risk Control Activities as part of its Risk Management Action Plan. The "TOP5 risks" are those identified as the five most critical risks for our business operations.

TOP5 Risk Control Activities cover all subsidiaries of the Nippon Kayaku Group, that are in turn broken down into more than 70 individual groups.

Through TOP5 Risk Control Activities, a performance report is compiled for the Risk Management Committee that includes an analysis of the risks present and identification of sustainable trends that can be adopted by management. These include risks present for the Company as a whole, whether risks are being dealt with regardless of their severity, and whether risk management is being carried out effectively.

Information Security Initiatives

In accordance with the Code of Conduct for the Management of Business Information, which is set forth in the Nippon Kayaku Group Charter of Conduct and Code of Conduct, we aim to protect corporate information on a daily basis and are continuously pursuing information security initiatives. In addition, we have established the Information Security Subcommittee under the Risk Management Committee, which is working to reinforce information security throughout the Company by controlling and monitoring companywide information security on an ongoing basis and devising programs to prevent data leaks and the illegal acquisition of the Company's data by third parties. Based on our Corporate Information Management Regulations, which cover the entire company, persons appointed to be in charge of corporate information at each business site draft the regulations for their respective workplaces and also work to raise each and every employee's awareness about information security by conducting annual information security self-checks and periodic information security training sessions for all employees.

Initiatives taken in fiscal 2019 were meant to enlighten our employees through training in the communications and response procedures to be taken in the event of an information security incident, so that we can prevent tardy responses or response oversights.

Risk Management Training

The Nippon Kayaku Group implements the Plan, Do, Check, Act (PDCA) cycle continuously so that it can minimize and raise awareness of risks. As part of these efforts, we conduct risk management training for all employees. Also, a separate risk management training session

is organized for new hires, newly appointed managers, and Japanese expatriate employees being assigned overseas.

Risk Management System

We have established a "Risk Management Manual" and "BCP Manual" in preparation for risks that could have a serious impact on corporate activities.

The first version of the Risk Management Manual was created in FY 2000, so that various risks surrounding the Nippon Kayaku Group's business operations could be managed and addressed in a proper manner.

The Risk Management Manual has been through several revisions due to various situations faced since then, currently being version 4.1 which was updated in FY 2019.

The Nippon Kayaku Group's Business Continuity Plan Initiatives

We have conducted business continuity plan (BCP) training at the head office since FY 2012, utilizing the lessons learned from the Great East Japan Earthquake and tsunami that struck Japan on March 11, 2011. This section takes a closer look at our BCP initiatives.

Preparing BCP Manuals

The Nippon Kayaku Group has launched a cross-organizational BCP project whereby all of our domestic business groups and plants have compiled BCP Manuals based on our policy of restoring business within a given time frame. In addition, the Nippon Kayaku Group has begun preparing BCP manuals at overseas group companies in order to respond to global risks. In FY 2018, four Chinese subsidiaries established BCP manuals and put them into practice.

BCP Training

Ongoing BCP training is critical to putting the plans established in the BCP Manual into action promptly. We hold BCP training every year, attended by executive officers, including the president.

In fiscal 2019, our Chinese group company, Kayaku Chemical (Wuxi) (KCW), conducted a simulation of first response and follow-up response actions involving the outbreak of a plant fire. Going forward, we will be holding more BCP drills based on various scenarios.



Fire and Disaster Prevention Activities



To be prepared for emergencies, all of the Nippon Kayaku Group's business sites and Group companies hold regular fire drills, disaster drills, BCP drills, and emergency communication drills.

> [FY 2019 Nippon Kayaku Group Disaster Prevention Training Activities Summary sheet](#)

Takasaki Plant Fire and Disaster Prevention Activities

Since the Great Hanshin–Awaji Earthquake, increasing the ability to respond to large-scale disasters has become an important issue. Given this, the Fire Services Act was partially revised, and the Disaster Prevention Management System was newly established in accordance with the current Fire Prevention Management System.

The size of the Takasaki Plant necessitates disaster prevention management, so in addition to the conventional fire fighting training (held annually), the plant now holds a new training drill with the scenario of a major earthquake.

Now, the plant holds a comprehensive fire prevention drill as part of fire prevention management during the spring, and a comprehensive disaster prevention training using the scenario of a major earthquake (seismic intensity of 6 upper) as part of its disaster prevention management in the fall each year.

All employees participate in both trainings, in which they assigned to teams with their designated roles, and practice evacuation, rescue, communications (using satellite phones), and protection measures.

The Takasaki Plant is surrounded by rivers and forests, which also exposes it to the risk of wild fires. With this in mind, the plant's firefighting brigade conducts fire extinguishing drills at the same time as those mentioned above, using the plant's own fire truck. On the day of the drills, all participants take part earnestly and the nearby fire chief visits to assess the drill every year. These activities make the training quite beneficial to all involved.

Also, fire drills using actual fire extinguishers are conducted as part of the annual safety training for new hires, and AED training is offered during Safety Week in October each year.

Furthermore, following the Great East Japan Earthquake, we have stocked up provisions of food rations (1,000 meals), drinking water and fuel (diesel and gasoline) in preparation for any emergency in the future.



Kayaku Safety Systems de Mexico, S.A. de C.V. (KSM) Disaster Prevention Training

KSM conducts disaster prevention training so that it can prepare for and be able to respond appropriately during emergency situations.

The disaster prevention training is designed based on risks that could occur at the KSM site, in accordance with Mexican laws and regulations.

KSM's plant has a high risk of fire, so training focuses mainly on fire prevention. Details such as causes of fires, preventive measures and chain of communication during emergencies are explained on a monthly basis. Employees are taught what to do and who to contact in the case they find potential causes for fires, as well as how to respond to an evacuation warning.

KSM has an emergency response brigade that comprises of 40 employees representing each department. Training for this emergency response brigade takes place at an offsite institution certified by the government, with experts in the field brought in as trainers. This training involves not only lectures concerning theoretical fire prevention, but also field training that includes exercises for safe fire extinguishing activities, first aid, rescue and responses to leakages of hazardous substances.

For example, training on the use of fire extinguishers and fire hydrants uses actual kerosene and other flammables to train with an open flame. First aid training covers emergency scenarios with



potential injuries that occur inside a plant, such as burns, cuts, as well as breathing difficulty and suffocation.

Rescue training focuses on saving people from hazardous areas safely, including those with injuries, and from difficult to reach places and locations with low visibility.

Furthermore, training on leakages of hazardous substances was held onsite at our own facilities and mainly involved the collection of leaked substances and decontamination methods for the polluted site.

Kayaku Safety Systems Malaysia Sdn. Bhd. (KMY) 2018 Evacuation Training and Chemical Spill Training

KMY held evacuation and chemical spill training on December 26, 2018. This training was designed to be compliant with the laws and regulations of Malaysia's fire departments and focused in particular on risks that could potentially occur during normal everyday work.

The evacuation training was jointly organized by the Safety, Health and Environment Department and the emergency response team (ERT), and ensuring that all employees predetermined evacuation route and rendezvous points during an emergency situation.

The chemical spill training involved the person in charge of the department that caused the spill to promptly report to ERT members, and carry out appropriate cleanup as well. At the same time, it is the ERT's responsibility to provide set up spill controls and personal protection equipment so as to ensure that chemicals being handled can be obtained easily.

The training also fulfilled the goal of educating ERT members about the KMY command system and fostering understanding about their individual roles and responsibilities. It was also confirmed that KMY's firefighting, support and first aid teams, along with the production staff are all standing by and ready to assist during an emergency, with all fire fighting facilities in place and ready for use.



FY2019 Nippon Kayaku Group Disaster Prevention Training Activity Summary Sheet

☐ : Unrealized due to lease limitations — : Non-applicable

* : Notification, evacuation, fire fighting, and other training in cooperation with the Fire Departments overseeing Comprehensive Disaster Prevention Exercises

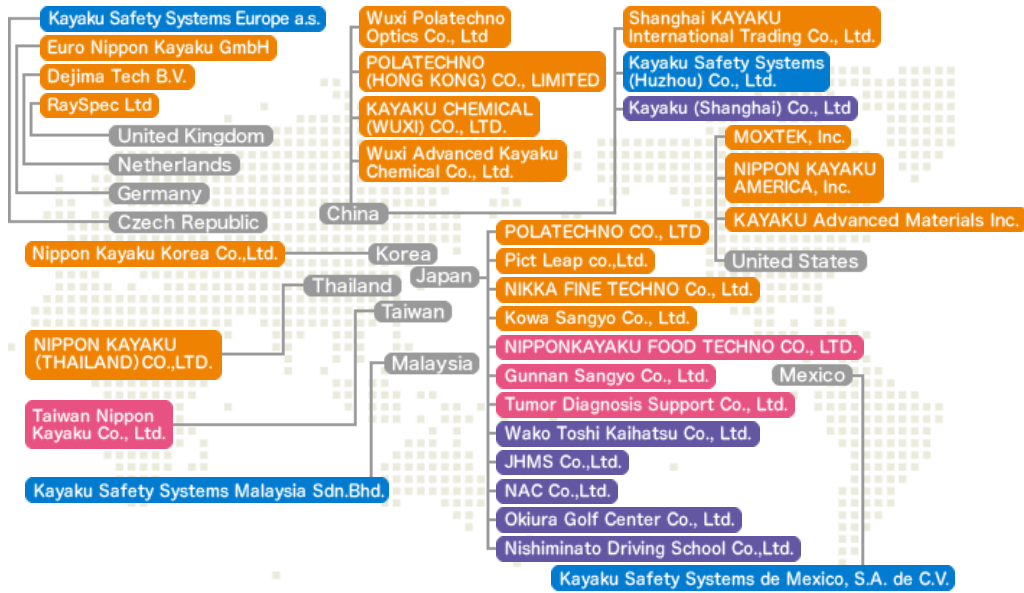
☎ : Training in placing the monthly satellite phone calls, starting June 2012, required by the Satellite Phone Training section of the BCP

Business site/ Company name	Comprehensive disaster prevention training*	Notification training, evacuation training	Early stage fire-fighting training ; Use of fire extinguishers and fire hydrants, firefighting skills Satellite phone training	Earthquake simulation training	First-Aid training, AED training	Lectures, study sessions	Leakage Response training, Sandbag training
Head Office, NIPPON KAYAKU CO., LTD.	●	●	● ☎	●	●	●	—
Fukuyama Plant/ NIPPONKAYAKU FUKUYAMA CO., LTD.	●	●	● ☎	●	●	●	●
Asa Plant	●	●	● ☎	●	●	●	●
Tokyo Plant/ NIPPON KAYAKU TOKYO CO., LTD.	●	●	● ☎	●	●	●	●
Takasaki Plant	●	●	● ☎	●	●	●	●
Himeji Plant	●	●	● ☎	●	●	●	●
Kashima Plant	●	●	● ☎	●	●	●	●
Tokyo business CENTER/ Tokyo R&D Administration office	●	●	● ☎	●	●	●	—
POLATECHNO CO., LTD.	●	●	●	●	●	●	●
MOXTEC, INC.	×	●	●	×	×	●	—
WUXI POLATECHNO OPTICS CO., LTD.	●	●	●	●	—	●	●
Dejima Tech B.V.	×	●	●	×	●	●	—
POLATECHNO (HONG KONG) CO., LIMITED	—	●	●	×	●	●	—
Pict Leap co.,Ltd.						●	
NIKKA FINE TECHNO CO., LTD.	—	●		●	—	●	—
Nippon Kayaku Korea Co., Ltd.	—		●			●	—
NIPPON KAYAKU AMERICA, INC.	—		●		●	●	—
Euro Nippon Kayaku GmbH	—	—	●	—	—	×	—
KAYAKU CHEMICAL (WUXI) CO., LTD.	●	●	●	×	●	●	×
KAYAKU Advanced Materials Inc.	●	●	●	—	●	●	●
Wuxi Advanced Kayaku Chemical Co., Ltd.	●	●	●	●	●	●	●
Shanghai KAYAKU International Trading Co., Ltd.	—	●	●	—	—	●	—
NIPPON KAYAKU FOOD TECHNO CO., LTD.	●	●	●	●	●	×	—
Tumor Diagnosis Support Co., Ltd.			●			×	—
Taiwan Nippon Kayaku Co., Ltd.	●	●	●	—	●	●	—
Kayaku Safety Systems Europe a.s.	●	●	●	—	●	●	●
Kayaku Safety Systems (Huzhou) Co., Ltd.	●	●	●	—	●	●	●
Kayaku Safety Systems de Mexico, S.A. de C.V.	●	●	●	—	●	●	●
Kayaku Safety Systems Malaysia Sdn.Bhd.	●	●	●	—	●	●	●
Nishimato Driving School Corporation		●	●	×	×	×	—
Okiura Golf Center Co., Ltd.	—	●	●	×	●	×	—
Kayaku (Shanghai) Co., Ltd.	—	●	●	—	—	●	—
JHMS Co., Ltd.	—	●	●	●	●	—	—
NAC Co., Ltd.	●	●	●	●	●	●	—
Wako Toshi Kaihatsu Co., Ltd.	●	●	●	●	●	●	—
Kouwa Sangyo Co., Ltd.	●	●	●	●	●	●	●
Gunnan Sangyo Co., Ltd.	●	●	●	●	●	●	●
Head Office, Kayaku Japan Co., Ltd.	●	●	●	●	●	●	—
Asa Plant, Kayaku Japan Co., Ltd	●	●	●	●	●	●	●



The Nippon Kayaku Group's Commitment to CSR

The Nippon Kayaku Group has business operations in twelve countries around the world, comprising a total of 35 group companies, 13 in Japan and 22 overseas. This section presents the unified CSR commitment of the 31 consolidated group companies.



Japan Functional Chemicals Group

CEO & Representative Director & President Masatomi Akezuma, POLATECHNO CO., LTD



POLATECHNO specializes in the 'Light Control Business', and aims to provide distinctive products useful to people in various situations all over the world. At the Niigata Factory, our manufacturing base, we recycle waste liquids and materials, and detoxify emissions. Our energy saving program was rated highly and received the "Chairman Award of 2014 Tohoku 7 Prefecture Electricity Effective Use Promotion Committee". We will continue supplying distinctive products from our energy-saving and eco-friendly plant and keep contributing to society.

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Japan Functional Chemicals Group

CEO & Representative Director & President Norio Koma, Pict Leap co.,Ltd.



Pict Leap Co., Ltd. creates new electronic displays and security products. With our special optical film technology and unique display system design, we aim to contribute to the realization of a safe, comfortable, and convenient society by offering displays that can be seen clearly under any conditions and, in the security area, thin and highly reliable fingerprint sensors.

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Japan Functional Chemicals Group

Representative Director & President Shinya Fukuoka, NIKKA FINE TECHNO Co., Ltd.

Nikka Fine Techno is the only domestic trading company in the Nippon Kayaku Group. We strive to be a helpful trading company that immediately accommodates our customers' wishes, and we market not only the Nippon Kayaku Group's products but also the best goods and materials carefully chosen from a broad range of available products in the market. So that our customers will feel comfortable using our products, we market only goods that have passed checks that are stricter than those required by safety, quality, and legal standards. This is why our employees work together as a team in pursuing corporate activities according to the Company's Charter of Conduct and Code of Conduct. Our goal is to realize the **KAYAKU spirit** and achieve sustainable growth with CSR management that meets the expectations of all of our stakeholders and earns their trust.



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Japan Functional Chemicals Group

Representative Director & President Kazuki Uchida, Kowa Sangyo Co., Ltd.

Kowa Sangyo performs contract manufacturing work at Nippon Kayaku's Asa Plant. Specifically, our main safety and health initiatives entail using interactive training tools to further improve employee education with first-hands experiences or simulations of dangerous situations. We also believe that we can help provide some help in the event of an emergency by offering training in first aid and AED use and by supporting local fire departments.

The Wasshoi! Kayaku Festival that we co-sponsor with the Asa Plant every November has become an annual community event. We hope that all of our employees will be able to continue contributing to the community through their corporate activities.

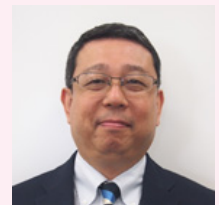


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Japan Pharmaceuticals Group

Representative Director & President Hiroshi Shimada, NIPPONKAYAKU FOOD TECHNO CO., LTD.

NIPPONKAYAKU FOOD TECHNO CO., LTD. manufactures and sells food preservatives and other products. As part of our CSR-centered management, we aim to contribute to society through the provision of highly valuable services and excellent products that emphasize food safety and healthy diets. As a member of the Nippon Kayaku Group, each and every employee abides by the Nippon Kayaku Group Charter of Conduct and Code of Conduct, following an esteemed set of ethical values with safe operations, compliance and environmental consciousness receiving top priority to realize the **KAYAKU spirit**. With this stance, we are working to develop new fields in the food industry, and live up to the trust and expectations of our customers.



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Japan Pharmaceuticals Business

Representative Director & President Daisuke Funagoshi, Gunnan Sangyo Co., Ltd.

Gunnan Sangyo provides the security, landscaping and janitorial services for the Takasaki Plant, and is responsible for the property management of Hisho, the training center for the employees of the Nippon Kayaku Group. We are working to carry out CSR activities by providing a more comfortable environment for local residents, the people that work at Takasaki Plant and the training center.



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Japan Pharmaceuticals Business

Representative Director & President Koichi Ono, Tumor Diagnosis Support Co., Ltd.

The Tumor Diagnosis in Tumor Diagnosis Support stands for tumor diagnosis. We support the diagnosis of pathological tissue found in mammary glands. Today, breast cancer has the highest prevalence rate of any cancer for women. However, breast cancer is believed to be an extremely difficult type of cancer to diagnose accurately with pathological tissue. Without the right diagnosis, a patient will not be able to receive the most effective treatment. As part of The Nippon Kayaku Group's Commitment to CSR management, Tumor Diagnosis Support is working day in and day out to contribute to an environment where breast cancer patients can receive treatment with the best possible outcome.



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Japan Other Businesses

Representative Director & President Naohiko Takeuchi, Wako Toshi Kaihatsu Co., Ltd.

Wako Toshi Kaihatsu engages in the real estate leasing business. We own land and a six-story building located in front of Wakoshi Station in Saitama Prefecture, which is leased to retailer Itoyokado's Wako store. We also lease two company housing buildings and one employee dormitory to Nippon Kayaku, as well as the building used for Asunaro House, a facility for supporting families of children with intractable diseases such as pediatric cancer, or who require bone marrow transplants and are being treated at specialist institutions. Our facilities, including Asunaro House, are used by a large number of people, and this is why we strive to continually update and upgrade each to ensure user safety and comfort.



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Japan Other Businesses

Representative Director & President Naoki Shiota, JHMS Co.,Ltd.

Japan Human Resources Medical Science Research Institute Co., Ltd. has a mission to contribute to society as a company providing comprehensive business support solutions to healthcare and other fields. Our business areas span a wide range of pharmaceutical support businesses for medical devices, including video productions, human resources development, training, worker dispatch, worker recruiting, and medical statistics. We also abide by related laws and regulations, and we hope to continually meet the needs of our customers to the best of our abilities.



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Japan Other Businesses

Representative Director & President Naoki Shiota, NAC Co.,Ltd.

NAC Co., Ltd. is involved in providing reception, security, and landscaping, and environmental safety services for, as well as operating a Sumida River ferry that serves as a mode of transportation for Nippon Kayaku's Akabane campus and Tokyo Plant as well as delivering internal mail, letters, and consumables to each workplace, filing confidential documents, and waste material handling for the Akabane campus as well. Additionally, NAC provides mainstay services for the Pharmaceutical Group which is the consignment of standard quality testing. and providing high quality data which plays a role in new compound and new preparation agent development and chemotherapy establishment and possesses the technology for delivering high quality pathological tissue specimens which contribute to accurate diagnosis of breast cancer.

One of our distinctive features is our inclusive workplace that hires persons with disabilities. We aim to evolve into a business where persons with disabilities can realize their fullest potential.



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Japan Other Businesses

Representative Director & President Tadayuki Kiyoyanagi, Okiura Golf Center Co., Ltd.

Okiura Golf Center was established in 1985 and began operations in 1986 with the goal of utilizing idle land. We offer one of the largest golf practice facilities in Hiroshima Prefecture, featuring a 250 yard natural

grass driving range with 72 tee boxes, along with a putting green, chipping green, sand trap and even a restaurant. The facility is surrounded by trees we have planted with the environment in mind. We are open from early in the morning to late at night and offer a host of golf lessons taught by professionals, and our facilities and services have earned us a strong reputation among customers. We promote CSR management to ensure that customers of all ages, from children to seniors, can enjoy using our facilities with peace of mind, and utilize our facilities as a venue for socializing with other members of the local community.



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Japan Other Businesses

Representative Director & President Shigeyoshi Nose, Nishiminato Driving School Co.,Ltd.

Nishiminato Driving School's primary goal is to teach people how to become safe and considerate drivers in preparation for obtaining their driving licenses and joining the automotive society. We also host outreach programs at local elementary and high schools on traffic safety, and also organize presentations on traffic safety for seniors and companies. We actively fulfill our role as a hub for community transportation safety education. As a comprehensive institute of learning for traffic safety, we will continue to strive to become a positive company that is supported and empathized by the community.



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United Kingdom Functional Chemicals Group Managing Director Peter Smith, RaySpec Ltd.

RaySpec Ltd is committed to conducting business in a fair and just manner, fully respecting its legal obligations regarding equal opportunities and non-discrimination, and providing a safe and healthy environment for its employees. Environmental impact is considered for all new product developments and the company actively promotes energy saving through both investments and daily activities. RaySpec actively promotes engagement with charitable organizations and supports fund raising initiatives.

RaySpec's products contribute to the safety and well-being of people around the world by utilizing systems which can measure and restrict the use of hazardous substances, determine material failure modes and check product quality.



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Netherlands Functional Chemicals Group Managing Director Henk Kalsbeek, Dejima Tech B.V.

Dejima aims to conduct its business in a socially responsible and ethical manner, to contribute to the community in which it operates, and to respect the needs of its employees, shareholders, customers, suppliers, regulators and other stakeholders. Dejima is committed to maintaining a healthy and safe work environment that ensures tolerance, respect and dignity for all its employees. Dejima is also committed to providing equal opportunity in all aspects of employment, and will not engage in or tolerate unlawful workplace conduct, including discrimination, intimidation, or harassment. Dejima recognizes that pollution prevention, biodiversity and resource conservation are key to a sustainable environment, and will effectively integrate these concepts into its business decision-making. All employees are responsible and accountable for contributing to a safe working environment, for fostering safe working attitudes, and for operating in an environmentally responsible manner.



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Germany Functional Chemicals Group Managing Director Naoya Miyachi, Euro Nippon Kayaku GmbH

In Germany, there is a labor court that exclusively handles labor issues, and companies are required to carry out business activities following CSR management and give consideration to their employees. In this regard,

people are very aware of CSR in Germany at the individual level. At Euro Nippon Kayaku we use the **KAYAKU spirit** booklets to broaden understanding of CSR management, and to ensure employee safety and create healthy workplaces, we strive to prevent all accidents and injuries during the commute and make sure employees take their paid leave. Moving forward, we are committed to actively carrying out CSR activities with consideration for the local community.



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Czech Republic Safety Systems Group
President Shinji Ichikawa, Kayaku Safety Systems Europe a.s.

Kayaku Safety Systems Europe a.s. manufactures and sells safety components for automobiles. The products we supply serve as important safety related components that help to save the lives of passengers. With safety being our utmost concern, we provide the market with high quality products. We aim to contribute to the community through implementing CSR-centered management, practicing environmental awareness, improving the quality of life of employees, and organizing charity activities.



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United States Functional Chemicals Group
CEO & President Shigeyuki Kawamura, MOXTEK, Inc.

MOXTEK makes contributions to society through utilizing the latest nano optical technology and x-ray technology in visual devices and analysis equipment.

As part of our CSR activities, we support programs in the local community through active participation in the Homeless Assistance Program. We strive to continue operating as a well rooted local business in the community.



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United States Functional Chemicals Group • Safety Systems Group
President Go Mizutani, NIPPON KAYAKU AMERICA, INC.

Nippon Kayaku America is responsible for the sale of chemicals that contribute to the efficient use of energy and resources and sales promotion and technical support for all automobile safety components in North America. As an enterprise that handles chemical products, the company is diligent in observing laws and regulations and in managing product quality, and the products it sells take safety and the environment into consideration. To accomplish the SDGs, it is also promoting initiatives that for proposing to its customers products and services that contribute to solving social issues.



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United States Functional Chemicals Group
President & CEO Jeremiah J. Cole Jr., KAYAKU Advanced Materials Inc.

KAYAKU Advanced Materials is committed to its corporate responsibilities for the welfare of our employees and to creating economic value for the community, environment, and stakeholders. We are dedicated to helping our customers succeed through our innovative products and technologies. In addition, we ensure that our business success is in line with KAYAKU Advanced Materials's high ethical principles and societal expectations.



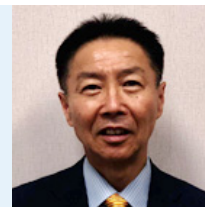
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Mexico Safety Systems Group

Director General Susumu Tokutake, Kayaku Safety Systems de Mexico, S.A. de C.V.

Kayaku Safety Systems de Mexico (KSM) has been promoting the **KAYAKU spirit** among its employees and striving to implement CSR-centered management since its establishment in May 2007. Besides social contributions targeting employees and the local community, we are also providing assistance by donating food and clothing to the southern and central regions of Mexico that are prone to earthquakes.

As the automobile industry has become globalized, automobile safety components made by KSM are used in countries around the world. We aim to continually grow as a company that is recognized by various stakeholders both locally and globally through provision of high quality products with explosive safety technology as our core competence, which serves to protect human lives from automobile accidents.



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China Functional Chemicals Group

General Manager Yoshihiro Ogawa, Wuxi Polatechno Optics Co., Ltd

Wuxi Polatechno Optics (WPLC) was established in 2003 in Wuxi, Jiangsu Province as a plant responsible for the post processes of POLATECHNO CO., LTD. In China, local region oriented CSR activities geared towards environmental protection and social contribution have become increasingly important. It is crucial to ensure a safe work environment for each and every employee following the WPLC Charter of Conduct. We are also conducting efforts aimed to developing our company into a corporation that fulfills its responsibilities to all stakeholders.



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China Functional Chemicals Group

General Manager Jiro Hanada, POLATECHNO (HONG KONG) CO., LIMITED

POLATECHNO (HONG KONG) is a key sales company that accounts for more than 70% of the POLATECHNO Group's sales. Our direct customers include Chinese LCD manufacturers and Japanese projector manufacturers, but our end products are widely used around the world in final products for automobile, LCD projectors, electricity and water meters, medical devices, and home electronics. These products include products indispensable to our daily lives, and many more are associated with energy efficiency, safety and health. We are committed to contributing to society, albeit indirectly, through the sales and marketing activities for our products.



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China Functional Chemicals Group

General Manager Kazuhiko Ishii, KAYAKU CHEMICAL (WUXI) CO., LTD.

China is faced with many environmental issues and other problems associated with its rapid economic growth, which has heightened the challenging nature of the business environment here. CSR management has become more important in terms of continually growing our business in this environment. We find it extremely important for each and every one of our employees to take action based on our corporate principles and behavioral standards in order to practice CSR management for the realization of **KAYAKU spirit**. We will continue to contribute to society by continually supplying our customers with the products they need, at the highest quality in many aspects through actions based on individual ethical values, instead of what others are doing, while respecting the local culture, history and business practices.



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China Functional Chemicals Group

General Manager Yoshiki Akatani, Wuxi Advanced Kayaku Chemical Co., Ltd.

China's President Xi Jinping has called for a shift from the country's focus on GDP to setting and achieving indicators for worker's income and environmental protection. As a result, China's environmental regulations are becoming more rigorous and thoroughly implemented, which has caused issues in the raw materials supply chain of certain chemicals companies, due to operating restrictions or forced shutdowns for raw materials manufacturers.



Wuxi Advanced Kayaku Chemical has introduced a new biological effluent treatment system this fiscal year as part of its response to tighter regulation. We are also strengthening our relationships with raw materials manufacturers to ensure the stable supply of our products, which is considered an important CSR issue.

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China Functional Chemicals Group

General Manager Ryo Fujimori, Shanghai KAYAKU International Trading Co., Ltd.

Shanghai KAYAKU International Trading (SKT) sells dyes, inks for industrial ink jet printers and heat-sensitive developing agents to the China and ASEAN markets. Environmental and energy conservation issues in these regions will only continue to grow in importance moving forward. In particular, environmental consideration and energy efficiency are very important issues facing customers who dye textiles. We are actively rolling out dyes that take about half the normal time to complete, which contributes to our customers' production efficiency, energy conservation and reduction in wastewater.



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China Safety Systems Group

General Manager Fumihiko Kamiwatari, Kayaku Safety Systems (Huzhou) Co., Ltd.

As Kayaku Safety Systems (Huzhou), we have constructed a five-point corporate vision which consists of "safety first, best quality, technical advance, employee development and focus on market". We have been carrying out the "KAYAKU spirit" through our IATF16969 (for quality), ISO14001 (for environment) and ISO45001 (for occupational health and safety) management systems.

Furthermore, for the purpose of improving our employee's awareness and skills about CSR management, we have established the education and training department as well as a training ground named as Dojo in 2018 to level up our employees positively.

By manufacturing and selling automobile safety parts, all of our employees are striving to contribute to the improvement of safety in automotive society in China and to bring about sustainable synergistic development of both communities and society.



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China Other Businesses

General Manager Masayuki Arakawa, Kayaku (Shanghai) Co., Ltd

Kayaku (Shanghai) Co., Ltd. implements activities to mitigate management risks of Nippon Kayaku Group companies in China. We implement regular compliance training to ensure the employees of our group companies are cognizant of correct compliance information while carrying out their daily duties. In addition, we also provide accurate information regarding financial and legal matters to promote appropriate and efficient business operations.



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Korea Functional Chemicals Group

Representative Director & President Keitaro Tada, Nippon Kayaku Korea Co., Ltd.

Nippon Kayaku Korea imports and sells Nippon Kayaku's functional materials and pigment materials in Korea, and exports pigment material and safety related raw materials from suppliers in Korea to Japan and overseas group companies. While laws in Korea that govern the import and sales of chemical materials into



the country, namely the Act on the Registration, Evaluation, etc. of Chemicals (K-Reach) and Chemicals Control Act are being revised (made stricter) yearly, we strive to accurately meet all revised criteria with the aim of realizing the **KAYAKU spirit**.

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Taiwan **Pharmaceuticals Group • Functional Chemicals Group**
General Manager Daisuke Komagata, Taiwan Nippon Kayaku Co., Ltd.



Taiwan Nippon Kayaku markets products from, and carries out market research for the Pharmaceuticals Group and Functional Chemicals Group. Currently, Taiwan Nippon Kayaku is carrying out daily activities to realize the **KAYAKU spirit**. Our commitments include: (1) correctly understanding customer needs, and striving to improve the quality of our daily work and convey those practices to related departments; (2) contributing to cultural and economic exchange by actively participating in and supporting activities and events of the Interchange

Association of Japan and the Taiwan Chamber of Commerce; and (3) displaying corporate vision boards in central locations of our office to constantly raise awareness of the **KAYAKU spirit**, and carrying a card at all times that contains our corporate vision. Moving forward, we will continue to proactively carry out CSR activities for the benefit of the local community.

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Malaysia **Safety Systems Group**
Managing Director Shigeru Maeda, Kayaku Safety Systems Malaysia Sdn. Bhd.



Kayaku Safety Systems Malaysia was founded in Malaysia at the end of 2012 to manufacture and market automotive safety components. Our product line-up encompasses a broad range that includes inflators, MGGs, and glass-to-metal-sealed squibs. We are working to imbue the company with the **KAYAKU spirit**, the Nippon Kayaku Group's corporate vision, and to put CSR management into practice. Putting safety first, we will continue providing our customers with quality products that will meet their satisfaction aims to be useful to society by contributing to the reduction of car accident fatalities in its region through its safety components.

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Thailand **Functional Chemicals Group**
Managing Director Tetsuya Tomita, NIPPON KAYAKU (THAILAND) CO., LTD.



NIPPON KAYAKU (THAILAND) CO., LTD. is a new company, recently established in 2018. Its primary business focuses on the sale of products from the Functional Chemicals Business in ASEAN and the South Asian region, procurement of raw materials and intermediates, as well as surveys of related markets.

Together with all of our employees, we will embrace the **KAYAKU spirit** and make great contributions to ASEAN and local communities in Southern Asia through the observance of compliance, and provision of safer materials and materials that lead to energy saving.

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Environment/Health/Safety/Quality Management System

We prioritize health, safety and environmental matters in our management of the company as well as strive to reduce our impact on the environment through the reduction of environmental emissions across the entire Nippon Kayaku Group.

The Declaration on Environment, Health and Safety, and Quality

The Nippon Kayaku Group, under the spirit of its CSR philosophy and Responsible Care[※], has formulated The Declaration on Environment, Health and Safety, and Quality, in order to maintain and enhance its environmental protection, health and safety and quality assurance practices. We are also implementing this declaration using organized activities.

The Declaration on Environment, Health and Safety, and Quality


Enacted November 7, 1995
Amended May 22, 2017

The Nippon Kayaku Group, under its corporate motto of "KAYAKU spirit", which calls for continuously providing society with the best products through ceaseless progress and the combined forces of our consciences, we will contribute to the realization of a sustainable society that safeguards the life and health of consumers, and supports a comfortable life.

Fundamental Policies

1. We will strive to maintain and improve the environment, people's health and safety across the entire product lifecycle, from R&D to production, distribution, sales, recycling, and disposal.
2. We will strive to conserve the environment by introducing and developing technologies that are useful toward reducing waste, carrying out the appropriate disposal of waste, conserving resources, conserving energy, and implementing global warming prevention measures.
3. We will actively provide business partners with information needed for the safe usage and handling of our products and for conserving the environment.
4. We will enhance the quality of not only products, but operating processes as well, and also work to enhance customer satisfaction.
5. We will heighten employee knowledge and skills through education and training and achieve our goal of zero pollution, zero injuries, zero accidents and enhanced quality.
6. We will disclose information so that stakeholders correctly understand our business activities and also strive to engage in dialogue with local communities and government authorities.

June 25, 2019



President & Representative Director
Nippon Kayaku Co., Ltd.

※ Responsible Care: A voluntary initiative under which companies that manufacture or handle chemical substances actively work on ensuring an operation that is aware of the environment, safety and health throughout its entire value-chain; from product development through production, sales, consumption, and disposal of chemical substances. The initiative began in Canada in 1985, and has now spread to encompass activities at companies in over 50 countries around the world.

Message from the Head of Technical Operations Group

The Nippon Kayaku Group has been developing high-quality chemical technology based products which are safely produced in the environment-friendly production equipment, and supplied to customers with maintaining and improving their quality. In terms of environment, we will steadily promote reducing manufacturing processes and energy waste, and tackle the issues raised in the "Sustainable Development Goals (SDGs)".

In terms of safety, we systematically carry out employee education and training. We will anticipate risks in daily work, and continue to supply our products.

In terms of hygiene and health, we will take various measures to maintain and improve the health of each employee. We believe that the Nippon Kayaku Group's social mission is to keep supplying high-quality products, that is the "best products", safely produced by the physically and mentally healthy employees.

Nippon Kayaku Group Responsible Care

The every Nippon Kayaku Group company hereby commits to "Prioritize Safety Above All" in our efforts. And we agreed not only complying with related environmental and safety laws in Japan and Overseas, but also preventing environmental and safety accidents. Furthermore we ensured they can carry out activities together under The Declaration on Environment, Health and Safety, and Quality, with the ultimate goal of realizing the **KAYAKU spirit**.

The following "Nippon Kayaku Group Responsible Care Policy" was created as a policy that should be continued from FY2019, especially with "decarbonization" in mind, and confirmed throughout the Group. Unless otherwise specified, the Nippon Kayaku Group will continue to promote Responsible Care activities based on this policy.

Nippon Kayaku Group Responsible Care Policy Statement

The Nippon Kayaku Group companies hereby commit to "Prioritize Safety Above All" in our efforts, and have all employees work on our business activities in accordance with the spirit of Responsible Care and the Fundamental Policies stated in "The Declaration on Environment, Health and Safety, and Quality."

Each group company shall work towards meeting their goals, set in accordance with their specific needs, status and country of location.

① Promoting initiatives for "Zero Accidents, Zero Injuries"

- Zero serious accidents, zero serious injuries
- Every Nippon Kayaku Group company shall prevent accidents and injuries by enhancing their ability to foresee potential risks by Risk Assessments and KYT/ K YK (Danger Prediction Training/Activities) and by promoting health and safety activities by means of patrols and inspection tours focused on pointing out unsafe actions

② Promoting initiatives aimed at prevention of global warming and reduction of our environmental impacts

- Every Nippon Kayaku Group company (including those overseas) will establish their own targets in sync with their company and country of location, and aim to become an eco-friendly company.
- Integrate the management system ISO-14001 company-wide so that the environmental goals and the medium-term business plan work together in a Plan-Do-Check-Action cycle.
- Promote initiatives that reduce our burden on the environment by adopting MFCA on a company-wide basis and rethinking our production processes.
- Review the issues facing us over the medium-to long-term by reassessing company-wide risks and opportunities.
- Clarify and create concrete measures for the new 2030 environmental targets.

③ Comprehensive chemical management

- Have all Nippon Kayaku Group companies properly ascertain and promote appropriate management of the hazard levels of chemical substances by using SDS and complying with GHS.
- Appropriately manage and maintain each chemical substance management DB.

④ Response to biodiversity

- Comprehensively manage effluent and promote "prevention of pollution caused by over nutrition and other factors."
- Promote transition to FSC-certified products for paper products such as copy paper and packaging cardboard. Use stress checks and other group analytics to find out which of our workplaces have high-stress working environments and be sure to conduct follow-ups.

⑤ Consideration of employees' health

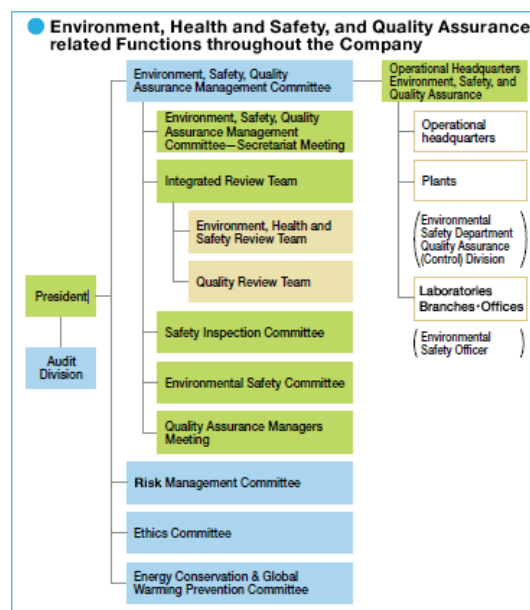
- Use stress checks and other group analytics to find out which of our workplaces have high-stress working environments and be sure to conduct follow-ups.
- Set numerical goals for the rate of participation in health management activities and the rate of specific-health-guidance implementation at each of our offices.

February 1, 2019

Company-wide System for Managing Environment, Health and Safety, and Quality Assurance

The Nippon Kayaku Group takes part in organized activities at all of its sites and certain Group companies including overseas plants to ensure employees are aware of the environment, health and safety, and quality assurance as well as to maintain and improve quality assurance. These activities revolve around the Environment, Health and Safety, and Quality Assurance Management Committee, which is led by the President of Nippon Kayaku.

> [Structure of Environment, Health and Safety, and Quality Assurance related Functions throughout the Company](#) 



Management Structure at Our Business Sites

Each of our business sites has a committee on the health and safety or the environment, health and safety headed by the head of that particular site. In addition, as a subordinate body, each business site also has a committee for promoting health and safety that consists of members representing each of the site's workplaces. Matters discussed by the Health and Safety Committee or the Environment, Health and Safety Committee are shared with all employees at roundtable meetings organized by the Health and Safety Promotion Committee. Conversely, matters discussed at roundtable meetings and by the Health and Safety Promotion Committee are communicated back to the Health and Safety Committee or the Environment, Health and Safety Committee as employee feedback.

Each business site's quality assurance (management) department leads Quality (Assurance) Committee meetings on a regular basis to check raw materials handled at each business site, examine customer complaints or quality issues concerning products made at that particular site, and deliberate on how to eliminate such complaints and quality issues. The committee also debates quality issues pertaining to new products, modified products and existing products to ensure that quality is constantly improved.



Certification of Environmental Management System

The Nippon Kayaku Group has moved forward with acquiring ISO14001 certification in order to develop, manufacture and provide eco-friendly products. We started acquiring ISO14001 environmental management system certification in 1998. Since then six of our plants have obtained certification, while other Group companies, including those outside of Japan, are in the process of obtaining this certification.

● Environmental Management System Certified Business Sites

Workplace	ISO14001
Fukuyama Plant	April 1999
Asa Plant	Sept. 1998
Tokyo Plant	Dec. 1998
Takasaki Plant	Jan. 2000
Himeji Plant	Jan. 2001
Kashima Plant	March 1999
POLATECHNO CO., LTD.	Aug. 2002
KAYAKU CHEMICAL (WUXI) CO., LTD.	Aug. 2006
Wuxi Advanced Kayaku Chemical Co., Ltd.	July 2007
Kayaku Safety Systems Europe a.s.	Dec. 2002
Kayaku Safety Systems (Huzhou) Co., Ltd.	Jun. 2016

Quality Management System Authorization Status

The Nippon Kayaku Group has moved forward with acquiring certification for international quality assurance standards in order to provide and develop products and services of superior quality.

With respect to quality management system ISO 9001, which is an international standard for quality assurance, we began acquiring ISO9001 quality assurance system certification starting with our plants in 1995 and later expanded this scope to include business divisions, R&D departments, and Group companies outside of Japan.

Our overseas Group companies involved in the auto industry are working on obtaining ISO/TS 16949 certification.

In the Pharmaceuticals Group, which includes the Takasaki Plant and the Pharmaceutical Research Laboratories, we are working to strengthen our quality assurance system and have acquired integrated certification for ISO 9001 and for ISO 13485, which is a quality assurance management system standard for medical devices and in vitro diagnostics.

Also, the Safety Systems Group, which includes our Himeji Plant and the Safety Systems Development Laboratories, has acquired IATF 16949 certification, which is an international quality management system standard for the automotive industry created by the International Automotive Task Force (IATF). Our automotive-related overseas group companies have also acquired IATF 16949 in their quest to provide higher-quality products.

● Quality assurance Management System
Certified Business Sites

Workplace	● ISO9001 ■ ISO 13485 ▲ IATF16949
Fukuyama Plant	●
Asa Plant	●
Tokyo Plant	●
Functional Chemicals Group	●
Functional Chemicals R&D	●
Takasaki Plant	● ■
Pharmaceuticals Business	● ■
Pharmaceuticals R&D	● ■
Himeji Plant	▲
Safety Systems Group	▲
SSD R&D	▲
Kashima Plant	●
Agrochemicals Business	●
Agrochemicals Group	●
POLATECHNO CO.,LTD.	●
Wuxi Polatechno Optics Co., Ltd.	●
Moxtek, Inc.	●
Dejima Optical Films B.V.	●
RaySpec Ltd.	●
KAYAKU CHEMICAL (WUXI) CO., Ltd.	●
KAYAKU Advanced Materials Inc.	●
Wuxi Advanced Kayaku Chemical Co., Ltd.	●
NIPPON KAYAKU FOOD TECHNO CO., LTD.	●
Kayaku Safety Systems Europe a.s.	▲
Kayaku Safety Systems (Huzhou) Co., Ltd.	▲
Kayaku Safety Systems de Mexico, S.A. de C.V.	▲
Kayaku Safety Systems Malaysia Sdn. Bhd.	▲

Kayaku Safety Systems de Mexico, S.A. de C.V. (KSM)

Obtained IATF16949 quality management certification for the automotive industry

In June 2018, KSM Quality Management System received an external audit by LRQA[※] Certification Team according to ISO 9001:2015 and IATF 16949:2016 requirements, and we obtained the recommendation for the IATF Certificate.

To keep this certificate we have to take periodic audits by LRQA. Maintaining this certification endorse the commitments of KSM; providing high quality products through safety, high quality, increasing customer satisfactions and continuous improvements.

Achieving this certification is possible due to dedication, teamwork and commitment of KSM collaborators.

※ LRQA—third certification party for IATF certificate.



IATF 16949 Certificate



GMP Authorization Status

The Takasaki Plant has obtained manufacturing approval under the Ministerial Ordinance on Standards for Manufacturing Control and Quality Control for Drugs and Quasi-drugs (GMP ordinance) and has obtained accreditation from the United States and Europe (EU).

● GMP[※]
Approval
Status

Workplace	Main governments
Takasaki Plant	Japan, USA, Europe, Canada, Brazil

- ※ GMP: A Japanese standard issued by the Ministry of Health and Welfare as a ministerial ordinance in 1980. Stipulates production control and compliance standards to ensure supply of high quality pharmaceutical and medical products.

Response to environmental regulations

Dealing with the Global Laws and Regulations on Chemical Products

The Functional Chemicals Group provides both domestic and overseas users with specialty industrial-use chemical products that take safety, quality, and the environment into account. As laws addressing the quality of chemical products are being developed and strengthened throughout the world, it is becoming increasingly important for the Nippon Kayaku Group to conduct its business in compliance with these laws and to be able to provide accurate information through our supply chain on the chemical substances in our products.

■ Chemical Management System

The Chemical Management Department, which is part of the Quality Assurance Division, oversees and facilitates the Functional Chemicals Group's management of chemical substances. Its main tasks include (1) dealing with chemical substance registration systems in Japan and overseas, (2) keeping abreast of developments in each country's laws and regulations regarding chemicals, making proposals on how to deal with them, and informing and giving advice to the relevant departments, and (3) management of products' safety data sheets (SDS)[※] and product labeling.

- ※ SDS : Safety Data Sheet. A document that lists information about the hazards and toxicity of chemical substances that is given to another business when the company is transferring (or furnishing) chemicals or a product that contains chemicals

■ Education and Assistance

Researchers involved in development and other group members involved in product sales need to possess correct knowledge about the laws and regulations on chemicals in the countries and regions where our products are sold. In fiscal 2019, we held study sessions with guest lecturers on laws and regulations concerning chemicals in China, South Korea, and Taiwan. A total of 75 people attended. In addition, since 2017, we have been operating an in-house "chemical management portal site" as a means of supporting our increasingly complex chemical management work. The site carries simple explanations and up-to-date information on various countries' chemical laws and regulations, ways to research lists of chemical laws and regulations, and cases of dealing with these laws and regulations. We plan to enhance the site so that it can respond to regulatory changes and contribute to our collective experience.

■ Providing Hazard and Toxicity Information in Line with the GHS

As each country adopts the GHS,[※] we need to issue an SDS in each local language and attach it to our product labels in accordance with local laws and regulations. The Functional Chemicals Group operates an SDS production system (3E generate), which contains a wealth of translations, regulatory data for each country, and data on physical properties and toxicity, so it can print whichever SDS complies with the local laws and regulations for attachment to the product's GHS label. Also, since the Japan Industrial Standards (JIS) were amended in 2019, we are in the middle of a three-year transition period for changing over to new versions of the SDS and product labels that will comply with the new JIS.

- ※ GHS: Globally Harmonized System of Classification and Labeling of Chemicals

Measures to Reduce Risk in the Manufacture and Handling of Chemicals

The 2016 amendment of the Industrial Safety and Health Act made it mandatory for workplaces to conduct risk assessments on the manufacture and handling of chemical substances. We are therefore performing risk assessments and implementing measures to reduce risk using a proprietary safety inspection system for new or revised production operations that handle substances mandated under this law or other hazardous or toxic substances.

The GHS label is attached at the site that handles the chemical, so that the users will be aware of the hazards and toxicity of any chemicals that they could be exposed to.



We are ensuring the users will be aware of the hazards and toxicity of the chemicals that they could be exposed to.

Overview of Environment, Health and Safety and Quality Organizations

Environment, Safety, Quality Assurance Management Committee

The Environment, Safety, Quality Assurance Management Committee is a company-wide committee led by the President of Nippon Kayaku and comprised of executive officers responsible for business divisions, general managers of business divisions, and the General Manager of the Technical Operations Group. The committee formulates annual policy for the environment, health and safety and quality assurance, assesses the results and recommends improvements.

Environment, Safety, Quality Assurance Management Committee – Secretariat Meeting

The secretariat is comprised of general managers from the technical departments of each business division and from related departments of the head office. The secretariat deliberates fiscal year policy proposals and implementation status and reports back to the Environment, Safety, Quality Assurance Management Committee. It also reviews material matters related to the environment, health and safety, and quality assurance.

Central Integrated Reviews

An integrated review is a combination of the conventional environment and health and safety review and the quality review, which had been implemented independently targeting business sites and group companies. The Integrated Review Team is led by the General Manager of the Technical Operations Group, and is comprised of the Environment, Health and Safety Review Team, led by the General Manager of the Environmental Protection & Safety Division and the Quality Review Team, which is headed by General Manager of the Quality Assurance Division. The same review as before is being performed on the head office, business sites and group companies that received environment and health and safety reviews or quality reviews. The head office, divisions, business sites and group companies for which issues were identified during the review process are required to create and execute an improvement implementation plan. The results of central integrated reviews are reported to the Environment, Safety, Quality Assurance Management Committee.

Safety Screenings

Safety screenings are conducted when developing and manufacturing new products, designing new facilities and equipment, replacing facilities, changing raw materials, and outsourcing production. Risk and other assessments are also performed to prevent problems before they occur.

Environmental Safety Committee

The Environmental Safety Committee comprises environmental safety managers or representatives from the Environmental Safety Department of each business site and group company selected by the General Manager of the Environmental Protection & Safety Division. The committee debates material matters and problems associated with the implementation of environmental protection and safety activities.

Quality Assurance Managers Meeting

The Quality Assurance Managers Meeting comprises quality assurance managers from the head office, business sites and group companies selected by the General Manager of the Quality Assurance Division. The meeting deliberates the implementation status of quality assurance and quality control activities.



Initiatives for Environmental Protection

Nippon Kayaku is committed to achieving a balance between the efficiency of production and reducing its impacts on the environment. For this reason, we consider environmentally friendly management to be an important task. We are now striving to achieve the various environmental targets we have set.

We are working to improve facilities and treatment processes in order to use energy and exhaust gas including green house gas emissions more efficiently and to lower the amount of substances released from effluent and waste that impact the environment. We have added some disclosure items according to GRI (Global Reporting Initiative) this year.

Promotion of Environmental Protection Activities

Nippon Kayaku has established specific numerical targets as one aspect of the mid-term environmental targets it has set for fiscal 2020, and with these targets in mind, we are now implementing activities for environmental protection. Also, to achieve these targets, we are working to reinforce our responses to natural disasters as well as promoting the development and improvement of wastewater treatment technologies.

Results of the Mid-term Corporate Plan for the Environment

Nippon Kayaku has established a mid-term corporate plan for the environment for the period running from fiscal 2011 to fiscal 2020 that consists of six items covering three areas. Fiscal 2019 was the 9th year of this plan. At present, we are currently formulating new mid-term environmental targets for fiscal 2030, mainly in response to climate change. The scope of reporting covers Nippon Kayaku (non-consolidated).

Mid-term Corporate Master Plan for the Environment (FY 2011 - FY 2020)

	Prevention of Global warming	Prevention of Global warming		Reduction of waste		
	Energy Derived CO ₂ Emission ^{※1} (Production Divisions+ Operation Divisions)	VOC ^{※2} Emissions	COD ^{※3} Emissions	Total waste produced	Recycling Rate	Zero Emission Rate ^{※4}
Fiscal 2018 results	69.2 thousand tons	28.6 tons	145.2 tons	23,204 tons	84.4% <small>Displacement outside of the factory 20,080 tons of which final disposal volume 870 tons</small>	3.6%
Year-on-year	Decreased 0.7%	Increased 11.8%	Increased 9.8%	Increased 8.0%	Increased 3.0point	Decreased 0.4point
Target value for fiscal 2020	Under 79.5 thousand tons	Under 42 tons	Under 150 tons	Under 23,500 tons	More than 80%	Under 3.0%

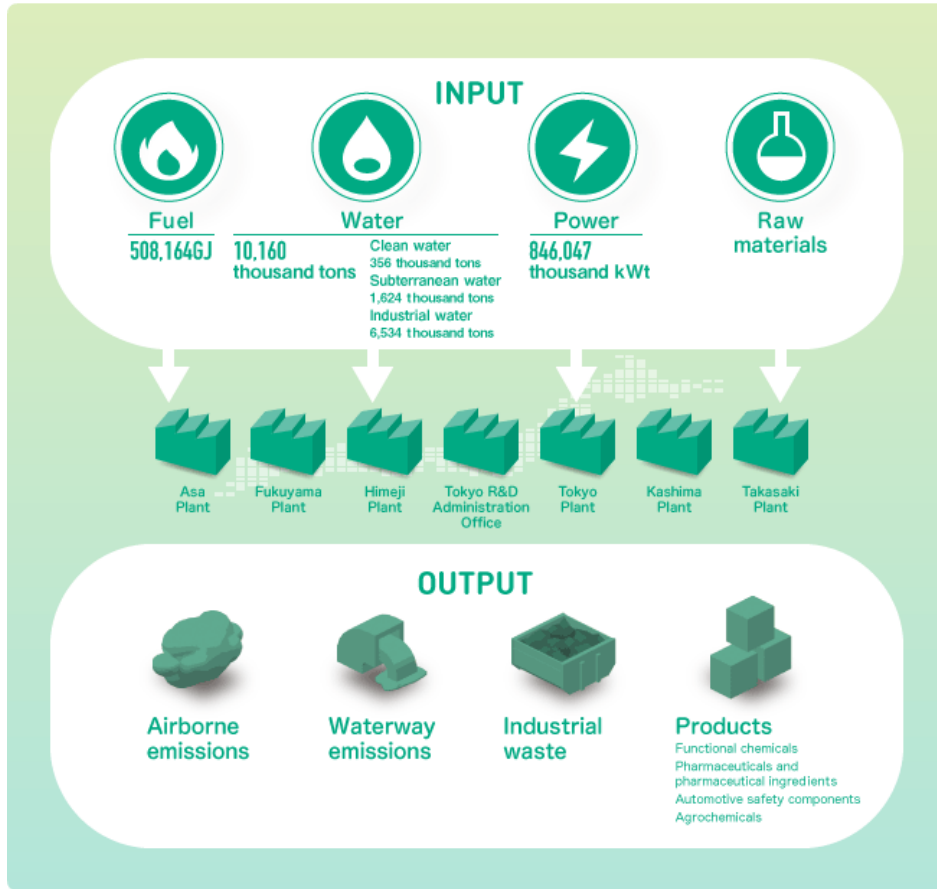
※1 Energy-derived CO₂ emissions: Japanese Government policy is to reduce these emissions by 3.8% versus 2005 (82.6 thousand tons).

※2 VOC: Volatile Organic Compounds (VOCs). This tally includes all chemical substances of reporting regulation, emitted into the atmosphere.

※3 COD: Chemical Oxygen Demand. An indication of the amount of oxygen needed to oxidize a subject compound under a predetermined condition using oxidizing agents.

※4 Zero emission rate: The amount of internal and external landfill waste produced as a percentage of total waste produced.

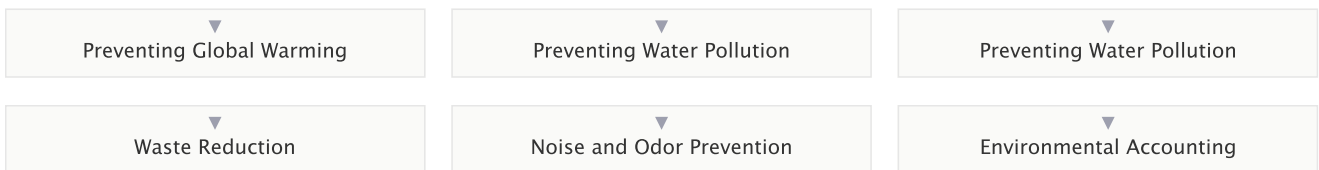
● Overview of business activities and environmental impacts



Scope: Nippon Kayaku (non-consolidated)

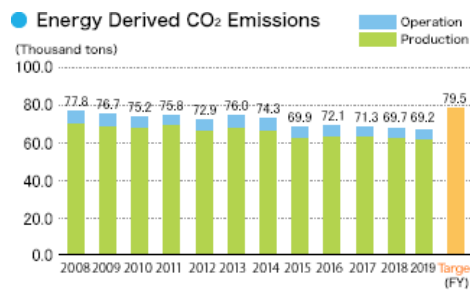
Results of Our Efforts to Reduce Environmental Impacts

As part of its effort to reduce environmental impacts, Nippon Kayaku focuses on preventing air, water and noise and odor pollution as well as stopping global warming and reducing waste.



Preventing Global Warming

At each business site, we have been working on energy conservation measures such as improving the operation of utility equipment, replacing it with high efficiency equipment, and changing to LED lighting. Energy-derived CO₂ emissions have been changing as shown below, and are declining year by year.



■The Nippon Kayaku Group has been investigating and tabulating the energy saving activities of each group company since fiscal 2011.

> [FY2019 Energy saving activity summary sheet of Nippon Kayaku Group](#)

About climate change

The “Paris Accords” adopted at COP21* held in 2015 aims to maintain the average temperature rise of the world before the Industrial Revolution to “below 2°C” and to tackle “below 1.5°C”. In addition, based on this agreement, each country promises national CO₂ emission reduction targets. The Nippon Kayaku Group set the target range for reducing CO₂ emissions from energy sources as only Nippon Kayaku in the fiscal 2020 Medium-Term Environmental Targets, but the new Medium-Term Environmental Targets by fiscal 2030 will expand to the entire Nippon Kayaku Group including overseas bases. We will continue to work on climate change to reduce CO₂ emissions that cause global warming.

* COP21: 21st Conference of the Parties to the United Nations Framework Convention on Climate Change. As a new framework after the Kyoto Protocol, which expires in 2020, all 196 countries have adopted the Paris Agreement held in the suburbs of France.

Disclosure of CO₂ emission data (Scope 3) throughout the supply chain

In recent years, there has been an increasing trend for companies to grasp and manage CO₂ emissions in the entire supply chain, which are indirectly emitted, and disclose them externally. Nippon Kayaku is calculating not only Scope 1 and Scope 2 that have been aggregated and managed until now, but also calculation of CO₂ emissions “Scope 3” in the supply chain. Currently, Nippon Kayaku’s non-consolidated basis is being calculated, but in the future we plan to expand the range to include domestic and overseas group companies. We will continue to collect and manage data based on the guidelines of the Ministry of the Environment to systematically reduce CO₂ emissions throughout the supply chain.

[Scope 1] GHG emissions generated from emission sources owned or controlled by the business operator (fuel use, emissions from manufacturing processes, etc.)

[Scope 2] Indirect GHG emissions from the use of electricity, heat and steam supplied from other companies (use of purchased electricity, etc.)

[Scope 3] Indirect emissions other than Scope 2 (procurement of raw materials, employee commuting, business trips, waste processing consignment, product use, disposal, etc.)

Categories		Emissions (Thousand tons-CO ₂ e)	
		2017	2018
1	Purchased goods and services	57.0	53.7
2	Capital goods	18.3	22.6
3	Fuel- and energy-related activities (not included in scope 1 or scope 2)	7.9	7.9
4	Upstream transportation and distribution	8.6	8.3
5	Waste generated in operations	16.0	16.5
6	Business travel	0.3	0.4
7	Employee commuting	0.7	0.8
8	Upstream leased assets	0.8	0.7
9	Downstream transportation and distribution	0.7	0.7

Categories		Emissions (Thousand tons-CO ₂ e)	
		2017	2018
10/11	Processing / use of sold products	Not covered	Not covered
12	End-of-life treatment of sold products	8.9	8.4
13	Downstream leased assets	0.4	0.4
Scope 3 total		119.7	120.4
Scope 1		30.8	29.2
Scope 2		43.1	42.9
Scope 1+2+3 total		193.5	192.5

Calculation method: Calculated using the emission factors described in the basic guidelines of the Ministry of the Environment and the Ministry of Economy, Trade and Industry in principle.

※ fiscal 2019 data is under calculation (as of June 2020)

Promoting the Adoption of Material Flow Cost Accounting (MFCA)

To date, Nippon Kayaku has been trying to reduce its burden on the environment by making its production processes more energy-efficient and conserving resources, and now it is working toward the adoption of material flow cost accounting (MFCA) by taking its environmental burden-reducing initiatives as an opportunity for “environmental management.” Adopting MFCA will help us to identify energy losses and material losses in the production process, and this will make it possible for us not only to continuously reduce the environmental burden of our production activities but also to come up with ways to lower our costs.

Since the second half of fiscal 2018, Nippon Kayaku has been working on adopting MFCA for certain products at its Fukuyama Plant, and some results have been achieved. In fiscal 2019, we also adopted MFCA at our Tokyo Plant and our Asa Plant. We plan to expand MFCA to other plants in the future so that we can further promote energy and resource conservation.

Himeji Plant Introduction of a Photovoltaic System

The electricity situation for the Himeji Plant has changed a great deal since before the Great East Japan Earthquake as follows.



- 1. Electricity supply shortages are forecast every year for the Kansai Electric Power Company service area during the summer months because of lost capacity from the shutdown of nuclear power plants, and so customers have been asked to reduce their electricity usage during peak times**
- 2. The minimum necessary electricity needed to contact customers and other related stakeholders during a major disaster is required as part of its BCP measures**

The Himeji Plant began operating a power generation system combining a photovoltaic system and lithium-ion batteries in April 2014 to satisfy the following three conditions.

- 1. Use of a system that can reduce the plant's electricity usage during time of peak demand in non-emergency situations**
- 2. A system that can operate even when external lifelines are cut off**
- 3. A system that can ensure the minimum operations of indirect and sales departments in case of a blackout from a major disaster**

The capacity of each component of the system is as follows.

- **Photovoltaic system: 54kW generating capacity**
- **Lithium-ion batteries: Output of 30kVa**

After putting the system into operation, the Himeji Plant has been able to reduce its use of electricity by up to 50kW during peak demand times in the summer. Additionally, the Himeji Plant was forced to initiate an emergency shutdown due to a nearby accident in December 2014. The photovoltaic system and lithium-ion batteries operated as normal and supported the operations of indirect

and sales departments. In the future, the Himeji Plant will increase the number of solar panels and take further steps for its BCP and energy saving activities.

Click to show the other activities

Activities by Kayaku Safety Systems de Mexico, S.A. de C.V. (KSM) to Reduce its Environmental Impacts

Activities by Kayaku Safety Systems de Mexico, S.A. de C.V. (KSM) to Reduce its Environmental Impacts

KSM is working on a number of themes for improving the environment, including reducing its use of energy to lower its green gas emissions.

In fiscal 2016, KSM replaced its exterior lighting facilities on the western side of its property. Until then, it had used 400 watt bulbs for exterior lighting, but KSM replaced all of these bulbs with ten 32 watt and twelve 57 watt photovoltaic lights.

This will reduce energy consumption by 32,000kW a year over the 10-year life of the photovoltaic panels. Converting this to environmental impacts, KSM reduce CO₂ emissions by 15 tons, which is the same as reducing coal consumption by 16 tons. By 2018, KSM plans to reduce the amount of electricity it purchases from the Federal Electricity Commission in Mexico by 5%, and then reduce it by another 1% each year until 2023 to reach the goal of a 10% reduction.

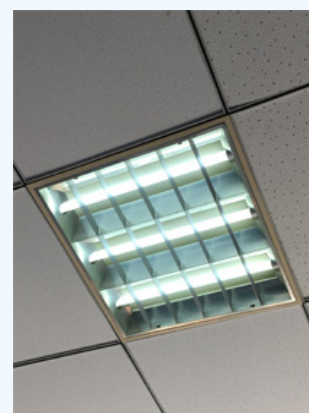


Wuxi Advanced Kayaku Chemical Co., Ltd. (WAC) Switching to LED lighting

Wuxi Advanced Kayaku Chemical Co., Ltd. (WAC) Switching to LED lighting

WAC is a Nippon Kayaku subsidiary established in Wuxi City, China in 1996 that manufactures synthetic dyes for textiles and paper. Starting in fiscal 2016, WAC began gradually switching out fluorescent lighting to LED lighting, and thus far it has replaced a total of 362 fluorescent bulbs with LED lights.

These 36 watt fluorescent bulbs were replaced with two hundred fifty 15 watt and one hundred twelve 20 watt LED lights. Simulations show that using these LED lights for eight hours will lower WAC's annual usage of electricity by about 20,000kW. This is equivalent to approximately 6.6 tons of coal used to produce this power. This will also lower WAC's annual carbon footprint by about 17 tons. WAC is committed to working to further reduce its electricity usage as well as maintaining and improving the natural environment.



Rolling Out Eco-friendly Sales Vehicles

Rolling Out Eco-friendly Sales Vehicles

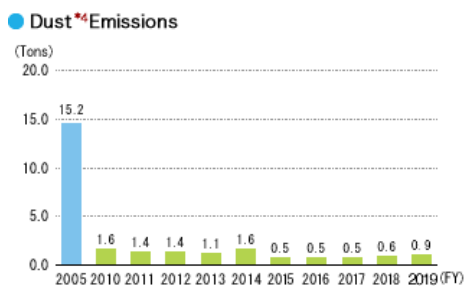
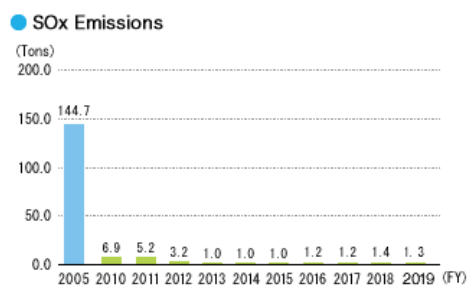
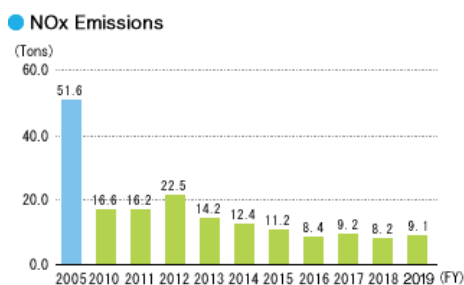
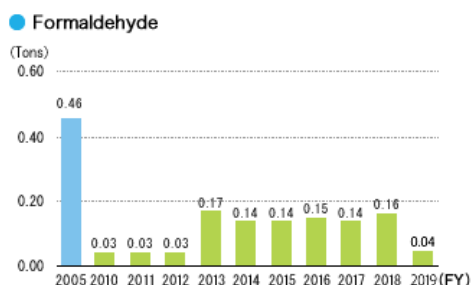
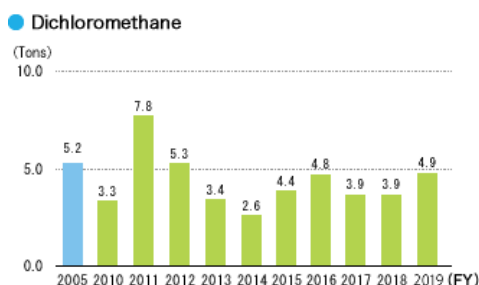
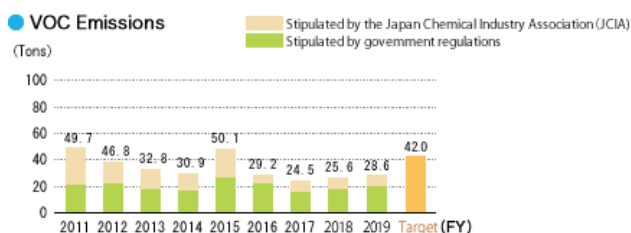
Information on efficacy and safety is essential to ensuring that patients use our pharmaceutical products correctly. Nippon Kayaku stations medical representatives (MR) throughout Japan in order to gather and provide information on our proprietary pharmaceuticals by visiting medical institutions in person. All of the company-owned sales vehicles used by these MR in their daily visits were recently switched over to eco-friendly hybrid vehicles, with the exception of colder weather areas requiring all-wheel drive.

Preventing Air Pollution

To help prevent air pollution, we carefully manage substances subject to Japan's Air Pollution Control Act, hazardous substances released into the air and other air pollutants.

(Under the initiative of the Japan Chemical Industry Association, the industry is taking action to voluntarily manage and reduce emissions of 12 control substances^{*1} that are deemed to be harmful air pollutants. Of these 12 control substances, we used five substances after 1995, but stopped the use of benzene in 1995. Emissions of chloroform and ethylene oxide have been cut to zero since fiscal 2007. About dichloromethane emissions there were few times of zero since fiscal 2007, but have risen slightly since fiscal 2010 because of their minor use in products. Formaldehyde emissions continue to occur, albeit in small amounts, because of its use in products and in sterilization and fumigation. Going forward we will focus particularly on reducing the use and emissions of dichloromethane and formaldehyde through production process improvements and other means.

Air pollutants sulfur oxide (SOx)^{*2} and nitrogen oxide (NOx)^{*3} are emitted during boiler operations. To date, the Nippon Kayaku Group has gradually shifted the fuel for its boilers from Bunker C heavy oil with high sulfur content to other lower sulfur content fuels such as Bunker A, in addition to LPG and natural gas, which are sulfur free. As a result, since fiscal 2008, we maintain to reduce SOx emissions about, we made further reductions. The Nippon Kayaku Group will continue to make efforts. to properly maintain air pollution prevention equipment, carry out regular inspections and upkeep, and reduce overall emission of air pollutants into the atmosphere.



- *1 12 control substances subject to voluntary controls: acrylonitrile, acetaldehyde, vinyl chloride monomer, chloroform, 1,2-dichloroethane, dichloromethane, tetrachloroethylene, trichloroethylene, 1,3-butadiene, benzene, formaldehyde, and ethylene oxide.
- *2 SOx (sulfur oxide): SOx is emitted when fossil fuels that contain sulfur are burned. SOx reacts with water in the atmosphere to form sulfuric acid and sulfurous acid, which are causes of air pollution and acid rain.
- *3 NOx (nitrogen oxide): NOx is produced when burned chemical substances react to nitrogen in the air and when fuels and chemical substances that contain nitrogen compounds such as coal are burned. Not only is it a major cause of air pollution including photochemical smog and acid rain, but NOx also has a harmful effect on the human respiratory system. In addition, NOx is also known to include the greenhouse gas dinitrogen monoxide.
- *4 Dust: Dust mainly refers to fine particulate soot found in dust smoke produced when burning fossil fuels. In addition to a major cause of air pollution, humans can contract pneumoconiosis or other harmful health conditions when breathing dust in high concentrations.

Some of the products manufactured at the Fukuyama Plant are made utilizing organic solvents which are target compounds of VOC emission control.

While removal of such compounds is a required process at the final stage of manufacturing, a small amount of these organic solvents are released into the atmosphere during this process. Upon reviewing the potential of recovering and reusing these organic solvents, we achieved a reduction of VOCs released into the air by more than 30% as well as reduced the amount of organic solvents used through equipment modifications and process improvement.

● VOC Emissions

FY	ton
2013	12.0
2014	10.0
2015	11.5
2016	5.6
2017	5.2
2018	6.0
2019	5.3

Response to Water Risks

The Sustainable Development Goals (SDGs) were adopted at the UN Summit in September 2015. The SDGs consist of 17 goals and 169 targets to achieve by 2030. Within the 17 goals, Goal 6 (water and sanitation), Goal 12 (sustainable production and consumption), Goal 13 (climate change), Goal 14 (ocean conservation), and Goal 15 (ecosystems and forests) are items related to water risks*. The Nippon Kayaku Group is working not only to resolving waste water issues as discussed in the Special Feature article of fiscal 2018 CSR report, but also the reduction of water usage.

* Water risks refer to the following three main categories.

1. Physical risk: impact on business operations due to drought, flood, and water pollution
2. Regulation risk: tightening water quality standards and revisions to waterworks and sewerage charges
3. Reputation risk: declined corporate image based on response to water access rights

■ Preventing Water Pollution

The Nippon Kayaku Group has set voluntary wastewater discharge control standards that are tougher than requirements laid out in national laws and local ordinances.

And The Nippon Kayaku Group produces color material-related products including dyes and ink jet printer ink, among others. Our Tokyo and Fukuyama plants, where color material-related products are manufactured, fully decolorize colored wastewater before it is discharged.

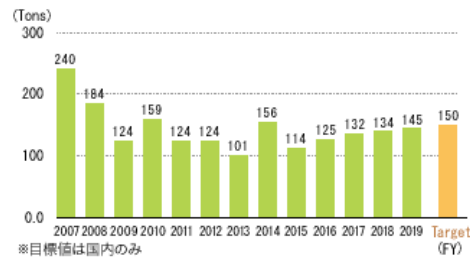
The Nippon Kayaku Group has made efforts to reduce its COD emissions by employing activated sludge treatment equipment at plants with high levels of COD emissions. In fiscal 2019, phosphorus emissions increased due to the impact of production items, but there is no problem with the wastewater standards.

■ PRTR*1 Initiatives

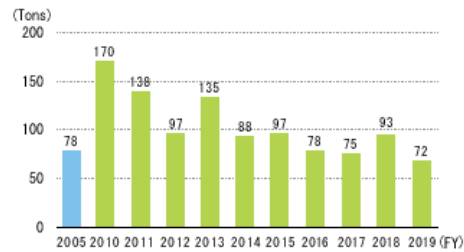
Since 1995, the Nippon Kayaku Group has participated in the Japan Chemical Industry Association led initiative to reduce compounds identified in the PRTR regulation, working to reduce its emissions of PRTR controlled compounds into the environment. In fiscal 2019, our emissions of PRTR controlled substances totaled 32.2 tons which marked about 13% increase from 28.5 tons in fiscal 2018. The reason for this is that the production volume of products handling PRTR materials increased at the Fukuyama Factory, Asa Factory, Himeji Factory and Kashima Factory in fiscal 2019. Toluene decreased from 15.5t in fiscal 2015 to 4.4t in fiscal 2018, but increased to 5.3t in fiscal 2019.

The result of the VOC emission reduction effect surely appeared.

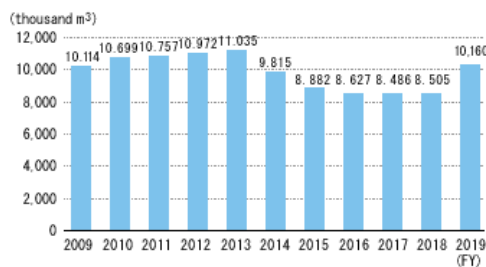
● COD Emissions



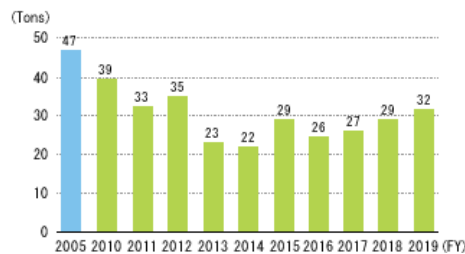
● Nitrogen Emissions



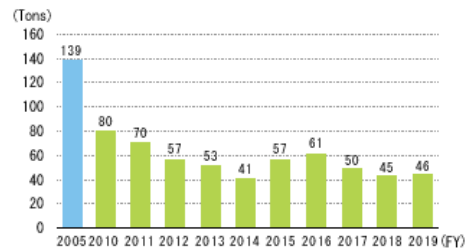
● Water Consumption



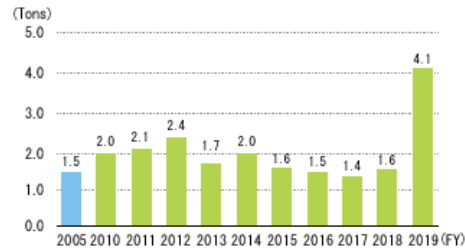
● Emissions of PRTR Controlled Substances



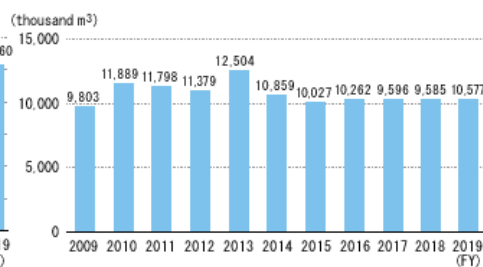
● SS*2 Emissions



● Phosphorus Emissions



● Drainage



- ※1 PRTR: Pollutant Release and Transfer Register. The PRTR regulation is designed to prevent occurrences of environmental safety incidents by encouraging businesses to improve their own chemical substance management.
- ※2 SS: Suspended Solids. SS is a water-quality indicator generally referring to insoluble substances of 2 mm or less in diameter suspended in water. The organic matter and metal originating in particulate-like mineral, animals-and-plants plankton and its corpse, a sewer, factory effluent, etc. are contained. The increase in SS worsens transparency, and influences underwater photosynthesis by preventing light penetration.

Fukuyama Plant Initiative to Reduce Water Usage

As of 2015, the amount of contracted volume of industrial water usage was 24,000 m³/day. In addition, we have reduced from 23,000 m³/day to 22,000 m³/day from fiscal 2018.

The Fukuyama Plant conducts treatment of waste water resulting from the colorant manufacturing process at its own expense. The treated water is then released into the Seto Inland Sea. Since the beginning of 2000, we have strived to optimize the treatment method of waste water resulting from the manufacturing of colorants for inkjet printer ink. This included many efforts to implement individualized treatment by brand and to revise the manufacturing process to realize reduced wastewater amounts.

Through these efforts, we have achieved a reduction in industrial water usage as stated above since 2015. At present, we are still working to develop better wastewater treatment techniques. Moreover, in addition to industrial water, we also use the city water supply during the manufacturing and equipment cleaning processes, which is also target for our reduction initiative.

Kayaku Safety Systems Europe a. s. (KSE) Effective Rainwater Usage

KSE has introduced a system in order to utilize rainwater more effectively following capital investment activities to support the environment and environmental protection policies. This system both contributes to the Nippon Kayaku Group's CSR-centered management and saves on costs both through reduced usage of potable water and the efficient use of non-potable water. The installation of water storage tanks at KSE began in November 2017. From that time to the end of the fiscal year, 2019, water storage tanks with capacities totaling 650.5m³ have been put into service. In 2020, KSE plans to install two more water storage tanks, which will lead to an additional capacity of 89m³. This will result in the supply of non-potable water to eight KSE buildings.



As a result of using the system, KSE had saved 3,612m³ of potable water by the end of 2019 – a savings of JPY 2,456,368. The anticipated savings for 2020 are 4,887 m³ (JPY 2,888,758). Simply put, the amount of potable water saved at KSE corresponds to the annual water consumption of all KSE employees and their families (approx. 4,000 people).

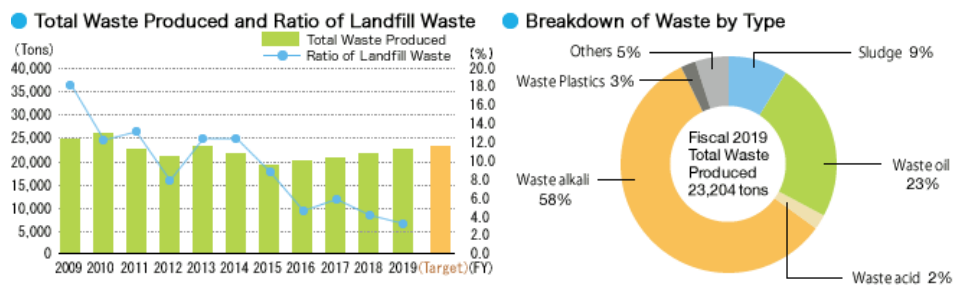
In addition to rainwater, wastewater from reverse osmosis stations supplies water tanks. KSE production areas require regulated humidification controlled by an air-conditioning system. This air-conditioning system requires demineralized water, which is attained through mineral removal in osmosis stations. Half of the water treated in this manner becomes wastewater. This wastewater serves as an additional source feeding the water tanks.

In these times, when a lack of precipitation is becoming a global issue, it is more essential than ever to implement water-recycling practices close to the source. In achieving this initiative, KSE comes closer to the fulfillment of the KAYAKU spirit.

※ [KSE] A company belonging to the KAYAKU Group located in the Czech Republic that manufactures automotive safety components.

Waste Reduction

In fiscal 2019, the Nippon Kayaku generated 23,204 tons of waste, which represents 8.0% increase compared to fiscal 2018. Landfill waste in fiscal 2019 amounted to 844 tons, and Zero Emissions rate of 3.6%. It was a decrease of 0.4 points from fiscal 2018, so we will continue to make efforts toward the 2020 target.



Fukuyama Plant

Fukuyama Plant Achieved Zero Net Emissions through Changes to its Sludge Treatment Process

Many types of wastes are produced during the Fukuyama Plant's production activities. Sludge that occurs from the treatment of waste liquids accounts for a considerably large portion of these wastes.

This sludge is difficult to dispose of because it contains moisture. In the past, this sludge was disposed of in landfills after undergoing appropriate treatment, but after examining whether this sludge could be recycled to reduce environmental impacts, the Fukuyama Plant found that it could be utilized as fuel for adjusting the heat used in waste incineration plants. Also, our waste disposal vender now has a source of recycled fuel, so both it and the Fukuyama Plant are able to utilize this sludge more effectively.

As a result, the Fukuyama Plant was able to reach its zero emission rate target (less than 1%) for the portion of its waste disposed of in landfills. Not only this, but it was also able to increase the recycling rate of waste and lower disposal costs.

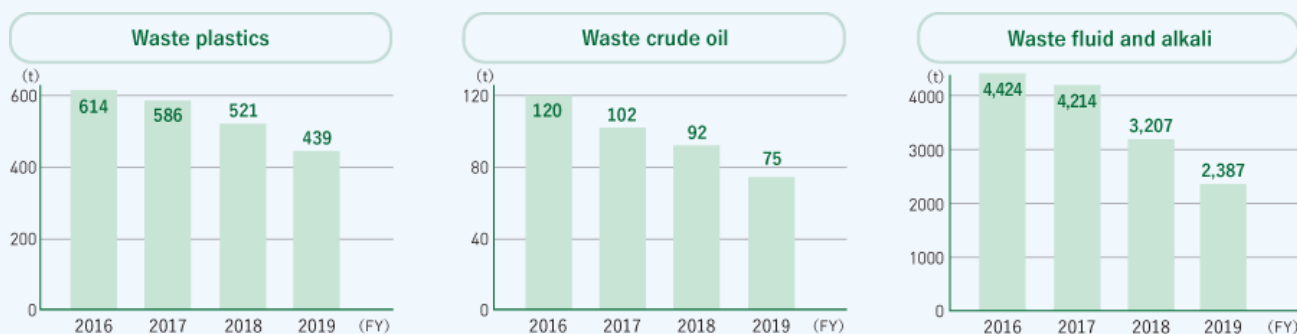
Polatechno Co., Ltd. Industrial Waste Reduction CHANGE&CHALLENGE

Polatechno Co., Ltd. generates waste plastics, waste resin, waste fluids, and other industrial waste materials in the process of producing polarizing plates, its major product. In its continuing efforts to conserve resources and to reduce the generation of and recycle waste, the company formed an Industrial Waste Reduction Subcommittee to change its traditional methods of reducing waste (CHANGE) and challenge itself to come up with new ideas for achieving waste reduction (CHALLENGE).



First, the fiscal 2016 results were examined and reviewed from the standpoint of zero emissions. Then, we adjusted raw material and product inventories when we changed our production process to producing small volumes of a large variety of items. After that, we changed to a bulk production process, which cut down on the volume of waste plastics and waste fluids. Next, we reduced our surplus generation of resin by ascertaining the optimal amounts of resin to be used in adhesive processing. In fiscal 2018, we were able to significantly reduce waste liquid by operating a recycling facility that reuses waste liquid, and in fiscal 2019 we are continuing to reduce the amount of industrial waste generated. We will continue to work to reduce industrial waste to contribute to environmental protection.

■ Amount of waste generation Result of FY2016–FY2019



Kayaku Safety Systems de Mexico, S.A. de C.V. (KSM)

Waste management: an approach to life cycle

KSM works to recycle solid waste, such as wood, cardboard, ferrous metals, aluminum and plastics by finding external suppliers which can re-use those wastes. After collecting those wastes from production sites, we store them in the plant until the certified waste collect suppliers to come pick them up. Those suppliers use woods to manufacture wood pallets, cardboard and plastic are recycled, aluminum and ferrous metals are used to generate new raw materials. This program extends to the non-productive areas such as rest areas, our collaborators classify waste like aluminum cans and plastic bottles for recycling, and we also classify organic and inorganic waste for proper disposal.



Noise and Odor Prevention

We conduct our business with a conscious effort toward minimizing noise and odor pollution in the areas surrounding our factories. We regularly measure noise levels around our factories, making every effort to be a positive members of the local community or odor-monitor-system. As such, any feedback or requests that we receive from local residents at company-sponsored events such as community round-tables are treated with the utmost priority. We also conduct regular work environment measurements in the factory to protect our employees from excessive noise and other hazardous chemicals.

Environmental Accounting

Nippon Kayaku has tracked and shared all cost data associated with its environmental protection initiatives since fiscal 2000. Also, from fiscal 2003, we began calculating the returns from our environmental protection initiatives. Calculation of environmental costs and returns are made according to Environmental Accounting Guidelines (2005 Version) published by the Ministry of the Environment of Japan, and Environmental Accounting Guidelines for Chemical Companies published by the Japan Chemical Industry Association.

● Environmental Protection Costs (Fiscal 2019)

(Millions of yen)

Category		Investment	Total	Main Activities	
Cost Incurred in the Workplace	Pollution Prevention Cost	Air Pollution Prevention	40.2	83.9	Upgraded dust collection facilities, boilers, etc.
		Water Pollution Prevention	70.5	148.0	Expanded waste liquid treatment facilities and upgraded equipment, etc.
		Underground seepage prevention	13.4	10.0	Moved pits and pipelines above ground, etc.
		Noise and Vibration Prevention	2.4	1.8	Noise abatement measures for scrubber towers, etc.
		Other		386.0	Disposal costs of facilities and pollution charges
	Global Environment Cost	Global Warming Prevention and Energy Conservation	40.3	20.1	Remodeled high-efficiency equipment and pumps, improved A/C energy usage, etc.
	Resource Recycling Cost	Waste treatment	30.9	576.7	In-house processing costs and processing outsourcing costs
Up- / Down-Stream Cost	Container Recycling Outsourcing		-	1.0	Outsourcing costs for repackaging products
	Sewage Processing Cost		-	90.3	Sewerage treatment costs Tank dredging costs
Management Activity Cost	System Maintenance and Operation		-	87.4	Internal auditor development cost and ISO14001 renewal costs
	Environmental Stress Monitoring		-	38.5	Analysis costs and outsourcing costs
	Information Disclosure		-	5.6	Outsourcing costs for preparing information disclosure documents on the environment
	Education, Training and Other		-	80.1	Outside lectures, workplace training, etc.
	Greening		1.0	58.0	Added plants and improved some greenery along the roadway Outsourcing costs
R&D Cost				81.7	Environmentally friendly R&D costs and wastewater treatment technology development costs
Social Activity Cost			-	9.7	Plant tours, community event sponsorship, responsible care, ICCA special committee, LRI research meeting costs
Environmental Damage Cost			-	0.0	
Total			198.7	1,678.9	

● Return from Environmental Protection Initiatives

(Millions of yen)

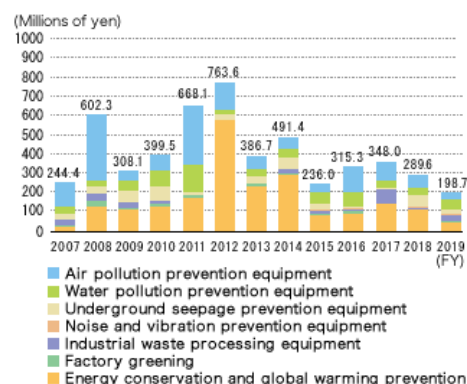
Sources of Return		Cost Reduction Return	Main Activities	
Workplace	Pollution Prevention Return	Air Pollution Prevention	0.0	Replacement of Nox decomposition facilities and boilers
		Water Pollution Prevention	0.0	Raising of drainage bits above the ground and replacement of dikes
		Pollution Load Levy Reduction	0.4	
		Noise and Vibration Prevention	0.0	Installation of sound-proof covers
	Global Environment Return	Global Warming Prevention and Energy Conservation	55.9	Made our pumps more energy-efficient, updated lighting to LED lighting, suspended use of air conditioners with ventilators, installed a central surveillance system
	Resource recycling return	Reduction of Waste	9.5	Solvent recovery
		Sale of Recycled Resources	12.9	Collected valuables, metals, sold paper products outside the group, and sold plastics outside the group
Other		0.0	Made changes to in-house recycling and the waste processing provider	
Up- / Down-Stream	Container Recycling		62.6	Reuse of plastic drums, stainless steel drums, etc.
Others			0.0	Implemented greening activities
Total			141.3	

- Scope: Nippon Kayaku (non-consolidated)
- Investments: Aggregate of all orders placed in fiscal year 2019(April 2019 to March 2020) Capital expenditure: Compilation of capital appropriated for orders in April 2018 to March 2019
- Management cost: Any cost increase resulting from change in fuel type or change in waste processing method that are deemed appropriate from an environmental perspective are recorded under this category each year for a period of five years from the date the change is first administered.
- From a financial accounting standpoint, earnings realized from environmental protection initiatives are recorded in the fiscal year in which such earnings are realized.
- Earnings such as expense reduction and environmental impact reduction that are not considered from a financial accounting standpoint are reported for five years from the date it is first realized.

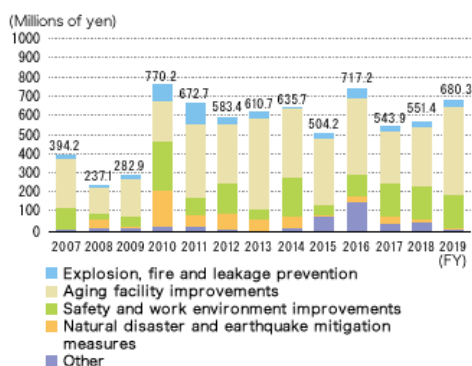
The Nippon Kayaku Group makes well planned and continual investments in environment, safety and health related projects. In fiscal 2019, investments related to the environment totaled at 199 million yen, which is a decrease of about 31% compared to fiscal 2018.

Investments related to health and safety totaled at 680 million yen in fiscal 2019, which is an increase of about 23% compared to fiscal 2018. Out of that, investments in equipment renewals accounted for 69% of the total.

● Environment Related Capital Investments



● Safety and Health Related Investments



Environment related data list

fiscal	Nippon Kayaku (Non-Consolidated)		Domestic group		Overseas group		Total	
	2018	2019	2018	2019	2018	2019	2018	2019
Global warming								
Energy input (Crude oil equivalent)	33,669	34,939	5,132	4,721	20,453	19,618	59,254	59,278
CO ₂ (ton)	69,731	69,241	10,380	9,557	49,701	47,156	129,812	125,954
Non-energy origin CO ₂ (ton)	2,202	2,371	10	0	1,108	12	3,321	2,383
GHG : Green house gas (ton) Other GHG (ton)	973	520	0	38	2,273	206	3,246	764
Emission to air								
NO _x (ton)	8.2	9.1	0.0	0.0	0.1	0.9	8.3	10.0
SO _x (ton)	1.4	1.3	0.0	0.0	0.0	0.0	1.4	1.3
Dish dust (ton)	0.6	0.9	0.0	0.0	3.1	3.3	3.7	4.2
PRTR substance (Emission to air; ton)	17.1	18.9	0.2	0.1			17.3	19.0
Emission to water area								
Water resource input (thousand m ³)	8,505	10,160	259	216	3,483	2,506	12,247	12,882
Amount of drainage (thousand m ³)	9,585	10,577	255	213	3,954	1,513	13,794	12,303
COD (ton)	133.7	145.2	2.9	0.0	57.4	62.2	194.0	207.4
Nitrogen (ton)	93.2	72.0					93.2	72.0
Phosphorus (ton)	1.6	4.1					1.6	4.1
PRTR substance (Emission to water area; ton)	11.4	13.3	1.2	0.8			12.6	14.1

fiscal	Nippon Kayaku (Non-Consolidated)		Domestic group		Overseas group		Total	
	2018	2019	2018	2019	2018	2019	2018	2019
Waste								
Amount of waste (ton)	21,491	23,204	4,150	3,240	1,005	1,043	26,646	27,487
Landfill waste (ton)	870	844	38	34	30	115	937	993
Zero emission (%)	4.0	3.6	0.9	1.0	2.9	11.1	3.5	3.6
Recycle rate (%)	81.4	84.4						

※ The energy input and CO₂ emission items were reviewed along with the conversion factors for the values announced last year.

※ Blank items do not have corresponding facilities or have no obligation to acquire data

FY2019 Energy saving activity summary sheet of Nippon Kayaku Group

☀ : Solar panel installation ☑ : Unrealized due to lease limitations — : Non-applicable ※High-load machinery: refrigerators/freezers, blowers, air compressors, steam boilers

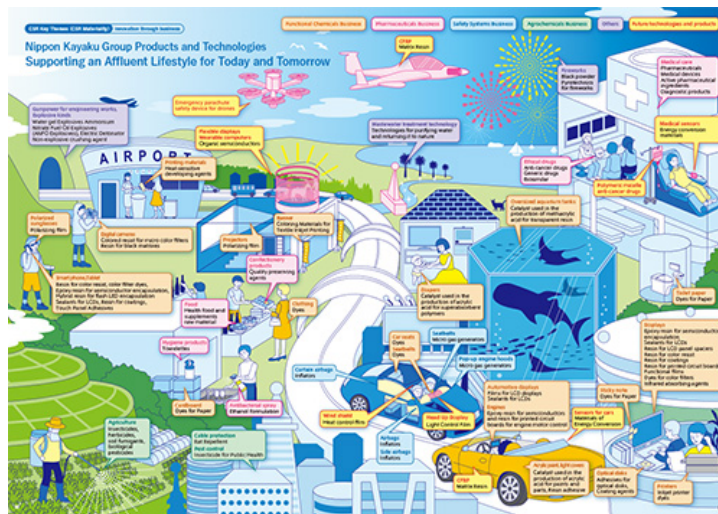
Business site/Company name	Management of thermostat settings	electricity/water saving and conservation awareness	Reduction of fluorescent lighting ; Switch to LED lighting.	Controlled operation of high - load machinery*	Heat barrier film/paint, water disperement
Head Office, NIPPON KAYAKU CO., LTD.	●	●	●	—	—
Asa Plant ☀	●	●	●	●	●
Takasaki Plant	●	●	●	●	●
Himeji Plant ☀	●	●	●	●	●
Kashima Plant	●	●	●	●	●
Tokyo business CENTER/ Tokyo P&D Administration Office	●	●	●	●	●
POLATECHNO CO., LTD.	●	●	●	●	×
MOXTEC, INC.	●	●	●	—	●
WUXI POLATECHNO OPTICS CO., LTD.	●	●	●	—	—
Dejima Tech B.V.	●	●	●	●	×
POLATECHNO (HONG KONG) CO., LIMITED	●	●	/	—	●
Pict Leap co.,Ltd.	●	●	/	—	—
NIKKA FINE TECHNO CO., LTD.	●	●	●	—	/
Nippon Kayaku Korea Co., Ltd.	●	●	/	—	/
NIPPON KAYAKU AMERICA, INC.	●	●	/	—	●
Euro Nippon Kayaku GmbH	—	●	●	—	/
KAYAKU CHEMICAL (WUXI) CO., LTD.	●	●	●	●	●
KAYAKU Advanced Materials Inc.	●	●	●	●	—
Wuxi Advanced Kayaku Chemical Co., Ltd.	●	●	●	●	●
Shanghai KAYAKU International Trading Co., Ltd.	●	●	—	—	—
NIPPON KAYAKU FOOD TECHNO CO., LTD.	●	●	●	—	●
Tumor Diagnosis Support Co., Ltd.	●	●	●	—	●
Taiwan Nippon Kayaku Co., Ltd.	●	●	—	—	—
Kayaku Safety Systems Europe a.s.	●	●	●	●	—
Kayaku Safety Systems (Huzhou) Co., Ltd.	●	●	●	●	●
Kayaku Safety Systems de Mexico, S.A. de C.V. ☀	●	●	●	●	●
Kayaku Safety Systems Malaysia Sdn.Bhd.	●	●	●	—	●
Nishiminato Driving School Corporation	●	●	●	—	●
Okiura Golf Center Co., Ltd.	●	●	●	—	●
Kayaky (Shanghai) Co., Ltd.	●	●	—	—	—
JHMS Co., Ltd	●	●	●	—	—
NAC Co., Ltd.	●	●	●	—	—
Wako Toshi Kaihatsu Co., Ltd.	●	●	●	—	—
Kouwa Sangyo Co., Ltd.	●	●	●	—	●
Gunnan Sangyo Co., Ltd.	●	●	●	—	●
Head Office, Kayaku Japan Co., Ltd.	●	●	●	—	/
Asa Plant, Kayaku Japan Co., Ltd	●	●	●	●	●



CSR activity through economic responsibility and business

Current Nippon Kayaku Group Products and Future Technologies and Products Supporting an Affluent Lifestyle

The Nippon Kayaku Group has adopted a corporate slogan called Global "sukima" ideas and is striving to develop Nippon Kayaku into a company that the world truly needs, by developing high value added products with unique technologies that stand out in niche markets and elsewhere.



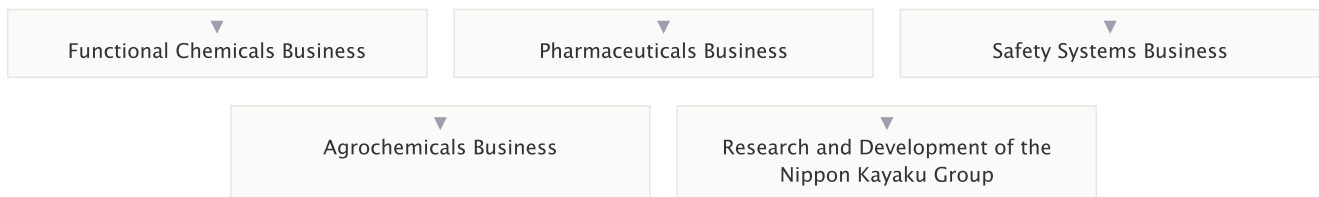
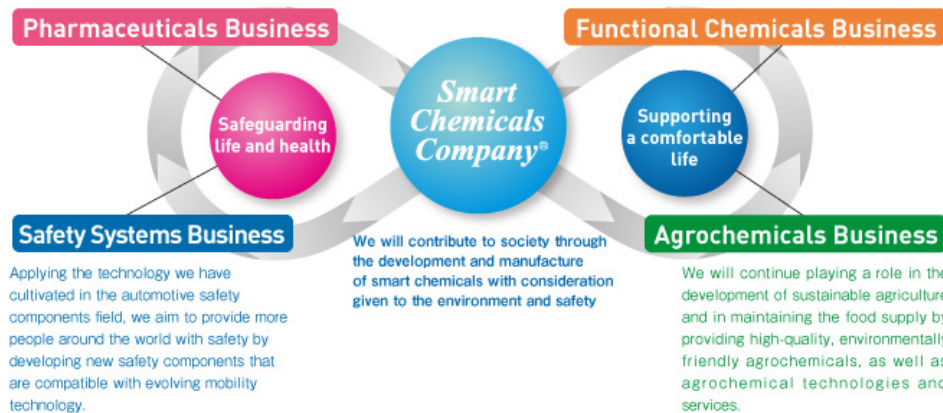
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The Nippon Kayaku Group's Businesses

This section will take a closer look at the 4 core businesses of the Nippon Kayaku Group as well as products that they developed with unique technologies that contribute to the betterment of society.

We aim to contribute to society through improved medical care by promoting innovations in our proprietary technologies and by providing a stable supply of and information about high-quality pharmaceutical products.

We contribute to the creation of an ultra-smart society and the realization of the SDGs by applying our core resin, colorant, catalyst and optical processing technologies to provide functional chemicals that offer special characteristics for the fields of information and communications, digital printing and energy and resource conservation and sensing.

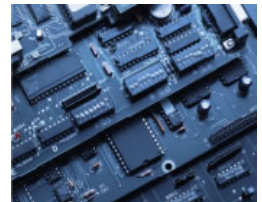


Functional Chemicals Business

- We will contribute to society by supplying unique functional chemicals for the IT, ICT and resource conservation fields

Many believe that the world is set to become a super-smart society in the future. This is a society where various things are connected to the Internet, making people's lives truly comfortable.

In the field of ICT, the network connecting personal digital devices with home electronics and automobiles is growing, while rapid advancements are also being made in reducing the size and increasing the performance of semiconductor devices and improving the resolution of displays mounted on these digital devices. At the same time, there is growing demand for energy conservation and resource conservation. The Functional Chemicals Business is helping to realize this super smart society by supplying unique products to the fields of IT, ICT, energy conservation and resource conservation using its long-standing technologies in resins, pigments, and catalysts.



[> Functional Chemicals Business](#)

Pharmaceuticals Business

- We are contributing to society through improved medical care by promoting innovations in our proprietary technologies and by providing a stable supply of and information about high-quality pharmaceutical products.

The Pharmaceuticals Business engages in research and development specializing in anti-cancer drugs and peripheral fields, focusing on polymeric micelle anti-cancer drugs that utilize nanotechnology as well as antibody drug, biosimilars and generic pharmaceuticals in the cancer field.

We aim to contribute to society through improved medical care by promoting innovations in our proprietary technologies and by providing a stable supply of and information about high-quality pharmaceutical products.



[> Pharmaceuticals Business](#)

Safety Systems Business

■ Through explosives technology applications, we help protect lives during auto collisions throughout the world

Although automobile production declined somewhat in China in 2018, on a global basis, the total number of units produced is expected to continue growing. In addition, safety components that protect passengers and pedestrians involved in auto collisions are rapidly spreading beyond the developed countries to the developing countries as well. The Safety Systems Business manufactures and markets uses explosives technology, on which the Company was founded, in its automotive safety components, providing such product that employ explosives technology as inflators and micro gas generators, which are incorporated in such automotive safety components as air bags, seatbelt pretensioners, and hood-opening devices that protect pedestrians. The Safety Systems Business's products are manufactured not only in Japan, but also in the Czech Republic, China, Mexico, and Malaysia, and are used by auto manufacturers almost worldwide. The Safety Systems Business's products are helping to save people's lives in auto accidents everywhere.



[> Safety Systems Business](#) 

Agrochemicals Business

■ We will contribute to society by supplying safe agrochemical preparations technology that are compatible with the environment and indispensable to stable food production

The environment surrounding agriculture is becoming more severe with each passing year, marked by food supply issues caused by the rising world population, issues with food self-sufficiency rate, and increasing crop damage from disease and pests. Such an environment requires that safe and secure agricultural crops be grown consistently and brought to market in a stable manner.



In June 2018, we launched our new insecticide, FINESAVE®. It is receiving rave reviews from the market as an insecticide that works on thrips and other pesticide-resistant insects, along with our spiracle-blocking agent, Fumon®, which is effective in overall pest control and does not rely only on a chemical pesticide.

[> Agrochemicals Business](#) 

Research and Development of the Nippon Kayaku Group

The Nippon Kayaku Group engages in proactive R&D activities, knowing that R&D is a driving force behind its business growth. Since marking its 100th anniversary, Nippon Kayaku continues to further deepen its long-standing elemental technologies and core technologies for new technological development. We will contribute to society, safeguard the life and health of the public, and support a comfortable life by executing R&D to consistently deliver the best products.

Also, out of those R&D initiatives aimed at creating new products and businesses, we are strategically allocating companywide management resources to those themes that we believe hold the most promise for future growth, and we are proactively pursuing this as corporate research that integrates external technologies, products, and intellectual property from both inside and outside the company. The Research and Development Group engages in exploratory research for the introduction of new technologies and the upgrading of Nippon Kayaku's elemental technologies, as well as on new R&D themes that will support the company's long-term future growth.

[> Outline of research department](#) 

■ Company-wide Research Presentation Conference

The annual Company-wide Research Presentation Conference brings together researchers from the Research and Development Group engaged in R&D at four laboratories in Japan as well as officials from the head office including the President for oral and poster presentations of research outcomes. The event also features oral presentations and awards for patented inventions that greatly contribute to the company's businesses or technological development.

In fiscal 2019, we sponsored poster presentations on our research and development teams' technologies and two oral presentations (on the tribulations and success stories of R&D), and these strengthened the lines of

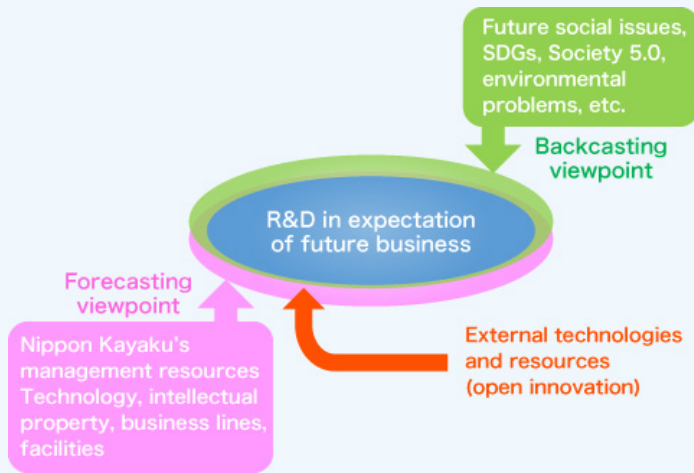


communication between our management team and our researchers and among our researchers. We are promoting the creation of innovations and solutions to the social issues that we will face in the near future by deepening understanding of and further developing and integrating the proprietary technologies and strong R&D capabilities that Nippon Kayaku has nurtured throughout its history.



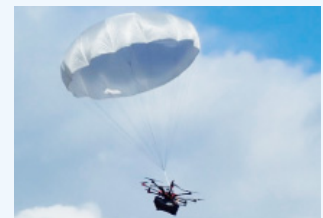
In Search of Long-term R&D Themes

In fiscal 2019, we launched the Waku-Doki Project, an R&D project that looks for long-term R&D themes. This project identifies the megatrends and near-term social issues facing our portfolio of proprietary technologies so that we can create R&D themes that are characteristic of Nippon Kayaku and that will help solve the social issues that are envisioned in the near future from both backcasting and forecasting points of view.



Developing Safety Devices for Drones

The Safety Systems Group develops, manufactures, and sells inflators, micro gas generators, and other types of gas generators, which are key components in automobile safety apparatus. Since its founding, Nippon Kayaku has been building up the explosives technologies used in these gas generator businesses. The Safety Systems Research Laboratory is continuously developing new products that utilize explosive technologies, and it has also considered expanding these technologies to other areas.



The parachute has opened



Actual safety device mounted on a drone

■ Launch of new theme creation project

The development of safety devices for drones was a theme proposed over the course of repeated discussions at off-site meetings and brain-storming sessions, where our young researchers take the initiative in launching projects based on new themes. The technological innovations and development of uses for drones over the past several years has been startling, and drones will probably become widely used throughout society in the future. Looking at the growth possibilities for drones, it occurred to us that we could use explosives technology to come up with a safety device for drones. Because a small amount of explosives is very powerful, we



Teamwork is essential because development and testing involve many components

thought that drones' flight performance could be best enhanced if the device on the drone was small and lightweight.

■ Technical issues and innovation factors

We used explosives to design a prototype device for opening a parachute. In the event that the drone suddenly starts falling, the safety device will open a parachute to slow the drone's descent, thus alleviating the impact of a crash landing and protecting any people on the ground. Although explosives are powerful, they are also dangerous and must be handled cautiously, so we took great pains in going through many iterations in our strength design. Also, when mounting it on a drone, the device must be small and extremely light so as not to interfere with the drone's flight operations. We therefore eliminated all excess space and parts. We mounted the safety devices on drones and took them to an outdoor test field to conduct flight and landing tests and verify their effectiveness.

■ Active use of open innovation

Although Nippon Kayaku possesses a large store of technology regarding explosives and automobile safety components, drones and parachutes were a new frontier for us. We therefore perfected our knowledge of this new frontier with the help of other firms, consultants, and university research labs. In addition, because this is a safety device for landing the drone, we needed a large test field for the actual flight tests. The laboratory borrowed a site at one of Nippon Kayaku's plants, where it ran repeated tests in which the parachute was deployed after the drone was dropped from a giant crane. This served to improve the reliability of the safety device. In launching this business endeavor, we thought that it was important to tell the market about this concept as soon as possible so that we could get feedback on the device. We are therefore proactively exhibiting at trade fairs and seeking out customers who will use our safety device. Drone development is proceeding very rapidly overseas as well, so we are proactively networking with partner firms overseas. In particular, we obtained a competing product in the U.S., and we are trying to differentiate our product by conducting benchmarking tests with the help of a partner firm. We want to use innovative initiatives like these to contribute to society by producing competitive drone safety devices as soon as possible.



Drone flight and landing tests are undergone repeatedly out in the field



A drop test using a giant crane



An outside instructor gives a class on drone mechanisms and system control techniques

New 5G Products: Production and Sales About to Launch!

We have developed a new product geared to the 5G system of next-generation high-speed telecommunications: the maleamide resin MIR-3000, which is a resin used in high-speed telecommunications. The Nippon Kayaku Group holds the top market share in high-purity epoxy resins used in electronics components, and this product is a maleamide resin that possesses electrical properties for high-speed telecommunications that were not obtainable with prior epoxy resins and that possesses our proprietary biphenyl skeleton that is noted for its good processing formability, unlike previous maleamide resins.

The Functional Chemicals R&D Laboratories started developing products for high-speed telecommunications more than 10 years ago, in line with its predictions for the future. The head office, research laboratories, and plants worked together to handle new production methods, new raw materials, and new equipment, thus bringing about the manufacture and sale of this new maleamide resin product. With this new maleamide resin product, we intend to play a role in realizing an affluent, super-smart society supported by high-speed telecommunications.



■ R&D that takes the Nippon Kayaku Group's proprietary technologies to new heights – R&D of light control films

The Research and Development Group will contribute to society, safeguard the life and health of the public, and support a comfortable life by executing R&D investments to consistently deliver the best products.

Automobiles are set to undergo a major transformation with advancements in electric vehicles and autonomous driving technologies. A large number of sensors are now fitted to automobiles to support safe driving. One of these is the head-up display that displays various forms of information on the windshield. Head-up displays use special films that control light in order to display this information clearly. Light control technology is used in a very wide range of fields, including not only head-up displays, but also LCD and organic EL displays, projectors, transparent displays, heat shield windows, and sunglasses, to name a few.

Nippon Kayaku is examining the use of the group's light control technologies such as polarizing films and retardation films to develop highly advanced and specialized light control films as one of its corporate research themes. For example, we are examining together with group companies the possibility of using these films to develop automotive head-up displays using our unique technology that makes images clear in wide viewing angles and to develop eyewear such as sunglasses and goggles with a completely new metallic-like finish despite being made from organic materials.



Head-up displays



Eyewear

■ Researching the Needs of Tomorrow: R&D for Organic Semiconductor Materials

The Research and Development Group will contribute to society, safeguard the life and health of the public, and support a comfortable life by executing R&D investments to consistently deliver the best products.

Additionally, the Research and Development Group is implementing R&D strategy with a medium- to long-term perspective to create new products and new business through open innovation inside and outside the company and by combining the intellectual properties and technologies of the Nippon Kayaku Group. The Kita-ku, Tokyo is one of the Nippon Kayaku Group's largest R&D hubs and considered a critical area for R&D and new business creation. We will concentrate resources here including researchers from each business field and facilities to achieve collaboration and integration of technologies and people.

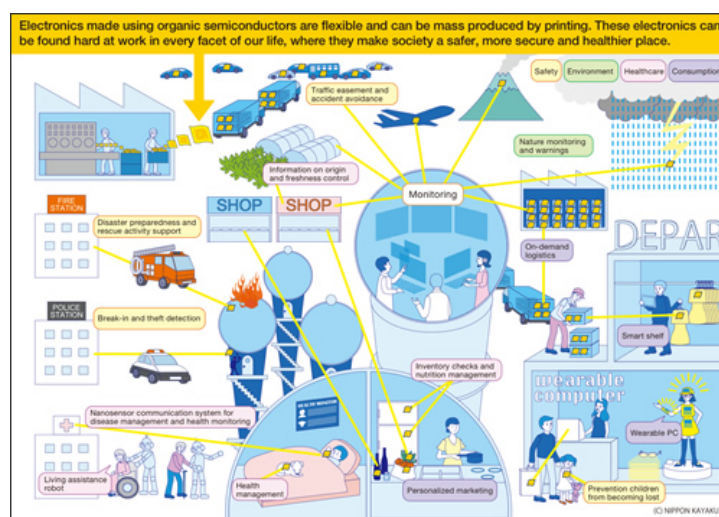


Inorganic semiconductor



Organic semiconductor

[> Learn more about our research laboratories](#)



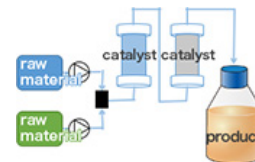
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■ Flow chemistry technology

At present, almost all fine chemical products are made using the batch method. The batch method has a long history, having shouldered the development of the chemical industry to date. In recent years, the focus has

been turning to a new production method called the precision flow method. The precision flow method is safer than the batch method, and it uses less energy and generates less waste.

At Nippon Kayaku, we are conducting research on continuous manufacturing techniques that use the precision flow method. We are also working on ways to inspect the products and applications in new product development. We expect to come up with new types of initiatives for improving the safety of our chemical plants and reducing their burden on the environment. As a fine chemical maker, we are ramping up our social contributions by adopting new technologies and continuing to enhance our manufacturing capabilities, which is an elemental technology.



Precision flow method



Pilot test facilities

Globalization of Research Activities

Following the policy of Nippon Kayaku's global management, the Research and Development Group is in the process of building a global R&D structure inclusive of overseas Group companies. While promoting greater interaction among researchers working for overseas subsidiaries, the Research and Development Group is carrying out the following activities from the perspective of CSR.

Hosting International Internship Students

Nippon Kayaku hosts interns from both domestic and overseas universities. Interns engage in various activities at Nippon Kayaku's laboratories with a focus on research and development, while also learning about corporate activities and Japanese culture. At the same time our employees receive a boost in terms of motivation and stimulation by working together with these young interns. Going forward, through these internships, we will continue to globalize our corporate culture and contribute to international exchange as well as the education of overseas students.



Joint Collaboration with Overseas Research Institutes

Nippon Kayaku actively engages in joint research with research institutes located outside of Japan.

We utilize web conferencing during joint research with overseas group companies to share information in a timely manner and speed up the R&D process. Also, we are among the first to adopt cutting edge technologies and materials, while utilizing industry-academia collaboration programs with overseas universities, to ensure that we can help create a sustainable society.

The collaboration and integration of our long-standing excellent technologies help promote problem solving and the creation of innovation.

Exchange within the Nippon Kayaku Group

Meeting for the 60th time in 2019 is held annually as a company-wide venue for sharing achievements in terms of operational improvements, improving productivity, human resources development, and new product development.

It has become the largest annual event to participate not only from Nippon Kayaku but also from domestic and foreign group companies.

In the Meeting, each department makes a presentation, and among them we select excellence awards and special awards to recognize excellent themes.

Evaluation of daily activities increases employee motivation for work.

By attending presentations of various workplaces, we can obtain hints for new ideas and task solving.

In addition, at the social gathering after the presentation, we are deepening collaboration laterally by communicating with people beyond occupations, generations, and countries, and expanding our horizons of business.



We will continue holding this meeting so that Nippon Kayaku Group employees can continue to raise their ambitions and take the next step in their careers.

KAYAKU spirit Dream and Drive("Kaizen")Activities*The exchange meeting

Meeting for the 8th time in 2019 is a field to talk about "KAYAKU spirit Dream and Drive"("Kaizen") Activities frankly. It is a small-scale meeting mainly plant departments and every participant can speak frankly and actively.



In this exchange meeting for two days, the presentations were carried out on the first day and had open discussions on the second day. During the open discussion, participants talked freely about how to lead D&D activities, evaluation method of the result, and troubles and ingenuities of activities.

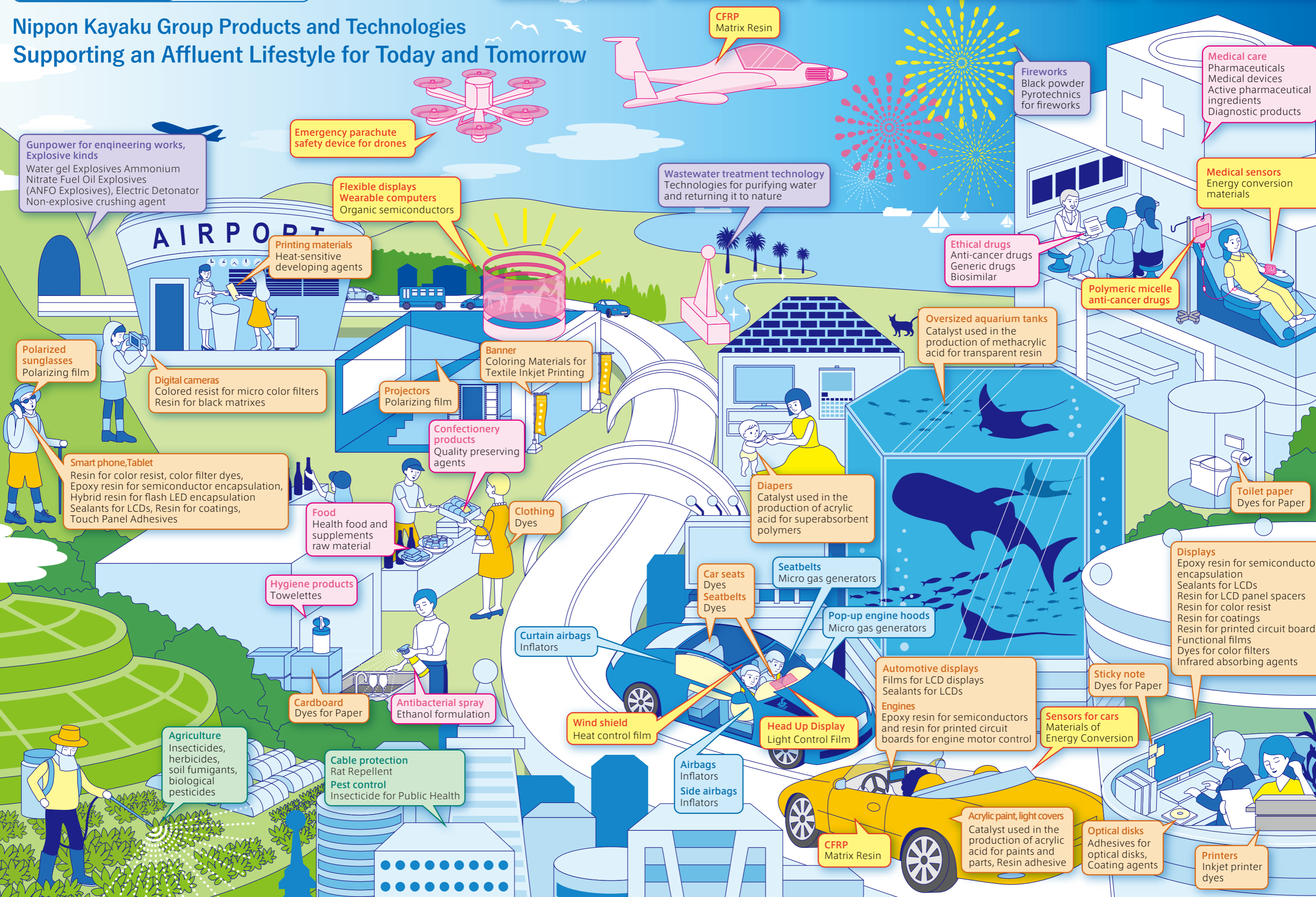
The small group size made it easier for participants to talk amongst themselves, resulting in active discussions. So it is popular among participants because it allows active exchange of opinions and information sharing. Through discussions with people in multiple workplaces, we receive stimulus from other workplaces, lead to improvement of problem awareness and promotion of D&D activities at our own workplace.



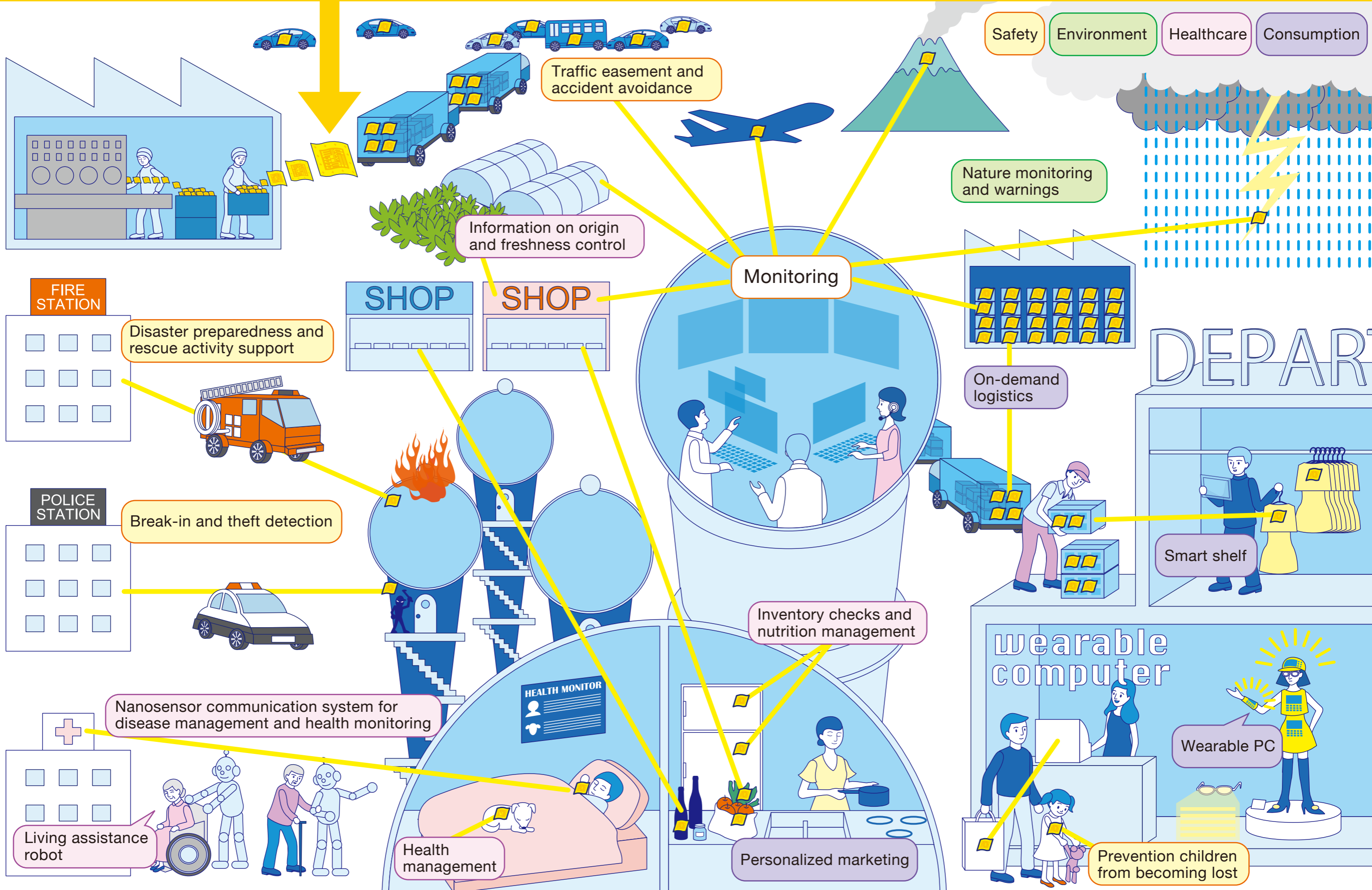
We will continue this exchange meeting and will do it for more active D&D activities in future

※ KAYAKU spirit Dream and Drive("Kaizen")Activities: A form of improvement activities that focus on the ingenuity and innovations of all employees in order to resolve tasks in the workplace independently under the banner of CSR management)

Nippon Kayaku Group Products and Technologies Supporting an Affluent Lifestyle for Today and Tomorrow



Electronics made using organic semiconductors are flexible and can be mass produced by printing. These electronics can be found hard at work in every facet of our life, where they make society a safer, more secure and healthier place.



Safety Environment Healthcare Consumption

Monitoring

Traffic easement and accident avoidance

Nature monitoring and warnings

Information on origin and freshness control

Disaster preparedness and rescue activity support

On-demand logistics

Break-in and theft detection

Inventory checks and nutrition management

Smart shelf

Nanosensor communication system for disease management and health monitoring

HEALTH MONITOR

wearable computer

Wearable PC

Living assistance robot

Health management

Personalized marketing

Prevention children from becoming lost



With Our Employees

A company is nothing without its people. Nippon Kayaku respects the human rights of each and every employee, and strives to offer a workplace environment that offers peace of mind to employees. Our goal is to be a company where employees can grow personally and professionally through work and feel a sense of motivation in what they do.

▼ Message from the Head of Administration Group	▼ Diversity & Inclusion	▼ Development of Human Resource	▼ Encouraging the Creation of Intellectual Properties
▼ Promoting Health Management	▼ Initiatives for Health and Safety	▼ Labor Union/Management-Labor Relations	▼ Human Resources Data

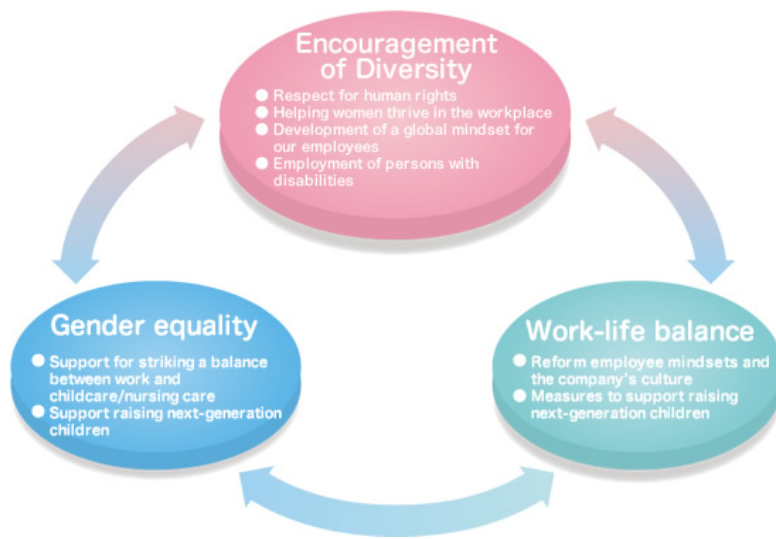
Message from the Head of Administration Group

In order to realize the **KAYAKU spirit**, the Nippon Kayaku Group has developed a number of innovative systems and programs so that all employees can fulfill their individual responsibilities and roles with a sense of pride and self-confidence as key implementers of this vision. Our position class system, which enables employees to obtain job assignments and compensation that are not tied to their age or career background, has become a standard system for employees to obtain job assignments regardless of their age or gender. The number of females promoted to manager positions also continues to increase with each passing year thanks to our appointment system that encourages a self-starter spirit and desire to take on challenges, and does not consider gender.

Furthermore, we are proactively promoting diversity through such programs as our Senior Partner System, which since its inception has rehired almost 100% of all employees who want to keep working after having reached the mandatory retirement age, and our employment of persons with intellectual disabilities via a tie-up with a special needs school.

As our global business expands, in addition to offering the usual education and training for expatriate employees both before and after their overseas assignments, we are also implementing planned human resources development programs for local staff and organizing study abroad programs.

Moving forward, we will continue to develop systems with new, innovative thinking, unbound by conventional approaches or practices respecting human rights, so that we can respond flexibly to the changing business climate.



Diversity & Inclusion

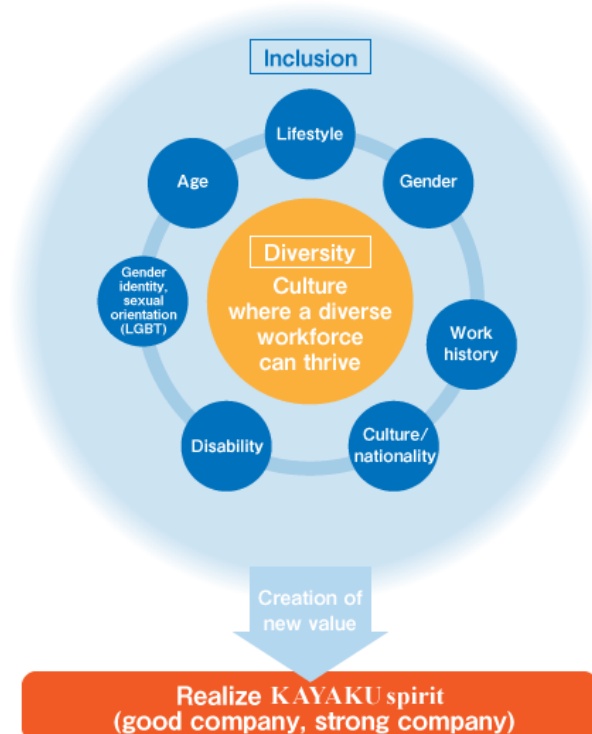
Initiatives for Achieving SDGs Approach to Diversity & Inclusion

The Nippon Kayaku Group aims to be a company with a work environment and atmosphere that can maximize people with differing personalities and values and where every employee can work enthusiastically with a feeling of fulfillment and that work is a worthy pursuit.

This means bringing about the sustainable growth of CSR management (i.e., the **KAYAKU spirit**) by creating a virtuous cycle of productivity improvement through human resource development and the creation of new corporate value through SDGs for our business.

Diversity and inclusion means a revolution in the way we work. With these initiatives as an impetus, we will succeed in becoming a company that is trusted by society and a company that is strong and good.

Approach to Diversity and Inclusion



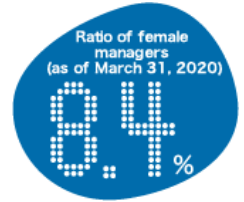
Encouraging Diversity

Nippon Kayaku Group's Personnel System

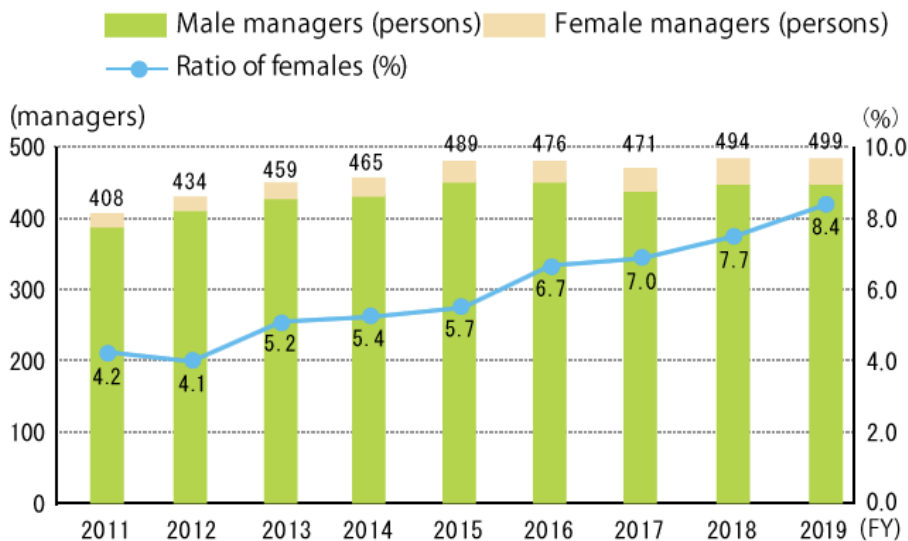
We have adopted the position class system, which is a human resources system whereby employees can obtain job assignments and compensation that are not tied to their age, gender, career background, or educational background, and we are improving it in response to the historical background and the demands of society. This system, which is based on individual roles and responsibilities, is also offered to management-class employees. Therefore, promotions to the managerial level can be achieved regardless of age, gender, academic history or career. As a result, the number of female managers continues to grow with each passing year.

Helping Women Thrive in the Workplace

The appointment of female managers is one aspect of the results of our initiatives to encourage diversity in the workplace. The ratio of our female managers increased to 8.4% as of the end of March, 2020 (7.7 in previous year). Our goal was to have 8% of our managerial positions filled by women by the end of fiscal 2020, but we achieved this target one year ahead of time. We will continue with our efforts to encourage the greater involvement of women in the workplace.



Percentage of female managers (*Nippon Kayaku non-consolidated basis; excluding seconded employees)



Finding a work style that each person can enjoy will lead to diversity

After working on pharmaceutical testing methods at the research lab, I transferred to the head office in 1999. At that time, the head office had almost no women in management positions, but the number of women has increased over time, so I feel the company has changed. In the Quality and Pharmacovigilance Division, to which I belong now, is responsible for ensuring the reliability of the products made by Nippon Kayaku's Pharmaceuticals Group. Of the eight department and office managers, half of them (four) are now women. Also, our company has a good childcare leave and work system, which I myself used. In my opinion, having experience bringing up children adds to one's managerial skills. Before I had children, I thought that I would always be rewarded if I try hard, but babies have no consideration of one's efforts, so things did not go the way I wanted. In the meantime, while I was trying to find out what would make my child happy or have fun, to my surprise, I suddenly found that my child was growing. In management as well, it seems that when I am with an employee worrying about what will make them happy (what their strengths are), a good outcome will suddenly crop up. It may be that women are good at this type of management. I think it is natural that everyone has their own personality and skills. I believe that finding a work style that each person can enjoy will lead to diversity.



Yuko Nagai
Pharmaceuticals Group
General Manager of the Quality and Pharmacovigilance Division and Marketing Supervisor-General

Employment of Persons with Disabilities

Nippon Kayaku employs people with disabilities. As of the end of March, 2020, 47 people[※] with disabilities are working with us (1.97% of total employees). Society demands that we move swifter in hiring persons with disabilities and so in the future we will strengthen our efforts and continue to actively hire persons with intellectual disabilities wherever possible.

※ One part time employee is included.

Re-employment of Employees after reaching Mandatory Retirement Age (senior partners)

In April 2006, we launched the Nippon Kayaku Senior Partner Program as a way to rehire employees who reached their mandatory retirement age. This program is intended to provide a place of work after retirement for former employees who are in good mental and physical health, are motivated to continue their career, and who can contribute their past career experiences and know-how. Participants are asked about their requested workplace, work duties and employment format, and since adopting this system we have been able to meet the requests of nearly 100% of participants who are rehired. Most of these participants continue on working until the age of 65. There are 144 reemployed persons working for Nippon Kayaku as of March 31, 2020.

Development of Global Human Resources

As one of our efforts to promote diversity, we provide employees in Japan as well as at our overseas group companies with opportunities to thrive in a global environment. We also strive to develop our employees' language abilities by offering study-abroad programs, short-term intensive English programs and company-wide TOEIC test. Moreover, we provide employees assigned overseas as expatriates with training programs on various subjects including cross-culture training. In addition to the training programs, we will keep making efforts to develop global talent by means of promoting personal interactions between business units in Japan and overseas group companies and also enhancing our support to experience various cultures and business environments.

In fiscal year 2017, Nippon Kayaku had foreign staff transferred from our overseas group companies to the head quarters. In order for the transferees to accustom to the Japanese lifestyle and culture smoothly, we held various orientations and prepared English version of the related regulations. This has been one of our efforts aimed at our commitment to further develop global human resources.

More active role for women in the workplace

I joined Kayaku Safety Systems Europe a. s. as an HR Specialist in 2000.

At that time, KSE[※] had 107 employees, and there were only two female managers at the company. The company currently employs 1,076 people, of whom 539 are women, and 4 women are in management positions, including me. In addition to these management positions, 10 women hold Group Leader positions in Administrative Division and Team Leader positions in the production department. The diversity of the work teams is key to the balance and healthy development of the company.

We know that working in the production area with continuous shift operations is strenuous for women; however, we regularly hear from our women that they value the stability and personal development care that our company offers. What our female employees mainly want are good working conditions and work-life balance. In HR, we support the integration of women returning to work from maternity leave, so we currently offer part-time positions at selected workplaces for women with young children.

Personally, I think that there are still not enough women in leadership positions. That is why I am pleased every time one of my female colleagues is promoted to a leadership position.

The world is full of strong and independent women who motivate us. In my opinion, being strong does not mean being flawless, unafraid, and without any self-doubt. I think it means being able to deal with and accept one's own shortcomings and being aware of one's own value and expectations of life.

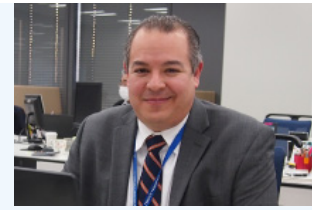
※ KSE: Kayaku Safety Systems Europe a.s.



Kayaku Safety Systems Europe a. s.
Jitka Simarova

Global exchanges

My name is Jorge Montes. After my involvement in setting up the plant of Kayaku Safety Systems de Mexico., S.A. de C.V. (KSM), I spent ten years on continual improvement activities with regards to quality and manufacturing. In June 2017, I took a position at Nippon Kayaku's head office as a member of the Global Quality Project team led by the Safety Systems Group's Quality Assurance Division, and then I later transferred to Himeji.



Jorge Montes, Safety Systems Group

Outside of work, my family and I have opened our hearts to the totally new world of Japan and its completely different living environment. We are learning Japanese as well as visiting various places, and our interactions with people's kindness along the way is an experience we cherish above all else.

I'm often asked, "What is your staple food? Can you buy it in Japan?" I always answer "Tortillas, and yes I can buy them in Japan."

In closing, we have the chance to make the Nippon Kayaku Group better on a daily basis. Let's be drivers behind change in each of our positions under the motto, "Everyone has a place in the driver's seat ※."

※ "Everyone has a place in the driver's seat": take the lead in taking action from the driver's seat(D-seat)

Expanding Programs for Gender Equality

The Nippon Kayaku Group is expanding in-house programs for gender equality and encouraging their utilization. In terms of our Next Generation Childcare Support measures, we have rolled out various programs that exceed legal requirements, beginning with our childcare leave program. While percentage of childcare leave use for female employees was 100%(26 employees), that for male employees was 59.5% (25employees) from April 1, 2018 to March 31, 2019.

Also, percentage of reinstatement after childcare leave was 100% for both male and female employees, we will seek to develop a workplace culture that encourages male employees to participate in childcare.

Special Paid Leave Program

The Special Paid Leave Program is a program whereby, in accordance with the Labor Standards Act, employees accrue special annual paid leave days that expire after two years and can use these days for such purposes as caring for a family member, acquiring training, volunteering, getting infertility treatments, or donating bone marrow. No complicated procedures are required to use this program, as employees simply have to apply by providing supporting proof for their activity. In addition, even after using the program once, employees can continue to accumulate paid leave to the maximum number of days for employees' convenience.

Also, starting this fiscal year, in response to childcare and nursing care needs, employees are now allowed to take half-day leave as part of nursing care leave for adults or children.

※1 Nursing care for a spouse, relative within the second degree, and uncles or aunts: employees permitted to take up to 10 days in half-day increments

※2 Nursing care for a child: employees permitted to take in half-day increments (up to 10 days)

●Special Paid Leave Program	
Applicable Uses	No. of Days Allowed
To receive treatment of an injury or illness that requires at least 4 consecutive days of care To receive outpatient services for rehabilitation or aftercare (within the stated period on the physician-issued medical certificate)	Up to 60 days
To provide nursing care to an immediate family member, aunt or uncle	60 days
To participate in a training program or volunteer activities	30 days
Leave in conjunction with the use of active points from the Nippon Kayaku Cafeteria Plan	5 days
To take leave in order to receive a vaccination or medical exam for a child of preschool age	5 days
To receive fertility treatments	60 days
To allocate additional days to childcare leave	10 days
To allocate additional days to leave for providing care to a sick child	10 days

Work-life Balance

Better Management of Employee Work Hours

With regards to compliance and mental health, the Nippon Kayaku Group strives to properly ascertain employee work hours and conditions, to take action where needed, and to manage working time properly by cooperation between employees and management. Additionally, from the perspective of enhancing work-life balance, starting last fiscal year we have reduced the total working hours by 7.5 hours and implemented work-style innovations to change the way employees think in an effort to increase productivity and create added value. We

will now look to further reduce overtime hours and increase the percentage of paid leave taken.

To increase the rate at which paid leave is taken, we have established the new anniversary paid leave system and taken other measures to encourage employees to use their paid leave days. To reduce overtime, we need to change our workplace culture and change the way employees think (work-style innovation). As a result, we are improving work-life balance along with aiming to increase operational productivity and create added value. Additionally, the Nippon Kayaku Group employs workers in various formats, including rehired seniors (senior partners), contract workers, and part-time workers. We are now working to develop various training and systems for these different formats in response to the growing diversity of our workforce.

● Work-life balance (Nippon Kayaku non-consolidated basis)						
	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019
Total working hours	1852.25	1852.25	1844.75	1844.75	1844.75	1844.75
Overtime hours *Average monthly hours per employee	12.8	12.4	12.3	12.8	13.3	12.7
Number of paid leave days taken	10.5	10.6	11.5	11.0	11.3	11.1
Ratio of paid leave days taken	55.1%	58.6%	62.7%	59.2%	61.1%	60.1%
Employees taking childcare leave (males)	1	0	4	4	17	25
Employees taking childcare leave (females)	17	20	27	26	20	26

On Taking Childcare Leave, "What I Realized By Stepping Away from Work and Concentrating on Childcare at Home"

We don't have any relatives nearby that we can ask for help, so in September 2017, I took a half-year of childcare leave so that I could relieve my wife, who was busy with our newborn second child, and help keep our first child (then three years old) happy. During this time, I was able to spend quality time with my wife watching our second child grow (and cry) on a daily basis, and our first child getting used to and growing up in a new and perplexing environment. These days with my family were even happier than ever before, and at the same time, made me realize how much work it is to spend 24 hours a day with children. In addition, I also realized that our older child has been supporting us as well, by doing his best at daycare and allowing the both of us to go to work. By allowing me to step away from my job and focus on childcare and housework, childcare leave has given me new insights and was a very valuable life experience for me.

Although I realize that my work colleagues were very inconvenienced by my absence, I deeply appreciate their support during my absence and warm acceptance upon my return.



Koji Mazaki, Planning & Coordination Division
Functional Chemicals Group

Taking Childcare Leave

I returned to work in July 2017 after taking childcare leave for the second time. I am currently working reduced hours so that I can drop off and pick off my children from daycare. This enables me to pursue my career seamlessly while still spending time with my children.

After giving birth, I was worried about whether I could continue working. However, during the course of my approximately one-year leave, my workplace contacted me to update me on the latest situation, which made the transition back to work smooth. The company offers a wide range of leave programs, so my husband was able to take a short child-care leave. It was really encouraging for us to be able to share the workload so to speak during the really difficult phase of childcare. I feel like the environment is gradually changing so that men, too, can take childcare leave. Sometimes I feel like I'm inconveniencing my workplace when I have to take a day off because my children aren't feeling well. I'm really grateful that everyone at work accepts this and kindly asks how my children are doing.

Since taking childcare leave and returning to work, I'm once again keenly aware that balancing work and childcare everyday with a smile is only possible with not only a wide range of leave programs, but also the understanding and support of people in the workplace and the support of family. I hope to grow as a member of society and as a mother, always remembering to appreciate those around me.



Hiromi Takimoto, Administration Department, Fukuyama plant

Development of Human Resource

Training Programs

Various training programs are provided to employees according to their jobs positions. These comprehensive training programs are conducted so as to develop the skilled workforce that will lead Nippon Kayaku in the next generation.



Training programs

Mandatory Programs

We offer training programs for new hires, after employees' first and third years at the company, and in their fifth year of service, and for mid-level employees in accordance with their job types and positions. We support our employees to make new steps forward to develop practical skills based on the changes of their roles and competences.

Voluntary Programs

A wide array of voluntary training programs is also available. These voluntary programs are tailored to specific employee characteristics and jobs. They facilitate self-improvement and boost the job-related problem-solving abilities and business skills of the employees.

Selective Program

A program providing special leadership and management training is also available for the next generation promising candidates who are recommended by the superiors.

	By level		By job type		Elective programs		
	University graduates	High school graduates	MR	Researchers & Engineers	Technical	Managerial	Global
Junior and mid-career employees	New employee orientation		Pharmaceuticals training Part 1 and 2	Introductory information research	Introductory information research		International business managers support
	Post first-year training		Follow-up	Introductory patents	Introductory patents		Introductory English
				Intermediate patents	Intermediate patents		Intermediate English
Leaders and managerial staff	Third year training	Post third-year training		Documentation	Documentation		Advanced patents
	Career presentation		Interpersonal skills MIR	Marketing	Marketing		Short-term study abroad
	Mid-career employees training		Cancer specialist MR training	R&D Training program	Logical communication		
	Networking with other industries		Training for new managers and group leaders		Problem solving methods		
	Self-improvement seminar		Training for managers and group leaders		Management simulations		
	Business leader development				Interpersonal skills		
	Newly appointed E-class employee training				Mandatory programs		
	Senior manager training				Elective programs		
				Medical Representatives Training & Education Dept.			

Passing down Technologies from Veteran Senior Employees to Junior Employees Initiatives of Fukuyama Plant

The Fukuyama Plant is manufacturing of functional materials and pigment materials. As of October 2014, some 70% of its workforce was under the age of 40, and when many of its core employees reach retirement age five years from now the company's employees in their 20s and 30s will need to take the reins and drive the company forward. For this reason, Fukuyama Plant faced the urgent task of passing down its technologies and establishing a solid foundation of knowledge among its young employees before its veteran senior employees reached retirement.

To overcome this issue, the Fukuyama Plant worked on developing a new training program that would allow younger employees to obtain a comprehensive overview of the plant's functions. This in-depth three-year program consists of 49 curriculums and administered to employees based on their career stage. The company set up an effective organizational structure for this program involving the entire plant by establishing a cross-functional working group to come up with the curriculum and instructors.

The program was launched in 2014. Section heads, team leaders and other mid career employees headed up efforts to create the curriculum so that newly hired employees can learn a



Workshop about the basics of cost price as well as profit and loss



Members of the training system development team at the Fukuyama Plant

broad range of skills over a period of time. Through this training, the plant's vertical threads and horizontal threads are able to mesh, creating a sense of solidarity that transcends age. The program is now being implemented under a new three-year plan established for fiscal 2017 and beyond. The know-how gained from the program will be shared with other business sites as a way to develop the human resources who will underpin the Nippon Kayaku Group in the future.

Himeji Plant Nurturing Young Employees and Improving Quality at the Himeji Plant

The Himeji Plant is the domestic production site and the parent plant for our overseas sites for automotive safety components handled by the Safety Systems Group. This plant continues to grow as our global business expands, so that it now has most employees of any of Nippon Kayaku's domestic plants.

Because of this, the number of young employees at the plant has been increasing rapidly due to new hires, and training them is a key issue. We therefore designed a systematic educational program geared toward young employees, launching it in fiscal 2019. This program seeks to upgrade employees' skills so that we can improve the quality of our products and our operations. This program develops human resources in tandem with our product quality education for mid-level employees, which was launched in fiscal 2018.

The program offers not just classroom learning but practical learning as well. Examples include education on the effectiveness of Kanban production that mimics the manufacture of toy blocks and sessions that teach employees the proper way to handle explosives using actual products, as the Himeji Plant handles dangerous explosives. The program is reevaluated every year, so we plan to make more enhancements next year.



An educational program at the Himeji Plant

Kayaku Safety Systems de Mexico, S.A. de C.V. (KSM) COE 3rd Generation* (Change from Operator to Employee)

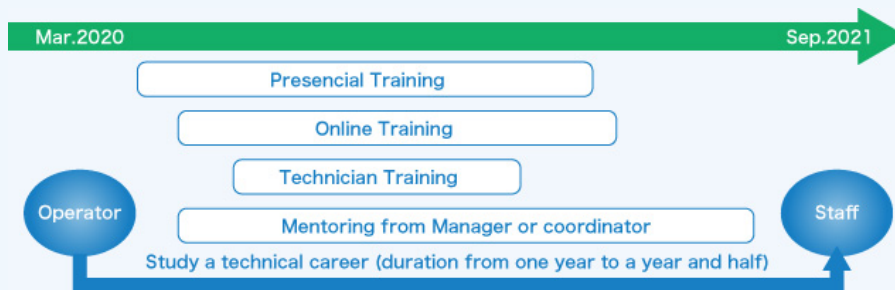
In KSM we have different programs for development of our collaborators, COE is a program that involves training operator level employees to become supervisors.

We already finished the 2nd generation program and had a graduation ceremony on September 2019 with the 4 collaborators that accomplished the program with good performances.

Now we are on the beginning of the 3rd Generation with 11 collaborators. The program has the same topics of leadership skills like teamwork and problem solving, but we also include technical topics and mentoring in order to improve the program.



- * COE 3rd Generation Program participants
- COE: change from operator to employee
- Operator (day worker; format of employment in Mexico)
- Employee (monthly worker; format of employment in Mexico)



General Business Operator Action Program under the Act for Measures to Support the Development of the Next Generation

We submitted our Action Plan for Measures to support the Development of the Next Generation action plan (from April 1, 2018 to March 31, 2020) to the Tokyo Labor Bureau for approval on April 1, 2018. We will now work to obtain Platinum Kurumin certification as quickly as possible.



Kurumin logo

Encouraging and Rewarding the Creation of Intellectual Property

Encouraging the Creation of Intellectual Property

Nippon Kayaku develops its businesses and contributes to society by producing useful products through the creation and utilization of intellectual properties. To encourage the creation of intellectual properties, we have established several programs to reward employee inventions, with both monetary awards and commendations presented annually.



■ 1. Performance Award Program and Invention Award Program

Our performance award program provides remuneration to employee patents that have contributed to sales. This program was initiated under the company's rule on the handling of employee inventions first prepared in 1963. This rule was created based on the provision of Japan's Patent Act and hence has been changed over the years with each modification to this law.

Researchers receive a certain percentage of the sales and licensing fees for each business year and retired employees, too, are eligible for such payments.

Employees responsible for inventions or patents that contribute particularly to society and sales are eligible to receive a lump sum payment, which incentivizes the creation of intellectual properties.



■ 2. Early Performance Contributions

Even for patents pending, if an invention has already made contributions to the performance of the Nippon Kayaku Group, the employee can receive remuneration known as an early performance contribution. This particular program was initiated in 2005 to properly recognize product inventions with a comparatively shorter lifecycle. This program serves to complement the previously mentioned Performance Award Program, and the fact that employees are eligible to receive payments based on sales for patents not yet registered makes for a very advanced program in the corporate world.

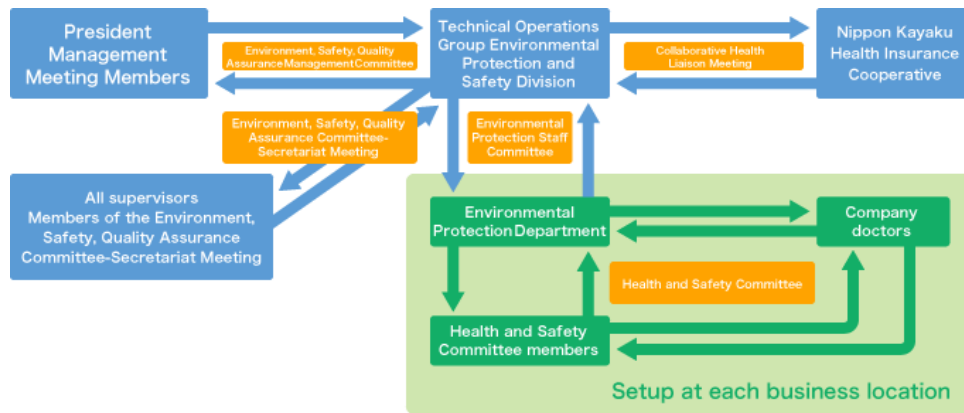
■ 3. In-house Commendation for Excellent Technologies

At the Company-wide Research Presentation Conference held every year in July, a commendation ceremony is held for employee inventions that have been patented or are patent pending during which time talented inventors are presented with monetary prizes and awards. These awards include the R&D Director's Award, presented at the recommendation of each laboratory head, Patent Pending Award, for inventors with many patents pending, and the Best Invention Award, recognizing highly advanced technological innovations. Recipients of the Best Invention Award are asked to present a lecture.

Promoting Health Management

The Nippon Kayaku Group reviewed its Declaration on Environment, Health and Safety, and Quality in 2017 and as a result, decided to add an item on health. Employee health is an essential element in any company's prosperity and helps to enhance stakeholder satisfaction at the same time. For this reason, we are implementing various activities for not only preventing exposure to chemical substances handled during work, but also aimed at mental health care and reducing lifestyle diseases.

Health management system



Promotion of Health and Productivity Management

All employees of the Nippon Kayaku Group receive regular health exams, which form the basis for the health and productivity management. After undergoing an exam, employees meet with an industrial physician to receive advice and guidance on how to manage their health.

In addition, employees who handle designated chemical substances receive special health exams. Furthermore, we have created a database of hazardous chemical substances handled in the workplace, which is utilized to help prevent occupational diseases. Each workplace implements a THP[※] for building mental and physical health in order to maintain and improve employee health. The goal is to encourage employees to review their lifestyle habits and promote continuous and systematic health improvement from a young age to ensure a healthier lifestyle. Specifically, physical fitness measurement, health management contests, walk rallies, hiking and other programs are being organized.

In March 2020, Nippon Kayaku was recognized for its efforts to improve the health of its employees, and was certified as a "Corporate Excellence Program 2020 for Health and Productivity Management" by a large company.

※ Total Health Promotion Plan (THP) is a program that utilizes that P-D-C-A cycle involving "health promotion plan," "health assessment," "health advice," "practical activities" and "improving lifestyle habit and invigorating the workplace."

Acquired certification of "Corporate Excellence Program 2020 on Health and Productivity Management" for large-scale corporate division

Nippon Kayaku is recognized as a "company that considers employee health management from a management perspective and is making strategic efforts", and has been certified as a large-scale corporate division in the Health and Productivity Management Excellence Company Certification Program 2020.



The company has traditionally offered many programs to maintain and promote employees' health, including stress checks, training sessions on mental health, and maintaining 100% participation in health exams.

For this recognition, the Company was evaluated for its health promotion programs, including how it determines which initiatives to take, its initiatives for improving the results of health examinations, measures dealing with passive smoking, and health promotion events for all employees. In particular, our initiatives to improve the results of health exams include having everyone with a diagnosis consult with an industrial physician, and the Health and Safety Committee is getting advice from industrial physicians on how to link health improvements with items for which diagnosis ratios are high.

We believe that promoting employees' health is indispensable to the company's prosperity and to increasing our stakeholders' satisfaction, and we will remain proactive about health management going forward.

※ Corporate Excellence Program 2020 on Health and Productivity Management for large-scale corporate division : A nickname that refers to a certified corporation in the large-scale corporate sector for large-scale corporations and medical corporations among the "health management excellent corporations" established by METI in 2016.

Mental Health Initiatives

To balance improvements in operational productivity with the creation of added value, employees need to have workplaces where they can thrive and also be in good mental and physical health.

The President of Nippon Kayaku issued a Mental Health Declaration in 2005 and since then we have provided thorough guidance to managers on the subject. Mental health care requires that all employees have the correct knowledge and understanding to ensure they can prevent or detect mental health issues at an early stage. We focus the greatest efforts on mental health issue prevention. As a concrete example, we invited a speaker from our contract EAP* to lead a mental health care training program mandatory for all employees to take part in at least once that was set up on five occasions – in fiscal 2005, between fiscal 2006 and 2008, between fiscal 2009 and 2011, between fiscal 2012 and 2014 and between fiscal 2015 and 2017. And we formulated a new three-year plan in fiscal 2018 and all employees are currently undergoing necessary training. In addition, with regard to obligations under the "Stress Check System" of the Occupational Safety and Health Act implemented on December 1, 2015, we already established the "Stress Check System", which is scheduled to once every year for all the employees.

* EAP is an acronym for Employee Assistance Program.

Health Improvement Initiatives at Business Sites

■ Responses at Business Sites without a Statutory Industrial Physician

Nippon Kayaku employee working at branches and business offices not required to appoint an industrial physician* were unable to receive follow-up by an industrial physician after undergoing statutory health exams or adult disease exams of the KAYAKU Health Insurance Association administered at the main business hub for each region. As a result, in fiscal 2013, after examining how to provide follow-up at branches and business offices without an appointed industrial physician, we decided to dispatch the industrial physician of the head office to meet with these employees directly. Starting from fiscal 2014, the head office's industrial physician began annual visits to branches and business offices nationwide, from Sapporo in the North to Fukuoka in the south. The industrial physician reviewed the results of health exams before visiting and then selected certain employees for follow-up interviews. These employees meet with the industrial physician at a nearby location or by telephone conference. Because one year was spent covering all of Japan, on some occasions the health exam results of the previous year were used as a basis for interviews, instead of the results of the health exam taken in the same fiscal year of the visit. As a result, we determined an annual itinerary for industrial physician interviews and adjusted the timing of health exams accordingly to ensure that interviews are based on the latest health exam results.

* Branches and business offices not required to appoint an industrial physician: Business sites that employ less than 50 workers are not required to appoint an industrial physician as per the provisions of Article 13 of the Industrial Safety and Health Act and Article 5 of the Order for Enforcement of the Industrial Safety and Health Act.



Kayaku Safety Systems de Mexco, S.A. de C.V.(KSM*)

Bájale 1 kilo menos: Weight Loss Program

KSM started the program "Bájale 1 kilo menos" in 2014, due to the "Chécate, Mídete, Muévete" campaign promoted by the Mexican Social Security Institute, which promoted physical activity and balanced nutrition to avoid overweight, obesity and other health problems.

The "Bájale 1 kilo menos" program promotes a healthier lifestyle in eating. The 11th edition was held during 2019, with the proposal to improve the lifestyle of our collaborators. The objective is to change eating habits according to the physiological and metabolic state of each, in order to lead a healthier and healthier life.



"1 Kilo Menos" Program	2017		2018	2019
	8th Feb - Jun	9th Aug - Nov	10th Feb - Jun	11th Feb - Jun
Target weight (kg)	629.4	573.4	678.5	573.8
Number of participants (persons)	100	91	91	63
Participation rate (%)	25%	22%	22%	15%
Number achieving target (persons)	7	12	10	12
Participant achievement rate (%)	7%	13%	11%	19%

"1 Kilo Menos" Program	2017		2018	2019
	8th Feb – Jun	9th Aug – Nov	10th Feb – Jun	11th Feb – Jun
Total weight loss (kg)	141.2	98.3	115.0	103.7
Total waist loss (cm)	497.75	89.10	545.30	256.4

※ KSM : based on Mexico, supply of the automotive and automotive components

Click to show the other activities

- Kayaku Safety Systems de Mexico. S.A. de C.V.
Opening of Futsal Court
- KAYAKU CHEMICAL (WUXI) CO., LTD. (KCW) Health Checkup Seminar

Initiatives for Health and Safety

The Nippon Kayaku Group is committed to promoting initiatives for occupational health and safety aimed at completely eliminating accidents and injuries in the workplace. This includes developing a system for safety training, implementing safety training on a company-wide scale, preventing accidents and injuries before they happen, and conducting health promotion programs.

Safety Performance (targets and results)

The Nippon Kayaku Group has set targets for safety performance based on the following categories: serious accidents and injuries, serious environmental incidents, lost worktime accidents, non-lost worktime accidents, motor vehicle accidents, and non-injury related accidents. With regard to motor vehicle accidents, starting in fiscal 2016, we have subdivided this category further into the following sub-categories: serious accidents, personal injuries, property damage, and self inflicted injuries for incidents counted with a separate target per subcategory, in order to analyze incidents and facilitate preventive measures.

1. Safety Performance (results)

The safety performance of Nippon Kayaku business sites as well as all group companies inside and outside Japan during fiscal 2019 is presented below.

Fiscal 2019 Safety Targets and Performance

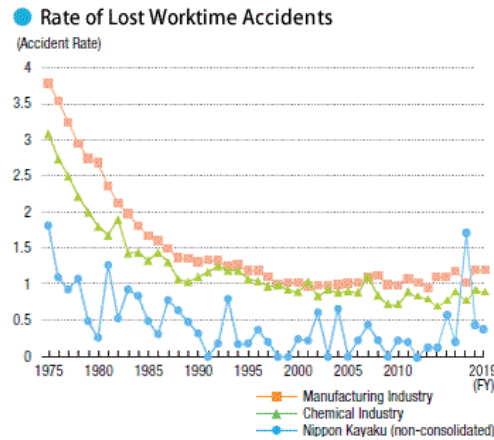
Items	Actual	Group companies
Major Injury / Accidents	0	0
Serious environmental accidents	0	0
Lost worktime accidents	2 cases	0
Accidents not accompanied by lost worktime	3 cases	1 cases
Non-injury related accidents	0	0
Work-related automobile collisions ²	Serious accidents	0
	Personal injuries	3 cases
	Property damage	14cases
	Self inflicted	17cases

※1 Frequency rate of lost worktime accidents: It expressed in terms of numbers of deaths of injuries in industrial accidents per 1 million work-hours in the aggregate.

※2 Work and commute-related automobile collisions: Only applicable to MRs using company-owned vehicles belonging to the Pharmaceuticals Group.

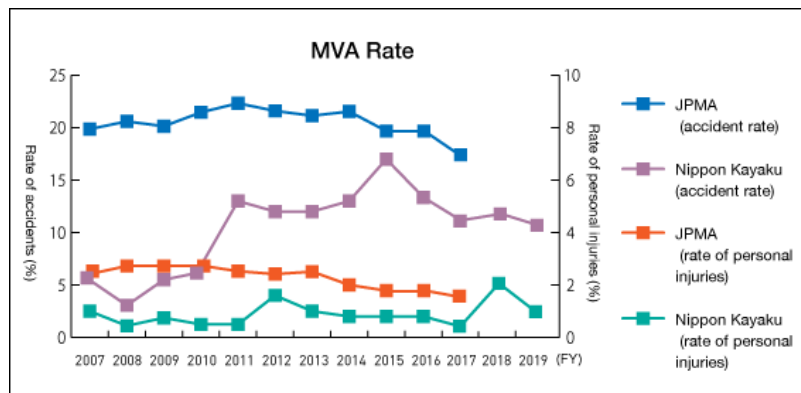
2. Graph Comparison of frequency rate of Lost Worktime Accidents

The lost-time accident frequency rate in FY2017 was much higher than those in the manufacturing and chemical industries. Therefore, when we surveyed industrial accidents in FY2017, we found that most of the industrial accidents were caused by non-regular work. Therefore, from fiscal 2018, in order to prevent accidents due to non-regular work, we have included 30-second inspections and fixed-point observations in safety activities to identify unsafe behavior. In FY2018, the accident rate for lost-worktime accident declined, and it has remained low in FY 2019.



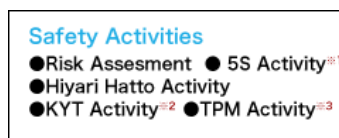
3. Efforts to Prevent MVA

While the rate of motor vehicle accidents at the Nippon Kayaku Group is lower than that of the Japan Pharmaceutical Manufacturers Association, our rate has remained somewhat elevated since fiscal 2011. Starting in fiscal 2016, we have added seminars at corresponding driving training centers as a new measure against motor vehicle accidents. Going forward, we aim to further reduce motor vehicle accidents.



Health and Safety Activities at Each Business Site

We define the health and safety policy and targets, and we are undertaking a wide range of health and safety activities at our business sites.



※1 5S Activity: An acronym of five Japanese words phonetically starting with the letter "S".

※2 Kiken Yochi Training (KYT): Danger Prediction Training.

※3 Total Productive Maintenance (TPM): Activities that maintain equipment and facilities in good working order to ensure safety and maintain productivity.

1. Conducting Safety Assessments (Risk assessment, understanding potential risk factors)

Each of our business sites performs safety reviews for new processes and facilities and whenever changes are made to existing processes and facilities. And we implements "Risk Assessments" in order to prevent business sites accidents, injuries, environmental accidents, complaints and quality issues. Risk factors in chemical reactions are analyzed primarily based on HAZOP.※

※ HAZOP: Hazard and Operability Study. A safety evaluation methodology used at chemical plants. Potential hazards associated with chemical reactions can be comprehensively extracted for evaluation.

■ 2. Elimination of Shortcuts and Omissions

Accidents that have occurred within the Nippon Kayaku Group in recent years have tended to result from shortcuts or omissions. As a result, the Nippon Kayaku Group is working to share safety awareness across different workplaces by distributing work flow checklists to help eliminate shortcuts or omissions, having employees issue a safety declaration to prevent shortcuts and omissions, as well as displaying this safety declaration clearly in each workplace.

■ 3. Traffic Safety Initiatives

Many Nippon Kayaku Group employees drive a car as part of their work duties or to commute to work. We perform safe driving reviews using a camera-equipped drive recorder ※¹. And using the driving aptitude test approved by the National Police Agency ※². From now on, we will further strengthen the education of new employees in practical skills and engage in reducing traffic accidents.

※¹ Camera-equipped drive recorder: A recorder that can analyze bad driving habits, such as sudden acceleration, sudden braking, and sudden turns using sensors for front/back and right/left acceleration, gyrocompass and GPS system.

※² Driving aptitude test approved by the National Police Agency: An exam that measures the aptitude of driving based on seven written questions covering 11 topics, including decision making skills, ability to prevent collisions, and mental stability test.

■ 4. Deployment of AEDs

Driving aptitude test approved by the National Police Agency: A driving aptitude test that measures driving ability based on responses to seven questions covering 11 items including situational awareness, collision prevention ability, and mental stability, among others.



AED training

■ 5. Fire Response

Each business location is equipped with a fire truck, fire hydrant, and fire extinguisher for chemical substances in preparation for potential fire hazards. In addition to holding onsite training, employees also participate in local fire fighting competitions at which they have achieved strong results.

[> Related Articles](#)



Firefighting training

■ 6. Natural Disaster Response

As a precaution for earthquakes and other natural disasters at each business sites, we have compiled the Employee's Handbook of Disaster (Earthquake) Prevention and distribute it to each and every employee. This handbook contains instructions on emergency response when an earthquake occurs, how to make contact and confirm one's safety, and alternative methods to reach home when public transportation is unavailable.

Employee safety during a disaster is monitored by a safety reporting and communication system that uses email. As an earthquake strikes, the disaster response headquarters will send out an instruction by email to all employees. Employees can reply to the email by a simple touch of a button, which allows data to be collected. This system will be used to confirm employee safety during an earthquake of a seismic intensity of 6 or higher in Japan.

Kowa Sangyo Kowa Sangyo wins the Jury's Special Award of the 14th Japan Chemical Industry Association RC (Responsible Care) Award

Kowa Sangyo ※ has been implementing various health and safety initiatives to protect its employees' health and safety. The company was awarded this prize for its comprehensive initiatives to build a safety culture by (1) making 12 Esperanza hands-on educational training devices on its own and using them to build an educational training system, (2) promoting



effective risk reduction on its shop floor by coming up with ways to analyze near-miss accidents, and (3) implementing a Health Improvement Project that aims to improve employees' health maintenance with the motto, "If you're not healthy, you're not safe." Since fiscal 2018, Kowa Sangyo has reported no accidents or disasters, and going forward, the company plans to further enhance its safety culture in line with its position as a member of the Nippon Kayaku Group

※ Kowa Sangyo is a group company involved in businesses related to the Asa Plant

Using training equipment to renew awareness of the seriousness of accidents and the importance of safety operations



View of a walking event, which is part of our Health Promotion Project

Kashima Plant Improving Operator Skills through the Forklift Certification Program

There was a time when there were frequent occurrences of near misses involving forklifts at the Kashima Plant. The following initiatives were undertaken in an effort to prevent accidents before they happened with the goal of improving the skills of forklift operators.



(1) Initiatives for improving skills

All forklift operators were required to take a practical skills short course led by an outside instructor covering the basics of forklift operations and approaches to operator skills and educational guidelines.

(2) Introduction of operator certification program

Only those who passed the certification exam are allowed to operate forklifts (certification lasts for six months).

(3) Environmental improvements

A permanent training course was set up so that operators can practice and take practical exams at any time.

(4) Analysis of driver techniques

An omnidirectional driving recorder was installed on all forklifts to analyze operator conditions and habits using video footage.

These initiatives have helped to drastically reduce the number of near misses involving forklifts. The Kashima Plant will continue to use this certification program in order to prevent accidents before they occur.

Kowa Sangyo We are promoting safety experience education using Esperanza (safety experience equipment).

Kowa Sangyo mainly carries out contract manufacturing work for Nippon Kayaku's Asa Plant. Kowa Sangyo conducts interactive safety training using equipment they have fabricated to provide employees with a greater sense of the importance of safety in accordance with its policy of placing safety as a top priority.

This equipment was given the name Esperanza (or hope in Spanish) because this was the same name given to the child born to a worker who was buried alive with 33 others in the 2010 Copiapó mining accident in Chile only to be rescued 69 days later miraculously along with all the missing workers.

The manufacturing floor involves work that carries with it an element of danger. Therefore, Kowa Sangyo is always heightening its awareness of safety, learning from past accidents and near misses, including through safety training. As part of these efforts, Kowa Sangyo uses Esperanza to simulate actual dangers to enable its employees to experience the scariness of accidents and reaffirm the importance of working safely. At the same time, interactive safety training enables employees to learn the correct usage of tools and the basics about equipment and component names, which helps to prevent accidents before they happen and to train employees about how to respond to accidents if they do occur.

All safety training equipment was created in-house. Also, the safety experience room makes use of an idle room, which was renovated, repainted and installed with unused work tables and equipment, making this learning lab completely homemade from reused equipment.

Learning with these interactive safety equipment helps to reaffirm dangers on the manufacturing floor, educating not only new employees, but veteran employees, too. Currently, Kowa Sangyo has nine kinds of equipment, which are also used by other workplaces for safety training. Kowa Sangyo will continue to further enhance these offerings so as to aid the safe operations of the Nippon Kayaku Group and train employees who are well versed in safety knowledge.



Click to show the other activities

Polatechno Interactive Training on Getting Caught in Machinery

Kayaku Safety Systems (Huzhou) Co., Ltd. (KSH) Introduction of ISO 14001 and OHSAS 18001 Systems

WUXI POLATECHNO OPTICS CO., LTD. (WPLC) Introduction of OHSAS 18001 System

Kayaku Safety Systems Europe a.s. (KSE)

Labor Union/Management-Labor Relations

On June 1, 1998, Nippon Kayaku Co., Ltd. and the Nippon Kayaku labor union entered into a labor agreement "based on good faith and trust, in order to acknowledge the social significance and responsibilities of industry and labor, to mutually respect the each other's rights based on the spirit of the labor laws, and to establish stable and peaceful relations between management and labor." Since then, this agreement has been renewed six times in accordance with its purpose, so that today we maintain sound relations based on mutual trust between management and labor. Because the Company has a union shop system, with the exception of certain managerial and contract employees, union participation is 100%.

The Company and the union engage in active discussions, and the Company's policy regarding these discussions is to be candid while disclosing as much information as possible. Also, the Central-Management-Labor Liaison Committee meets three times a year, at which the executive team communicates the Company's management policies as soon as the annual business plan, mid-term business plan, and health and safety policy are firmed up. A central management roundtable is held monthly to deepen mutual understanding, to share information about the status of the Company, and to discuss how to solve problems. Also, we are making efforts to promptly communicate the outcome of these management-labor discussions to employees throughout the Company.

At the same time, with respect to issues faced by individual offices, we hold monthly business site management roundtables to obtain a shared recognition through discussions and opinion exchanges and to bring about a labor environment where it is easy to work.

Environment, Health and Safety (Integrated) Review with The labor union of Nippon Kayaku

The Environment, Health and Safety Review is conducted together with the Quality Review in an integrated review of Nippon Kayaku's business sites and certain Group companies based on the annual plan. This review process also involves the labor union of Nippon Kayaku.

During the review, the progress of the environment, health and safety policy and plan of the business sites and Group companies being reviewed is checked and results of activities are identified through meetings, documents and onsite audits. The labor union is also given the opportunity to point out issues, as part of efforts to increase the level of safety and health at the company-wide level.



Safety and Health Initiatives with the Labor Union

The Nippon Kayaku labor union puts safety at the top of its action policy and offers an annual health and safety training, titled the "Level-Up Seminar (Health & Safety)," which is co-hosted by the Company and attended by employees from every local branch. The fiscal 2018 training lasted two days and was attended by 24 employees.

On day one, participants took part in outside training using interactive safety training equipment to experience actual dangers first hand, including why getting caught in machinery or pocket hands (walking with both hands in pockets) are dangerous and what is dangerous about them.

On day two, members of the Environmental Protection & Safety Division led a lecture entitled, "About learning safety measures from past accidents of Nippon Kayaku, and learning to implement KYT and pointing-and-calling." Also, the labor union held a lecture called "What is a Health and Safety Committee?" which covered the initiatives being undertaken by health and safety committees at each business site in compliance with laws.

Participants then learned by comparing these with the activities of their own health and safety committees. Furthermore, training participants were asked to identify positives and negatives related to the health and safety activities of each branch (business site)



that were then used as part of a group discussion on sharing information about health and safety and how to improve the issues faced by participants' own business sites. This process greatly enhanced awareness of health and safety in the workplace.

Human Resources Data

[-] is unpublished, Blank is not counted

	2017			2018			2019			Unit
	Total	Males	Females	Total	Males	Females	Total	Males	Females	
Number Of Permanent employees (consolidated)	5,684			5,814			5,769			Persons
Percentage of permanent employees (consolidated)										%
Number of permanent employees (Japan)	1,845	—	—	2,079	—	—	2,053	1,730	323	Persons
Number of permanent employees (consolidated)										Persons
Number of contract employees (consolidated)	—	—	—	—	—	—				Persons
Percentage of contract employees (consolidated)										%
Number of contract employees (Japan)	594	418	176	642	437	205	662	450	212	Persons
Number of contract employees (consolidated)										Persons
Employment rate of persons with disabilities (annual average)	2.08			1.82			1.97			%
Rehiring rate of retired employees	60.97	61.52 (*)	100.00	62.74	58.69 (*)	100.00	70.58	68.75 (*)	100.00	%
Employee turnover rate	1.8	1.9	1.5	2.18	2.14	2.42	1.75	1.5	3.09	%
Average age of employees	40.63	40.47	41.39	40.29	40.03	41.67	41.04	39.75	42.33	Age
Average length of service	15.07	14.97	15.53	14.65	14.45	15.68	15.2	14.19	16.21	Years
Number of employees who are new graduates	56	51	5	64	60	4	57	49	8	Persons

	2017			2018			2019			Unit
	Total	Males	Females	Total	Males	Females	Total	Males	Females	
Number of managerial employees (Japan)	471	438	33	494	456	38	499	457	42	Persons
Number of managerial employees (consolidated)										Persons
Percentage of available annual leave taken	59.2	55.7	75.3	61.1	56.7	81.6	60.1	56.8	75.9	%
Percentage of available childcare leave taken		9.3	100		39.5	100		59.5	100	%
Number of employees taking childcare leave	31	4	27	37	17	20	51	25	26	Persons
Return/retention rate for pregnancy and childcare leave	100	100	100	100	100	100	100	100	100	%
Use of nursing-care leave system	0	0	0	1	0	1	0	0	0	Persons
Use of shortened work hours system for childcare	24	1	23	28	2	26	33	2	31	Persons
Health check-up rate	100	100	100	100	100	100	100	100	100	%
		Manufacturing industry average (2017)		Manufacturing industry average (2018)		Manufacturing industry average (2019)				
Workplace accident frequency rate	1.74	1.02	0.43	1.2	0.44	1.2				Frequency rate
Workplace accident severity rate	0.085	0.08	0.012	0.1	0.034	0.1				Severity rate
Number of union member	1,753			1,762			1,871			Persons
	University degree	High school degree		University degree	High school degree		University degree	High school degree		
Starting salary	225,000	173,200		226,000	174,200		226,000	174,200		Yen

※ The re-employment rate for retirees desiring re-employment has reached 100%



With Our Customers

The Nippon Kayaku Group conducts company-wide quality activities under its quality system in order to supply the best products to customers. We are mindful that product quality improvements, safety and reliability, as well as the provision of technical services and information are paramount to improving customer satisfaction.

Quality Initiatives

The Nippon Kayaku Group has established a basic policy called The Declaration on Environment, Health and Safety, and Quality and has built a quality management system to continually deliver the best products that satisfy customers. We deploy various initiatives for quality across the entire company and work on quality assurance and quality improvement activities to increase customer satisfaction.

The Declaration on Environment, Health and Safety, and Quality

The Nippon Kayaku Group, under the spirit of its CSR philosophy and Responsible Care, has formulated The Declaration on Environment, Health and Safety, and Quality, in order to maintain and enhance its environmental protection, health and safety and quality assurance practices. We are also implementing this declaration using organized activities.

The Declaration on Environment, Health and Safety, and Quality

Enacted November 7, 1995
Amended May 22, 2017

The Nippon Kayaku Group, under its corporate motto of "KAYAKU spirit", which calls for continuously providing society with the best products through ceaseless progress and the combined forces of our consciences, we will contribute to the realization of a sustainable society that safeguards the life and health of consumers, and supports a comfortable life.

Fundamental Policies

1. We will strive to maintain and improve the environment, people's health and safety across the entire product lifecycle, from R&D to production, distribution, sales, recycling, and disposal.
2. We will strive to conserve the environment by introducing and developing technologies that are useful toward reducing waste, carrying out the appropriate disposal of waste, conserving resources, conserving energy, and implementing global warming prevention measures.
3. We will actively provide business partners with information needed for the safe usage and handling of our products and for conserving the environment.
4. We will enhance the quality of not only products, but operating processes as well, and also work to enhance customer satisfaction.
5. We will heighten employee knowledge and skills through education and training and achieve our goal of zero pollution, zero injuries, zero accidents and enhanced quality.
6. We will disclose information so that stakeholders correctly understand our business activities and also strive to engage in dialogue with local communities and government authorities.

June 25, 2019

President & Representative Director
Nippon Kayaku Co., Ltd.

Quality Assurance System

Quality assurance at the Nippon Kayaku Group is carried out through a control system headed by the Environment, Safety, and Quality Assurance Management Committee, which is chaired by Nippon Kayaku's President.

This committee deliberates and makes decisions on problems and countermeasures regarding the quality assurance policy and quality activity status.

Furthermore, each business division has established a quality assurance department, which is the cornerstone of quality assurance for each business, and has strengthened the quality assurance system.

Quality Assurance and Quality Improvement Activities

The Quality Management Division of the Technical Operations Group heads up the Nippon Kayaku Group's quality assurance and quality improvement activities.

As a quality improvement activity, we are enhancing quality education by promoting in-house training for managers and practitioners of quality risk management and attending external quality training, and carry out various training to enhance and reinforce quality control skills in order to stabilize quality. To verify that the Nippon Kayaku Group's quality management system is operating effectively, we conduct quality assessments of business sites in Japan and group companies, including those outside Japan.



The "Field Data Analysis - Enjoying Learning Through Experiences" workshop in progress. Participants logically discuss complex cause-and-effect relationships at their desk and then carry out experiments to test out their theories.

Quality Assurance and Quality Improvement Activities at each business site

Each business site of the Nippon Kayaku Group deploys various types of quality assurance activities. Also, we are building a database of quality process mishaps so that it can be shared horizontally at other business sites as well.

Quality assurance activities

- Quality patrols
- Trend management (visualization)
- Activities to prevent reoccurrences of quality troubles (why-why analysis, etc.)
- Reinforcement of quality management technologies

Quality improvement activities

- Quality risk assessments
- Improvement of design and development capabilities
- Statistical analysis method ("Field Data Analysis - Learning Through Experience")
- Activities to prevent reoccurrences of quality troubles (why-why analysis, etc.)

Quality Risk Assessments

Whenever changes are made to production process, such as the installation of a new machine that will take the place of a new worker, for example, (whenever so-called 4M changes are made), we conduct a quality risk assessment to prevent quality troubles before they occur. The 4M change is associated with the four acronyms M: "Man", "Machine", "Material", and "Method".

The educational activities for the quality assurance and the quality improvement

As the educational activities for the quality assurance, We offer "Field Data Analysis - Learning Through Experience" program geared toward researchers and developers and plant employees for practical training on statistical analysis methods, send employees to take part in outside quality training, and provide outreach teaching at plants as part of internal auditor training. Here, we will take a look at measures to reduce customer complaints and curb quality process failures.

At each of our plants, we utilize quality control methods such as management diagrams as well as carry out quality patrols and QYT activities (quality hazard detection training), as part of our daily quality control activities.

Activities to prevent recurrence of customer complaints and quality process abnormalities

For customer complaints and quality process failures we encourage the use of why-why analysis by the workplace using Nippon Kayaku's why-why analysis manual in order to reinforce preventive measures. In addition, we have published English and Chinese versions of this manual, and are conducting "5-Whys Analysis" for overseas Group companies of Nippon Kayaku.

Published the "5-Whys Analysis" manual of Nippon Kayaku Group

The Quality Management Promotion Department analyzed that there were many similar cases when analyzing quality abnormalities that occurred in the past, so we analyzed that there is insufficient ability to investigate what is at the root of the cause. Therefore, we have introduced the "5-Whys Analysis" with the aim of accurately understanding the relationship between the cause and effect, identifying the underlying "root cause", and preventing the recurrence of similar cases. We also gather members from each factory to create a "5-Whys Analysis" manual. In addition to the Japanese and Chinese versions created so far, we have added an English version to this manual.



Quality Improvement Promotion Activities

Nippon Kayaku's initiatives for improving quality began with the voluntary introduction of statistical approaches to QC* activities by plant engineers in 1948.

After receiving the Deming Prize in 1963, Nippon Kayaku organized its very first In-house QC Circle Conference in 1966 as a venue to present the results of its QC activities. Since then, we have expanded the scope of these activities into "Small Group Activity Meetings" open for all employees, with this name later changed to the "Meeting of the Movement for Tomorrow." The scope of these activities has expanded from quality improvement to operational reform, cost reductions, 5S activities, next-generation development, energy conservation, health and safety improvement, and environmental conservation.

Starting in 2014, these small group activities were revamped exclusively for Nippon Kayaku with a focus not only on improvement, but also on human resources development and CSR activities.

Global Quality Control and Human Resources Development within the Safety Systems Group

The safety systems group supplies automotive safety components to customers around the world. This requires that it provide and guarantee the same standard of quality. The group has production facilities worldwide and so the Himeji mother plant has implemented the Robust design* resilient in the face of numerous variations given the requirements of differing production sites in terms of culture, language and technologies. This approach has enabled it to provide the same level of quality worldwide.

At its global production sites, locally hired managers and line workers are selected to take part in extended trainings at the mother plant to obtain essential knowledge and skills. After completing their training, they return to their workplaces and serve as instructors to pass on their knowledge and skills to others.



Technical interns from Malaysia and members of the Himeji Plant's Quality Assurance Department

* Robust design: A design in which product performance and quality does not vary and is not affected by interference or measurement errors.

Aiming to Create Products that Satisfy Customers

The Nippon Kayaku Group is undertaking various research and development for new products and services in order to supply products that support the enriched and healthy lifestyle of its customers.

Head-up display related products for automobiles (under development)

Nippon Kayaku is developing products that can contribute to the safe driving support systems. Head-up displays, which display information on the windshield or clear screen of cars, allow the driver to access information without averting their line of sight. These displays are anticipated to become more popular going forward in place of conventional car navigation systems.

However, as windshields are made up of two plates of glass, there is the issue with head-up displays showing double images if simply projecting an image onto the glasses, while the display is difficult to see when wearing polarized sunglasses.

To address this issue, we developed a new product called Freelux[®] HUF^{*} using our proprietary optical design expertise.

Freelux[®] HUF is a breakthrough film that eliminates double image of a projected image as well as allows images to show up vividly to the eyes even when wearing polarizing sunglasses by inserting this film between the two plates of glass of a windshield. This was exhibited as a conceptual sample at the 2017 Highly-functional FILM EXPO, which attracted many visitors who were able to experience its effects. Currently, we are working on development aimed at commercialization.

Together with our group companies, we will continue to propose new products with features that will contribute to the "Environment, Energy Conservation, and Safety."

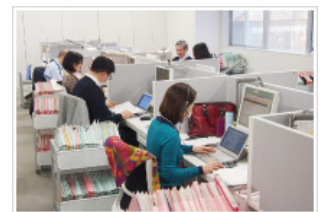
^{*} [Freelux[®] HUF] Light control film for head-up displays.



HUD using Freelux[®] HUF

Medical Information Service Center and Securing Customer Trust

The Medical Information Service Center receives toll free calls from patients and medical professionals with various questions relating to our pharmaceuticals and medical devices, such as anti-cancer drugs, treatments for autoimmune diseases and intravascular embolic materials. Staff at the Medical Information Service Center carefully and accurately respond to each inquiry to ensure that all of the products supplied by Nippon Kayaku are of the highest possible quality. We also conduct surveys to check whether our response meets the expectations of the customer as part of our continual improvement initiatives. Additionally, staff work with medical representatives (MRs) that visit medical facilities to ensure they can provide information that is beneficial to patients, while customer requests and opinions are proposed and reported to each relevant department in charge within the company. The Medical Information Service Center is committed to improving medical care under the slogan "provide proper usage information and improve customer satisfaction in all situations."



Medical Information Service Center

Information Site

We have prepared websites which are useful for patients and their families.

■ 「Note on Fibroids」

This is a comprehensive information site on uterine fibroids for the general public. Filled with helpful information on what Uterine Fibroids are and their symptoms and treatment, the site provides easy-to-understand information for women who are busy with work, child-reading, care-giving, hobbies, and the like.

[> Note on Fibroids](#) 



■ 「IBD-INFO」

This is an information site for IBD patients.

IBD stands for Inflammatory Bowel Disease. Generally, IBD refers to Ulcerative Colitis and Crohn's Disease. The microsite IBD-INFO provides easy-to-understand commentary from a healthcare professional about the symptoms of Ulcerative Colitis and Crohn's disease as well as exams, diagnosis, treatment and daily care, among other topics.

The microsite features a host of different content about causes and symptoms, treatment methods, daily care, and public subsidies for defraying healthcare costs, so as to provide patients with an extensive resource of need-to-know information. Additionally, articles on the latest in IBD treatment and care featuring interviews with specialist physicians are regularly published on the microsite as well. The goal of this microsite is to broaden patient understanding and empower them with the correct knowledge so that they will be more motivated during the treatment process.



> [IBD-INFO](#) 

■ 「RHEUMATISM RA・RA・RA」

The microsite "RHEUMATISM RA・RA・RA" was launched in February 2015 to educate people living with Rheumatoid arthritis. This site was created with a commitment to serve as a close, everyday partner for people with Rheumatoid arthritis by providing emotional support.

The site, which is also compatible with smartphones, offers an easy-to-use platform that is user friendly, including oversized icons that are easy to touch. The site offers various content covering the topics that patients want to know about, including the causes of Rheumatoid arthritis, symptoms, and treatment options, a long with medical costs involved, care services and a hospital search function. Additionally, the site provides information about Japan's high cost medical care benefit system accessible for the treatment of Rheumatoid arthritis and also a medical cost reimbursement calculator. The video collection of exercises for Rheumatoid arthritis patients selected by the editorial supervisor, who is a specialist in rheumatology, can be watched at home where patients can also try them out at their convenience.

The phrase "Feeling Happy" and the four leaf clover mark form the logo used by Nippon Kayaku's immunology business. Like a four leaf clover, we hope to play an integral role in patient's lives and provide emotional support. New perspectives play an important role in the treatment process and making life more enjoyable. Our hope is to contribute to each and every patient "Feeling Happy."



> [RHEUMATISM RA・RA・RA](#) 

■ 「Breast Cancer Info Navi」

Breast Cancer Info Navi was launched in 2006 as an informative website for breast cancer patients.

This Navi aims to provide information from specialist physicians and pharmacists to all women, not just breast cancer patients and their families.

> [Breast Cancer Info Navi](#) 



Initiatives at the Himeji Plant

■ New Dojo Set up as an Education and Training Venue

In fiscal 2018, the Safety Systems Group started offering education at the Himeji Plant's new Dojo (Educational Center), which will serve as an educational and training venue for employees.

The Dojo is divided into zones for educating new hires about the Company's safety and quality rules and prohibitions (dos and don'ts) in an easy-to-understand format and zones for providing hands-on experience. Also, incorrect judgments made during emergencies by plant or research lab on-site supervisors will result in a spate of defective products. We have therefore launched courses about our products and processes and that review past problems with products and processes, which are led by veteran employees selected from the plant and research groups to enhance the skill levels of mid-range employees (120 people).



Furthermore, the Safety Systems Group's overseas subsidiaries are also setting up Dojos to offer similar education.

Agrochemical Business Initiatives

■ Contributing to Agricultural Production with Our New Insecticide (FINESAVE®)

Launched in June 2018, FINESAVE® is new type of insecticide that is highly effective in killing thrips, silverleaf whiteflies, rust mites, cabbage moths, and other pests that plague leeks, onions, tomatoes, strawberries, white radishes, cabbage, and other types of produce.

Because FINESAVE® is a new kind of agent that does minimal harm to useful insects and the natural enemies of these pests, it can be used during the growing season, when the use of agricultural chemicals had to be restricted in the past. We are holding discussions with local instructional organizations regarding crop systems, usage of agrochemicals, etc., so that we can suggest ways to use this product efficiently and skillfully while taking maximum advantage of its attributes. We are working so that this agent can contribute to actual agricultural production in the future.



■ Initiatives for Improving Crop Quality

For higher-quality crops and the production of safer crops, the Agrochemicals Division is proposing ways to use our existing products, Leaf Guard® and Fumon®, along with our new product, FINESAVE®, which went on the market in June 2018 and is effective in killing such pests as thrips, rust mites, and cabbage moths.

We are conducting marketing and sales promotion activities that propose using FINESAVE® with Leaf Guard® (which is effective on a broad range of eggs, larvae, and adult insects) on such major cabbage and Chinese cabbage pests as cabbage moths, which have thus far been fairly resistant to existing agrochemicals, and that propose using FINESAVE® with Fumon® (which has the capabilities of spiracle-blocking agents plus spreading agents and is safe enough to use over and over until harvest time) on strawberries and the like.

We will continue our untiring efforts to improve crop quality in the future.



[> Agrochemicals Business](#) 



With Our Business Partners

The Nippon Kayaku Group engages in proactive communication with all of its business partners.

Supply Chain Management

The Nippon Kayaku Group has formulated its Basic Procurement Principles and Basic Procurement Policy so that its purchasing activities will be consistent with CSR management. We practice CSR with all of our suppliers.

Initiatives for CSR Procurement

The Nippon Kayaku Group is working with every member of its supply chain to bring about a sustainable society, so its procurement activities consider such aspects of CSR as respect for human rights, protection of the environment, occupational health and safety, compliance with laws and regulations, and fair business dealings. We formulated our Basic Procurement Principles and Basic Procurement Policy in order to engage in procurement activities that are appropriate for CSR management. Our procurement activities therefore follow these guidelines.

Basic Procurement Principles

In order to realize the **KAYAKU spirit**, Nippon Kayaku Group will pursue mutual and sustainable growth with suppliers based on the understanding they are important business partners who help us produce products of the best quality. Based on our basic procurement policy, we Nippon Kayaku and our affiliates conduct our transactions with fair, just and sincere attitude following with the laws and the social norms all the time.

Basic Procurement Policies

At Nippon Kayaku Group, all procurement operations will be carried out in accordance with the Basic Procurement Policies as set out below.

Compliance with Relevant Laws, Social Norms, and the Nippon Kayaku Group Charter of Conduct

1. We will comply with all relevant laws and regulations when conducting procurement operations.
2. We will judge the propriety of procurement activities based on Nippon Kayaku Group Charter of Conduct and the Nippon Kayaku Group Code of Conduct and Group Action Guidelines.

Open-door Policy, Fairness, Impartiality, and Transparency in Business Transactions

3. We will conduct procurement-related business transactions in a fair, impartial, and transparent manner, and follow an open-door policy with respect to businesses at home and abroad.
4. We will build partnerships with suppliers based on mutual understanding and trust, and pursue mutual sustainable growth.
5. In order to ensure transparency in all our procurement activities, we will undertake due procedures based on written documentation or electronic purchasing systems in accordance with the procurement operations standards.

Protection of Information

6. We will protect supplier-related information obtained in the course of our operations, and strive to prevent any information leakage.

Concern for the Environment

7. We will promote the procurement of eco-friendly goods and materials.

Basic Criteria for Selecting Suppliers

8. When selecting goods and materials, we will give due consideration to economic factors such as quality, price, and date of delivery. We will also consider other factors such as the supplier's operating foundations, technological competitiveness, and stability of supply.
9. When selecting suppliers, we will give due consideration to their commitment to corporate social responsibility (CSR), including their observance of relevant laws and regulations, respect for human rights, concern for the working environment, disaster preparedness and safety measures, efforts toward environmental conservation, and other efforts designed to fulfill their CSR.

BCP Initiatives

10. In addition to the above, we will give due consideration to whether or not the potential supplier has a risk management system such as BCP (Business Continuity Plan).

Initiatives for CSR Procurement

The Nippon Kayaku Group is working to obtain the support of all our suppliers in its goal of bringing about a sustainable society by publishing its guidelines in the CSR Procurement Guidebook, which includes the Nippon Kayaku Group Charter of Conduct, Basic Procurement Principles, and Basic Procurement Policy.

We are advocating CSR procurement practices in which we and all of the business partners in our supply chain—from R&D, to procurement of raw materials, to manufacturing, sales, and distribution—take respect for human rights into consideration, as well as environmental protection, occupational health and safety, legal compliance, and fair business dealings.

Our efforts to obtain our suppliers' understanding of our CSR Procurement Policy include briefings, ordinary communications, and business meetings.

We will continue to exercise our social responsibilities vis-à-vis the entire supply chain and will strive to strengthen our ties with all of our business partners so that we will gain their respect and admiration as we realize a sustainable society.

Environmental and Social Assessment of Our Business Partners

In fiscal 2019, we conducted a CSR survey of our business partners (about 900 companies). The questionnaire verified what our business partners are doing with respect to environmental protection, and we found that none of those who responded (318 companies) were negatively impacting the environment. We also determined that among their social initiatives, there were no instance of harassment, discrimination, forced labor, inappropriate work hours or wages, or other antisocial behavior. We plan to continue these initiatives going forward as part of our risk management.

Initiatives Toward a Business Continuity Plan (BCP)

Nippon Kayaku always tries to obtain up-to-date information on disasters and accidents in its supply chain. When we receive such information, we share it by immediately entering it into our in-house data base. We also promptly compile a list of the raw materials produced by the affected countries of origin and manufacturers and check the impact on our procurement and inventories, the status of restarting plant operations, and the impact on production. Although we have diversified our procurement sources for many items in line with our BCP program, we are working to strengthen these efforts so that we will be able to deal with any situation.

Safety Systems Group Annual Purchasing Conference

The Safety Systems Group organizes annual purchasing conference for its key suppliers. At these meetings, we provide information on our earnings forecast for the current fiscal year; business plan for subsequent fiscal years; status of the production system; development plan; medium- to long term business vision; as well as Basic Procurement Policies with the interest of helping our partners formulate their business plans.

Also, we presented one partner company which responded to our quality, costs, and delivery requirements in a model manner with Outstanding Partner Company Award.



Purchasing Conference

Polatechno Co., Ltd. and Moxtek, Inc. host booth at Finetech Japan

Polatechno Co., Ltd. and Moxtek, Inc. jointly hosted a booth at the 28th Finetech Japan – LCD/OLED/Sensor Technology Expo held at Tokyo Big Sight from December 5 to 7, 2018.

Finetech Japan is the world's largest expo specializing in display, lighting, and sensor devices that draw together the latest technology of LCD, OLED, and sensor technologies at one place.

Polatechno and Moxtek showcased products and technologies using achromatic polarizing plates^{*1}, high contrast, high durability dye-based polarizing plates^{*2}, and ProFLux[®]^{*3}, and provided detailed information using samples, demonstration equipment, and panels.

Many people visited the companies' booth including those representing domestic and international automobile and display manufacturers, material manufacturers, and university research institutes. The booth introduced the development and manufacturing technology of dye-based polarizing plates as well as inorganic polarizing plates of the Polatechno Group.

Polatechno Group's polarizing plates with a higher durability and visibility contribute to more convenient lifestyles while saving energy.



- *1 Achromatic polarizing plate: A polarizing plate used in full color reflective LCD with a rapidly improved contrast (over ten times improvement compared to the company's conventional polarizing plates).
- *2 High contrast, high durability dye-based polarizing plate: A high performance dye-based polarizing plate with a very high contrast while maintaining high durability performance using high performance pigments and orientation technology.
- *3 ProFLux: Inorganic polarizing plate.

Responding to Emergencies

Reporting Drills

Our Agrochemicals Business handles such substances as Kayaku Chloropicrin, Dojo Picrin, and Chlopic Flow, which have chloropicrin as their active ingredient and are used in fumigating soil to protect crops from diseases and insect pests when growing vegetables.

In October 2019, we conducted a Chloropicrin Distribution Accident Emergency Response Dispatch Reporting Drill, which hypothesized that the driver of a truck loaded with chloropicrin had erred when merging into traffic at an expressway interchange, hitting a wall and causing the truck to overturn. Some of the chloropicrin was dumped on the side of the road, and the fallen containers burst, emitting an odor. The drill simulated the actual situation. Participants swiftly contacted the companies and business sites with which we have agreements, investigated the site of the accident, sent faxes, and arranged for emergency vehicles, and an emergency dispatch team loaded equipment onto the emergency vehicles.

> [The Nippon Kayaku Group's BCP Initiatives](#) 



Scenes from a reporting drill



With Our Shareholders and Investors

Nippon Kayaku strives to earn the trust of all stakeholders and to continue to be an essential part of society. In order to achieve that, we have established Disclosure Policy and are disclosing information to our shareholders, investors and other stakeholders in a timely, fair and equitable manner.

[> Disclosure Policy](#)

Communicating with Investors

The Nippon Kayaku Group holds its ordinary general meeting of shareholders every year in June as a venue for communicating with its shareholders.

To provide our shareholders with business reports and voting resolutions in a more timely and easy to understand fashion, we are digitizing meeting notices and providing English-language meeting notices on our Company website, and are moving up the dates that we send out meeting notices and provide electronic disclosure.

Also, we are trying to make it easier for our shareholders to exercise their voting rights by installing an electronic voting system whereby shareholders may cast their votes on the internet if they are not submitting a voting form.

We send out a business report every six months so that our shareholders can stay informed about our businesses and other topics.

[> Notice of the 163rd General Meeting of Shareholders and Reference Documents for General Meeting of Shareholders](#)



General meeting of shareholders

Communication with Institutional Investors and Securities Analysts

■ Holding IR meetings and telephone conferences about financial results

Nippon Kayaku Group holds IR meetings and telephone conferences about financial results for institutional investors and securities analysts. President and all Managing Director attend IR meetings, which are held after the second quarter and annual financial results, to explain our financial results and forecasts, as well as the policies and progress of our Mid-term business plan. In addition, telephone conferences are held during the first and third quarters of the fiscal year to explain business conditions and answer questions from guests.

[> IR calendar](#)



Earnings Presentations

■ One-on-one Meetings

We hold one-on-one meetings to communicate directly with institutional investors and securities analysts.

■ Open House Tours at Plants and Round-table Conferences with Investors

Nippon Kayaku host open house tours of our plants and round-table conferences for institutional investors and securities analysts every year, to promote better understanding of Nippon Kayaku's business activities.

Website development

The Nippon Kayaku website has business and solution, product, IR information, CSR information, company information, etc. We quickly post information especially about investor relations, including management policy, financial, quarterly financial results briefings, integrated reports for our shareholders and investors 's solid understanding.

[> Investor relations](#) 



With Our Local Communities

The Nippon Kayaku Group aims to be a company closely rooted in communities through its involvement at the local level, proactive engagement with all stakeholders and support for the educational needs of the next generation.

For society built on a healthy and productive life

Asunaro House – Let's Assist Children with Intractable Diseases and Their Families

The Nippon Kayaku Group, as part of the commemorative projects marking its 80th anniversary and under the motto of "Let's assist children with intractable diseases and their families," owns and operates Asunaro House, an extended-stay facility for caregivers in Saitama City, Saitama Prefecture.

We have been holding volunteer events twice a year for current and former employees of Nippon Kayaku and its affiliates to clean and do yard work since 2018 so that families using Asunaro House can enjoy a pleasant stay there.

Our goal is to offer a facility that provides networking opportunities for the families of sick children and helps alleviate the mental and financial burden on these families while safeguarding their privacy.



Current and former employees
volunteering in cleaning and yard work

Message

I have been working as the House Manager at Asunaro House since 2017. Since its founding 22 years ago in 1998, more than 3,500 families (constituting 65,000 people) have used Asunaro House.

We expect that more people will avail themselves of our services because the Saitama Children's Medical Center relocated to Saitama-Shintoshin area in 2016 and many nearby medical facilities have been expanding their pediatric medical treatment.



Asunaro House Manager

Asunaro House is constantly changing as it anticipates users' needs as times change and so that families will be able to have a safer, more secure, and more comfortable stay.

There is no better recognition than the simple words "thank you" as the children are discharged from the hospital and ready to move back home as a family.

Providing Support for LRI Activities

The Long-range Research Initiative (LRI) is a joint initiative of the chemical industries of Japan, the United States and Europe. Part of the voluntary activities of International Council of Chemical Associations (ICCA), LRI supports long-term research into the effects of chemicals on human health and the environment, with focus on endocrine disrupting effects, neurotoxicity, chemical carcinogenesis, immunotoxicity and elaborating risk factors.

Nippon Kayaku has actively supported LRI from its start in 1999 by offering financial support for LRI activities. and attending the committee.

Supporting the Development of the Next Generation

CSR Educational Initiatives

Three approaches including outreach classes, events, and site visits.

Outreach Class

Outreach classes are developed based on our own educational program that are in line with elementary schools' guidelines with and implemented in schools around plants.

■ Outreach class: "Discovering the body! Mechanisms of the body and its relationship to medicine"

A curriculum to learn the following four concepts through experimentation developed based on "Constitutions of the Human Body and Functions" as a science subject related to the pharmaceutical business.

- (1)How are nutrients absorbed into the bloodstream after being digested; how do they circulate throughout the body?
- (2)How do medicinal ingredients become absorbed into the bloodstream from the small intestine; how do they circulate throughout the body?
- (3)The deep relationship between the efficacy of medicines and the body's mechanisms.
- (4)Pharmaceutical companies making various efforts.

Takasaki Plant

Class for Grade 6 students at Takasaki Municipal Iwahana Elementary School

An outreach class was hosted for grade six students at Takasaki Municipal Iwahana Elementary School on June 2019. Employees from the Takasaki Plant with highly specialized knowledge acted as the teacher and teaching assistants. While these teachers were somewhat nervous, they strived to get closer to the students to promote clear understanding and share their advice. We will continue to hold outreach classes like this one in order to instill interest in chemistry among school children and enable them to feel more comfortable as a member of society.



Tokyo R&D Administration Office

Class for Grade 6 students at Kita Ward Nadeshiko Elementary School

An outreach class was hosted for grade six students at Kita Ward Nadeshiko Elementary School on July 2019. Researchers from the Pharmaceuticals Research Laboratories and Functional Chemicals R&D Laboratories served as teacher and teaching assistants. The students were captivated by the experiments held in class and gave their undivided attention. The outreach class experience was also appreciated by the school teachers. Through this event, students were encouraged to learn more about chemistry as well as to understand more about Nippon Kayaku.



Site Visits

Himeji Plant

Initiatives to Cultivate the Next Generation

The two programs of "Creating Fizzing Tablets" and "Plant Tour" launched in commemoration of the 100th anniversary of the company's founding were hosted for grade six students at Toyotomi Elementary School located near the Himeji Plant. These programs were held for the 4th year in fiscal 2018 with a total of 24 participating students.

In order to encourage active participation, the students were given a quiz on knowledge of gunpowder. As well, the students tried their hand at creating fizzing tablets as bath bombs resembling gas forming agents manufactured at the Himeji Plant, which aimed to spur interest in chemistry and manufacturing.

The children not only viewed the production line but also observed instantly inflating air bags up close, which is not something that can normally be experienced.



Event-based Educational CSR

Asa Plant

Science Expo hosted by the City of Sanyo-Onoda "Using Chromatography to Make Round Fans" event for elementary and junior high school students

Asa Plant has participated in the annual Science Expo hosted by the City of Sanyo-Onoda. Under this year's theme, "Let's Play with Color," we held chromatography experiments and had students experience the world's only round fan making event.

Children were able to get a sense of the wonders of science as we explained how to use color separation when making the fans.



Kashima Plant

Customer living expo as Kamisu Festa hosted by the City of Kamisu in Ibaraki Prefecture Experience-based Event for Elementary School Students

Kashima Plant and Agrochemicals research laboratories participate in Customer living expo as Kamisu Festa hosted by the City of Kamisu in Ibaraki every year in October with the goal of giving back to the local community by conveying and fostering interest in science and chemistry among youth.

The Nippon Kayaku booth hosted a hands-on event called "Let's play by making bead-like capsules," which utilizes the technology and products of Kashima Plant and the Agrochemicals



Laboratories. Students took part in the simple chemical experiment of creating artificial salmon roe.

Tokyo R&D Administration Office

Held class for elementary school children during summer vacation

A summertime class for elementary school students between grades three and six was held at Tokyo's Kita Ward Nadeshiko Elementary School on August 2019.

Members of our Tokyo R&D Administration Office and our other research laboratories collaborated in holding experiments using acrylic resins, which are photo-setting resins. The children were excited to see liquid acrylic resin become solid when exposed to light. Going forward the Tokyo Business Office will continue to host events such as this for students to engage their interest in chemistry while learning more about Nippon Kayaku.



Tokyo R&D Administration Office Head office

Hosted by Japan Chemical Industry Association (JCIA)

~The Summer Children's Science Experiment Show~ Experience-based Classroom

Nippon Kayaku participated in the Summer Children's Science Experiment Show for elementary school students held for two days between August 3 and 4 at the Science Museum (Kudanshita, Tokyo) and more than 200 children took part.

With the theme, "A Shiny Key Holder Made of Resin: The Riddle of a Strange Liquid That Hardens in the Light," we made objects using acrylic resin for photo-setting. This was the first time we made photo-setting resin our theme for the Summer Children's Science Experiment Show. The children had fun and cheered when they finished making unique key holders using shiny beads and a decal of Kayakuma the Bear.

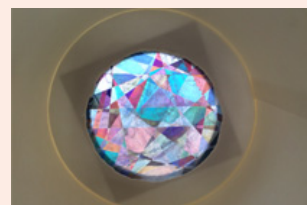


Polatechno Co., Ltd

Joetsu Science Museum in Joetsu City, Niigata Prefecture

Held a science class using polarizing film

The Joetsu Science Museum in Joetsu City, Niigata Prefecture, where Polatechno Co., Ltd. is located, is hosting an exhibit where patrons can experience and enjoy the themes of human science and the science of snow through nine zones involving seeing, touching and checking. During this event, Polatechno provided polarizing film so children could enjoy science handicrafts at its paper cup kaleidoscope booth as part of the Science Plaza held in May 2016.



KSM

Continuing Education Support at KSM

KSM* has been offering an educational support program for the children of employees since 2014 because it is committed to the welfare of its employees. In August 2019, the company held an event to aid the education of 29 children of employees.

Each child participating in the event drew a picture containing Nippon Kayaku's mascot, Kayakuma the Bear, on such themes as "Safety First," "Superior Quality," "The KAYAKU spirit, the Nippon Kayaku Group's corporate vision," and "Care for the Global Environment." Then, at the end of the event, we gave the children backpacks containing a set of necessary school supplies to reduce the burden on their caretakers when they go to school.



Group photo of everyone holding their school supply presents

* KSM is a group company in Mexico that manufactures automotive safety components.



Initiatives in Local Communities

The Nippon Kayaku Group strives to foster understanding of its business activities in local communities through festivals and open houses at its plants and facilities, educational programs, donations and other forms of support, blood drives, pink ribbon campaigns, clean-up campaigns, and round-table discussions.

Going forward, we will organize various platforms to proactively engage with the local residents as part of our goal of becoming a company that is closely rooted in the local community.

Nippon Kayaku's Agreements with Local Authorities

Business Site	Agreement	Local Authority
Fukuyama Plant	Agreement on environmental pollution control	Hiroshima Prefecture and Fukuyama City
Asa Plant	Agreement on water pollution control	Yamaguchi Prefectural Fisheries Cooperative
	Agreement on environmental protection	Sanyo-Onoda City
Tokyo Plant	Green agreement	Adachi City
	Agreement on establishing Colored Effluent Issue Council	Tokyo Metropolitan Bureau of Sewerage No. 2 Control Office
	Agreement on mutual disaster relief support in case of an earthquake	Shinden Neighborhood Association and Shinden 1-chome Residents' Association in Adachi City
	Agreement to provide the general public with access to a small water pump storage facility	Senju Fire Department
Tokyo Business Office	Provision of fire fighting facilities 1. Provision of water for firefighting 2. Deployment of a boat for rescues 3. Fire fighting group cooperation site 4. Use of rooftop as a lookout	Tokyo Fire Department Akabane Fire Station
Takasaki Plant	Agreement on assistance from voluntary fire fighting brigade	Regional fire departments including Takasaki City
Himeji Plant	Memorandum on effluent control	Himeji City
Kashima Plant	Agreement on environmental pollution control	Ibaraki Prefecture, Kashima City, Kamisu City

■ Piece of our activities

Kayaku Safety Systems Europe a.s. (KSE)^{*1}

The 5th Pink Ribbon Day was successful!

Pink Ribbon Day, a campaign focusing on the prevention of breast cancer, was held on 11 October in the Vsetin region with the non-profit organization ZO ONKO-DUHA^{*2} Vsetin. Several institutions including the Secondary Medical School, Masaryk Public Library Vsetin and the Vsetin Hospital, participated in this event. Employees of KSE also supported the campaign adorned in pink clothing and accessories for the day.

This year, the regional TV broadcasted a post in which a Vsetin surgeon and the chairwoman of ZO ONKO-DUHA Vsetin spoke about the importance of breast cancer prevention and periodicary self-examinations and to continue this event as long as there is some people who believe that the threat does not concern them and never will.

In total, roughly three thousand residents of Vsetin and surrounding areas were asked to voluntarily participate in the event. Aside from the informative disease awareness leaflets, participants were given a pink scarf to remind women of the necessity of regular self-examinations, which can be done at home as an alternative to an examination in a mammographic centre.

^{*1} Kayaku Safety Systems Europe a.s. (KSE), located in the Czech Republic, engages in the manufacture and sale of automobile safety components

^{*2} ZO ONKO-DUHA Vsetin is the Vsetin branch of SPCC (an organization for breast cancer patients in the Czech Republic), which in turn is an organization to which KSE has been providing financial assistance since 2015.



KSEの従業員も、ピンクを着てキャンペーンへの支持を示しました。

Kayaku Safety Systems de Mexico, S.A. de C.V.

Pink Ribbon Campaign activities

October is Breast Cancer Awareness Month, KSM had a Pink Ribbon Campaign that includes conferences for all its employees to raise awareness about early detection and how to do self-tests, and they can share this information with their families.

In 2019, the conferences were held by members of the Red Cross (Mexican Red Cross), Alejandra Aguilera and Carmen Muñoz.

During the conference, the importance of breast cancer screening, how to carry out the self-test, the stages and types of breast cancer, and recommendations on how to have a healthier lifestyle were highlighted. Also a member of the Cruz Rosa, Esperanza Gómez taught us how you can check a breast cancer by yourself by using a silicon breast sample. At the end, a brochure with information of breast cancer was delivered as well as a pink towel to each of our collaborators.



KSE KSE employees supported Children's home

Representatives of Kayaku Safety Systems Europe a.s. handed the amazing amount of CZK 30,137 over to children from the Children's Home in Valasske Mezirici in December, 2019. It was an excellent Christmas present for the children who can't live with their families.

The amount of CZK 25 137 was collected by KSE employees in the company cash collection, CZK 5 T was a company donation. This financial contribution is to be used for leisure activities of children, e.g. visit of a cinema, trip to the ZOO or for other activities outside the Children's Home, which cannot not be normally afforded by the Home.

Neither the Home's management nor its children hid their excitement about the financial gift and thanks to their approach they all created a friendly atmosphere. It is adorable that there are people at our company who are willing to help those, who were not lucky enough to grow up in a functioning family.

The amount of KSE annual sponsorship is CZK 1 mil. This money is divided between a local hospital, charities, sport clubs for youth, schools and other educational and cultural activities.





KMY KMY's First Blood Drive

In cooperation with the nearby Tunku Jaafar Hospital Blood Bank Centre, KMY held its first in-house blood drive in November 2019. This came about because the needs of the Blood Bank Centre matched up with KMY's desire to contribute to the local community.

On that day, about 50 employees gave blood in response to the Human Resources Department's call for donors. We would be glad if, through this program, we are able to help as many people who need blood as possible.

Before making their blood donation, employees received a Health Talk and health consultation from a doctor. Many employees paid attention and used the opportunity to consider the state of their own health.

Although this was the first blood drive, we plan to hold them regularly from now on, as we want to contribute to local communities and to help upgrade employee's health.



[Click here to learn about past programs](#)

■Nippon Kayaku

Fukuyama Plant Opening up tennis courts to the public ▼

Tokyo Plante Hosting internships for High School Students ▼

Fukuyama Plant Internships ▼

Takasaki Plant and Gunnan Sangyo Co., Ltd. ▼

■Group companies

Polatechno Co., Ltd. Wrap Advertising on a Train ▼

Kayaku Safety Systems Europe a.s. (KSE) Safety Days ▼

Nikka Fine Techno Co., Ltd.
Activities to deepen interaction with the local community ▼

Kowa Sangyou Co., Ltd.
Supporting activities of local fire company ▼