



Special Feature

The Nippon Kayaku Group's Safety and Security Initiatives in the Value Chain



"Pointing and Calling" signage at Nippon Kayaku Tokyo

Reliability and Safety from Manufacture to Use

The Nippon Kayaku Group strives to identify risks, implement measures and carry out safe corporate activities. This is achieved by conducting safety screenings on environmental, health and safety concerns during each stage of the value chain, spanning from new product development and raw materials purchases to product shipment.

Safety screenings utilize HAZOP*1, RAT*2 and other risk analysis methods, together with our own expertise in manufacturing and case studies about past incidents at other companies, as well as discussions and confirmations with in-house experts, to protect workers, ensure safety and be mindful of the environment.

During R&D we work hard to ensure the safety of raw materials, intermediates, products and waste by carrying out safety screenings along each step of development. On occasion product development is stopped if safety cannot be guaranteed.

Even during technology transfers from research lab to factory, safety screenings are carried out to ensure the necessary safety measures are in place for actual production and that safe work methods will be established. Safety screenings are conducted even for products being made at our factories; whenever there is a restart after a prolonged lull in production, changes in raw materials, production methods, or waste treatment processes, or facility improvements and upgrades are made. Safety training is also provided as part of our efforts to eliminate the threat of danger before it even occurs.

*1 HAZOP: Hazard and Operability Studies

*2 RAT: Risk Analysis by the Type of accident

R&D

Safety at research laboratories

The Nippon Kayaku Group sets a company-wide environmental, health and safety policy and targets, and dedicates efforts towards fulfilling each.

Our research laboratories thoroughly implement the following measures to better manage safety.

1. Awareness toward safety is heightened through active daily communication between staff due to the ongoing transient nature of work despite the small size of our laboratories.
2. Scenarios of abnormalities and accidents that may occur when transitioning to the production line are examined during each stage of the research process, from basic research to product development.
3. Chemical substances are managed responsibly while knowledge and experience from the basics to reaction mechanisms are constantly passed down together with technologies.

These initiatives help to prevent accidents everywhere at the Nippon Kayaku Group before they occur and also ensure that users are aware of safety and environmental requirements when using our products.

Number of consecutive days without an occupational injury at our research laboratories (as of March 31, 2015)

Functional Chemicals R&D Laboratories	15,119 days
Pharmaceuticals Research Laboratories	10,897 days
Agrochemicals Laboratories	9,190 days
Safety Systems Development Laboratories	3,408 days

Raw Materials

Working in concert with suppliers

In April 2015, we launched the CSR Procurement page on our corporate website where we publish our Basic Procurement Principles, Basic Procurement Policy, and CSR Procurement Guidebook. This guidebook conveys our philosophy about CSR procurement and purchasing activities to all of our suppliers.

Stakeholders require that a company carry out its business activities fully aware of its responsibilities to society. Our CSR Procurement Guidebook fosters understanding in our CSR philosophy among suppliers and ensures that we work side by side with suppliers in fulfilling our responsibilities to society. We have been following through on our commitment to CSR management and CSR procurement forms an important part of these efforts. We are committed to supplying the best possible products and services by fulfilling CSR with our suppliers based on purchasing activities that comply with all laws and regulations and take into consideration human rights and the environment.



Production

Safe and efficient production

The production of automotive safety parts that use explosives requires the fusion of technologies from two completely different fields, which are production processes that emphasize explosives safety developed over our many years in the business and production processes for automotive parts with an emphasis on speed and efficiency.

The Himeji Plant began researching efficient automotive production methods 15 years ago. However, such methods were only able to be used on part of the production line that did not involve explosives and were not expanded.

Later, the Global Production Meeting launched in 2013 began to examine the issue, providing added momentum to establish an efficient production system that included processes involving explosives. This was also driven by a change in thinking where optimizing the connection between these two processes could help to improve the situation without losing efficiency or downgrading safety.



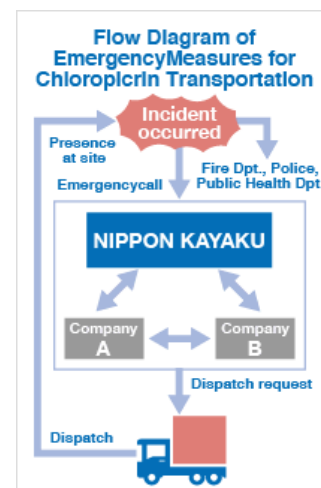
Logistics

Safety measures for the transportation of agricultural chemicals

The soil fumigant chloropicrin is a non-medical deleterious substance irritant with a pungent odor that requires careful handling. We are one of the three chloropicrin manufacturers in Japan and each manufacturer is distributing and transporting chloropicrin with the licensed logistic partners.

In the event of accident and/or natural disasters, it is absolutely necessary and critical to take measures for the safety of those involved as well as preventing the local communities to be kept intact or less affected by the incidents or that the three chloropicrin manufacturers are all prepared for any accidents and/or natural disasters anywhere in Japan through a collaborative communication and safety response team which is on alert to be dispatched in case of emergency.

There is also a collaborative system for emergency among these three companies and the Japan Chloropicrin Manufacturers Association. In the event of an accident during the transport of chloropicrin, this system ensures safety measures are in place, such as notifying the fire department, public health department, and police through an emergency contact network as well as activating and mobilizing the emergency response team to arrive at the site as quickly as possible. In this manner, Nippon Kayaku has been prepared for addressing and managing the dangers of handling and transporting hazardous chemical substances such as chloropicrin.



Initiatives of the Chemical Management Office

Chemical product laws, regulations and standards have been widely adopted in countries and regions around the world since the Globally Harmonized System of Classification and Labeling of Chemicals (GHS *3) was established by the United Nations in 2003. This has required that chemical product manufacturers provide labels and Safety Data Sheets (SDS *4) to customers that contain accurate classification information about the danger of chemicals based on GHS in the local language. The Functional Chemicals Group has introduced an SDS preparation system called MSDgen that features a wealth of translations, regulatory data from each country, and data on the physical properties and dangers of each chemical. This system makes it possible for us to provide labels and SDS in the local language that is compliant with each country and region's regulations. We also regularly manage the history of SDS using a database to ensure that we always provide the most up to date information possible.

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

*4 SDS: Safety Data Sheet

Initiatives of the Medical Information Service Center

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

Role of the Quality Assurance Division in Improving Quality Management Techniques

The Quality Assurance Division provides training with the objective of enhancing quality management techniques and awareness of quality as part of its broader efforts to protect and enhance Nippon Kayaku's brand image. In order to guarantee consistent product quality, daily quality management activities must be carried out without fail, and quality management techniques must be continually improved. For example, simply gathering data from process monitoring and other means alone will not provide the big picture.

This is because conclusions may be wrong if incorrect data collection methods or processes based on a misunderstanding about variations of data are carried out. Additionally, in order to supply products with constant quality, manufacturing departments, standardize work processes, improve control plans, and promote activities that prevent human errors and incidents before they occur.

As part of the division's efforts to develop human resources for implementing these activities it holds a group training program called "Field Data Analysis - Learning Through Experience" at Training Center Hisho. This training teaches participants about statistical thinking through group discussions and problem solving. Employees also take part in various seminars organized by the Union of Japanese Scientists and Engineers.



Safety Training at Kayaku Safety Systems De Mexico (KSM)

The Safety Systems Group manufactures automotive safety components that use explosives at five sites in Europe, the Americas, and Asia (Japan, Czech Republic, China, Mexico, and Malaysia). The ability to continually maintain safety and zero accidents is a precondition for supplying better products to society.

KSM, which is located the furthest away from Japan of these sites, is no exception. It must work on fostering greater awareness toward safety in a similar fashion as other sites including those in Japan.

Starting in November 2013, as part of its safety training KSM has organized safety experiments using actual explosives for not only production floor workers, but all employees, to provide a chance for them to experience the nature of these explosives first hand. These experiments are also used to foster greater awareness about the daily measures being taken to prevent ignition and the spread of fires, as well as minimize damages.

KSM employees have also been trained to carry out these safety experiments on their own because employees from Japan cannot be dispatched on every occasion. Each of Nippon Kayaku's sites around the world is committed to carrying out similar safety training programs to ensure safe operations now and in the future.

