

Safety Reporting

Corporate Statements

The Kuraray Group
Code of Conduct

Compliance Handbook

TOP STATEMENT

Sustainability
Management

Safety Report

Process Safety and
Disaster Prevention,
Occupational Safety,
Logistics Safety

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Kuraray Report
(integrated report) /
Sustainability website

Process Safety and Disaster Prevention,
Occupational Safety, Logistics Safety

Kuraray's Approach to Safety

For the Kuraray Group's business activities, safety is an absolute necessity, and the cornerstone of everything we do. Building "Trustful workplaces and a safe and accident-free company" is a key theme required for maintaining stable product supply and trustworthiness for society.

With these concepts in mind, the Kuraray Group has established and implemented a safety management system to undertake various activities. A number of initiatives are being promoted to raise the safety awareness of our employees and to have safety behavior and confirmations established as common practice at work.

Each worksite tries to find process safety risks and occupational risks through risk assessment activities, and to prevent the occurrence by promoting inherent safe measures for facilities. In preparation for accidents or disasters, we make efforts to prevent the recurrence of accidents or disasters, in ways such as by holding emergency drills to minimize the damage and sharing information on the accident or lessons learned, or by disseminating information regarding measures across the company.

Guiding Principle on
Ensuring Safety

**Safety is the
Cornerstone of
Everything We Do**

Action Courses on Ensuring Safety (FY2020)

- 1. Ensuring "Safety First, Production (Construction and R&D) Second"**
- 2. Predict Hazards and Make Sure the Safety before Taking Action, then Confirm the Action Results are what you expected**
- 3. All employees Must Act Proactively to Ensure Safety**

Safety Activity Management

In accordance with the Company's Safety Activity Management Regulations, the Kuraray Group develops a safety plan every fiscal year and implements it to ensure occupational safety, process safety, and disaster prevention. To be more specific, at the Safety Promotion Committee attended by the President and executives in charge, we make an overall assessment and have a discussion on safety activity performances of the current fiscal year and establish an activity policy for the coming fiscal year. This policy is reflected in and implemented through specific action plans of each plant and department. A group of safety representatives from headquarters, including executives in charge of safety, visit every plant of the Group in Japan twice a year to examine their activity plans, the management of implementation progress, and the results. In addition, staff members from headquarters visit the Group subsidiaries outside Japan once every three years to confirm their statuses. We perform an overall assessment on results based on the challenges found through the surveys made at each plant, the safety results for that year, and other factors. We incorporate this assessment into the formulation of company-wide policies for the next year, thereby operating a management system for safe operations.



Verification of safety activities at Tsurumi Plant



Verification of safety activities at Kashima Plant

Targets and Performance in Safety Priority Activities

Evaluation: ○ Accomplished, △ Nearly accomplished, × Not accomplished

	FY2019			Items related to FY2020 safety activities
	Targets	Performances	Evaluation	
	Prevention of occupational injuries caused by careless or involuntary behavior of individuals	Through initiatives to boost "recognition" in the workplace and sharing, we strived to heighten individual awareness and reduce behavioral incidents caused by careless or unthinking behavior. Nevertheless, many behavioral incidents still occurred.	△	
	Transition to situation where all employees actively take part in safety activities	We continue to work to get everyone in the organization to understand properly the purpose of the initiatives and provide feedback on suggestions/proposals, and having them evolve into proactive ones.	○	

	FY2019			Items related to FY2020 safety activities
	Targets	Performances	Evaluation	
Process Safety and Disaster Prevention, Occupational Safety	Promotion of work place improvement (facilities and operation) by realizing when something feels wrong	We are promoting workplace improvement by developing an environment in which it is easier to notice when something feels wrong through the 5S activities, and we are also trying measures through on-site patrols and other measures.	○	<ul style="list-style-type: none"> Ensuring hazard prediction “KY” to secure the safety of the workplace Recognition and realization in the workplace when something feels wrong, and acting on it Review and enhancement of “new employee training” Implementation of measures to discover latent risks and to minimize actualization risks with regard to process safety Reliable operation of the Global Safety Activity Management System
	Prevention of process accidents/troubles by making thorough “Check”	While we have been promoting initiatives on incorporating a concrete list of points to be confirmed into the procedure document and checklists, and reviewing difficult-to-follow rules, accidents/troubles and other incidents due to insufficient checking still occur. In particular, it is necessary to review how to give instructions to new employees and confirm work status.	△	
	Implementation of measures to discover latent risks that can lead to process accidents and minimize the occurrence of those risks	Through initiatives to broaden our thinking to off-normal operation/conditions and others, we worked to discover risks, and progressed with confirmation of the maintenance status of measures implemented in the past and their effects. In the wake of a series of fire accidents involving explosions occurred at plants outside Japan since 2019, we initiated emergency safety audits.	△	
	Reliable operation of the Global Safety Activity Management System	In accordance with the established management system, we worked to share safety information and confirm the activity status by visiting overseas bases and holding the Global Meeting. We also initiated emergency safety audits of the chemical plants.	△	

Numerical Targets and Results

	FY2019			FY2020	
	Targets	Criteria for evaluation	Actual results	Targets	Criteria for evaluation
Process safety	Zero	Zero process accidents	10 cases	Zero	Zero process accidents
		Zero A and B rank incidents* ¹	5 cases (6 persons)		Zero A and B rank incidents* ¹

	FY2019			FY2020	
	Targets	Criteria for evaluation	Actual results	Targets	Criteria for evaluation
Occupational safety	Zero	The frequency rate of all occupational incidents*2: 1.5 or less	3.20	Zero	The frequency rate of all occupational incidents*2: 1.5 or less

*1 A and B rank incidents: An evaluation ranking of occupational incidents using Kuraray's proprietary system that rates the seriousness of occupational incidents from A to D in accordance with the levels of potential disorders and with the levels of faults that caused such incidents. An incident rated A or B is considered to be a serious incident.

*2 The frequency rate of all occupational incidents: The number of all occupational incidents requiring medical attention per million working hours.

Process Safety and Disaster Prevention

At the Kuraray Group, we consider it our major responsibility to prevent the occurrence of explosions or fires, leakage of hazardous materials and other accidents that could have an immense impact on society, as well as to minimize any damage in the event of such occurrence. For this purpose, we have continuously undertaken activities such as risk assessment related to process safety and disaster prevention, and strive to take earthquake and tsunami countermeasures for buildings and plants, and organize the safety management system for facilities.

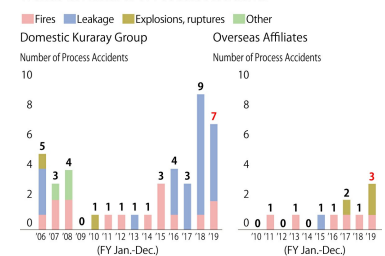
After a recent accident occurred at another company, we paid particular attention to the risk assessment of unusual tasks and situations such as the starting and ceasing of an operation, a power and water outage and an emergency shut-down. Moreover, we also extract various risks that may arise in the event of a failure of safety equipment or incompliance with a rule, and consider countermeasures.

Additionally, we develop ideas and human resources that can promptly respond to an unusual situation before an accident occurs through implementing education to raise the members' sensitivity to risks and clarify standards to determine an unusual situation, so that they can detect a sign of abnormalities.

Employees are regularly trained through on-site drills on various situations including the night time, holidays, when managerial personnel are absent and situations that occur without notice, in a drill using an external facility or a joint drill with a local fire department.

We are engaging in initiatives for receiving evaluations from an external organization about our safety-related foundations and culture, and we aim to be a safe company that does not suffer any accidents or disasters by operating the PDCA cycle with a thorough understanding of which

Trends in Number of Process Accidents



areas need further reinforcement.

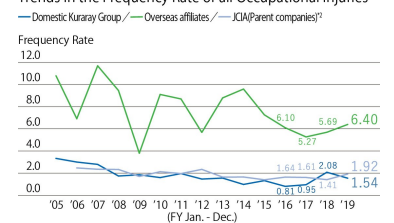
In the event of a significant accident, the Emergency Command Center led by President is ready to be established to promptly respond to the situation and provide on-site support. In fiscal 2019, a company-wide drill involving the Emergency Command Center, assuming that a fire with casualties had broken out at a plant. Media training is also provided to key managerial personnel in charge of public relations to enable them to appropriately provide information to the regional community and media in case of such an accident.

In fiscal 2019, we regret that 10 cases of process accidents were recorded, and we failed to meet the target. With respect to process accidents in Japan, there were five slight leakages of hazardous materials and two minor fires at facilities, which did not lead to a major incident. However, two of the three process accidents outside Japan involved a small explosion. Following the previous fiscal year, as accidents occurred that involved an explosion, emergency safety audits were initiated at overseas chemical plants. We aim to ensure progress with initiatives for issues identified through audits and improve the safety management level.

Occupational Safety

Realizing that the safety and health of its employees are the basis of business activities, the Kuraray Group aims to create safe and accident free workplaces by striving to enhance the safety level of each of its employees and organizations. It does this through appropriately implementing its occupational safety management system. Through the Company-wide policies and activity items

Trends in the Frequency Rate of all Occupational Injuries^{*1}

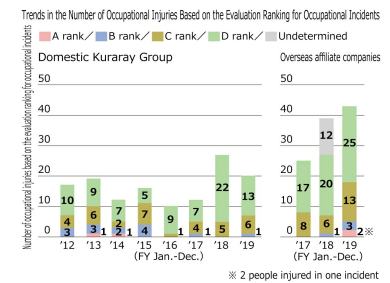


^{*1} Number of all occupational incidents per million work hours required medical treatments
^{*2} Japan Chemical Industry Association (JICA) Data. Source: Occupational Safety Fact-finding Survey

including Guiding Principles and Action Courses on Ensuring Safety, policies and plans are thoughtfully developed and put into practice according to each plant's and division's situations and their unique ideas. Safety activities and their challenges are discussed among workers and employers at the Safety and Health Committee held by each of the domestic plants and factories every month, aiming to realize "trustful workplaces, and a safe and accident-free company."

Through risk assessment activities and inherent safety measures of equipment, activities to reduce equipment-caused accidents have successfully decreased serious occupational incidents. However, many occupational incidents caused by an individual's lack of preparations or unconscious behavior still have occurred. Therefore, education to raise the members' sensitivity to risks has been promoted to eliminate these types of occupational incidents.

In fiscal 2019, the frequency rate for all occupational incidents of the entire Group was 3.20 (1.54 in the Group in Japan and 6.40 in the Group outside Japan), failing considerably to meet the target(1.50 or less in the entire Group). Kuraray has implemented an evaluation system to rank the seriousness of occupational incidents from A to D, with goals (zero A and B rank incidents) set regarding the number of incidents rated A or B, which indicates serious incidents. The total number of A and B rank incidents in the entire Group was five. This includes one B rank incident in the Group in Japan, as well as one A rank incident (two workers were injured in a fire involving a small explosion, which was counted as two in the number of A and B rank incidents) and three B rank incidents in the Group outside Japan. Three of the five cases were caused by workers being caught in rotating machines. We will improve our facilities and strengthen management to eliminate such major incidents. In addition, similar to the previous fiscal year, there were many occupational incidents caused by an individual's lack of preparation or unconscious behavior, such as tumbles, and we are continuing our efforts to reduce such "behavioral incidents." We will review and enhance the new employee training as there occurred many occupational incidents involving inexperienced workers. We will continue to firmly proceed with our efforts to address these issues, and going forward, we will strive to fulfill the objective of achieving a safe workplace where disasters do not occur.



Number of Fatal Occupational Incidents

Boundary						
Japan: Kuraray Co., Ltd. and subsidiaries in Japan						
Overseas: Plants of overseas subsidiaries						
	2015	2016	2017	2018	2019	
Japan	0	0	0	0	0	
Overseas	0	0	0	0	0	

- No fatal incidents have occurred in the Kuraray Group in Japan since the one in December 2005.
- No fatal incidents have occurred overseas since fiscal 2002, the earliest year for which data is available.

Number of Fatal Occupational Incidents (at subcontractors)

Boundary						
Japan: Workers of subcontractors that engage in maintenance and construction works at the Company's plants, etc.						
Overseas: Same as above						
	2015	2016	2017	2018	2019	
Japan	0	0	0	0	0	
Overseas	0	0	0	0	0	

- No fatal incidents have occurred at subcontractors in Japan since the one in March 1992.
- No fatal incidents have been reported at overseas subcontractors in the past.

Risk assessment of new business, capital investment, etc.

The Kuraray Group has in place and operates a system that carries out prior surveys and

risk assessment regarding process safety and occupational safety and health of new projects and capital investments in and outside Japan through the functions of the Technical Evaluation Committee, the Technology Review Meeting and the Safety and Environment Examination to verify that safety measures and environment measures are sufficiently considered before moving to the next step. In addition, changes in raw materials, facilities, operating conditions and the organization as well as personnel transfer in line with the organizational change (supervisors, administrators, persons in charge, etc.) are implemented after taking measures required upon assessing risks as part of the change control process. The Kuraray Group ensures safety in introducing new business and facilities by steadily implementing these initiatives.

Evaluation and Classification of Occupational Incidents

Generally, categories based on the severity of actual incidents, including fatal incidents, lost time incidents and non-lost time incidents, are used as an indicator for occupational incidents. In particular, the frequency rate of lost time incidents is often used to assess the level of or establish a target for organizational safety.

However, actual safety levels may deviate from the results of this assessment method for the following reasons:

- (1) The severity of injuries is unpredictable in many cases.
- (2) The occurrence factors of an accident are not taken into consideration.
- (3) (When it is applied to global management) criteria of determining the degree of injuries depends on the country.

We therefore have established a proprietary evaluation and classification of occupational incidents by subtracting unpredictable factors and adding an assessment of occurrence factors. This quantifies not the actual severity of injuries but the potential severity of injuries that could have been caused by an occupational incident. Moreover, faults that caused such incidents are divided into human, equipment and managerial, rated numerically, and added to the potential severity of injury to determine the ranking from A, B, C to D.

As a result, the number of severe occupational incidents ranked A and B serves as an indicator for evaluating the level of organizational safety.

Safety Audits for Chemical Plants outside Japan

In response to a series of fire accidents involving explosions at chemical plants of the Group's subsidiaries outside Japan in recent years, we initiated safety audits for chemical plants outside Japan to ensure the safety and stable operation of the Group outside Japan. The audits include the determination of what can no longer be carried out, whether there are any omissions or deficiencies in management items, and whether long-term stable operations have led to overconfidence and complacency about safety. The audits have detected some issues with the change control process crucial to ensuring safety, the operation of permission/approval for specific works, and the identification of risk sources during off-normal operations (such as start-up and suspension of operations). For those issues, we will work to develop/enhance safety management systems that are suitable for their respective plans while stepping up

Logistics Safety

To prevent damage to society at large caused by logistics accidents, the Kuraray Group is engaged in an ongoing promotion of activities to ensure logistics safety from the aspects of product shipment and storage.

In fiscal 2019, the Kuraray Logistics Safety Conference, which is the core organization for these activities, marked its 19th year and was held at the Okayama Plant with the convocation of eight hazardous materials transportation contractors. We discussed safety activities, accident cases and countermeasures at the plant, and shared measures to prevent significant accidents among participant companies. Going forward, we will continue maintaining and enhancing logistics safety while cooperating with various external related organizations, with our target of achieving a zero level of significant accidents.

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