


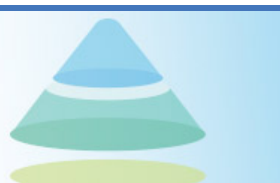
**Message from the President**

Read an important message from President Masanobu Suzuki.



**Special Feature**

For the Next 100 Years  
 Passing Down Our Technical Prowess and Developing the Human Resources of Tomorrow  
 A Century of Challenges



**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**

Read about our departments involved in CSR and our R&D initiatives.




**Fulfilling Our Responsibility to Society**

[Initiatives with Our Customers](#)

[Initiatives with Our Business Partners and Investors](#)

[Initiatives for Society](#)



**Fulfilling Our Responsibility to the Environment**

[Environment, Health and Safety, and Quality Assurance Management System](#)

[Initiatives for Health and Safety](#)



**The Nippon Kayaku Group's CSR Commitment**

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

Initiatives in Local  
Communities

Initiatives for Employees

Initiatives for Environmental  
Protection

Editorial Policy



## Message from the President



**We will continue contributing to a sustainable society and environment for today and tomorrow while advancing our technologies developed over the past century to address the changes taking place during an era of safeguarding the life and health of consumers, and supporting a comfortable life.**

The Nippon Kayaku Group celebrated its 100th anniversary in 2016. This milestone was made possible by the support we have received from all of our stakeholders over the past century. I am very thankful for this. Since our founding, we have engaged in business activities with the sincere commitment of always being someone that gives back to society. Despite the many major changes that have taken place in the world and markets, we have passed down a corporate DNA that produces the best quality products while constantly refining and evolving its proprietary technologies. This DNA is the driving force behind our continual growth over the past century and is one of the Nippon Kayaku Group's greatest strengths.


Our corporate vision is embodied in KAYAKU spirit, which is defined as continuously providing society with the best products through ceaseless progress and the combined forces of our consciences. This vision is traced back to the management ideals of our third president, Mr. Yasusaburo Hara, who spent many years involved in our management since our founding. These ideals were "combined forces of our consciences," "ceaseless progress," and "best products." We have carefully passed down this spirit to this very day. Under the "combined forces of our consciences," our organizations and people have supplied the "best products" needed by society through "ceaseless progress," contributing greatly to society in the process. In this manner, our corporate activities led by each and every employee practicing KAYAKU spirit represent the very bedrock of our CSR management.

The times are constantly changing. We must address a number of social issues in order to carry out sustainable business activities. Looking at the business areas of the Nippon Kayaku Group, we find that automotive society continues to grow around the world, which makes it more important than ever to help enhance the safety of automobiles for passengers. Turning our attention to Japan, we find that rising medical costs have become a social issue because of the country's aging population. Japan is also introducing work-style innovations to achieve work-life balance for workers. We will work on addressing each of these issues through our businesses. This involves continually developing and providing the best products that meet the needs of the world. This includes not only automotive safety components, but also pharmaceuticals that help improve quality of life (QOL) of patients and lower medical costs, such as anti-cancer drugs and biosimilars, as well as unique functional materials utilizing our pigment and resin technologies.

We have already embarked on our 101st year in business. Following our three-year Mid-term CSR Action Plan 2016 – 2018 established last year, we will continue to deliver the best products and services while creating new technologies and businesses. These actions will be carried out company-wide so that we can fulfill our role as a member of society for the next 100 years.

I ask for the continued support of all of our stakeholders as we move forward.

President

  
Masanobu Suzuki





## Special Feature – For the Next 100 Years

### — Passing Down Our Technical Prowess and Developing the Human Resources of Tomorrow



Raising the level of safety-oriented culture and safety awareness (employees from administrative departments also take part in trainings otherwise unrelated to their duties)

One of the important challenges we face today as a multinational corporation looking at the next 100 years is how to pass down the advanced technical prowess developed over our history to the next generation at our global network of subsidiaries. Nippon Kayaku excels at integration and now we must work to combine and integrate not only our technologies, but also our approach to human resources development. We believe this represents the first step in creating the innovations of the future.

## 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

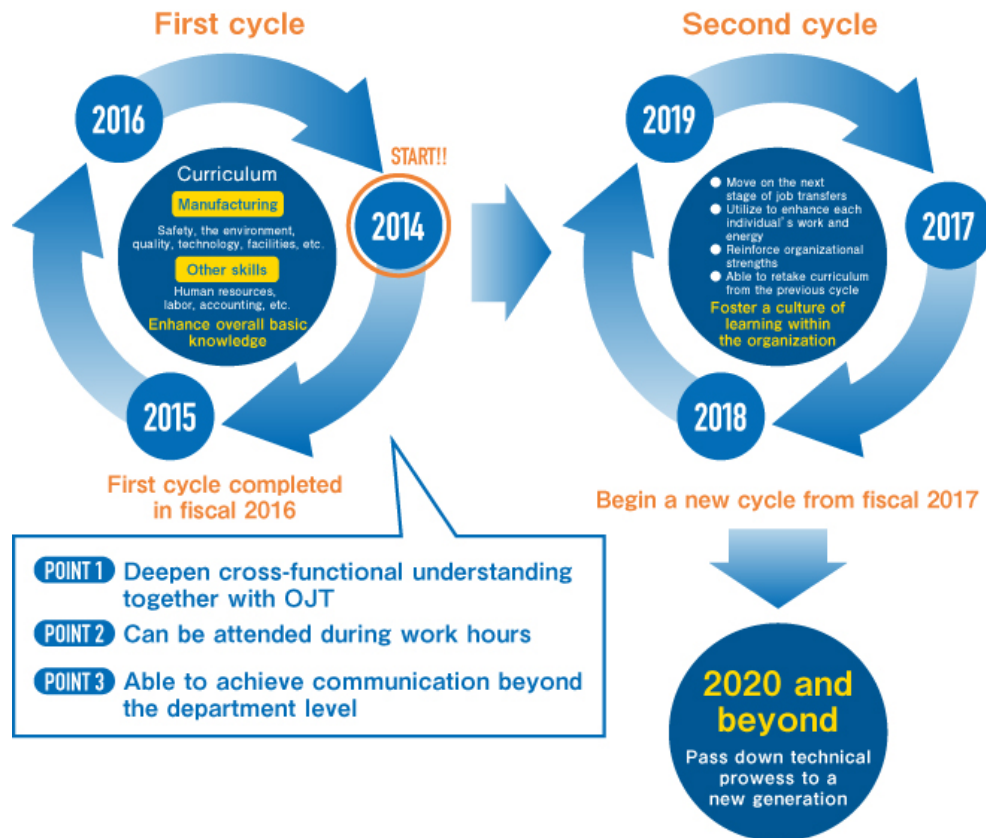


Workshop about the basics of cost

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.

Overview of Nippon Kayaku Fukuyama's training program



MESSAGE

"What's needed to elevate frontline strengths and make progress toward becoming a stronger company."

The year 2012 is when we realized that we had a real problem on our hands in terms of the unbalanced nature of our workforce that could negatively affect the company. As a result, we set up a team and began planning and preparing a training program while meeting countless times to discuss details carefully. As a result, in 2014, we were able to launch the program, which represents the first of its kind at the Nippon Kayaku Group. One of the challenges we faced was how to implement this in-depth program given that the plant's functions primarily involved production. The secret to our success may have been the fact we were able to reach an agreement with top management and working group members to allow employees to take the course during work hours.

Employees were able to interact more through this training and learning, which fostered better communication and breathed fresh new air into the company. As a first-time initiative, there were many opinions and issues, but are resolving each based on our discussions. We will continue with our efforts to become a stronger company while making steady progress in human resources development as a manufacturer.

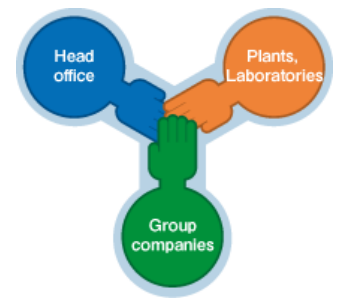


Members of the training system development team at Nippon Kayaku Fukuyama (Pictured from left) Masumi Imai (leader), Shinichi Namba, Hiroki Kishido, Kazufumi Kobayashi

Human Resources Development at the Nippon Kayaku Group

At the Nippon Kayaku head office, the Human Resources Management Division, Technical Administration & Engineering Division, Environment Protection & Safety Division, and Quality Management Division provide various forms of training for human resources development. These include human resources development offered by the Human Resources Management Division, the exchange meeting of "KAYAKU spirit Dream and Drive" ("Kaizen") Activities of the Technical Administration & Engineering Division, why-why analysis provided by the Quality

Management Division, and other small-scale networking sessions. Also, each production site (plants and laboratories) provides systematic training focused around OJT, while working on creating systematic mechanisms for the training system. Each group company carries out human resources development, with best practices also rolled out at overseas subsidiaries. In this manner, we are working to pass down the technical prowess of the Nippon Kayaku Group.



### 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.

### Meeting of the Movement for Tomorrow

The Meeting of the Movement for Tomorrow, which marked its 57th time in 2016, is held annually as a company-wide venue for sharing a broad range of business activities in terms of operational improvements, improving productivity, human resources development, new business creation, and new product development. The presentation has a cosmopolitan flair as it is attended by participants from Nippon Kayaku as well as group companies from inside and outside Japan. Each year the number of participating business sites increases and it has become the largest annual event held by Nippon Kayaku Group.



The presentations indicate the high level of awareness and provide many ideas that can be rolled out at other workplaces or serve as hints for task solving.

Also, exchanges during the presentations and networking session serve as not only a chance to ask questions and share information, but also provide many stimuli from interactions with people from differing sectors, jobs, countries and cultures. This allows for participants to expand their personal network and horizons, while also elevating their motivation toward work.

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.

### Exchange meeting of "KAYAKU spirit Dream and Drive"("Kaizen") Activities

Nippon Kayaku holds "KAYAKU spirit Dream and Drive"("Kaizen") Activities\*2 as a way to increase operating efficiencies and productivity. These activities involve various plans for promoting active approaches to improvement. One of these activities is the exchange meeting of "KAYAKU spirit Dream and Drive"("Kaizen") Activities held once every year.



The exchange meeting is a venue for presenting simple improvements a person has made at work. It is a small-scale meeting mainly plant departments. The purpose of the exchange meeting is to share approaches, challenges and issues related to activities on the frontlines and then create a better environment for these activities and implement them actively. In the year 2016, the fifth time exchange meeting was held where participants were separated into small groups to carry on open discussions.

During the open discussion, participants talked freely about approaches to theme creation and team building and innovations for increasing motivation. The small group size made it easier for participants to talk amongst themselves, resulting in active discussions. Participants raved about the format because they were able to find out about the views of other business sites and share challenges.

Going forward, we will continue to deepen exchanges between participants from differing workplaces in order to spread the effects of these activities to other workplaces and business sites.

\*2 "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 problems in the workplace independently under the banner of CSR management





## Special Feature A Century of Challenges

From Explosives to Chemicals  
and from Fine Chemicals to a  
*Smart Chemicals Company*®

"Continuously providing society with the best products through ceaseless progress and the combined forces of our consciences." By following this corporate slogan, the Nippon Kayaku Group has survived turbulent times, from World War II and post-war reconstruction to Japan's period of rapid economic growth and the collapse of Japan's asset bubble. One of our traits has been our ability to constantly evolve our business activities in a flexible manner under this unwavering slogan to meet the dramatic and repeated changes that have taken place in our business environment. The Nippon Kayaku Group's mainstay products, too, have undergone constant change to meet the needs of the times as well as the needs of Japan's industry and consumers. At the heart of this change and success has been our advanced fine chemical technologies developed since our founding. As a smart chemicals company, we will dedicate management resources to domains where we stand above competition in order to continually contribute to society.



### The Nippon Kayaku Group's History

A Century of Value Creation by Responding to Change with KAYAKU spirit

Functional Chemicals  
Business

Pharmaceuticals  
Business

Safety Systems Business

Agrochemicals Business

Major Milestones of the  
Nippon Kayaku Group

1910



**1916**  
Successfully produces  
black sulphur dye in Japan

### Beginning of Synthetic Dye Production in Japan

Japan relied upon imports for all synthetic dyes from the Meiji period to the Taisho period. These imports were cut off temporarily during World War I causing a nationwide shortage and creating an urgent need to develop synthetic dyes in Japan. For this reason, the government encouraged the domestic production of these dyes. With the start of black sulphur dye, Nippon Kayaku opened the door to production of synthetic dyes in Japan.



1940 Post-war Reconstruction,  
Rapid Economic Growth and Environmental Pollution

1940

Approves  
corporate  
name change  
to Nippon  
Kayaku Co.,  
Ltd.



**1951**  
Launches direct dye  
"Kayarus", dye for textiles  
made from cotton and hemp  
cellulose



**1954**  
Develops fluorescent dye



**1960**  
Launches "Kayalon  
Polyester", a disperse dye  
for polyester textiles



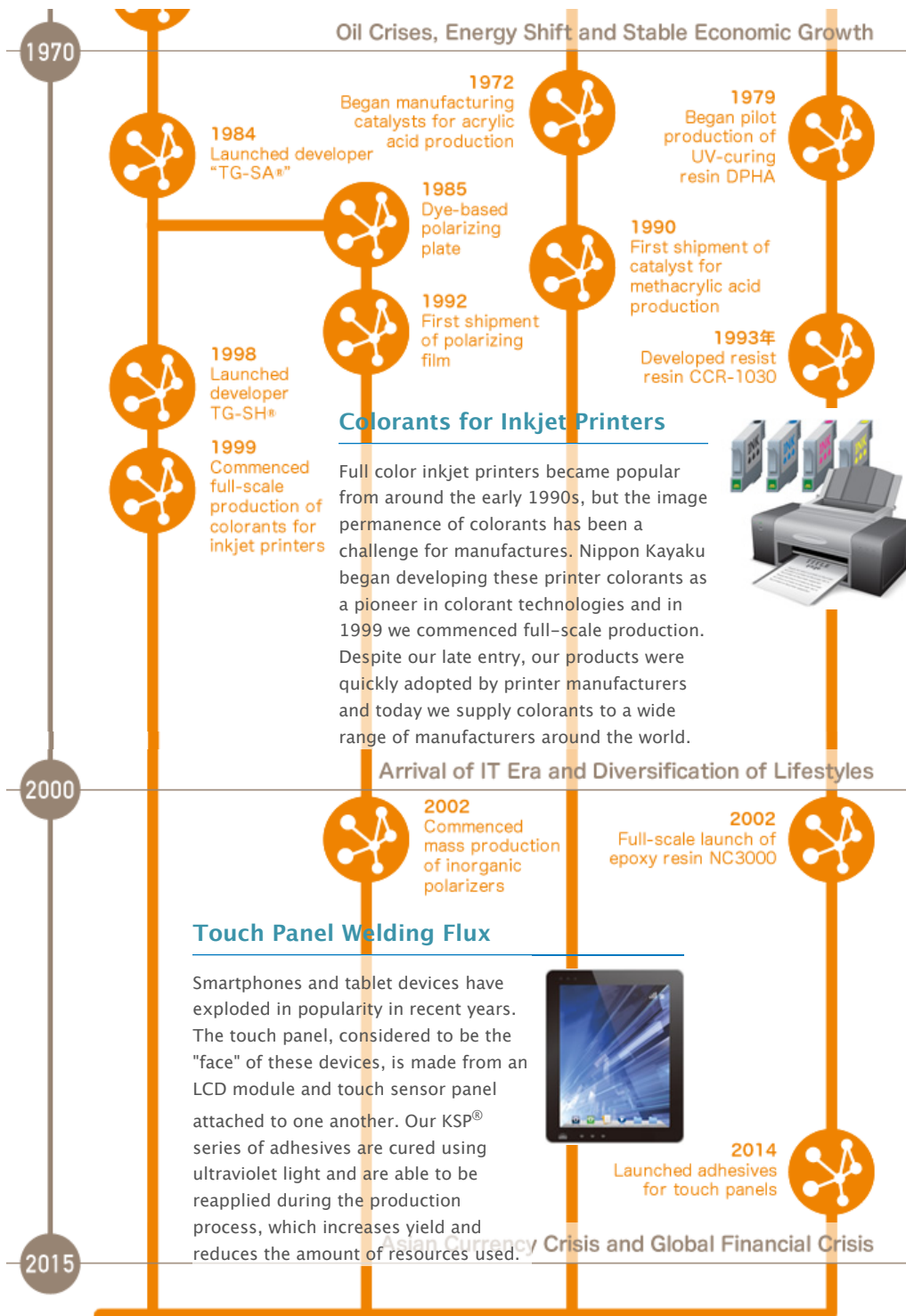
**1969**  
Launches "Kayacryl®" dye  
for acrylic textiles



**1963**  
Concludes a licensing  
agreement with Standard Oil  
Co., Ohio (US) for acrylic acid  
technology (catalysts)

**1969**  
Begins  
production of  
epoxy resins





### Colorants for Inkjet Printers

1999 Commenced full-scale production of colorants for inkjet printers

Full color inkjet printers became popular from around the early 1990s, but the image permanence of colorants has been a challenge for manufactures. Nippon Kayaku began developing these printer colorants as a pioneer in colorant technologies and in 1999 we commenced full-scale production. Despite our late entry, our products were quickly adopted by printer manufacturers and today we supply colorants to a wide range of manufacturers around the world.



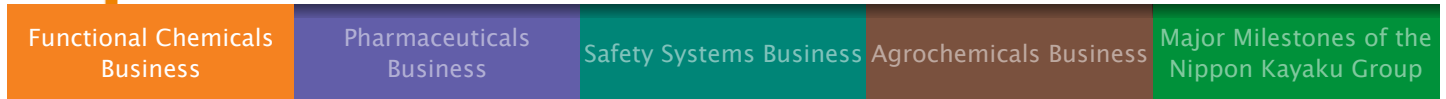
### Arrival of IT Era and Diversification of Lifestyles

### Touch Panel Welding Flux

Smartphones and tablet devices have exploded in popularity in recent years. The touch panel, considered to be the "face" of these devices, is made from an LCD module and touch sensor panel attached to one another. Our KSP® series of adhesives are cured using ultraviolet light and are able to be reapplied during the production process, which increases yield and reduces the amount of resources used.



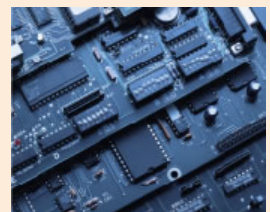
2014 Launched adhesives for touch panels



From Fine Chemicals to a *Smart Chemicals Company*®

### Continually delivering functional chemicals with less environmental impacts and that contribute to energy efficiency

The Functional Chemicals Business is developing and supplying functional chemicals with less environmental impacts and that contribute to energy efficiency. For example, our environmentally friendly NC-3000 series of epoxy resin is able to cure with a high degree of flame resistance without adding a flame retardant such as phosphorous or halogen. These adhesives are used for not only semiconductor encapsulation but also printed circuit boards and other fields. The high degree of quality and reduced environmental impact of these products has been proven, earnings them the status of de facto standard in the marketplace today.



In addition, we are contributing to energy and resource savings through the development of high yield catalysts for making acrylic acid and methacrylic acid as well as colorants for industrial inkjet printers that do not produce waste water yet create vivid, solid colors thanks

to our long-standing colorant synthesis technologies. These have earned us a strong reputation among our customers.



## Special Feature A Century of Challenges

From Explosives to Chemicals  
and from Fine Chemicals to a  
*Smart Chemicals Company*<sup>®</sup>

"Continuously providing society with the best products through ceaseless progress and the combined forces of our consciences." By following this corporate slogan, the Nippon Kayaku Group has survived turbulent times, from World War II and post-war reconstruction to Japan's period of rapid economic growth and the collapse of Japan's asset bubble. One of our traits has been our ability to constantly evolve our business activities in a flexible manner under this unwavering slogan to meet the dramatic and repeated changes that have taken place in our business environment. The Nippon Kayaku Group's mainstay products, too, have undergone constant change to meet the needs of the times as well as the needs of Japan's industry and consumers. At the heart of this change and success has been our advanced fine chemical technologies developed since our founding. As a smart chemicals company, we will dedicate management resources to domains where we stand above competition in order to continually contribute to society.



### The Nippon Kayaku Group's History

A Century of Value Creation by Responding to Change with KAYAKU spirit

Functional Chemicals  
Business

Pharmaceuticals  
Business

Safety Systems Business

Agrochemicals Business

Major Milestones of the  
Nippon Kayaku Group

1910



**1932**  
 Launches Aspirin, an anti-inflammatory analgesic agent

### Meeting demand for aspirin

Aspirin had the largest demand of the important pharmaceuticals that the Government of Japan encourages to be produced domestically, and aspirin was primarily an official drug. At the time, imported pharmaceuticals made up a majority of the domestic market, and amid growing voices for a Japanese pharmaceutical company to initiate private sector production, Nippon Kayaku launched Aspirin Yamakawa, an anti-inflammatory analgesic, in 1932. Aspirin Yamakawa would go on to cover a multitude of domestic drug markets.



1940 Post-war Reconstruction, Rapid Economic Growth and Environmental Pollution

1940

Approves corporate name change to Nippon Kayaku Co., Ltd.



**1948**  
 Commences production of antibiotic Penicillin

### Beginning of anti-cancer drugs

Nippon Kayaku's Pharmaceuticals Group successfully developed its first anti-cancer drug in February 1969. The drug, Bleomycin, appeared in the April 27, 1969 edition of the Asahi Shimbun newspaper under the headline "High expectations for novel drug used in cancer treatment." This marked the beginning of Nippon Kayaku's long history with anti-cancer drugs.



**1967**  
 Launches NEOLAMIN™ 3B intravenous multivitamin



**1969**  
 Launches BLEO™, an antitumor antibiotic



Oil Crises, Energy Shift and Stable Economic Growth

1970



**1973**  
 Launches MUSCALM™, Antispasmodic agents

### Development of nitroglycerin injections

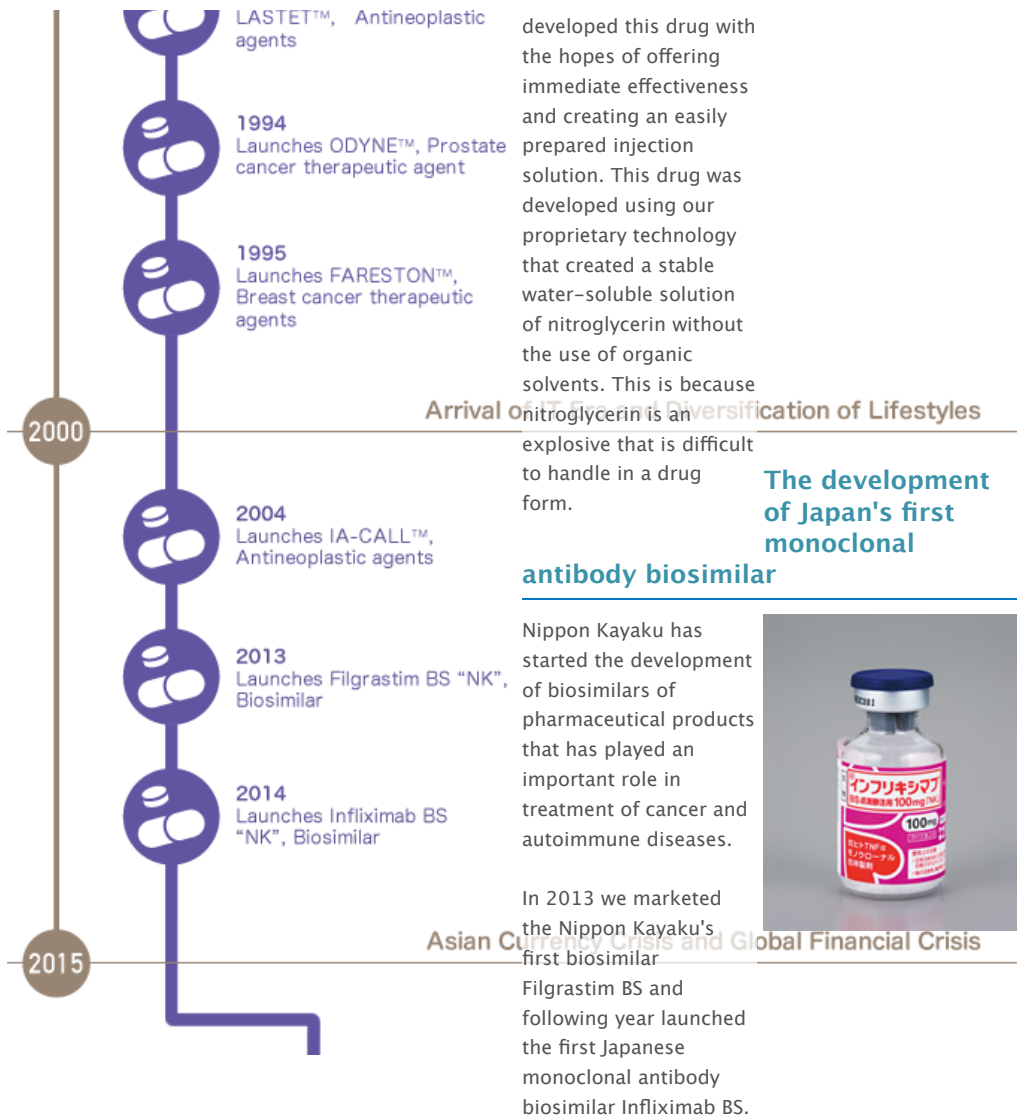
In 1984, we launched MILLISROL™, the world's first water-soluble nitroglycerin injections. In addition to a sublingual tablet used as a treatment for angina already in use, Nippon Kayaku



**1984**  
 Launches RANDA™, Antineoplastic agents



**1987**  
 Launches BESTATIN™ and



developed this drug with the hopes of offering immediate effectiveness and creating an easily prepared injection solution. This drug was developed using our proprietary technology that created a stable water-soluble solution of nitroglycerin without the use of organic solvents. This is because nitroglycerin is an explosive that is difficult to handle in a drug form.

### The development of Japan's first monoclonal antibody biosimilar

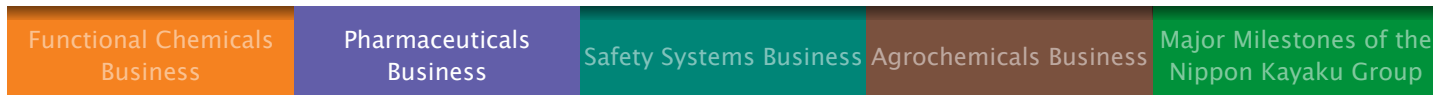
#### antibody biosimilar

Nippon Kayaku has started the development of biosimilars of pharmaceutical products that has played an important role in treatment of cancer and autoimmune diseases.



In 2013 we marketed the Nippon Kayaku's first biosimilar

Filgrastim BS and following year launched the first Japanese monoclonal antibody biosimilar Infliximab BS.



### From Fine Chemicals to a *Smart Chemicals Company*®

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.

Nippon Kayaku is now working on the development of polymeric micelle anti-cancer drugs through a joint Multi-national Phase III Clinical Study. In addition, we are also participating in a joint Multi-national Phase III Clinical Study of monoclonal antibody biosimilar treatments for breast cancer as part of our proactive efforts to develop biosimilar treatments following the success of FILGRASTIM BS and INFLIXIMAB BS, which have already been launched.

We are committed to prompting innovations by using our technological expertise, including in the development of generic anti-cancer drugs. 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.



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



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Major Milestones of the  
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1910

Foundation of Nippon Kayaku Seizo Co., Ltd.



1917  
Receives the first private sector license in Japan for manufacturing dynamite

### Beginning of Industrial Explosives Production

In 1914, after the start of World War I, Japan's downtrodden economy staged a turnaround to strong economic growth. With an increase mine production, dynamite, which was disposed of by the military and largely relied on imports suffered an extreme shortage. As demands for private sector production sharply increased, Nippon Kayaku Seizo Co., Ltd. became Japan's first company to make dynamite in 1916 in response to the heightened needs of industry.



1940 Post-war Reconstruction, Rapid Economic Growth and Environmental Pollution

1940

Approves corporate name change to Nippon Kayaku Co., Ltd.



1959  
Launches C-Type Instantaneous Electric Detonator



1962  
Wins the Okochi Memorial Award for the production of Initiating Explosive "DDNP"



1962  
Launches ANFO Explosives

Oil Crises, Energy Shift and Stable Economic Growth

1970



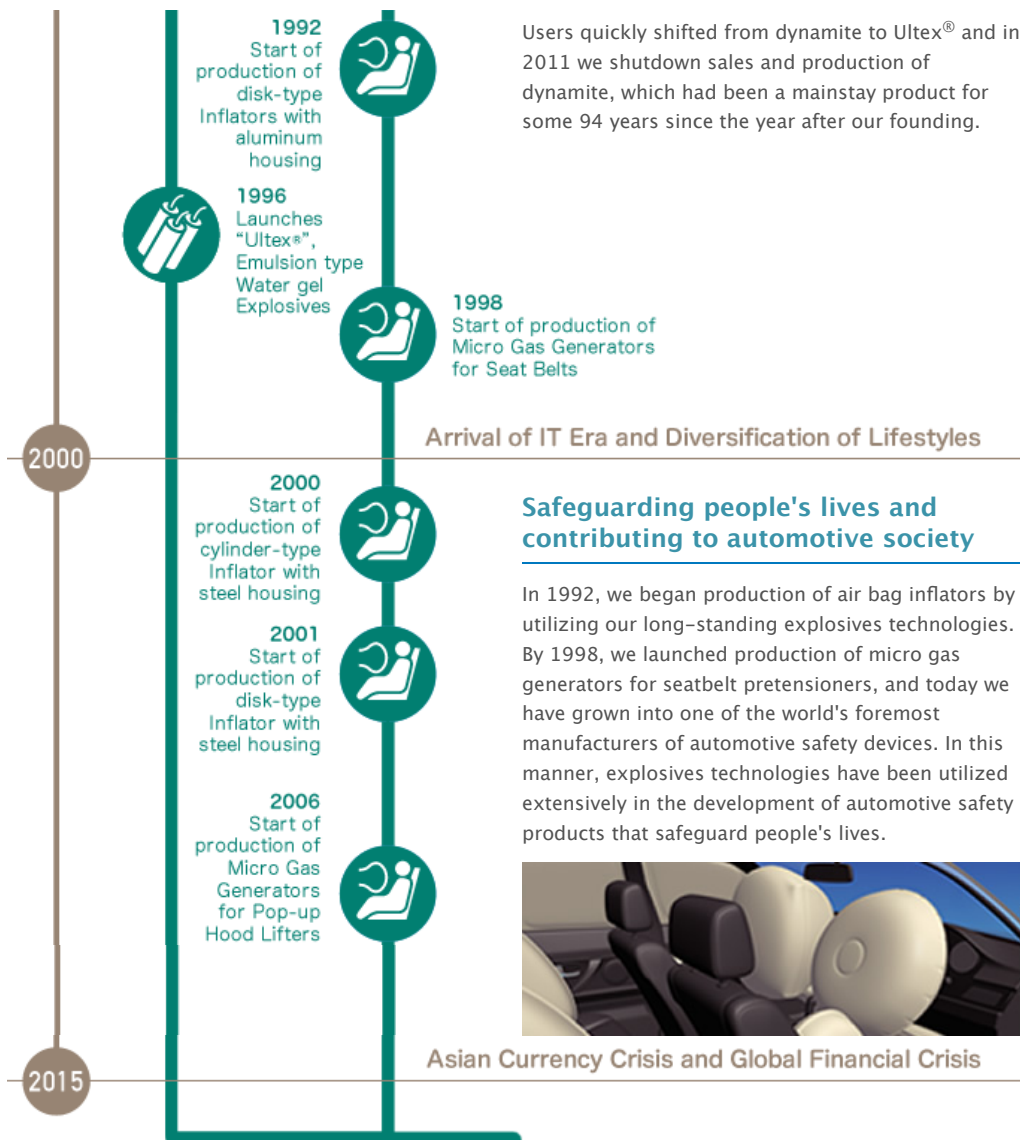
1980  
Launches "Kayamite", Emulsion type Water gel Explosives

1989  
Start of production of Squibs



### Launch of Ultimate Water Gel Explosives

Sixteen years after we launched emulsion type water gel explosive Kayamite, developed in-house as a water gel explosive that greatly enhances safety during manufacturing and use while maintaining a similar power as dynamite, in 1996 we launched emulsion type water gel explosive Ultex<sup>®</sup>, named for the fact that it represents the ultimate explosive.



From Fine Chemicals to a *Smart Chemicals Company*<sup>®</sup>

**With explosives safety technologies as our core competencies, we are providing safety to more people around the world mainly through our automotive safety components.**

Automobile production in Southeast Asia is expected to see strong growth rates, second only to China in the world, and nearly 60% of the market is occupied by Japanese automakers. In 2011, ASEAN NCAP, safety evaluation standards for new vehicles, was established, with safety testing commencing in 2013. This has dramatically increased the use of automotive safety components in automobiles. Given this, the Safety Systems Group examined market entry in Southeast Asia, with these discussions culminating in the establishment of Kayaku Safety Systems Malaysia Sdn. Bhd. in December 2012. The air bag inflators and micro gas generators for seatbelt pretensioners made here are exported within ASEAN and to India, contributing to automotive safety in these areas.





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Major Milestones of the  
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1910

### Manufacturing Agrochemicals from Picric Acid

In 1931, Nippon Kayaku began making Chloropicrin, a soil fumigant agrochemical that is highly effective against insect pests and soil-borne diseases, using the raw material of dye agents, known as black sulphur. This agrochemical greatly contributed to the control of soil-borne disease and pest insects that had been difficult to keep under control until then. At the same time, it also formed the foundation for the development of our agrochemicals business in the post-war era.



**1931**  
Commences production of Chloropicrin, a soil fumigant to protect plants from insect pests and soil-borne diseases

1940

1940 Post-war Reconstruction, Rapid Economic Growth and Environmental Pollution

### New Agrochemicals Contributing to Increased Food Production

Following World War II, the Government of Japan implemented policies to increase food production, and as a result there were heightened expectations for synthetic agrochemicals that could contribute to plant protection. Nippon Kayaku licensed technologies from Geigy of Switzerland and first commenced production of technical grade Diazinon<sup>®</sup> for hygienic use in 1957, and after some quality improvements, we launched the insecticide called Diazinon<sup>®</sup> Granule for agricultural use in 1964. This product proved to be highly effective against insect pests in paddy rice and agricultural soil, greatly contributing to the development of agriculture in Japan.

Approves corporate name change to Nippon Kayaku Co., Ltd.



**1957**  
Commences production of technical grade Diazinon<sup>®</sup> for hygienic use



**1964**  
Commences production of Diazinon<sup>®</sup> Granule for agricultural use



1970

Oil Crises, Energy Shift and Stable Economic Growth

**Diazinon<sup>®</sup> SL sol**



**1987**  
Launches insecticide, Cyclosal®



**1990**  
Launches Diazinon® SL sol



**1992**  
Launches R-731, rodent repellent against biting damage



**1999**  
Launches insecticide, Matric® Flowable

Diazinon® SL sol was developed using Nippon Kayaku's micro encapsulation technologies. The active ingredient is enclosed in micro capsules, making it safer and long-lasting. This product is now widely used to control the larva of beetles that eat sweet potatoes. Conventionally, agrochemicals had to be applied several times during a growing season, but this product can control insect pests simply by applying it only once prior to the planting.



2000

Arrival of IT Era and Diversification of Lifestyles



**2005**  
Launches hygienic-use insecticide, Safrothin® MC



**2010**  
Launches spreading agent/adjuvant, Widecoat®



**2011**  
Launches insecticide, Leaf Guard®



**2016**  
Launches insecticide & acaricide, Fuhmon® for mites

Asian Currency Crisis and Global Financial Crisis

2015

Functional Chemicals Business

Pharmaceuticals Business

Safety Systems Business

Agrochemicals Business

Major Milestones of the Nippon Kayaku Group

From Fine Chemicals to a *Smart Chemicals Company*®

**Providing agrochemicals with excellent effects, safety and environmental compatibility together with formulation technologies that make them easy to use and increase performance**

On February 15, 2016, the Agrochemicals Division launched spiracle-blocking insecticide Fuhmon®, which is ideal for Integrated Pest management (IPM) that does not rely only on chemical pesticides. This product offers four unique features: (1) it is made from polyglyceryl fatty acid ester which is used as food additive; (2) there are no limitations on the number of applications and it can be used even the day prior to harvesting vegetables; (3) it can protect plants from damage by spider mites, aphids, and whiteflies simultaneously; and (4) it is effective against insects that have become resistant to conventional chemical pesticides. Fuhmon® contributes greatly to protecting plants from various pests, which in turn contributes to the stable production of agricultural crops. Going forward, we will continue to contribute to agriculture while developing and supplying technologies and materials required by all aspects of this field.





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From Explosives to Chemicals  
and from Fine Chemicals to a  
*Smart Chemicals Company*®

"Continuously providing society with the best products through ceaseless progress and the combined forces of our consciences." By following this corporate slogan, the Nippon Kayaku Group has survived turbulent times, from World War II and post-war reconstruction to Japan's period of rapid economic growth and the collapse of Japan's asset bubble. One of our traits has been our ability to constantly evolve our business activities in a flexible manner under this unwavering slogan to meet the dramatic and repeated changes that have taken place in our business environment. The Nippon Kayaku Group's mainstay products, too, have undergone constant change to meet the needs of the times as well as the needs of Japan's industry and consumers. At the heart of this change and success has been our advanced fine chemical technologies developed since our founding. As a smart chemicals company, we will dedicate management resources to domains where we stand above competition in order to continually contribute to society.



### The Nippon Kayaku Group's History

A Century of Value Creation by Responding to Change with KAYAKU spirit

Functional Chemicals  
Business

Pharmaceuticals  
Business

Safety Systems Business

Agrochemicals Business

Major Milestones of the  
Nippon Kayaku Group

1910

**1916**  
Foundation of Nippon Kayaku Seizo Co., Ltd.

**1928**  
Acquires Teikoku Senryo Seizo Co., Ltd.

**1931**  
Establishes Yamakawa Seiyaku Co., Ltd.

1940 Post-war Reconstruction,  
Rapid Economic Growth and Environmental Pollution

1940

Approves corporate name change to Nippon Kayaku Co., Ltd.

**1943**  
Merges and absorbs Teikoku Senryo Seizo Co., Ltd. and Yamakawa Seiyaku Co., Ltd..

**1945**  
Approves corporate name change to Nippon Kayaku Co., Ltd.

**1962**  
Establishes corporate motto and corporate spirit

**1963**  
Recipient of the Deming Prize

The Deming Prize

In 1961, Mr. Yasusaburo Hara, then President of Nippon Kayaku, decided to establish a candidacy for the Deming Prize based on the implementation of a consistent company-wide fundamental policy and the recognition that a company's mission to society is to supply high quality products at affordable prices. Over the next two years, all 4,150 employees took part in a quality control campaign for promoting quality assurance. These efforts paid off in 1963 when the company was presented with the Deming Prize. Since then, quality activities have become a source of pride and an ongoing tradition for Nippon Kayaku.



Oil Crises, Energy Shift and Stable Economic Growth

1970

**1986**  
Establishes new corporate symbol

**1991**  
Establishes POLATECHNO CO., LTD.

**1992**  
Releases the Environmental Safety Declaration

releases the Environmental Safety Declaration

**1993**  
Establishes Taiwan Nippon Kayaku Co., Ltd

**1995**  
Acquires certification for quality assurance management system  
Establishes NIPPONKAYAKU FOOD TECHNO CO., LTD.

**1996**  
Establishes Wuxi Advanced Chemical Co., Ltd.

**1998**  
Establishment of Asunaro House

**1999**  
Invests in capital of  
INDET SAFETY  
SYSTEMS a.s.

**Arrival of IT Era and Diversification of Lifestyles**

2000

**2000**  
Establishes NIPPON KAYAKU TOKYO Co., Ltd. and  
NIPPONKAYAKU FUKUYAMA Co., Ltd.

**2002**  
Establishes KAYAKU CHEMICAL (WUXI) CO., LTD.

**2004**  
Launches Pink Ribbon campaign

**2006**  
Establishes Kayaku Safety Systems (Huzhou) Co., Ltd.  
Establishment of Nippon Kayaku Korea Co., Ltd.  
Name changed to NIKKA FINE TECHNO CO., LTD.

**2007**  
Establishment of Kayaku Safety Systems de Mexico, S.A.de.C.V.

**2008**  
Starts up Kayaku Japan Co., Ltd. Acquires MicroChem Corp.

**2010**  
Establishment of Shanghai Kayaku International Trading Co., Ltd.

**2012**  
Establishment of Kayaku Safety Systems  
Malaysia Sdn.Bhd.

**Asian Currency Crisis and Global Financial Crisis**

2015

Functional Chemicals  
Business

Pharmaceuticals  
Business

Safety Systems Business

Agrochemicals Business

Major Milestones of the  
Nippon Kayaku Group

From Fine Chemicals to a *Smart Chemicals Company*<sup>®</sup>

### 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" mandatory for all employees, with this name later changed to the "Meeting of the Movement for Tomorrow." The scope of these activities has been expanded from quality improvement to energy savings, improving occupational health and safety, and environmental conservation. The "Meeting of the Movement for Tomorrow" serves as venue for giving presentations and networking among employees, and now involves Nippon Kayaku Group companies from outside Japan. Additionally, starting in 2014, we re-launched and revamped our proprietary small group activities to include not only improvements, but also human resource development and CSR.

\*QC : Quality Control





## Fundamental CSR Activities

The Nippon Kayaku Group is implementing CSR management that fosters trust among all stakeholders through its focus on the KAYAKU spirit.

### Corporate Vision and CSR Activities

The KAYAKU spirit is considered as a common philosophy guiding the entire Nippon Kayaku Group globally and, with this in mind, we are carrying out various initiatives aimed at realizing CSR management.

### CSR Action Plan

Our Mid-term CSR Action Plan is made known to all employees and executive officers who together carry out integrated initiatives to enhance awareness about CSR management.

### Corporate Governance

We have established an autonomous governance system that ensures management transparency.

### Compliance

We are strengthening compliance initiatives around the world under the goal of becoming a company trusted by society.

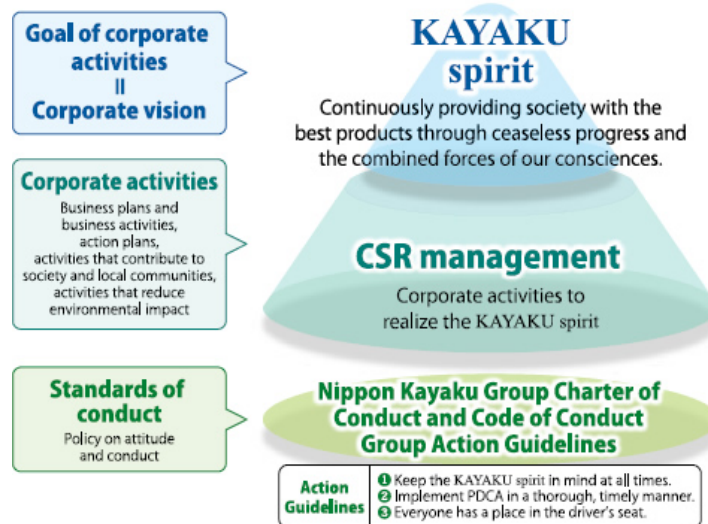


## Corporate Vision and CSR Activities

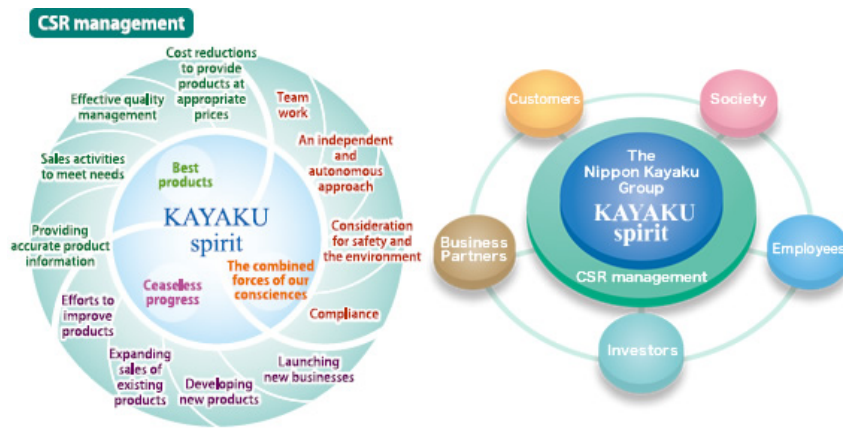
The Nippon Kayaku Group is implementing CSR management that fosters trust among all stakeholders through its focus on the KAYAKU spirit, which calls for "continuously providing society with the best products through ceaseless progress and the combined forces of our consciences."

### 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.



CSR management is positioned as a key corporate activity for achieving the vision outlined in the KAYAKU spirit



All of our business activities are grounded in the vision embodied by the KAYAKU spirit. We will foster trust among all of our stakeholders through CSR management that aspires to fulfill this KAYAKU spirit.

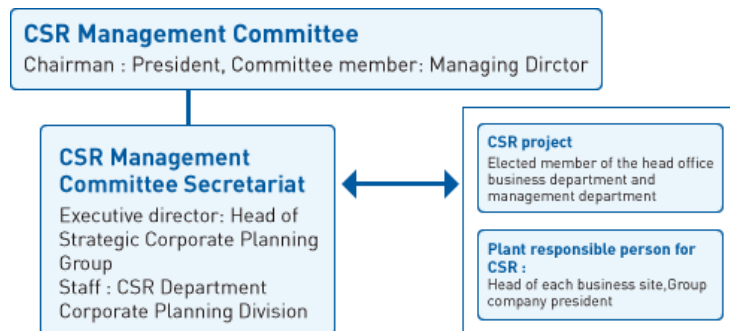
## CSR Action Plan and Management Strategy

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.



### KAYAKU spirit Promotion Efforts using the Kayakuma the Bear



Kyakuma 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

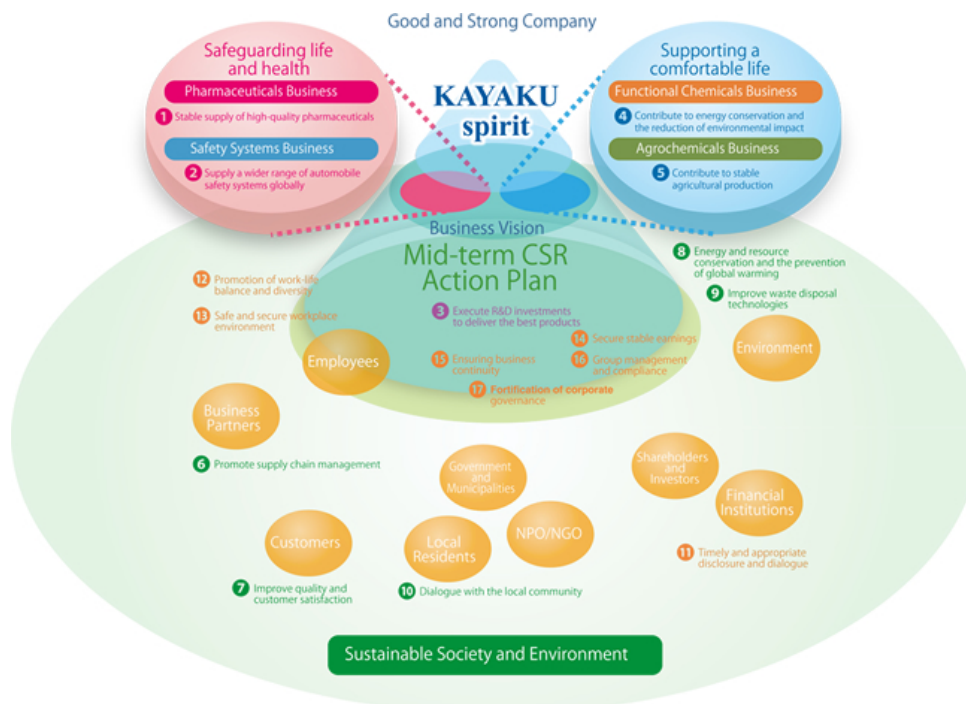
The Nippon Kayaku Group practices CSR management by realizing the KAYAKU spirit, which calls for "continuously providing society with the best products through ceaseless progress and the combined forces of our consciences." The following section provides a closer look at the CSR Action Plan and how it 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 <sup>*1</sup>
	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

## 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	ISO26000 Core Subjects and Related Issues																
		Human rights	Labour rights	Environment	Consumer interests	Community involvement and development	Supplier interests	Product safety	Information security	Anti-corruption	Other	Other	Other	Other	Other	Other	Other	
 Safeguarding life and health	1																	
	2																	
	3																	
 Supporting a comfortable life	4																	
	5																	
 Contributing to the development of a sustainable society and environment	6																	
	7																	
	8																	
	9																	
	10																	
 Represent the embodiment of a good and strong company	11																	
	12																	
	13																	
	14																	
	15																	
	16																	
	17																	

\*1: Partial change in wording from April 2017

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

## Results of FY 2016 CSR ACTION PLAN and FY 2017 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 2016 and the CSR Action Plan 2017 are as follows.

### Results of FY 2016 CSR Action Plan

CSR Action Plan 2016 Achievements			FY17: 100% achieved FY16: 100% achieved FY15: 100% achieved FY14: 100% achieved		
No.	Mid-term CSR Action Plan 2016-2018	CSR Action Plan 2016	CSR Action Plan 2016 achievements	Assessment levels	
13 Sustaining life and health	1	Contribute to society by promoting innovations using our technological expertise, and by stablely supplying high-quality pharmaceuticals coupled with truly reliable information	Proceed with development of polymeric micelle anti-cancer drugs and monoclonal antibody biosimilars for cancer fields, and launch generic anti-cancer drugs without delay	Results from past international trials in 1611 in groups with larger phase III trials were confirmed in 100% of the primary endpoint, and pending	100%
	2	Contribute to public safety by globally supplying a wide range of automobile safety systems to improve automotive outdoor safety	Governed by safe operations, provide the strengthening and expansion of production systems of our Japanese and overseas bases, and deliver high-quality products to global markets	Brought three generic drugs to market and proceeded with development of biosimilars benefits	100%
	3	Contribute to society, safeguard the life and health of the public, and support a comfortable life by providing functional chemical materials that offer special characteristics for the fields of information and communication, and energy and resource conservation	Implement next-generation designs, production, and sales that suit growing needs in global markets as planned	Implemented the strengthening and expansion of production systems of our Japanese and overseas bases, and deliver high-quality products to global markets	100%
14 Supporting a comfortable life	4	Contribute to the creation of a "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	Proceed on products capable of handling quality requirements for global markets, and carried out development of new-generation products	100%
	5	Contribute to stable agricultural production by offering agrochemicals that suit the needs of the market environment and our customers	Launch new insecticides, and develop unique and improved formulations using formulation technologies, and expand applications of existing products	Proceed with research and development connected to the best products that accurately capture the needs of society (customer values)	100%
	6	Promote supply chain management	Maintain a stable supply chain and alleviate procurement risks through the promotion of CSR procurement, while promoting improved quality and proper purchasing	Established a supply chain management system that integrates internal and external intellectual assets, operate and provide a place for cross-organizational research exchanges, and execute corporate research themes without delay	100%
15 Contributing to the development of a sustainable society and environment	7	Promote the additional improvement of customer satisfaction of product quality	Continue to implement activities to strengthen the global quality assurance system in the safety systems business	Proceed on activities capable of handling quality requirements for global markets, and carried out development of new-generation products	100%
	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	Proceed with research and development connected to the best products that accurately capture the needs of society (customer values)	100%
	9	Improve environmental preservation technologies for water treatment	Promote initiatives to reduce our energy consumption per unit by more than 1% each year	Proceed with research and development connected to the best products that accurately capture the needs of society (customer values)	100%
16 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 plant festivals, local community socials, local cleanup activities, Pink Ribbon Campaign, and interactive events for children (educational CSR) at each of our locations	Proceed with research and development connected to the best products that accurately capture the needs of society (customer values)	100%
	11	Carry out dialogue with stakeholders by providing appropriate information in a timely manner	Disclose financial and non-financial information with the aim to increase corporate value in a timely, fair and impartial manner while deepening the dialogue with stakeholders	Proceed with research and development connected to the best products that accurately capture the needs of society (customer values)	100%
	12	Provide a work environment that focuses on respect for human rights and work-life balance, and promote HR training and diversity	Establish a work environment in accordance with the revised Gender Equality in Employment Act (addressing sexual harassment, maternity harassment and LGBT discrimination)	Proceed with research and development connected to the best products that accurately capture the needs of society (customer values)	100%
17 Partly achieved	13	Maintain a safe and secure work environment that is free of accidents and work-related disorders	Promote health management that takes into account employee occupational safety and health (including mental health training, implement stress check-ups, promote improvements for a cleaner, healthier workplace, etc.)	Proceed with research and development connected to the best products that accurately capture the needs of society (customer values)	100%
	14	Secure stable earnings as a corporate group with growth potential	Optimally allocate management resources, improve capital efficiency, and promote business operations that focus on achieving our mid-term business plan	Proceed with research and development connected to the best products that accurately capture the needs of society (customer values)	100%
	15	Maintain business continuity even during an emergency	Implement training targeted at the workplace and continue to review the BCP manual	Proceed with research and development connected to the best products that accurately capture the needs of society (customer values)	100%
	16	Implement 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	Proceed with research and development connected to the best products that accurately capture the needs of society (customer values)	100%
	17	Partly corporate governance throughout the group	Strengthen systems and continue to implement systems of internal control and risk management, and continue to conduct follow-ups and improve the effectiveness of internal audits	Proceed with research and development connected to the best products that accurately capture the needs of society (customer values)	100%

Result of FY 2016 CSR Action Plan PDF

FY 2017 CSR Action Plan

CSR Action Plan 2017			
No.	Mid-term CSR Action Plan 2016-2018	CSR Action Plan 2017	
13 Sustaining life and health	1	Contribute to society by promoting innovations using our technological expertise, and by stablely supplying high-quality pharmaceuticals coupled with truly reliable information	Proceed with development of polymeric micelle anti-cancer drugs and monoclonal antibody biosimilars for cancer fields, and launch generic anti-cancer drugs without delay
	2	Contribute to public safety by globally supplying a wide range of automobile safety systems to improve automotive outdoor safety	Governed by safe operations, provide the strengthening and expansion of production systems of our Japanese and overseas bases, and deliver high-quality products to global markets
	3	Contribute to society, safeguard the life and health of the public, and support a comfortable life by providing functional chemical materials that offer special characteristics for the fields of information and communication, and energy and resource conservation	Implement next-generation designs, production, and sales that suit growing needs in global markets as planned
14 Supporting a comfortable life	4	Contribute to the creation of a "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 insecticides, and develop unique and improved formulations using formulation technologies, and expand applications of existing products
	6	Promote supply chain management	Maintain a stable supply chain and alleviate procurement risks through the promotion of CSR procurement, while promoting improved quality and proper purchasing
15 Contributing to the development of a sustainable society and environment	7	Promote the additional improvement of customer satisfaction of product quality	Continue to implement activities to strengthen the global quality assurance system in the safety systems business
	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	Promote initiatives to reduce our energy consumption per unit by more than 1% each year
16 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 plant festivals, local community socials, local cleanup activities, Pink Ribbon Campaign, and interactive events for children (educational CSR) at each of our locations
	11	Carry out dialogue with stakeholders by providing appropriate information in a timely manner	Disclose financial and non-financial information with the aim to increase corporate value in a timely, fair and impartial manner while deepening the dialogue with stakeholders
	12	Provide a work environment that focuses on respect for human rights and work-life balance, and promote HR training and diversity	Establish a work environment in accordance with the revised Gender Equality in Employment Act (addressing sexual harassment, maternity harassment and LGBT discrimination)
	13	Maintain a safe and secure work environment that is free of accidents and work-related disorders	Promote health management that takes into account employee occupational safety and health (including mental health training, implement stress check-ups, promote improvements for a cleaner, healthier workplace, etc.)
	14	Secure stable earnings as a corporate group with growth potential	Optimally allocate management resources, improve capital efficiency, and promote business operations that focus on achieving our mid-term business plan
17 Partly achieved	15	Maintain business continuity even during an emergency	Implement training targeted at the workplace and continue to review the BCP manual
	16	Implement 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
	17	Partly corporate governance throughout the group	Strengthen systems and continue to implement systems of internal control and risk management, and continue to conduct follow-ups and improve the effectiveness of internal audits

FY 2017 CSR Action Plan PDF







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# Mid-term CSR Action Plan 2016-2018





	No	Mid-term CSR Action Plan 2016-2018
 <b>Safeguarding life and health</b>	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
 <b>Supporting a comfortable life</b>	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
 <b>Contributing to the development of a sustainable society and environment</b>	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
 <b>Represent the embodiment of a good and strong company</b>	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 2016 Achievements

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

No	Mid-term CSR Action Plan 2016–2018	CSR Action Plan 2016	CSR Action Plan 2016 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	Proceed with development of polymeric micelle anti-cancer drugs	Results from joint international trials of NK105 in patients with breast cancer did not meet the prespecified statistical criteria of the primary endpoint, and planning for future clinical trials is underway	★☆☆
		Develop and launch generic anti-cancer drugs without delay and supply monoclonal antibody biosimilar treatments	Brought three generic drugs to market and proceeded with development of biosimilars favorably	★★★	
	2	Contribute to public safety by globally supplying a wider range of automobile safety systems to improve automotive collision safety	Governed by safe operations, increase our Japanese and overseas production capacity as scheduled, and deliver high-quality products to global markets	Implemented the strengthening and expansion of production systems at our Japanese and overseas bases as scheduled, and supplied a wider range of automobile safety components globally	★★★
Implement next-generation designs, production, and sales that suit growing needs in global markets as planned			Focused on products capable of handling quality requirements for global markets, and carried out development of new-generation designs	★★★	
Supporting a comfortable life	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	Create new products and businesses by implementing R&D investments, coordinating and integrating group intellectual assets and technologies, and promoting open innovations with parties outside the company	<ul style="list-style-type: none"> <li>Promoted joint research with the Group's internal and external research institutes</li> <li>Launched three new corporate research projects in collaboration with each of the research laboratories</li> <li>Held a company-wide research presentation meeting and an exchange meeting for analytical evaluation technologies, and implemented initiatives to promote the integration of intellectual property and technologies</li> </ul>	★☆☆
			Create, protect, and use intellectual assets and establish a global management system	Established a global management system of intellectual property for our Chinese Group companies	★★★
	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	Promote business development of epoxy resins and industrial-use inkjet colorants that contribute to reducing environmental impact and energy usage, and develop and launch high-performance catalysts used to manufacture acrylic acid	<ul style="list-style-type: none"> <li>Promoted business development of environmentally-friendly epoxy resins and industrial-use inkjet colorants</li> <li>Development is earnestly underway for high-performance catalysts used to manufacture acrylic acid</li> </ul>	★★★★
5	Contribute to stable agricultural production by offering agrochemicals that suit the needs of the market environment and our customers	Gear up for launch of new insecticides, develop a unique formulation using formulation technologies, and expand applications for existing products	Promoted registration procedures for new insecticides, and implemented information sessions on the safe use of agrochemicals in each representative's area	★★★★	
Contributing to the development of a sustainable society and environment	6	Promote supply chain management	Maintain a stable supply chain and alleviate procurement risks through the promotion of CSR procurement, while promoting improved quality and proper purchasing	<ul style="list-style-type: none"> <li>Grasped procurement risks and maintained a stable supply chain by actively communicating with suppliers through audits and investigations</li> <li>Developed familiarization activities for suppliers in relation to CSR procurement</li> </ul>	★★★★
	7	Promote the additional improvement of customer satisfaction of product quality	Continue to implement activities to maintain our record of zero serious customer complaints (5-Whys analysis, cross-organizational sharing of case studies, preventing human error, etc.)	Serious customer complaints: Zero cases <sup>2</sup> Continued to implement quality assurance activities for making the workplace stronger through the Nippon Kayaku "Why Why" Analysis and quality engineering training	★★★☆
			Strengthen global quality assurance system in the safety systems business	Established the Quality Assurance Division, and strengthened global systems	★★★☆
	8	Contribute to environmental preservation by promoting energy and resource conservation, and measures to prevent global warming	Promote initiatives for achieving our FY2020 mid-term environmental targets	Reviewed FY 2020 mid-term environmental targets based on the achievements of FY 2015, and started initiatives towards stricter targets	★★★☆
			Promote initiatives to reduce our energy consumption per unit by more than 1% each year	Promoted the update of energy-conserving equipment and review of energy consumption methods, and implemented energy conservation inspections	★★★☆
	9	Improve environmental preservation technologies for water treatment	Review existing wastewater treatment technologies, including those at group companies, and seek out new treatment technologies	Planned a project to implement a review of existing wastewater treatment technologies and seek out new treatment technologies, and activities are underway towards future results	★★★☆
10	Contribute to coexistence with the local society through communication with its residents	Continue to hold events, such as plant festivals, local community socials, local cleanup activities, Pink Ribbon Campaign, and interactive events for children at each of our locations and operate Asunaro house	<ul style="list-style-type: none"> <li>Pink Ribbon Campaign: Implemented activities at each business site, including overseas Group companies, in October</li> <li>Interactive events for children (educational CSR): Offered chemistry experiment shows at each business site and event</li> <li>Plant festivals, local community socials, etc.: Implemented according to plan</li> <li>Asunaro House: used by over 104 families (51% occupancy rate)</li> </ul>	★★★★	
Represent the embodiment of a good and strong company	11	Carry out dialogue with stakeholders by providing appropriate information in a timely manner	Increase both disclosure of non-financial information for stakeholders, and dialogue with shareholders and investors, to promote mutual understanding	Improved optional items in business reports, and explained the corporate value creation process and improved non-financial information in the annual report.	★★★☆
			Timely and appropriate disclosure of financial information and preparations to introduce IFRS	Continued to implement activities for 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	Foster an environment conducive for diverse human resources to play an active role, and implement HR training (conform with the law to promote the active role of women in the workplace, global HR training, training to pass on and develop manufacturing technologies, etc.)	<ul style="list-style-type: none"> <li>Created an action plan for initiatives to promote the active role of women in the workplace, and announced the action plan and targets inside and outside the Company</li> <li>Continued to implement training to pass on and develop manufacturing technologies at each business site and Group company (Female manager employment rate: 6.7%<sup>2</sup>, Achieved the legally mandated 2.1% employment for workers with disabilities<sup>2</sup>)</li> </ul>	★★★☆
			Promote initiatives conducted in accordance with the Act on Advancement of Measures to Support Raising Next-Generation Children (support for child-rearing and nursing care, encourage men to participate in child raising, reduction of overtime, improvement of the paid leave acquisition rate, etc.)	<ul style="list-style-type: none"> <li>Implemented various initiatives towards Platinum Kurumin certification, and plan to lodge an application on our achievements at the end of the fiscal year</li> <li>Changed the system of leave for child-rearing and nursing care to make half-day increments also available</li> </ul>	★★★☆
	13	Maintain a safe and secure work environment that is free of accidents and work-related disasters	Promote health management that takes into account employee occupational safety and health (continuing mental health training, implementing stress check-ups, developing data health plans, etc.)	<ul style="list-style-type: none"> <li>Mental health training and health check-ups both achieved a 100% participation rate<sup>2</sup></li> <li>Implemented stress check-ups, and responded to employees with high-levels of stress</li> </ul>	★★★★
			Continue to conduct activities for preventing accidents and disasters in advance (fire drills, safety inspections, plant inspections by managers, employee training, etc.)	<ul style="list-style-type: none"> <li>Incidence of major accidents: Zero cases<sup>2</sup></li> <li>Implemented activities to internally instill risk assessments focused on strengthening chemical substance management</li> </ul>	★★★★
			Carry out health and safety activities at group companies in accordance with the Nippon Kayaku Group FY 2016 Responsible Care Policy	<ul style="list-style-type: none"> <li>Familiarized each Group company with the companywide Responsible Care Policy and targets together with confirming the status of these initiatives with environmental health and safety diagnostics</li> <li>Continued to implement health and safety activities at each Group company (various types of safety training, KYT, near-miss training, etc.)</li> </ul>	★★★☆
	14	Secure stable earnings as a corporate group with growth potential	Optimally allocate management resources, improve capital efficiency, and carry out business operations that focus on earnings improvement	<ul style="list-style-type: none"> <li>Did not achieve our net sales plan, but achieved our plan for operating income nevertheless through promotion of cost reductions</li> <li>Ensured appropriate inventory management to focus on capital efficiency, and promoted the sale of idle assets</li> </ul>	★★★★
	15	Maintain business continuity even during an emergency	Implement training adapted for the field and review the BCP manual	<ul style="list-style-type: none"> <li>Implemented BCP training for hypothetical typhoon damage for the Catalysts Division and Asa Plant</li> <li>Created BCP manuals for two Chinese Group companies</li> </ul>	★★★★
	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 at group companies	<ul style="list-style-type: none"> <li>CSR training: Implemented 12 times for 260 employees, including 73 employees in seven Group companies</li> <li>Compliance training: Implemented group training in Japan in 33 times for 2,023 employees, DVD training for 1,422 employees, and for 506 employees in management roles in six overseas Group companies</li> </ul>	★★★★
Comply with local laws in each country/region, and quickly and properly address legal revisions			Executed business operations that complied with the laws in each country/region for the entire group, including laws related to chemical substances	★★★☆	
17	Fortify corporate governance throughout the group	Promote measures in accordance with the revised Companies Act and the Corporate Governance Code	Established opportunities for exchanging opinions with persons responsible for each business and advance briefings of agenda items for the Board of Directors for Outside Directors	★★★☆	
		Continue to implement and strengthen systems of internal control and risk management (Top 5 risk control activities), as well as follow-up and improve on the effectiveness of internal audits	<ul style="list-style-type: none"> <li>Evaluated the operating conditions of important meeting bodies, and confirmed that governance was functioning</li> <li>Implemented internal audits as planned, and carried out follow-up investigations on three Group companies</li> </ul>	★★★★	
		Establish an information security system to strengthen corporate information management	<ul style="list-style-type: none"> <li>Continued to implement information security training for employees in addition to new career hires</li> <li>Development is underway towards the implementation of the information security policy next fiscal year</li> </ul>	★★★☆	

\*1: Partial change in wording from April 2017 \*2: Nippon Kayaku non-consolidated basis figures

# CSR Action Plan 2017

	No	Mid-term CSR Action Plan 2016–2018	CSR Action Plan 2017
 <b>Safeguarding life and health</b>	1	Contribute to society by promoting innovations using our technological expertise, and by stably supplying high-quality pharmaceuticals coupled with truly reliable information	Proceed with development of polymeric micelle anti-cancer drugs and monoclonal antibody biosimilars for cancer fields, and launch generic anti-cancer drugs without delay
	2	Contribute to public safety by globally supplying a wider range of automobile safety systems to improve automotive collision safety	Governed by safe operations, promote the strengthening and expansion of production systems at our Japanese and overseas bases, and deliver high-quality products to global markets  Implement next-generation designs, production, and sales that suit growing needs in global markets 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	Promote research and development connected to the best products that accurately capture the needs of society (customer values) (Execute cross-sectional research and development that integrates internal and external intellectual assets, operate and provide a place for cross-organizational research exchange, and execute corporate research themes without delay)  Promote the creation, protection, and use of intellectual property, and strengthen the management system for domestic and overseas Group companies
 <b>Supporting a comfortable life</b>	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	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 insecticides, and develop unique and improved formulations using formulation technologies, and expand applications of existing products
	6	Promote supply chain management	Maintain a stable supply chain and alleviate procurement risks through the promotion of CSR procurement, while promoting improved quality and proper purchasing
 <b>Contributing to the development of a sustainable society and environment</b>	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  Continue to implement activities to strengthen the global quality assurance system in the safety systems business
	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  Promote initiatives to reduce our energy consumption per unit by more than 1% each year
	9	Improve environmental preservation technologies for water treatment	Investigate and implement technologies to reduce the impact of waste water and optimize the operations of waste water facilities to improve waste water treatment technologies, including those at group companies
	10	Contribute to coexistence with the local society through communication with its residents	Continue to run events such as plant festivals, local community socials, local cleanup activities, Pink Ribbon Campaign, and interactive events for children (educational CSR) at each of our locations
 <b>Represent the embodiment of a good and strong company</b>	11	Carry out dialogue with stakeholders by providing appropriate information in a timely manner	Disclose financial and non-financial information with the aim to increase corporate value in a timely, fair and impartial manner while deepening the dialogue with stakeholders  Continue to implement preparations and surveys leading to introduction of IFRS
	12	Provide a work environment that focuses on respect for human rights and work-life balance, and promote HR training and diversity	Foster an environment for diverse human resources to play an active role, and implement HR training (Diversity & Inclusion), (promote an active role of women in the workplace, global HR training, training to pass on and develop manufacturing technologies, etc.)  Promote initiatives conducted in accordance with the Act on Advancement of Measures to Support Raising Next-Generation Children (support for child-rearing and nursing care, encourage men to participate in child raising, reduction of overtime, improvement of the paid leave utilization rate, etc.)  Establish a work environment in accordance with the revised Gender Equality in Employment Act (addressing sexual harassment, maternity harassment and LGBT discrimination)
	13	Maintain a safe and secure work environment that is free of accidents and work-related disasters	Promote health management that takes into account employee occupational safety and health (continue mental health training, implement stress check-ups, promote improvements for a cleaner, healthier workplace, etc.)  Continue to conduct activities for preventing accidents and disasters in advance (Fire drills, safety audits, comprehensive chemical management and more efficient risk assessments, etc.)  Carry out health and safety activities at group companies in accordance with the Nippon Kayaku Group FY 2016 Responsible Care Policy, and implement environment and safety diagnoses and training for overseas Group companies
	14	Secure stable earnings as a corporate group with growth potential	Optimally allocate management resources, improve capital efficiency, and promote business operations that focus on achieving our mid-term business plan
	15	Maintain business continuity even during an emergency	Implement training targeted at the workplace and continue to 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	Implement assessments of the effectiveness of the Board of Directors and strengthen the governance system through timely exchanges of information with Outside Directors and Outside Audit & Supervisory Board Members with local laws in each country/region, and quickly and properly address legal revisions  Strengthen systems and continue to implement systems of internal control and risk management, and continue to conduct follow-ups and improve the effectiveness of internal audits  Establish an information security system to promote bolstering our corporate information management, while increasing employee awareness of the need for information management, and promote implementing information security systems in Group companies

\*1: Partial change in wording from April 2017



## Corporate Governance

### The Nippon Kayaku Group Corporate Governance and Internal Control System

#### Fundamental Approach to Corporate Governance

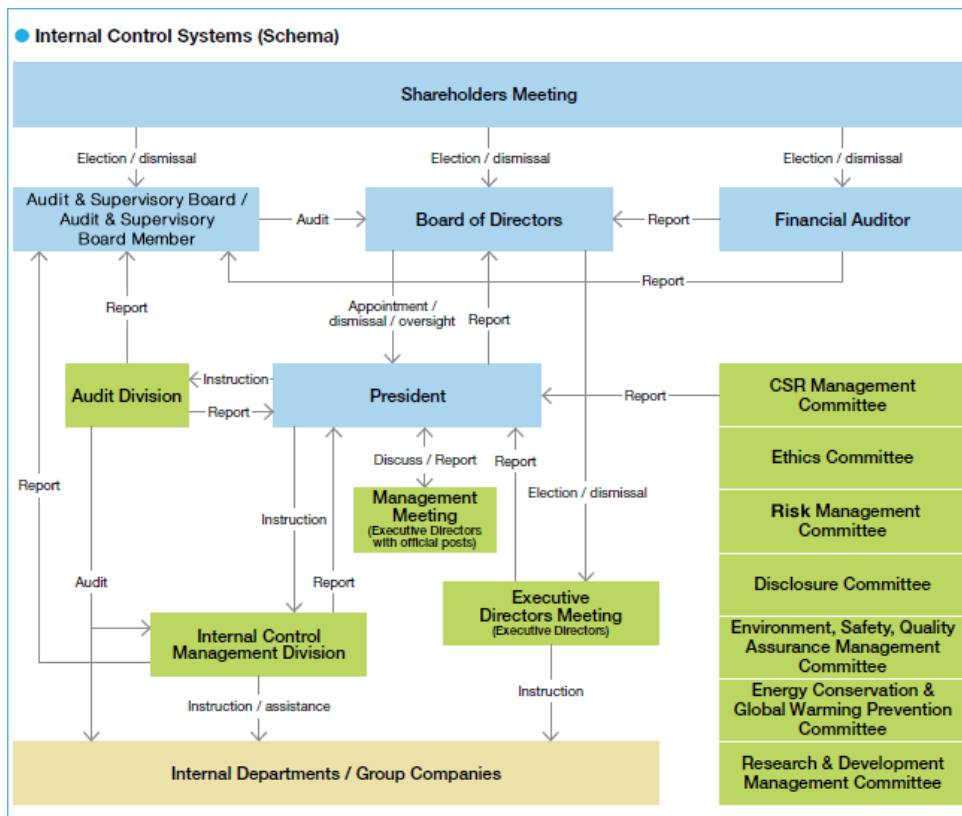
To gain the trust of society, the Nippon Kayaku Group recognizes the vital importance of preserving business transparency through greater checks and balances and of timely, impartial information disclosure to investors and shareholders. To that end, we have put in place an autonomous corporate governance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

## 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.



Training at a Group company in China

### Compliance Promotion Activities

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

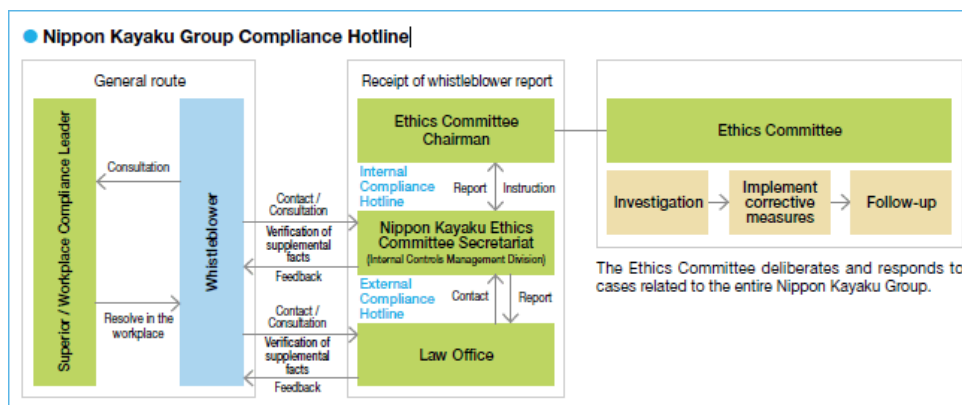
Organized by the Internal Control Management Division, compliance training consists of group training sessions which focus on a specific theme determined for each year, along with study sessions held during regular meetings at each workplace, and training sessions based on actual case studies. Training sessions are recorded on DVD and distributed to employees who could not attend so that training opportunities and programs are provided to all for improved awareness of compliance. In fiscal 2016, group trainings were held a total of 7 times with the participation of 3,286 employees including DVD trainings.

### Raising Awareness at Overseas Group Companies

We work closely with overseas group companies to promote greater compliance awareness while also being mindful of local cultures and customs as well as legal risks. In fiscal 2016, global compliance training was held for 12 Japanese employees being assigned overseas, and for a total of 32 Japanese expatriate employees of two of our subsidiaries outside of Japan and all of our group companies in China. Additionally, the person in charge of legal affairs for Kayaku (Shanghai) Co., Ltd. conducted a training session on the Nippon Kayaku Group Charter of Conduct and Code of Conduct for 474 employees of all group companies in China. Furthermore, a survey was conducted to gauge participant comprehension of the curriculum and for improving future training sessions.

### 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.



## 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

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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 2016, 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

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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

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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

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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 2016 Nippon Kayaku Group Disaster Prevention Training Activities Summary sheet](#) 

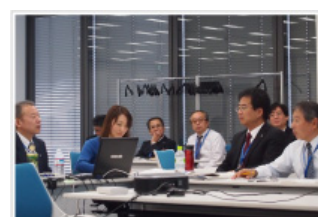
### Preparing BCP Manuals

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 2016, the Asa Plant and the Functional Chemicals Group conducted training based on the scenario of a large typhoon striking the Chugoku Region and damaging the Asa Plant. Training involved connecting the head office with the Asa Plant Kawahigashi and Kawanishi areas using a teleconference to ensure that products could be supplied without delay.



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. The training involves not only theory, but also actual emergency response drills. Training covers fire prevention, how to safely extinguish fires, first aid, evacuations, rescues, and hazardous material accidents.

Training using fire extinguishers and fire fighting hoses involves both solid and liquid agents. First aid training focuses on injuries such as burns and lacerations that can occur at the plant as well as other emergencies such as respiratory failure and choking. Rescue training covers finding and rescuing an injured person from inside a place that is difficult to access or with low visibility. Hazardous material training is conducted on-site at KSM and mainly involves collecting pollutants and decontaminating the area.



# FY2016 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

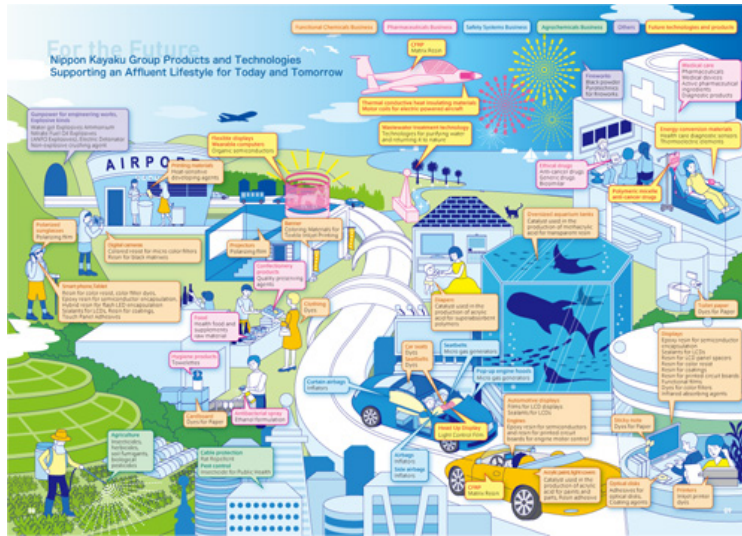
Business site/ Company name	Comprehensive disaster prevention training*	Notification training, evacuation training	Early stage fire-fighting training ; Use of fire extinguishers and fire hydrants, firefighting skills Satellite phone training	Earthquake simulation training	First-Aid training, AED training	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.	●	●	●	—	●	●	—
INDET SAFETY SYSTEMS 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.

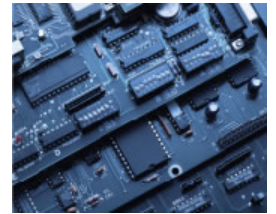
Contribute to the creation of an "Super Smart Society" by providing functional chemical materials that offer special characteristics for the fields of information and communication, and energy and resource conservation.



## Functional Chemicals Business

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

The super smart society of tomorrow is expected to be one in which the goods and services we need will be supplied only in the necessary amount, resulting in more lively and comfortable lifestyles. 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.



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

[Pharmaceuticals Business](#)

## 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 by a sizeable margin in Southeast Asia and other emerging countries following a similar trend in China. 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**

In February 2016, the Agrochemicals Group launched a spiracle-blocking insecticide Fuhmon<sup>®</sup>, ideal for Integrated Pest Management (IPM) limiting the reliance on chemical pesticides. This product offers four unique features: (1) it is made from polyglyceryl fatty acid ester which is used as food additive; (2) it can be applied unlimited multiple times and even up to a day before crop harvest; (3) it is possible to simultaneously exterminate mites, aphids, whiteflies, and powdery mildew; (4) it is effective against insects that have become resistant to conventional chemical pesticides. It has earned a solid reputation and is now widely used for produce vegetables such as strawberries and tomatoes.

Going forward, 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

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

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

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

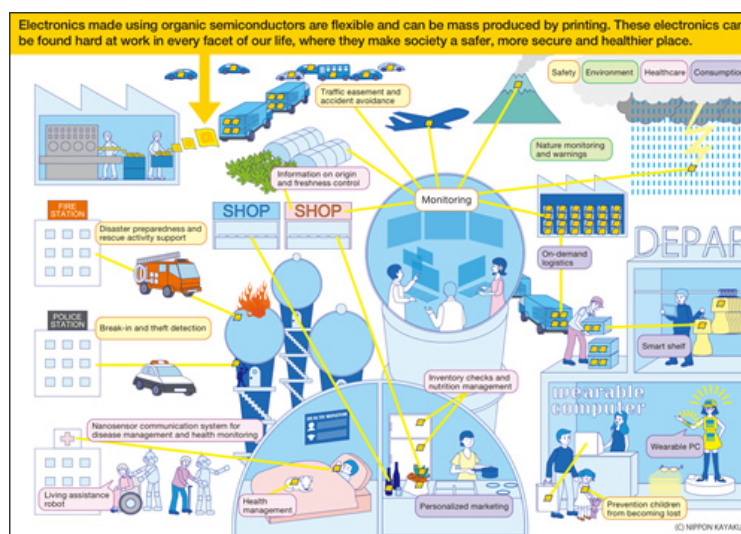


Inorganic semiconductor

[Learn more about our research laboratories](#)



Organic semiconductor



[View larger image](#)

**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.

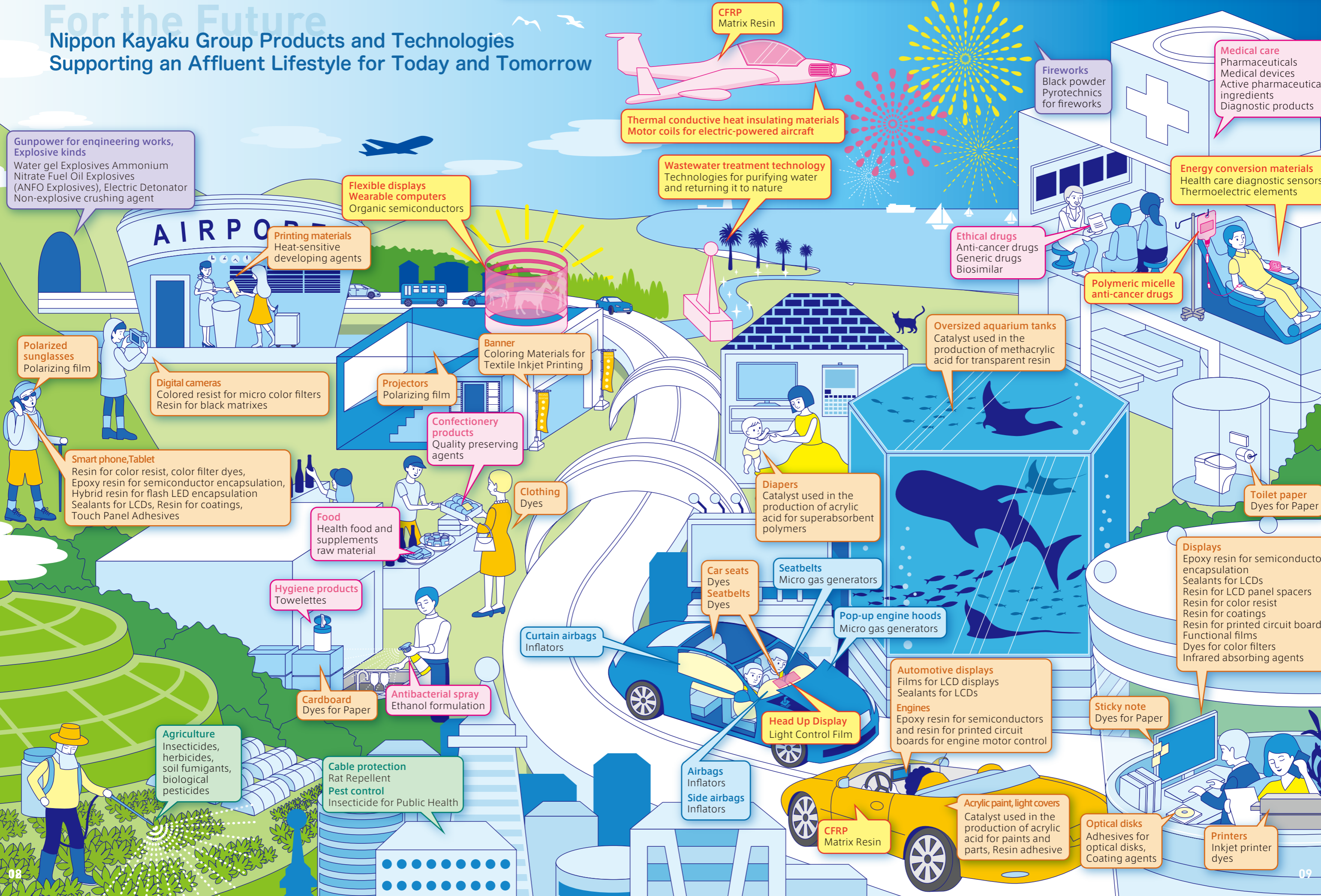
We utilize web conferencing during joint research with overseas group companies to share information in a timely manner and speed up the R&D process. Also, we are among the first to adopt cutting edge technologies and materials, while utilizing industry-academia collaboration programs with overseas universities,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

**CFRP Matrix Resin**  
**Thermal conductive heat insulating materials**  
 Motor coils for electric-powered aircraft

**Fireworks**  
 Black powder Pyrotechnics for fireworks

**Medical care**  
 Pharmaceuticals  
 Medical devices  
 Active pharmaceutical ingredients  
 Diagnostic products

**Energy conversion materials**  
 Health care diagnostic sensors  
 Thermoelectric elements

**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**

**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

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

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

**CFRP Matrix Resin**

**Optical disks**  
 Adhesives for optical disks, Coating agents

**Head Up Display**  
 Light Control Film

**Airbags**  
 Inflators  
**Side airbags**  
 Inflators

**Car seats**  
 Dyes  
**Seatbelts**  
 Dyes

**Seatbelts**  
 Micro gas generators

**Pop-up engine hoods**  
 Micro gas generators

**Curtain airbags**  
 Inflators

**Clothing**  
 Dyes

**Confectionery products**  
 Quality preserving agents

**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

**Banner**  
 Coloring Materials for Textile Inkjet Printing

**Projectors**  
 Polarizing film

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

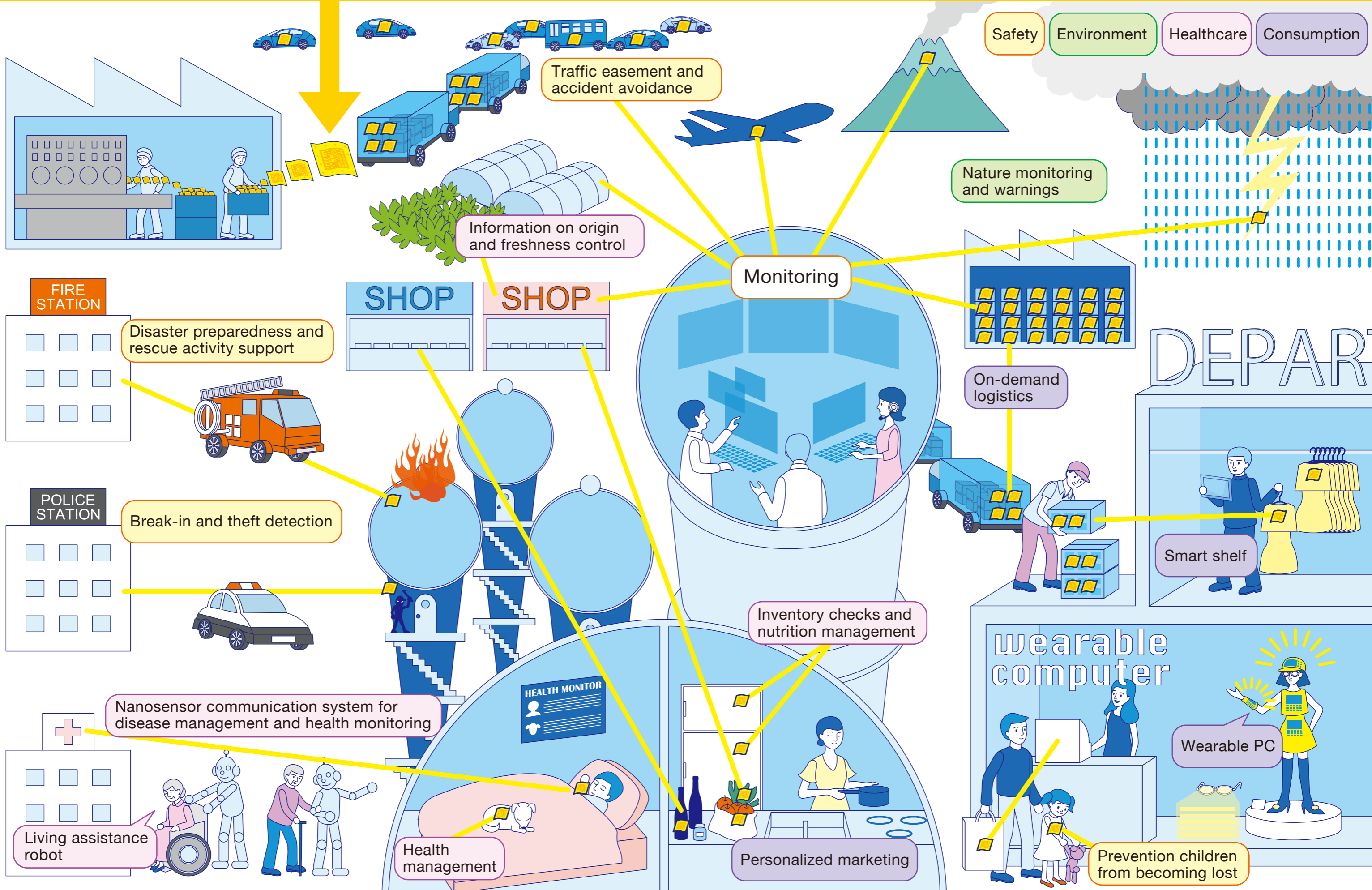
**Smart phone, Tablet**  
 Resin for color resist, color filter dyes, Epoxy resin for semiconductor encapsulation, Hybrid resin for flash LED encapsulation Sealants for LCDs, Resin for coatings, Touch Panel Adhesives

**Polarized sunglasses**  
 Polarizing film

**Flexible displays**  
**Wearable computers**  
 Organic semiconductors

**Printing materials**  
 Heat-sensitive developing 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.





## Fulfilling Our Responsibility to Society

The Nippon Kayaku Group continually carries out CSR activities that foster trust among all of its stakeholders, including customers, business partners, employees, shareholders, society and local communities.

### Initiatives with Our Customers

The Nippon Kayaku Group continually strives to develop sound products and services that are both safe and reliable in order to provide the best possible solutions to its customers around the world.

### Initiatives with Society

The Nippon Kayaku Group dynamically communicates with local communities with the goal of becoming a company closely rooted in the community.

### Initiatives with Our Employees

The Nippon Kayaku Group provides workplaces where employees can contribute to society through their achievements and work comfortably with peace of mind.

### Initiatives with Our Business Partners and Investors

The Nippon Kayaku Group proactively communicates with its suppliers, medical institutions, and investors.

### Initiatives in Local Communities

We host factory festivals, open our facilities to the public, take part in community clean-up events, as well as roundtable discussions in foster understanding about the Nippon Kayaku Group among members of local communities.





## — 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.

Below, we will take a closer look at various training activities.

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. Why-why analysis and change management as well as change point management are used as part of efforts to reinforce preventive measures. Additionally, quality process mishaps are compiled into a company-wide database so that information is shared horizontally across business sites.

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.

## Why-why Analysis Initiatives

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.

## Briefings on the Safe Use of Agrochemicals

The Agrochemicals Business handles preparations such as Kayaku Chloropicrin, Dojo Picrin, and Chloplic Flow, or others that use chloropicrin as an active ingredient .

These products are agrochemicals essential for crop cultivation as soil fumigants for eliminating pathogens and pests in the soil. They are widely used by farmers because they have a highly stable efficacy and they do not remain on the crops.

Although highly effective, chloropicrin is designated as a hazardous substance that requires careful attention during use. Chloropicrin easily vaporizes, causing pain in the eyes and throat. In a worst case scenario, a person may die from chloropicrin exposure. Therefore, this agrochemical must be handled with the utmost care.

For this reason, the Agrochemicals Business holds briefings and instruction sessions prior to use regularly as needed to ensure that customers use these products not only effectively, but safely as well.



A green pepper farm located in the major producing area of Notsu-machi, Usuki City, Oita Prefecture. Approximately 100 farmers in the area cultivate green peppers.

## 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





## — 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. We will strive to conduct procurement transactions that are fair, honest, impartial, and in accordance with relevant laws, social norms, and our Basic Procurement Policies.



# 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**

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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**

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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**

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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**

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

## **Basic Criteria for Selecting Suppliers**

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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**

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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

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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 briefing

## Communicating with Investors

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### 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."



## 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 2016 marked the 13th 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.

In fiscal year 2016, our overseas group company KSM in Mexico also started their own Pink Ribbon Campaign.



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.



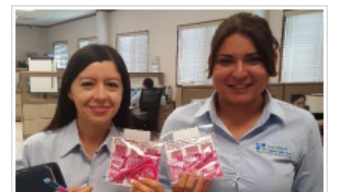
### Pink Ribbon Campaign activities at Kayaku Safety Systems de Mexico, S.A. de C.V. (KSM)

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

Around half of KSM's employees are women and in October 2016 the company took part in the Pink Ribbon Campaign for the second time.

First, various forms of in-house media (posters on doors and walls, the TV in the cafeteria, and hand-made novelties) were used to convey the Pink Ribbon Campaign to employees. During the monthly training session, information was given to all in attendance, not only to female employees but also to all male employees.

During the training, participants were taught how to detect breast cancer themselves and how to convey these methods to friends and family. After the training, all employees were given a package of Pink Ribbon Campaign novelties, including a pen, bracelet and candy.



## Asunaro House – Supporting Families of Children with Intractable Diseases

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.





## Hiroshige from the Yasusaburo Hara Collection Co-sponsored by the City of Fukuyama and Nippon Kayaku Co., Ltd. for their 100th anniversaries

Nippon Kayaku has maintained a plant in Fukuyama City, Hiroshima Prefecture since it was first founded and it has grown together with the city in the time since. To commemorate the 100th anniversaries of the City of Fukuyama and Nippon Kayaku Co., Ltd., we co-sponsored an art exhibit called Hiroshige from the Yasusaburo Hara Collection at the Fukuyama Art Museum.

This exhibit featured around 230 ukiyo-e paintings from the personal collection of Yasusaburo Hara, the third President of Nippon Kayaku, attracting more than 20,000 visitors from the local community. This exhibit gave patrons the chance to view first print ukiyo-e paintings in good condition to experience the culture of ukiyo-e themselves.

Similar ukiyo-e exhibits were held at five art museums located in communities near Nippon Kayaku plants, branches and group companies.

[Nippon Kayaku Commemorating 100 years of Sukima Ideas Ukiyo-e Woodblock Prints](#) ■



\*Yasusaburo Hara Collection: Yasusaburo Hara, the third President of Nippon Kayaku, had a collection of woodblock prints, hand-painted ukiyo-e, India ink paintings and calligraphy at the beginning of the Showa era. The collection of woodblock print ukiyo-e mainly features landscapes by noted artists Hiroshige and Hokusai. The unique aspect of the collection is that Hara carefully collected complete series.

## CSR Educational Initiatives

Nippon Kayaku offers the Summer Vacation Children's Chemistry Experiment Show, sponsored by the Dream-Chemistry-21 Committee, event-based science experiment classes, and outreach classes as part of its CSR educational initiatives to make chemistry more interesting for children, who will inherit the future.

The event-based science experiment classes held in fiscal 2016 included plant festivals at each of our plants as part of the company's 100th anniversary celebrations (Asa, Takasaki, Himeji, Kashima, Nippon Kayaku Fukuyama, Nippon Kayaku Tokyo and the Tokyo Administration Office).

In fiscal 2017, we plan on conducting outreach classes using a program developed in-house tailored to elementary schools nearby our business sites with the goal of making science more interesting.

### ■ Educational CSR Involving a Facility Tour

#### Initiatives for the development of the next generation

As part of the company's 100th anniversary celebration, the Takasaki Plant held a chemistry experiment class and plant tour for two classes of sixth graders at Iwahana Elementary School and their teachers. The total group consisted of 55 students and 4 teachers.

During the chemistry experiment class "The Exciting drug preparation experiment! - Creating fizzing tablets -," students got to create a tablet that foamed and changed colors when placed in water to experience a fun activity that taught about the manufacturing process of tablets, a familiar format of pharmaceuticals. The students were quite serious during the tablet-making process, but shared innocent smiles when their tablet was made without a hitch. Staff also appeared to be somewhat nervous initially, but in the end they felt a sense of satisfaction and achievement.

During the plant tour, students were able to tour and see firsthand the series of manufacturing processes to complete a pharmaceutical, including the manufacturing and packaging lines of injectable medicines. A few days later, each of the students sent the Takasaki Plant a thank you letter. Many stated that they now liked chemistry as a result of the class and tour, which provided us with a renewed sense of the important meaning of our CSR activities.

Going forward, we will continue to engage the local community through the Takasaki Plant and its activities to foster greater interest in chemistry among children in the local community.



## Initiatives for the development of the next generation

As part of the company's 100th anniversary celebration, the Himeji Plant held educational CSR activities such as a fizzing tablet-making class and plant tour for sixth graders at the nearby Toyotomi Elementary School. After explaining about explosives using simple terms, a quiz was held for interactive learning involving all of the children.

Students also toured the production line and saw the deployment of airbags, which is something they do not get to experience during normal everyday life. Also, students created tablets fashioned after gas generators made at the Himeji Plant and then turned these fizzing tablets into a bubble bath additive.



## Event-based Educational CSR

### Science Exposition sponsored by the City of Sanyo-Onoda Key holder making class held for elementary and junior high school students

The Asa Plant hosted a booth at Science Exposition sponsored by the City of Sanyo-Onoda on the first Saturday of October every year. The Nippon Kayaku booth allowed visitors to make their very own key holder in which they selected a favorite picture or design to place atop the key holder base and then used a UV-curable resin to finish the surface.



### Held a class at the Satsuki Festival on making colorful bookmarks for elementary school students

Nippon Kayaku Tokyo mainly engages in the manufacture of colorants for inkjet printers.

At its class during the Satsuki Festival held in May 2016, elementary school students learned first about the three primary colors. Next, they used black along with adjusted colorants to separate colors into magenta, cyan, and yellow in order to create their very own colorful bookmark.



### Fureai Festival for deepening interactions with the local community Showed the wonders of chemistry for students in lower grade levels of elementary school

The Takasaki Plant hosts the Fureai Festival on the second Sunday every May (Mother's Day) as a venue for deepening interaction with members of the local community. At the Fureai Festival held on Sunday, May 8, 2016, children in lower grade levels of elementary school were given the chance to create their very own kaleidoscope with sparkling colors in an event called "The Wonders of Chemistry - experience the magic of colors," in order to foster greater interest in science and chemistry.



### Kamisu Festa Industry Fair sponsored by the City of Kamisu, Ibaraki Prefecture Held an interactive-learning event for elementary school students

The Kashima Plant hosted a booth at the Kamisu Festa Industry Fair organized by the City of Kamisu in Ibaraki Prefecture every October with the goal of giving back to the community by conveying and fostering interest in science and chemistry among youth.

The booth provided elementary school children with the event called "Let's play by making bead-like capsules" utilizing the products and technologies of Kashima Plant and Agrochemicals Laboratories. This provided children with the chance to conduct a simple scientific experiment to create artificial fish roe.



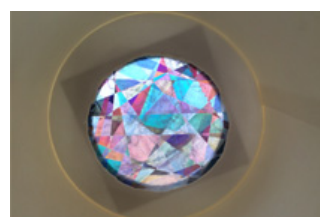
### Held class for elementary school children during summer vacation

On August 26, 2016, the Tokyo Administration Office held a class for third to sixth graders at nearby Nadeshiko Elementary School who were on summer vacation. The children were able to conduct experiments using polarizing plates and also create their very own original stained glass using polarizing plates.



### 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.



## Providing Support for LRI Activities

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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

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

▼ INDET SAFETY SYSTEMS a.s. Helping Defray the Cost of a Wheelchair

▼ Kayaku Safety Systems Malaysia Sdn.Bhd. Relationship Building with the Local Community

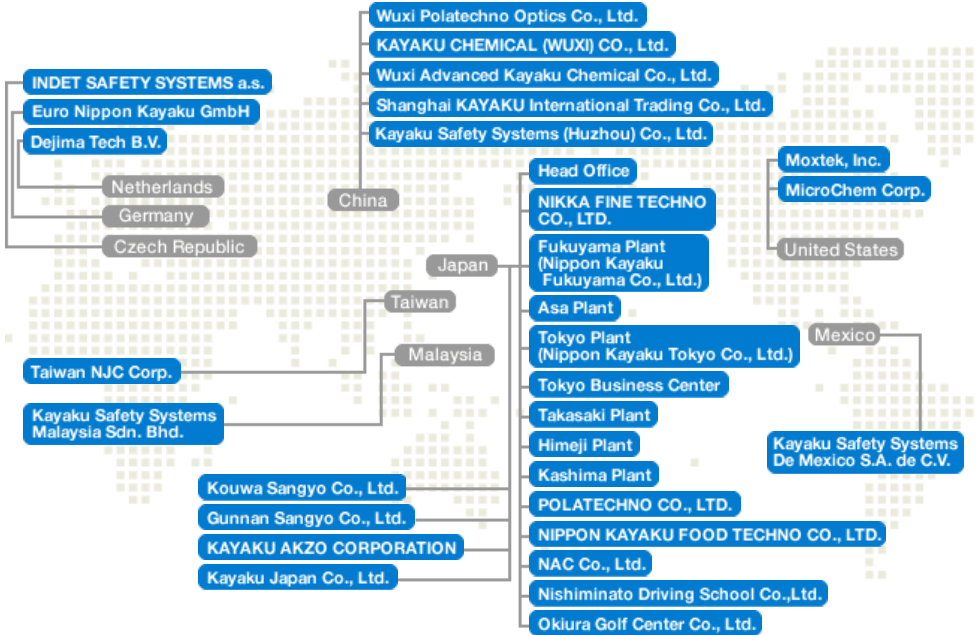
▼ Takasaki Plant and Gunnan Sangyo Co., Ltd. Potato Digging Event

#### Nippon Kayaku's Agreements with Local Authorities

Business Site	Agreement	Local Authority
Fukuyama Plant	Agreement on environmental pollution control	Hiroshima Prefecture and Fukuyama City
Asa Plant	Agreement on water pollution control	Yamaguchi Prefectural Fisheries Cooperative
	Agreement on environmental protection	Sanyo-Onoda City
Tokyo Plant	Green agreement	Adachi City
	Agreement on establishing Colored Effluent Issue Council	Tokyo Metropolitan Bureau of Sewerage No. 2 Control Office
	Agreement on mutual disaster relief support in case of an earthquake	Shinden Neighborhood Association and Shinden 1-chome Residents' Association in Adachi City
	Agreement to provide the general public with access to a small water pump storage facility	Senju Fire Department
Tokyo Business Office	Provision of fire fighting facilities 1. Provision of water for firefighting	Tokyo Fire Department Akabane Fire Station

	2. Deployment of a boat for rescues 3. Fire fighting group cooperation site 4. Use of rooftop as a lookout	
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
	Asa Plant	Education

	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.)	Festivals	Hosts the Satsuki Festival Hosts a mochi-making 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 Business Center	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
		Holding chemical experiment demonstrations and hosting factory tours for Iwana elementary school sixth graders
	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)

		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)
	Assistance	Participates in homeless assistance program run by the Community Action Services and Food Bank
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
		Contribution to the 300th anniversary celebration of the town of Westboro (local government)
Sponsorship of uniforms for Soccer Club		
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
NIPPON KAYAKU FOOD TECHNO CO., LTD.	Donations	Iwahana Kosodate Kanzeon Festival (sponsors fireworks display)
	Festivals	Sponsors and 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	
NAC Co., Ltd.	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
INDET SAFETY SYSTEMS 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.	Employees and their families	Family day
		Healthy Campaign to lose weight "1 Kilo Menos" for employees
		High school study support plan for operators
		Supports schools
	Donations	Donates to Cervantino International Music Festival
	Donations	Donates kitchen articles
		Donation for students of Japanese language of the UANL (Nuevo Leon University)
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
	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



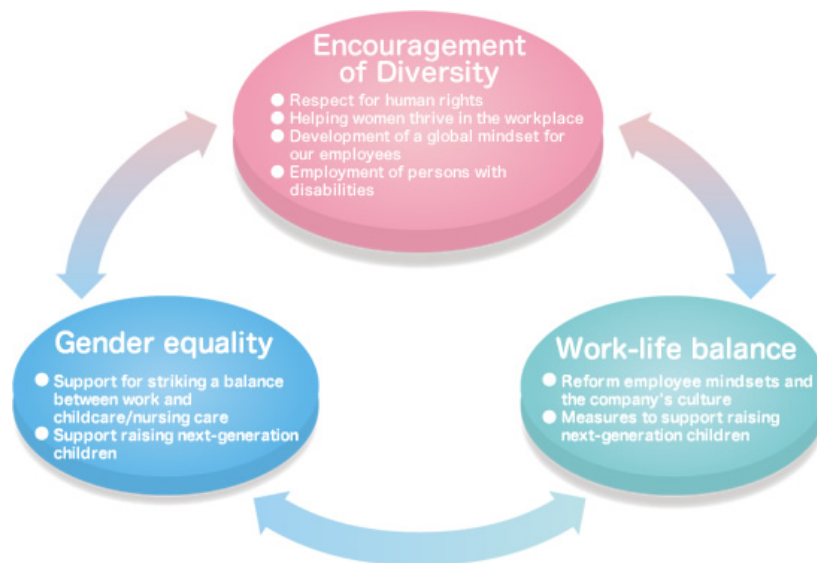
## Initiatives for Employees

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

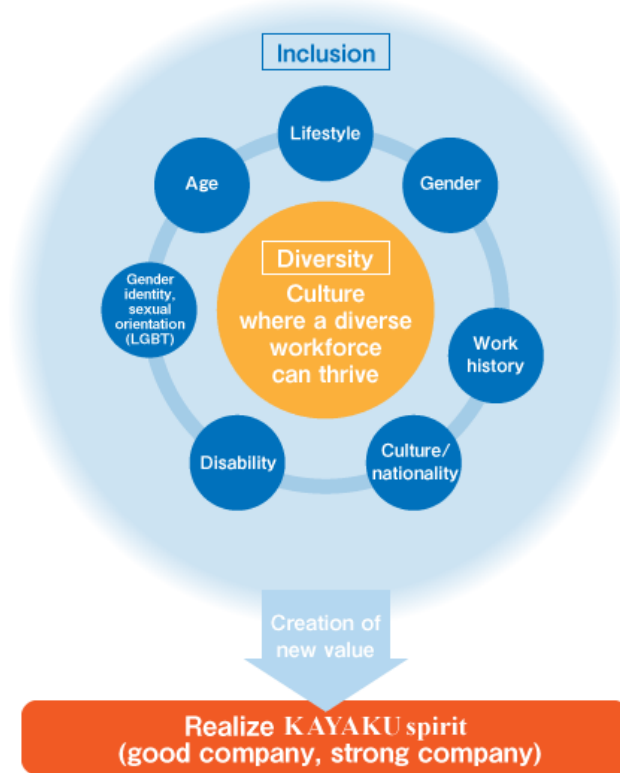
The Nippon Kayaku Group employs a diverse workforce of people with differing personalities and values. By promoting inclusion, we make it possible

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.

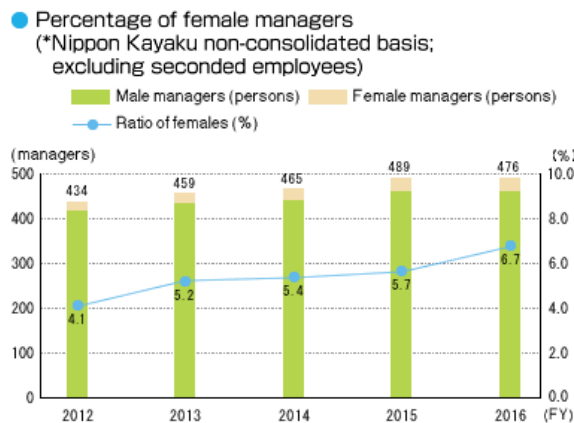
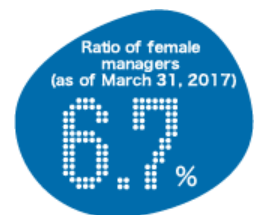
### Approach to Diversity and Inclusion



### 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 18th 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.



#### 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 6.7% as of the end of March, 2017 (5.75 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, 2017, 5.5 people\* with disabilities are working with us (2.1% 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 131 reemployed persons working for Nippon Kayaku as of March 31, 2017.

### ■ Active Role of Female Managers Takasaki Plant Chieko Yahagi

The Takasaki Plant is the only Nippon Kayaku business site to manufacture pharmaceuticals. With KAYAKU spirit at the heart of all actions, the Takasaki Plant manufactures pharmaceuticals according to a rigorous quality control system, knowing full well that these products are very close to human lives.

The Takasaki Plant employs a workforce of around 300 employees. Of these around 75, or one-fourth, are women. Women employees are active in broad range of roles at the Takasaki Plant as their duties vary greatly and they are an important element of the workforce. I belong to the Active Pharmaceutical Ingredient Production Department, a department that is mostly men. All of us work together with equal standing regardless of gender. I am hoping to work on tasks that require greater dexterity and fine motor skills, which build upon the strengths of women.

Generally, the ratio of female managers on the production line is said to be low, and the Takasaki Plant is no exception. Many women here hesitate to become managers even though they have all of the qualities of being a great leader. Aiming to become a manager by itself does not embody the spirit of empowering women in the workplace, but by offering this as one option, I believe women's roles will greatly expand. I hope to become a pioneering role model as a female manager at the Takasaki Plant and hope that more women will follow in my footsteps.

### ■ 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.



Section Manager Technical Section  
Active Pharmaceutical ingredients  
Production Department

## 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. More than 100% of eligible female employees take childcare leave. For female employees, percentage of childcare leave use was 125% from April 1, 2016 to March 31, 2017. Moving forward, 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.

● Work-life balance (Nippon Kayaku non-consolidated basis)			
	FY2014	FY2015	FY2016
Total working hours	1852.25	1844.75	1844.75
Overtime hours *Average monthly hours per employee	12.8	12.4	12.3
Number of paid leave days taken	9.9	10.6	11.5
Ratio of paid leave days taken	55.1%	58.6%	62.7%
Employees taking childcare leave (males)	1	0	4
Employees taking childcare leave (females)	16	20	23

## 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.



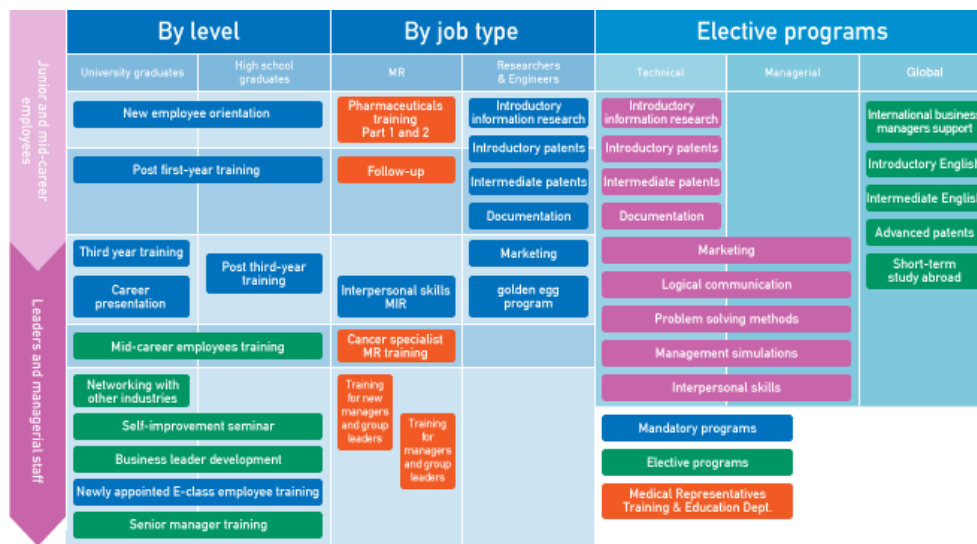
Training programs

### ■ 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.



## Launched a High School Program

KSM launched the KSM high school program in August 2016 in order to raise the bar of its employees.

Any employee who has worked for KSM for over a year and has not had any unauthorized absences can take part in the KSM high school program. Local high school teachers serve as instructors and teach students every Sunday over a 10-month period. In addition to one's own efforts, the support of all employees is also essential for these employees to earn their high school equivalency diploma.

The first class of 28 students are expected to receive their high school equivalency diploma in July 2017. KSM will continue to assist so that all of its employees can obtain their high school equivalency diploma.



## 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, 2015 to March 31, 2018) to the Tokyo Labor Bureau for approval on March 27, 2015.

We will now work to obtain Platinum Kurumin certification as quickly as possible.



Kurumin logo

## Company-wide Research Presentation Conference

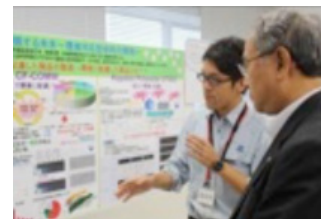
The annual Company-wide Research Presentation Conference brings together researchers from the Research & Development Group engaged in R&D at four laboratories in Japan as well as officials from the head office including the President for oral and poster presentations of research outcomes. The event also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

In fiscal 2016, we organized oral presentations and postal displays on the theme of "Realizing our future, with What?" 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.



## 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.



## Fulfilling Our Responsibility to the Environment

The Nippon Kayaku Group prioritizes the environment, safety and quality in all aspects of its management and is working collectively together to reduce its impacts on the environment.

### Environment, Health and Safety, and Quality Assurance Management System

We carry out organized activities to maintain and improve our environmental protection, health, safety and quality assurance efforts.

### Initiatives for Environmental Protection

We are working to reduce our impacts on the environment through various measures aimed at achieving our mid-term environmental targets for 2020.

### Initiatives for Health and Safety

We are working to prevent safety and environmental accidents. Also, we are implementing health promotion activities.



## 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,<sup>\*1</sup> 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.

<sup>\*1</sup>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

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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 CO<sub>2</sub> 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 FY2017

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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 fiscal 2017, we will continue with these efforts and continued the following Policy throughout Nippon Kayaku Group.

### **Nippon Kayaku Group Responsible Care Policy Statement for FY2017**

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 our Responsible Care Philosophy, and the Fundamental Polices 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 "Zero Accidents, Zero Injuries"**

ZERO MAJOR ACCIDENTS, ZERO MAJOR INJURIES

Every Nippon Kayaku Group company shall proactively prevent accidents and injuries by

- Enhancing their ability to foresee potential risks by Risk Assessments and KYT/KYK (Danger Prediction Training/Activities)
- Promoting health and safety activities by means of inspection tours focused on pointing out unsafe action.

#### **② Promoting prevention of global warming and reduction of our environmental burden**

MONITORING OUR GREENHOUSE GAS EMISSION LEVELS

Every Nippon Kayaku Group company shall aim to become an Eco-friendly company by

- Working towards specific goals suited to each country and each of our Group Companies.

#### **③ Comprehensive Chemical Management**

Every Nippon Kayaku Group company shall promote Responsible Chemical Management by

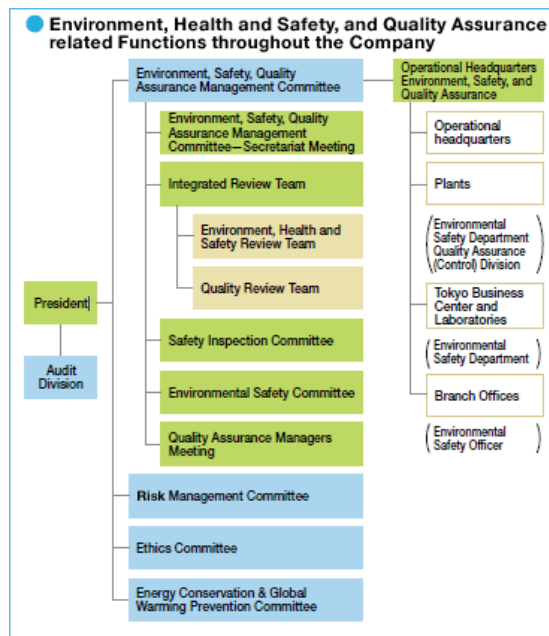
- Properly understanding the risks and toxicities associated with each chemical by utilizing SDS and observing GHS.

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

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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
INDET SAFETY SYSTEMS a.s.	Dec. 2002

## 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
Fukuyama Plant	● June 1995
Asa Plant	● Jan. 1995
Tokyo Plant	● June 1995
Takasaki Plant	● July 2003
Himeji Plant	● Sept. 2007
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
NIPPON KAYAKU FOOD TECHNO CO., LTD.	● Nov. 2003
KAYAKU CHEMICAL (WUXI) CO., LTD.	● March 2005
MicroChem Corp.	● April 2002
Wuxi Advanced Kayaku Chemical Co., Ltd.	● April 2007
INDET SAFETY SYSTEMS a.s.	■ March 2002
Kayaku Safety Systems (Huzhou) Co., Ltd.	■ May 2014
Kayaku Safety Systems de Mexico, S.A. de C.V.	■ Feb 2014
MOXTEK, Inc.	● July, 2012

\*2 ISO / TS16949: A world standard that was developed jointly by members of the IATF (International Automotive Task Force) to provide high quality products to automobile users around the world.

■ 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



ISO audit in progress

## GMP Authorization Status

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

● GMP* Approval Status	Workplace	Main governments
	Takasaki Plant	Japan, USA, Europe, Canada, Brazil

\*3 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.

## **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.

### Protection of Health and Safety Activities

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)

In fiscal 2016, there was one lost worktime accident, eight non-lost worktime accidents, and one incident of non-injury related accident. This data is for all business sites of the Nippon Kayaku Group and group companies within our business sites. Furthermore, while the number of motor vehicle accidents (MVA rate \*1) has improved since the previous fiscal year, the rate of occurrence is still high. In response, we will further strengthen our accident and injury prevention efforts in fiscal 2017. Additionally, compared to the previous fiscal year, about the same number of accidents took place in the calendar year of 2016, which includes overseas group companies. This included 12 lost worktime accidents, 11 non-lost worktime accidents, and eight non-injury related accidents.

\*1 MVA Rate = Number of MVA / Number of company vehicles (389 vehicles)

● Fiscal 2016 Safety Targets and Performance

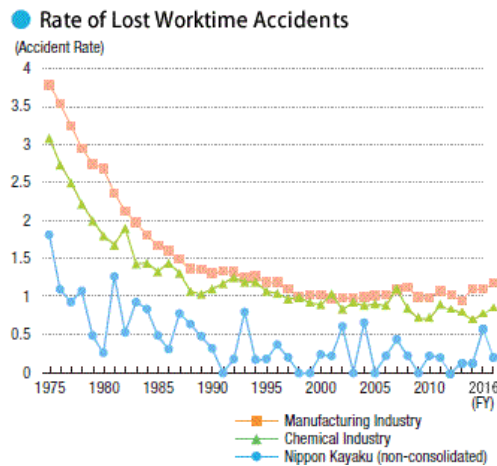
Items		Target	Actual
Major Injury / Accidents		0	0
Serious environmental accidents		0	0
Lost worktime accidents		0	1 cases
Accidents not accompanied by lost worktime		Rate of lost worktime accidents <sup>*2</sup> of under 1	1,14
		Less than 5 cases	8 cases
Non-injury related accidents		0	1 cases
Work-related automobile collisions	Serious accidents	0	0
	Personal injuries	0	3 cases
	Property damage	Less than 3%	3.9 %
	Self inflicted	Less than 3%	8.5 %

\*2 Frequency rate of lost worktime accidents: It expressed in terms of numbers of deaths & injuries in industrial accidents per 1 million work-hours in the aggregate.

2. Graph Comparison of frequency rate of Lost Worktime Accidents

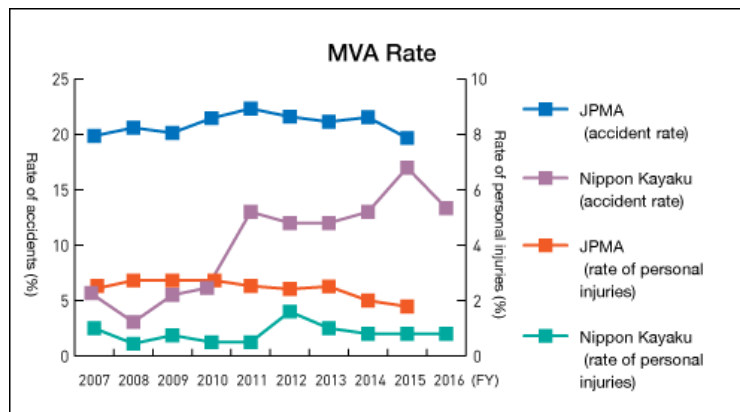
While our frequency rate of lost worktime accidents is lower than that of the manufacturing and chemical industries every year, unfortunately we have not been to maintain the rate of accidents at zero as the graph indicates. We aim to reinforce safety awareness among every employee to achieve the goal of zero accidents by conducting work safely.

Note: The rates shown for the manufacturing and chemical industries are data for the calendar year (January through December).



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.



## 1. 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
- SS Activity\*3
- KYT Activity
- THP (Total Health promotion Plan)\*5

\*3 SS 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.

\*5 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."

## 2. 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.\*6

\*6 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.

## 3. 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.

## 4. 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\*7. And using the driving aptitude test approved by the National Police Agency\*8. From now on, we will further strengthen the education of new employees in practical skills and engage in reducing traffic accidents.

\*7 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.

\*8 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.

## 5. Promoting Health Management

Our employees undergo regular health checkups as well as special physical examinations because chemical substances are regularly handled on the job. Employees meet with an industrial physician following their regular health checkup to receive guidance and instructions on their health management and awareness. We also manage a database of information on the hazardous properties of chemical substances and utilize this information to prevent work related illnesses.

We are promoting THP to ensuring mental and physical health in order to enhance and maintain the health of our employees. We recommend employees to review their lifestyle habits and commit to a continuous and systematic health promotion plan with the goal of living a healthy lifestyle. Specifically, we implement assessments of physical fitness, and promote activities such as health management contests, walks, and hiking at each business site.

### 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. After rolling out our mental health care program, we invited a speaker from our contract EAP\*9 to lead a mental health care training program mandatory for all employees to take part in at least once that was set up on four occasions - in fiscal 2005, between fiscal 2006 and 2008, between fiscal 2009 and 2011 and between fiscal 2012 and 2014. We formulated a new three-year plan in fiscal 2015 and all employees are currently undergoing necessary training.

We have also created the Return to Work Program for employees that were forced to take a leave of absence due to a mental health issue. In this manner, workplace supervisors (the company), industrial physicians, and EAP form a trinity of measures for ensuring employees can return to work smoothly with a focus on preventing relapses.

In addition, with regard to obligations under the "Stress Check System" of the Occupational Safety and Health Act implemented on December 1, 2015, we have made preparations to establish the "Stress Check System", which is scheduled to be implemented in July 2016 for all the employees. In the future, we will carry it out once every year.

\*9 EAP is an acronym for Employee Assistance Program.

## 6. 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

## 7. 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.



Firefighting training

## 8. 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.

### 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. Following a similar initiative in 2015, on May 10, 2016 KCW invited specialist physicians from the medical institution that performed employee health check-ups to visit the company to explain the health check-up items used for the results of employee health check-ups. Afterwards, 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

## Further Expanding Interactive Safety Training Initiatives at Kowa Sangyo Co., Ltd.

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 32 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.

## Environment, Health and Safety (Integrated) Review with the Labor Union

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 2016, participants took part in outside training using interactive safety training equipment to experience actual dangers first hand. The Environmental Protection & Safety Division also held a lecture entitled, "About learning safety measures from past accidents of Nippon Kayaku, and learning to implement KYT and pointing-and-calling." Furthermore, training participants were asked to identify issues 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.







## 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 Chemical Management Office, which collects the latest information on laws and regulations around the world, instructs related departments with their response and provides training on general chemical substance related laws. Through these efforts, the Chemical Management Office is striving to maintain and improve compliance as it relates to chemical substances.

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.

In fiscal 2017, we will continue to comply with Europe's REACH \*10 and CLP \*11, and continue to positively promote the response to the new chemicals legislation and legal reform around the world.

\*10 Registration, Evaluation, Authorization and Restriction of Chemicals (REACH): An EU regulation for registering, evaluating, approving and restricting chemical substances.

\*11 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 \*12, companies are now required to provide SDS \*13 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.

\*12 GHS: Globally Harmonized System of Classification and Labeling of Chemicals

\*13 SDS: Safety Data Sheet.



Sample GHS-compliant label



## 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 2016 was the sixth 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)

		Target value	Fiscal 2016 results	
Reducing Our Chemical Substance Footprint	VOC* <sup>1</sup> Emissions	Under 42 tons	29.2 tons	Reduced by 41.7% compared to fiscal 2015. The drop is due to temporarily increased production of high-VOC products in Kashima plant in fiscal 2015.
	COD* <sup>2</sup> Emissions	Under 150 tons	125.2 tons	Increased 9.6% compared to fiscal 2015. The difference is considered to fall within the allowable range
Prevention of Global Warming	Energy Derived CO <sub>2</sub> Emission* <sup>3</sup> (Production Divisions+ Operation Divisions)	More than 3.8% reduction	72,100 tons	Increased 3.2% compared to fiscal 2015. This represents 12.7% reduction compared to fiscal 2005.
Reduction of Waste	Total Waste Produced	Under 23,500 tons	20,386 tons	Increased 2.6% compared to fiscal 2015.
	Recycling Rate	More than 80%	81.2%	Increased 1.3% compared to fiscal 2015.
	Zero Emission Rate* <sup>4</sup>	Under 3%	4.8%	Greatly reduced by 4.2% compared to fiscal 2015. The drop is due to Fukuyama plant's ability to utilize their output landfill waste for recycling means.

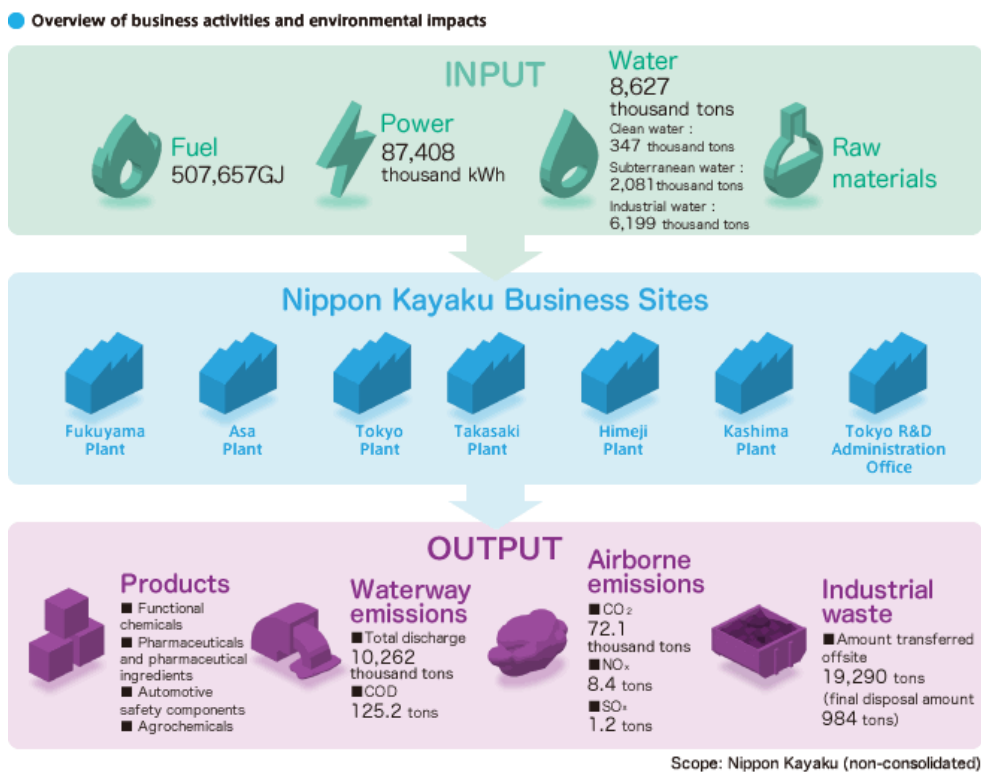
\*1 VOC: Volatile Organic Compounds (VOCs). This tally includes all chemical substances of reporting regulation, emitted into the atmosphere.

\*2 COD: Chemical Oxygen Demand. An indication of the amount of oxygen needed to oxidize a subject compound under a predetermined condition using oxidizing agents.

\*3 Energy-derived CO<sub>2</sub> emissions: Fiscal 2005 has been set as the benchmark (82,600 tons)

\*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

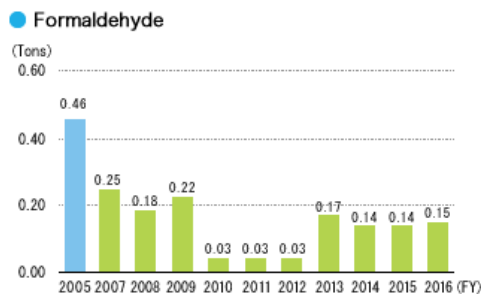
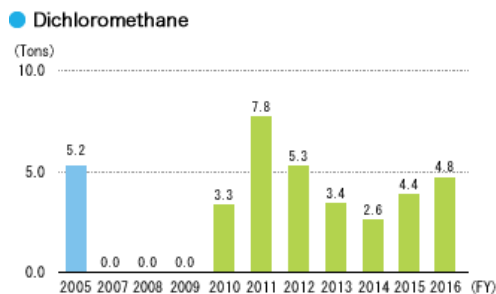
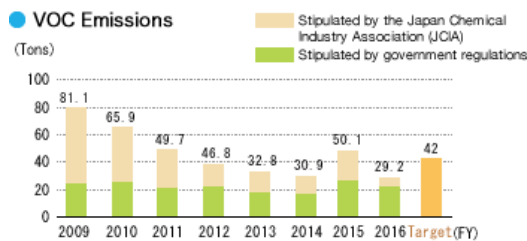
As part of its effort to reduce environmental impacts, Nippon Kayaku focuses on preventing air, water and noise and odor pollution as well as stopping global warming and reducing waste.

### Preventing Air Pollution

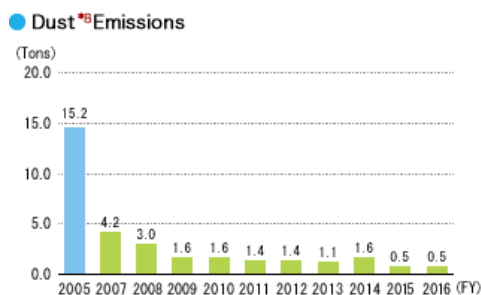
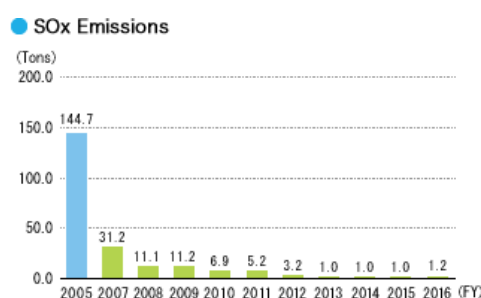
To help prevent air pollution, we carefully manage substances subject to Japan's Air Pollution Control Act, hazardous substances released into the air and other air pollutants.

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 (SO<sub>x</sub>)\*6 and nitrogen oxide (NO<sub>x</sub>)\*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 SO<sub>x</sub> 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.

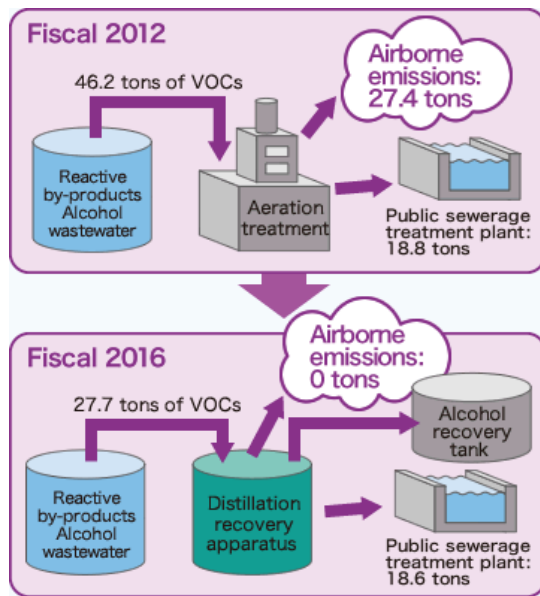
\*8 Dust: Dust mainly refers to fine particulate soot found in dust smoke produced when burning fossil fuels. In addition to a major cause of air pollution, humans can contract pneumoconiosis or other harmful health conditions when breathing dust in high concentrations.

### Initiatives to Reduce VOCs at the Kashima Plant

The Kashima Plant released alcohol produced in large quantities from the agricultural manufacturing processes into the air, but in order to become an eco-friendlier plant, it decided to launch an initiative to examine ways to recover alcohol produced during the manufacturing process based on theme reducing the amount of VOCs released into the air. Specifically, existing facilities were switched for use as alcohol distillation recovery apparatuses, which involves transforming alcohol in a gaseous state into a liquid for recovery in a tank. This method greatly reduces the amount of alcohol released into the air.

In fiscal 2012 we released 27.4 tons into the atmosphere. As a result of the above-mentioned, we completely eliminated our emissions of alcohol gas into the atmosphere since fiscal 2013.

We stand firmly committed to actively helping improve the environment with the goal of reduced impacts on the environment in the future.



## 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.

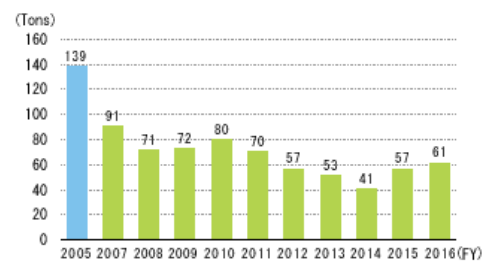
## PRTR<sup>\*9</sup> Initiatives

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 2016, our emissions of PRTR controlled substances totaled 25.9 tons which marked about 12% decrease from 29.4 tons in fiscal 2015. This was caused in fiscal 2015 by production volume at the Kashima Plant increased. Although toluene continues to represent the largest source of PRTR controlled emissions, toluene emissions totaled 9.7 tons in fiscal 2016. This was about 38% of all emissions of compounds identified in the PRTR regulation.

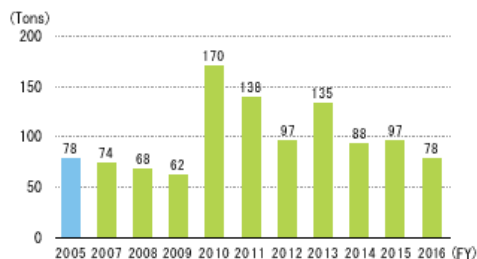
### ● COD Emissions



### ● SS<sup>\*10</sup> Emissions



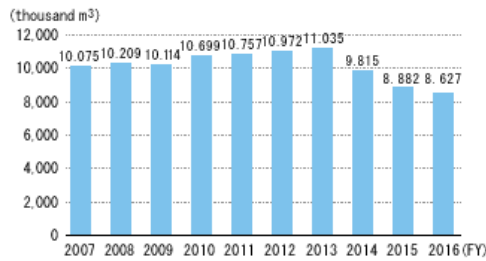
### ● Nitrogen Emissions



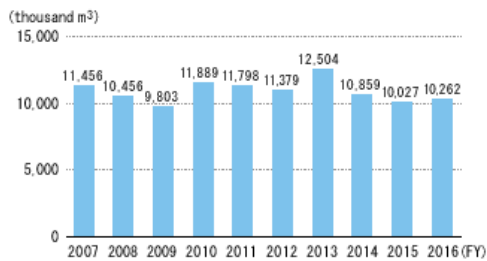
### ● Phosphorus Emissions



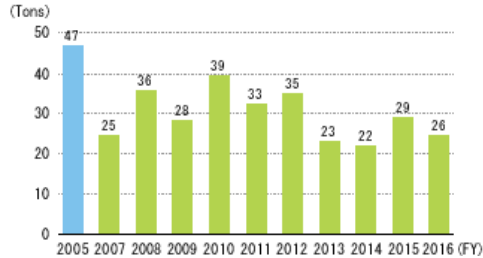
### Water Consumption



### 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.

### Preventing Global Warming

Each of our business sites has implemented various energy conservation activities that have helped to reduce our total energy consumption annually. In fiscal 2013, total energy usage declined, but as the conversion coefficient for CO<sub>2</sub> emissions revision, CO<sub>2</sub> emissions were temporarily worsening, in fiscal 2016, CO<sub>2</sub> emissions were 65,600 tons, which was 3.2% more than fiscal 2015.

This is caused by increasing produced volume at Takasaki plant and Himeji plant.

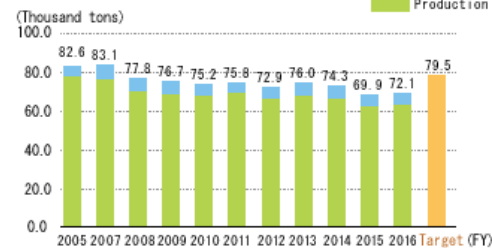
As part of its efforts to help reduce CO<sub>2</sub> emissions from homes, the Nippon Kayaku Group has established the program to encourage employees to conserve energy at home called "My Home is Currently Conserving Electricity", which focuses exclusively on electricity usage.

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.

ただいま節電中!



### Energy Derived CO<sub>2</sub> Emissions



FY2016 Energy saving activity summary sheet of Nippon Kayaku Group

### Energy Conservation Activities at the Tokyo R&D Administration\* Office

The Tokyo R&D Administration Office represents the largest R&D hub of the Nippon Kayaku Group. In fiscal 2016, this facility introduced a central control system that helps to increase the energy efficiency of air conditioning facilities, which account for between 40 and 60% of the area's energy usage, in order to establish the good practice of streamlining energy usage from the research stage. This facilitates the visualization of air conditioning usage, while the data obtained from the system is being utilized in various other initiatives. After meeting with persons in charge of the air conditioning, the system is now programmed to provide the optimal controls for each room of the facility, which is greatly reducing energy usage. Aggregated data is also used in monthly meeting documents that are shared throughout the facility in an effort to involve everyone working there.



\*Tokyo R&D Administration Office : Comprises the Functional Chemicals R&D Laboratories, Pharmaceuticals

Research Laboratories and indirect departments all in a single facility located in Kita-ku, Tokyo.

## 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.



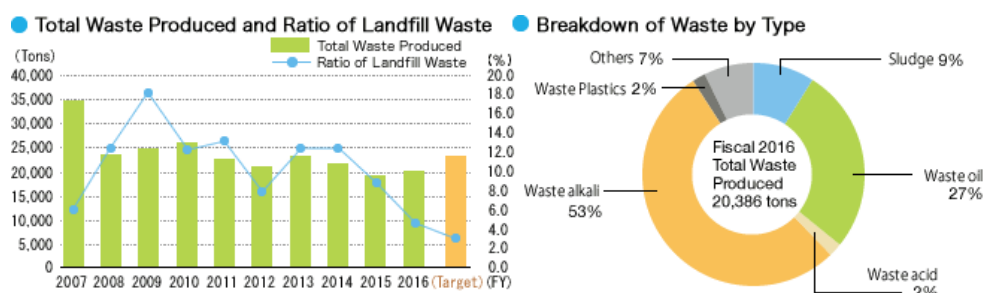
## Rolling Out Eco-friendly Sales Vehicles

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 2016, the Nippon Kayaku Group generated 20,386 tons of waste, which represents 2.6% increase compared to fiscal 2015. Landfill waste in fiscal 2016 amounted to 984 tons, and Zero Emissions rate of 4.8%, which represents a major reduction of 4.2% compared to fiscal 2015. The drop is due to Fukuyama plant's ability to utilize their output landfill waste for recycling means.



## 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 2016)

(Millions of yen)

Category		Investment	Total	Main Activities	
Cost Incurred in the Workplace	Pollution Prevention Cost	Air Pollution Prevention	137.3	107.2	Installed exhaust gas treatment system, installed gas absorption system, and replaced pretreatment tower
		Water Pollution Prevention	80.4	279.8	Replaced leakage containment barrier and wastewater pit, improved oil separation tank, and replaced wastewater pump
		Underground seepage prevention	3.0	9.6	Brought drainage piping above ground, brought the walls of the drain pit, dirt floor lining
		Noise and Vibration Prevention	0.9	0.9	Installed silencer on isolation tower
		Other		243.8	Disposal costs of facilities and pollution charges
	Global Environment Cost	Global Warming Prevention and Energy Conservation	76.7	14.3	Upgraded blowers/pumps, heat insulation coating for roof, switched mercury bulbs to LED
Resource Recycling Cost	Waste treatment	6.6	471.2	In-house processing costs and processing outsourcing costs	
Up- / Down-Stream Cost	Container Recycling Outsourcing	-	0.3	Outsourcing costs for repackaging products and cleaned and recycled product containers	
	Sewerage Processing Cost	-	74.5	Sewerage treatment costs Tank dredging costs	
Management Activity Cost	System Maintenance and Operation	-	121.1	Internal auditor development cost and ISO14001 renewal costs	
	Environmental Stress Monitoring	-	41.7	Analysis costs and outsourcing costs	
	Information Disclosure	-	8.6	Outsourcing costs for preparing information disclosure documents on the environment	
	Education, Training and Other	-	55.6	Outside lectures, workplace training, etc.	
	Greening	10.5	203.9	Added plants and improved some greenery along the roadway Outsourcing costs	
R&D Cost			309.6	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		
<b>Total</b>		<b>315.3</b>	<b>1,951.1</b>		



● 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	Upgrades and improvements to ventilation facilities, replaced activated carbon pretreatment tower, and recovered alcohol
		Water Pollution Prevention	0.0	Improvements to effluent treatment facilities, Changes in agglomeration method for treating
		Pollution Load Levy Reduction	0.2	
		Noise and Vibration Prevention	0.0	
	Global Environment Return	Global Warming Prevention and Energy Conservation	89.3	Reduced cost by using gas cogeneration system, cut off steam system, and introduced energy-efficient equipment
	Resource recycling return	Reduction of Waste	4.0	Recovered valuables from waste, and recycled waste oil as auxiliary fuel
		Sale of Recycled Resources	13.8	Collected valuables, metals, sold paper products outside the group, and sold plastics outside the group
Other		0.7	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		107.9		

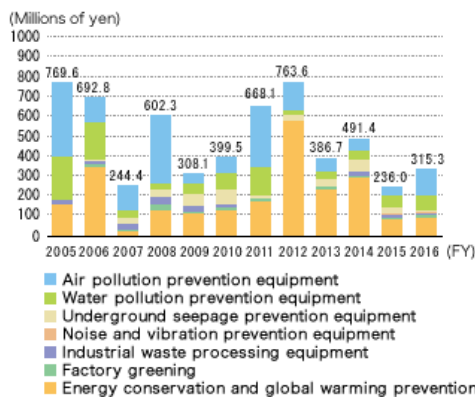
- Scope: Nippon Kayaku (non-consolidated)
- Investments: Aggregate of all orders placed in fiscal year 2016 (April 2016 to March 2017) Capital expenditure: Compilation of capital appropriated for orders in April 2016 to March 2017
- Management cost: Any cost increase resulting from change in fuel type 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

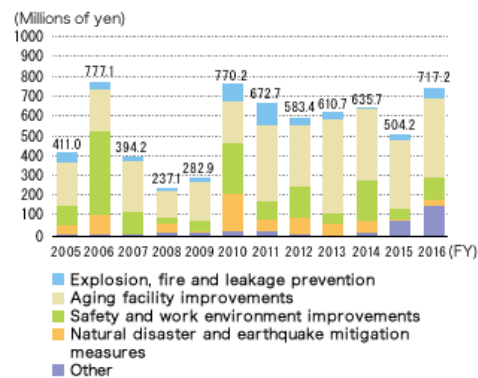
The Nippon Kayaku Group makes well planned and continual investments in environment, safety and health related projects. In fiscal 2016, investments related to the environment totalled at 315 million yen, which is an increase of about 34% compared to fiscal 2015.

Investments related to health and safety totalled at 717.2 million yen in fiscal 2016, which is a major increase of about 42% compared to fiscal 2015. Out of that, investments in equipment renewals accounted for 54% of the total.

● Environment Related Capital Investments



● Safety and Health Related Investments



# FY2016 Energy saving activity summary sheet of Nippon Kayaku Group

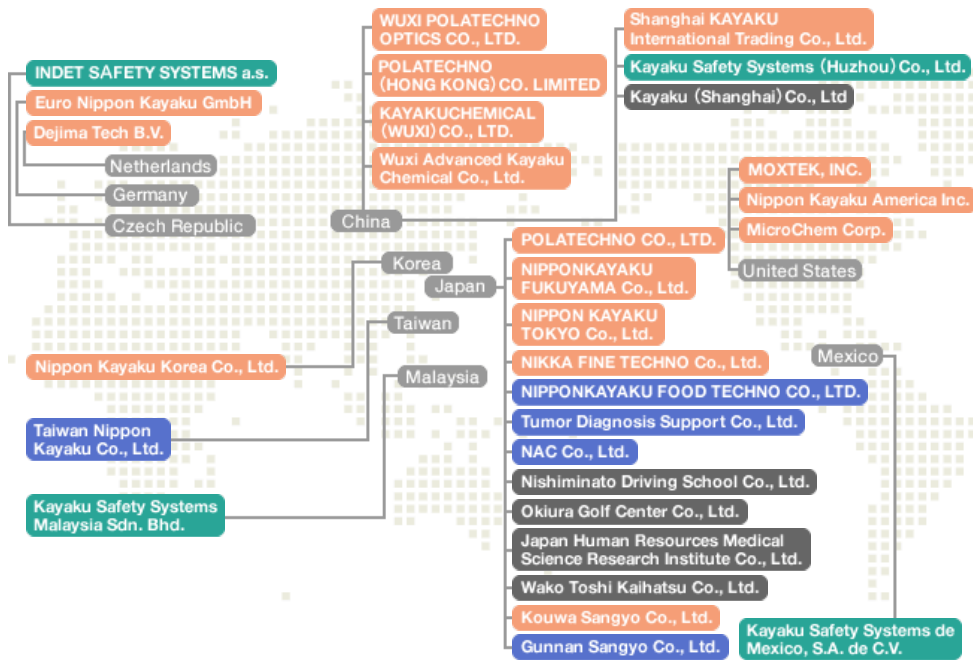
☀ : Solar panel installation    ☑ : Unrealized due to lease limitaions    — : Non-applicable    ※High-load machinery: refrigerators/freezers, blowers, air compressors, steam boilers

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.	●	●	—	—	—
INDET SAFETY SYSTEMS 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 17 subsidiaries in Japan and 19 subsidiaries overseas. This section presents the unified CSR commitment of 30 consolidated group companies.



**Japan Functional Chemicals Group**

Representative Director & President Hiromi Morita, POLATECHNO CO., LTD

POLATECHNO Co., Ltd. operates a line of businesses based on the key words "controlling light." The products we make using this technology focus on the concepts of energy efficiency and eco friendliness from the manufacturing stage. These products also make the lives of the customers who use them more convenient and comfortable. As a company that controls light, we will continue to supply a lineup of products that meet the needs of society in terms of energy efficiency and eco friendliness, while also contributing to 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 Chitoshi Mochizuki, 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 helping to establish chemotherapy methods and develop new compounds and new preparations through the provision of high quality data by means of its experience as a contract provider in biological concentration measurement testing and standard quality testing for pharmaceuticals. Also, by supplying superior quality pathological tissue samples, we are contributing to the accurate diagnosis of breast cancer. In addition, we strive to provide comfort and gain trust in the local community through ensuring safety at Nippon Kayaku Tokyo Co., Ltd. and the Tokyo R&D Administration Office, tree-planting, and environmental protection, as well as contribute to society by providing employment opportunities to the elderly and persons with disabilities.



#### **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 Tooru Nakata, 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, Kouwa Sangyo Co., Ltd.**

Kouwa 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.



**United States Functional Chemicals Group**

**CEO & President Shigeyuki Kawamura, MOXTEK, Inc.**

Moxtek's CSR activities are closely rooted in the local community. These include our involvement in a homeless assistance program, support for the LEGO Robotics Tournaments in support of area universities, and our sponsorship of extracurricular activities at the elementary, junior high and high school levels. We are working hard to fulfill our

commitment to be a company closely rooted in the local community by actively supporting the learning of youth and extracurricular activities in particular.



**United States** Functional Chemicals Group • Safety Systems Group  
Representative Director & 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.



**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 Teruo Uchida, 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.



#### **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

**Representative Director & President 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** Safety Systems Group

## President Susumu Tokutake, INDET SAFETY SYSTEMS a.s.

In 2014, INDET SAFETY SYSTEMS a.s. celebrated its 15th anniversary and through commemorative events we worked to broaden employee understanding about CSR. In addition, we continue to deepen relationships with local communities through our activities at hospitals, schools, and welfare facilities. The automotive industry continues to globalize and today more than ever we must supply parts of the highest possible quality. Our promise to stakeholders is to supply great products around the world and in the process help to protect human life from traffic accidents.



## South Korea Functional Chemicals Group

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

Nippon Kayaku Korea (NKK) imports Nippon Kayaku's functional materials to sell to customers in South Korea. Functional materials are chemical substances, so prior approval must be received for their import to South Korea. On January 1, 2015, South Korea enacted a new law and regulation on chemicals called K-REACH as well as a separate law on chemical substance controls. NKK will steadfastly comply with this new regulation and law on chemicals.



## Taiwan Pharmaceuticals Group • Functional Chemicals Group

### General Manager Jiro Hanada, 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.



## Mexico Safety Systems Group

### Representative Director & President Yoshitsugu Kawata, Kayaku Safety Systems de Mexico, S.A. de C.V.

Kayaku Safety Systems de Mexico (KSM) is a young company that is only eight years old, but we continue to grow everyday as each and every employee works to fulfill KAYAKU spirit. We carry out activities with the goal of becoming a company recognized in the local community for its four missions. These include: (1) listening to and understanding the voice of customers; (2) constantly and continually striving to improve products; (3) create an expansive culture inside the company with accountability and pride, and (4) fulfilling responsibilities as an organization and a member of society.



## Malaysia Safety Systems Group

### Representative Director & President 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.







## — Editorial Policy

CSR Information of the Nippon Kayaku Group contains results report and activity status of our mid-term CSR action plan and CSR action plan 2016 geared towards realizing a sustainable society and create an opportunity for dialogue with all of our stakeholders.

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, 2016 – March 31, 2017

### Release date

September 28, 2017

### Organization name

As of March 31, 2017

### 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