

Kao's approach

Kao implements process safety and disaster prevention activities with the aim of ensuring the safety of employees and maintenance of safe, stable operations, stipulating matters relating to prevention of accidents, emergency response and strengthened security. Through these activities, we aim to completely eliminate accidents.

Kao's creating value to address social issues

Social issues we are aware of

As we have several large-scale plants, its process safety and disaster prevention needs are increasingly heightened in the context of accidents at chemical plants and the many natural disasters that have occurred recently.

Kao's creating value

Kao, as a company with large-scale chemicals plants, will provide regional communities in which local residents can live in peace of mind and employees at worksites can operate in safety without fear of accidents.

Risks related to realization of our vision by 2030

- Stoppages to stable operations from major accidents impacting regions in the vicinities of plants, natural disasters, or other factors, and accompanying loss of societal trust in the company

Opportunities related to realization of our vision by 2030

- Instilling of trust in the company and enhancement of the brand image by implementation of thorough process safety and disaster prevention initiatives to ensure the safety of communities and employees

Contributions to the SDGs



Policies

Activities to ensure process safety and disaster prevention are clearly stipulated in the Kao Responsible Care Policy. This is a policy to “prevent fires, explosions and chemical spills while maintaining safe and stable operations, and the appropriate facilities and periodical training to prepare for emergency situations such as natural disaster and security issues.” We are endeavoring to prevent accidents and disasters in accordance with this policy.



Kao Responsible Care Policy
www.kao.com/global/en/sustainability/environment/statement-policy/policy/responsible-care/

Framework

Our daily activities for process safety and disaster prevention are conducted as part of the Responsible Care promotion system. In particular, we have built a framework to keep track of accidents or disasters when they occur, through our global emergency reporting network. In addition, when a large-scale disaster such as a major earthquake occurs, we will establish an Emergency Response Team Organization headed by the President. Together as a Group, our initial response places top priority on the safeguarding of human life as we implement measures including our Business Continuity Plan (BCP)*.

* Business Continuity Plan (BCP)

A plan for continuing key corporate activities through procedures to decide in advance which operations and functions should be continued, and which methods should be applied to continue activities, assuming various situations that cause the interruption and/or shutdown of business activities due to various events and the factors behind their occurrence.



→ p. 195 Governance > Responsible care activities

Education and promotion

Kao creates various educational programs for process safety and disaster prevention. For example, at our Monozukuri Training Center, by recreating incidents such as technical glitches and hazardous situations we are endeavoring to ensure that the necessary knowledge and skills are passed on to younger technicians who will be responsible for production sites.

Promising leaders of the next generation within and outside Japan receive eight months of training to learn about production technology and the spirit of *Yoki-Monozukuri* at Kao's Global Techno School in the Wakayama Plant. This training includes process safety and disaster prevention. In addition, an annual disaster prevention message is posted, and an earthquake and disaster prevention handbook is published to improve disaster awareness. We are also endeavoring to ensure that the efficacy of past drills is not weakened by the passage of time, by designating a Safety Day on days when accidents occurred in the past.



- p. 197 Governance > Responsible care activities > Education and promotion
- p. 151 Corporate Culture > Human capital development

Collaboration with stakeholders

- We implement joint drills one or more times per year aligned with regions with, for example, fire stations and local corporations, in order to keep any damage caused by accidents and disasters which occur to the bare minimum. We are endeavoring to improve the overall level of our disaster prevention activities.
- We jointly implement drills one or more times per year premised on terrorist attacks in cooperation with local police for our production sites overseas, on an as-needed basis.

Mid- to long-term targets and performance

Mid- to long-term targets

We actively strive to realize our goal of complete elimination of on-site fires, explosions, leakages and logistics-related leakage accidents.

Anticipated benefits from achieving mid- to long-term targets

Cost reductions or profit increase

Mitigation of unnecessary expenses and reductions in overall costs, leading to higher revenues with sound implementation of business activities from safe operations at all worksites.

Impacts on society

Ensuring the stable provision of products with sound implementation of business activities from safe operations at all worksites. Moreover, this can facilitate the stabilization of product prices.

Performance in 2018

Performance

In 2018, we implemented thorough Change Management*, risk assessments of chemical facilities, regular inspections and enhanced patrols, for maintenance of safe, stable operations, to eradicate process safety accidents. In addition, detailed implementation specs and plans were also drafted for respective divisions with the targets of enriching disaster prevention drills and enhancing security. There were no leakages (on-site) or logistics-related leakages in 2018. In 2019, we will continue activities directed toward our targets of completely eliminating on-site fires and accidents related to explosion, leakage and logistics-related leakage accidents.

* Change Management: Management activities anticipating and accommodating risks before changes are implemented, along with preventive measures for issues such as failure, defects and accidents.

Targets and performance

Item	Scope	Indicator	2017		2018		2019	
			Results	Target	Results	Target	Results	Target
Accidents	Kao Group	Fires, explosions, leakages, etc. (no. of accidents)	6	0	2	0	0	0
		Logistics-related leakage* (no. of accidents)	0	0	0	0	0	0

* Logistics-related leakage Accidents involving leakage while products, etc. are being transported.

Overview of accidents in 2018

Type of accident	Small-scale fires: 2 cases
Overview of accident	<ul style="list-style-type: none"> • A fire started by liquid leakage and pyrolysis following degradation of storage container after long-term storage of test reagents used in research. • A fire started after a container for emulsification trials was placed in an IH water base while still hot causing accidental overheating.
Countermeasures being taken	We will implement system management for reagents and review storage locations while also reviewing test equipment.

Our initiatives

Emergency response drills to prepare for large-scale disasters

Besides implementing fire response training and emergency evacuation training at the level of individual workplaces, the group also conducts training on a company-wide basis to prepare for large-scale disasters.

Training in the use of the system for reporting the safety of Kao employees

In 2018, a new Employee Safety Confirmation System was introduced in February, with data inputting drills for the new system targeting all Kao Group employees in Japan designated and implemented for one-day (24-hour) periods in March and September. On the following days, we held a drill for the person in charge for tracing and confirming the whereabouts of employees not accounted for during the data inputting drill premised on an actual earthquake. We will continue to hold drills premised on an actual earthquake as it occurs based on the new system.

Below is an overview of uses of the Employee Safety Confirmation System in natural disasters in 2018. Active deployment of the Employee Safety Confirmation System allowed confirmation of employee safety with no critical human casualties.

Usage of the Employee Safety Confirmation System in 2018

Date	Disaster	Result
Jul. 2018	Northern Osaka Earthquake	Safety confirmation completed for 100% within two days
Jul. 2018	Torrential rain in July 2018	Safety confirmation completed for 100% within two days
Sep. 2018	Typhoon No. 21 (Jebi)	Safety confirmation completed for 100% within two days
Sep. 2018	Hokkaido Eastern Iburi Earthquake	Safety confirmation completed for 100% on the same day
Sep.–Oct. 2018	Typhoon No. 24 (Trami)	Safety confirmation completed for 100% within two days

Company-wide earthquake scenario reporting and communication training

The group is consolidating its organizational units for disaster response in Eastern Japan and Western Japan premised on damage to the Kao Head Office from an earthquake in the Greater Tokyo Metropolitan area. In May 2018, we implemented disaster response drills for organizational units for Eastern Japan with the units on the Tokai, Chubu, Kinki, Chugoku, Shikoku and Kyushu regions premised on a massive earthquake in the Nankai Trough, while in September we repeated these drills for units on site and for Western Japan premised on a major earthquake with its epicenter directly under the Tokyo Metropolitan Area.

During these drills, premised on locations during daytime on weekday, statuses were confirmed by means of IP radio within major disaster response organizational units, and promptly transmitted to Emergency Countermeasure Headquarters, alongside information on statuses of personnel safety and property damage at disaster sites by means of a meeting system using satellite phones and our internal disaster bulletin board and website. Necessary response drills were implemented based on the data from organizational units for disaster response.

In addition, at the September drills premised on a

disaster in the Greater Tokyo Metropolitan area, the Emergency Countermeasure Headquarters, with the Kao President serving as its head, completed training on the entire flow process for disaster response, including transfer drills to a base camp for safe activities, with the participation of the BCP Response Team for production.

The content of drills is being reviewed on an ongoing basis in light of the lessons learned from past training drills.

Emergency evacuation drills based on the scenario that a plant tour is taking place when the disaster occurs

The nine Kao plants in Japan that provide plant tours have prepared protective hoods for use by plant visitors in the event that an earthquake occurs while a plant tour is underway. These plants also implement emergency evacuation drills, with employees taking on the role of plant visitors, to ensure that in the event of emergency visitors can be taken swiftly to a safe place. In the future, we will continue to incorporate drills based on a variety of different scenarios during a plant tour into our annual training plan.



p. 202 Governance > Risk and crisis management



Implementing an emergency evacuation drill with employees taking on the role of plant visitors

Disaster prevention audits

In 2018, in addition to holding an audit at one plant in Germany, we audited two plants in China and one each in Thailand and Indonesia. Disaster prevention audits cover the state of implementation of disaster prevention operations, and the improvements made to address safety and disaster prevention issues. When issues are identified during audits, appropriate measures are taken to respond to these issues. As a result of these audits, we confirmed that improvements in the safety and disaster prevention levels have been achieved when compared with previous audits.

Initiatives including the implementation of audits by having

dispatched auditors from particular plants to other plants are also continued so that we can improve the levels of safety and disaster prevention at each plant through audit.

Strengthening process safety and disaster prevention

The SCM Division is working to strengthen chemical equipment risk management by identifying latent risks and implementing suitable measures in response, as well as continuing to promote earthquake response measures.

In 2018, measures to prevent naturally occurring fires and those involving low-flashpoint substances which were identified as latent risks in safety assessment of chemicals facilities were completed. We continuously implemented response measures for dust explosions as well as safety measures for polymerization and exothermic reactions and strengthening of the change management for facilities outside Japan. With regard to earthquake response measures, we implemented seismic resistance diagnostics and reinforcement for both buildings and equipment stands, liquefaction prevention measures, and measures to strengthen protection against tsunamis.

High-pressure gas safety inspection, auditing and verification

The Wakayama Plant has been designated an Accredited Safety Inspection Executor* pursuant to the High Pressure Gas Safety Act. In 2018, a safety audit was implemented by the Safety Management Division in August and a safety inspection under the direction of the President, who also serves as head of safety management, was implemented in October. We were able to confirm that there were no issues with regards to process safety activities. In 2018 we also underwent an audit with a Ministry of Economy, Trade and Industry accredited facilities auditor acting as intermediary.

The high-pressure gas equipment at other Kao sites has

safety inspection performed by external inspection bodies. Safety audit and safety verification are carried out in-house, and a serious effort is being made to ensure safe equipment operation.



High-pressure gas safety inspection at the Wakayama Plant

* Accredited Safety Inspection Executor

It is a company or organization authorized by the Minister of Economy, Trade and Industry to perform self-inspection, either while equipment is in operation or while it is out of operation, to verify whether the safety of specified items of equipment conforms to the relevant technical standards pursuant to the High Pressure Gas Safety Act.

Topic Third-party evaluation of safety competency (Wakayama Plant)

In 2018, we held a third-party (Japan Safety Competency Center) evaluation of safety competency for the first time, at the Wakayama Plant. A safety competency evaluation entails confirmation of management status for safe on-site operations of plants, including operational safety, maintenance and construction work. It also confirms that workplace environments with safety as the utmost priority are being cultivated, as well as the vitality of workplaces. Evaluations are completed in five stages to identify strengths and weaknesses in these respective areas, with the aim of encouraging autonomous improvements.

We will continue to draft improvement plans for the items identified as weaknesses and to actively improve on these fronts based on these evaluations.