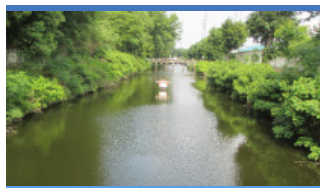




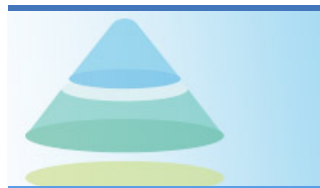
Message from the President

Read an important message from President Masanobu Suzuki.



Special Feature

The Nippon Kayaku Group's Global Efforts to Improve Environmental Preservation Technologies for Water Treatment



Fundamental CSR Activities

Learn about the role the KAYAKU spirit plays in our CSR management.

- Corporate Vision and CSR Activities
- CSR Action Plan
- Corporate Governance
- Compliance



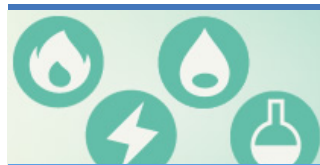
CSR Activities Fulfilling Economic Responsibilities

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.



Fulfilling Our Responsibility to Society

- Initiatives with Our Customers
- Initiatives with Our Business Partners and Investors
- Initiatives for Society
- Initiatives in Local Communities
- Initiatives for Employees



Fulfilling Our Responsibility to the Environment

- Environment, Health and Safety, and Quality Assurance Management System
- Initiatives for Health and Safety
- Initiatives for Environmental Protection

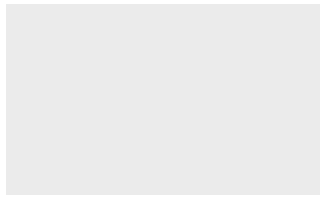


The Nippon Kayaku Group's CSR Commitment

Editorial Policy

Commitment

This section presents the unified CSR commitment of all consolidated group companies.





Message from the President



Safeguarding the life and health of consumers, and supporting a comfortable life

Nippon Kayaku is continuously working to further evolve our unique and original technologies to keep ahead of the changing times, in order to contribute to achieving a sustainable society and environment.

The Nippon Kayaku Group's corporate vision is embodied in the KAYAKU spirit, which is "continuously providing society with the best products through ceaseless progress and the combined forces of our consciences." The origin of our corporate vision dates back to Yasusaburo Hara, our third president, who established the corporate mottoes of "combined forces of our consciences," "ceaseless progress," and "the best products," to express his management vision. In other words, the KAYAKU spirit forms our commitment under the "combined forces of our consciences" to achieve "ceaseless progress" seamlessly by both organization and individual, enabling us to continually contribute to society by providing "the best products" needed by the world. We believe that the corporate activities of individual employees supporting the KAYAKU spirit form the foundation of the Nippon Kayaku Group's CSR-centered management.


We have passed down this KAYAKU spirit since the very foundation of the company, and have engaged in our business activities with the strong commitment to contribute consistently to people around the world. Our corporate DNA of producing the best products while refining and flexibly evolving technologies, even amidst major changes in markets and society, has been a driving force behind our continual growth over more than a century and represents the Nippon Kayaku Group's strength.

The world is constantly changing. To ensure the sustainability of our own corporate activities, we must address a variety of social issues. The world faces a number of issues as set forth in the Paris Agreement on climate change and the UN's Sustainable Development Goals (SDGs). These include food and water shortages caused by population growth, growing income disparities, labor issues including child labor, and the advancement of global warming. Looking at the Nippon Kayaku Group's business environment, the needs for chemicals and materials that conserve more energy, conserve more resources and have less of an impact on the environment continue to grow, along with the progress of today's advanced information society. As reliance on automobiles continues to grow worldwide, the need to improve safety will become even more important, too. In healthcare, rising medical costs in Japan are becoming a social issue.

The Nippon Kayaku Group is committed to doing our part to address these social issues head-on, as a company that serves as a public institution of society. Capitalizing on our long-standing strength of flexibly and constantly evolving businesses, we will create and provide shared value to society through our core businesses. These include the Functional Chemicals Business, which supports a super-smart society with low environmental impact functional materials made possible with our colorant and resin technologies; the Pharmaceuticals Business, where we contribute to lower medical costs and improved patient quality of life (QOL) with anti-cancer drugs and biosimilars; the Safety Systems Business, which safeguards people's safety by providing stable supplies of automotive safety components worldwide; and the Agrochemicals Business, where we help to solve food issues through stable agricultural production. At the same time, we will enhance our corporate value through sustained growth, while practicing 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.

I would like to ask our stakeholders for their continued support as we continue to move forward.

President


Masanobu Suzuki



Special Feature – The Nippon Kayaku Group's Global Efforts to Improve Environmental Preservation Technologies for Water Treatment



Today, companies have to take the lead in finding solutions to environmental issues and social issues in order to realize a sustainable society. With operations in 12 countries and regions around the world, the Nippon Kayaku Group implemented the Clean Eco Technology (CET) Project at business sites in Japan and at Wuxi Advanced Kayaku Chemical Co., Ltd. (WAC), a Group company in China, with the aim to establish safe, stable and eco-friendly wastewater treatment

The 14th goal of the UN's Sustainable Development Goals (SDGs) covers the preservation of oceans, seas and marine resources. The CET Project, which also considers biodiversity conservation, has been a long-term initiative spanning five and a half years since 2012 responding to the needs of society.

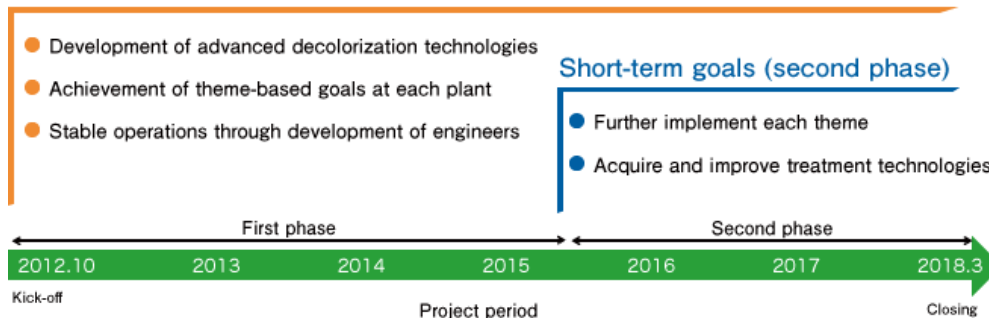
Background to Project Establishment and Goals

Plants of the Nippon Kayaku Group handling resins, colorants and dyes face the unique issue of wastewater treatment. This includes high salinity wastewater that is difficult to treat biologically and high COD colored wastewater produced during the colorant manufacturing process. Overcoming these issues not only reduces environmental impacts, but also is important from the standpoint of sustainability, including engagement with local communities.

Launched in October 2012, the CET Project was separated into two phases based on its medium- to long-term goals. The first phase was 2012 to 2016 and the second phase was 2016 to 2018. To put into practice number nine of the Mid-term CSR Action Plan ("Improve environmental preservation technologies for water treatment"), we deployed effective management. The project worked on initiatives at business sites in Japan and at WAC, citing as a target, the common goals of reducing COD emissions through improved wastewater treatment technologies, development of future engineers, cost reductions, and leveling of technologies between business sites.

Goals of the Project

Medium- to long-term goals (at time of project establishment)



Participating Business Sites/Departments and Main Achievements

Participating business sites/departments

Japan

Fukuyama Plant (Nippon Kayaku Fukuyama), Asa Plant, Tokyo Plant (Nippon Kayaku Tokyo), Takasaki Plant, Himeji Plant, Kashima Plant, Tokyo Business District, R&D Planning Division, Functional Chemicals R&D Laboratories, Pharmaceuticals Research Laboratories, Agrochemicals Laboratories, Technical Administration & Engineering Division

Group companies

Wuxi Advanced Kayaku Chemical Co., Ltd., POLATECHNO CO., LTD., Asa Plant of Kayaku Akzo Corporation

Main achievements

Achievements

- COD emissions reduced by approx. **50** % (compared to 2007)
- Nitrogen emissions reduced by approx. **43** % (compared to 2011)
- Phosphate emissions reduced by approx. **29** % (compared to 2011)

(Results in Japan)

WAC (China)

Theme

Reduce COD emissions through introduction of new wastewater treatment facilities

Achievement

Reduced COD*emissions by approx. **28** % (compared to 2013)

*COD: Chemical Oxygen Demand. An indication of the amount of oxygen needed to oxidize a subject compounds in water.

Tokyo Plant

Theme

Examine optimization of existing wastewater treatment process

Achievement

Reduced raw materials costs by changing nutrients and changing operating conditions (8 million yen/year)

Fukuyama Plant

Theme

Improve decolorization using high performance coagulants

Achievement

Reduced water usage by approx. **33** % (compared to 2011)

Asa Plant

Theme

1-Develop high salinity epoxy wastewater treatment technology
2-Establish technology for removal of molybdenum from catalyst wastewater

Achievement

Achievement: Established a technology for epoxy wastewater treatment (3 other patents pending)

Engineer Development, Industry–Academia Partnerships, Earning Trust

In addition to the achievements of the CET Project above, there were three separate initiatives.

(1) Initiatives to develop engineers involved study sessions, working groups and networking sessions at all business sites (total of approximately 20 times over a five-year period) for skill building. A project database was also set up to centrally manage information and disseminate information to all business sites, which enabled timely sharing of information. As a result, we were able to raise greater awareness among researchers about wastewater and enable manufacturing design with an eye on wastewater treatment from the research phase.

(2) In terms of industry-academia partnerships, a technology sharing session was held in which information was exchanged and presentation of cases was made on the Nippon Kayaku Group's core wastewater technology for the "decolorization of colored wastewater." In addition, joint research was conducted with universities with the aim of developing new wastewater treatment technologies.

(3) Towards building an external network, we accommodated requests from business partners for engineer training and requests from universities for site visits in an effort to earn trust by actively sharing technologies with outsiders.

■ Making Improvements with Ceaseless Efforts and Utilizing Achievements for the Future

Roughly five and a half years have passed since the project kicked off in 2012. In addition to engineer development, which was an important long-term goal of the CET Project, we have developed a network of wastewater personnel across business sites and one externally, while establishing actual technologies, which have resulted in visible improvements, including new facility proposals and the quick realization of cost savings. Furthermore, we were able to evaluate treatment technologies and build up know-how for optimization. In 2018, the project achievements were featured in a book called "The Nippon Kayaku Group's Wastewater Treatment Technologies," which is now being used to reinforce our wastewater treatment technology base for the future and pass down these technologies. Looking ahead, we will now deploy the PDCA cycle as part of technical assistance for each plant and environmental preservation activities.

These activities were also recognized with an Outstanding Award at the 2018 Responsible Care Award organized by the Japan Chemical Industry Association.

The Nippon Kayaku Group stands committed to being an eco-friendly company—one that designs eco-friendly products based on an understanding of treating wastewater with advanced wastewater technologies and sound knowledge and one that uses innovations to improve existing processes.



Yukihiro Sagawa
General Manager
Technical Administration &
Engineering Division
Technical Operations Group
Nippon Kayaku Co., Ltd.

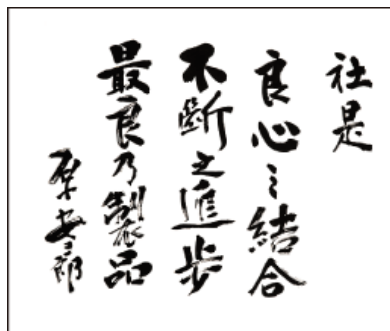
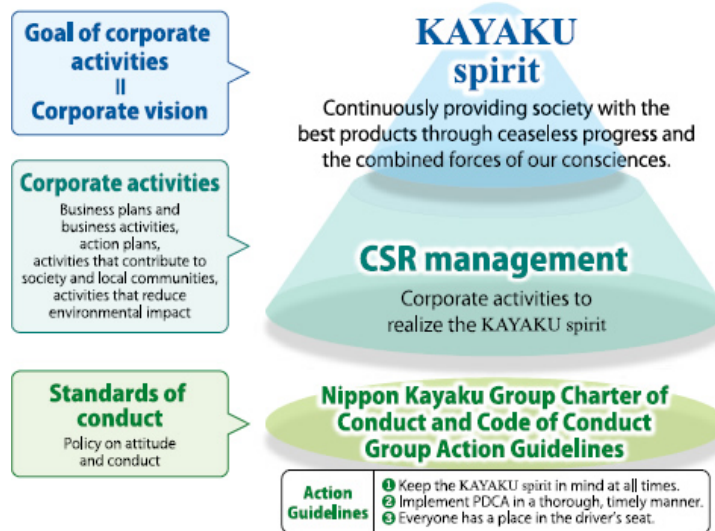


Corporate Vision and CSR Activities

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.

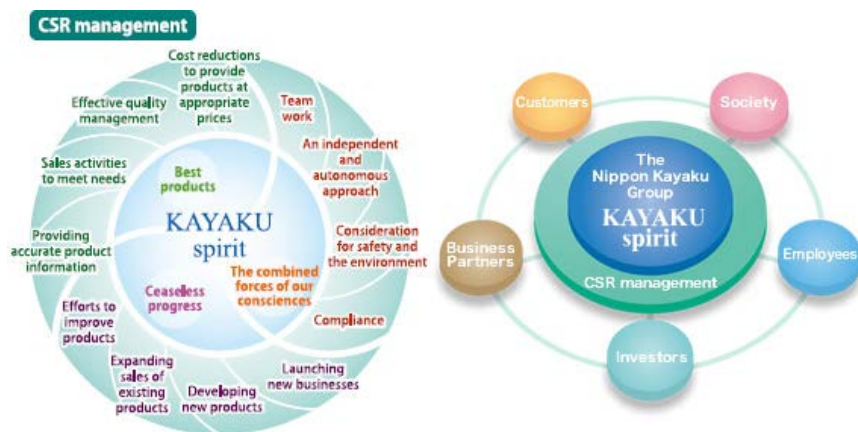


The image at the bottom left is an overhead view of the KAYAKU Spirit.

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



Respect for Human Rights and KAYAKU spirit

The words "combined forces of our consciences" can be found in the fundamental philosophy of the KAYAKU spirit. We believe that respecting the human rights of everyone, from employees to business partners, in all aspects of our corporate activities, and mutually combining forces of good consciences, form the basis of our corporate management.

The Nippon Kayaku Group Charter of Conduct, which forms the standards of conduct for the group, stipulates respect for basic human rights and the privacy of individuals. Furthermore, respect for human rights and privacy is the slogan of Article 24 in the Nippon Kayaku Group Code of Conduct, which is considered a principle of action for all employees to follow across the entire group.

The Nippon Kayaku Group has established an Ethics Committee chaired by the President, which deliberates on various topics to prevent workplace harassment and human rights violations. The committee periodically hosts internal training as well as seminars with guest speakers for managers and employees to promote consideration toward human rights, prevention of power, sexual, or maternity harassment, as well as promote understanding of LGBT. The company is committed to continuously creating a lively workplace environment that strives for employee diversity and inclusion.

Nippon Kayaku Group's basic policy on CSR Procurement, the Basic Procurement Policy, states 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 specifically stipulates the prohibition of inhumane treatment, discrimination, forced labor, and child labor. Together with our business partners, we strive to conduct procurement activities with consideration for human rights.

CSR Action Plan and Management Strategy

The Nippon Kayaku Group has formulated its mid-term CSR action plan to meet the expectations of all stakeholders. Our basic management policy is to contribute to a sustainable society and environment as a corporation that continues to provide the best products, technologies and services that safeguard the life and health of consumers, and support a comfortable life. Under this basic management policy, we have created the Mid-term CSR Action Plan 2016 – 2018 as part of our medium-term initiatives. This action plan, which started in fiscal 2016, represents our commitment to all stakeholders to promote R&D for business development, implement CSR procurement through supply chain management, work toward achieving the mid-term environmental targets, and reinforce governance. Linked to this, we have established a mid-term business plan called Take a New Step 2016, under which we are executing a detailed business strategy.

In this manner, across all business areas, we will emphasize safe operations, thorough compliance and consideration for the environment, and with a high sense of ethical value, we will conduct CSR management closely aligned with management strategy.

CSR Implementation System

We established the CSR Management Committee in 2010 and set up the CSR Department within the Corporate Planning Division of the Strategic Corporate Planning Group. The CSR Department administers cross-functional CSR projects while business sites and group companies take the lead in implementing these projects.

CSR Management Committee

Chairman : President, Committee member: Managing Director

**CSR Management
Committee Secretariat**

Executive director: Head of
Strategic Corporate Planning
Group
Staff : CSR Department
Corporate Planning Division

CSR project

Elected member of the head office
business department and
management department

**Plant responsible person for
CSR :**

Head of each business site, Group
company president



KAYAKU spirit Promotion Efforts using the Kayakuma the Bear



Kayakuma the Bear
mascot character representing
KAYAKU spirit

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 part of the company newsletter that introduces CSR activities and activities for implementing the corporate vision using visual depictions that are easier 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 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 widely using it as a symbol of the Nippon Kayaku Group in newspaper ads and novelty items and events, such as factory festivals.



Conference room and employee
locker



CSR Action Plan

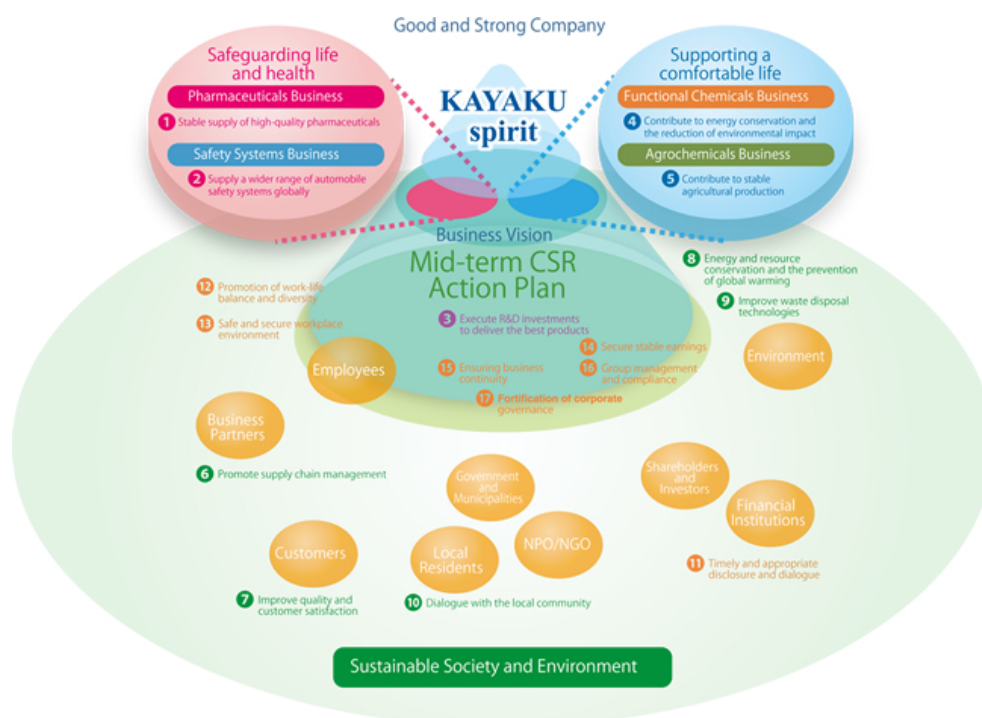
The Nippon Kayaku Group practices CSR management by realizing the KAYAKU spirit, which calls for "continuously providing society with the best products through ceaseless progress and the combined forces of our consciences." The following section provides a closer look at the CSR Action Plan and how it is linked to our business activities.

Mid-term CSR Action Plan

The Nippon Kayaku Group has created a Mid-term CSR Action Plan 2016–2018 that is closely linked with the three-year mid-term business plan "Take a New Step 2016," launched on April 1, 2016, which contains the message "Coinciding with the centennial of our company's founding, we are on the verge of taking a new and innovative step forward."

Our goal is to realize the mid-term business vision, "Continuing to provide the best products, technologies, and services that safeguard the life and health of consumers, and support a comfortable life" through our four business segments, while creating a better and stronger company that contributes to a sustainable society and environment.

The Mid-term CSR Action Plan represents a total of 17 items carefully selected as a consensus of the Nippon Kayaku Group from the more than 400 action plans submitted by each business division, including administrative divisions, and consolidated subsidiary.



Please see the following table "Mid-term CSR Action Plan 2016–2018" for details about each action plan. The numerical data within the table matches each item of the action plan.

Mid-term CSR Action Plan 2016-2018

| | No | Mid-term CSR Action Plan 2016-2018 |
|--|----|--|
| Safeguarding life and health | 1 | Contribute to society by promoting innovations using our technological expertise, and by stably supplying high-quality pharmaceuticals coupled with truly reliable information |
| | 2 | Contribute to public safety by globally supplying a wider range of automobile safety systems to improve automotive collision safety |
| | 3 | 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 |
| Supporting a comfortable life | 4 | Contribute to the creation of an "Super Smart Society" by providing functional chemical materials that offer special characteristics for the fields of information and communication, and energy and resource conservation*1 |
| | 5 | Contribute to stable agricultural production by offering agrochemicals that suit the needs of the market environment and our customers |
| Contributing to the development of a sustainable society and environment | 6 | Promote supply chain management |
| | 7 | Promote the additional improvement of customer satisfaction of product quality |
| | 8 | Contribute to environmental preservation by promoting energy and resource conservation, and measures to prevent global warming |
| | 9 | Improve environmental preservation technologies for water treatment |
| | 10 | Contribute to coexistence with the local society through communication with its residents |
| Represent the embodiment of a good and strong company | 11 | Carry out dialogue with stakeholders by providing appropriate information in a timely manner |
| | 12 | Provide a work environment that focuses on respect for human rights and work-life balance, and promote HR training and diversity |
| | 13 | Maintain a safe and secure work environment that is free of accidents and work-related disasters |
| | 14 | Secure stable earnings as a corporate group with growth potential |
| | 15 | Maintain business continuity even during an emergency |
| | 16 | Instill CSR management throughout the group and continue to fully implement compliance |
| | 17 | Fortify corporate governance throughout the group |

*1: Partial change in wording from April 2017

Mid-term CSR Action Plan 2016 – 2018 

Relationship between our Mid-term CSR Action Plan and the SDGs

The Nippon Kayaku Group is working to do whatever possible through its businesses to address the various social issues cited in the Sustainable Development Goals (SDGs) for 2030 adopted by the United Nations. We will contribute to the achievement of the SDGs through the initiatives we are implementing under our Mid-term CSR Action Plan 2016 – 2018.

Mid-term CSR Action Plan 2016-2018

| | No | Mid-term CSR Action Plan 2016-2018 | SDGs |
|--|----|--|----------------|
| Safeguarding life and health | 1 | Contribute to society by promoting innovations using our technological expertise, and by stably supplying high-quality pharmaceuticals coupled with truly reliable information | 3, 9 |
| | 2 | Contribute to public safety by globally supplying a wider range of automobile safety systems to improve automotive collision safety | 3, 9 |
| | 3 | 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 | 3, 9 |
| Supporting a comfortable life | 4 | Contribute to the creation of an "Super Smart Society" by providing functional chemical materials that offer special characteristics for the fields of information and communication, and energy and resource conservation*1 | 4, 5, 7, 8, 13 |
| | 5 | Contribute to stable agricultural production by offering agrochemicals that suit the needs of the market environment and our customers | 2, 9 |
| Contributing to the development of a sustainable society and environment | 6 | Promote supply chain management | 12 |
| | 7 | Promote the additional improvement of customer satisfaction of product quality | 8 |
| | 8 | Contribute to environmental preservation by promoting energy and resource conservation, and measures to prevent global warming | 13 |
| | 9 | Improve environmental preservation technologies for water treatment | 6, 14 |
| | 10 | Contribute to coexistence with the local society through communication with its residents | 11 |
| Represent the embodiment of a good and strong company | 11 | Carry out dialogue with stakeholders by providing appropriate information in a timely manner | 17 |
| | 12 | Provide a work environment that focuses on respect for human rights and work-life balance, and promote HR training and diversity | 5, 8, 10 |
| | 13 | Maintain a safe and secure work environment that is free of accidents and work-related disasters | 3, 8, 11 |
| | 14 | Secure stable earnings as a corporate group with growth potential | 8 |
| | 15 | Maintain business continuity even during an emergency | 9 |
| | 16 | Instill CSR management throughout the group and continue to fully implement compliance | 16 |
| | 17 | Fortify corporate governance throughout the group | 17 |

*1: Partial change in wording from April 2017

Relationship between our Mid-term CSR Action Plan and the SDGs 

Mid-term CSR Action Plan 2016–2018 for ISO26000 Core Subjects

The Nippon Kayaku Group has created a table of correspondence between the 37 Core Issues of ISO26000 and our each item of Mid-term CSR Action Plan 2016–2018.

| Mid-term CSR Action Plan 2016-2018 for ISO26000 Core Subjects | | | | | | | | | | | | | |
|---|--|-------------------|---|---------------|-------------|----------------|---------|-----------------------|---------------------|---------------------|----------------------|-----------------|---|
| No. | Mid-term CSR Action Plan 2016-2018 | Completion Status | ISO26000 Core Subjects and Related Issues | | | | | | | | | | |
| | | | Human Rights | Labour Rights | Environment | Product Safety | Quality | Customer Satisfaction | Supplier Management | Community Relations | Information Security | The environment | |
| 1 | Conduct a risk assessment for the company's activities and identify areas for improvement. | Completed | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 2 | Establish a system for the management of human rights. | Completed | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 3 | Conduct a risk assessment for the company's activities and identify areas for improvement. | Completed | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 4 | Establish a system for the management of human rights. | Completed | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Mid-term CSR Action Plan 2016-2018 for ISO26000 Core Subjects PDF

Results of FY 2017 CSR ACTION PLAN and FY 2018 CSR Action Plan

The Nippon Kayaku Group has formulated a single-year CSR action plan for each fiscal year to achieve the Mid-term CSR Action Plan 2016-2018, and has passed PDCA. The results of the first year CSR Action Plan 2017 and the CSR Action Plan 2018 are as follows.

Results of FY 2017 CSR ACTION PLAN

| CSR Action Plan 2017 Achievements | | | Assessment levels |
|-----------------------------------|--|---|-------------------|
| No. | Mid-term CSR Action Plan 2016-2018 | CSR Action Plan FY 2017 Achievements | Assessment levels |
| 1 | Conduct a risk assessment for the company's activities and identify areas for improvement. | Completed clinical trial for NK-105, a compound molecule with cancer drug | *** |
| | | Obtained marketing approval for Topotecan 301 NK, a monoclonal antibody molecule for cancer fields | *** |
| | | Completed capacity expansion and production system expansion for existing products of our business sites in China and Europe, to deliver products of a higher quality of products under a global quality assurance system | *** |
| | | Completed the construction of a production value system for new products as planned | *** |
| 2 | Establish a system for the management of human rights. | Successfully established one corporate research framework technological integration | *** |
| | | Successfully established one corporate research framework technological integration, including a company-wide research presentation meeting, meeting of research laboratory heads, and exchange training for applicable evaluation techniques | *** |
| | | Successfully established one global quality assurance system for existing products under a global quality assurance system | *** |
| | | Successfully established one global quality assurance system for existing products under a global quality assurance system | *** |
| 3 | Conduct a risk assessment for the company's activities and identify areas for improvement. | Completed management system of intellectual properties in domestic drug integration | *** |
| | | Successful allocation of intellectual properties through analysis of our own patents and those of other companies | *** |
| | | Completed by 90% (planned) for digital device in the ICT field | *** |
| | | Developed and proceeded plans for talent centers in the industrial printing field | *** |
| 4 | Establish a system for the management of human rights. | Completed agricultural registration of new trademark FRESHAGE 0 | *** |
| | | Successful reduction of working hours to 170 days / 170 days and 10 points / 10 points | *** |
| | | Completed stable procurement by seeking to improve procurement risk by gathering information through communications with suppliers and by diversifying our supplier base | *** |
| | | Completed the customer complaint base related to more than 10 million yen* | *** |
| 5 | Conduct a risk assessment for the company's activities and identify areas for improvement. | Strengthened customer complaint and quality process follow-up and prevention measures following "5-Why" analysis | *** |
| | | Continued to strengthen the global quality assurance system and created a new education center to enhance safety and technical training for employees | *** |
| | | Completed initiatives for the improvement of each business division under the Responsible Care Policy and the Chemical Industry Agreements for 2020 will be achieved | *** |
| | | Energy consumption per unit achieved target for following 2 FY's* completed to last year | *** |
| 6 | Promote human rights management. | Implemented company-wide project aimed at enhancing sustainable business technologies and established core technology | *** |
| | | Completed various forms of engagement with local residents and people | *** |
| | | Successfully reduced cases of local community activity as part of educational CSR and participated in the work-based Children's Science Experiment Show 2017 | *** |
| | | Completed on-site volunteer activities throughout Japan and raised awareness about safety detection and early treatment of breast cancer among around 20,000 people | *** |
| 7 | Conduct a risk assessment for the company's activities and identify areas for improvement. | Completed financial and non-financial information in a timely and appropriate manner | *** |
| | | Completed impact assessment in the project to review the adoption of ESG | *** |
| | | Progress of the active rate of women in management was 7.0% (5.0 percentage points higher than last year) | *** |
| | | Completed 140 training including core based training and skills training at each plant and business division | *** |
| 8 | Provide a safe and comfortable work environment for our employees. | Completed core training for employees prior to being posted overseas. Language learning support and exchange with personnel of overseas Group companies to foster globally-minded human resources | *** |
| | | Implemented training as part of measures to develop the next generation | *** |
| | | Completed training of the working base, consistent with the labor laws provided to countries, sites, and introduced the automatic paid leave system to encourage employees to take paid leave | *** |
| | | Completed technical training of the dedicated facility and construction commission following responses to company risks related to framework preservation and expansion | *** |
| 9 | Establish a system for the management of human rights. | Completed training and a learning program for all employees on harassment | *** |
| | | Completed to carry out stress check and conducted group counseling for high stress employees | *** |
| | | Completed the ethical water use project* | *** |
| | | Completed to hold for skills and safety audits of each workplace and Group company and conducted workplace safety activities. Discussed dissemination for identifying unsafe actions | *** |
| 10 | Conduct a risk assessment for the company's activities and identify areas for improvement. | Completed environmental and safety diagnosis of Group companies in China and held committee meeting working process in charge of environment and safety | *** |
| | | Completed higher profit margin increase in terms of both net sales and working income | *** |
| | | Established EHS as management subject to improve safety efficiency and prevent cost reductions at plants and the sale of site assets | *** |
| | | Completed RCP training was held for the Pharmaceutical Group in fiscal 2017 | *** |
| 11 | Conduct a risk assessment for the company's activities and identify areas for improvement. | Completed to review RCP measures focused on the frontline | *** |
| | | Completed CSR training implemented group training for 315 employees, including 100 employees in five Group companies | *** |
| | | Completed training implemented training in Japan for 1,075 employees, group training for 625 employees, RCP training for 770 employees, and group training in China for 300 employees | *** |
| | | Completed group training with visitors to be in each country/region, and took steps to comply with the EU General Data Protection Regulation (GDPR) | *** |
| 12 | Conduct a risk assessment for the company's activities and identify areas for improvement. | Completed qualification of Directors and Audit & Supervisory Board Members about the effectiveness of the Board of Directors | *** |
| | | Completed communication between the Internal Audit Department and Audit & Supervisory Board Members, held meetings between the Internal Audit Department and audit cooperation and strengthened collaboration of management | *** |
| | | Completed to improve information security training and information security self-checks involving all employees | *** |
| | | Completed to improve information security training and information security self-checks involving all employees | *** |

Result of FY 2017 CSR Action Plan PDF

Nippon Kayaku Group CSR Action Plan 2018

Nippon Kayaku Group CSR Action Plan 2018

| No. | Mid-term CSR Action Plan 2016-2018 | CSR Action Plan 2018 |
|--|--|--|
|  Safeguarding life and health | 1 "Contribute to society by promoting innovations using our technological expertise, and by stably supplying high-quality pharmaceuticals coupled with truly reliable information" | Contribute to achieve more efficient medical spending through research and development and launch of monoclonal antibody biosimilars for cancer fields and generic anti-cancer drugs, and proceed with research and development of polymeric micelle anti-cancer drugs |
| | 2 "Contribute to public safety by globally applying a wide range of advanced safety systems to improve automotive collision safety" | Develop products that match the changing needs of markets and contribute to the safety of more people around the world |
| | 3 "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" | Strengthen medium- to long-term R&D for the best products that accurately meet the needs of society |
|  Supporting a comfortable life | 4 "Contribute to the creation of an "Super Smart Society" by providing functional chemical materials that offer special characteristics for the fields of information and communication, and energy and resource conservation" | Provide functional chemical materials that contribute to the progress of digital printing, and making semiconductors and electronic devices thinner, lighter, and more compact |
| | 5 "Contribute to stable agricultural production by offering agrochemicals that suit the needs of the market environment and our customers" | Launch new insecticide FINESAVE® and promote sales to farmers Expand scope of application for existing products |
|  Contributing to the development of a sustainable society and environment | 6 Promote supply chain management | Share information with suppliers on CSR procurement and promote enhanced quality, reduced procurement risk and stable procurement |
| | 7 "Promote the additional improvement of customer satisfaction of product quality" | Continue to implement the Nippon Kayaku "Why Why" Analysis, initiatives to prevent human error, widespread communication to prevent recurrence, and risk assessments to have zero serious customer complaints |
| | 8 "Contribute to environmental preservation by promoting energy and resource conservation, and measures to prevent global warming" | Promote initiatives for achieving our FY 2020 mid-term environmental targets |
| | 9 "Improve environmental preservation technologies for water treatment" | Optimize the management of operation and maintenance control including the operating conditions of waste water facilities |
|  Represent the embodiment of a good and strong company | 10 "Contribute to coexistence with the local society through communication with its residents" | Continue to run events such as on-site festivals, local community socials, local cleanup activities, Pink Ribbon Campaign, and educational CSR at each of our locations |
| | 11 "Carry out dialogue with stakeholders by providing appropriate information in a timely manner" | Promote dialogue with shareholders and investors using appropriate financial and non-financial information with consideration given toward ESG |
| | 12 "Provide a work environment that focuses on respect for human rights and work-life balance, and promote HR training and diversity" | Promote the active role of women and global HR training in order to achieve diversity and inclusion Promote initiatives conducted in accordance with the Act on Advancement of Measures to Support Raising Next Generation Children, including promoting acquisition of childcare leave and reducing overtime, etc. Promote work style innovations and workplaces that offer work-life balance where employees can work enthusiastically and efficiently |
| | 13 "Maintain a safe and secure work environment that is free of accidents and work-related diseases" | Implement business operations balanced in terms of investments for generating stable earnings and future growth Promote initiatives for preventing accidents and disasters |
| | 14 "Secure stable earnings as a corporate group with growth potential" | Implement business operations balanced in terms of investments for generating stable earnings and future growth |
| | 15 "Maintain business continuity even during an emergency" | Implement BCP training targeting the Safety Systems Business and periodically review the BCP manual |
| | 16 "Inculc CSR management throughout the group and continue to fully implement compliance" | Continue to implement CSR and compliance training, which includes training for employees of the Group companies Comply with local laws in each country/region, and quickly and properly address legal revisions |
| | 17 Fortify corporate governance throughout the group | Enhance the quality of the governance system by continuing to implement assessments of the effectiveness of the Board of Directors, internal control, risk management and internal audits Reinforce the corporate information management system by improving IT literacy and security literacy |

*ESG is an acronym for Environment, Social and Governance.





FY 2018 CSR Action Plan 



Adobe Reader is required to view files in PDF format.













If you do not have Adobe Reader, click on the icon on the left and start downloading.

Mid-term CSR Action Plan 2016-2018

| | No | Mid-term CSR Action Plan 2016-2018 |
|---|---|--|
|  Safeguarding life and health | 1 | Contribute to society by promoting innovations using our technological expertise, and by stably supplying high-quality pharmaceuticals coupled with truly reliable information |
| | 2 | Contribute to public safety by globally supplying a wider range of automobile safety systems to improve automotive collision safety |
| | 3 | 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 |
|  Supporting a comfortable life | 4 | Contribute to the creation of an “ Super Smart Society ” by providing functional chemical materials that offer special characteristics for the fields of information and communication, and energy and resource conservation*1 |
| | 5 | Contribute to stable agricultural production by offering agrochemicals that suit the needs of the market environment and our customers |
|  Contributing to the development of a sustainable society and environment | 6 | Promote supply chain management |
| | 7 | Promote the additional improvement of customer satisfaction of product quality |
| | 8 | Contribute to environmental preservation by promoting energy and resource conservation, and measures to prevent global warming |
| | 9 | Improve environmental preservation technologies for water treatment |
|  Represent the embodiment of a good and strong company | 10 | Contribute to coexistence with the local society through communication with its residents |
| | 11 | Carry out dialogue with stakeholders by providing appropriate information in a timely manner |
| | 12 | Provide a work environment that focuses on respect for human rights and work-life balance, and promote HR training and diversity |
| | 13 | Maintain a safe and secure work environment that is free of accidents and work-related disasters |
| | 14 | Secure stable earnings as a corporate group with growth potential |
| | 15 | Maintain business continuity even during an emergency |
| | 16 | Instill CSR management throughout the group and continue to fully implement compliance |
| 17 | Fortify corporate governance throughout the group | |

*1: Partial change in wording from April 2017

Mid-term CSR Action Plan 2016-2018

| | No | Mid-term CSR Action Plan 2016-2018 | SDGs |
|---|---|---|---|
|  Safeguarding life and health | 1 | Contribute to society by promoting innovations using our technological expertise, and by stably supplying high-quality pharmaceuticals coupled with truly reliable information |         |
| | 2 | Contribute to public safety by globally supplying a wider range of automobile safety systems to improve automotive collision safety | |
| | 3 | 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 | |
|  Supporting a comfortable life | 4 | Contribute to the creation of an “ Super Smart Society” by providing functional chemical materials that offer special characteristics for the fields of information and communication, and energy and resource conservation*1 | |
| | 5 | Contribute to stable agricultural production by offering agrochemicals that suit the needs of the market environment and our customers | |
|  Contributing to the development of a sustainable society and environment | 6 | Promote supply chain management | |
| | 7 | Promote the additional improvement of customer satisfaction of product quality | |
| | 8 | Contribute to environmental preservation by promoting energy and resource conservation, and measures to prevent global warming | |
| | 9 | Improve environmental preservation technologies for water treatment | |
|  Represent the embodiment of a good and strong company | 10 | Contribute to coexistence with the local society through communication with its residents | |
| | 11 | Carry out dialogue with stakeholders by providing appropriate information in a timely manner | |
| | 12 | Provide a work environment that focuses on respect for human rights and work-life balance, and promote HR training and diversity | |
| | 13 | Maintain a safe and secure work environment that is free of accidents and work-related disasters | |
| | 14 | Secure stable earnings as a corporate group with growth potential | |
| | 15 | Maintain business continuity even during an emergency | |
| | 16 | Instill CSR management throughout the group and continue to fully implement compliance | |
| 17 | Fortify corporate governance throughout the group | | |

*1: Partial change in wording from April 2017

Mid-Term CSR Action Plan 2016-2018 for ISO26000 Core Subjects

| | No | Mid-term CSR Action Plan 2016-2018 | ISO26000 Core Subjects and Related Issues | | | | | | | | | | | | | | | | | |
|--|---|--|--|---------------|------------------------------|-------------------------|-----------------------------|--------------------------------------|----------------------------|--------------------------------------|---|---|--|------------------------|---------------------------|---|-------------------------|--------------------------|--|---|
| | | | Organizational governance Decision-making processes and structure | Human rights | | | | | | Labor practices | | | | | | The environment | | | | |
| | | | | Due diligence | Human rights risk situations | Avoidance of complicity | Resolving grievances (※N/A) | Discrimination and vulnerable groups | Civil and political rights | Economic, social and cultural rights | Fundamental principles and rights at work | Employment and employment relationships | Conditions of work and social protection | Social dialogue (※N/A) | Health and safety at work | Human development and training in the workplace | Prevention of pollution | Sustainable resource use | Climate change mitigation and adaptation | Protection of the environment, biodiversity and restoration of natural habitats |
| Safeguarding life and health | 1 | Contribute to society by promoting innovations using our technological expertise, and by stably supplying high-quality pharmaceuticals coupled with truly reliable information | | | | | | | | | | | | | | | | | | |
| | 2 | Contribute to public safety by globally supplying a wider range of automobile safety systems to improve automotive collision safety | | | | | | | | | | | | | | | | | | |
| | 3 | 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 | | | | | | | | | | | | | | | | | | |
| Supporting a comfortable life | 4 | Contribute to the creation of an " Super Smart Society " by providing functional chemical materials that offer special characteristics for the fields of information and communication, and energy and resource conservation*1 | | | | | | | | | | | | | | | | | ○ | ○ |
| | 5 | Contribute to stable agricultural production by offering agrochemicals that suit the needs of the market environment and our customers | | | | | | | | | | | | | | | | | ◎ | ◎ |
| Contributing to the development of a sustainable society and environment | 6 | Promote supply chain management | | ◎ | ◎ | ○ | | | | | | | | | | | | | ○ | |
| | 7 | Promote the additional improvement of customer satisfaction of product quality | | | | | | | | | | | | | | | | | | |
| | 8 | Contribute to environmental preservation by promoting energy and resource conservation, and measures to prevent global warming | | | | | | | | | | | | | | | | | ◎ | ◎ |
| | 9 | Improve environmental preservation technologies for water treatment | | | | | | | | | | | | | | | | | ◎ | ○ |
| Represent the embodiment of a good and strong company | 10 | Contribute to coexistence with the local society through communication with its residents | | | | | | | ○ | | | | | | | | | | | |
| | 11 | Carry out dialogue with stakeholders by providing appropriate information in a timely manner | ○ | | | | | | | | | | | | | | | | | |
| | 12 | Provide a work environment that focuses on respect for human rights and work-life balance, and promote HR training and diversity | | ◎ | ◎ | | | | | | ○ | ◎ | ○ | ◎ | | | ◎ | | | |
| | 13 | Maintain a safe and secure work environment that is free of accidents and work-related disasters | | | | | | | | | | | | | | ◎ | | ○ | | |
| | 14 | Secure stable earnings as a corporate group with growth potential | ◎ | | | | | | | | | | | | | | | | | |
| | 15 | Maintain business continuity even during an emergency | ◎ | | | | | | | | | | | | ○ | | | | | |
| | 16 | Instill CSR management throughout the group and continue to fully implement compliance | ◎ | | | | | | ○ | ○ | ○ | ○ | | | | | | | | |
| 17 | Fortify corporate governance throughout the group | ◎ | | | | | | | | | | | | | | | | | | |





*1: Partial change in wording from April 2017

| | No | Mid-term CSR Action Plan 2016-2018 | ISO26000 Core Subjects and Related Issues | | | | | | | | | | | | | | | | | | |
|--|---|--|---|-----------------------------------|------------------|--|-----------------------------|---|---|-------------------------|---|--------------------------------------|---------------------------------------|-------------------------|-----------------------|-----------------------|--|-----------------------------------|----------------------------|--------|-------------------|
| | | | Fair operating practices | | | | | Consumer issues | | | | | Community involvement and development | | | | | | | | |
| | | | Anti-corruption | Responsible political involvement | Fair competition | Promoting social responsibility in the value chain | Respect for property rights | Fair marketing, factual and unbiased information and fair contractual practices | Protecting consumers' health and safety | Sustainable consumption | Consumer service, support, and complaint and dispute resolution | Consumer data protection and privacy | Access to essential services (※N/A) | Education and awareness | Community involvement | Education and culture | Employment creation and skills development | Technology development and access | Wealth and income creation | Health | Social investment |
| Safeguarding life and health | 1 | Contribute to society by promoting innovations using our technological expertise, and by stably supplying high-quality pharmaceuticals coupled with truly reliable information | | | | | | | | | | | | | | | | | | | |
| | 2 | Contribute to public safety by globally supplying a wider range of automobile safety systems to improve automotive collision safety | | | | | | | | | | | | | | | | | | | |
| | 3 | 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 | | | | | | | | | | | | | | | | | | | |
| Supporting a comfortable life | 4 | Contribute to the creation of an " Super Smart Society " by providing functional chemical materials that offer special characteristics for the fields of information and communication, and energy and resource conservation*1 | | | | | | | | | | | | | | | | | | | |
| | 5 | Contribute to stable agricultural production by offering agrochemicals that suit the needs of the market environment and our customers | | | | | | | | | | | | | | | | | | | |
| Contributing to the development of a sustainable society and environment | 6 | Promote supply chain management | | | ○ | ◎ | | | | | | | | | | | | | | | |
| | 7 | Promote the additional improvement of customer satisfaction of product quality | | | | ○ | | | | | | | | | | | | | | | |
| | 8 | Contribute to environmental preservation by promoting energy and resource conservation, and measures to prevent global warming | | | | | | | | | | | | | | | | | | | |
| | 9 | Improve environmental preservation technologies for water treatment | | | | | | | | | | | | | | | | | | | |
| Represent the embodiment of a good and strong company | 10 | Contribute to coexistence with the local society through communication with its residents | | | | | | | | | | | | | | ○ | ◎ | ◎ | ○ | ○ | ○ |
| | 11 | Carry out dialogue with stakeholders by providing appropriate information in a timely manner | | | | | | | | | | | | | | | | | | | |
| | 12 | Provide a work environment that focuses on respect for human rights and work-life balance, and promote HR training and diversity | | | | | | | | | | | | | | | | | | | |
| | 13 | Maintain a safe and secure work environment that is free of accidents and work-related disasters | | | | | | | | | | | | | | | | | | | |
| | 14 | Secure stable earnings as a corporate group with growth potential | | | ○ | | | | | | | | | | | | | | | | |
| | 15 | Maintain business continuity even during an emergency | | | | | | | | | | | | | | | | | | | |
| | 16 | Instill CSR management throughout the group and continue to fully implement compliance | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | ○ | | | | | |
| 17 | Fortify corporate governance throughout the group | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | ○ | | | | | | |

*1: Partial change in wording from April 2017





CSR Action Plan 2017 Achievements

★★★ Target achieved
 ★★☆ Almost achieved
 ★☆☆ Under-going efforts toward improvement
 ☆☆☆ Not achieved

| | No | Mid-term CSR Action Plan 2016–2018 | CSR Action Plan FY 2017 Achievements | Assessment levels |
|--|----|--|--|-------------------|
|  Safeguarding life and health | 1 | Contribute to society by promoting innovations using our technological expertise, and by stably supplying high-quality pharmaceuticals coupled with truly reliable information | <ul style="list-style-type: none"> Commenced clinical trial for NK105, a polymeric micelle anti-cancer drug Brought to market Temozolomide NK tablets, a generic anti-cancer drug Obtained marketing approval for Trastuzumab BS NK, a monoclonal antibody biosimilar for cancer fields | ★★★ |
| | 2 | Contribute to public safety by globally supplying a wider range of automobile safety systems to improve automotive collision safety | <ul style="list-style-type: none"> Completed capacity increases and production system expansion for existing products at our business sites in Japan and overseas as planned and provided a stable supply of products under a global quality assurance system Completed the construction of a production/sales system for new products as planned | ★★☆ |
| | 3 | 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 | <ul style="list-style-type: none"> Newly established one corporate research theme seeking technological integration Held initiatives for creating opportunities for mutual understanding and integration of technologies, including a company-wide research presentation meeting, meeting of research laboratory heads, and exchange meeting for analytical evaluation technologies Newly established two joint research projects with research institutions inside and outside Japan | ★★★ |
|  Supporting a comfortable life | 4 | Contribute to the creation of an “Super Smart Society” by providing functional chemical materials that offer special characteristics for the fields of information and communication, and energy and resource conservation*1 | <ul style="list-style-type: none"> Provided dry film photoresist for digital devices in the ICT field Developed and provided pigments for inkjet printers in the industrial printing field | ★★★★ |
| | 5 | Contribute to stable agricultural production by offering agrochemicals that suit the needs of the market environment and our customers | <ul style="list-style-type: none"> Completed agrochemical registration of new insecticide FINESAVE® Expanded indications of existing insecticides to 13 crops + 1 crop family and 19 pests & diseases | ★★★★ |
| | 6 | Promote supply chain management | <ul style="list-style-type: none"> Ensured stable procurement by seeking to mitigate procurement risk by gathering information through communications with suppliers and by diversifying our supplier base | ★★☆☆ |
|  Contributing to the development of a sustainable society and environment | 7 | Promote the additional improvement of customer satisfaction of product quality | <ul style="list-style-type: none"> One serious customer complaint (loss valued at more than 10 million yen)¹ Revamped the customer complaint database and quality process failure database and rolled out preventive measures following “Why Why” analysis Continued to strengthen the global quality assurance system and created a new education center to enhance safety and technical training for employees | ★★☆☆ |
| | 8 | Contribute to environmental preservation by promoting energy and resource conservation, and measures to prevent global warming | <ul style="list-style-type: none"> Conducted initiatives for the environment at each business division under the Responsible Care Policy and the forecast indicates targets for 2020 will be achieved Energy consumption per unit: achieved target by reducing 2.7%¹ compared to last year | ★★★★ |
| | 9 | Improve environmental preservation technologies for water treatment | <ul style="list-style-type: none"> Implemented company-wide project aimed at enhancing wastewater treatment technologies and established core technology | ★★★★ |
| | 10 | Contribute to coexistence with the local society through communication with its residents | <ul style="list-style-type: none"> Continued various forms of engagement with local residents around plants Held outreach classes at local elementary schools as part of educational CSR and participated in the event-based Children’s Science Experiment Show 2017 Carried out Pink Ribbon Campaign activities throughout Japan and raised awareness about early detection and early treatment of breast cancer among around 20,000 people | ★★★★ |
|  Represent the embodiment of a good and strong company | 11 | Carry out dialogue with stakeholders by providing appropriate information in a timely manner | <ul style="list-style-type: none"> Disclosed financial and non-financial information in a timely and appropriate manner Continued ongoing engagement with institutional investors Carried out impact assessment in the project to review the adoption of IFRS | ★★★ |
| | 12 | Provide a work environment that focuses on respect for human rights and work-life balance, and promote HR training and diversity | <ul style="list-style-type: none"> Promotion of the active role of women: percentage of women in management was 7.0%¹ (0.3 percentage points higher than last year) Carried out HR training including rank-based training and skills training at each plant and business division Carried out training for employees prior to being posted overseas, language learning support and interchange with personnel of overseas Group companies to foster globally-minded human resources Held manager training as part of measures to develop the next generation Held a meeting of the working hours committee with the labor union, promoted no overtime days, and introduced the anniversary paid leave system to encourage employees to take paid leave Reinforced operations of the dedicated hotline and countermeasures committee following revisions to company rules related to harassment prevention and responses Held group training and e-learning program (for all employees) on harassment | ★★☆☆ |
| | 13 | Maintain a safe and secure work environment that is free of accidents and work-related disasters | <ul style="list-style-type: none"> Continued to carry out stress check-ups and conducted group counseling for high stress workplaces One electrical system work accident¹ Continued to hold fire drills and safety audits at each workplace and Group company and commenced workplace patrol activities (fixed-point observations) for identifying unsafe actions Carried out environmental and safety diagnoses at Group companies in China and held committee meeting involving persons in charge of environment and security | ★★☆☆ |
| | 14 | Secure stable earnings as a corporate group with growth potential | <ul style="list-style-type: none"> Achieved higher profit on higher revenue in terms of both net sales and operating income Established ROIC as a management indicator to improve capital efficiency and promoted cost reductions at plants and the sale of idle assets | ★★★★ |
| | 15 | Maintain business continuity even during an emergency | <ul style="list-style-type: none"> BCP training was held for the Pharmaceuticals Group in fiscal 2017 Continued to review BCP manuals focused on the frontlines | ★★★★ |
| | 16 | Instill CSR management throughout the group and continue to fully implement compliance | <ul style="list-style-type: none"> CSR training: Implemented group training for 315 employees, including 189 employees in five Group companies Compliance training: In Japan, implemented e-learning for 1,973 employees, group training for 825 employees, and DVD training for 778 employees, and in China, implemented group training for 380 employees Complied promptly with revisions to laws in each country/region, and took steps to comply with the EU General Data Protection Regulation (GDPR) | ★★★★ |
| | 17 | Fortify corporate governance throughout the group | <ul style="list-style-type: none"> Conducted questionnaire of Directors and Audit & Supervisory Board Members about the effectiveness of the Board of Directors Exchanged views between the Internal Audit Department and Audit & Supervisory Board Members, held meetings between the Internal Audit Department and audit corporation, and strengthened collaboration of three-pronged audits Continued to implement information security training and information security self checks involving all employees | ★★★ |

*1: Figures for Nippon Kayaku on a non-consolidated basis

Nippon Kayaku Group CSR Action Plan 2018

| | No | Mid-term CSR Action Plan 2016–2018 | CSR Action Plan 2018 |
|--|--|---|--|
|  Safeguarding life and health | 1 | "Contribute to society by promoting innovations using our technological expertise, and by stably supplying high-quality pharmaceuticals coupled with truly reliable information" | Contribute to achieve more efficient medical spending through research and development and launch of monoclonal antibody biosimilars for cancer fields and generic anti-cancer drugs, and proceed with research and development of polymeric micelle anti-cancer drugs |
| | 2 | "Contribute to public safety by globally supplying a wider range of automobile safety systems to improve automotive collision safety" | Develop products that match the changing needs of markets and contribute to the safety of more people around the world |
| | 3 | "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" | Strengthen medium- to long-term R&D for the best products that accurately meet the needs of society Promote creation, protection, analysis and utilization of intellectual properties and reinforce the management system for intellectual properties at overseas group companies |
|  Supporting a comfortable life | 4 | "Contribute to the creation of an " Super Smart Society" by providing functional chemical materials that offer special characteristics for the fields of information and communication, and energy and resource conservation" | Provide functional chemical materials that contribute to the progress of digital printing, and making semiconductors and electronic devices thinner, lighter, and more compact |
| | 5 | "Contribute to stable agricultural production by offering agrochemicals that suit the needs of the market environment and our customers" | Launch new insecticide FINESAVE® and promote sales to farmers Expand scope of application for existing products |
|  Contributing to the development of a sustainable society and environment | 6 | Promote supply chain management | Share information with suppliers on CSR procurement and promote enhanced quality, reduced procurement risk and stable procurement |
| | 7 | "Promote the additional improvement of customer satisfaction of product quality" | Continue to implement the Nippon Kayaku "Why Why" Analysis, initiatives to prevent human error, widespread communication to prevent recurrence, and risk assessments to have zero serious customer complaints Strengthen the quality assurance system and address the increasing needs of customers |
| | 8 | "Contribute to environmental preservation by promoting energy and resource conservation, and measures to prevent global warming" | Promote initiatives for achieving our FY 2020 mid-term environmental targets |
| | 9 | "Improve environmental preservation technologies for water treatment" | Optimize the management of operation and maintenance control including the operating conditions of waste water facilities |
| | 10 | "Contribute to coexistence with the local society through communication with its residents" | Continue to run events such as on-site festivals, local community socials, local cleanup activities, Pink Ribbon Campaign, and educational CSR at each of our locations |
|  Represent the embodiment of a good and strong company | 11 | "Carry out dialogue with stakeholders by providing appropriate information in a timely manner" | Promote dialogue with shareholders and investors using appropriate financial and non-financial information with consideration given toward ESG* |
| | 12 | "Provide a work environment that focuses on respect for human rights and work-life balance, and promote HR training and diversity" | Promote the active role of women and global HR training in order to achieve diversity and inclusion |
| | | | Promote initiatives conducted in accordance with the Act on Advancement of Measures to Support Raising Next-Generation Children, including promoting acquisition of childcare leave and reducing overtime, etc. |
| | | | Promote work-style innovations and workplaces that offer work-life balance where employees can work enthusiastically and efficiently |
| | 13 | "Maintain a safe and secure work environment that is free of accidents and work-related disasters" | Implement business operations balanced in terms of investments for generating stable earnings and future growth |
| | | | Promote initiatives for preventing accidents and disasters |
| | 14 | "Secure stable earnings as a corporate group with growth potential" | Implement business operations balanced in terms of investments for generating stable earnings and future growth |
| 15 | "Maintain business continuity even during an emergency" | Implement BCP training targeting the Safety Systems Business and periodically review the BCP manual | |
| 16 | "Instill CSR management throughout the group and continue to fully implement compliance" | Continue to implement CSR and compliance training, which includes training for employees of the Group companies | |
| | | Comply with local laws in each country/region, and quickly and properly address legal revisions | |
| 17 | Fortify corporate governance throughout the group | Enhance the quality of the governance system by continuing to implement assessments of the effectiveness of the Board of Directors, internal control, risk management and internal audits | |
| | | Reinforce the corporate information management system by improving IT literacy and security literacy | |



Corporate Governance

The Nippon Kayaku Group Corporate Governance and Internal Control System

Fundamental Approach to Corporate Governance

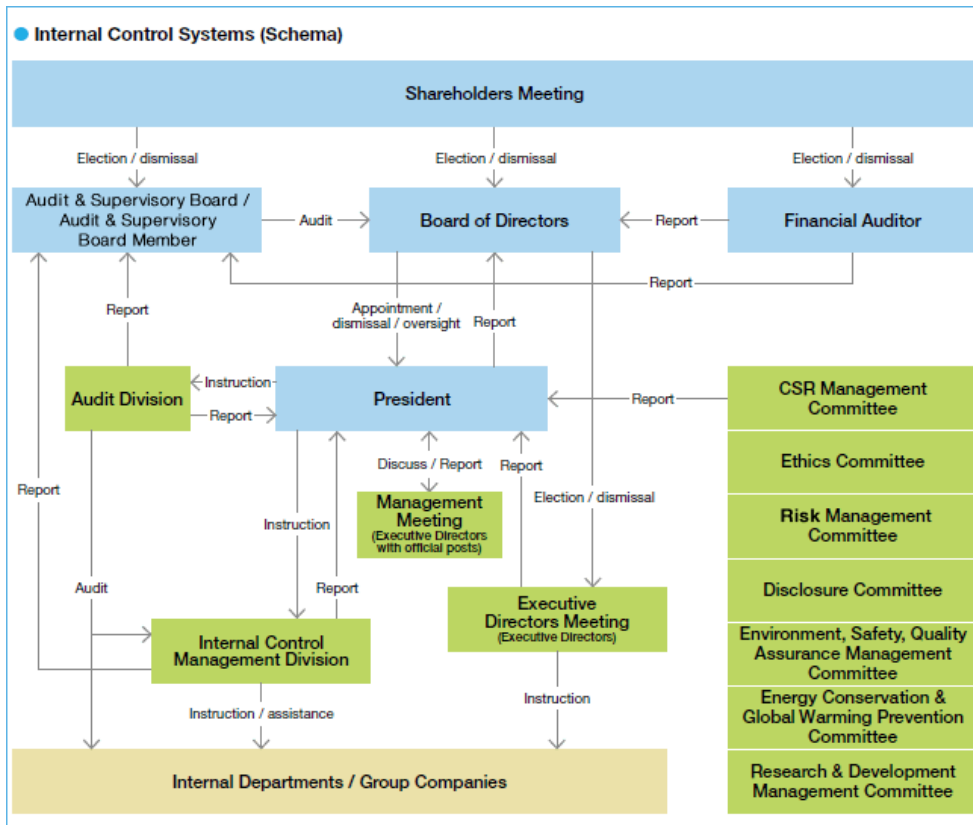
To gain the trust of society, the Nippon Kayaku Group recognizes the vital importance of preserving business transparency through greater checks and balances and of timely, impartial information disclosure to investors and shareholders. To that end, we have put in place an autonomous corporate governance system.

Corporate Governance System

Through decision-making by the council system of our Board of Directors and the corporate auditor system, the Nippon Kayaku Group believes that its system of corporate governance effectively supports management functions.

We have introduced the executive director system, which clearly separates management's decision-making and supervisory functions from business execution functions enabling each of these functions to be reinforced, whereby ensuring that appropriate decision making and punctual business execution take place. In addition, we have also elected independent Outside Directors in order to enhance the supervisory functions over those executing daily operations. Audit & Supervisory Board Members attend various important internal meetings including meetings of the Board of Directors, as well as communicate with the Internal Audit Department in monitoring and supervising the execution of duties of the Directors from an independent perspective.

[Summary of Internal Control Systems](#) 



Internal Control System and Corporate Auditor Audits

The Internal Audit Department has been established separate from the Audit & Supervisory Board and is directly managed by the president in order to perform internal audit that help prevent improprieties and errors before they happen, improve business operations, and protect company assets. This department performs business audit on all Nippon Kayaku Group companies in accordance with the fiscal year plan.

Audit & Supervisory Board Members attend board of director meetings and other important company deliberations and performs business execution audits to oversee and monitor directors' execution of duties from an independent perspective in accordance with the audit policy, audit plan, and assignment of duties decided by the Audit & Supervisory Board.

Summary of each Meeting

Board of Directors Meeting (Held Monthly)

To ensure prompt decision-making, the Board is limited to 10 members. Decisions related to important business matters are made through the stipulations of the Board of Directors in conformity with relevant laws and our articles of incorporation. Operational oversight functions also are being strengthened.

Management Meeting (Held Weekly)

The Management Meeting deliberates important matters related to management and business affairs and receives reports from business divisions. The President, as the chairman, makes decisions after thorough deliberation among the Management Meeting members.

Executive Directors Meeting (Held Quarterly)

The Executive Directors Meeting is chaired by the President, and attended by all Executive Directors (up to 25) appointed by the Board of Directors. Executive Directors report on the status of the businesses they have been entrusted with from the Board of Directors and the President as well as other necessary matters.

Management Strategy Meeting (Held Semi-Annually)

Important management matters at the Board Meeting such as basic policy of our group and management strategy are distributed to management personnel through the Management Strategy Meeting to ensure thorough understanding and awareness.

Board of Auditors Meeting (Held Monthly)

The Board of Auditors consists of five auditors (three external). The members monitor and oversee the duties of Directors from an independent position based on the stipulations of the Board of Auditors..

In addition, the Company clarifies authority and responsibility by management position, segregation of duties and company organization structure, setting rules that stipulate duties and powers. This promotes organized and efficient operations and establishes a framework of accountability.

Establishment of Various Committees

CSR Management Committee

Decides CSR action policy and mid-term action plan as well as confirms the validity of the measures based on KAYAKU spirit and CSR philosophy to undertake corporate social responsibility sustainably.

Ethics Committee

Works to formulate policies and measures for compliance and implementation of the Charter of Business Conduct and Code of Business Conduct and to evaluate companywide compliance.

Risk Management Committee

Develops and maintains a risk management structure for risk preventive measure, damage control and damage remediation over the full range of management issues.

Disclosure Committee

Scrutinizing important managerial information of the company and maintains and improves the structure for timely and proper external disclosure.

Environment, Safety, and Quality Assurance Management Committee

Presents its fiscal year policies on environment, safety, and quality assurance matters. Assesses results, and devises plans for improvement.

Energy Conservation and Global Warming Prevention Committee

Makes mid- and long-term plans, confirms each activity and discusses measures to problems based on the policy about energy conservation and global warming prevention.

These results are disclosed to inside and outside the company.

Research & Development Management Committee

Develops company-wide research and development policies and strategies. A forum to report, discuss and make decisions on important research and development matters.



Compliance

The Nippon Kayaku Group widely recognizes compliance as not only complying with 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

The Nippon Kayaku Group, believing that compliance holds a position of the utmost importance in its business activities, established the Nippon Kayaku Action Charter and Nippon Kayaku Action Standards in 2000. Later, in 2011, this was amended to the [Nippon Kayaku Group Charter of Conduct and Code of Conduct](#), which follows ISO 26000, the international standard for effectively assessing and addressing social responsibilities.

Nippon Kayaku Group Charter of Conduct

Business operation

1. The Nippon Kayaku Group will pay careful attention to the safety and reliability of its products and services, and provide customers with products and services satisfying their needs.
2. The Nippon Kayaku Group will comply with the words and spirit of relevant laws and regulations, as well as with its internal rules, to conduct fair, transparent and open competition.
3. In conducting overseas business operations, the Nippon Kayaku Group will comply with relevant laws and regulations in Japan and abroad, and respect the culture and customs of each country and region.
4. The Nippon Kayaku Group will appropriately manage and utilize the company assets and seek to improve the efficiency of business operations, so as to achieve a continuous growth.
5. The Nippon Kayaku Group will deal firmly with anti-social forces, and will not yield to unjustified or illegal requests.

Relationship with the society

6. The Nippon Kayaku Group will promote coordination and cooperation with society and contribute to the society as a good corporate citizen.
7. The Nippon Kayaku Group will disclose information concerning on its business operations to customers, local society, employees and business partners, based on objective facts, in an adequate and timely manner.
8. The Nippon Kayaku Group will always give consideration to the impact of its business on the global environment. The Group will aim to achieve environmentally friendly business operation, by not only by compliance with relevant laws and regulations, but also by establishing voluntary standards.

Management of business information

9. The Nippon Kayaku Group will adequately protect any information obtained through its business operations and develop countermeasures safeguarding against information leakages and unauthorized external and internal access.
10. The Nippon Kayaku Group will acknowledge the proprietary nature of information (Intellectual Property) and respect the rights of others.

Relationship between the company and individuals

11. The Nippon Kayaku Group will comply with labor laws and regulations to ensure a safe and comfortable working environment, and will also respect the fundamental human rights and privacy of the individuals.

Relationship between the Code of Conduct and ISO 26000

Relationship between the Code of Conduct and ISO 26000

| Nippon Kayaku Group Charter of Conduct | Nippon Kayaku Group Code of Conduct | ISO26000 Core Subjects and Related Issues | | | | | |
|---|--|---|------------------|-----------------|--------------------------|-----------------|--|
| | | Human Rights | Labour Practices | The Environment | Fair Operating Practices | Consumer Issues | Community Involvement and Philanthropy |
| Business operation | Code of Conduct on business operations | | | | | | |
| 1. The Nippon Kayaku Group will pay careful attention to the safety and reliability of its products and services, and provide customers with products and services satisfying their needs. | 1 Product safety and quality | | | | | ● | |
| 2. The Nippon Kayaku Group will comply with the words and spirit of relevant laws and regulations, as well as with its internal rules, to conduct fair, transparent and open competition. | 2 Provision of product information | | | | | ● | |
| 3. In conducting overseas business operations, the Nippon Kayaku Group will comply with relevant laws and regulations in Japan and abroad and respect the cultures and customs of each country and region. | 3 Fair and impartial trade | | | | | ● | |
| 4. The Nippon Kayaku Group will appropriately manage and utilize the company assets and seek to improve the efficiency of business operations, so as to achieve a continuous growth. | 4 Prohibition of excessive gifts and entertainment | | | | | ● | |
| 5. The Nippon Kayaku Group will deal fairly with anti-social forces, and will not yield to unjustified or illegal requests. | 5 Priority on ethics | ● | ● | | | ● | ● |
| | 6 Prohibition of pursuit of individual benefits | | | | | ● | ● |
| | 7 Compliance with local laws and regulations and respect for international norms, cultures and customs | ● | ● | ● | ● | ● | ● |
| | 8 Adequate protection and efficient utilization of corporate assets | | | | | ● | |
| | 9 Active efforts for operational improvement | | | | | ● | ● |
| | 10 Exclusion of anti-social forces, criminal and/or other illegitimate sources | | | | | ● | |
| Relationship with the society | Code of Conduct on the relationship with society | | | | | | |
| 6. The Nippon Kayaku Group will promote coordination and cooperation with society and contribute to the society as a good corporate citizen. | 11 Social action programs | | | | | | ● |
| 7. The Nippon Kayaku Group will disclose information concerning its business operations to customers, local society, employees and business partners, based on objective facts, in an adequate and timely manner. | 12 Exchange with local societies | | | | | | ● |
| 8. The Nippon Kayaku Group will always give consideration to the impact of its business on the global environment. The Group will aim to achieve environmentally friendly business operation, by not only complying with relevant laws and regulations, but also by establishing voluntary standards. | 13 Adequate and timely disclosure of information | | | | | ● | ● |
| | 14 Thorough crisis management | ● | | | | ● | ● |
| | 15 Prohibition of insider trading | | | | | ● | |
| | 16 Environmental C | | | | | ● | |
| | 17 Environmental protection efforts/existence | | | | | ● | |
| Management of business information | Code of Conduct for the management of business information | | | | | | |
| 9. The Nippon Kayaku Group will adequately protect any information obtained through its business operations and develop countermeasures safeguarding against information leakage and unauthorized external and internal access. | 18 Protection of business information | | | | | ● | |
| 10. The Nippon Kayaku Group will acknowledge the proprietary nature of information (Intellectual Property) and respect the rights of others. | 19 Protection of personal information | ● | | | | ● | |
| | 20 Appropriate use of information system | | | | | ● | |
| | 21 Respect for the rights of other people | | | | | ● | |
| Relationship between the company and individuals | Code of Conduct on the relationship between the company and individuals | | | | | | |
| 11. The Nippon Kayaku Group will comply with labor laws and regulations to ensure a safe and comfortable working environment, and will also respect the fundamental human rights and privacy of the individuals. | 22 Maintenance of the working environment | ● | ● | | | | |
| | 23 Prohibition of harassment and abuse of power | ● | ● | | | | |
| | 24 Respect for human rights and privacy | ● | ● | | | | |

Relationship between the Code of Conduct and ISO 26000

Raising Awareness about Compliance

The Nippon Kayaku Group provides training and calls on each workplace to establish an action plan in order to instill and foster greater awareness of compliance among its employees. In turn, specific compliance related activities are carried out at each workplace. The results of these activities carried out throughout each fiscal year are evaluated and then utilized in continuous efforts to 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 comments 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 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 requests for improvements to be made.

Compliance Training for Nippon Kayaku Group Companies

Organized by the Internal Control Management Division, compliance training in Japan consists of fiscal year training sessions which focus on a specific theme determined for each year, along with study sessions held during regular meetings at each workplace, and training sessions based on actual case studies.

The theme of training for fiscal 2017 was "Training on the Prevention of Workplace Harassment: Maternity Harassment, Nursing Care Harassment and LGBT Harassment." This theme was selected because of the promulgation of the revised Equal Employment Opportunity Act and the revised Child Care and Family Care Leave Act in January 2017, which was followed by revisions to related company rules.

Initially, the aforementioned training was held at liaison meetings of ethics managers from Group companies in Japan and each business site and led by Ms. Itoh of Cuore C Cube., Ltd. to broaden understanding among ethics managers. Thereafter, ethics managers returned to their workplaces where they shared feedback about the training session.

In order to provide training opportunities and programs to all employees, in addition to group training and recording training sessions on DVD and distributing these to employees who could not attend, starting in fiscal 2017, training was also provided via e-Learning for the first time at Nippon Kayaku and certain subsidiaries. As a result, compliance training was provided to a total of 3,576 employees, which included e-Learning given to 1,973 employees, eight group training sessions for 825 employees, DVD-based training for 778 employees.

Raising Awareness at Overseas Group Companies

Close to half of the Nippon Kayaku Group's sales originate from overseas group companies, while our workforce overseas already outnumbers that in Japan. We have a large number of group companies in China that employ close to 1,000 people. For this reason, we find it important to ensure thorough understanding of KAYAKU spirit and compliance. In fiscal 2017, we held the first-ever ethics manager conference with ethics managers and the presidents of group companies in China. During the meeting, discussions took place on compliance initiatives at each company, issues, and future approaches, among other topics.



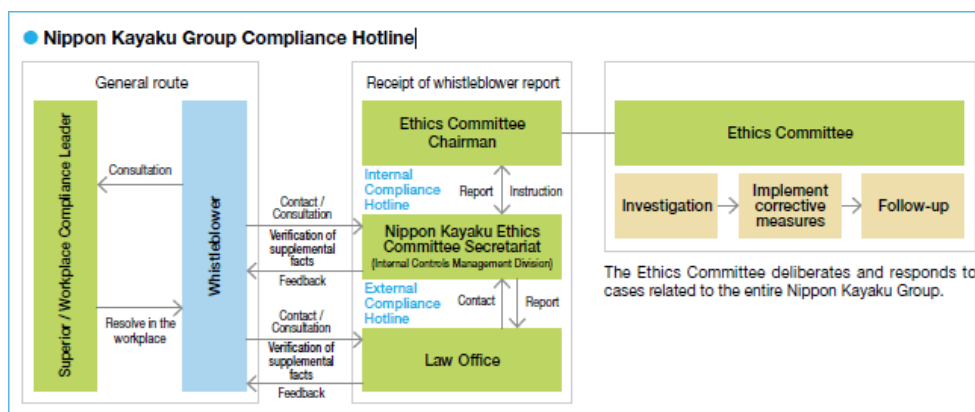
The person in charge of legal affairs from Kayaku (Shanghai) Co., Ltd. and the Internal Control Management Division worked together to organize compliance training for local employees at six group companies on 10 occasions. A survey was also conducted of the 380 participants, with feedback set to be used for future training sessions.



Going forward, we will continue efforts to make global compliance activities more effective and efficient by deepening collaboration among different departments, taking into account the current situation in each country.

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.



Number and nature of reports over the previous three years

| Nature of reports | 2015 | 2016 | 2017 |
|--|------|------|------|
| Acts that damage the work environment (power harassment/sexual harassment, etc.) | 7 | 7 | 2 |
| Violations of company rules or etiquette | 1 | 1 | 1 |
| Others | 0 | 0 | 0 |

Risk Management System

Identifying and controlling various risks represents an important element of corporate governance. The Nippon Kayaku Group works to mitigate risks following the Risk Management Action Plan approved by the Risk Management Committee.

Activities Promoting Risk Management

The Nippon Kayaku Group is carrying out TOP5 Risk Control Activities as part of its Risk Management Action Plan.

TOP5 Risk Control Activities cover all subsidiaries of the Nippon Kayaku Group that are in turn broken down into more than 70 individual groups. Each group works on identifying their inherent risks, of which the five most critical items are selected and defined as "TOP5 risks." At the start of the year, each group formulates countermeasures for their TOP5 risks, the results of which are compiled by the staff in charge of risk management at fiscal year end for analysis and trend mapping. The collected data is reported to the Risk Management Committee, which continuously examines the data for risks present for the company as a whole, to make sure small risks are not being overlooked, and to see if risk management is being carried out effectively, for utilization in management-level decision making.

Information Security Initiatives

We established the Information Security Subcommittee under the Risk Management Committee as an organization for helping to reinforce information security of the entire company with the goal of managing and monitoring company-wide information security during normal times and preventing risks such as information leakages before they happen. Based on the Corporate Information Management Regulations covering the entire company, persons in charge of corporate information appointed by each workplace draft regulations for their own respective workplaces and also work to raise the awareness of each and every employee about information security through ongoing information security training.

In fiscal 2017, we had all employees carry out an information security self-check. We hope to identify issues at the individual level, and then use this information for future improvement plans.

Risk Management Training

The Nippon Kayaku Group implements the Plan, Check, Do, Action (PDCA) cycle continuously so that it can minimize risks and raise awareness of risk. 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. These manuals also form part of our risk management system.

The first version of the Risk Management Manual was established in fiscal 2000 so that various risks surrounding the Nippon Kayaku Group's business operations could be managed and addressed in a proper manner. The second revised version of this manual was published in fiscal 2010, followed by the third version in fiscal 2015, which contains major changes, including the defined risk events and the relevant departments in charge.

Members of the headquarters for disaster countermeasures of Agrochemical Business, including mainly heads of business divisions, were able to create a shipment and production plan for fulfilling customer needs during the training, while working not only with the head office, but the Kashima Plant as well.

The Nippon Kayaku Group's Business Continuity Plan Initiatives

We have conducted business continuity plan (BCP) training at the head office since fiscal 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.

[FY 2017 Nippon Kayaku Group Disaster Prevention Training Activities Summary sheet](#) 

■ Preparing BCP Manuals

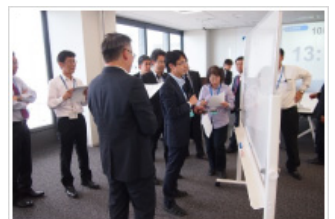
Nippon Kayaku Group has launched a cross-organizational BCP project, under which all business divisions and plants in Japan have established their BCP Manuals, based on the premise that after a contingency, the business must be recovered within the given time objective.. In addition, Nippon Kayaku Group has begun preparing BCP manuals at overseas group companies in order to respond to global risks. In fiscal 2016, two Chinese subsidiaries established BCP manuals and put them into practice.

■ BCP Training

Ongoing training is critical to implementing the established BCP Manual promptly. We hold BCP training every year, which involves the president as well as all executive officers.

In fiscal 2017, we conducted a simulation of business restoration behavior at the occurrence of a large-scale earthquake, for Pharmaceuticals Group, Takasaki Plant, and Osaka Pharmaceutical Office.

Going forward, we will continue to carry out BCP training based on a wide variety of scenarios.



■ Takasaki Plant's Fire and Disaster Prevention Activities

Since the Great Hanshin-Awaji Earthquake, reinforcing the ability to deal with 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. Thus, the comprehensive fire prevention drill is held as part of the plant's fire prevention management during the spring and in the autumn the plant holds comprehensive disaster prevention training using the scenario of a major earthquake (seismic intensity of 6 upper) as part of its disaster prevention management.



All employees participate in both trainings in which the head office and each district are separated into teams to conduct 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 training drills at the same time as those mentioned above. 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 drill quite beneficial to all involved.



Also, fire training using actual fire extinguishers is held every year as part of the safety training for new hires and AED training is held as part of Safety Week in October.

Furthermore, following the Great East Japan Earthquake, we have systematically established provisions of food rations (1,000 meals), drinking water and fuel (diesel and gasoline) as part of our emergency response. These provisions are continually maintained for use in emergencies.

Disaster Prevention Training at Kayaku Safety Systems de Mexico (KSM)

KSM conducts disaster prevention training so that it can prepare for workplace accidents and respond appropriately during an emergency situation.



The disaster prevention training is designed to comply with Mexican laws and regulations and focuses on risks that could occur at the site.

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



KSM has an emergency response brigade that comprises 40 employees representing each department. Training for this emergency response brigade takes place at an offsite institution certified by the government, while the lecturer is an outside expert in the field. This training involves not only knowledge-based learning 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 practices the rescue of people, including those with injuries, even in 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.



2017 Evacuation Training and Chemical Spill Training at Kayaku Safety Systems Malaysia Sdn. Bhd. (KMY)

KMY held evacuation and chemical spill training on April 27, 2017. 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 involved ensuring that all employees can reach a predetermined location following the emergency evacuation route during an emergency situation.

The chemical spill training involved the person in charge at the department that caused the spill making a report to ERT members. In turn, they also had to carry out prompt and appropriate cleanup. In addition, 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 all fire fighting facilities are in place and ready for use in an emergency and KMY's fire fighting, support, and first aid teams along with production staff are standing by and ready to assist during an emergency.





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Relationship between the Code of Conduct and ISO 26000

| Nippon Kayaku Group Charter of Conduct | Nippon Kayaku Group Code of Conduct | | ISO26000 Core Subjects and Related Issues | | | | | |
|---|--|--|---|-----------------|-----------------|--------------------------|-----------------|---------------------------------------|
| | | | Human rights | Labor practices | The environment | Fair operating practices | Consumer issues | Community involvement and development |
| ■ Business operation | Code of Conduct on business operations | | | | | | | |
| <p>1. The Nippon Kayaku Group will pay careful attention to the safety and reliability of its products and services, and provide customers with products and services satisfying their needs.</p> <p>2. The Nippon Kayaku Group will comply with the words and spirit of relevant laws and regulations, as well as with its internal rules, to conduct fair, transparent and open competition.</p> <p>3. In conducting overseas business operations, the Nippon Kayaku Group will comply with relevant laws and regulations in Japan and abroad, and respect the culture and customs of each country and region.</p> <p>4. The Nippon Kayaku Group will appropriately manage and utilize the company assets and seek to improve the efficiency of business operations, so as to achieve a continuous growth.</p> <p>5. The Nippon Kayaku Group will deal firmly with anti-social forces, and will not yield to unjustified or illegal requests.</p> | 1 | Product safety and quality | | | | | ● | |
| | 2 | Provision of product information | | | | | ● | |
| | 3 | Fair and impartial trade | | | | ● | ● | |
| | 4 | Prohibition of excessive gifts and entertainment | | | | ● | | |
| | 5 | Priority on ethics | ● | ● | | ● | ● | ● |
| | 6 | Prohibition of pursuit of individual benefits | | | | ● | | ● |
| | 7 | Compliance with local laws and regulations and respect for international norms, cultures and customs | ● | ● | ● | ● | ● | ● |
| | 8 | Adequate protection and efficient utilization of corporate assets. | | | | ● | | |
| | 9 | Active efforts for operational improvement | | ● | ● | ● | | |
| | 10 | Exclusion of anti-social forces, criminal and/or other illegitimate sources | | | | ● | | |
| ■ Relationship with the society | Code of Conduct on the relationship with society | | | | | | | |
| <p>6. The Nippon Kayaku Group will promote coordination and cooperation with society and contribute to the society as a good corporate citizen.</p> <p>7. The Nippon Kayaku Group will disclose information concerning on its business operations to customers, local society, employees and business partners, based on objective facts, in an adequate and timely manner.</p> <p>8. The Nippon Kayaku Group will always give consideration to the impact of its business on the global environment. The Group will aim to achieve environmentally friendly business operation, by not only by compliance with relevant laws and regulations, but also by establishing voluntary standards.</p> | 11 | Social action programs | | | | | | ● |
| | 12 | Exchange with local societies | | | | | | ● |
| | 13 | Adequate and timely disclosure of information | | | | ● | ● | ● |
| | 14 | Thorough crisis management | | ● | | ● | ● | ● |
| | 15 | Prohibition of insider trading | | | | ● | | |
| | 16 | Environmental C | | | ● | | | |
| | 17 | Environmental protection effortsoexistence | | | ● | | | |
| ■ Management of business information | Code of Conduct for the management of business information | | | | | | | |
| <p>9. The Nippon Kayaku Group will adequately protect any information obtained through its business operations and develop countermeasures safe-guarding against information leakages and unauthorized external and internal access.</p> <p>10. The Nippon Kayaku Group will acknowledge the proprietary nature of information (Intellectual Property) and respect the rights of others.</p> | 18 | Protection of business information | | | | ● | | |
| | 19 | Protection of personal information | ● | | | ● | ● | |
| | 20 | Appropriate use of information system | | | | ● | | |
| | 21 | Respect for the rights of other people | | | | ● | | |
| ■ Relationship between the company and individuals | Code of Conduct on the relationship between the company and individuals | | | | | | | |
| <p>11. The Nippon Kayaku Group will comply with labor laws and regulations to ensure a safe and comfortable working environment, and will also respect the fundamental human rights and privacy of the individuals.</p> | 22 | Maintenance of the working environment | ● | ● | | | | |
| | 23 | Prohibition of harassment and abuse of power | ● | ● | | | | |
| | 24 | Respect for human rights and privacy | ● | ● | | | | |

FY2017 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

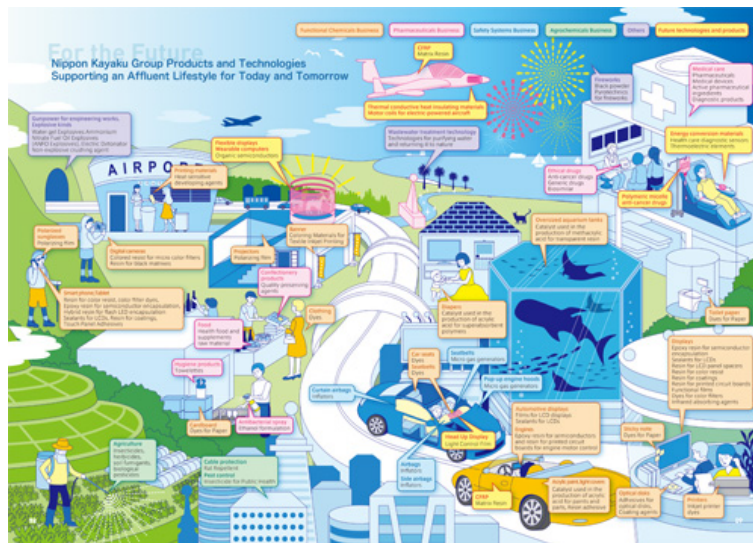
| Business site/ Company name | Comprehensive disaster prevention training* | Notification training, evacuation training | Early stage fire-fighting training ; Use of fire extinguishers and fire hydrants, firefighting skills Satellite phone training | Earthquake simulation training | First-Aid training, 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 | — | ● | × | × | × | × | — |
| NIKKA FINE TECHNO CO., LTD. | — | ● | / | ● | — | ● | — |
| Nippon Kayaku Korea Co., Ltd. | — | / | ● | / | / | × | — |
| NIPPON KAYAKU AMERICA, INC. | — | / | ● | / | ● | ● | — |
| Euro Nippon Kayaku GmbH | — | — | ● | — | — | × | — |
| KAYAKU CHEMICAL (WUXI) CO., LTD. | ● | ● | ● | ● | ● | ● | × |
| MicroChem Corp. | ● | ● | ● | — | ● | ● | ● |
| Wuxi Advanced Kayaku Chemical Co., Ltd. | ● | ● | ● | ● | ● | ● | ● |
| Shanghai KAYAKU International Trading Co., Ltd. | — | ● | ● | — | — | ● | — |
| NIPPON KAYAKU FOOD TECHNO CO., LTD. | ● | ● | ● | ● | ● | × | — |
| Tumor Diagnosis Support Co., Ltd. | / | / | ● | / | / | × | — |
| NAC 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. | — | ● | ● | × | ● | × | — |
| Kayaku (Shanghai) Co., Ltd. | — | ● | ● | — | — | — | ● |
| JHMS 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 | ● | ● | ● | ● | ● | ● | ● |
| Sanko Kagaku Kogyo Co., Ltd. | × | ● | ● | ● | × | ● | — |
| Head Office, KAYAKU AKZO CORPORATION | ● | ● | ● | ● | × | × | — |
| Asa Plant, KAYAKU AKZO CORPORATION | ● | ● | ● | ● | ● | × | ● |



CSR Activities Fulfilling Economic Responsibilities

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.



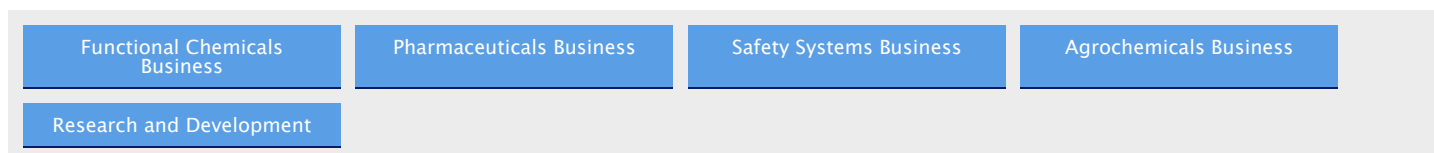
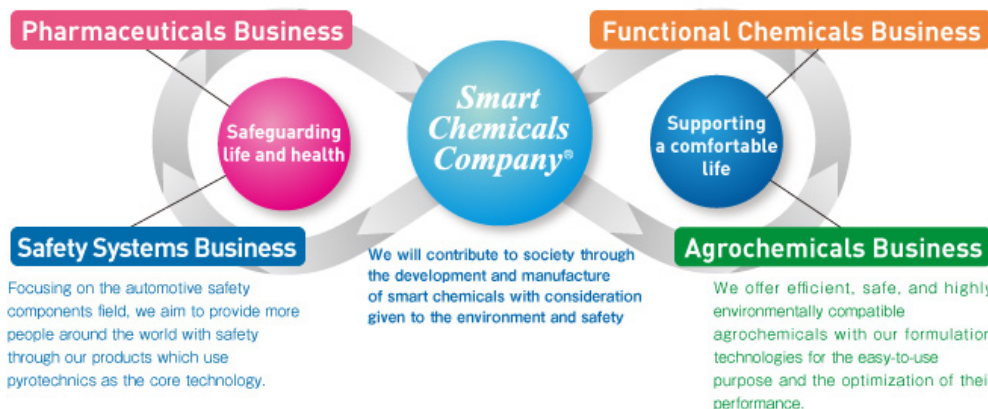
[View larger image](#)

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 are committed to promoting innovations by using our technological expertise. It is our goal to contribute to society by consistently supplying high-quality pharmaceuticals to improve patient outcomes, and to achieve more efficient medical spending.

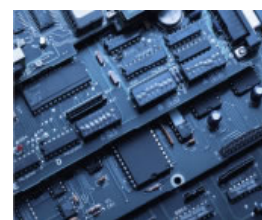
Contribute to the creation of an "Super Smart Society" by providing functional chemical materials that offer special characteristics for the fields of information and communication, and energy and resource conservation.



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 committed to prompting innovations by using our technological expertise. It is our goal to contribute to society by consistently supplying high-quality pharmaceuticals to improve patient outcomes, and to achieve more efficient medical spending.

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 biosimilars and generic pharmaceuticals. Currently, we are participating in a Multi-national Phase3 Clinical Study of a monoclonal antibody biosimilar candidate for breast cancer as part of our efforts aimed at obtaining marketing approval for the next biosimilar following the success of FILGRASTIM BS and INFLIXIMAB BS.

We aim to contribute to society with innovations that are backed by our technological expertise and by consistently supplying high-quality pharmaceuticals to improve the level of treatments patients receive, and to achieve more efficient medical spending.

[Pharmaceuticals Business](#)



MINK Web - an informative site targeting medical professionals developed by Nippon Kayaku

Safety Systems Business

With explosives safety technologies as our core competencies, we will contribute to society by making people safer around the world through our automotive safety components

Automobile production is forecast to grow with the emerging countries of Southern Asia expected to follow China with a high level of growth. Also, the average safety device content per vehicle is expected to rise dramatically going forward. The Safety Systems Business manufactures and markets automotive safety components based on many years of research

using Nippon Kayaku's core competence of explosives technology. Furthermore, various departments are involved in the processes leading up to product launch starting with development. This allows us to simultaneously push forward with development, manufacturing and marketing, resulting in products being brought to market in a much quicker time frame. Looking forward, we will strengthen the collaboration with our overseas sites to enhance product value globally and contribute to society.



[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.

The Agrochemicals Division offers a variety of agrochemical products created with its innovations and proprietary technologies from unique perspectives.

For example, Fumon[®], ideal for Integrated Pest Management limiting the reliance on chemical pesticides, or Chlopic Flow[®], that use chloropicrin, improved formulation with low irritation keeping highly effectiveness for eliminating pathogens and pests in the soil.

We will continue to contribute to agriculture by researching, developing and supplying technologies and materials closely in tune with customer needs.



[Agrochemicals Business](#)

Research and Development

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.

At each of the research laboratories directly run by the Functional Chemicals Group, the Pharmaceuticals Group, the Safety Systems Group, and the Agrochemicals Group, R&D activities are taking place aimed at the creation of new products only possible by Nippon Kayaku in each of these respective business domains. In addition, as part of the R&D aimed at the creation of new products and new businesses, we also actively pursue corporate research utilizing our strengths by allocating company-wide management resources strategically and combining technologies, products and intellectual properties from inside and outside the company.

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.

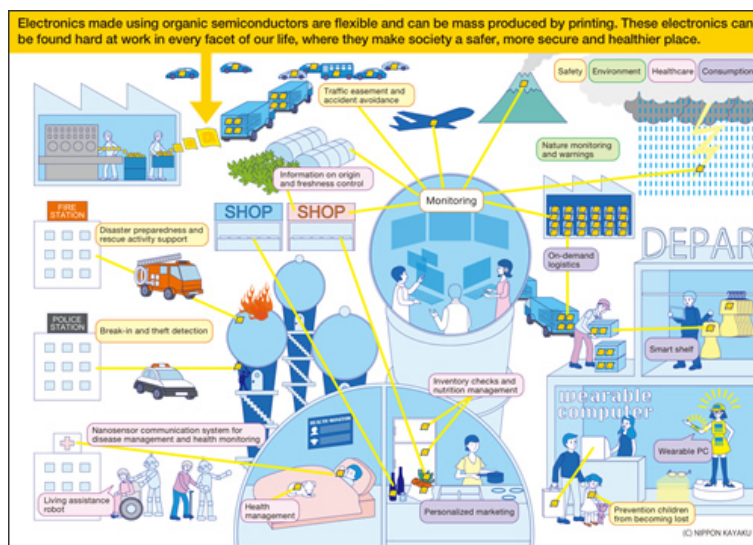
[Learn more about our research laboratories](#)



Inorganic semiconductor



Organic semiconductor



[View larger image](#)

The Meeting of the Movement for Tomorrow

The Meeting of the Movement for Tomorrow, which marked its 58 th time in 2017, 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

The exchange meeting, which marked its 6 th time in 2017, 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)

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 2017, we organized oral presentations and postal displays on the theme of "A new world spun out of horizontal threads" so as to explain how our technologies are derived, what kind of future these technologies will bring to us, and which technologies are needed to realize this future.

Nippon Kayaku highly values opportunities for management and researchers to directly engage one another to share research outcomes in a multifaceted manner and to enable researchers to promote themselves. Researchers are also able to create company-wide networks among themselves, while being asked questions and given advice after their oral presentations and poster presentations. This allows for the linkage and fusion of the many excellent technologies developed by Nippon Kayaku over the years, and contributes to problem solving and the creation of innovation.



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.

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

Gunpower for engineering works, Explosive kinds
Water gel Explosives Ammonium Nitrate Fuel Oil Explosives (ANFO Explosives), Electric Detonator Non-explosive crushing agent

Polarized sunglasses
Polarizing film

Smart phone, Tablet
Resin for color resist, color filter dyes, Epoxy resin for semiconductor encapsulation, Hybrid resin for flash LED encapsulation Sealants for LCDs, Resin for coatings, Touch Panel Adhesives

Digital cameras
Colored resist for micro color filters Resin for black matrixes

Printing materials
Heat-sensitive developing agents

Flexible displays
Wearable computers
Organic semiconductors

Projectors
Polarizing film

Banner
Coloring Materials for Textile Inkjet Printing

Confectionery products
Quality preserving agents

Clothing
Dyes

Food
Health food and supplements raw material

Hygiene products
Towelettes

Cardboard
Dyes for Paper

Antibacterial spray
Ethanol formulation

Agriculture
Insecticides, herbicides, soil fumigants, biological pesticides

Cable protection
Rat Repellent
Pest control
Insecticide for Public Health

CFRP Matrix Resin

Thermal conductive heat insulating materials
Motor coils for electric-powered aircraft

Wastewater treatment technology
Technologies for purifying water and returning it to nature

Ethical drugs
Anti-cancer drugs
Generic drugs
Biosimilar

Polymeric micelle anti-cancer drugs

Energy conversion materials
Health care diagnostic sensors
Thermoelectric elements

Medical care
Pharmaceuticals
Medical devices
Active pharmaceutical ingredients
Diagnostic products

Fireworks
Black powder
Pyrotechnics for fireworks

Oversized aquarium tanks
Catalyst used in the production of methacrylic acid for transparent resin

Toilet paper
Dyes for Paper

Displays
Epoxy resin for semiconductor encapsulation
Sealants for LCDs
Resin for LCD panel spacers
Resin for color resist
Resin for coatings
Resin for printed circuit boards
Functional films
Dyes for color filters
Infrared absorbing agents

Sticky note
Dyes for Paper

Printers
Inkjet printer dyes

Diapers
Catalyst used in the production of acrylic acid for superabsorbent polymers

Car seats
Dyes
Seatbelts
Dyes

Head Up Display
Light Control Film

Airbags
Inflators
Side airbags
Inflators

Pop-up engine hoods
Micro gas generators

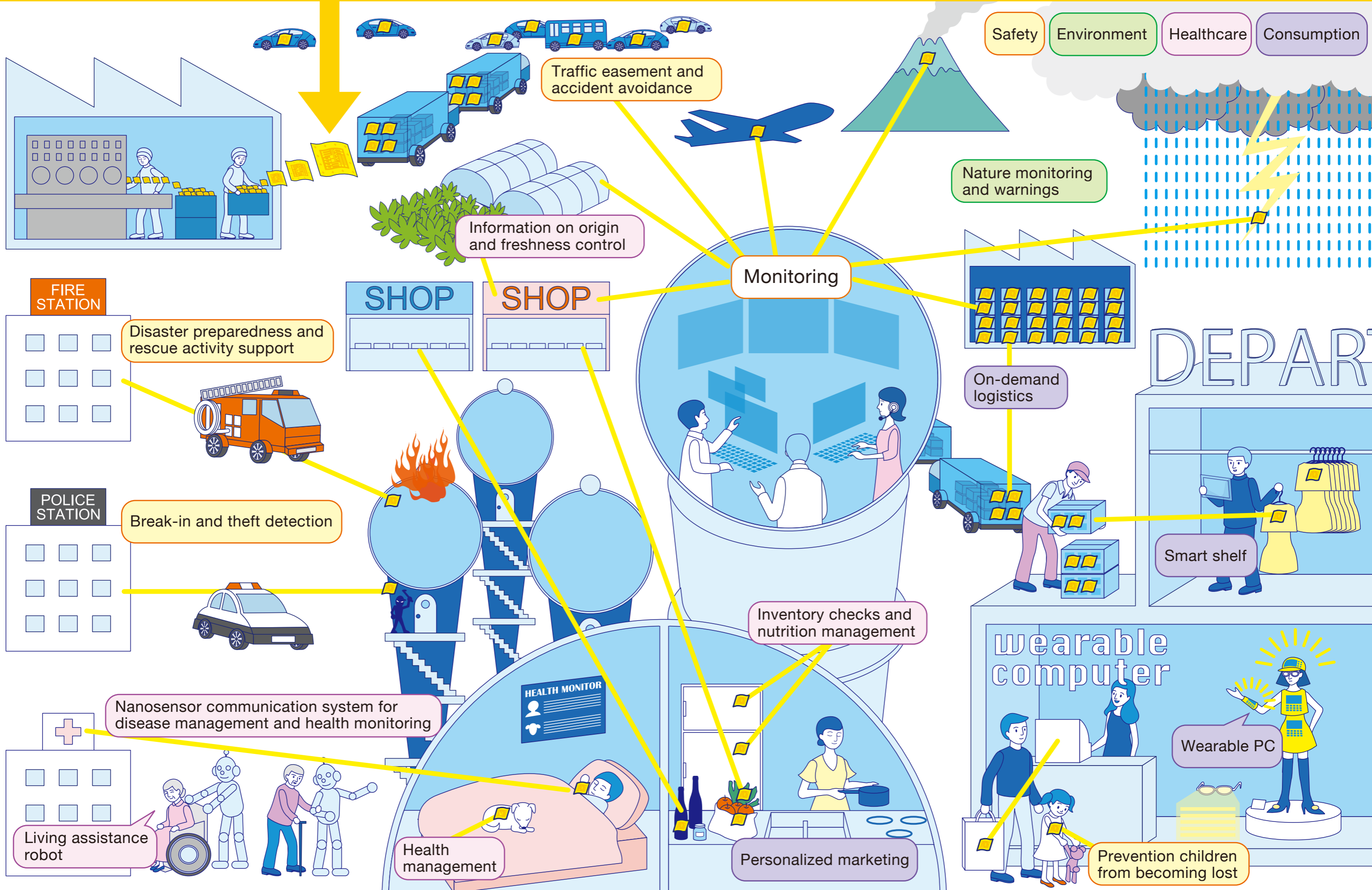
Automotive displays
Films for LCD displays
Sealants for LCDs
Engines
Epoxy resin for semiconductors and resin for printed circuit boards for engine motor control

CFRP Matrix Resin

Acrylic paint, light covers
Catalyst used in the production of acrylic acid for paints and parts, Resin adhesive

Optical disks
Adhesives for optical disks, Coating agents

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.





Initiatives 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.

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.

Quality assurance activities aim to mitigate quality process failures, cut back on customer complaints, and carry out various training to enhance and reinforce quality control skills in order to stabilize quality.

Quality improvement activities involve quality risk assessments, in addition to various training activities. A collection of best practices on quality improvements is also published in order to promote comprehensive understanding about quality improvement methods. Also, laboratories are working to enhance their design and development capabilities through the introduction of quality engineering and statistical methods.

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 term "4M changes" refers to changes related to man, machine, material and/or 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.

The activities to prevent recurrence of the quality process abnormality

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. Furthermore, we use a version of this manual translated into the Chinese language to conduct training on why-why analysis at our group companies in China.

Creation of Our Own "Why-Why Analysis" Manual

There are many past examples of incidents involving non-compliance at Nippon Kayaku and similar events, and analysis indicated that insufficient efforts were being made to find the fundamental cause of these incidents. Therefore, we decided to implement why-why analysis in an effort to correctly identify relationships between cause and outcome, determine the fundamental cause, and prevent similar events from happening again. Each plant selects members to promote these efforts and we have also compiled our own "Why-Why Analysis" Manual (made available in both Japanese and Chinese language versions). This manual is used by every workplace for why-why analysis.



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 SCR 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 a robust design*1 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

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

Briefings on the Safe Use of Agrochemicals

The Agrochemicals Group supplies insecticide Fumon[®], which is possible to simultaneously exterminating aphids, mites and whiteflies on vegetables.

It is made from polyglyceryl fatty acid ester which is used as food additive and block pest spiracles. It is very useful for improving the ability to control. It can be applied unlimited number of times and even up to a day before crop harvest. Sometimes pesticides cause phytotoxicity, Fumon[®] is expected to reduce the risk of phytotoxicity because it can be used diluted down to 1:1000.

Agrochemicals business will continue offering and marketing of Fumon for produce crops safely with high quality.



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

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*2 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."

*2 [Freelux[®] HUF] Light control film for head-up displays.



HUD using Freelux[®] HUF



— Initiatives with Our Business Partners and Investors

The Nippon Kayaku Group engages in proactively communication with our valued Business Partners and Investors.

Initiatives for CSR Procurement

The Nippon Kayaku Group formulated its CSR Procurement Policy in 2015, and it is published on our website. We have established Basic Procurement Principles and Basic Procurement Policies governing purchasing activities that are appropriate for CSR management. We are now working with every one of our business partners on CSR procurement.

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).

CSR Procurement

In order to realize [KAYAKU spirit](#), procurement departments will pursue long-term mutual and sustainable growth with suppliers through active and thorough communication.

We will strive to conduct procurement transactions with our suppliers with an emphasis on important factors including quality, price, stability of supply, observance of relevant laws and regulations, respect for human rights, labor, health and safety, and environmental conservation.

In fiscal 2016, we sent out letters to all of our supplies in Japan and overseas requesting cooperation with CSR procurement and containing information on our Basic Procurement Principles and Basic Procurement Policies along with our CSR report. In turn, we received valuable feedback and comments from our suppliers.

Going forward, we plan to further our efforts among overseas group companies.

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 27th [Finetech Japan – LCD/OLED/Sensor Technology Expo](#) held at Tokyo Big Sight from April 5 to 7, 2017.

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.

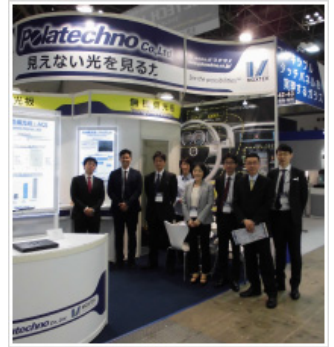
Over 200 attendants (a record high to date) visited the companies' booth including those representing domestic and international automobile and display manufacturers, material manufacturers, and university research institutes. The booth introduced the development and manufacturing technology of dye-based 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.



Communicating with Investors

Earnings Presentations

Nippon Kayaku strives to earn the trust of all stakeholders and to continue to be an essential part of society. To achieve these goals, we disclose information to all of our shareholders, investors, and other stakeholders in a timely, impartial, and fair manner.



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

We host open house tours of our plants and R&D briefings for institutional investors and securities analysts every year, to promote better understanding of Nippon Kayaku's business activities.



Initiatives for Society

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.

Launch of IBD-INFO

In April 2015, we launched IBD-INFO as an informative microsite 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 



Launch of Informational Microsite "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 



The Pink Ribbon Campaign

The Pink Ribbon Campaign was launched by Nippon Kayaku in 2004 to convey the importance of early detection, early diagnosis and early treatment of breast cancer. Fiscal year 2017 marked the 14th year of these activities.

The campaign includes running a breast cancer awareness website, employees wearing Pink Ribbon Badges, and handing out items that help raise awareness such as bumper stickers. At first these items were handed out at the closer station nearest to our corporate head office, but starting in fiscal 2012 we handed items out at the railway stations closest to all of our business sites in Japan (Nippon Kayaku Fukuyama, Nippon Kayaku Tokyo, Asa Plant, Takasaki Plant, Himeji Plant, and the Tokyo), where we also lobbied passersby about the importance of breast cancer screenings.

Furthermore KSM and KSE of overseas group companies also have carried out the Pink Ribbon Campaign, Nippon Kayaku's Pink Ribbon Campaign are expanding worldwide.



Kayami – the Nippon Kayaku Pink Ribbon campaign character



Breast Cancer Info Navi

Breast Cancer Info Navi was launched in 2006 as an informative website for breast cancer patients, and in October 2013, the site was completely revamped during Pink Ribbon Month.

There are a number of breast cancer websites on the Internet, so during the revamping process Nippon Kayaku considered how it could provide a unique touch the new website. We decided to focus on a more specialized website that provides information from specialist physicians and pharmacists to not only breast cancer patients and their families but all women.

The redesigned website was also linked with the Nippon Kayaku Group's Pink Ribbon activities, including contents related to the Pink Ribbon campaign's mascot Kayami. Breast Cancer Info Navi is a breast cancer website intended to help all women live a more vibrant and successful life.



Kayaku Safety Systems Europe a.s. (KSE)'s Pink Ribbon Campaign activities

The aim of the Pink Ribbon Campaign activities is to promote the knowledge of and importance of preventing breast cancer. KSE joined forces with ONKO-DUHA Vsetin*1 in promoting the "Third Pink Ribbon Day"*2 on the websites of local media, government, library, and hospitals, which took place on October 13, 2017.

Campaign promotional items and brochures were made for the event, which were shared with people in the local community at local government buildings, businesses and on the streets, in promoting breast cancer awareness and ways of prevention. In addition, we introduced important procedures for self-examination using a doll at the library.



*1 [ONKO-DUHA Vsetin] The Vsetin branch of SPCCH (an organization for breast cancer patients in the Czech Republic) is an organization to which KSE has been providing financial assistance since 2015.

*2 [Pink Ribbon Day] A campaign hosted by SPCCH to promote world breast health.

Pink Ribbon Campaign activities at Kayaku Safety Systems de Mexico, S.A. de C.V.

In October 2017, the KSM's Pink Ribbon Campaign was held to raise awareness towards breast cancer screening among all its employees.

This year, Julieta Tamayo Garza from Nuevo León State Women Institute was invited as a guest speaker.

The lecture provided information on breast cancer, examination methods, and breast self-examination. Through the lecture, our employees learned to understand patients who are diagnosed with breast cancer.

All employees who attended received promotional items for the campaign including a brochure on breast self-examination and cookies shaped as a pink ribbon.



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.

This facility safeguards users' privacy and provides parents with a child fighting an illness an opportunity to meet others like themselves, which helps to alleviate the mental burden placed on parents.



Message

I have been working as the House Manager at Asunaro House since 2017. This facility has hosted over 3,000 families since it was established in 1998. After the Saitama Children's Medical Center relocated to Saitama Shin Toshin in December 2016, we have seen an increase in users of the facility.

As the time changes, the demands for our facility is also gradually changing. Asunaro House aims to constantly evolve in anticipation of the ever-changing needs of the families choosing our facility to stay a safer, more secure and comfortable environment.

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.



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.

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 22, 2017. 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.



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 June 30, 2017. 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

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 third year in fiscal 2018 with a total of 22 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.



During the plant tour, students not only visited the production line but also got to closely observe airbag deployment that is not normally available for viewing, which sparked interest in safety among the students.

Event-based Educational CSR

Science Expo hosted by the City of Sanyo-Onoda "Make Your Own Original Keychain" Event for Elementary and Junior High School Students

Asa Plant has participated in the annual Science Expo hosted by the City of Sanyo-Onoda. At the Nippon Kayaku booth, students were invited to make their own original keychains by adorning the disc that forms the main body of the keychain with drawings or decorations, which was then finished the surface with a UV curable resin.



Industry Fair Kamisu Festa hosted by the City of Kamisu in Ibaraki Prefecture Experience-based Event for Elementary School Students

Kashima Plant participates in the Industry Fair 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.

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 24, 2017.



Members from all research laboratories as well as Tokyo R&D Administration Office worked together in hosting an experiment using a black dye. Black dye is in fact made with many colors added together, and using paper chromatography, the different colors can be separated. The students were very enthralled by the separation of colors from the black dye. 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.

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 5 and 6 at the Science Museum (Kudanshita, Tokyo).



At the show, a color experiment related to the company's Color Materials Division, Functional Chemicals Group was conducted under the theme of "Creating Rainbow Round Fans - Do You Know the Secret of Black?"

The black dye used in the experiment was actually formulated by combining various colors. Using color chromatography techniques, black dye was separated into different colors yielding a beautiful array of rainbow colors. The children each decorated their own original Japanese round fan using chromatography paper dyed in rainbow colors.



Visit by Students from Obu Shiritsu Obuminami Junior High School

On June 22, 2017, three students representing Obu Shiritsu Obuminami Junior High School visited the Pharmaceuticals Research Laboratories for their company tour experience.

Students at Obuminami Junior High School were asked to research the occupations they are interested in and determine which companies they would like to visit as part of their school trip.



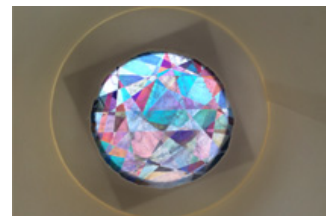
The Pharmaceuticals Research Laboratories received a request for a visit from these students who were very interested in pharmaceutical research at Nippon Kayaku. Besides the Pharmaceuticals Research Laboratories, there are also the Functional Chemicals R&D Laboratories within the Tokyo Business District. The visiting students also keenly observed the research displays other than pharmaceutical research at the entrance to the company premises. Going forward, the Tokyo Business District will continue to host company tours and similar activities that contribute to cultivating the next generation.

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.

[Nippon Kayaku Commemorating 100 years of Sukima Ideas CSR Educational Programs](#) 



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.



Initiatives in Local Communities

Regional Initiatives

Examples of Nippon Kayaku Group's Involvement in Regions

The Nippon Kayaku Group strives to foster understanding in its business activities among local residents through plant festivals, opening its sites to the public, cleanup activities and round-table talks.

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.

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

Polatechno Co., Ltd. Wrap Advertising on a Train

With its 25th anniversary in July 2016, Polatechno asked the local Echigo Tokimeki Railway to operate a train featuring the Polatechno logo for a two year period starting in July 2015.

Polatechno asked local high school students with the Construction & Design Department of Joetsu Sogo Gijyutsu High School to design the wrap advertisement for the train. Of the five proposals, a vote was taken within the company that determined the winning design to be the one with the seven-colored ray of light connecting the world depicted with a blue color reminiscent of the sky.

On July 28, 2015, the train featuring the Polatechno logo was rolled out at a special departure ceremony held at Naoetsu Station and attended by many stakeholders and members of the media.



▼ Kayaku Safety Systems de Mexico, S.A. de C.V. Continuing with its Support for Local Education

Kayaku Safety Systems de Mexico, S.A. de C.V. (KSM) Continuing with its Support for Local Education

Located in Mexico, KSM is a Nippon Kayaku subsidiary established in 2007 that manufactures automotive safety components.

KSM launched activities to support childhood learning in 2014. The goal of these activities is to increase children's motivation to continue studying. The first initiative involved providing stationery used at school for the children of employees (grades of 8.0 and higher). In fiscal 2015, KSM continued with its educational support by defraying the costs of purchased items for use at school.



▼ Start of Support Campaign "Co-hosting with Internal Medical Department"

Start of Support Campaign "Co-hosting with Internal Medical Department"



This campaign provides incentives for sourcing funds in order to purchase equipment for new physicians by local companies, organizations, or municipalities. This enables all residents in the community to make use of medical services.

To date, KSE has provided support in the purchase of multiple beds and necessary equipment for Vsetín Hospital. In fiscal 2017, KSE made donations for the purchase of echocardiography diagnostic equipment with an esophageal scope to the same hospital.

Echocardiography is considered the most common diagnostic procedure that makes heart examination easier and more accurate as it can search for the heart while avoiding radiation that harms the body, as well as eliminating the need for taking a contrast prior to an exam. Echocardiography can also be used to diagnose conditions including hypertrophic cardiomyopathy as well as dilated cardiomyopathy.

We sincerely hope this can be effectively utilized by everyone living in the Vsetín area.

▼ Fukuyama Plant Opening up tennis courts to the public

Fukuyama Plant Opening up tennis courts to the public



The Fukuyama Plant has a LED-lit multi-purpose ground (baseball and soccer field) for sports recreation, five tennis courts, a club house "Ikoi" fully equipped with shower facilities and lounge rooms, which are open to the public.

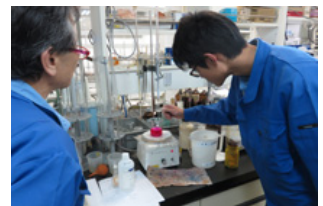
The recreational grounds host numerous baseball, soccer, and tennis practices and games throughout the year. Especially the use of the tennis courts regardless of the time of day or night makes up more than a half of the total number of users. Once a year, the Nippon Kayaku Tennis Tournament hosted by the Plant's Tennis Club takes place, drawing over 60 participants ranging from students to seniors.

Products manufactured at the Fukuyama Plant were also on display at the 20th Nippon Kayaku Tennis Tournament in 2017 to showcase their functions, while many novelty goods were given out to participants.

We strive to take a proactive approach to establishing closer ties with local communities under the slogan of "contributing to coexistence with the local community and its development through communication with its residents".

▼ Nippon Kayaku Tokyo Co., Ltd. Hosting internships for High School Students

Nippon Kayaku Tokyo Co., Ltd. Hosting internships for High School Students



Nippon Kayaku Tokyo offers internships to local students every year. For FY2017, a student from Suginami Technical High School was chosen for a one-week internship from November 9 to 15.

The intern student worked in the Quality Assurance Department and the Technical Section of the Manufacturing Department during their time here. The tasks involved presented many challenges for him due to the specialized nature, but he eagerly worked on his assignments, while taking notes of what he learned.

Having the opportunity to spend time in a workplace filled with scientific equipment seems to provide interns with a fresh perspective, compared to the classroom environment they are used to. Nippon Kayaku Tokyo plans to continue this internship program in order to provide more students with an opportunity to experience what it is like to hold a position in a real life workplace.

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

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

Nikka Fine Techno Co., Ltd. is the only domestic trading company under the Nippon Kayaku Group. One of its business locations is the Hokuriku Office situated in the city of Fukui.

Fukui is a quaint, historic town. The Fukui Cherry Blossom Festival held from early to mid April each year is an event that illustrates the charm of the city, with the 33rd festival taking place in 2018. The meticulously planned

festival attracts many visitors every year under the themes of history, culture, nature, and cuisine. The main event, the Echizen Historical Costume Parade , features a reenactment of historical figures right out of an illustrated handscroll of history, including hometown heroes such as Shibata Katsue and others, as well as Oichi no Kata, and her three princesses, with an elegant and glorious display of feminine beauty.

The festival features a free drop-in parade as well as an activity area, allowing everyone to enjoy the festivities at their own pace. Nikka Fine Techno is a sponsor of the Fukui Cherry Blossom Festival, as we are committed to conducting activities that foster bonds within the local community.



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

Kouwa Sangyou Co., Ltd. Supporting activities of local fire company

About 10% of our employees at Kouwa Sangyou serve as volunteer firefighters for the local fire brigade. The main roles of volunteer firefighters are to take part in disaster prevention training, firefighting equipment training, home fireproofing diagnosis for seniors, as well as provide support to firefighters on site in guiding evacuations at the time of an actual fire.



Volunteer firefighters mainly train on Saturdays and Sundays, but during a fire on a weekday, these volunteers take a day off to help on site. In 2010, these firemen worked long periods during the heavy rains in Asa. In addition, as safety is regarded as the first priority at work, the firefighting knowledge and safety awareness of the volunteer firefighters is very helpful. These men also share the techniques from their daily training with other employees during the workplace disaster prevention drill held twice a year.

Our company became certified as a Fire Brigade Partner Business by the Fire and Disaster Management Agency in 2012 as a result of our years of efforts to promote company wide recognition for granting and receiving special leaves of absence to fulfill firefighting demands and responses to disasters.

Moreover, in March 2018, we received a community activity award for firefighting from the Commissioner of the Fire and Disaster Management Agency . In fiscal 2017, this award went to a total of 13 business offices in Japan, while it was the first time for a company within the jurisdiction of Ube, Sanyo-Onoda Fire Department , to receive the award.

Kouwa Sangyou will continue to support local fire fighting activities in the hope of contributing to the local community.

▼ Takasaki Plant and Gunnan Sangyo Co., Ltd. Potato Digging Event

Takasaki Plant and Gunnan Sangyo Co., Ltd. Potato Digging Event with Local Nursery School Students

The Takasaki Plant is using an empty part of the site of its company housing to create a field for growing potatoes. Every year in the spring employees of Gunnan Sangyo plant seed potatoes and then students from the local Iwahana Nursery School are invited to help dig them up at harvest time.

Last year the harvest took place On November 22 2017 under a warm and sunny sky. About 50 children tried their hardest, digging up a large amount of potatoes. All the children screamed with approval whenever a potato was unearthed, rather it was large or small, making this a fun memory that will live on in these children for many years to come. The Takasaki Plant will continue to host this harvest every year.



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 |

| Business Site | Agreement | Local Authority |
|-----------------------|---|---|
| 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 |

Interaction with regions

Examples of Nippon Kayaku's Involvement

| Business site | Category | Details |
|--|---|---|
| Head Office | Education | Participation in children's chemistry experiment show |
| | | Hosting of workshops for students in Tokyo |
| | Awareness raising activities | Pink Ribbon activities |
| | Assistance | Assistance provided to AgriFuture Japan (development of farm operators) |
| | Donations | Japan Association of Corporate Executive IPPO IPPO NIPPON: 8th donation for earthquake reconstruction assistance Tokyo Metropolitan Government Joint Fundraising: FY2014 Akaihane Joint Fundraising Japan Anti-tuberculosis Association: Double-barred cross seal fundraising Guidelines on Transparency in Relationships between Nippon Kayaku and Medical Institutions Guidelines on Transparency in Relationships between Nippon Kayaku and Patients |
| Fukuyama Plant (Nippon Kayaku Fukuyama Co., Ltd.) | Festivals | Hosting of the Shining Fukuyama Festival |
| | | Sponsorship of the Fukuyama Rose Festival and summer festivals in the Fukuyama, Akebono, Shingai and Minoshima school districts |
| | | Sponsorship of cultural festivals in the Akebono, Shingai and Minoshima school districts |
| | | Sponsorship of the Fukuyama Fureai and Welfare Festival |
| | Awareness raising activities | Pink Ribbon activities |
| | Competitions | Hosting of tennis tournament |
| | Opening facilities to the public | Soccer field, baseball field, and tennis court, etc. |
| | Donation | FUKUYAMA SUMMER FESTIVAL (Sponsorship of Fireworks) |
| Cleanups | Holds cleanup activities around the plant | |

| Business site | Category | Details |
|--|--|--|
| Asa Plant | Education | Sanyoonoda City Science Expo |
| | Festivals | Hosts the Wasshoi! Kayaku Festival (co-sponsored by Kowa Sangyo, KAYAKU AKZO, and Kayaku Japan) |
| | Awareness raising activities | Pink Ribbon activities |
| | Competitions | Nippon Kayaku Cup – Boys Baseball Tournament |
| | Discussions | Holds community roundtable talks (together with KAYAKU AKZO for neighborhood associations surrounding the Kawahigashi Plant) |
| | Opening facilities to the public | Gymnasium |
| | Blood Donations | Blood Donations |
| | Cleanups | Picks up trash along the Asa River (together with the Asa Branch of the labor union) |
| Tokyo Plant (Nippon Kayaku Tokyo Co., Ltd.) | Education | Hosted internship for high school students |
| | Festivals | Hosts the Satsuki Festival |
| | Lectures open to the public | Public lectures for elementary school students (dyes and dyeing technologies) |
| | Plant tours | Hosts plant tours |
| | Awareness raising activities | Pink Ribbon activities |
| | Opening facilities to the public | Opens parking lot (for use by community baseball teams during their season) |
| | Cleanups | Holds cleanup activities in and around the plant |
| | Tokyo R&D Administration Office | Education |
| Festivals | | Hosts a spring festival |
| | | Participates in the Kumano Shrine Festival |
| | | Hosts a mochi-making festival |
| Awareness raising to the public | | Pink Ribbon activities |
| Discussions | | Hosts briefings for leaders of Shimo 3 and 4 neighborhood associations |
| Opening facilities to the public | | Provides area for Akabane Fire Department training exercises |
| Traffic safety | | Provides traffic safety instructions at Kita-hondori Street during the nationwide traffic safety campaign (Tokyo Business District Traffic Safety Promotion Committee) |
| Donations | | Donates proceeds from certain cafeteria items to those in need (Donation of necessities to nearby childcare facilities twice a year) |
| | | Support for the reconstruction of Eastern Japan |
| | Helps provide vaccines to children around the world through PET bottle recycling | |
| Cleanups | Holds cleanup activities around the Tokyo Business Center | |
| | Holds the Cleanup Campaign (Akabane Station to Arakawa River) | |
| Takasaki Plant | Education | Acceptance of trainees from local elementary junior high, high schools, and hosting of factory tours for them |
| | | Visiting lecture at Iwahana elementary school |
| | Festivals | Hosts a fureai festival |
| | | Participates in the Iwahana Kosodate Kanzeon Festival |
| | | Hosts a summer dance performance (together with Iwahana Town) |
| | Awareness raising to the public | Pink Ribbon activities |
| | Events | Sweet potato planting and harvesting with children from Iwahana Daycare |
| | Discussions | Roundtable discussions with community leaders |
| | Opening facilities to the public (only for Iwahana Town) | Opens facilities to the public (baseball field, gymnasium, tennis court, and plaza in front of Ten Shrine) |
| | Donations | Takasaki Festival (sponsors fireworks display) |

| Business site | Category | Details |
|---------------|----------------------------------|--|
| | | Iwahana Kosodate Kanzeon Festival (sponsors fireworks display) |
| Himeji Plant | Education | Holding chemical experiment demonstrations and hosting factory tours for Toyotomi elementary school sixth graders |
| | Festivals | Summer fireworks festival (weather permitted) |
| | Awareness raising to the public | Pink Ribbon activities |
| | Discussion | Information exchange meetings with neighbor companies |
| | Opening facilities to the public | Opens its parking lot (for local sports festivals of elementary and junior high schools) |
| | Cleanups | Holds cleanup activities around the plant |
| Kashima Plant | Education | Co-organized with Agrochemicals Laboratories Chemical experiment demonstrations for children as a part of Kamisu Industry Festival |
| | Awareness raising to the public | Pink Ribbon activities |
| | Tours | Company tours for employees and their families |
| | Discussions | Hosts roundtable talks with Hasaki District Administration members |
| | Traffic safety | Organizes illegal parking patrols within the Hasaki District Industrial Park |
| | Cleanups | Holds cleanup activities together with the Agrochemicals Laboratories Participates in cleanup activities within the Hasaki District Industrial Park |

Examples of Involvement of Nippon Kayaku Group companies

| Business site | Category | Details |
|----------------------------------|-------------------------------|---|
| POLATECHNO CO., LTD. | Education | Provides polarizing plate materials to the Japan Science Museum |
| | Donations | Donations of used PCs to facilities for disabled people (For disassembly and recycling in the facilities) |
| | Cleanups | Holds cleanup activities around the plant |
| Moxtek, Inc. | Education | Supports involvement in the First Lego League (organized by the University of Utah) |
| | Donation | Donation of socks, feminine hygiene, blankets, toothbrushes and clothes to the Women's Shelter |
| | Sponsorship | Employees went to the homeless shelter to help prepare and serve food. |
| Wuxi Polatechno Optics Co., Ltd. | Donations | Donates to a government run fund for poverty-stricken people in need |
| | Blood donations | Blood donations |
| | Open facilities to the public | Sets up and opens badminton courts to the public |
| | Provision | Develops roads, manages lighting, manages greenery, and picks up trash |
| Dejima Tech B.V. | Participation in competitions | Supports employee participation in a community marathon |
| | Donations | Uses UNICEF postcards to send New Year's greetings |
| NIKKA FINE TECHNO CO., LTD. | Sponsorship | Fukui Office: History Festival held annually by the Fukui Chamber of Commerce and Industry |
| Euro NIPPON Kayaku GMBH | Donations | Donations to Japanese International School (Frankfurt) |
| KAYAKU CHEMICAL (WUXI) CO., Ltd. | Donations | Donates to a government run fund for poverty-stricken people in need |
| | Provision | Develops roads, manages lighting, manages greenery, and picks up trash |
| MicroChem Corp. | Donations | Donates to Toys for Tots |
| | Donations | Donates to fight hunger Donations to Boy Scouts of America for an Eagle Scout Project Donations to Minuteman Flames Youth Hockey team |
| | | Donation to Town Of Westboro to help Older Citizens with their Property Taxes |
| | | Donation to Missing Man Ministry in California who support children with a missing father. |
| | Sponsorship | Contribution to the 300th anniversary celebration of the town of Westboro (local government) Sponsorship of uniforms for Soccer Club |
| | | Donation/Sponsorship of Charity Golf Outing for Boston Children's Hospital and McLean's Hospital |

| Business site | Category | Details | |
|---|--|--|--|
| Wuxi Advanced Kayaku Chemical Co., Ltd. | Blood Donations | Blood Donations | |
| | Provision | Donates to a government run fund for poverty-stricken people in need | |
| Shanghai KAYAKU International Trading Co., Ltd. | Volunteering | Volunteers for the Shanghai Cherry Blossom Festival organized by the Consulate Volunteers in the Japanese cultural class called the Power of Picture Books organized by the Consulate | |
| | Donations | Iwahana Kosodate Kanzeon Festival (sponsors fireworks display) | |
| NIPPON KAYAKU FOOD TECHNO CO., LTD. | Festivals | Sponsors and participates in the Iwahana Kosodate Kanzeon Festival Participates in the Iwahana Kosodate Kanzeon Festival Hosts and sponsors a summer dance performance (together with Iwahana Town) | |
| | Awareness raising to the public | Pink Ribbon activities | |
| | Traffic safety | Provides traffic safety instructions at Kita-hondori Street during traffic safety week | |
| | Cleanups | Holds cleanup activities around the Tokyo Business Center and Nippon Kayaku Tokyo | |
| Taiwan NJC Corp. | Seminar | Participation to regular meetings of the Pharmaceutical and Medical Devices Committee under the Japanese Chamber of Commerce & Industry in Taipei: | |
| | Lectures/Events | Participates in events organized by the Japan Chamber of Commerce and Industry | |
| | Committee activities | Participates in the Japan Chamber of Commerce and Industry's Intellectual Property Committee | |
| Kayaku Safety Systems Europe a.s. | Donations | Donation to kindergartens and elementary schools for disabled children Donations to autism support groups Donates to facilities that hire the physically disabled Donations to care centers for seniors Donations to homeless support groups Donates to schools with explosives departments Donates to youth rehab facilities (alcoholism, etc.) | |
| | Awareness raising to the public | Pink Ribbon activities | |
| | Donations | Donates beds to hospitals Donations of equipment to a technical high-school | |
| | Sponsors | Sponsors a karate tournament Sponsors a bicycle safety class Sponsoring of Japanese Speech Contest Sponsoring of Firefighter Rescue Competition | |
| | Events | Introductory session on Japanese culture in a local library | |
| | Kayaku Safety Systems (Huzhou) Co., Ltd. | Donations | Donates fans to assisted living facilities |
| | | Tours | Plant tours for employees and their families |
| | Kayaku Safety Systems De Mexico S.A. de C.V. | Opening facilities to the public | Football Field Grand |
| | | Employees and their families | Family day Supports schools |
| | | Donations | Donates to Cervantino International Music Festival |
| | | Donations | Donates kitchen articles Donates for Christmas (clothing, blankets, and toys, etc.) |
| | Kayaku Safety Systems Malaysia Sdn. Bhd. | Donations | Donation of projector sets for orphanages plus birthday lunches by employees |
| | | Sponsors | Donations of gifts to local schools |
| Nishiminato Driving School Co.,Ltd. | Events | Traffic safety classes | |
| | Donations | Disaster prevention charity | |
| Okiura Golf Center Co., Ltd. | Events | Spring and autumn Okiura Golf Tournament Okiura Women's Golf Tournament | |
| | Volunteering | Provides recycled cardboard boxes to social welfare company Joy Joy Work free of charge | |

| Business site | Category | Details |
|-----------------------------|----------------------------------|---|
| | Sponsorship | Mizuno Open Golf |
| Kouwa Sangyo Co., Ltd. | Festivals | Hosts the Wasshoi! Kayaku Festival (co-sponsored by the Asa Plant) |
| Gunnan Sangyo Co., Ltd. | Festivals | Fureai Festival (sponsors with the Takasaki Plant) |
| | Donations | Iwahana Kosodate Kanzeon Festival (sponsors fireworks display) |
| | Events | Sweet potato planting and harvesting with children from Iwahana Daycare (jointly with the Takasaki Plant) |
| KAYAKU AKZO CORPORATION | Discussions | Hosts community roundtable talks (together with Asa Plant) |
| | Festivals | Hosts the Wasshoi! Kayaku Festival (co-sponsored by the NK Asa Plant) |
| | Donations | Donates articles to Koyo Elementary School |
| Kayaku Japan Co., Ltd. | Education | Providing of visiting instructors to universities and colleges Dispatches instructors registered with the Japan Explosives Safety Association Providing of visiting instructors to local junior high schools |
| | Festivals | Hosts the Wasshoi! Kayaku Festival (co-sponsored by the Asa Plant) |
| | Events | On-site Ekiden Marathon (held jointly with the Asa Plant) |
| | Donating blood | Hosts blood donation truck (together with the NK Asa Plant) |
| | Opening facilities to the public | Cherry tree blossom viewing spot inside Toumi plant open |
| | Plant tours | Plant tours for schools & colleges , government offices, teacher groups (trainings), local clubs and Group companies |
| | Cleanups | Holds trash pickup activities along the Asa River (together with the Asa Branch of the labor union) Holds cleanup activities around the Toumi Plant, Tokai Plant, Nagahama Coast and Hamakawa area |
| Sanko Kagaku Kogyo Co.,Ltd. | Festivals | Ichinomiyahatimannookami:hamaorisai Samukawamathisanngyoumaturi:Owarairaiibu Sofiatigasakinouryousai |
| | Donation | Free provision of safety gear in support of the recovery work from heavy rain damages. (donation through the Japan Respirator Manufacturers Association) |
| | Cleanups | Participation in Sagamigawa River Beautification Campaign Participation in Samukawa Town Beautification Campaign Submission of the "Report on Environmental Beautification Activity Results" to the Samukawa Town Environmentai Division |
| | Discussion and organization | Samukawa Town Council of Social Welfare Samukawa-machi Society of Commerce and Industry Fujisawahojinkai samukawasibu Chigasakitikukoutuannzennkyoukai Chigasaki police station Security Liaison Commitee Chigasaki police station Kouzatikusasenwokireinisurukai |
| | Association | Ichinomiya seif-government association Sofia chigasaki self-government association |
| | fire-fighting operation | Samukawa fire station Volunteer fire corps No2part team |



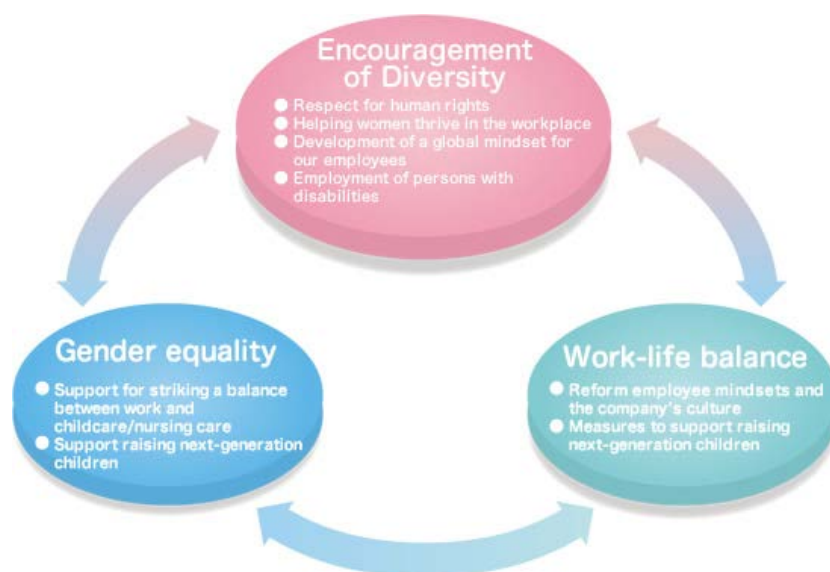
Initiatives for Employees

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

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, implemented 20 years ago, makes it possible to deploy and compensate human resources without focus placed on age, gender or academic history. 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. Moreover, we are actively promoting diversity. This includes the re-hiring of nearly 100% of our employees who reach mandatory retirement age since the start of our senior partner program and supporting the employment of persons with disabilities through partnerships with schools for the disabled. Meanwhile, our business continues to become more global in nature. In line with this growth, we provide pre-departure and post completion training for expatriate employees and systemically carry out training for locally hired staff.

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.



Approach to Diversity and Inclusion

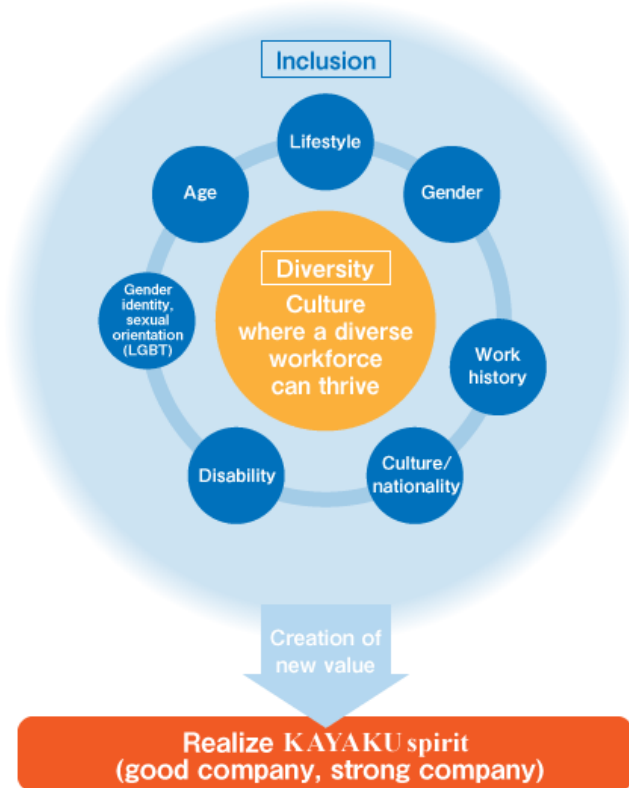
The Nippon Kayaku Group employs a diverse workforce of people with differing personalities and values. By promoting inclusion, we make it possible for employees to work together and fully contribute their unique skills and abilities, resulting in a dynamic work environment where everyone is

motivated and feels a sense of fulfillment. In turn, this helps management enhance our competitiveness and grow the company steadily.

The promotion of diversity requires to "Gender equality program" and "Work-life balance," which we believe help develop a workplace environment where women as well as a diverse overall workforce can contribute its skills to the fullest.

To promote inclusion, we strive to provide workplace environments that are friendly to a diverse workforce regardless of age, gender, religion, nationality, disability, sexual orientation, gender identity or employment format. Also, we have adopted a position class system as our personnel system in order to evaluate and compensate this diverse workforce fairly.

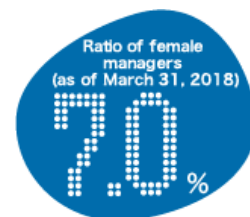
Approach to Diversity and Inclusion



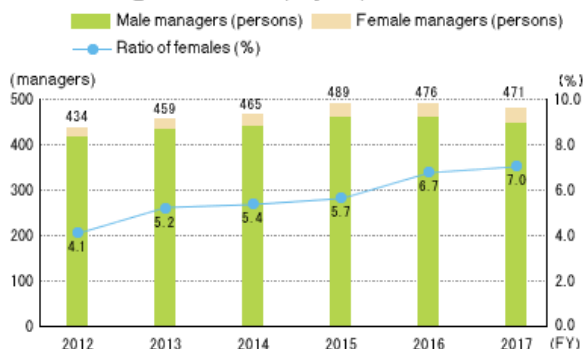
Encouraging Diversity

Nippon Kayaku Group's Personnel System

We have adopted the position class system as our personnel system which enables assignments and compensation not tied to age, gender, career or academic history. This system marks the 19th year. This system focuses evaluations on a person's roles and responsibilities. The same system is also used for managerial 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.



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



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 7.0% as of the end of March, 2018 (6.7 in previous year). We will continue with our efforts to encourage the greater involvement of women in the workplace, with a goal to increase the percentage of female managers to 8% by the year 2020.

■ Employment of Persons with Disabilities

Nippon Kayaku employs people with disabilities. As of the end of March, 2018, 50 people* with disabilities are working with us (2.0% 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 133 reemployed persons working for Nippon Kayaku as of March 31, 2018.

■ 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 of women in the workplace

I was the first local employee hired at Kayaku Safety Systems Malaysia Sdn. Bhd. (KMY), which was established in 2012. I received training at the Himeji Plant in 2013.

Currently, I am the only female member of KMY's management team in my position as Senior Manager of the Human Resources Department. I supervise a team of eight people, and I value communication with each of my team members. I also share my understanding of the Nippon Kayaku Group's KAYAKU spirit with Malaysian employees to raise awareness about its meaning and best practices in terms of work. In addition, I have high expectations for raising the motivation of Malaysian female employees so that they can advance their careers proactively and one day become leaders behind KMY's business in Malaysia.

Outside of work I am a wife and mother of four children. I have achieved a positive work-life balance that allows me to enjoy my hobbies of reading, jogging and cooking. On my days off from work, I often go on trips together with my family.



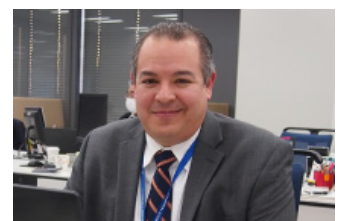
Ramla Mohamed Nor, Senior Manager, KMY Human Resources Department

■ 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 was assigned to the Nippon Kayaku head office as a member of the Global Quality Project Team led by the Quality Assurance Division of the 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."



Jorge Montes, Safety Systems Group

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 *1."

*1 "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 9.3%(4 employees) from April 1, 2017 to March 31, 2018.

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 enables employees to set aside annual paid leave that will expire if not taken within a two year period and use it for nursing care obligations, training, volunteer work, infertility treatments, or to donate 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.

- * 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
- * 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 | 45 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 Managing 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) | | | |
|---|--------|--------|--------|
| | FY2015 | FY2016 | FY2017 |
| Total working hours | 185.25 | 184.75 | 184.75 |
| Overtime hours *Average monthly hours per employee | 12.4 | 12.3 | 12.8 |
| Number of paid leave days taken | 10.6 | 11.5 | 11.0 |
| Ratio of paid leave days taken | 58.6% | 62.7% | 59.2% |
| Employees taking childcare leave (males) | 0 | 4 | 4 |
| Employees taking childcare leave (females) | 20 | 27 | 26 |

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, Nippon Kayaku Fukuyama Co., Ltd.

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

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.

Mandatory Programs

In order to systematically develop the skills of the employees, training is imparted to the employees start immediately upon their joining the company. This is followed by mandatory programs after durations of one year and three years. Training programs are also conducted for mid-level employees in accordance to their job types and positions and matching their job work performance. We support our employees to make new steps forward to develop practical skills based on the changes of their roles and competences.



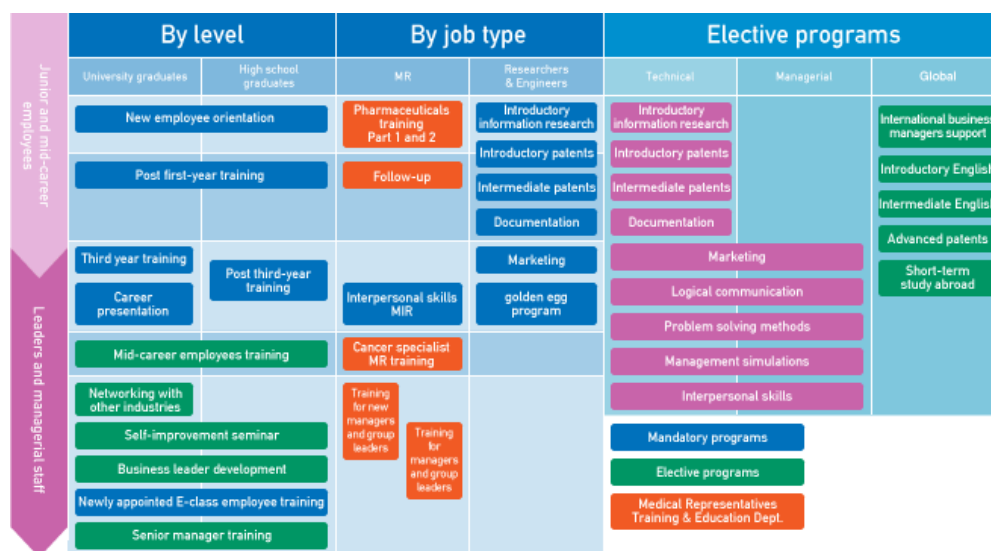
Training programs

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.



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

Nippon Kayaku Fukuyama is a subsidiary of Nippon Kayaku established in 2000 that engages in the contract manufacturing of functional materials and pigment materials. It plays an important role in ensuring the Nippon Kayaku Group is able to provide a stable supply of products. In recent years, Nippon Kayaku Fukuyama was faced with a shortage of mid-career employees despite the globalization of its business. 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, Nippon Kayaku Fukuyama 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.



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

To overcome this issue, Nippon Kayaku Fukuyama 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 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.



Members of the training system development team at Nippon Kayaku Kayaku Fukuyama

COE 2nd Generation*2 Program at Kayaku Safety Systems de Mexico, S.A. de C.V. (KSM) From operator to employee

KSM launched the COE 2nd Generation Program in September 2017. COE is a program that involves training operator level employees to become supervisors. The purpose of this program is to increase the motivation of operators by providing them with an opportunity to be promoted to supervisor.

During the COE 1st Generation Program from 2014 to 2017, a total of four operators were promoted to supervisor and currently the COE 2nd Generation Program has 14 participants. They will be promoted to supervisor based on the final evaluation of the program.



KSM will continue to support their career ambitions.

*2 COE 2nd 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)



Encouraging the Creation of Intellectual Properties

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 incentivises 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.



Environment, Health and Safety, and Quality Assurance 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,*1 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.

May 22, 2017

President & Representative Director
 Nippon Kayaku Co., Ltd.

*1 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 grown on the back of chemical technologies and today it develops and manufactures a truly broad range of products. To satisfy the needs of the market, we harness our long-standing technologies and the latest knowledge each and every day to provide stable supplies of high quality products.

We recognize that safety requires the awareness of individual workers and the continual enhancement of supporting systems. In order to establish a stable operating structure for the generational change of manufacturing workers and the globalization of our production sites, we are focusing a great deal of efforts on education, training and follow up.

Environmental measures such as reducing CO₂ emissions, increasing recycling, and lowering waste emissions are necessary not only for regulatory compliance, but also for maintaining the future continuity of our business operations. We are currently working hard to find the best mix, technologically speaking, for our production processes and scale.

Going forward, we will continue constantly enhance quality and carry out Responsible Care activities in order to gain the satisfaction of all stakeholders.

Nippon Kayaku Group Responsible Care Policy Statement for FY2018

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.

In 2018, we will continue with these efforts and continued the following Policy throughout Nippon Kayaku Group.

Nippon Kayaku Group Responsible Care Policy Statement for FY2018

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/KYK (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.
- Consider the utility of initiatives for the reduction of environmental impacts through manufacturing process reviews.
- Review medium- to long-term issues after reconsidering company-wide risks and opportunities.

③ Comprehensive chemical management

- 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.
- Consider the utility of initiatives for the reduction of environmental impacts through manufacturing process reviews.

④ Response to biodiversity

- Comprehensively manage effluent and promote "prevention of pollution caused by over nutrition and other factors."
- Identify raw materials that impact biodiversity, review procurement of these materials, and commence biodiversity procurement.

⑤ Consideration of employees' health

- Seek to prevent exposure in employees through comprehensive chemical management and promote daily health management activities, including mental health care and THP that results in the prevention of lifestyle diseases.

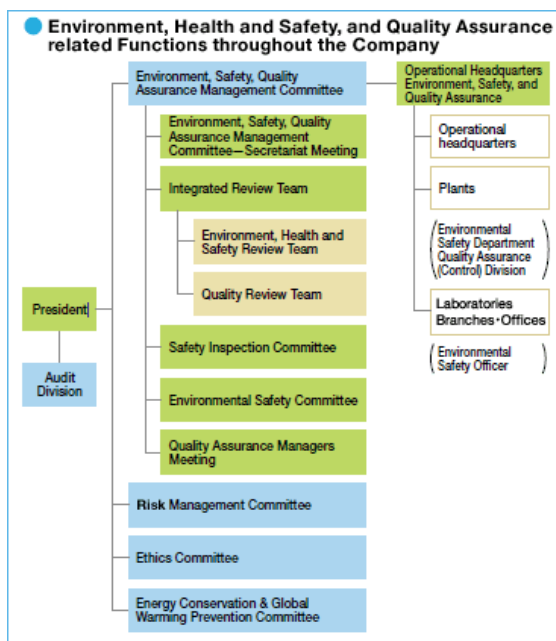
March 19, 2018

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 all 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 |

Certification of Quality Assurance Management System

The Nippon Kayaku Group has moved forward with acquiring ISO9001 certification in order to provide and develop products and services of superior quality.

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.

● Quality assurance Management System
Certified Business Sites

| Workplace | ● ISO9001 ■ ISO/TS16949*2 ▲ IATF16949*3 |
|---|---|
| Fukuyama Plant | ● June 1995 |
| Asa Plant | ● Jan. 1995 |
| Tokyo Plant | ● June 1995 |
| Takasaki Plant | ● July 2003 |
| Himeji Plant | ■ Aug. 2017 |
| Kashima Plant | ● Dec. 1995 |
| Functional Chemicals Group | ● Jan. 2001 |
| Pharmaceuticals Group | ● Sept. 2003 |
| Safety Systems Group | ● Sept. 2007 |
| Agrochemicals Division | ● Sept. 2003 |
| POLATECHNO CO., LTD. | ● Jan. 1999 |
| MOXTEK, Inc. | ● July, 2012 |
| KAYAKU CHEMICAL (WUXI) CO., LTD. | ● March 2005 |
| MicroChem Corp. | ● April 2002 |
| Wuxi Advanced Kayaku Chemical Co., Ltd. | ● April 2007 |
| NIPPON KAYAKU FOOD TECHNO CO., LTD. | ● Nov. 2003 |
| Kayaku Safety Systems Europe a.s. | ▲ Dec. 2017 |
| Kayaku Safety Systems (Huzhou) Co., Ltd. | ■ May 2014 |
| Kayaku Safety Systems de Mexico, S.A. de C.V. | ■ Feb 2014 |
| Kayaku Safety Systems Malaysia Sdn. Bhd. | ● Sept. 2016 |

*2 ISO / TS16949: An international quality management system standard for the automobile industry that was developed jointly by members of the IATF (International Automotive Task Force) with assistance from ISO.

*3 IATF16949: The latest revised version of the international quality management system standard for the automobile industry developed by IATF in 2016 as a replacement to ISO / TS16949.

Kayaku Safety Systems de Mexico, S.A. de C.V. (KSM) Renewed ISO 9001 and TS 16949 quality management certification for the automotive industry

KSM is a Nippon Kayaku subsidiary established in Mexico in 2007 that manufactures automotive safety components.

KSM initially obtained ISO 9001 certification in 2010. Not long after, however, based on requests from customers, it revamped its quality system, trained employees and underwent screening in order to obtain ISO/TS 16949 certification in 2012.

In September 2013, KSM underwent the Stage 1 screening, followed by Stage 2 in November 2013. Later, KSM completed work on issues pointed out during the screening process and was able to obtain certification in February 2014.

In 2016, three years after obtaining certification, KSM underwent another screening to renew its certification, which it passed successfully. Currently, KSM is beginning preparations aimed at obtaining IATF 16949 certification, which is a new standard for quality management systems that will be introduced in September 2018.



ISO9001-TS16949



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*4 Approval Status | Workplace | Main governments |
|-------------------------------|-------------------|------------------------------------|
| | Takasaki Plant | Japan, USA, Europe, Canada, Brazil |

*4 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.

Management of Chemical Substances

With countries around the world moving to tighten the management of chemical substances, we have seen a growing importance in complying with chemical related laws both in Japan and abroad and being able to aptly respond to customer requirements for chemical substances contained in our products.

The Functional Chemicals Group established the Quality Assurance Division in February 2017 in order to reinforce quality management and the quality assurance system annually. Under this organization, it also established the Quality Assurance Department and Chemical Management Department (formerly the Chemical Management Office).

A representative of the Chemical Management Office has been assigned to the Functional Chemicals R&D Laboratories to closely monitor product safety and compliance with legal requirements from the development stage.

From now on in fiscal 2017, we will continue to comply with Europe's REACH*5 and CLP*6, and continue to positively promote the response to the new chemicals legislation and legal reform around the world.

*5 Registration, Evaluation, Authorization and Restriction of Chemicals (REACH): An EU regulation for registering, evaluating, approving and restricting chemical substances.

*6 Regulation on Classification, Labeling and Packaging of substances and mixtures (CLP): An EU regulation on the classification, labeling and packaging of chemical substances based on GHS.

GHS Compliance

With each country implementing GHS*7, companies are now required to provide SDS*8 compliant with local laws and regulations that are written in the local language. The Functional Chemicals Group has instituted an SDS compilation system (MSDgen) that contains a large database of bilingual documents as well as data on the laws of various countries and data on the properties and toxicity of chemicals. This system enables it to create SDS that are fully compliant with local laws and regulations. The 2013 system update complies with the US version of GHS, which complements its prior compliance with GHS in Japan, Europe and Asia.

The Functional Chemicals Group manages and uses a database of SDS and SDS history to ensure that it always provides the most up to date information on GHS compliance.

*7 GHS: Globally Harmonized System of Classification and Labeling of Chemicals

*8 SDS: Safety Data Sheet.



Sample GHS-compliant label

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 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.

Initiative for Safety

Within its health and safety activities, the Nippon Kayaku Group places special emphasis on pointing and calling, KYT (Danger Prediction Training), and danger prediction prior to a work processes. Furthermore, we continually make efforts to prevent accidents and occupational injuries before they occur through systematic brainstorming of potential risks including non-regular work, while also carefully ensuring that risk assessments for chemical substances are conducted in accordance with legislation in Japan.

For example, we carry out safety inspections during the development and design stages when manufacturing a new product or installing new equipment, and implement risk assessments to account for any potential risks thereby preventing accidents, occupational injuries, and environmental incidents.

Moreover, we also promote safety training and enhance awareness of KYT and near misses at our overseas group companies.

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 2017 is presented below.

● Fiscal 2017 Safety Targets and Performance

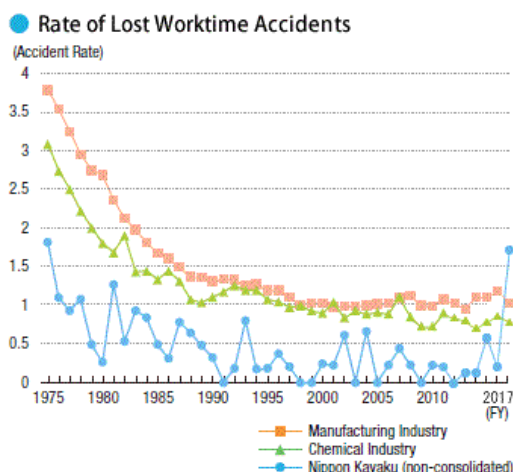
| Items | | Target | Actual | Group companies |
|--|-------------------|--|---------|-----------------|
| Major Injury / Accidents | | 0 | 1 cases | 0 |
| Serious environmental accidents | | 0 | 0 | 0 |
| Lost worktime accidents | | 0 | 11cases | 10 cases |
| Accidents not accompanied by lost worktime | | Rate of lost worktime accidents*1 of under 1 | 1,55 | - |
| | | Less than 5 cases | 9 cases | 5 cases |
| Non-injury related accidents | | 0 | 0 | 10 cases |
| Work-related automobile collisions*2 | Serious accidents | 0 | 0 | |
| | Personal injuries | 0 | 1 cases | |
| | Property damage | Less than 3% | 4.8 % | |
| | Self inflicted | Less than 3% | 5.9 % | |

*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.

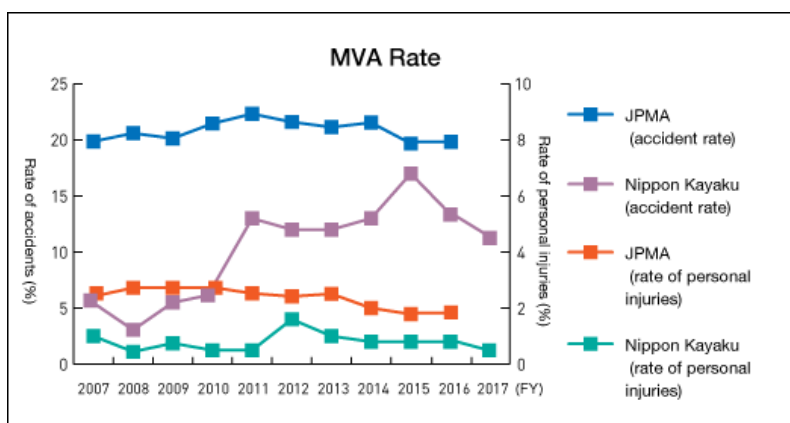
■ 2. Graph Comparison of frequency rate of Lost Worktime Accidents

The frequency rate of lost worktime accidents in fiscal 2017 greatly exceeded the rate observed by the manufacturing industry and chemicals industry. As a result, we decided to institute workplace patrol activities (fixed-point observations) with the goal of pointing out unsafe actions in order to prevent accidents and injuries during non-regular work.



■ 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.

Safety Activities

- Risk Assessment
- Hiyari Hatto Activity
- TPM Activity*4
- 5S Activity*3
- KYT Activity

*3 5S Activity: An acronym of five Japanese words phonetically starting with the letter "S".

*4 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. *5

*5 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 *6. And using the driving aptitude test approved by the National Police Agency*7. From now on, we will further strengthen the education of new employees in practical skills and engage in reducing traffic accidents.

*6 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.

*7 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



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.

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 labor union of Nippon Kayaku have items on safety and health at the top of the movement policy of labor unions, and every year hosts the "Level-up Seminar (Health & Safety)," inviting participants from each branch to attend to receive health and safety training co-hosted by the company.

In fiscal 2017, 24 employees took part in the training which was held over a two-day period.

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.

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.

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.



Polatechno Interactive Training on Getting Caught in Machinery

Polatechno fabricated original interactive machine in November 2012 to teach about and eliminate accidents involving employees getting caught in machinery. Initially, training was provided to all employees working at the company's plants and afterwards it has been held annually for new employees and workers using nip roll machines. The training includes reenactments of past accidents involving employees getting caught as well as how to operate the photoelectric tube sensor and the emergency stop button and rope switch to prevent accidents. Participants also get to experience the feeling of getting caught in machinery (a simple pinching feeling) using the proximity sensor function.

In the past, two lost worktime accidents have occurred at Polatechno involving employees getting caught in machinery. According to fiscal 2014 statistics of the Ministry of Health, Labour and Welfare, there were 180 fatalities in the manufacturing industry, and of these 36%, or 64 fatalities, were caused by getting caught in machinery. Of the 1,057 fatalities across all industries, 14%, or 151 fatalities, were attributed to getting caught in machinery. This indicates that this type of accident is quite serious and occurs quite frequently in the manufacturing industry.

Starting in fiscal 2015, Polatechno has been implementing a greeting campaign, mutual consideration, and onsite patrol instructions based on the general manager's policy, all on the theme of "Reinforcement of Safety Awareness." Going forward, Polatechno will implement the PDCA cycle to foster a corporate culture with an even greater focus on safety, as it underpins all corporate activities.



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

KSH carries out various initiatives company-wide in order to safeguard the life and health of consumers, and support a comfortable life, based on continuously providing society with the best products through ceaseless progress and the combined forces of our consciences. In June 2016, KSH obtained ISO 14001 and OHSAS 18001 certification and constructed an environmental & occupational health and safety (ISO 14001 / OHSAS 18001 *8) management system. Currently, KSH is moving ahead with activities for environmental conservation and eliminating workplace accidents and injuries that improve overall employee satisfaction.

These activities are aligned with China's law on Prevention and Control of Occupational Disease, occupational disease hazard list, and safety standards in order to prevent occupational hazards.

KSH also identifies occupational hazard elements, measures occupational hazard elements, and carries out occupational health exams (prior to employment, during employment, and after employment), as basics of its assessments of occupational disease hazards.

*8 OHSAS 18001: An international consortium standard on occupational health and safety management systems.

| Item | 2015 | 2016 | 2017 |
|---|------|------|------|
| Number of occupational hazard elements | 7 | 7 | 13 |
| Score of occupational hazard elements | 50 | 56 | 68 |
| Number of employees receiving occupational health exams (during employment) | 119 | 142 | 161 |
| Number of employees being reexamined | 3 | 3 | 7 |
| Fiscal year pass rate | 100% | 100% | 100% |

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

WPLC obtained OHSAS 18001 certification for its occupational health and safety management system in November 2016.

WPLC's objective behind the introduction of OHSAS 18001 is to transition safety and health activities to a preventive and fundamental safety focus in response to changes in the legal environment and requests from



customers. To achieve this objective, WPLC had to construct a better system.

It took WPLC about nine months to complete the process behind system introduction. This included the multi-step process of preparation of introduction plan, education on the standard, system planning, preparation of system documents and training, system trial run, and certification screening.

The effects realized from introducing this new system compared to WPLC's old occupational health and safety management system were night and day.

- (1) Significantly strengthened initiatives for occupational health and safety
- (2) Proactive participation in occupational health and safety activities by employees
- (3) Standardization of process operations and management
- (4) Achievement of systematic and objective verification and assessment of occupational health and safety performance

Going forward, WPLC will continue to build a safe and secure work environment by operating its new occupational health and safety management system to the fullest.

Result of OHSAS 18001 System

| | 2015 | 2016 | 2017 |
|--|------|------|------|
| Onsite work accidents | 4 | 2 | 0 |
| Accidents involving safety abnormality | 8 | 6 | 6 |
| Proposals on safety | 422 | 466 | 435 |
| KYT activities | 77 | 120 | 138 |
| Close call activities | 167 | 221 | 189 |

Kayaku Safety Systems Europe a.s. (KSE)

The occupational health and safety of KSE employees is an indispensable element of all activities and a top priority of the company. A safe and healthy workplace is not only a fundamental right of workers, it also represents one aspect of KSE's daily operations. Therefore, KSE carries out regular training for confirming whether the optimal conditions are met with regards to employees' work. The company also carries out emergency training (hazardous chemical spills, etc.) and evacuation training to prepare for fires or explosions.

A great deal of attention is also paid to health in the workplace. In accordance with its occupational health and safety screening system, KSE carefully screens employees' aptitude for specific jobs. We carry out multiple checks on the work environment in order to monitor risk factors in each workplace. Based on the results, technical and organizational measures are proposed in order to eliminate jobs with latent hazards. For example, a gas extractor unit is installed on worktables where organic solvents are handled. These units ensure the thorough management of chemical substances in the work environment and eliminate hazardous jobs.

In this manner, KSE will continue to promote preventive measures and have employees propose ways to prevent close calls and actively participate in improvements in occupational health and safety.

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.

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*9 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.

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

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 *10 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.

*10 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 *11 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.

*11 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.

Health Promotion Project

Kowa Sangyo Co., Ltd. has been implementing a health improvement project since 2015 aimed at maintaining and improving employee health. The project team comprises representatives from each department and members from the Environment and Security Department. Its activities focus on support based on the fundamental precept of "health equals safety" indicating employee health is an important component of safe work.

The main initiative involves monthly self-assessments based on a health improvement challenge established by all employees for taking action to reduce or prevent certain lifestyle habits found in regular health exams. In addition, the project also held lectures called health outreach classes on lifestyle diseases and smoking with the cooperation of the city's Health Improvement Section, and organized events for employees including health checks (vascular age and 7 other items) and a walking event. The project also raised awareness through a regular article in the company newsletter about health. In the three years since the start of the project, employee awareness of health has increased and employees are now taking voluntary actions, with health exam results improving, too.

Specific results from this project include a 4.1% reduction in employees requiring follow up and a 2.0% reduction in employees that smoke.



Kayaku Safety Systems de Mexco, S.A. de C.V.(KSM) 1kg Weight Loss Program

KSM launched a program in 2013 to improve employee health. The name of the program was changed to the "1kg Weight Loss (Bájale 1 kilo menos) Program" in 2015. It is held twice a year for a period of four months each time. Currently the tenth session of the program is underway (February 6, 2018), which is focusing on improving participants' eating habits to prevent lifestyle diseases.

Participants manage their own weight and meet with a nutritionist biweekly to receive various advices. In addition, a diet-friendly menu has been prepared by the cafeteria, while at training for all employees held once a month, a nutritionist provides information about lifestyle diseases. To

encourage more to participate in the program, participants receive gift cards to a sporting goods store and t-shirt with the program's logo.

| "1 Kilo Menos" Program | 2017 | |
|-----------------------------------|------------------|------------------|
| | 8th Feb – Jun | 9th Aug – Nov |
| Target weight (kg) | 629.40 | 573.40 |
| Number of participants (persons) | 100 | 91 |
| Participation rate (%) | 25% | 22% |
| Number achieving target (persons) | 7 | 12 |
| Participant achievement rate (%) | 7% | 13% |
| Total weight loss (kg) | 141.20 | 98.30 |
| Total waist loss (cm) | 497.75 | 89.10 |

**Kayaku Safety Systems de Mexico. S.A. de C.V.
Opening of Futsal Court**

KSM created a futsal court to contribute to healthy lifestyles of employees, their families and everyone in the local community.

On February 21, 2018, a grand opening ceremony of the futsal court was held, with Mr. Kawafuji, the head of the Safety Systems Group of Nippon Kayaku and Mr. Gonzalo Elizondo of Salinas Victoria of Nuevo León in attendance.

The futsal court was constructed on the grounds of KSM and next to a parking lot. Next to the futsal court are ancillary facilities such as restrooms and showers as well as a square gazebo with a bench and grill. Employees are able to play soccer or enjoy a barbeque in their free time, which has helped to improve mental and physical health. Family and friends also visit to take part in the fun. Going forward, KSM will consider hosting soccer related events to foster communication between employees.



**KAYAKU CHEMICAL (WUXI) CO., LTD. (KCW)
Lectures on Health Check-ups at KAYAKU CHEMICAL (WUXI) Co. Ltd.**

KAYAKU CHEMICAL (WUXI) CO., LTD. (KCW) is a Nippon Kayaku Group company, which was established in China in 2002 to manufacture and market synthetic resins and also researches and develops technology services. KCW, as part of "employee health month," under the broader theme of environmental and safety month, organized health check-ups for all employees.

Furthermore, the physician from a medical institution who ordered medical check-ups as usual came to KCW, the physician answered questions from employees and provided health guidance. This enabled KCW to encourage employees to make improvements in their daily lives and focus on health issues as well. These efforts will be continued in the future.



Health check-up lectures led by a visiting specialist physician



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.

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 2017 was the seventh year of this plan. In addition, in response to the interim results of fiscal 2015, we set the target value for fiscal 2020 to a more stringent level.

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 | Reducing Our Chemical Substance Footprint | | 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 2017 results | 71,300 tons | 24,5 tons | 132.1 tons Total emissions 9,596,000 tons | 20,552 tons | 79.7% Displacement outside of the factory 19,213 tons of which final disposal volume 1,148 tons | 5.6% |
| Year-on-year | Decreased 1.1 % | Decreased 16.1% | Increased 5.5% | Increased 0.8% | Decreased 1.5% | Increased 0.8% |
| Target value for fiscal 2020 | Under 79,500 tons | Under 42 tons | Under 150 tons | Under 23,500 tons | More than 80% | Under 3.0% |

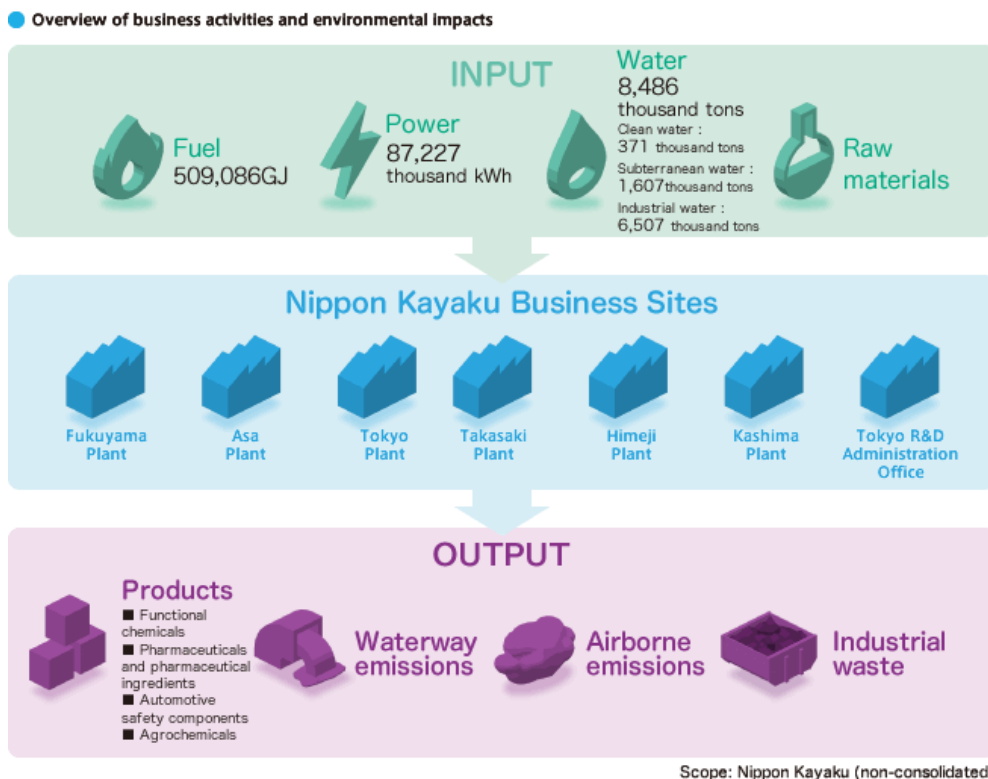
*1 Energy-derived CO₂ emissions: Japanese Government policy is to reduce these emissions by 3.8% versus 2005 (82.6 thousand tons).

*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.

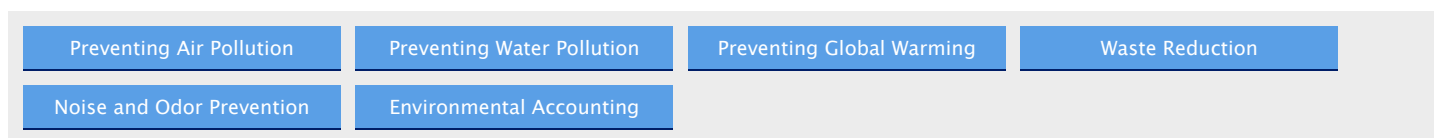
*4 Zero emission rate: The amount of internal and external landfill waste produced as a percentage of total waste produced.

Energy and Material Balance



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.

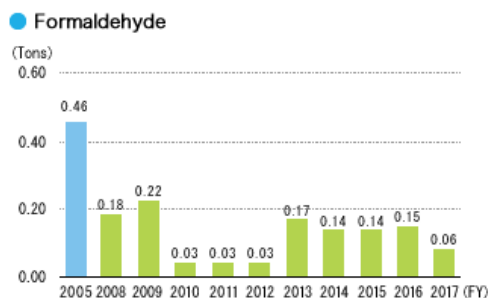
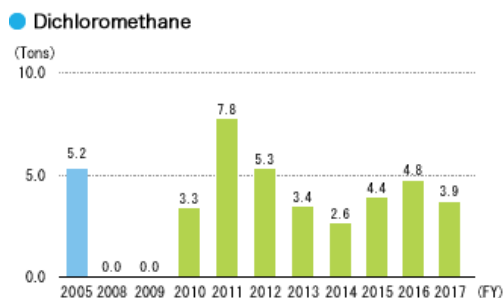
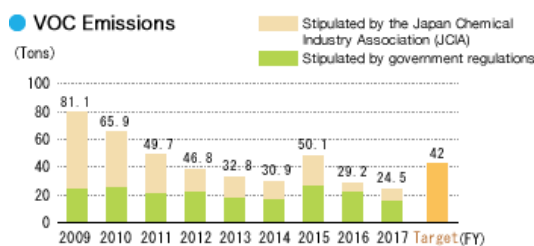


Preventing Air Pollution

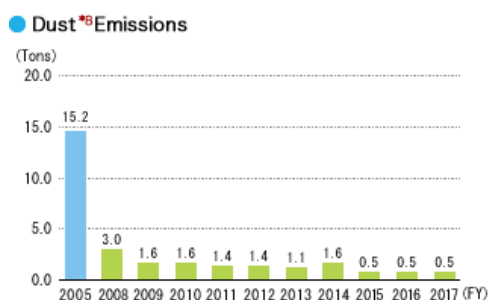
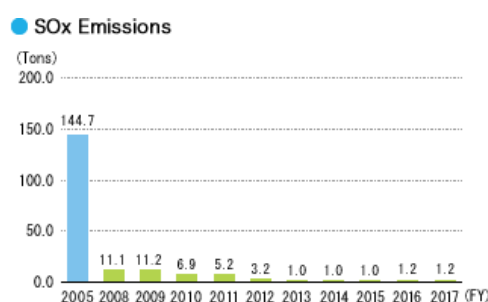
To help prevent air pollution, we carefully manage substances subject to Japan's Air Pollution Control Act, hazardous substances released into the air and other air pollutants.

Under the initiative of the Japan Chemical Industry Association, the industry is taking action to voluntarily manage and reduce emissions of 12 control substances *5 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) *6 and nitrogen oxide (NOx) *7 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.



*5 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.



*6 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.

*7 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.

*8 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.

Nippon Kayaku Fukuyama VOC Reduction Initiative

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 |

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 *1. The Nippon Kayaku Group is working not only to resolving waste water issues as discussed in the Special Feature article, but also the reduction of water usage.

*1 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.

PRTR*9 Initiatives

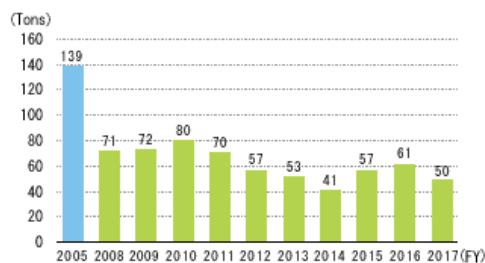
Since 1995, the Nippon Kayaku Group has participated in the Japan Chemical Industry Association led initiative to reduce compounds identified in the PRTR regulation, working to reduce its emissions of PRTR controlled compounds into the environment. In fiscal 2017, our emissions of PRTR controlled substances totaled 27.4 tons which marked about 6% increase from 25.9 tons in fiscal 2016. This was caused in fiscal 2017 by increased amount of use at the PRTR substance of Kashima Plant. Among PRTR substances, toluene emissions were high, but it decreased to 15.5 tons in 2015, 9.7 tons in 2016 and 3.8 tons in fiscal 2017.

The result of the VOC emission reduction effect surely appeared.

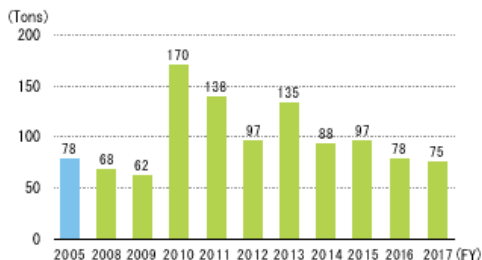
● COD Emissions



● SS*10 Emissions



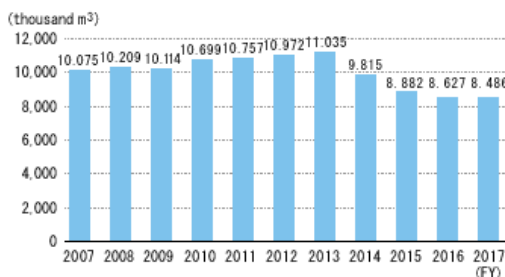
● Nitrogen Emissions



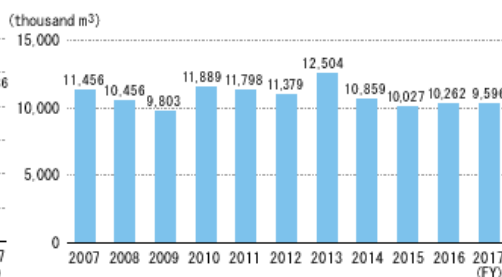
● Phosphorus Emissions



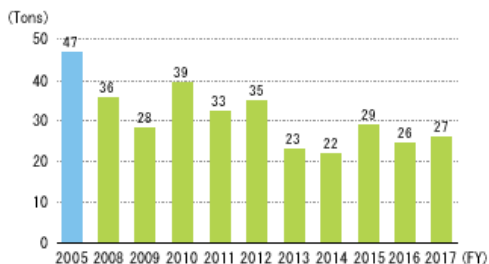
● Water Consumption



● Drainage



● Emissions of PRTR Controlled Substances



*9 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.

*10 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.

Nippon Kayaku Fukuyama Initiative to Reduce Water Usage

As of 2015, the amount of contracted volume of industrial water usage was 24,000 m³/day. In November 2015, this amount was amended to 23,000m³/day, which has been further reduced at the present to 22,000 m³/day through our implementation of reduction efforts.

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) Introduction of Rainwater Utilization System

KSE*11 introduced a system in 2017 to utilize rainwater more effectively following capital investment activities in support of the environment and its environmental protection policies. This system not only complies with the laws and regulation of the Czech Republic, but also contributes to the Nippon Kayaku Group's CSR-centered management.

This initiative not only received a positive review during a regular inspection on construction management performed by an administrative institution of the Government of the Czech Republic, but also has lowered costs following reduced water usage because non-potable tap water is no longer used.

Under the rainwater utilization project, KSE installed a 55m³ water storage tank under its parking lot and installed two 35m³ water storage tanks in the basement under its building as permanent facilities. Rainwater stored in these tanks is used to supply water to the building's restrooms.

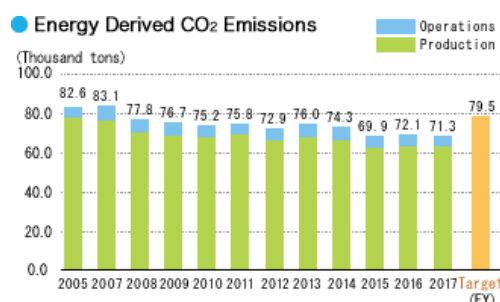
In fiscal 2018, KSE plans to install a 66m³ water tank, its largest water tank to date, under a different building.

*11 [KSE] A group company located in the Czech Republic that manufactures automotive safety components.

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. We will continue making efforts to attain the medium-term environmental goals.

In addition, As part of its efforts to help reduce CO₂ emissions from homes, the Nippon Kayaku Group has established the program to encourage employees to conserve energy at home called "My Home is Currently Conserving Electricity", which focuses exclusively on electricity usage. In 2015, we created new version of Kayakuma the Bear with the phrase "I'm currently conserving electricity" to raise greater awareness of this campaign.



As for measures against global warming, we must establish stricter targets for our medium-term environmental targets for fiscal 2030 set to be established shortly, taking into account the Paris Agreement concluded at COP21 in November 2016. At the same time, we need to energize activities focused not only on conventional approaches to energy conservation, but also on energy loss. This fiscal year we examine specific details to be included in the medium-term environmental targets for fiscal 2030.

Kayaku Safety Systems (Huzhou) Co., Ltd.
Initiatives for Reducing Environmental Impacts

KSH *12 has switched over to LED lighting, made modifications to its pneumatic system, and carried out energy conservation activities including switching off equipment when not in use and educating employees, in order to contribute to the prevention of global warming. While it is achieving results from these initiatives, KSE is continuing to make efforts by combining the power of its entire workforce. In aiming to be an environmentally friendly company, KSE ensures that dangerous wastes are sorted and disposed of by an accredited vendor. The company has also prepared and registered an emergency response manual for environmental accidents and is working to have the necessary facilities and materials in place for any contingency.

*12 KSH: A group company located in China that manufactures automotive safety components.

| item | 2015 | 2016 | 2017 | 2018 |
|--|-------|-------|-------|------|
| Intensity of electricity usage (Electricity usage/Net sales) (kWh/10,000 RMB) | 174.6 | 169.9 | 158.8 | 153 |
| Electricity cost savings (10,000 RMB) | - | 17.5 | 51.4 | 21 |
| CO ₂ reduction (tons) | - | 165.5 | 463.2 | 200 |
| SO ₂ reduction (tons) | - | 20.1 | 60.5 | 26 |

*Figures for 2015 to 2017 are actual results, while figures for 2018 are targets.
 CO₂ and SO₂ calculations based on coal-fired electricity generation.

Introduction of a Photovoltaic System at the Himeji Plant

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.

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**

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.

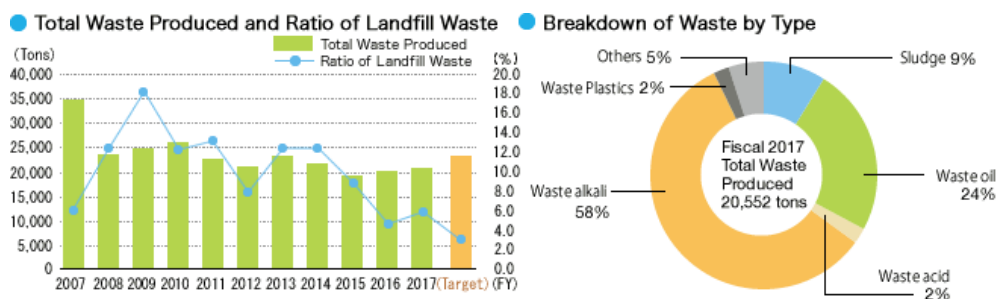


Rolling Out Eco-friendly Sales Vehicles

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.

Waste Reduction

In fiscal 2017, the Nippon Kayaku generated 20,552 tons of waste, which represents 0.8% increase compared to fiscal 2016. Landfill waste in fiscal 2017 amounted to 1,148 tons, and Zero Emissions rate of 5.6%. It was an increase of 0.8 points from fiscal 2016, but we will continue to make efforts toward the 2020 target.



**Fukuyama Plant (Nippon Kayaku Fukuyama)
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.

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 2017)

(Millions of yen)

| Category | | Investment | Total | Main Activities | |
|--------------------------------|----------------------------------|---|-------|--|--|
| Cost Incurred in the Workplace | Pollution Prevention Cost | Air Pollution Prevention | 98.4 | 116.2 | Odor countermeasures, upgraded exhaust gas treatment facilities, etc. |
| | | Water Pollution Prevention | 24.7 | 239.2 | Expanded waste liquid treatment facilities and upgraded equipment, etc. |
| | | Underground seepage prevention | 5.9 | 13.2 | Dirt floor maintenance, expanded wastewater drains, etc. |
| | | Noise and Vibration Prevention | 0.0 | 0.2 | Soundproofing measures for treatment tower and pumps, etc. |
| | | Other | | 160.6 | Disposal costs of facilities and pollution charges |
| | Global Environment Cost | Global Warming Prevention and Energy Conservation | 152.9 | 41.1 | Upgraded to high efficiency equipment, upgraded pumps, responded to CFC facilities, etc. |
| Resource Recycling Cost | Waste treatment | 66.1 | 500.1 | In-house processing costs and processing outsourcing costs | |
| Up- / Down-Stream Cost | Container Recycling Outsourcing | | - | 0.4 | Outsourcing costs for repackaging products |
| | Sewerage Processing Cost | | - | 81.7 | Sewerage treatment costs Tank dredging costs |
| Management Activity Cost | System Maintenance and Operation | | - | 93.4 | Internal auditor development cost and ISO14001 renewal costs |
| | Environmental Stress Monitoring | | - | 51.7 | Analysis costs and outsourcing costs |
| | Information Disclosure | | - | 9.5 | Outsourcing costs for preparing information disclosure documents on the environment |
| | Education, Training and Other | | - | 88.9 | Outside lectures, workplace training, etc. |
| | Greening | | - | 163.0 | Added plants and improved some greenery along the roadway Outsourcing costs |
| R&D Cost | | | | 316.3 | Environmentally friendly R&D costs and wastewater treatment technology development costs |
| Social Activity Cost | | | - | 9.0 | Plant tours, community event sponsorship, responsible care, ICCA special committee, LRI research meeting costs |
| Environmental Damage Cost | | | - | 0.0 | |
| Total | | | 348.0 | 1,884.6 | |

● 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 | Odor countermeasures |
| | | Water Pollution Prevention | 0.0 | Improvements to effluent treatment facilities, Changes in agglomeration method for treating |
| | | Pollution Load Levy Reduction | 0.4 | Installed soundproofing sheet |
| | | Noise and Vibration Prevention | 0.0 | Upgraded boiler, switched to LED lighting, introduced energy efficient equipment |
| | Global Environment Return | Global Warming Prevention and Energy Conservation | 45.6 | Reduced cost by using gas cogeneration system, cut off steam system, and introduced energy-efficient equipment |
| | Resource recycling return | Reduction of Waste | 1.6 | Recovered valuables from waste, and recycled waste oil as auxiliary fuel |
| | | Sale of Recycled Resources | 13.3 | Collected valuables, metals, sold paper products outside the group, and sold plastics outside the group |
| Other | | 8.6 | Made changes to in-house recycling and the waste processing provider | |
| Up- / Down-Stream | Container Recycling | | 0.0 | Reused plastic drums |
| Others | | | 0.0 | Implemented greening activities |
| Total | | | 69.4 | |

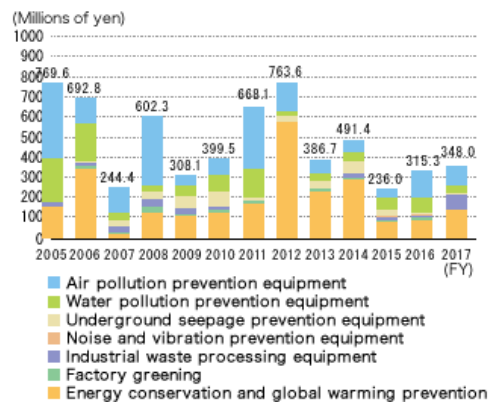
- Scope: Nippon Kayaku (non-consolidated)
- Investments: Aggregate of all orders placed in fiscal year 2017 (April 2017 to March 2018) Capital expenditure: Compilation of capital appropriated for orders in April 2017 to March 2018
- Management cost: Any cost increase resulting from change in fuel type 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.

Investments Related to the Environment, Health and Safety

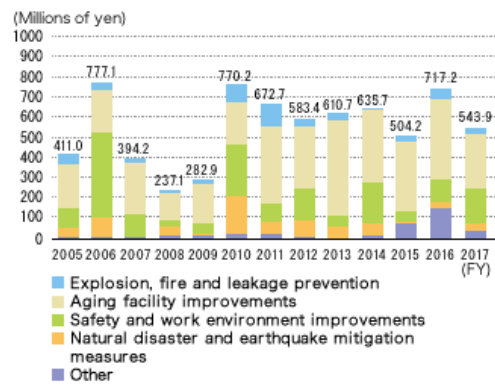
The Nippon Kayaku Group makes well planned and continual investments in environment, safety and health related projects. In fiscal 2017, investments related to the environment totalled at 348 million yen, which is an increase of about 10% compared to fiscal 2016.

Investments related to health and safety totalled at 543.9 million yen in fiscal 2017, which is a decrease of about 24% compared to fiscal 2016. Out of that, investments in equipment renewals accounted for 51% of the total.

● Environment Related Capital Investments



● Safety and Health Related Investments



FY2017 Energy saving activity summary sheet of Nippon Kayaku Group

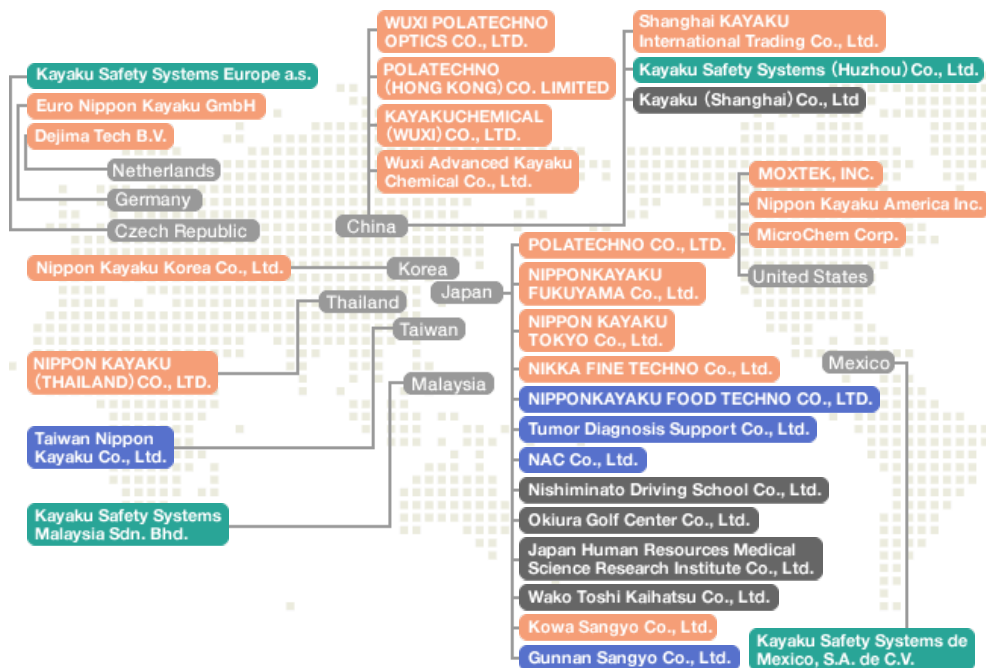
☀ : Solar panel installation ☑ : Unrealized due to lease limitaions — : Non-applicable ※High-load machinery: refrigerators/freezers, blowers, air compressors, steam boilers

| 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. | ● | ● | ● | — | — |
| 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 P&D Administration Office | ● | ● | ● | ● | ● |
| POLATECHNO CO., LTD. | ● | ● | ● | ● | × |
| MOXTEC, INC. | ● | × | ● | — | ● |
| WUXI POLATECHNO OPTICS CO., LTD. | ● | ● | ● | — | — |
| Dejima Tech B.V. | ● | ● | ● | ● | × |
| POLATECHNO (HONG KONG) CO., LIMITED | ● | ● | / | — | ● |
| NIKKA FINE TECHNO CO., LTD. | ● | ● | ● | — | / |
| Nippon Kayaku Korea Co., Ltd. | ● | ● | / | — | / |
| NIPPON KAYAKU AMERICA, INC. | ● | ● | / | — | ● |
| Euro Nippon Kayaku GmbH | — | ● | × | — | / |
| KAYAKU CHEMICAL (WUXI) CO., LTD. | ● | ● | ● | ● | ● |
| MicroChem Corp. | ● | ● | ● | ● | — |
| Wuxi Advanced Kayaku Chemical Co., Ltd. | ● | ● | ● | ● | ● |
| Shanghai KAYAKU International Trading Co., Ltd. | ● | ● | — | — | — |
| NIPPON KAYAKU FOOD TECHNO CO., LTD. | ● | ● | ● | — | ● |
| Tumor Diagnosis Support Co., Ltd. | ● | ● | ● | — | ● |
| NAC 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 | ● | ● | ● | — | — |
| 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 | ● | ● | ● | ● | ● |
| Sanko Kagaku Kogyo Co., Ltd. | ● | ● | ● | ● | ● |
| Head Office, KAYAKU AKZO CORPORATION | ● | ● | ● | — | / |
| Asa Plant, KAYAKU AKZO CORPORATION | ● | ● | ● | — | × |



The Nippon Kayaku Group's CSR Commitment

The Nippon Kayaku Group has business operations in nine countries around the world, comprising 19 subsidiaries in Japan and 22 subsidiaries overseas. This section presents the unified CSR commitment of 31 consolidated group companies.



Japan Functional Chemicals Group

CEO & Representative Director & President Katsuhiko Sakitama, POLATECHNO CO., LTD



POLATECHNO specializes in the 'Light Control Business', and aims to provide distinctive characteristic products 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 characteristic products from our energy-saving and eco-friendly plant and keep contributing to the society.

Japan Functional Chemicals Group

Representative Director & President Tetsuo Kando, NIPPONKAYAKU FUKUYAMA Co., Ltd.



We strive to maintain stable production with zero accidents and zero disasters, help improve the environment, safety, and health as well as quality, and promote compliance. In order to revitalize the local economy, we will continue to provide the community with sports facilities (baseball, soccer, and tennis) as well as offer support to the summer festivals and rose festival held in Fukuyama. We will also play an active role in the development of our local region through taking part in activities outside of the office including fire and disaster prevention as well as occupational safety and health activities to enhance safety and security. Going forward, we will continue to strive to mutually benefit our society via CSR activity

promotion and earn recognition from society.

Japan Functional Chemicals Group

Representative Director & President Akira Saino, NIPPON KAYAKU TOKYO Co., Ltd.

At Nippon Kayaku Tokyo, we use 3C&SQE as a keyword in our approach to corporate management. This acronym stands for compliance, community, cost savings, safety, quality and ecology. With this in mind, we contribute to society through the production of colorants for ink jet printers.

We engage the local community through the Satsuki Festival (May), rice cake-making event (December), plant tours, and internships. As a plant located in a densely populated urban area, our volunteer firefighting activities help protect the plant and also form part of the disaster assistance agreements we have signed with local community associations. We also have an AED outside for the benefit of our employees and the surrounding community.



Japan Functional Chemicals Group • Safety Systems Group

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

NIKKA FINE TECHNO is the only Nippon Kayaku Group company in Japan that serves as a trading company. Our core business focuses on the domains of Nippon Kayaku and its group companies, and leveraging our broad product lines and technical support capabilities, our employees carry out business activities fully compliant with relevant laws and fully aware of the company's code of conduct. We will realize the KAYAKU spirit and achieve sustainable growth by carrying out CSR management that fulfills the expectations and trust of all stakeholders.



Japan Pharmaceuticals Group

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

NIPPONKAYAKU FOOD TECHNO CO., LTD. manufactures and sells preservatives for food quality 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 food and health. As a member of the Nippon Kayaku Group and to realize KAYAKU spirit, 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. With this stance, we are working to develop new fields in the food industry and also live up to the trust and expectations of our customers.



Japan Pharmaceuticals Business

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

The TD in TD 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 in females. 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, TD 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.



Japan Pharmaceuticals Business

Representative Director & President Mituyosi Simohira, NAC Co.,Ltd.

NAC Co., Ltd. is involved in providing reception, security and greening, and environmental conservation for the Tokyo Business District and Nippon Kayaku Tokyo Co., Ltd., a Sumida River ferry that serves as a mode of transportation for Nippon Kayaku Tokyo Co., Ltd., as well as delivering internal mail, letters, and consumables to each workplace, confidential document filing, and waste material handling for the Tokyo Business District. Additionally, NAC provides mainstay services involving pharmaceutical products, including 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.



Japan Other Businesses

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

Nishiminato Driving School is to help train safe and considerate drivers who will contribute to 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. Going forward, we will strive to become a positive company that continually contributes to society as a comprehensive base of traffic safety learning that has earned support and empathy from the community.



Japan Other Businesses

Representative Director & President Hiroshi Kanazawa, 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, including a 250 yard driving range with 72 tee boxes, natural grass, a putting green, approach practice area, bunker practice area and even a restaurant. We are open from early in the morning to late at night and offer a host of golf lessons taught by professionals. Our facilities and services have earned us a strong reputation among customers. We have planted trees around our practice ranges being mindful of the environment. We take pride in welcoming customers of all ages, from children to seniors, to enjoy using our facilities with peace of mind. We are also promoting CSR management so that we can utilize our facilities as a venue for communication between members of the local community.



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 the healthcare and other fields. Our business lines 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, despite our small scale operations.



Japan Other Businesses

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

Wako Toshi Kaihatsu engages in the real estate lease 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 pediatric cancer, intractable diseases 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.



Japan Functional Chemicals Group

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

Kowa Sangyo mainly carries out manufacturing work at the Asa Plant. Our important health and safety initiatives include providing opportunities for employees to experience dangers and threats to their safety firsthand using apparatuses. We also offer emergency first-aid and AED training as well as support the local volunteer firefighting brigade to instill employees with the knowledge and techniques needed to quickly respond in an emergency. The Wasshoi! Kayaku Festival co-sponsored with the Asa Plant every November has become an integral event for the local community. Moving forward, we will aim to contribute to the community through the corporate activities of each and every employee.



Japan Pharmaceuticals Business

Representative Director & President Yasuhiro Okabe, Gunnan Sangyo Co., Ltd.

Gunnan Sangyo is responsible for the security of the Takasaki Plant, landscaping and greenery, as well as property management for Hisho, which is a training center used to develop the human resources of the Nippon Kayaku Group. We are working to carry out CSR activities by providing a more comfortable environment for local residents and the people that work at Takasaki Plant and the training center.



The 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 employees, shareholders, customers, suppliers, regulators and other stakeholders. Dejima is committed to maintain a healthy and safe working environment that ensures tolerance, respect and dignity for all its employees. Dejima is 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 its 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.

Europe 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 Euro Nippon Kayaku we use printed versions of the KAYAKU spirit to broaden understanding of CSR management, and to ensure employees safety and create healthy workplaces, we strive to prevent all accidents and injuries during the commute and make sure employees take all their paid leave. Moving forward, we are committed to actively carrying out CSR activities in consideration of the local community.



Europe Kayaku Safety Systems Europe a.s. President Shinji Ichikawa

Kayaku Safety Systems Europe a.s. manufactures and sells safety components for automobiles. 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.



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 visualization and analysis equipment.

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



United States Functional Chemicals Group · Safety Systems Group

President Go Mizutani, NIPPON KAYAKU AMERICA, INC.

Nippon Kayaku America sells and promotes functional chemical products and automotive safety components to customers in North America and also provides technical support. We are located in California, which has some of the most rigorous environmental regulations and worker protection measures of any state in the United States. We comply fully with these rigorous laws and market chemical products that are safe and eco friendly. We also promote products that contribute to the environment and energy efficiency and constantly work to propose even safer automotive safety components to customers. Moving forward, we will continue to proactively engage in CSR activities with the goal of practicing KAYAKU spirit to its fullest.



United States Functional Chemicals Group

President & CEO Jeremiah J. Cole Jr., MicroChem Corp.

MicroChem 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 MicroChem's high ethical principles and societal expectations.



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.



China Functional Chemicals Group

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

Kayaku Chemical (Wuxi) 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.



China Functional Chemicals Group

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

POLATECHNO (HONG KONG) is an important sales company that accounts for more than 70% of the POLATECHNO Group's sales. Our direct customers include Chinese LCD manufacturers and Japanese project 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.



China Functional Chemicals Group

General Manager Kazuyuki Murata, 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 products of the highest quality, in the wider sense, demanded by customers, through actions based on individual ethical values, instead of what others are doing, while respecting the local culture, history and business practices.



China Functional Chemicals Group

General Manager Tadayuki Kiyoyanagi, 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, such as 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 further 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.



China Functional Chemicals Group

General Manager Hiroshi Shichijo, Shanghai KAYAKU International Trading Co., Ltd.

Shanghai KAYAKU International Trading (SKT) sells dyes, ink 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 grow 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.



China Safety Systems Group

General Manager Shigeyuki Kawamura, Kayaku Safety Systems (Huzhou) Co., Ltd.

Kayaku Safety Systems (Huzhou) Co., Ltd. has created a corporate vision focused on the five key word phrase of "safety number one, commitment to quality, technological improvement, employee development, and market-focused" in an effort to realize KAYAKU spirit. We have a TS-16949 based system in place for stable quality and enhancing customer satisfaction, while in terms of safety and the environment, we have advance our efforts based on ISO 14001 and OHSAS 18001.

In addition, we focus on training in order to heighten employee awareness and input in our CSR-centered management. We offer training in Japan as well as training and lectures led by outside institutions and employees visiting from Nippon Kayaku, which have delivered positive results to date. We will continue to contribute to the improved safety of automotive society and benefit society, while ensuring all employees keep KAYAKU spirit close at heart.



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 employees of 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.



South Korea Functional Chemicals Group

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

Nippon Kayaku Korea imports and sells functional materials and pigment materials of Nippon Kayaku in Korea as well as 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.



Taiwan Pharmaceuticals Group • Functional Chemicals Group

General Manager Daisuke Komagata, Taiwan Nippon Kayaku Co., Ltd.

Taiwan Nippon Kayaku markets products from the Pharmaceuticals Group and Functional Chemicals Group and also carries out market research. 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 quality of daily work, conveying these practices to related departments; (2) contributing to cultural and economic exchange by actively participating and supporting activities and events of the Interchange Association Japan and the Taiwan Chamber of Commerce; and (3) displaying corporate vision boards primarily inside 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.



Malaysia Safety Systems Group

Managing Director Yoichiro Wada, Kayaku Safety Systems Malaysia Sdn. Bhd.

Kayaku Safety Systems Malaysia is a young company established in Malaysia in December 2012 to manufacture and sell automotive safety components. In 2015, we finally initiate the shipment of mass produced products. Because we are a young company, our workforce is also youthful as well as pliable and sensible. We constantly share the message of KAYAKU spirit within the company to raise employee morale. With safety of paramount importance, we supply only the highest quality products knowing that these products can directly affect the lives of our customers and have helped to reduce the number of automobile accident fatalities in the community. We are also mindful of the environment and constantly work to generate added value for the community, while improving quality of life and economic activity.



Thailand NIPPON KAYAKU (THAILAND) CO., LTD.

Managing Director Tetsuya Tomita

NIPPON KAYAKU (THAILAND) CO., LTD. is a company newly 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 observance of compliance and provision of safer materials and materials that lead to energy saving.





Editorial Policy

Nippon Kayaku Group's "CSR Information" is a report on the activities and results of the Mid-Term CSR Action Plan (2016–2018) and the CSR Action Plan 2018. It was prepared in order to promote dialogue with stakeholders to realize a sustainable society.

In addition to Message from the President, messages from each group company's representative is featured in the CSR Commitment section, with activity reports and detailed environmental data on many of the group companies' activities. Moreover, specific themes are also highlighted in the Special Feature section.

Reporting period

April 1, 2017 – March 31, 2018

Release date

September 28, 2018

Organization name

As of June 1, 2018

Scope of report

Nippon Kayaku Co., Ltd., domestic and overseas group companies

However, some personnel data and environmental data are based on Nippon Kayaku alone

Reference guidelines

ISO26000