

# Process Safety & Disaster Prevention and Occupational Safety & Health

## Basic Safety Policies

- ◇ Safety forms our management foundation, and is the basis of all corporate activities.
- ◇ Safety is the foundation of local and worldwide communities' confidence in Kaneka.
- ◇ Safety is based on our belief that "All accidents can be prevented."
- ◇ Safety is the responsibility of every employee in accordance with his/her duties.
- ◇ Safety must be maintained continuously.

## Efforts in Process Safety & Disaster Prevention

### ● Aiming for Zero Process Accidents

Affirming that "safe and stable operation is the foundation of a manufacturing business," we have been making efforts to achieve the goal of "zero process accidents" for many years at Kaneka. Despite this, two accidents involving fires occurred in fiscal 2008 (one each at our Takasago Plant and Kashima Plant). Neither accident hurt any person, the damage to our facilities was light, and the surrounding communities suffered no harm. In response to these accidents, along with taking measures immediately to prevent recurrence, we are making efforts throughout the group to prevent the occurrence of similar accidents.

At the Kaneka Group, motivated by the explosion and fire accident that occurred at our Takasago Plant in fiscal 2006, we are continuously conducting risk assessments of dangers that could cause explosions, fires and other serious accidents and disasters. To prevent accidents caused by the chemical substances that we handle in manufacturing and research, we are undertaking "explosion and fire risk assessments" and actively making various reforms, including the installation of equipment that suppresses the buildup of static electricity, which can cause ignition, in facilities that handle and manufacture flammable gases, resins and other materials.

In addition, we are also actively sharing lessons from examples of accidents and other incidents that have occurred at other companies as we endeavor to prevent accidents and disasters.

### ● Enhancing Crisis Management Systems

At Kaneka Corporation and in the Kaneka Group, in preparation for the occurrence of emergencies, we have readied response measures for crises that demand immediate and rapid action. In addition, to fulfill our corporate social responsibilities and realize the continuation of our business, we have created a Crisis Management Manual and posted it on our intranet.

In our Crisis Management Manual, we establish a primary reporting network and clarify the responsibilities and jurisdictions of the concerned divisions and our head offices in the case of an emergency. In this manual, we also include items necessary for immediate response systems, for example, and preparations during ordinary circumstances, as well as regulations about interactions with government, mass media, neighboring residents, customers and other outside entities.

At present, in order to share information about the conditions of an accident site more accurately throughout the company, we are working to build a system for transmitting video taken by mobile phones to our head offices in real time.

### ● Enhancing Equipment for Process Safety and Disaster Prevention

At our Osaka Plant, we have installed an earthquake reporting system that, within the plant, automatically broadcasts information about earthquakes from the Japan Meteorological Agency. We have also prepared an emergency information transmission system that allows one-touch operation using Internet and telephone lines for more rapid communication with concerned parties if an emergency situation should occur at night or during a holiday. At our Shiga Plant, as efforts to strengthen information management during disasters, we are reviewing the installation locations of disaster-prevention wireless antennas, assuring communication functionality throughout the plant, and introducing an emergency information transmission system (emergency summoning) using mobile phones. At our Kashima Plant, we have introduced an emergency earthquake reporting system and equipment to report automatically when an earthquake of *shindo*\* 2 or higher is expected. The simultaneous broadcast to every part of the plant includes the time (in seconds) until shockwave arrival and the estimated *shindo*. We are continuing to augment our equipment related to process safety and disaster prevention at every one of our worksites.



Emergency information transmission system (Shiga Plant)



Disaster-prevention wireless equipment (Shiga Plant)

### ● Disaster Prevention Drills

In fiscal 2008, we implemented comprehensive disaster prevention drills at all Kaneka plants. In addition, our affiliated companies regularly conduct disaster prevention drills and fire extinguisher handling training.

#### Comprehensive Disaster Prevention Drills (FY 2008)

Plant	Date	No. of Participants	Program Details
Takasago Plant	October 21, 2008	Approx. 450	We held a drill for a hypothetical scenario in which a <i>shindo</i> * 6-strong earthquake along the Yamazaki Fault occurs, further causing a heavy oil tank to leak and catch fire on land and heavy oil to flow out on the ocean and catch a work vessel on fire. Takasago and Kakogawa City Fire Departments, the Hyogo Prefectural Police Department, the Japan Ground Self-Defense Forces, the Himeji Marine Safety Division and ten nearby businesses participated in this drill, which was held in conjunction with Hyogo Prefecture petroleum industrial complex comprehensive disaster prevention training.
Osaka Plant	March 10, 2009	Approx. 500	We conducted training for a hypothetical scenario in which a <i>shindo</i> * 5-strong earthquake occurs, resulting in the ignition of designated flammable materials and the outbreak of fire as well as injuries to people from falling items. The Settsu City Fire Department participated in this training that included firefighting activities and the rescue of victims by the self-defense group, as well as communication with related organizations inside and outside the company.
Shiga Plant	March 17, 2009	Approx. 190	We conducted training for a hypothetical scenario in which a <i>shindo</i> * 6-weak earthquake occurs, resulting in a crack in a pipe on an organic solvent tank and leakage of the organic solvent, as well as the outbreak and spread of fire during treatment. The training covered reporting, firefighting, rescuing victims, and communicating with related agencies, as well as protective measures by self-defense groups and evacuation that includes affiliated companies.
Kashima Plant	November 26, 2008	Approx. 240	We conducted comprehensive disaster prevention training jointly with a cooperative disaster prevention group for a hypothetical scenario in which an earthquake causes a flexible supply pipe on a spherical tank for vinyl chloride monomer (VCM) to break, allowing the VCM to leak and start a fire. This training included systems for reporting and immediate response (protective efforts), guidance, first aid and evacuation, as well as reporting to related agencies and corporate head offices.

\* *Shindo* is the Japanese scale for the intensity of an earthquake as felt at a particular location.

**Comprehensive disaster prevention training (Takasago Plant)**



Arrival of rescue vehicle and ambulance from fire department headquarters



Water sprayed from elevated water truck (on land)



Firefighting by fireboats (at sea)

**Comprehensive disaster prevention training (Osaka Plant)**



Training in targeted water spraying from fire hydrant hoses



Training in targeted water spraying



Training review

**● Disaster Prevention in the Local Community**

We cooperate with fire departments, fire brigades, other enterprises in Takasago, Settsu, Otsu and Kamisu cities where our plants are located in implementing various trainings. We also actively participate in New Year's firefighting events and hose/hydrant competitions every year.



New Year firefighting event at the Shiga Plant



Disaster prevention training with neighboring companies at the Kashima Plant



New Year firefighting event at the Kashima Plant



Disaster prevention training with neighboring companies at the Kashima Plant



Hose/hydrant competitions at the Takasago Plant



Firefighting training events at the Osaka Plant in Settsu City

**Comprehensive disaster prevention training (Kashima Plant)**



Training at the general affairs division



Training in tank water spraying



Training in water spraying, including from an elevated water truck

**Distribution Safety**

**● Safety Education for Transportation Contractors**

We have established an annual plan for safety education for the companies that are responsible for the transportation of products that are subject to the Japan's High Pressure Gas Safety Law, the Poisonous and Deleterious Substance Control Law and the Fire Services Act, as well as other products that could cause serious damage if an accident occurred during transportation. We implement related training for vehicle crews so that they can prevent accidents and respond rapidly should one occur. In addition, we reconfirm that the work procedures and security maintenance for safe transportation are being observed.

**● Yellow Cards**

We require vehicles that transport chemical substances to carry Yellow Cards that describe response measures and reporting details if accidents should occur. Kaneka and transportation contractor cooperate to confirm vehicles are carrying them as required.

**● Emergency Response Training for Potential Disasters during Transportation**

Once a disaster occurs during transportation, not only knowledge but also the ability to take correct and appropriate action is required. Kaneka always keeps disaster prevention equipment on-hand and make preparations for disasters.

We regularly conduct emergency response training jointly with contracted transportation companies to improve our practical response capabilities. Also, our Takasago Plant participates in the emergency mobilization training that the Regional High Pressure Gas Disaster Prevention Council of Hyogo Prefecture conducts as part of a mutual support system for transportation disasters.



Emergency response training for potential disasters (disaster prevention system preparation work)



# Process Safety & Disaster Prevention and Occupational Safety & Health

## Efforts in Occupational Safety & Health

### ● Striving to Eliminate Accidents

#### “Zero Accident” Principles

All people, you and me, are indispensable;  
we ensure everyone is working safe.

[Pledge of safety]

Safety is everyone’s responsibility;  
we do not miss sparing time to seek safety.

[Participation in safety]

There is no trick to safety;  
we always value a fundamental approach to it.

[Adherence to safety basics]

Be aware of potential danger;  
we endeavor to eliminate safety risks.

[Safety in advance]

Where there is carelessness, there is  
a possibility of an accident;  
we do not allow every little chance of negligence.

[99%, yet 0%]

Seeking to achieve “zero occupational accidents”, Kaneka has been promoting occupational safety and health activities that show due consideration for the characteristics of each individual workplace. However, accidents involving our employees occurred in 2008, including one that caused lost time and two that caused no lost time. Accidents involving the employees of cooperating companies also occurred, including two that caused lost time and one that caused no lost time. These accidents took various forms, including getting caught and pulled into equipment, cuts and falls. For each of these accidents, we have undertaken thorough countermeasures to prevent their recurrence and also to prevent the occurrence of similar accidents. Moreover, we are strengthening our systematic efforts for risk assessment with the intention to “Create safety in advance,” and we will continue to seek to achieve a record of zero occupational accidents.

### ● Enhancing Our Occupational Safety and Health Management Systems

In fiscal 2006, we began efforts for occupational safety and health using an occupational health and safety management system (OSHMS). In fiscal 2007, every one of our plants acquired OSHMS certification that is accredited by the Japan Industrial Safety & Health Association (JISHA). In fiscal 2008, in order to strengthen the operation of our OSHMS, we trained more people to increase the number of system auditors and focused on increasing their abilities. In addition, we also provided support for risk assessments to cooperating companies, for example, by offering guidance and advice and giving suggestions during safety patrols by plant heads. We will continue striving to strengthen our risk assessment efforts and system auditing functions with our OSHMS as a pillar for these and other efforts.

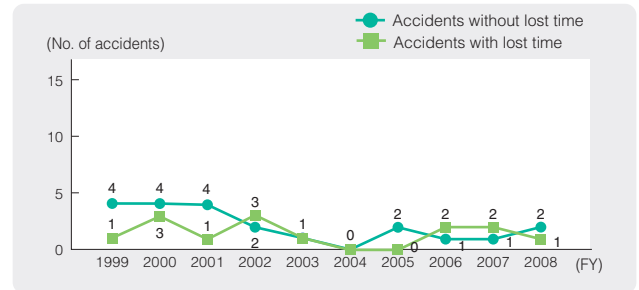
#### Status of OSHMS Certification

Business place	Location	Certification date	Certification number
Takasago Plant	Hyogo	March 10, 2008	08-28-13
Osaka Plant	Osaka	August 21, 2007	07-27-10
Shiga Plant	Shiga	January 15, 2008	08-25-6
Kashima Plant	Ibaraki	December 21, 2007	07-8-10

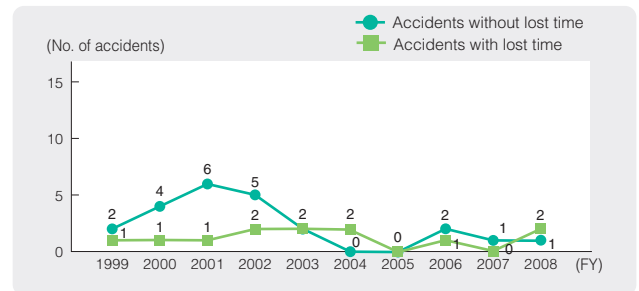
### ● Comprehensive Inspections

In order to improve the level of occupational safety and health in the Kaneka Group, we implement Comprehensive Inspections every other year for all group companies in Japan and abroad. The inspection items that we are emphasizing in fiscal 2008 with the goal of eliminating serious accidents and disasters are the establishment of risk management and assessment, compliance, and thorough implementation of the 3S safety fundamentals (seiri, seiton and seiso, which can be loosely translated as “tidying, organizing and cleaning”). In addition to inspections at Kaneka’s four plants, we implemented inspections at 17 business places of 15 domestic group companies and 8 business places of 8 overseas group companies. Serious efforts were being made related to the emphasized inspection items at every company.

#### No. of Kaneka Employee Accidents With/Without Lost Time



#### No. of Contractor Employee Accidents With/Without Lost Time



#### Lost Time Frequency Rate<sup>1</sup> and Accident Severity Rate<sup>2</sup> of Kaneka and Group Company Employee

	Entire Kaneka Group		Kaneka Corporation		Group Companies	
Calendar year	2007	2008	2007	2008	2007	2008
Frequency rate	0.68	0.58	0.91	0.20	0.55	0.86
Severity rate	0.27	0.02	0.03	0.01	0.42	0.03

#### Lost Time Frequency Rate and Accident Severity Rate of Contractor Employee

	Entire Kaneka Group		Kaneka Corporation		Group Companies	
Calendar year	2007	2008	2007	2008	2007	2008
Frequency rate	0.17	0.89	0.00	0.47	0.78	2.12
Severity rate	0.00	0.03	0.00	0.03	0.00	0.03

1: Frequency Rate: No. of affected workers ÷ Total No. of working hours × 1,000,000  
2: Severity Rate: No. of days lost ÷ Total No. of working hours × 1,000

### ● Efforts for Risk Assessment

At our Osaka Plant, we are making our equipment safer, following the Guidelines for the Comprehensive Safety Standards of Machinery issued by the Ministry of Health, Labour and Welfare of Japan. We are working to make our equipment safer by deepening the understanding of the workers who are actually responsible for their use, for example, through confirming JIS requirements.

At our Shiga Plant, we are focusing on “getting caught and pulled into equipment” and “the work of handling organic solvents.” We are establishing working groups for each particular issue to reduce risks, particularly through the continuous identification of latent risks and essential safety enhancement.

### ● Safety and Hygiene Efforts at Osaka Synthetic Chemical Laboratories, Inc.

Osaka Synthetic Chemical Laboratories, Inc., which is a Kaneka Group company in Japan, uses a great variety of chemical substances and solvents to make numerous medical supplies, intermediates and specialty chemicals in small amounts. Having experienced drug disasters (occupational accidents) and warehouse fires in the past, all our employees are working together on efforts to further improve environmental safety and hygiene. In our risk assessment activities, in order to prevent predictable troubles, our research and technology divisions work in coordination with the plants to conduct multiple investigations. Based on their results, we create rules about preproduction education for new types of products and reflect these in the instructional documentation.

Among our tangible actions, we have installed fixed oxygen concentration meters, plant wastewater pH meters and gas concentration meters, and taken other measures in workplace environments. Among our intangible efforts, we are endeavoring to maintain stable production through hands-on experiences and education about taking care of facilities, as well as receiving guidance from Kaneka’s Corporate Technology Administration Department. By conducting efforts to vitalize work duties and systems (SSKP\*) 52 times, we have been increasing our bottom-up improvement efforts, and we are striving to continue a record of zero occupational accidents.

\* Shokumu Soshiki Kasseika Program



Safety meeting

### ● Hands-on Learning with the Goal of Improving Sensitivity to Danger

In order to enhance hands-on learning at our Osaka Plant, along with training instructors, we have added equipment that allows dust explosion experiments and simulated experiences of static electricity and being pulled into a conveyor, for example, in our hands-on learning laboratory. At our Shiga Plant, in order to assure day-to-day safety, we are implementing hands-on learning using training equipment that conforms to the conditions of each workplace in order to increase employee sensitivity to danger. At the same time, we are using an analytical method (TPI-SWD\*) to improve safety that focuses on the behavioral characteristics of individuals. This can increase sensitivity, which can suppress risk-taking behaviors and create new habits.

\* Today Personality Inventory—Safety Worker and Driver

### ● Mental Health

From the perspective of mental health, we recognize that self-care (stress awareness by employees) and line-care (improvement of workplace environments by managing supervisors) are important for the protection of employee health, lifestyles and lives. For these purposes, we are making efforts focused on education and training as well as counseling.

In fiscal 2008, for the purpose of promoting self-care, we conducted trainings 8 times for about 290 employees so that each of them could gain fundamental knowledge about mental health and stress control skills. For line-care, we conducted trainings 15 times for about 440 people on how to respond to employees whose mental health deteriorates. In addition, we also conducted trainings for newly appointed executives and managers at the times of their promotions.



Mental health training for executives